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E&MM

ELECTRONICS & MUSIC MAKER
THE MUSIC TECHNOLOGY MAGAZINE

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Roland TR505 Drums — Full Report

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Saga and Mr Mister Interviewed

VECTOR SYNTHESIS
Delving deeper into the Prophet VS

REHEARSAL RIGHTS
Making the Most of Practising

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FIRST REPORTS
On Yamaha SPX90 FX, Oberheim Xk, Mirage MultiSampler, Roland Software, Casio CZ230S Synth

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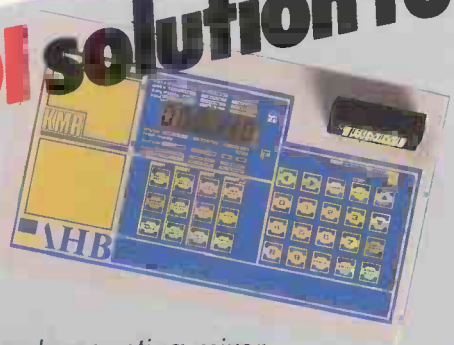

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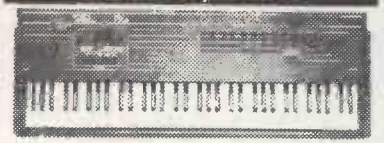

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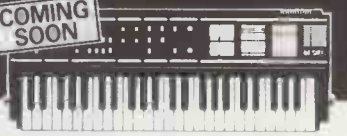

It incorporates a 2-track real time polyphonic MIDI sequencer with a memory of up to 300 notes. It is fully programmable and features 50 memory slots with complete MIDI features. This internal memory is expandable with the optional RAM/ROM cartridges to give you up to 150 programmes on line. The double 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.

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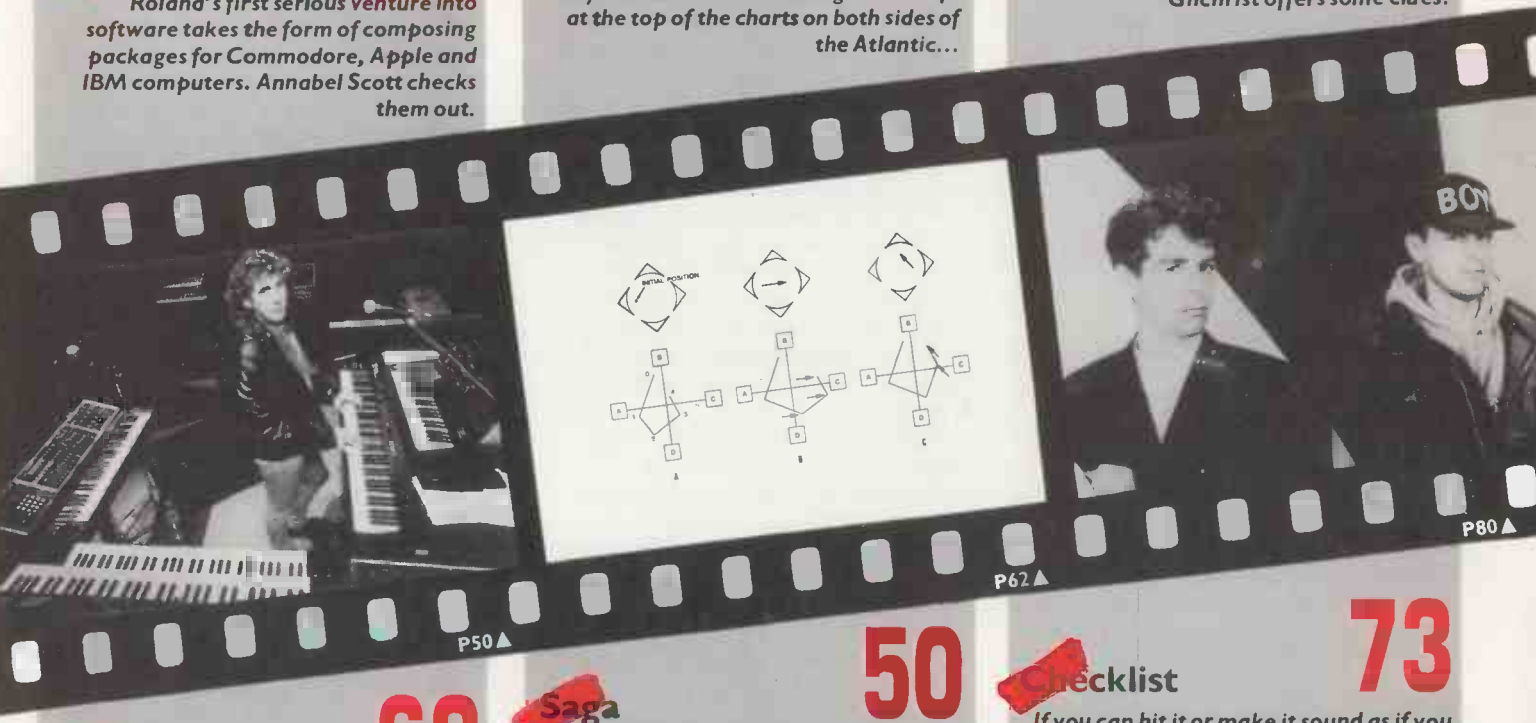

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...while Annabel Scott listens to words of wisdom from a Transatlantic keyboardist of a very different kind – Saga's Jim Gilmour.

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Oberheim Xk 68

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Comment

A CHANGE OF PROGRAMME

This month's bit of editorial beefing leads on, indirectly, from what was said on this page in E&MM March. Then, some of the magazine's staff had just returned from the Frankfurt Musikmesse (the music industry's biggest trade show), having found little evidence that programming synthesisers was going to be made any easier by the crop of new instruments the year was bound to bring.

Most modern keyboard players are now reconciled to the fact that new machines don't offer the ease of sound-manipulation made possible by the synths of four years ago – with their huge, costly banks of knobs and switches. Many have also reconciled themselves to working with synthesis principles which, though utterly logical in their configuration, simply don't give the immediacy and predictability of result offered by traditional analogue techniques.

Yamaha's FM and Casio's Phase Distortion principles are fine-sounding systems which have given existing synth users a whole new vocabulary of voices, and which have done much to further the cause of sound synthesis as a whole. Yet the fact remains that neither is very easy to get on with when it comes to programming.

No matter what you do with sets of numbers, they'll never be as easy for musicians to understand as an oscillator, running through a filter, running through an amplifier. Which is why so many DX and CZ users leap at the chance of another set of ROM sound cartridges, when they've got a whole machine's worth of programming capability in front of them just waiting (and waiting) to be used. And why of all the technical queries we receive daily, questions regarding DX and CZ programming figure high amongst the most common.

Beginning on page 62 of this issue, you'll find an exclusive, in-depth review of a new synthesiser that threatens to change all this – the Sequential Prophet VS. As many of you will already know, the 'VS' bit stands for Vector Synthesis, a technique whereby four different sound sources can be mixed in any proportion simply by moving a cursor (in the VS' case, a joystick) within a diamond-shaped field which has one sound source at each corner. When you consider that the new Prophet has 128 different software-generated waveforms permanently in memory, you begin to realise that, potentially, it could herald the arrival of *another* extension to the sonic vocabulary – not a minor annexe of new sounds (which is what too many new synths provide), but a fully-fledged, self-contained library of new material for synth programmers to toy with at their leisure.

'Leisure' is undoubtedly what Sequential's designers want programmers to enjoy as they play with the VS' huge array of possibilities. And pretty leisurely it is, too: tapping in waveform numbers, assigning them to the four corner positions, and playing with the joystick until the thing sounds right. There's plenty of potential, but more than that, it's *instantly* accessible, which is more than you can say for the DXs and CZs of this world.

Unfortunately, the VS system has a major drawback. For whereas conventional subtractive synthesis has traditionally been based around simple oscillator waveshapes such as square, sawtooth and triangle, Vector Synthesis as implemented on the Prophet introduces over a hundred harmonically-complex waveforms. Look at one in isolation and it's difficult to envisage what sort of sound it's likely to produce; look at *four* being mixed together with an immediately variable balance of levels, and it's impossible to know what might happen until you actually put them in position and start twiddling.

Sound creation on the VS, then, can be a decidedly hit-and-miss affair, as Sequential themselves readily admit. Their synthesis principle is hugely capable and instantly accessible, but more difficult to *predict* than any yet devised, FM included.

Having mulled these points over for a while, I began to ask myself why I wanted the VS to succeed so much. Production in California is due to begin as you read this, and when it arrives in Britain, the VS will cost under £2000. That makes it extraordinary value for money by any reckoning and, as Pete Schlesinger says in his review, it deserves to make an impact simply because it offers to open up a new horizon of sound at a time when the craze for sampled, preset and pre-packaged sound threatens to close all the others down.

Whether Vector Synthesis will succeed in coaxing a generation of keyboardists into complex programming remains to be seen. Personally, I doubt it. The system in its present incarnation is simply too unwieldy to make much sense to musicians, most of whom simply don't have the time – even if they have the inclination – to sit in front of a control panel, frantically scribbling notes and doing arithmetic, while the rest of the music community is out writing, recording or gigging. Like FM and PD, VS has been tripped up by its own complexity.

But I do believe that a few industrious individuals (and the history of FM has shown that's all it takes) *will* take the time to get to know the VS, and that their efforts will result in our library of sound being broadened and enriched.

It seems, these days, that sound-creation has to be a long, complex and diligently-followed process, if it's to succeed at all. ■ **Dg**

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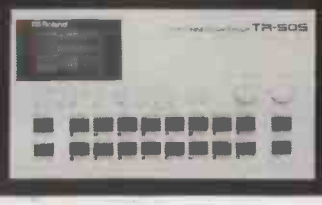

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TOA TOA TOA!

The first of two pieces of news from Toa concerns the HY1 headset mic we offered as First Prize in the Toa wordsearch competition last month. It seems the manufacturers misquoted the price of the HY1 to us, so we'll take this opportunity to stress that the mic actually carries an RRP of £195, not over £400 as stated in E&MM April. Sorry to anybody who got over-excited over that one.

On a more positive note, Toa have a new three-way speaker, the 38-SD, to add to their

range. The 38-SD is designed for on-the-road use, and features a 15-inch bass reflex enclosure, a small radial horn and two tweeters.

More from Toa Electronics, Tallon Road, Hutton Industrial Estate, Brentwood, Essex, CM13 1TG. ■ Tg

ABC ANNOUNCE PRO-SHOPS

Keyboard and home-recording enthusiasts stand to benefit from a series of demonstration studios being proposed by enterprising retailers ABC Music. The first of a series of studios, to be called Pro-Shops and designed to demonstrate hi-tech equipment, sequencers, drum machines, sampling techniques and home recording gear to the full, is shortly to open in darkest Surrey. It should be open by the time you read this, and a second is already planned for unsuspecting Oxford. The Surrey studio is at 14-16 High Street, Addlestone, Surrey (☎ (0934) 40139), while the Oxford shop is at 44 St Clements, Oxford (☎ (0865) 725221).

More from Kim Joseph, Esher, ☎ (0372) 66195; or Chris West, Weybridge, ☎ (0932) 40139. ■ Tg

CANADIANS UNVEIL NEW MEGA-SYNTH

Just when you thought the world had enough superpower computer musical instruments to keep it happy, along comes Canadian firm Technos with the 16π, a mega-synth if ever there was one. The machine is actually French-Canadian in origin, and is principally the brainchild of one Pierre Guilmette.

The design approach appears to be nearer that of the Synclavier than the Fairlight, and like the former, the Technos consists of a main keyboard/control panel unit with add-on peripherals. Dedicated touch-sensitive controls on the panel call up parameters into centralised LED displays, while a 32×16 touch-sensitive LED screen (which Technos term the 'Grapher') shows graphic displays of waveforms and envelopes.

The standard 16π consists of four sound-generating modules, each of which can generate one note with 64-harmonic resolution, or two notes with 32-harmonic resolution. These four modules also offer four sequencer tracks; each track is completely independent, and can be looped, transposed, played backwards and varied in speed.

According to the information we've received thus far, there are to be three peripherals: a computer terminal (comprising three basic programs – Polynote, Polygraph and Polycomp); Emulator (an analogue-to-digital converter); and Articulator (a control input interface for analogue signals such as guitar, voice or trumpet).

The standard 16π is an eight-note system, expandable up to 16 notes. The onboard sequencer offers 15,000 notes expandable up to 45,000 notes.

Facilities for sound-generation, capture and manipulation appear to be pretty extensive, especially if you're suffering from schizophrenia when it comes to choosing methods of sound-creation. Just think of it: Fixed Additive Synthesis, Dynamic Additive Synthesis, Extended Additive Synthesis, Imaginative Resynthesis, Subtractive Synthesis (digitally implemented) and Frequency Modulation, in addition to high-bandwidth sampling, all in one box. Extensive control is offered over individual harmonics, too.

The basic goal underlying the 16π's design seems to be to fuse analysis and synthesis of sound. With this end in mind, the operational parameters for sampling and synthesis are identical. One of the stated purposes of the 16π is to facilitate 'sonic research', and certainly, the machine's specification looks comprehensive enough to satisfy the most ▷

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▷ stringent of technical research demands. It remains to be seen, though, exactly how well the machine will fit into either academic or commercial categories.

Retail distribution agreements for the Technos have been reached in Paris, Munich and New York, but a British distributor has yet to be announced. Price? No idea, but you can be sure it won't be cheap.

More from Technos, CP 577, Lévis, QC, Canada, G6V 7E5. ☎ (418) 835-1416. ■ St

ICON DO IT

Icon Designs is the name given to a new company set up by Clive Button, previously of MPC Electronics and responsible for their Drum Synthesiser Modules. It's the latter that form the basis of Icon's launch product.

The DSM200 is a dual-voice percussion synthesiser module with a host of contemporary features, along the lines of gating for snare sounds, automatic resetting of analogue waveforms for consistent sounds, and a logarithmic input trigger for improved dynamics.

The DSM200 is to be accompanied at launch by the 10 Systems MIDI Sequencer. This is a software package for the Sinclair Spectrum micro, capable of recording ten individual tracks of up to 1000 bars each, programmable tempo changes, pitch transpose and external syncing to 1, 2, 3, 4, 8, 12, 16, 24, 32, 48, 96ppqn.

More from Icon Designs, 423 Newmarket Road, Cambridge, ☎ (0223) 61293. ■ Tg

ZLATNA CLOSED DOWN – BUT THE WORK GOES ON

After the euphoria that pervaded our industry profile of the Zlatna musical instrument consortium in last month's E&MM, it is with great regret and sadness that we report the closure of the organisation's high-technology research division.

According to reliable sources high up within the Zlatna hierarchy, the decision was taken after a couple of cynical internal reports on the research division's activities made their way to the Bulgarian Communist Party's Plovdiv headquarters. These reports, so our sources claim, focus attention on 'the unrealistic attitudes of researchers, the high costs incurred by their activities, and the obvious unviability of the products that resulted from their research'.

While the Zlatna closure will doubtless hearten those within the Eastern Bloc who saw the development of hi-tech musical instruments as an unwanted westernisation of a traditional local industry, it will sadden enthusiasts on this side of the Iron Curtain. Hundreds of E&MM readers have been moved to write in appreciation of Zlatna's research and development work on each of the two occasions we've surveyed the organisation's activities. And thousands of musicians throughout the world will now be unable to sample the delights of the MIDIplay Sequencer and the MIDI Multiplexer previewed in our last issue.

Several Zlatna users have already complained to us that their ACS100 Anticipation Control samplers have ceased working, having predicted their manufacturer's impending demise and instantly programmed an auto-destruct command for themselves.

The one ray of hope in amidst this gloom is that Mikhail Beecherescu, Romanian MIDI expert and the brains behind much of the Zlatna team's most stunning research work, is to continue his programme of research in his native country, having been expelled from Bulgaria on charges of industrial espionage.

We await his next offering with cautious optimism. ■ Dg

NEW E-MUSIC FANZINE

Paul Walker, a name long familiar to E&MM readers as the man who began the Great Sampling Debate, has come up with a new Electronic Music fanzine entitled 'Dream Sequence'. If I tell you issue one is to feature the likes of Tangerine Dream, Michel Huygen, Klaus Schulze and Robert Scröder, you should get a pretty accurate idea of what it's all about. Subscription costs £5 (£6.50 if you're outside Europe), and should be sent to Paul Walker/Dream Sequence, 25 Ravenswood Avenue, Rock Ferry, Wirral, Merseyside L42 4NY. ■ Tg

CASIO WINNER GETS HIS CHIPS

Another month, another photograph of an E&MM competition prizewinner, receiving his just reward for deciphering a host of editing errors and production mishaps.

The competition in question is the Quiz of the Decade, which we ran in our New Year issue and for which we published the winners' names a couple of months back. One of those winners was Steve Windsor of Congleton in Cheshire, who struggled manfully through Julian Colbeck's Keyfax crossword, came out

on top, and duly made the journey to London last month to receive his prize – a Casio CZ101 synth and SZ1 MIDI sequencer.

Here's Steve, doing his best to avoid gazing into the camera, flanked on the left by Casio's Martin Brady and Richard Young, and on the right by E&MM Editor Dan Goldstein, who's actually a lot taller than he looks in this photograph. ■ St

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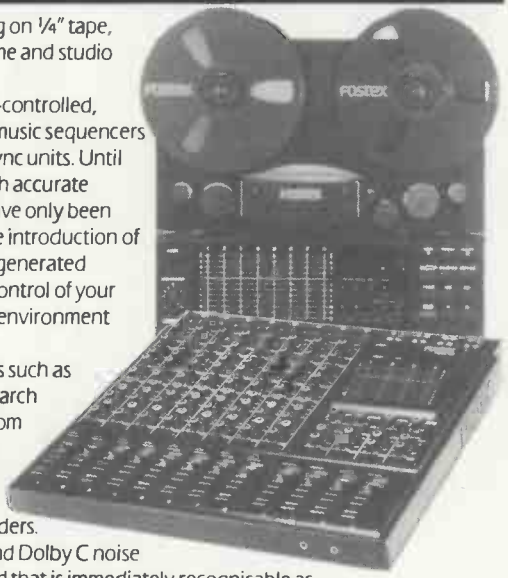

Fostex, the pioneers of 8-track recording on ¼" tape, have created a new masterpiece for home and studio recording – the unique Model 80.
Complete synchronisation with SMPTE-controlled, professional video recorders and MIDI music sequencers can be achieved with Fostex's add-on sync units. Until now, advanced production facilities with accurate syncing and combined auto-location have only been available in expensive editing suites. The introduction of low-cost video cameras and computer-generated graphics open up possibilities for total control of your creative output in a professional studio environment at home.

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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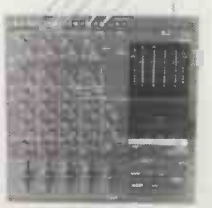

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Dear E&MM

White Noise

MIDI. What a wonderful invention. The answer to every synth player's dreams, not to mention those of the average sound engineer, guitarist, drummer, producer, and songwriter.

Seduced by the idea of what this interface had to offer, I recently lashed out on a complete (whatever that means) MIDI system. Basically, it comprises Yamaha DX21, Sequential MultiTrak (much underrated, in my view), and Casio CZ5000 synths, a Roland MSQ700 sequencer, and a Yamaha RX11 drum machine.

All the instruments are good: they behave pretty much as their instruction manuals said they would, they're reasonably easy to use, and they open up musical horizons the like of which I'd never encountered before.

Linking them together hasn't been quite so enthralling. As the proud owner of three MIDI polysynths, one MIDI sequencer, and one MIDI drum machine, I am utterly perplexed and confused. To get my musical ball rolling, I have to make so many connections, adjust so many parameters, and sort out so many operational problems, I might just as well be using a load of gear that isn't compatible at all. By the time I've arranged my music system so that it can make music, I've forgotten why I wanted to do it in the first place.

Has MIDI made me a better musician? No. Has it made me a better songwriter? No. Has it made me a better artist? Insofar as contemporary art can be better or worse than what preceded it, no.

Why have I bought all this MIDI gear? Because once you've arranged it all, it makes a bloody good noise, that's why.

■ Steve Troughton
Worksop

Dear E&MM

Eno's Y'know

It was nice for me to see that there is a forum for discussion of modern music and musical technologies which avoids both the cynical fashionableness of the pop rags, and the superior exclusiveness of the 'serious music' publications.

In response to Peter Frazer's letter (responding to my interview), there are surprisingly few books about the kind of thing he's discussing. Of course 'Grove's Dictionary of Music' would touch on it, but one book I'd like to recommend is 'Tone: A Study in Musical Acoustics' by Siegmund Lerarie and Ernst Levy, Kent State University Press, 1980. It might not be easy to get here but it's really worth the effort; it's technical enough to be useful and spiritual enough to be inspiring.

■ Brian Eno
London

Dear E&MM

Sound Designers

Allow me some space to comment on contemporary synth design.

The technicians buried in the laboratories of various companies seem to be doing their best to put the most useful technology into their instruments. But, almost always, their work lacks inspiration and fails to offer the 'ultimate' instrument. Why?

I'm an instrument designer (albeit a young one) and the few people that noticed the ill-fated IDEA2 synthesiser (Frankfurt '85) will understand what a complete instrument means to me – I built it. For instance, IDEA2 allowed more than 100 possible keyboard modes with flexible control over performance. It's only a matter of intelligent software work, and it doesn't cost a lot in development time (only a matter of weeks for the IDEA). Even considering the hardware – less than £1 in ROM space, less than £1 in panel working, less than £1 in components – it was offering an unbeatable method of control. It would have been silly to save on it.

Let me draw a comparison with the Yamaha DX100: the dynamic parameters in ROM are uneditable unless first loaded into RAM, but an extra RAM chip couldn't have added more than £2 to the cost (£6 retail) and would have resulted in a much more useful instrument. Is that so much to ask on top of £350?

RAM chips are getting cheaper by the month. Factories now pay £4 for 8Kbytes of RAM (most instruments use less than 2K of it) but a £400 instrument still has only 32 programs.

Even sampling is cheap: 256K of DRAM (8K at 32kHz) comes in at less than £50. Auto-triggering, external mods and other facilities can be provided for under £10. And the same goes for the likes of software contour generators.

Analysing the Juno 106 and other Roland single-DCO-per-voice synths, you soon realise that the DCOs aren't the most expensive part: with a third of an IC for each DCO controller, software-generated envelopes and modulation routings from a 7811 processor, these voices should cost about £10 each. It's for this reason that I dislike the Alpha Juno 1 – it's no more than a restyling of a weak-sounding instrument, and I can't see anyone choosing it for either cost or ease of access to parameters.

Straightforward parameter control is not, in fact, the hugely expensive beast some manufacturers would have us believe. It all comes down to software (simple software at that), and is therefore quite inexpensive.

And about £5 worth of software represents the difference between a dynamic keyboard and one with no dynamics. Yet Korg had to bring out the DW6000 before the 8000, even though they had the technology to produce the latter first. The problem here is one of marketing strategy, which often involves leaving features out of a synth that people are sure to want later on. It's rather like the special edition of 'Close Encounters': you need to pay the full price of a new ticket to see five minutes of new film. It seems versatile instruments have been killed off in favour of dedicated – but more easily marketable – ones.

Often, though, these problems are simply the result of designers wanting to save time and effort. All too frequently, they turn their attention to multimeters and computers when they should be listening to musicians.

Surely, if you're a musician, it's better to spend a lot of time discovering a complex instrument, than it is to spend a little time on a simple one and quickly become bored with it? DX7 and Oberheim Matrix owners should know what I mean.

■ Francesco Esposito
Rome

Dear E&MM

Old Favourites

I read the article on the resurgence of the Minimoog (E&MM, August 85) with great interest. Is there any chance of an occasional series featuring other outmoded equipment, such as the SCI Prophet series, Roland System 100M and so on? I'm sure it would be of considerable interest and help to buyers of secondhand equipment such as myself.

■ J V Ring
Glamorgan

▶ Due to the popularity of the Minimoog feature, we're busily preparing just such a series. If you've a favourite old instrument and wouldn't mind waxing lyrical over it for a couple of thousand words, feel free to drop us a line. ■

E&MM reserves the right to abbreviate readers' letters where necessary. The opinions expressed here are those of the correspondents, and are not necessarily those of the Editor.

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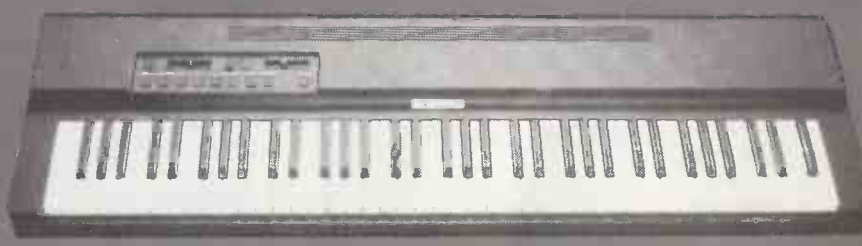

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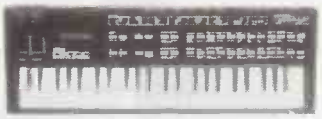

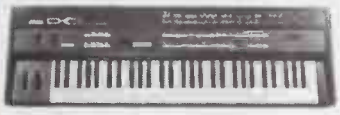

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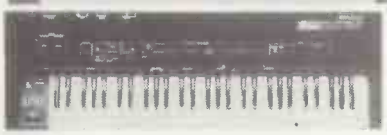

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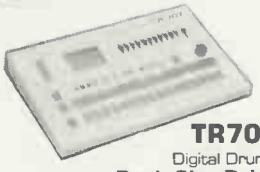

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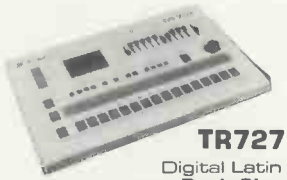

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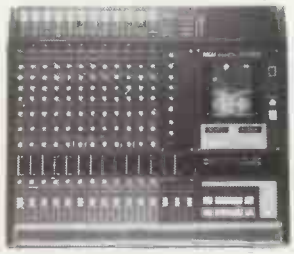

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Interface

Your questions answered by E&MM's resident team of experts. If you have a query about any aspect of music technology, or some information that might be useful to other readers, write to Interface at the editorial address.

Q ***Reading some old (and I mean Old) back issues of E&MM, I chanced upon a review by David Ellis of the Chromascope Video Synthesiser (September '81). As a working video artist fascinated by such gimmickry I decided to follow it up, despite the rather unfavourable review. Having written to the company concerned (CEL Electron) at the address given in the review, only to have my letter returned with 'not known at this address' stamped all over it, I'm wondering if they still exist. Is there anybody who can help me out on this one? I realise you probably can't help me, but maybe someone somewhere knows someone else who just might want to flog one!***

■ **Mark Franklin**
Portsmouth

A *Sifting through E&MM's murky past can affect your health, you know. The Editor, who's old and wise, vaguely remembers seeing the Chromascope in action – but that's as far as we managed to get. Have you tried sifting through the ads in the electronics magazines. In the mean time, as you say, maybe there's someone, somewhere...* ■ **St**

Q ***Please, please reply to these questions; I'm terribly confused.***
1: If my master synth has a built-in sequencer and I have an expander connected via MIDI Out, can I record the expander's sound on the sequencer? And would I have to join MIDI In to make the sound return to the sequencer? What if I had more than one expander?
2: If I had my synth MIDI'd to a reverb unit, would output be from synth or reverb or both? Would it also be possible to connect the reverb machine to a sequencer?
3: In your preview of the Series III Fairlight (E&MM April), you said it had four MIDI Outs which could use the sequencer. How can they, if MIDI Out sends out information? Would it be possible to use the sequencer with an outside keyboard?

■ **E Duval**
Plymouth

A *Phew! So many questions... Your basic confusion is a common one, so it's worth spending some time on the subject.*

To begin with, MIDI ***doesn't*** *handle audio data. Essentially, what it does is allow one MIDI instrument to tell another MIDI instrument what notes to play, and when to stop playing them. When you play a note on the keyboard you're turning a note on, and when you stop playing it, you're turning it off. MIDI allows these actions to be interpreted as codes; like music notation (but in a very different way), it acts as a representation of music. Thus there is a standardised code for Note On (with an associated note number – Middle C is represented by the number 60, for instance) and a standardised code for Note Off (also with a note number).*

All the MIDI codes are given in what is known as the MIDI 1.0 specification, and this is (theoretically) adhered to by all the MIDI instrument manufacturers. These codes are sent along the MIDI cable as digital data from one instrument to another.

The sequence of operations is as follows: you play a note on the master instrument, the Note On code and the note number is sent by the master over MIDI to the slave instrument, which then plays the same note itself, using whichever sound is currently selected on it. When you stop playing the note on your master instrument, a Note Off code is sent (with note number) from master to slave instrument. The latter then turns off the relevant note.

A MIDI sequencer records and stores this information in its memory, and can then replay it. If you think about it, it doesn't make any difference to a receiving instrument whether or not it receives the information from a keyboard or a sequencer – it's still the same information.

So, a MIDI sequencer won't record the ***sound*** *of your expander, or indeed any other instrument. What it will allow you to do is record note information from your master synth, which can then be replayed over MIDI to your expander, and then to another expander via MIDI Thru. Obviously, you need a keyboard in order to play the music in the first place, so an expander can't be used to play (or record) music data.*

In answer to your second question, we again have to make a clear distinction between audio and MIDI signals. When connecting up a MIDI synth and a MIDI reverb, there are two connections: audio and MIDI. The reverb effects act on the audio signal from your synth, of course, while the MIDI connection should allow you to select reverb patches by selecting corresponding patches on the synth. The synth sends a patch-change code and an associated number (patch 12, say) along the MIDI cable to the reverb, which is then able to interpret this code and select its appropriate reverb patch. The obvious benefit of this is that you can automatically associate a particular synth sound with a particular reverb effect.

These patch-change codes can be recorded on most MIDI sequencers. You can also dedicate a particular track of a multitrack sequencer to patch changes, which allows your reverb program changes to be independent of synth patch changes.

On the final question, we sugggest you re-read the relevant couple of paragraphs in the preview carefully. A sequencer receives (records) MIDI data on its MIDI In, and sends (plays) MIDI data on its MIDI Out(s). It follows from this that you can use any MIDI keyboard to record data into the sequencer.

I hope the above has conveyed the essence of what MIDI is about. It can do a lot more, of course, but as with anything else, you've got to learn to walk before you can run. ■ **St**

Q ***Help! I'm a classically trained pianist, and am lucky enough to own an old concert grand piano which dominates my small-ish flat. Much as I am continually astonished by the new avenues of sound and performance that the instrument offers me every time I lift its lid, I'm also keen to get more involved with synthesisers.***

Ideally, I'd like to buy a couple of synthesisers of differing programming styles (I was thinking of a DX7/DW8000 combination) so that I could become acclimatised to different methods of synthesising sound. But what I'd really like to do is play those sounds from the piano keyboard, or failing that, from a keyboard that approaches the action and sensitivity of the one I'm used to.

Money isn't too much of a problem, but satisfying the demands imposed by my playing technique certainly is.

■ **Mark Stacey**
Chislehurst
Kent

A *If money really isn't too much of a problem (don't feel like lending me some, do you?), and you're set on the two synths you mention, then there are three options open to you.*

The first is to take your piano to Syco Systems in London, who are now fitting the Forté MIDIMod to Joannas of all ages, shapes and sizes. We've yet to sample the delights of this modification and therefore can't comment on its usability, but there seems little obviously wrong with the basic principle. Syco's showrooms are at 20 Conduit Place, London W2, ☎ 01-724 2451.

If you decide you don't want to jeopardise the originality of an old and potentially valuable musical instrument, you can either (a) buy a dedicated mother keyboard such as the Oberheim Xk reviewed in this issue, or (b) opt for one of the new generation of digital electronic pianos. Generally speaking, either option will give you a keyboard that's sensitive to both initial velocity and aftertouch, and that's built with a bit more integrity than the average synth keyboard, so you should get an instrument that doesn't represent too big a jump, in performance terms, from your grand piano. However, whereas dedicated master instruments offer a variety of assignment facilities useful for people with ever-expanding MIDI systems, the pianos have some digital piano voices built into them, and these are getting more realistic all the time.

The choice is yours, but as always, play (preferably for some while) before you buy. ■ **Dg** ▷

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Q ***Whilst I fully appreciate the usefulness of MIDI program changes, I'm having extreme trouble making the numbers on my DX7 correspond to those on my Juno 106. Basically, they don't match up!***

I've also just become the proud owner of an Ensoniq Mirage, but have run into some more number trouble here. Sometimes the numbers shown in the display seem to contain letters as well, sometimes they're composed entirely of letters.

What does it all mean, and more importantly, will I have to go back to school before I can understand it all?

■ **Oscar Rosario**
Rio de Janeiro

A *Although the synth manufacturers have agreed that MIDI should be the universal interface standard, they've failed to agree on which numbering system to adopt for patch-changing and other programming tasks.*

Your DX7 counts normally in decimal, ie. 0-9, then 10-19, 20-29, and so on. Unfortunately, it only makes it as far as 32 before it runs out of patches, so if it receives a MIDI patch-change value higher than that, it subtracts 32 (or 64, or 96) from that incoming value, and selects the resulting patch number.

The situation is made worse by machines like the Juno 106, which can't even manage to count up to 10. They count from 11-18 instead of from 0-9, and then go on to 21-28, with the first digit in each case referring to the bank number. The Juno (like the Prophet T8) has 128 patches, but numbers 11-88 only represent 64, so it organises its programs into two groups, Left and Right, with the Left group taking the first 64 MIDI patch-change values, and the Right taking those from 65 to 128. We've coined the term 'Program Octal' to describe this rather idiosyncratic (and downright tedious) method of program numbering.

A further complication ensues from the fact that MIDI's 128 possible program-change values are actually numbered 0-127. This means, for example, that DX7 patch 1 is equivalent to MIDI patch 0, and Program Octal patch 11. So always remember to add 1 to the MIDI patch number before converting for use with your synth.

The Mirage problem opens up another can of worms entirely. Because of the restrictions imposed by a dual alphanumeric LED display, only 100 numbers (00-99) can be represented in an entirely numerical, decimal form. The designers (who think in binary and hexadecimal half the time anyway) didn't think it would be too confusing to use hex to represent three-figure decimal numbers. How wrong they were. As the hexadecimal system presses the first seven letters of the alphabet into service as numbers, this can be particularly confusing on instruments like the Mirage, where a hex number like BF could mean 191, or some cryptic message like 'Bad Format'.

However, the machines that use these systems wouldn't be available at the price they are if manufacturers had to fit more comprehensive display facilities onto them. The most costly part of any electronic keyboard design these days is fast becoming the user-friendliness of the instrument itself, rather than the sound quality or flexibility of the system.

In an attempt to demystify the numbering process a little, we've provided the accompanying reference chart, compiled by synth-programming wizard Paul Wiffen. This covers decimal to hex and Program Octal conversion, and for the real masochists who like to convert MIDI codes from the binary (which the machines understand, or should do) to the hex that the displays can show, we've listed all four side by side. This should allow base conversion without headaches, a calculator, or an unwanted return to the classroom.

■ **Dg**

Base Conversion Chart

Decimal	Binary	Hexa-decimal	Program Octal
1	1	1	Left 11
2	10	2	12
3	11	3	13
4	100	4	14
5	101	5	15
6	110	6	16
7	111	7	17
8	1000	8	18
9	1001	9	21
10	1010	A	22
11	1011	B	23
12	1100	C	24
13	1101	D	25
14	1110	E	26
15	1111	F	27
16	10000	10	28
17	10001	11	31
18	10010	12	32
19	10011	13	33
20	10100	14	34
21	10101	15	35
22	10110	16	36
23	10111	17	37
24	11000	18	38
25	11001	19	41
26	11010	1A	42
27	11011	1B	43
28	11100	1C	44
29	11101	1D	45
30	11110	1E	46
31	11111	1F	47
32	100000	20	48
33	100001	21	51
34	100010	22	52
35	100011	23	53
36	100100	24	54
37	100101	25	55
38	100110	26	56
39	100111	27	57
40	101000	28	58
41	101001	29	61
42	101010	2A	62
43	101011	2B	63
44	101100	2C	64
45	101101	2D	65
46	101110	2E	66
47	101111	2F	67
48	110000	30	68
49	110001	31	71
50	110010	32	72
51	110011	33	73
52	110100	34	74
53	110101	35	75
54	110110	36	76
55	110111	37	77
56	111000	38	78
57	111001	39	81
58	111010	3A	82
59	111011	3B	83
60	111100	3C	84
61	111101	3D	85
62	111110	3E	86
63	111111	3F	87
64	1000000	40	88
65	1000001	41	Right 11
66	1000010	42	12
67	1000011	43	13
68	1000100	44	14
69	1000101	45	15
70	1000110	46	16
71	1000111	47	17
72	1001000	48	18
73	1001001	49	21
74	1001010	4A	22
75	1001011	4B	23
76	1001100	4C	24
77	1001101	4D	25
78	1001110	4E	26
79	1001111	4F	27
80	1010000	50	28
81	1010001	51	31
82	1010010	52	32
83	1010011	53	33
84	1010100	54	34
85	1010101	55	35
86	1010110	56	36
87	1010111	57	37
88	1011000	58	38
89	1011001	59	41
90	1011010	5A	42
91	1011011	5B	43
92	1011100	5C	44
93	1011101	5D	45
94	1011110	5E	46
95	1011111	5F	47
96	1100000	60	48
97	1100001	61	51
98	1100010	62	52
99	1100011	63	53
100	1100100	64	54
101	1100101	65	55
102	1100110	66	56
103	1100111	67	57
104	1101000	68	58
105	1101001	69	61
106	1101010	6A	62
107	1101011	6B	63
108	1101100	6C	64
109	1101101	6D	65
110	1101110	6E	66
111	1101111	6F	67
112	1110000	70	68
113	1110001	71	71
114	1110010	72	72
115	1110011	73	73
116	1110100	74	74
117	1110101	75	75
118	1110110	76	76
119	1110111	77	77
120	1111000	78	78
121	1111001	79	81
122	1111010	7A	82
123	1111011	7B	83
124	1111100	7C	84
125	1111101	7D	85
126	1111110	7E	86
127	1111111	7F	87
128	10000000	80	88
129	10000001	81	
143	10001111	8F	
144	10010000	90	
145	10010001	91	
159	10011111	9F	
160	10100000	A0	
161	10100001	A1	
175	10101111	AF	
176	10110000	B0	
177	10110001	B1	
191	10111111	BF	
192	11000000	C0	
193	11000001	C1	
207	11001111	CF	
208	11010000	D0	
209	11010001	D1	
223	11011111	DF	
224	11100000	E0	
225	11100001	E1	
239	11101111	EF	
240	11110000	F0	
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255	11111111	FF	
256	100000000	100	

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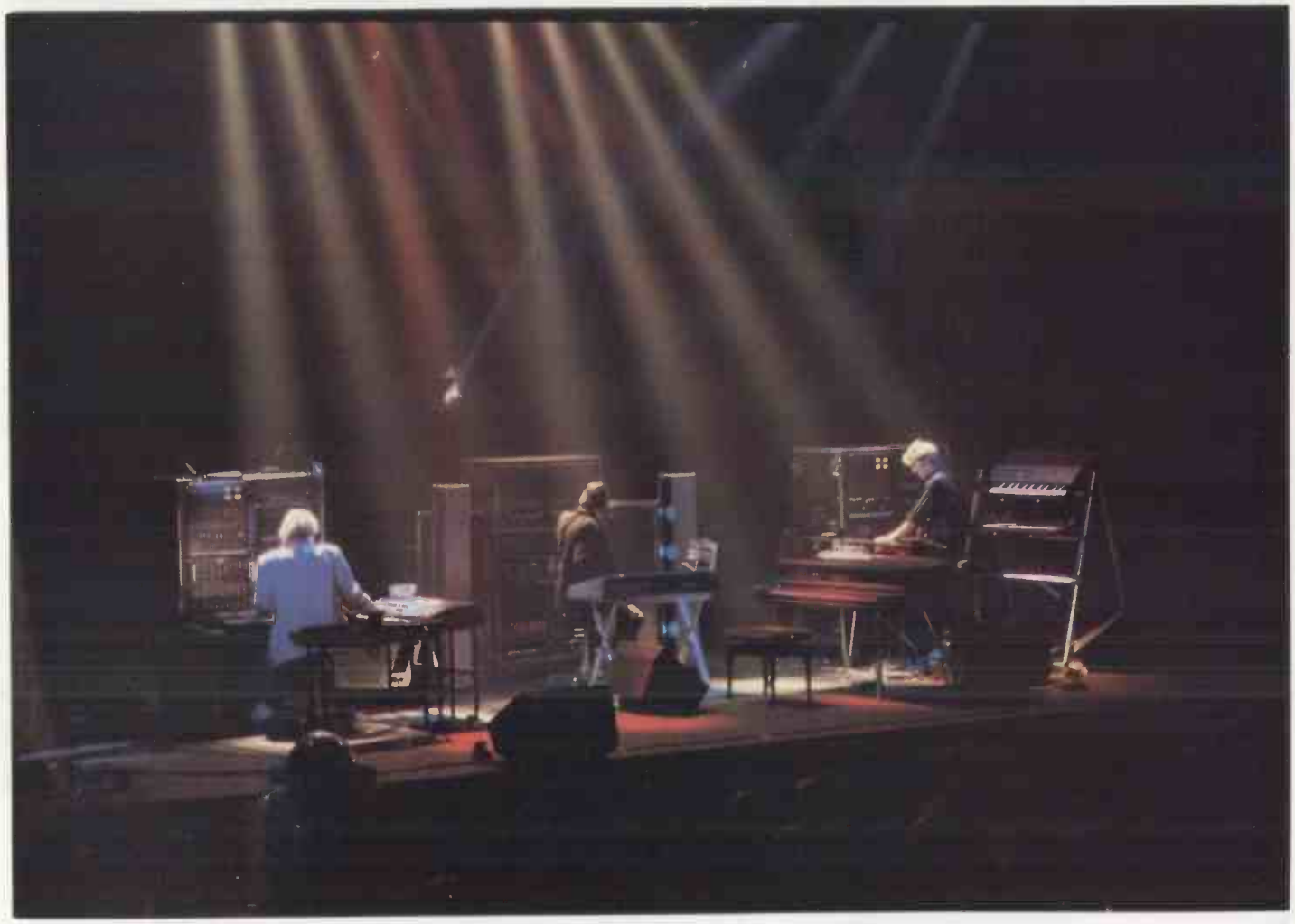


NEW GOLD DREAM

A stack of new film soundtracks, a six-album boxed set, a new line-up, and Tangerine Dream are on the road again. But what's the future for the world's best-known electronic music group?

Interview *Annabel Scott* Photography *Matthew Vosburgh*

Tangerine Dream have been the world's greatest electronic band for 15 years. That's partly down to lack of competition, of course. Few professional groups seem interested in a completely electronic setup, and TD themselves dislike being labelled as an 'electronic band'. Founder member Edgar Froese comments: 'we have certain ideas we want to realise, and at the moment we happen to do that with synthesisers and sequencers. But that might not always be true.'

TD's other mainstay, Chris Franke – originally a jazz drummer, latterly a pioneer in the use of sequencers and increasingly a talented keyboard-player – agrees.

Tangerine Dream have their roots in seventies European hippiedom. Like many composers and musicians working in Germany at the time, they set out to break barriers and spring surprises. They treated musical history with contempt, and became the darlings of the music press as fashion pointed its finger in their direction. The Tangs were big news, and to a certain extent, they still are.

They've survived countless personnel changes, a switch of record company and the rigours of falling from press favour, to become one of the longest-surviving members of the experimental Class of '73.

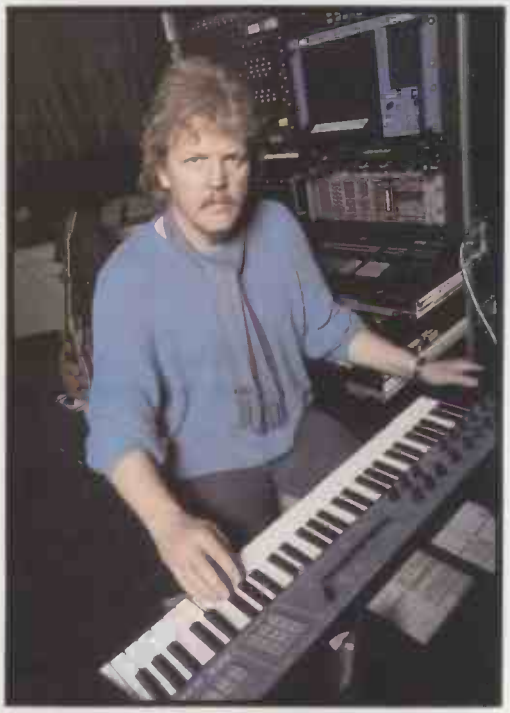
In the last few years, the Tangs have devoted more time and energy to recording. But that trend has come to an end in 1986, as the Germans embarked on a programme of live gigging, their most ambitious for years.

Biggest surprise of the band's recent UK tour was the introduction of a new member, 23-year-old Paul Haslinger. He replaces Johannes Schmoelling, who disliked the prospect of a very lengthy tour and decided to concentrate on his own studio

work. When asked if it's likely that Schmoelling will work with the band again in the studio, Froese is non-committal. So how did Haslinger come into the picture?

'You know, when it was decided between us all that we would say goodbye to Hannes, it left us in something of a delicate situation. We had got used to playing together (Schmoelling had been a Dreamer for over six years, much longer than his predecessor, Peter Baumann) and we had to find someone

"When we decided to say goodbye to Johannes Schmoelling, it left us in something of a delicate situation. We had got used to playing together and we had to find someone sympathetic to our kind of music."



sympathetic to our kind of music.

'I have a studio near Vienna now and I had met Paul there. He hadn't played this sort of music before, and it's not just a matter of finding somebody who can play guitar or piano, like in a rock band. But we felt that we could work together and he was happy to join.'

Haslinger: 'I was studying classical music in Vienna but I already had some interest in computers and synthesisers. But now I'm very happy with the band and I hope I can continue with them for a long time to come.'

Franke: 'Obviously when you have a new member you have to change the way in which you work slightly. We haven't changed the role of each player in the band though – the most important thing is to feel that you can trust each other, and we feel that with Paul. But having him in the band has allowed us to re-introduce some elements we've enjoyed in the past – such as having a piano piece in the live set, and having Edgar and Paul playing guitar.'

As usual, the band's current tour avoids coinciding with a new album release. Last year's *Le Parc* on Jive Electro met with a decidedly mixed critical reception, many pundits believing it was too commercial. Even the band themselves are rumoured to have been unhappy with it, and certainly, elements of it are musically unsuccessful.

Also new on the album side is *In the Beginning*, a six-album boxed set on Jive Electro consisting of the early albums *Electronic Meditation* (featuring Klaus Schulze and Conrad Schnitzler), *Alpha Centauri*, *Zeit* (a double), *Atem* (which first brought the band to the attention of John Peel) and *Green Desert*, which was previously unreleased.

These albums will either delight or shock fans of the band's later output, but *Green Desert* in particular has a fascinating history.

Froese: 'Peter Baumann left the band a couple of times, the first time in 1973 when he went to bum around India. Christoph and myself were left with nothing much to do, so we booked some studio time and recorded *Green Desert* with some ▷

▷ basic equipment. Shortly after, we closed a deal with Virgin and played them the album, but they wanted us to come over to The Manor and record another one. So we recorded *Phaedra* and *Green Desert* was never released, but we've kept it on the shelves and decided to put it out now.'

Reading between the lines, it seems the advance from Virgin enabled the band to buy all the Moog equipment which made *Phaedra* such a leap forward from *Atem* and *Green Desert*. The latter contains only one sequencer passage (on 'Astral Voyager'), and even that's a very simple two-note exercise, played on a PRXII rhythm controller custom-built by the company which eventually became Projekt Elektronik. The rest of the album is in the style of some more obscure contemporary tracks such as 'Oszillator Plant Concert' and 'Ultima Thule' – lots of slow guitars, Minimoog drones, Mellotrons and drums.

> "We only need a couple of keyboards each on stage now, because a lot of the synthesisers are in modular form – Yamaha TX units, Roland MKS30s and Super Jupiters. I only have one custom sequencer now."

In fact, *Green Desert* was the subject of a little remixing and overdubbing (with some DX7 sounds?) as recently as 1984, so the album is of more than historical interest.

Returning to the subject of equipment, the Tangs have changed their stage setup quite radically since their last UK appearance in 1982. Why? Because the commercial equipment companies have finally caught up with what TD had been doing for years.

Franke: 'We only need a couple of keyboards each on stage now, because a lot of the synthesisers are in modular form – Yamaha TX units, Roland MKS30s and Super Jupiters. I only have one custom sequencer now, it's an event controller and the only unit I can partly control in real time. I also have a DX7, a TX816 rack and an Emulator II.'

Froese: 'I'm playing a Roland JX8P, a DX7 and a PPG Wave, and in the rack system there are some Roland modules, a TX816 rack and an Akai S612 sampler.

Haslinger: 'My setup has a Roland MKB300 Mother Keyboard playing Roland modules, an Akai S612, a TX216 rack, a PPG Wave, a DX7 and an Oberheim Xpander, and I play the Yamaha electric grand and a Tokai guitar.'

In the background, behind the front line of equipment, the band are now largely reliant on Yamaha QX1 sequencers for melodic backing, and on the Sequential Drumtraks for the percussive stuff with a selection of chips (some from other drum machines) prepared by Chris Franke. The sequencers are started and stopped manually, and the trio don't find it necessary to change any disks, even though the set starts with a 90-minute piece. Franke does have to change some of the disks in his Emulator (which explains the strange perspex disk rack perched on the machine), since he plays several percussion parts as well as voice, guitar and synth samples. The sound engineer also has the job of fading in some of the sequences, as well as balancing the overall levels.

As anyone who's caught TD on tour will know, they invariably present (a) a spectacular light show (the band are 'waiting for the next generation of laser equipment') and (b) a good selection of familiar pieces – from *Stratosfear* to *Ricochet*, *Thief*, *Le Parc*, *Poland* and their latest project, *Legend*. The film of that name was co-produced by two film companies, and the company responsible for US distribution took a dislike to the Jerry Goldsmith soundtrack heard in the UK. So the Tangs were called in, and are now hoping that their US tour will benefit from the inclusion of two tracks from the film. In fact, TD have just come to the end of a long spate of recent soundtrack work.

Froese: 'We've completed music for *Legend* and *Forbidden* recently, and before that we did the TV series *Streethawk*. We've learned a lot from working for these people, but you have to work in a certain way for the US film industry. Firstly you have to work very quickly, and second you have to talk their language. We didn't want to have to become businessmen instead of musicians.'

Franke: 'On *Forbidden* we were going for something very different – an orchestral-sounding score with a lot of strings and other classical effects. Sometimes it doesn't even sound like synthesisers playing.'

There's still talk of Virgin releasing the band's soundtrack for *The Keep* and of MCA releasing their version of *Legend*, despite the fact that the Jerry Goldsmith score is already in the shops. But with an Australian tour planned and an American tour on the cards, further soundtrack work will have to wait for a while.

Clearly, live work is, for a change, predominant in the band's minds at the moment, but that in itself begs the question as to whether there are any plans for changing the studio equipment further. The answer to that question tells us that, apart from anything else, studios can become much more compact nowadays.

Franke: 'The Synclavier from my studio has already gone, and the GDS has gone too. We're using small samplers like the Akai because they're so fast to use, though obviously we'll be happier when the larger version with better frequency response comes out. And we're experimenting with new computer software all the time – we have packages from Steinberg and Jellinghaus, and recently I've been using the composer package from C-Lab (*soon to be imported into the UK by Sound Technology – Ed*).'

> "The Synclavier from the studio has already gone, and the GDS has gone too. We're using small samplers like the Akai because they're so fast to use, though we'll be happier when the larger version comes out."

But have the changes in Tangs technology resulted in any corresponding shifts in musical style? That's open to question. For this tour, Paul Haslinger has more or less had to learn parts

already composed for Johannes Schmoelling, driving a large nail into the coffin of the improvisation that was once such a trademark of TD's live appearances.

Elsewhere the changes have been less dramatic. Instrumentally, the Tangs are still very much reliant on rapid changes in tone colour and the sonic pyrotechnics so beloved of the 'cosmic, maaan' electronic music fraternity. There's little sign that this is going to change, and on *Le Parc*, with its shorter, more 'disciplined' pieces, it sometimes resulted in a messy hotch-potch of ideas that lacked a cohesive centre. Until the band return to the studio, we won't know whether Haslinger or Schmoelling (or both) will be composing for studio albums, or what effects that might have on the sound of the group as a whole. If Schmoelling returns, the *Le Parc* themes may be pursued. If he doesn't, there's no telling which direction the Dreamers will move in.

> "We're experimenting with new computer software all the time – we have packages from Steinberg and Jellinghaus, and recently we've been using the composer package from C-Lab"

The final concert in the current series – not at the Hammersmith Odeon, but in Paris – was the performance that saw the Tangs at their best. As you'll see, the current live set has a good selection of analogue, digital and sampled sounds, some very powerful music, and some enjoyable featured spots.

But it's hard to avoid the feeling that TD are at a turning point, and that no-one – not even the band themselves – knows what the next step is to be. Maybe another studio album, due later this year, will provide some answers. ■

Tangerine Dream

Paris Olympia

The Parisian set was more or less identical to the one played on all the UK dates, which culminated in a sell-out gig at London's Hammersmith Odeon. But the Paris gig had a certain added air, born partly from excitement and partly from uncertainty.

Because this time, TD were in a city they hadn't played for eight years. And because they weren't being backed by Jive or Carrere or Adrian Hopkins Promotions, but by Crystal Lake, a tiny organisation formed by local fans to distribute cassettes and a magazine called *Synthesis*. Mortgaged up to their eyebrows to raise around £24,000 needed to put on two TD concerts, the Crystal Lake people had advertised frantically in the preceding weeks, with somewhat disappointing results.

While UK fans often feel that electronic music across the Channel *must* be more exciting than the home-grown kind, the fact of the matter is that the whole music business there is dominated by MOR acts (*'la varieté'*) and anything vaguely experimental has to fight to survive.

So TD's opening flute and bird sounds fell upon a hall just over half-full, which nevertheless reacted with an encouraging lack of British reserve.

Some of the audience even recognised the opening piece, a new version of *Stratosfear* with subdued sequences, powerful TX816 digital clangs and PPG sampled flute solos. On then to a very 'digital' sounding passage more reminiscent of Neuronium than TD, and a rather formless sequencer/drums bash developing into a chordal piece, Haslinger soloing with mucho pitchbending on the Roland Mother Keyboard.

A huge splash of white noise introduces another sequenced passage with Latin Percussion whistle samples, developing into a fascinating exercise of plopping raindrop samples and J-M Jarre style slowed-down voices. Then into a Haslinger piano solo, opening with 'Ricochet Part 2' and improvising on the theme with flute and strings backing from Froese and Franke.

The most spectacular moment of the first half is definitely the light show, though. As in 1980 and 1982, the band seem to be building up slowly, but 40 minutes is a long time just to build up.

Never mind, because the next section is the highlight of the whole concert, with all the stops pulled out, a churning bass and drum pattern, screaming lead guitar samples from Franke, bending solos from Haslinger, and a good, solid chord progression over Prophet-like analogue twangs. The sequences die away under a huge crash, but the piece is built up again convincingly – when you've got a good thing going, milk it for all it's worth!

And the pace is kept up for most of the second half, with only a short chordal passage before Franke switches on the old 'Thief' sequence for another fifteen minutes of heavy stuff. What's this? Haslinger goes for the guitar and starts churning out HM riffs. What's this? Froese's got one too. The French go mad, the volume goes up 5dB, the drum machines go Boom, Froese *moves about on stage*, and Franke finishes the whole thing off.

Thirty seconds of peace before the tom-toms signal the start of 'Going West' from the *Flashpoint* soundtrack, with yet more bending solos and another pleasing chord progression. After that, 'Yellowstone Park' from *Le Parc* with a guitar solo by Franke on the Emulator and all the voices of the original faithfully reproduced, followed by another formless sequencer/drums bit.

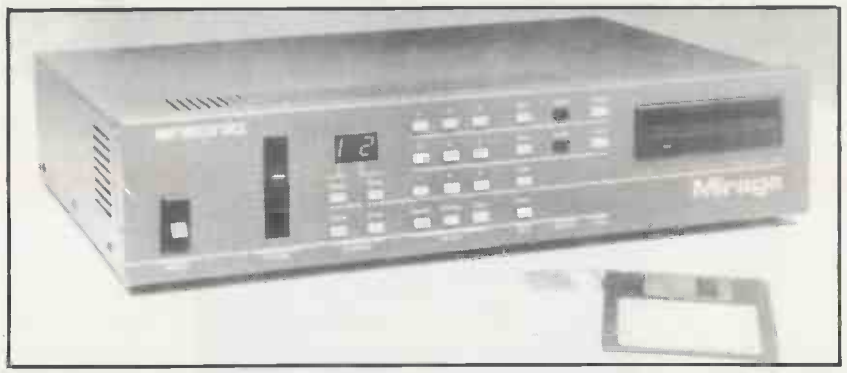
To close, a mega-massive chord, a short rapid sequence and a doomy section full of devilish voices and overlaid with wonderful lighting effects. Not a bad ending for a ninety-minute set.

As for the encores... some gentle pieces from *Legend* (obviously intended for the unicorns-and-pixies sections of the film), a Chopin prelude from Haslinger on the piano merging into 'Rare Bird' (the end of the 'Tangent' section of *Poland*), and 'Bois de Boulogne' from *Le Parc*.

Interesting choices from that album – as Franke comments: 'Those pieces, 'Yellowstone Park' and 'Bois de Boulogne', received the most airplay, and we had to choose tracks that could be arranged for three guys to play live. Some of the others have much more of a studio arrangement.'

A rapturous reception for the band almost disguises the size of the audience – but at least their popularity on the Continent has received a shot in the arm, and with luck, the tours will start coming a little more frequently now. Maybe the Parisians won't have to wait another eight years before seeing what's still the world's greatest electronic band – and we in the UK won't have to wait another four. ■

Ensoniq Mirage MultiSampler



To begin with, the expander version loses nothing in terms of facilities over its keyboard counterpart: only the sync input for triggering the onboard sequencer is absent. The original Mirage, as you'll probably recall, set new standards in making quality sound-sampling 'affordable', with an RRP of £1695 that has since become £1295. And now that Akai have proved musicians don't necessarily want a keyboard to go with their sampling gear, the way is clear for Ensoniq to launch a modular MIDI sampler to complement their keyboard instrument.

So here it is: the Ensoniq Mirage MultiSampler. It doesn't have any of the Akai's useful rotary controls and sliders, so all its parameters have to be accessed via the familiar numeric keypad. Fortunately, the manual is helpful here.

A more crucial difference between the Akai and the Mirage is that the latter is a multi-sampler. You can have up to eight samples on each half of the controlling keyboard, which is great for minimising those 'Mickey Mouse' effects. As always, though, the more samples you use, the less memory/bandwidth there is for each sample. The Mirage's 64K of memory for each keyboard half could usefully do with an upgrade to ease this problem.

The expander is eight-voice polyphonic, and its two oscillators per voice allow detuning and mixing effects which greatly enrich its sonic vocabulary. Mixing allows you to move from one sound to another using such sources as keyboard velocity or the mod wheel. Ensoniq's rock guitar sample, for instance, allows you to introduce feedback by moving the mod wheel – great for those screaming guitar solo imitations.

Like many other samplers, the Mirage module has a built-in disk drive for saving and loading of sounds. Each 3.5-inch disk can store three sets of Upper and Lower samples, which is quite a decent amount – more so if you're using multisampling. Loading Upper and Lower samples for each keyboard half takes a lengthy (though not irritating) eight seconds.

The Mirage offers a fine degree of control over samples once they've been recorded, but that control isn't always easily accessible. There are plenty of options for looping segments and shuffling sample data around, but dealing with two-digit hexadecimal displays is nobody's idea of fun.

You can sidestep this problem by using a visual editing software package, several of which are now available for a variety of different home computers. In fact, some factory sounds have been worked on using Ensoniq's Macintosh software to create smooth looping. There's a particularly impressive piano sample which loops smoothly through fade-out; volume and filter envelopes can be imposed on a sample, and release time can be tracked to the keyboard so that it's longer in the lower registers and shorter in the higher ones, as happens naturally on acoustic instruments.

Also included on the expander is a 333-event sequencer. It's a fairly basic device which can loop during recording, and allows you to overdub and to record multitimbrally. There's straightforward start/stop MIDI syncing, and your sequences can be saved to disk.

In keeping with its new-found MIDI-dependent status, the Mirage expander has a healthy complement of MIDI facilities courtesy of the latest software updates (the operating system is now version 3.1). The original Mirage couldn't even respond to attack velocity over MIDI, but now, in addition to attack velocity, pitchbend and mod wheel data, the module can respond to channel/polyphonic aftertouch and patch-changes (enabling automatic loading of any samples off disk), and assign MIDI controllers such as breath control and volume pedal to affect LFO, Mix and aftertouch modulation depth.

The Multisampler expander comes complete (as the keyboard version does now) with Ensoniq's Advanced Sampling Guide, a MASOS (Mirage Advanced Sampler's Operating System) disk, two sound library disks and one disk-formatting program so you don't have to buy pre-formatted disks any more.

Optional extras are a 50kHz sampling cartridge and a 1024-event sequencer expander – given the price of the expander, the additional cost of these doesn't look bad.

Despite an eight-bit resolution, the Mirage MultiSampler can sample and store sounds with great accuracy. Its multisampling and editing facilities make it a serious proposition for anyone interested not just in the rudiments of sampling, but also in sample manipulation and control. And with the support of software writers, the module should provide the base for a powerful and flexible sampling system, at an extremely modest price.

■ *Simon Trask*

Price *RRP £995; sound library disks £15 each; 50kHz sampling cartridge £112; sequencer expander cartridge £62; all including VAT*
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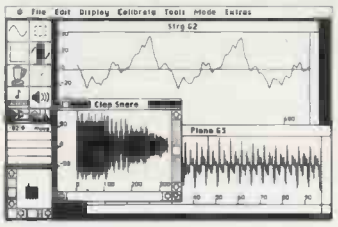
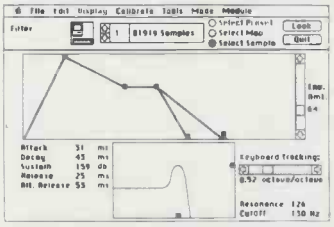
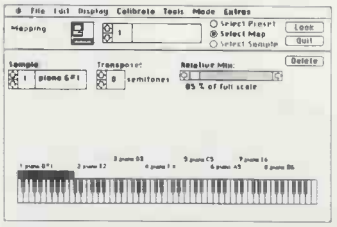
Sound Designer 2000 Software







If you read the Prophet 2000 review in E&MM December '85, you may have been distracted by another feature on Digidesign's Sound Designer software for the Emulator II. At the time, it seemed a pity that a similar software package wasn't available for the 2000. A few months later, and Digidesign have adapted the package to work with the Prophet, and have even gone as far as incorporating some facilities that weren't included in the original system. As if that wasn't enough, the Prophet 2000 version (or SD2000) is half the price of the Emulator one.

In the new system, the Mac communicates with the 2000 via MIDI, which means that only a cheap interface is needed to run the software. Not surprisingly, though, communication time is a fair bit higher than it is with the EII's RS242 port.

Just in case you missed Paul Wiffen's original report, I'll briefly recap on the main points of the Digidesign package.

Sound Designer's main *raison d'être* is providing on-screen editing of samples, with facilities including looping, cut-and-splice, re-drawing and digital mixing. Functions normally accessed via the host instrument's front panel can be selected instead from the Mac, allowing envelopes and filter configurations to be visualised and edited. Fourier Analysis allows the frequency content of the sample to be viewed in the 'mountain range' format first seen on the Fairlight. And in addition to this, digital synthesis using the Karplus-Strong algorithm is possible, offering a range of 'plucked' timbres.

To this already impressive list, SD2000 adds several innovations. The most instantly appreciable of these is the Loop Window. This wraps the end of a sample loop round and places it up against the start point, so that you can match up waveforms and levels for faster glitch-free looping.

For those sounds which are really impossible to loop, Digidesign have expanded the digital mixer section (represented on-screen by the 'food blender' icon) to include a feature called Cross-Fade Looping. This takes the areas around the start and end of a loop and fades them in and out by means of digital addition, which hides the loop point through reshaping the waveform. It won't hide any pitch or timbre glitches if your whole loop is badly positioned: like invisible mending, it only works if the materials match.

SD2000 supports both the sustain and release loops of the host Prophet sampler, though you have to keep a sharp eye on this, as one loop marker can hide another.

The Prophet's front-panel functions can be accessed in a similar manner to those of the EII. In the case of the Prophet, this facility is worth its weight in gold – because however good the sampler may sound, its front panel is a mite tricky to use. By representing Prophet functions graphically on-screen, Sound Designer goes a long way toward overcoming the host machine's inherent programming awkwardness.

Mapping sounds across the keyboard becomes a doddle, as you place original and highest pitches by selecting notes on a representation of the keyboard. And the Prophet's complex arpeggiator section also becomes a cinch to use when all its parameters are laid-out in front of you at the same time.

For owners of the Prophet 2002 module who may not have a MIDI keyboard to hand, the rack-mounting unit may be played direct from the software using a pull-down window called – aptly enough – MIDI Keyboard. This also allows a short sequence to be recorded for checking up on how edits affect the playing of a particular phrase.

If you want to check how your latest keyboard map is working out, a function called Pattern runs from bottom to top, playing all the semitones so you know exactly where your sounds are. Saves you having to replug Mac and MIDI keyboard alternately when editing.

All in all, SD2000 takes the Prophet sampler's sound-manipulation facilities, expands them, and makes the whole system a real pleasure to use.

The forthcoming Mirage version should save a lot of tedious mucking about in hexadecimal, while for those who remain put off by the Apple Mac's high UK selling price, Digidesign are hard at work adapting their software to run on the Atari ST. ■ *Brian Devereux*

Price *RRP Prophet 2000 version £395 including VAT; Mirage version available shortly*
More from *Syco, 20 Conduit Place, London W2, ☎ 01-724 2451; or Rod Argent's Keyboards, 20 Denmark Street, London WC2, ☎ 01-379 6690*

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YAMAHA

FANTASTIC NEW PRODUCTS!

DX27 £499

A regular key version of the DX100. Its features and specs are nearly identical to the DX100 so you can use it as a MIDI on line controller keyboard.

QX21 DIGITAL SEQUENCE RECORDER £259

This high-performance 2-track digital sequencer is capable of recording anything you play on a Yamaha DX synthesizer or other MIDI keyboard, complete with touch response (velocity), pitch bend, modulation, and other function parameters, 6000 to 8100 note memory, 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
Distortion.....£39
Overdrive.....£39
Chorus £59
Flanger.....£59
Graphic EQ £59

YAMAHA

FANTASTIC NEW PRODUCTS!

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

The new 4 track cassette multitracker. Amazing specification, amazing price. Optional power pack available!

RX21L LATIN PERCUSSION MACHINE £249

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

YAMAHA RANGE GUITARS

SE200 .....£115
SG1300T £345
SG100S £289
S9300 .....£659
SG200 .....£145
Call in for demo!

FUTURE MUSIC

YAMAHA

SPECIAL OFFERS!!! SPECIAL OFFERS!!!

DX5 Digital Synth	Incredible New Low Price	£1999
REV 7 Digital Reverb	Incredible New Low Price	£899
REV 1 Digital Reverb	Incredible New Low Price	£POA
QX1 Digital Sequencer	Incredible New Low Price	£POA
KX88 MIDI Remote	Incredible New Low Price	£999
TX816 Tone Module	Incredible New Low Price	£POA
QX7 Digital Sequencer	Incredible New Low Price	£299
TX7 FM Module	Incredible New Low Price	£499
RX11 Digital Drums		£625
KX5 Remote Keyboard	Incredible New Low Price	£179
TX216 Tone Modules	Incredible New Low Price	£POA

CX5 SOFTWARE AND ACCESSORIES

NEW

SFG05 TONE MODULE CARTRIDGE £99

DISC DRIVE INTERFACE £POA

SOFTWARE

RM101	ROM - FM Music Composer	£36	CMW32	ROM - Keyboard Chord Progres.	£45
RM102	ROM - FM Voicing Program	£36	CMW33	ROM - Guitar Chord Master	£45
RM103	ROM - DX7 Voicing Program	£36	GAR-01	ROM - Graphic Artist (Mouse Paint)	£49
RM104	ROM - FM Music Macro	£36	FVD-01	Cass. - FM Voice Data I - 96 voices	£19
RM105	ROM - DX9 Voicing Program	£36	FVD-02	Cass. - FM Voice Data II - 96 voices	£19
RM301	ROM - 4-track MIDI Recorder DC	£39	RDB-01	Cass. - RX15 Rhythm Data I	£19
RM302	ROM - RX Editor DC	£39	RDB-02	Cass. - RX15 Rhythm Data II	£19
RM305	ROM - DX21 Voicing Program DC	£39	RDB-03	Cass. - RX15 Rhythm Data III	£19
RM501	ROM - FM Music Composer II DC	£39	UPA-01	Playcard Program Cartridge	£53
RM502	ROM - FM Voicing Program II DC	£39	CR-01	Playcard Reader	£26
RM504	ROM - FM Music Macro II DC	£39	UDC-01	Data Memory Cartridge	£65
MW31	ROM - Keyboard Chord Master	£45	CA-01	Cartridge Adaptor	£19

*DC = Disc compatible

NEW! SFG05 RX21 Tone Module Cartridge £99!!

YAMAHA

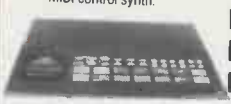
HI-TECH EXCELLENCE!!!

DX21 £649

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

DX100 £349

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



RX21 DRUM MACHINE £249

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 × presets, stereo, 60 user memories!!!

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!

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.

TX7 FM TONE GENERATOR £499

QX7 DIGITAL SEQUENCE RECORDER £299

MT44D Multitrack Recording Systems PHONE

E.& O.E.

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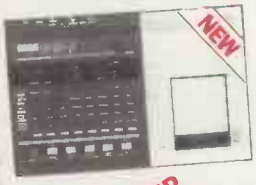
KORG

DW8000 PROGRAMMABLE DIGITAL WAVEFORM SYNTHESIZER

Hit of the year! Korg get it right with features and price! 8 voice poly/ Korg's original digital waveform system/velocity sensing/built in digital relay/Echo Flanging/Chorus MIDI/69 memories. Extremely easy to edit/Dual digital six part envelope generators!

DW6000 6 VOICE POLYSYNTH. *NEW LOW PRICE*

Korgs 6 voice digital synth. now available at unbeatable competitive price! Features advanced digital sound quality with easy use processing and control/69 memories/Complete sound generation through harmonics synth. encoder in 2x256 ROM chips.



SQD-1 MIDI RECORDER & QUICK DISC

Korgs outright winner! At last an affordable storage system with the speed and efficiency of a built-in disk drive!! 2.8" quick disc/With 30000 note storage/Real or step time/ Advanced editing/MIDI/Fast ACCFII/Advanced editing/Punchout/Copy insert/Delete modes.

EX800 POLYPHONIX MIDI EXPANDER

Now at an incredible new low price of £199.00 (while stocks last)

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POLY 800

Korgs best selling Synth. Now at silly price of

£399

KORG

POLY 800 Mk II

1000 note polyphonic sequencer, programmable digital delay, up to 1024 milisecs, programmable Eq, 6 point envelopes

NEW EX8000 PROGRAMMABLE SYNTH MODULE £POA

Expander version of the amazing DW8000. Many many features. Phone for details.

DVP-1 DIGITAL VOICE PROCESSOR

Features MIDI, 5 note programmable harmonizer, pitch shifter, 8 internal waveforms, 64 programs, 16 bit digital technology.

£895

SPECIAL OFFER

Korg MIDI pedal board and SDD2000 sampler delay. Special deals **£POA**
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SEQUENTIAL

CALL FOR DELIVERY ON PROPHET VS AND 2002

PROPHET VS DIGITAL VECTOR SYNTHESIZER £2175

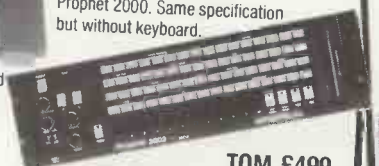
The Prophet VS digital vector synthesizer features 8 voices with each voice composed of 4 digital oscillators. 200 programs via ROM and RAM cartridges. MIDI. Up to 128 waveforms. Velocity and pressure sensitive 5 octave keyboard with programmable split. Many innovative features – call in for details.

PROPHET 2000 DIGITAL SAMPLING KEYBOARD £2175

Up to 16 splits/touch sensitive weighted keyboard formats own disc/6 second sampling at 21KHz – 10 secs at 15KHz/Extremely sophisticated

PROPHET 2002 DIGITAL SAMPLING MODULE £1795

Rack mount version of the Prophet 2000. Same specification but without keyboard.



MULTITRAK £695

Sequential's new advanced polysynth, now at all-time low price. Touch sensitive, powerful on-board sequencer, multi-timbral, MIDI.

TOM £499

The advanced digital drum machine now at this ridiculous price

AKAI

NEW **S900 MIDI RACK SAMPLER £1595**

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

Now Available **– COMPLETE SOUND SAMPLING SYSTEM! S612 MIDI DIGITAL SAMPLER & MD280 QUICK DISCS**

Includes complete set of 10 pre-recorded discs

INCREDIBLE NEW LOW PRICE!!!

£799

AKAI LIBRARY DISK SETS 20 SOUNDS IN EACH SET!!

SL201 Orchestra sounds	£49.90	SL202 Percussive Sounds	£59.90
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SL205 Special Effects	£49.90	SL206 Sounds of Japan	£59.90
BL100 Blank disk set	£29.90	ALL IN STOCK NOW!!	

AX80 MIDI – TOUCH SENSITIVE POLYSYNTH

INCREDIBLE SPECIAL OFFER! AX80 £

All new design and sounds at a crazy price! A wealth of features. Beautiful cosmetics, easy to use. 61 keys/8 voice poly/Fluorescent display/32 preset sounds/64 user programmes/velocity sensitive MIDI

CALL FOR INCREDIBLE PRICE

AKAI MIDI RACK EFFECTS

ME10D MIDI digital delay	£99
ME15F MIDI dynamic controller	£99
ME20A MIDI sequencer arpegiator	£99

AKAI COMPACT DISC PLAYER IN STOCK £199!!

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FANTASTIC NEW PRODUCTS

ENSONIQ DIGITAL PIANO

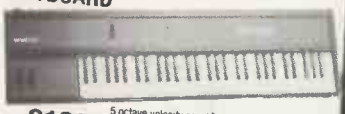
Use multi-sampled grand piano waveforms first instrument. 76 keys, touch sensitive, MIDI, 12 other sounds include electric piano, honky tonk piano. Call in for demo.

£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

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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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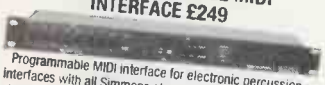
SIMMONS

NEW WORLD BEATING PRODUCTS

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.

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-ht & cymbals – effects send or each channel – rugged, powerful, yet highly portable system

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.

MUSIC

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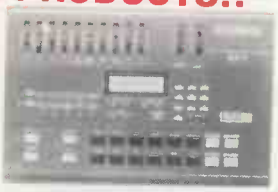
FANTASTIC NEW PRODUCTS!!

RX1 – NEW DIGITAL SAMPLING RHYTHM COMPOSER £395



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 ▶

CZ3000 POLYSYNTH IN STOCK NOW!!!▲

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

£89.00

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Standard Strat	£395	Squier Tele	£239
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Telecaster with humbuckers and trem	£429	Contemporary P.J. bass	£399
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AMPLIFICATION

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Best range at best prices always stocked at Future Music e.g.

Rocket 30	£175
Sessionette 75, 1×12 combo	£175
Sessionette 75, 2×10 combo	£275

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Pedals for the perfectionist

INCREDIBLE QUALITY!! SUPER LOW NOISE!!

Chorus/flanger	£157.00
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TCX11 Phasor	£126.00
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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

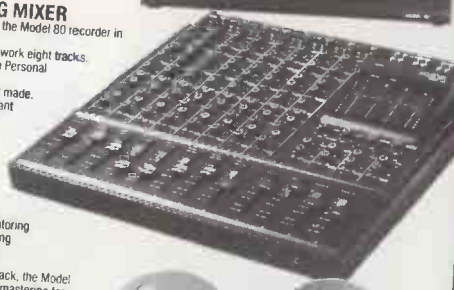
Fostex pioneered eight tracks on quarter inch. This unique format offers convenience and economy of operation with audio mastering quality. This unique fourth generation Personal Multitrack recorder and uses microprocessor control technology to achieve smoother, faster working. Connections are provided 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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SOUTHSEA
PORTSMOUTH
HAMPSHIRE
0705 820595

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!

Accessit 'Exiciter' now in stock plus complete range

Accessit

FOSTEX X15

NEW LOW PRICE £245

MN15 Compressor/ Mixer £39

SIGNAL PROCESSING AT A BUDGET PRICE

- Noise Gate
- Compressor
- Dual Sweep Equaliser
- Stereo Reverb

NEW Exciter in stock
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ew Roland MKB1000 ..... £799 A
ew Roland MKB300 ..... £599 A
ew Yamaha DX21 ..... £599 A
ew Yamaha DX27 ..... £POA A
ew Yamaha DX7 ..... £1199 A
ew Yamaha DX5 ..... £1999 A
ew Yamaha DX100 ..... £349 A
ew Yamaha TX7 ..... £499 A
ew Yamaha TX812 ..... £POA A
ew Yamaha TX816 ..... £POA A
ew Korg DW8000 ..... £899 A
ew Korg DW6000 ..... £559 A
ew Korg Poly 800 ..... £399 A
ew Korg Poly 800 II ..... £425 A
/H Korg Delta ..... £199 F
ew Korg EX800 ..... £199 A
ew Korg EX800 ..... £POA A
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ew Sequential Pro 2000 ..... £1999 A
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/H Roland SH2000 ..... £149 C
/H Arp Omni ..... £Offers! C
/H Korg Micro Preset ..... £Offers! C
/H Juno 106 ..... £449 C
/H SH101 MGS1 ..... £175 S
/H Yamaha CS70M ..... £499 S
/H Roland Planet Mod ..... £699 A
/H Yamaha DX7 ..... £POA F
ew Oberheim DX ..... £399 F
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/H Moog Prodigy ..... £99 S

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S/H Roland Jupiter 6 ..... £799 S
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New Roland AXIS300 ..... £POA A
New Yamaha KX5 ..... £179 A
New Yamaha KX88 ..... £999 A
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New Korg SD2000 ..... £599 A
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New Boss DSD2 ..... £169 A
New Boss DE200 ..... £295 A
New Yamaha VSS100 ..... £179 A
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S/H MX R01 Digital Reverb (cost £2000) ..... £499 S
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Casio CZ230S Keyboard

Casio's new mini-keyboard is certainly different. It falls between several stools, and doesn't seem to be aimed at any particular market – though creating new markets has been something of a Casio speciality in the past. As part of the CZ range, it could either sell a million and put Phase Distortion synthesis into the homes of a whole new generation of synth players, or it could fall flat on its face.

First, it has a go at being a portable fun machine, with four octaves of mini keys, battery or mains transformer power, a built-in speaker and a guitar-strap fixing with a rear-edge sprung pitch-bender for portable playing.

It also has a go at being a MIDI expander, with In/Out/Thru ports, a MIDI Off switch, an Internal/External Clock switch to sync the drum section, and 100 preset synth sounds. But it doesn't seem to be capable of multi-timbral playing via MIDI, and that's the feature which makes the CZ101 so attractive as a cheap voice expander.

The PCM drum machine section is partially programmable, and a pair of output jacks allow you to treat the drum and synth sections separately.

The PD synth sounds begin with 30 orchestral effects – brass ensembles, strings and symphonic ensembles, organs, choirs and so on – which are mostly quite impressive, and which include both thick sounds and some thinner effects for variation.

Twenty wind instrument sounds include trumpets, whistles, and a harmonica, as well as a sitar sound that makes use of the complex Casio envelope – holding a note down makes it bend up and back, even though the keyboard isn't touch-sensitive.

There are ten piano, clav and harpsichord sounds which aren't, on the whole, terribly clever. These are followed by 20 percussive/string sounds including some fine vibes, bells and marimbas and several acoustic guitar effects. Fashionably, the ten percussion sounds include three Simmons effects.

Sound effects occupy the remainder of the preset voice memories, with an extremely realistic typhoon, a motorbike starting, explosions, jets, and a wonderful record scratch impersonation.

The PD sounds can be tuned from the front panel, and you can also program levels for Portamento Speed, Bend Depth (0-12 semitones) and Transpose (five semitones down, six up).

The drum machine section has 20 preset patterns, plus ten programmable memories. Start/Stop and Synchro Start are available, and an Intro/Fill button introduces some well-composed variations into each pattern.

The drum sounds are excellent: a thumpy bass, a good sharp snare, slightly hissy toms, reasonable ride and hi-hat cymbals, and decent percussion sounds such as cowbell – though the clap is surprisingly poor.

When you want to program a new 16- or 12-beat pattern, the keys of the keyboard are marked up to represent each beat: simply program each instrument by tapping the keys on which you want it to occur. A metronome LED flashes red and green while you're programming.

It's possible to call up any four PD sounds for use in the rhythm section. These voices are stolen from the keyboard, so if you're playing over the top of rhythms which use PD sounds, you have to take care to avoid glitches produced by a shortage of voices. The synth tom and metallic sounds from the PD section add a lot to the drum machine, and it's also possible to use some of the 'conventional' synth sounds, though notes can only be entered at Middle C.

If you switch to Song Memory mode, you can use the Start/Stop and Intro controls to chain up to 200 patterns (preset or user-programmed) into a Song. PCM and PD rhythm section sounds can be mixed individually while playing, too.

Does the 230S spread its capabilities too thinly? Possibly. As a fun instrument, it's limited by its lack of auto-accompaniment and its high-ish price. As a posing lead synth, it suffers from being non-programmable. As an expander, it's handicapped by the lack of multi-timbral playing, though many of its polyphonic sounds are rich and could be useful in many applications, serious and otherwise. As a 'pro' drum machine, it suffers from not having individual outputs.

Cleverly designed, trendy, and fine-sounding, the CZ230S isn't the convincing argument for all-in-one packaging it should have been. As one musician remarked: 'It's got lots of good points, but they don't really add up to anything.' Quite. ■

Annabel Scott

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Emulator SP12 Updates

It is customary, in this era of planned obsolescence, for consumer products to be introduced, advertised, sold, discontinued and finally replaced over an incredibly short period of time.

A new hi-tech musical instrument, for instance, can now expect a lifespan of no more than a couple of years, if it's lucky. During that time, it may enjoy a fair amount of popularity among musicians and technicians. It may even break sales records and make its manufacturers a small fortune. But almost everywhere, all that success goes by the wayside as soon as a better product has been developed and is ready to be foisted on the unsuspecting public. Almost everywhere, that is, except at a minority of enlightened music houses who have realised the value of introducing a machine, and then improving it stage by stage, instead of replacing it with something totally different.

One of those enlightened companies – from where I'm sitting, anyway – is E-mu Systems. In the nine months since we reviewed their Emulator SP12 sampling drum box, the Santa Cruz people have done more than simply rest on their laurels. Apart from moving 10 miles into the mountains to the picturesque but inaccessible Scotts Valley, they've been beavering away to keep the SP12 at the forefront of the sampling percussion field.

The first update, mentioned in our original review, was the Turbo kit. This expands the maximum sample time from just under two seconds on the base model to five seconds. Obviously, this means you can record percussion sounds that have naturally longer envelope times (like cymbal crashes) and sounds that have been treated with reverb, say.

Alternatively, you can use the extra memory in conjunction with one of the newer software improvements to go beyond the eight user sample locations originally provided for. By dexterous use of the new Copy Sound facility, you can spread 32 of your own sounds across the SP12's four banks, so that an entire drum pattern can bear witness to your sampling prowess. This facility should prove even more useful if the rumoured 'Rambo' update (giving 15 seconds' worth of sample memory) comes to pass.

The range over which pitched samples can be played has also been increased by the later software versions, and now gives you a choice between Low, Mid and Hi. Creating sounds which don't betray their sampled origins has never been easier.

The latest version of software, catchily titled 2.4, also provides for compatability with the J L Cooper MIDIdisk, an all-purpose Stateside device of considerable worth. With the 2.4 software, you're no longer forced to watch your hair turn grey whilst waiting for a tape recorder or Commodore disk drive to save and load sounds and sequences. The Cooper drive works considerably faster than Commodore's lengendary tortoise, and does so with a lot less racket, too. However, the MIDIdisk doesn't come all that cheap (listing at just under a $1000 in its country of origin), and until someone starts importing Mr Cooper's worthy (if a little pricey) efforts into the UK, you'll have to send off to the States for it.

The most recent news on the hardware front also concerns something that isn't actually being produced by E-mu themselves – though again, the new software contains the necessary operating system for it to work.

The devastatingly simple modification in question is the brainchild of Riley Smith, E-mu's Service Manager. In simple terms, it allows the sample input to be used to trigger any one of the factory or user sounds from an audio signal, like a sound off tape or another instrument, in real time. All you do to facilitate this is pull up the pot on the sample module, which then sets the triggering threshold. Ingenious, and frighteningly easy to accomplish.

On top of all this, E-mu have done a bit of export restructuring so that the Turbo version now lists at just £2500 plus VAT. It's not going to put Yamaha and Casio designers out of a job, but it does make the SP12 better value than ever. For me, there is no real alternative. ■ *Paul Wiffen*

More from *Syco, 20 Conduit Place, London W2, ☎ 01-724 2451;* Review model *supplied by Rod Argent's Keyboards, 20 Denmark Street, London WC2, ☎ 01-379 6690*

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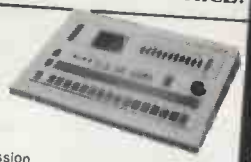

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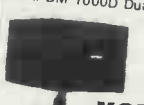

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THE POWER

BEHIND THE BUTTON

It looks like any other budget digital delay line, but thanks to some clever software writing, the Yamaha SPX90 is one of the most versatile signal processors yet designed, offering a whole host of facilities for the price of an 'ordinary' DDL. Outboard gear will never be the same again. *Paul White*

Take two digital effects processors – a reverb unit and a chorus, say. Open them up, look inside, and you'll discover that, if their electronic specifications are similar, the main difference between them is one of software. Once you've digitised an input signal, the things you do to it are all realised in arithmetic processing, so the same box of tricks can function as a reverb, a chorus unit, or even a fuzz-box. Yamaha have given the fuzz-box angle a miss on their new SPX90 effects unit, but despite this gross and disturbing omission, the machine can still manage no fewer than 12 different signal-processing operations, with several variations on each – though not all at the same time, of course.

In paper specification terms, the SPX90 uses linear 16-bit encoding, and has a quoted dynamic range in excess of 75dB. Sampling rate is 31.25kHz, and all the effects have a 12kHz bandwidth.

The unit has 30 preset programs ready to go at switch-on, and room for you to store a further 60 of your own, giving them appropriate names along the way. As with Yamaha's REV7 dedicated reverb, user programs on the SPX90 are created by calling up a preset effect and then modifying the available parameters, so you don't ever have to start from scratch.

In common with so many modern machines that use digital parameter access, the SPX90 has a front panel that doesn't give much away. A solitary rotary control covers input signal level, with all other facilities being selected and modified using a handful of function keys and increment/decrement (up/down) switches.

The SPX90's many functions can be split into different families of sound effects and treatments, namely Reverb, Early Reflection, Delay, Echo, Modulation, Pitch Change, Freeze, Gate, Compressor, Pan, Vibrato and Parametric EQ.

The reverb features offered by the SPX90 are derived from those used in the REV7 – though understandably, there are fewer variations this time. Reverberation time is variable up to a (silly) maximum of 99 seconds, and you can add up to 50mS of pre-delay to this.

The first four preset effects are reverb treatments called Hall, Room, Vocal and Plate, which give a reasonable variety. High-frequency decay time can be varied independently, and there are high- and low-pass filters for further tailoring. Subjectively, these reverb settings sound very much like those on the REV7 – clear, bright, and just a touch artificial, though not in any unpleasant way.

An Early Reflection mode is included, but this is not strictly speaking a reverb effect, as you can only use it without the following main body of reverberation. There are four types of initial reflection on offer – Hall, Reverse, Random and Plate – and all of them

Reverb *"There are four types of initial reflection on offer, and all of them are useful for adding a discreet ambience without yelling 'reverb!' at you."*

are useful for adding a discreet reverb ambience without yelling 'reverb!' at you; it's particularly effective on percussive sounds. The spacing and decay time of these reflections is under user control, and up to 400mS of pre-delay may be added. There's also a low-pass filter covering a range of 1kHz to 11kHz – useful for removing excess brightness from the effect.

There are also some Reverse Reflections, which create an interesting backwards reverb sound, again similar to that generated by the REV7.

Gated Reverb is catered for in a different section, predictably entitled Gate Reverb. Gate Hold time is adjustable up to a maximum 30 seconds, and the release time can be as long as 32 seconds. In practice, many users will select shorter values to produce those distinctive if rather passé gated drum sounds, but this extra range does give scope for experimentation, which is always a good thing.

Curiously, the Yamaha's Delay and Echo modes appear to do much the same thing. Both offer independent control over right- and left-channel delays, and both permit you to apply positive and negative feedback. The only difference is that Delay has a maximum delay time of half a second, whilst Echo effects only go up to 250mS. In order that the echoes can be made softer in tone as they die away, the amount of high frequency feedback can also be varied in both cases.

Setting function apart from composition,

we find that Echo and Delay can only be used to generate repeat echoes. Other, modulation-based DDL effects such as chorus, flanging, tremolo and so on are not possible in either mode.

Despite the 12kHz bandwidth, the Delay effects all sound fairly bright, and the only real complaint is that the maximum delay time is not longer: 500mS can be a bit restrictive.

Stereo flanging is the first effect to come under the heading of Modulation, and offers all the usual parameters like modulation frequency, modulation depth, delay time and feedback. As the time delay increases in one channel it decreases in the other, giving a true stereo effect with a convincing sense of movement.

Chorus uses the same ingredients as flanging, except that there's no feedback. Other modulation effects include Stereo Phasing, Tremolo (deep chorus) and Symphonic, the latter being a lush, spatially-enhanced chorus treatment that uses similar parameters to flanging but, again, without the feedback. All these effects are up to the standard you'd expect from a DDL in the SPX90's price range, and the fact that they're in true stereo is a great advantage for studio use.

Pitch Change is the effect most people would describe as harmonising – though it can't be called that because Eventide would get cross. On the SPX90, it allows you to change the pitch of any input by up to an octave in either direction, in one-cent steps; the output can also be delayed by up to 400mS should you wish it. As this is a two-channel device, you have the option of selecting a different pitch shift for each output. If this isn't what you're after, you're given the alternative option of using a MIDI keyboard to control the amount of shift in real time – not by playing the pitch as such, but by selecting the amount of pitch-shifting to which the input signal is subjected, and by choosing a base key at which no pitch-shifting occurs. You can also add feedback and delay for pitch-spiralling effects.

Like all budget pitch-shifters, the output of this one gets rather lumpy when more than a little shift is introduced, which means that subtle detuning effects are fine, but fifths or octaves start to show signs of glitching. This manifests itself as an atonal modulation, making things sound slightly out of tune or metallic. Used with care, though, the pitch-shifting is musically useful, and adding a pitch drop to a snare drum, for example, can result in quite a novel sound.

Freeze mode turns out to be Yamaha's way of saying sampling. Don't get too excited, though: maximum storage time is only half a second, so Ensoniq and the others aren't under much of a threat from the SPX90.

In fact, there are two separate sampling modes. The first allows you to alter the start and end points of the sample, but doesn't permit keyboard control of pitch. The second mode allows no such editing, but does give you keyboard control via MIDI.

Sampling

"Maximum storage time is only half a second, so Ensoniq and the others aren't under much of a threat from the SPX90."

Sampling can be initiated automatically by the sound itself, or manually by pressing the Parameter Increment key. A trigger delay feature lets you trigger up to 500mS either before or after the input exceeds the triggering threshold, negative trigger delays being obtained by delaying the actual input signal somewhere inside the SPX90's circuitry.

The 'Gate' included here is actually more akin to the sort of ADSR envelope shaper common to so many synths, though without the 'S' bit. Thus it can be used solely as a gate to clean up recordings, or to impart a new envelope to existing sounds. You can vary the trigger level (or threshold), and invoke a trigger delay function similar to the one just discussed, except that the maximum time is only 100mS. There's another new function in Trigger Mask, which prevents the Yamaha from re-triggering until a user-determined time (in this case somewhere between 5 milliseconds and 32 seconds) has elapsed.

As far as the envelope shaper goes, Attack, Decay and Release times are all variable between 5 milliseconds and 32 seconds, while Hold time can be as little as a millisecond. Decay level is also variable.

There's also a switchable MIDI Trigger facility. With this switched on, the gate triggers when any note is played on the MIDI keyboard – useful if you need to apply a new envelope to a MIDI sampler such as the Akai S612.

Using the gate in a serious recording context can be a problem, though, thanks to limited bandwidth. Whereas 12kHz is satisfactory for delay effects where a portion of the original signal is to be added, it's too small for any processor designed to pass the whole of the audio signal. Ergonomically, setting up a gate using increment/decrement keys isn't a lot of fun, and there's no threshold LED to help you, either. The SPX90's gate, then, is more usable as a triggered envelope generator than as a gate in the traditionally accepted sense.

Like gates, compressors are often analogue devices, but Yamaha have succeeded in writing some suitable software instructions for the SPX90's electronics to carry out. Thus, the compressor section offers independent control of Attack, Hold and Release times, as well as allowing you to set the operating Trigger threshold and the Hold level. Both positive and negative Trigger Delay times can be programmed, again by delaying the input signal when required. The Compressor can also be triggered by pressing a key on a MIDI keyboard, in addition to the more conventional mode of operation.

In the same way as Yamaha have seen fit to make the SPX90's version of a Gate useful as special-effects generator, so the Compressor can create a few fireworks of its own, in addition to operating in its traditional, corrective manner. Only trouble is, the Compressor suffers from the same limited bandwidth and ergonomic problems

Compressor

"There's no parameter to tell you exactly which compression ratio you're using, and you really do need a visual indication that the input is exceeding the trigger level."

that beset its near neighbour. There's no parameter to tell you *exactly* which compression ratio you're setting-up, and you really do need a visual indication that the input is exceeding the trigger level.

The Pan section hides an autopanner that sweeps a signal from left to right, right to left or alternately from one side to another – depending on whether it's in its free-running mode or set to be triggered from the input signal or optional footswitch. The signal-triggered mode is the most exciting, as pans can be synchronised to individual notes or drum beats; pan speed is variable from 5ms to over half a minute. Once the signal exceeds the threshold, the output pans from whichever side it's resting at to the opposite side. Like the Gate and Compressor modes, the Pan section includes a Trigger Mask facility which lets a sweep complete itself before re-triggering is allowed: this may be set for any time up to 32 seconds, or de-selected completely if not required. And as with most of the other effects, the Pan may be initiated by a MIDI note-on signal.

So long as you don't overuse it, the Pan is a

Autopanning

"So long as you don't overuse it, this is a useful effect, particularly striking when used to pan echoes without moving the original sound source."

useful effect, particularly striking when used to pan echoes or reverb sounds *without* moving the original sound source. Bear in mind, though, that you'll need a second effects unit to do this, as the SPX90 can only do one thing at a time.

And so to the Vibrato section. All the usual vibrato parameters are accessible, including ▷

Speed, Depth and Rise Time. There's also a Delay parameter so that the vibrato (or pitch-modulation) can be made to develop gradually over a period of up to 30 seconds.

Finally, we come to the last stop on our journey through the SPX90's myriad functions: the Parametric EQ. This consists of two fully parametric filters, a high-pass filter, and a low-pass filter. The high-pass filter has a 6dB-per-octave slope, and is variable from 32Hz to 1kHz, whilst the low-pass one covers the range 1kHz to 11kHz. Both parametrics offer up to 15dB of cut or boost, and their frequency ranges are 315Hz-4kHz and 800Hz-8kHz respectively. Bandwidth is variable, and up to 400mS of delay can be added so you can generate a sort of equalised echo.

For serious use, a parametric filter with a 12kHz frequency response makes no sense whatsoever. But it can be used to good effect on electric guitars and other instruments that have little or no really high-frequency content, or if preserving the original signal's bandwidth isn't of paramount importance anyway.

You could be forgiven for reading through that list of functions and facilities, parameters and possibilities, and thinking, at the end of it all, that the SPX90 is an utterly mind-boggling instrument that takes an eon-and-a-half to get acclimatised to. But you'd be wrong. As digital-access devices go, this one is quite easy to operate and program. It's not an ideal state of affairs, having just a central panel of switches with which to do everything, but on a machine as multi-layered and multi-faceted as the SPX90, there's no realistic alternative. And in any case, the system only becomes a hindrance (as opposed to a nuisance) in the Gate and Compressor modes, as mentioned earlier.

Cramming so much into so little a space (and at so low a price) obviously has its drawbacks. But overall, you'll be consistently and pleasantly surprised by the SPX90's overall performance, so long as your expectations aren't sky-high. Yamaha have realised that it isn't enough simply to endow a machine with a load of functions, none of which it can execute properly. Thus the SPX90 performs very respectably in most areas – just as well, in fact, as just about any other DDL in its price category, regardless of the number of musical options on offer.

Even where its capabilities are limited by restricted bandwidth (Gate, Compressor, Parametric EQ) or sample time (Echo, Delay, Sampling), the new Yamaha succeeds in offering sufficient variable parameters to make each section a useful stimulus for creative signal processing, outside what would normally be considered as 'state of the art' performance.

On the interfacing front, Yamaha have been thoroughly modern and gone for MIDI above all else. If you don't want to trigger the effects from MIDI, most modes let you use the footswitch input to do the job – but I'd still like to see a dedicated trigger pulse input for drum machines and monosynths. MIDI may be the standard where polyphonic synths are concerned, but for simple triggering (and especially for things like auto-panning), the humble pulse is more practical.

MIDI is useful when it comes to patch selection, though. Any effect, preset or user-programmed, can be selected by MIDI patch-change information in the range 1 to 128. Any MIDI channel between 1 and 16 may be used for this purpose, and the machine can also be used in Omni mode.

Those facilities are at their most useful playing live, where remote, instant access of programs can come in really handy – even more so when MIDI-controlled combo amps become widely available. The SPX90's restricted bandwidth won't be as noticeable at a gig as it is in the studio, either.

Overall, it's tempting to look at the SPX90 and conclude that it's the pinnacle of digital signal-processing achievement. For the time being, that's exactly what it is: the first effects unit to take full advantage of the flexibility of computer technology, using the same electronics to perform a multitude of different software tasks. In some ways, this revolution has been a long while coming to the outboard effects sector; synth players and sampler users have been enjoying its benefits for years.

But there's a second stage of that revolution which has still to make its presence felt in the music industry. For whereas machines like the SPX90 can only accomplish one task at a time, many of today's home computers have sufficient memory and processing power to accomplish several – multi-tasking, in other words. The SPX90 may be clever enough to do the musical equivalent of a home micro's game-playing, accounting, and word-processing jobs, but unlike the most recent computers, it can't do all of them simultaneously.

This shortfall poses something of a dilemma in the recording studio, where reverbed compression, pitch-shifting echoes and so on aren't possible with the SPX90 *unless* you do one of two things. One is to record each instrument with the first treatment already applied to it, leaving the second layer of processing to the mixing stage. The other is to buy more than one SPX90, which isn't quite as silly as it sounds. Before this machine appeared, you had to buy four or five different outboard devices to get the same sort of versatility – and that lot could add up to over a grand, or about the price of two SPX90s. And I understand that Yamaha, for their part, have no objections to anyone buying more than one SPX90. ■

Conclusion

"Before this machine appeared, you had to buy four or five outboard devices to get the same versatility – and that could work out at the price of two SPX90s."

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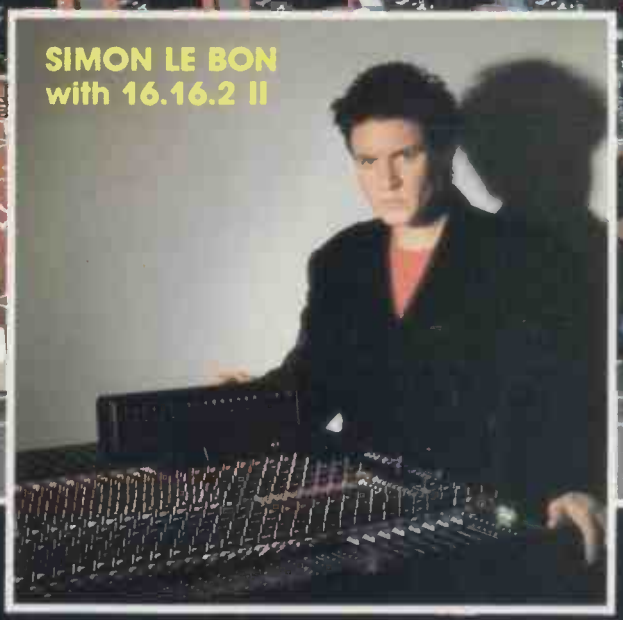

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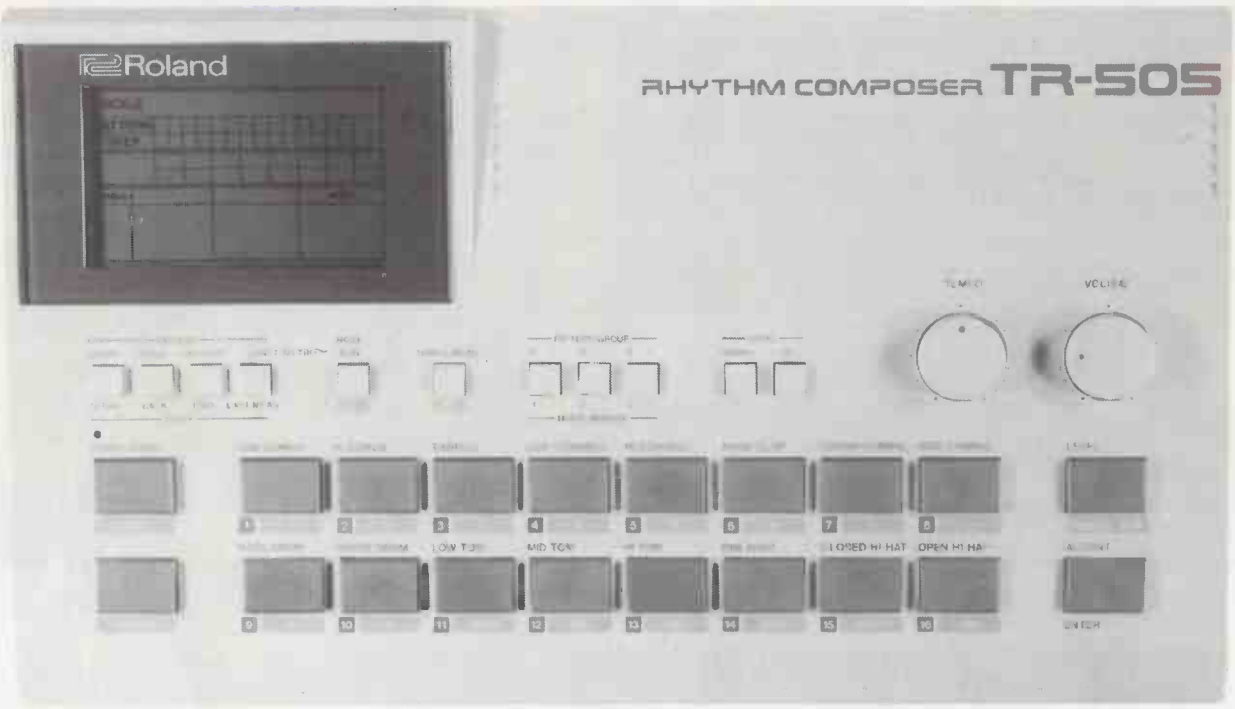

The TR505 digital drum machine is the modern-day successor to the analogue Roland Drumatix. It looks smart, it sounds great, and it's almost mind-manglingly cheap. *Trevor Gilchrist*

Many UK musicians, a large proportion of them E&MM readers, are probably still smarting from their first encounter with the machine the Roland TR505 is intended to replace. I speak of the TR606 Drumatix, which, to many, still represents their first and only foray into The Wonderful World of Programmable Drum Machines.

For the broad-minded and the optimistic, the 606 marked the spot from which whole new territories of creativity could be explored and exploited. The voices it offered, though bland and annoying by today's standards, sounded novel and were refreshingly easy to manipulate. The 606 was also extraordinarily cheap, and it was some time before it could be prised from its enviable market position of 'just-what-every-musician-has-been-waiting-for'.

For many other people, the little silver box was sufficiently off-putting to turn them against electronic percussion as a whole (and especially 'budget' machines), so that rather than opening up new creative pastures, the 606's shortcomings simply encouraged musicians to ignore the progress that's been made since.

But here we are, it's 1986 and if you didn't already know it, 'budget drum machines' have come on a little in the last four years...

Just as the 606 was intended as a budget alternative to the TR808 and 909 machines, so the 505 fills the same gap below the 707. (Yes, I know it's confusing, but hang in there, it's worth it.) With a price-tag of £225, there's little to suggest otherwise, but Messrs Roland have not been content simply to unbolt a few 707 features and stick the result in a different box; the unit itself, though similar in appearance to its predecessors, has in fact been extensively redesigned, front and rear, outside and in.

Display *"The only difference I can see between the 505's system and the 707's matrix, is that rather than seeing a whole pattern at a glance, you have to see it at several glances."*

The front panel retains a liquid crystal display as its primary means of communicating with the user, but it's of a different nature to that on the 707. Gone is the 16×10 matrix display, to be replaced by a single-line Rhythm Pattern Chart and a Selected Instrument Display, which between them provide all the necessary information about which voice has been programmed and where. The only difference I can see between this one-instrument-at-a-time system and the 707's matrix, is that rather than being able to see a whole pattern at a glance, you have to see it at several glances. Other than that, no problems.

Room is still made available on the display for Track, Measure, Pattern and (inevitably) MIDI information, so 'comprehensive' is a description that fits and fits well.

The 505's 16 digitally-encoded voices are accessed via 16 main keys, and represent a commendable effort to make potential buyers realise they're not simply being fobbed-off with a toy 707. High and low congas, a timbale and two cowbells are brought in to supplement the expected 'kit' sounds, and their inclusion (no doubt inspired by the popularity of dedicated Latin Percussion machines) is a wise move: using the 505, it quickly becomes apparent that uninspiring or predictable 'kit' patterns can easily be brought to life by a little Latin.

Switching from what's been added to what's been taken away... the 505's voices have lost the individual level sliders of the 707, and more crucially for studio purposes, the separate audio outputs. If you want to treat individual 505 sounds with different effects whilst recording, you'll have to open the box and try to install output jacks of your own – invalidating Roland's warranty in the process.

No tuning facility is provided, either, so you're stuck with the 'hi' and 'lo' settings provided by Roland, where they're provided at all. But in view of the fact that no budget machine offers a comparable facility, I don't think there can be any complaints there.

More irritating is the abandonment of RAM cartridge storage – such a welcome inclusion on the 707/727. Cassette dumping takes its place, but this isn't such a bitter pill to swallow when you consider that saving the entire contents of the 505's memory takes only 42 seconds – not bad for a cassette-based system, and certainly not as bad as the 40 minutes A N Other magazine reckoned it took. For anyone working at or near the 'pro' end of the industry, it's still a fair while, especially when there's little prospect of reliability at the end of it. But in the altogether less hurried atmosphere of the home studio, achieving the performance you want is almost invariably a matter of patience, so maybe most users won't mind too much.

All in all, the TR505's back panel is sparsely populated, and disappointingly so. There's no means of syncing the machine to external instruments other than via MIDI, which means even if you're using older Roland gear with standard Sync 24 connectors, you still have to buy an interface unit to get the system moving. There are no external triggering facilities, either, and even the Drumatix had those.

However, those MIDI sockets (In and Out but no Thru) conceal a set of facilities more comprehensive than even those on the 707. For example, you can assign each drum voice its own MIDI channel number, and select the specific keyboard note used to trigger each voice over MIDI. And going back to the syncing angle, the 505 transmits and receives Song Select, MIDI sync codes. and MIDI song position pointers.

No *real* surprises on the programming front, with the writing process taking place on four levels: steps, measures, patterns and tracks. A measure is made up of 16 steps (as displayed on the LCD Rhythm Pattern Chart), patterns are constructed from a series of measures, and can then be chained together to form whole tracks.

Unlike any Roland drum machine since the old CR series, the TR505 is actually a preset/programmable hybrid. No fewer than 48 preset rhythm patterns are available to the user, and these occupy pattern groups A, B and C, with remaining groups D, E and F left free for your own rhythm compositions.

I think it's fair to say that preset rhythms (Samba, March, Disco and the like) do different things for different people, but if nothing else, they do make excellent building-blocks for individual compositional adventures – particularly useful on an instrument like the 505, which will doubtless find its way into the hands of many musicians for whom rhythm programming is an entirely new discipline.

Programming can be undertaken in either real-time or step-time (like all other Roland boxes since the Year Dot, the 505 calls the former 'tap-time') and whilst real-time obviously has the advantage that all the 505's voices can be programmed simultaneously (in step-time you have to hold down the Instrument key and press the relevant voice selector each time you want to program a different drum), neither mode poses any real problems, especially if you've used a TR series machine before.

Sounds *"The bass drum is short and to the point: it has a satisfying punchiness and richness that should rarely have to be rescued by lashings of EQ."*

One thing programming does reveal is that the 505 isn't quite as well equipped, voice-wise, as its front panel appears to indicate. Of the 16 sounds resident in the machine, only eight can be programmed to sound on the same beat – basically because only one tom sample, for instance, is responsible for all three differently-pitched versions.

Programming variety has also suffered a little next to the dearer Roland units. Neither the flam nor the shuffle program options appears on the new machine, and their departure limits the user's ability to inject that elusive quality known as 'human feel' into a pattern.

All but three of the keys on the unit's front panel are multi-functional, though none has more than two tasks to perform. The 505 sticks with the Shift key system, as pioneered on the TR808 and carried through the range to the present. This inevitably results in a lot of tedious key-pressing, though it must be stressed that, what with multifunction switches becoming almost as common in the kitchen and on wristwatches as they are in the studio, few people would find the 505's difficult to understand or use.

As on the 707, ten voice selector switches double as numeric keys used to specify such things as measure number and MIDI channel number, while the remainder are used for Insert, Delete and Copy functions (they see copious use during the chaining process), and the customary tape dump functions of Save, Verify and Load.

The review model tended to drift away from the tempi I'd programmed by about 1% either way. This may well have been a fault of the particular machine I was using (and in any case, it never constituted a great problem), but it did rather make me wonder whether a coarse *and* fine tempo control might have come in handy.

Just as the TR808 brought Roland into the programmable analogue drum-machine stakes with a vengeance, the 606 broke all known price barriers, and the TR707 pushed the company right to the forefront of the affordable digital drum market, so the TR505 should have a sizeable impact in the world of budget sampled drums.

Why? Because all 16 voices supplied are of first-rate quality, and quickly prove themselves to be extremely usable.

The bass drum is short and to the point: it has a satisfying punchiness and richness that should rarely have to be rescued by lashings of EQ. The snare drum (and remember, there's only one), is a fine choice, crisp but nicely rounded and full-sounding. The three toms sound a little on the 'electronic' side (rare evidence of the 505's 25kHz sampling rate), but they're still impressive and, of course, light years ahead of what the 606 had to offer in the same department.

Onto the timbale, and my only major reservation about the voices. What the *Hell* is the use of only one timbale? The sample provided slots nicely into the 'superb' category when it comes to sound quality, but surely two timbales would be more useful than a pair of cowbells?

Both conga samples are marvellous (yes, I'm running out of superlatives here), and though they suffer, as most of the voices do, from a markedly abrupt cut-off when listened to in isolation, as part of a mix they really excel themselves.

The same can be said for the cowbells, rimshot and handclap, which are about as good as you could expect to hear *anywhere*, unless you took the dramatic step of sampling your own equivalents into a suitable machine.

Which leaves us with the hi-hat and two cymbals (crash and ride). Well, what can I say? The hi-hat is lively, pleasant, functional and very, very convincing. A little intelligent use of accent programming and it's as good a hi-hat as you'll ever need. Simple as that.

One thing you could never accuse Roland of doing is failing to *think* before they release a new product. Other, lesser companies may have been tempted to simply scale-down a best-seller and leave it at that. But whilst the 707 is undeniably the father of the 505, the newer machine gives a fine account of itself in most important areas, and even surpasses its parent in a few areas such as variety of percussion voices and MIDI implementation.

Come to think of it, even if the TR505 sold at £100 more than it actually does, it would still be difficult to fault seriously. ■

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THE SOUND OF THE VOICE

At last, Korg have applied digital technology to one of the music industry's most underused and underrated electronic instruments – the vocoder. Does the new DVP1 deliver the goods? *Tim Goodyer*

As a species, the vocoder has been on the endangered list for some while now. Manufacturers have killed off the few survivors one by one, without making any effort to replenish the dwindling stock. Old stalwarts such as the Sennheiser vocoder have made occasional forays into the open, but are jealously guarded by over-protective owners. Sometimes the odd, ageing specimen – usually a Roland VP330 or its rack-mounted stablemate, the SVC350 – finds its way into E&MM's classified columns, but is snapped up before the print run is complete.

The vocoder is a 'love it or hate it' instrument. Those who love it recognise it as one of the last truly unexplored areas of modern music technology; those who hate it assume 'Mr Blue Sky' impressions represent the extent of its usefulness. I'd put myself in the former camp: people may have given the instrument up as a bad job, but that, it seems to me, is where innovation should begin.

Right, let's get a couple of things straight. First of all, what *is* a vocoder?

Briefly, it's a device that allows you to articulate a sound using your voice. This involves superimposing your vocal characteristics (as picked up by a microphone) onto another sound source. More often than not, this source is taken from something like an electronic keyboard, in which case the sound retains the pitch it had when it was fed into the vocoder. Alternatively, the source may be generated within the vocoder itself, in which case the vocoder requires either a keyboard of its own to determine the pitch of the sound, or an external input to do the same job. The Roland VP330 belonged to the former category; the new Korg DVP1 belongs to the latter.

But the DVP1, being an entirely new machine, bristles with modern innovations like programmable patch memories and MIDI control. It holds 64 patches onboard, and is five-voice polyphonic over five octaves in most modes.

It also has the facility to operate in the absence of any voice input, using internally-generated vocal characteristics instead. This is termed Internal Wave mode, and is one of four styles of operation, selectable from the front panel but, sadly, not usable in combination. The three others are Vocoder (just described), Harmonize and Pitch Shift, the last two lying outside the scope of 'vocoding' in the conventional sense.

Beginning with Vocoder mode, this has four factory programs, christened Normal, Clear, Soft and Ensemble. The Normal and Soft settings are rather indistinct, and the chorus on the Ensemble is a little excessive, leaving the Clear setting as the most usable.

The control parameters that go up to make these sounds (and indeed all the DVP1's effects) vary from the recognisable to the obscure. Amongst the former are such familiar items as waveform selection, portamento, and modulation generation (Korg parlance for an LFO), while the latter include something called 'Formant' and something else called 'Breath Bypass'. Formant is said to emulate the resonant frequency of the human vocal passage, and to give an impression of the age and sex of the voice. It sounds more like a resonant filter to me, but it's effective in shaping the sound all the same. You can even route MIDI pitchbend data to the Formant circuitry, with resultant timbral modifications every time you move the wheel/lever/joystick.

If all this fails to give the vowel sound you're after, a Freeze facility allows you to hold a short section of the input vowel to shape your sound.

Like all other vocoders, the DVP1's circuitry is capable of handling only vowel sounds, which leaves us with something of a problem: without consonants, most sounds appear indistinct and artificial. To overcome this, the Korg's Breath Bypass feature is designed to put the missing consonants back into the output signal. Three control parameters are tied up with this: Level, which determines the balance between consonant and vowel components of the output, and Level and Pitch Threshold, which determine the sensitivity of the bypass circuitry.

There are one or two other refinements

worthy of mention. First of these is a straightforward attack-decay envelope giving control over volume rise time and release time. Simple but effective.

Then there's a pitch envelope generator. Not a great innovation, I'm sure you'll agree, but one that's capable of adding subtler, less obvious facets to the vocoded sound.

Internal Wave is essentially the same as the Vocoder mode, except that the microphone input is replaced by one of eight synthetically-generated voice waveforms. These come in a variety of styles, covering male and female sources and a variety of vowel shapes: *a*, *la*, *lu* and *wo*. Some 24 of the 32 factory programs are devoted to effects generated in this way, and the Formant parameters crop up again here to lend a helping hand.

To my mind, though, the internal settings are the least useful aspect of the DVP1. Some of the waveforms represent a valiant effort at replicating vocal sounds, but I'm left thinking that the technology at this level is well below that needed to synthesise a sound as complex as the human voice.

Many of the sounds are thin and, worse, dynamically repetitive. Part of the beauty of a vocoder is the freedom of articulation it affords, whereby no two sounds need ever be exactly alike. Use an internal waveform, and you kiss that unpredictability goodbye.

That said, the Internal Wave memories can easily be turned into Vocoder memories by muting the internal waveform, after which they provide useful starting points for experimentation, and yield far better results than the vocoder presets themselves – I found muted Internal Wave patch 27 offered the best vocoder sound on the machine.

In its Harmonizer role, the DVP1 offers two factory preset effects, and is capable of shifting the pitch of the input signal by as much as an octave either sharp or flat. This interval is determined from the keyboard with reference to a Key Note, which is freely variable in semitone steps over the working range of the machine.

The Harmonizer story isn't over, though, since the DVP1, clever little beast that it is, still has four more voices at its disposal (three if you use the chorus). Thus, you can create a chord by setting these voices to various intervals.

Pitch Shift mode (also two presets) has a couple of strings to its bow. The first of these is a straightforward modification to the pitch of the input signal, controllable in 100th-semitone steps over a range of an octave either side of the input signal pitch. In small doses, this can be used to fatten sounds or, as the manual observes, to provide a solution to feedback problems. But seeing as the DVP1 is capable of producing up to five voices, and four of these are idle in normal Pitch Shift operation, you can call the other four into play with pitch discrepancies specified by a Detune function, to fatten the sound further.

Speaking of sound-fattening, the Korg also has a built-in chorus, though it's used at the cost of one of the unit's five voices. If that limitation sounds as though it might be unbearable, you can always buy a separate chorus machine, safe in the knowledge that you could part-exchange an old noise gate to help pay for it, as the DVP1 has a gate built in. This particular gate offers control over both Threshold and Decay parameters, operates in all but Internal Wave mode, but is not a programmable function.

If you really want to, you can set the Pitch Shift mode to zero, which leaves the unit clear to be used purely for its chorus and/or gate.

Quite a bit has been done, ergonomically, to make the Korg good to use. All connections are on the rear panel with the exception of the input, which takes both canon and standard jack forms on the front panel. The front panel layout is clean and logical, and features a choice of canon and jack inputs (all other connections are at the rear); an input level trimpot and attenuator (switchable between −50dB, −10dB and +4dB, which is a good range); a choice of three output levels (Direct, Effect and Total); mode selection switches (including Chorus and Unison controls); and a Tune pot covering a range of a quarter-semitone sharp and flat.

Like most modern musical machinery, the DVP1 employs digital parameter access in the programming department. Not an ideal state of affairs, this, though your endless button-pressing is eased by three numeric LED indicators on the front panel, which give simultaneous readouts of program number, parameter number, and parameter value.

The Korg's 64 internal patch memories are arranged in the familiar eight-banks-of-eight format (program numbers 11 to 88), and each memory can store the operation Mode (including Chorus and Unison on/off), and all control parameters with the exception of gate and MIDI setup. The unit comes with 32 factory programs, loaded in memory locations 11 to 48 and, curiously, repeated in locations 51 to 88. The manual includes a useful chart that shows all the parameter settings used to produce these presets.

Of course, the DVP1 would be nothing (well, not much) without MIDI, so is equipped with MIDI In, Out and Thru sockets on its rear panel. The application of MIDI In and Thru should be obvious by now, but what of the MIDI Out? Well, this provides a means of communication between the DVP1 and a suitably interfaced computer, and is the only route by which you can dump your own programs. Computer-assisted parameter editing may also be carried out over the MIDI bus, but unless you fancy yourself as a budding programmer, you're at the mercy of the software houses as to whether any of this will ever be possible.

One nice touch is the inclusion of a MIDI Indicator, a front-panel LED that lights to indicate the presence of incoming MIDI data – a great time-saver when setting up isn't going smoothly.

Even better, the Write and Write Enable/Disable switches serve a dual purpose. When the Write function is disabled, the Write button acts as a MIDI reset for clearing the sort of corrupt MIDI data that so often results in droning notes.

The only blight on the DVP1's MIDI map is the fact that it isn't sensitive to either initial velocity or aftertouch – which goes against current trends somewhat. Maybe they'll rectify things on the MkII model.

But back to the good news and Korg's novel-sounding Key Window feature, which is in fact the equivalent of establishing keyboard zones, and employs two user-definable parameters to determine its top and bottom extent. The result of this is that you can define any area of the unit's operating range within which you wish it to respond, so you can split the controlling keyboard or restrict response to any specific area within its range. However, by setting the top of the window *below* the bottom, you can create a specific area within the keyboard range where it will *not* respond – in other words, a window.

As it stands, there's no way you can use a voice to articulate your favourite synth patch. Initially, I was worried that this would undermine the potential of the DVP1, but although I did find myself wishing I could use a rich string or vicious Moog lead patch as a starting point from time to time, the system does cover most eventualities.

And the DVP1 excels in a couple of other areas, like the creation of off-the-wall effects that simply aren't possible with 'ordinary' synths and samplers. If you fancy it, you can program a superb imitation of moaning monks – a little reverb and a few well-chosen notes around middle C soon have you believing you've moved your studio/rehearsal/bed room to a small uncharted island off the Scottish coast, never to be heard from again.

Unlike so much recent gear, and despite the lack of touch response, the DVP1 is an exceptionally expressive instrument. It represents a very real innovation, and time spent exploring its possibilities is both exciting and rewarding. ■

DATAFILE

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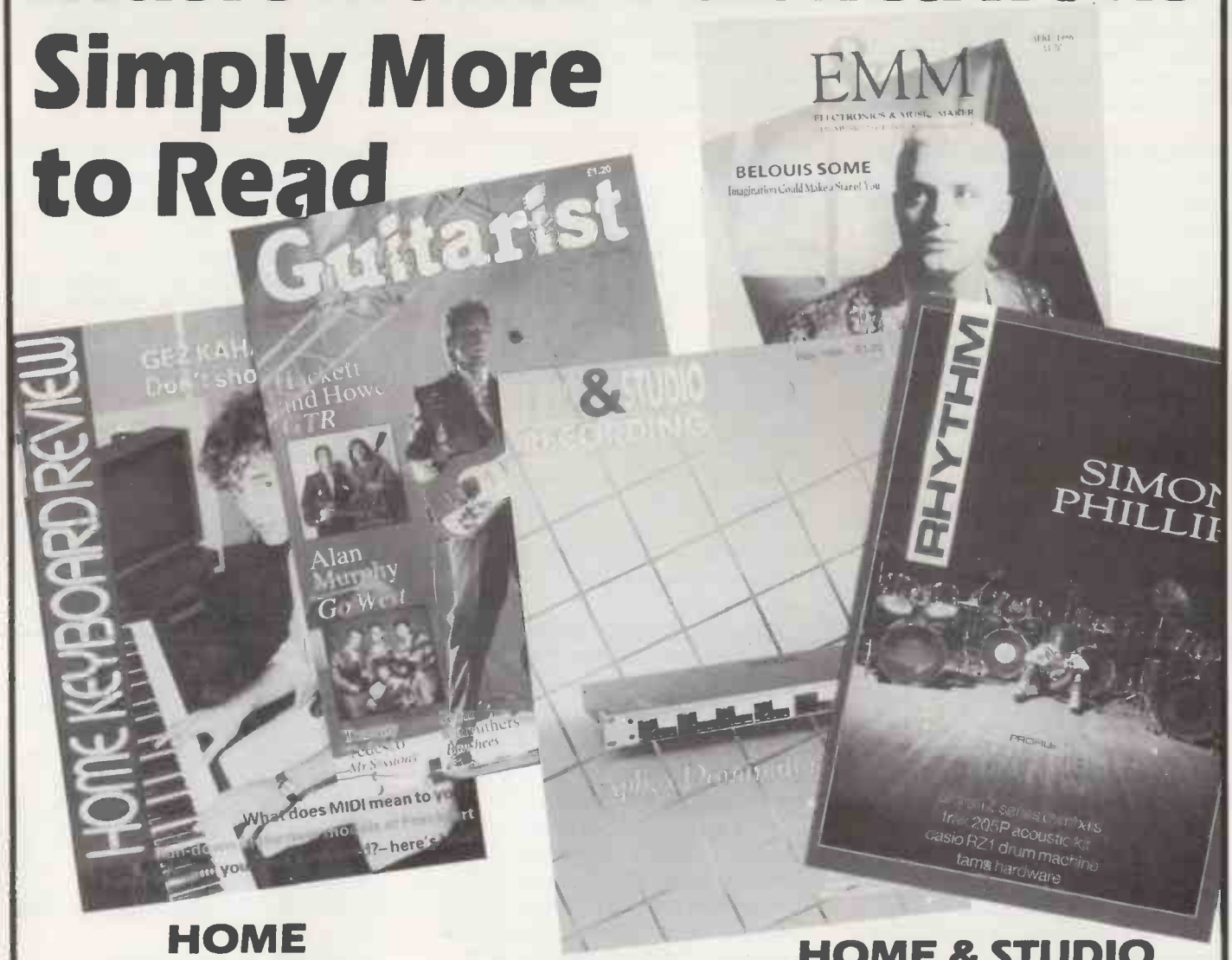

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LANGUAGE...

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THE NEW GENERATION

In an effort to shift stocks of C64 computers, Commodore have announced a revitalised range of music software that includes a decent sampler and an FM synth voice module. The whole package looks conspicuously good value.

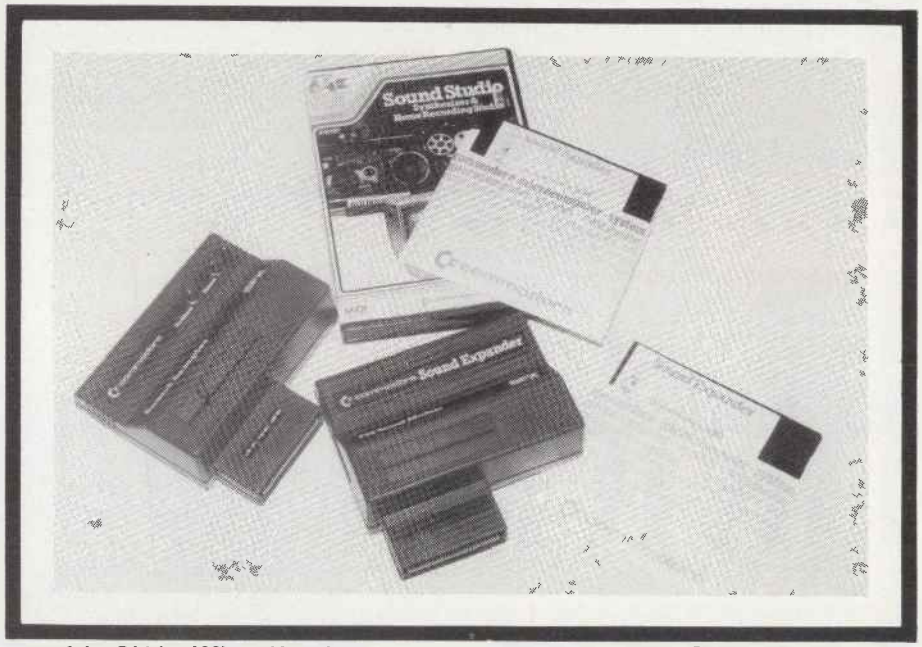
Chris Jenkins

What would you do if you had thousands of ageing home computers to sell, and the market seemed practically saturated? If you were Commodore and you had to shift stocks of the popular 64 micro, you'd decide to go full tilt for the music market.

Because the 64's primitive BASIC makes it next to impossible to write good music programs for without delving into machine code, lots of musicians and computer hobbyists fail to realise that the micro's SID (Sound Interface Device) chip is a miniature synthesiser in itself, complete with three voices, selectable waveforms, filter, ADSR and modulation. But to make it easier to get the best out of SID, you need commercial software – or you can bypass SID altogether, and use external sound sources under the computer's control. Fired by the enthusiasm of Commodore's new marketing director Chriss Kaday – himself a former musician – the company have produced, in conjunction with Music Sales, a range of hardware and software packages which should appeal to all C64 (or 128) owners, not to mention a few people who hadn't previously considered owning a computer at all.

The range includes SID chip compositional software, a sampler, an FM voice module, a full-spec keyboard and clip-on overlay, and a MIDI interface. Yes, Commodore are aware that no computer is an island, and have built MIDI communication facilities into all the Music Sales packages – though the appropriate interface isn't available just yet.

Perhaps the best of these packages is the Sound Expander. Built into a cartridge of the type used for the Magic Voice speech synth, the Expander is an eight-note polyphonic FM music synthesiser. Since FM of this kind is the exclusive preserve of Yamaha, it's easy to work out where Commodore bought the chips, though you won't find any mention of Yamaha in the literature.



The Expander plugs into the cartridge port of the C64 (or 128), and has three connectors. The first is a phono out for connection to amplifiers (though you can listen to the signal through your TV or monitor), the second a cartridge port which will accept the forthcoming MIDI interface, and the third an edge connector for the keyboard.

Once you've loaded the software, you can play the Expander in three ways: using the QWERTY keyboard (impossible), using a clip-on Music Maker keyboard overlay (difficult), or by connecting up the forthcoming Music Sales mechanical keyboard. This luxurious Italian item is a full-size, five-octave device with good feel and fine finish – enough, in fact, to make you think you're playing a real musical instrument.

So, as soon as you've chosen your method of play and arranged amplification, you load the software from disk and play away. The main screen display shows a music stave, on which any notes you play are shown instantly. Above this is the option menu.

The first option is Setup, which allows you to select the keyboard control modes: normal, single finger chord, fingered chord, keyboard split, split point, and transposition. If this selection gives you the idea that the Sound Expander software is meant to emulate a Casio keyboard, you'd be right; the emphasis is very much on quick and easy playing.

The second menu allows you to select the synth voices, of which there are 30 on the first disk, all of them slightly modifyable by changing their algorithm. Similar in character to a DX9's presets, the Expander voices include piano, vibes, chimes, strings, clavinet, synths, and some engaging novelties such as a swooshing Alien. All the voices have the clarity and brilliance synth players have come to associate with FM sounds, though bear in mind you'll need decent amplification to appreciate them. The ensemble option gives even better sound with four-note polyphony.

The next option is Rhythm. As a bonus, the Sound Expander has percussion voices built in, though these are little better than the drum sounds of a midrange portable keyboard. The pre-programmed rhythms include Pop, Rock 'n' Roll, Reggae, Disco, Country and so on; fortunately, not too many of the common Bossanova/Cha-Cha/Beguine type.

The fourth option is the unusual Riff Machine. This consists of a series of pre-programmed bass, rhythm, chord and lead sequences, which can be combined into tunes up to 256 bars long simply by loading

them from disk, and then pressing the appropriate keys. Unfortunately, you can't play along with these computer-controlled masterpieces, so this isn't exactly the most useful feature on the Expander.

The last option is the disk menu, which allows you to load new voices, riffs, and demos.

The Sound Expander costs £99. For your money, you get the benefit of FM sounds, but you do need either the forthcoming keyboard or MIDI sequencing software to get the best from them.

Second device in the Music Sales series is Sound Sampler, and a surprisingly good one at that. Given a selling price of just under £70, you might be forgiven for thinking this plug-in module is an expensive toy, but not a bit of it; it's a usable musical instrument that offers decent-quality monophonic sampling and a range of digital delay effects.

Like the Sound Expander, the Sampler plugs into the cartridge port of your 64 or 128. It comes complete with a plug-in microphone, but if you're going to be fair to the unit, you're better off using a more sophisticated mic. There are controls for input volume and feedback on top of the module, and a phono output. Again, there's a cartridge port for the forthcoming MIDI interface, though no direct keyboard connector.

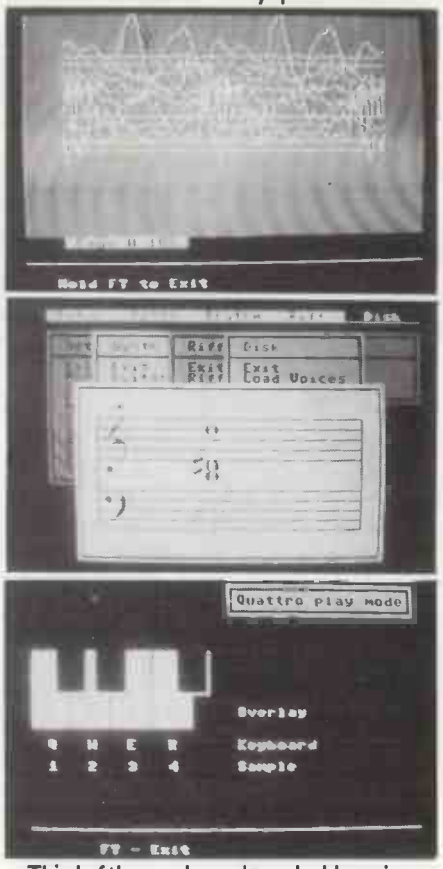
To say that the sampler software is easy to use would be something of an understatement. On the left-hand side of the main display is a bar chart showing the input level and trigger threshold, which you adjust using the Commodore's function keys. Select Sample, bark into the microphone, and you can play your funny noises back immediately via the QWERTY keyboard or Music Maker overlay. Sampling quality is reasonable – though no figures are given – and sampling length is about one-and-a-half seconds.

Having made your sample, you can call on a number of menu options with which to modify it. You can display a Fairlight-type mountain plot (which is pretty to look at but doesn't offer the opportunity to perform waveform editing), set a repeat on the sample, reverse it, or alter the start and end points. Not unexpectedly, these options allow you to tidy up your sample, and make it a good bit more 'playable'.

Now we come on to 'Quattro sampling', which is not a soft-drinks testing routine, but a multisample option for short percussive sounds. You can make as many as four samples, and play them back either using the keys Q, W, E and R, or using the Quattro Sequencer. This is hardly a 'professional' feature: the sequencer allows you to arrange your four samples in patterns of 16 beats only, with pauses if you wish, and play the pattern at a range of tempi from 1 to 28. If you want different time signatures, pattern variations or pitch changes – forget it. There are two demo files of percussion samples on the disk, though ironically (and rather irritatingly) these are themselves taken from digital drum machines.

The Sampler's last feature is the Effects page. Here you can select one of eight real-time harmonising effects, which can make you sound like Donald Duck or the man in the Denim adverts, depending on which treatment you select. Actually, the Feedback control offers some mildly fascinating effects, and there's also an Echo option, which provides delays of between 20 milliseconds and 2 seconds, and a repeat function adjusted by the Feedback control. Quality is fair, but control limited.

Overall, the Sampler is an excellent and inexpensive introduction to the technique, with the software's all-too-obvious failings being, I suspect, insurmountable given the limited amount of memory space in the C64.



Third of the newly-packaged add-ons is a piece of software called Sound Studio software, which uses the by now familiar menu and window routines to provide sound synthesis and sequencing on the SID chip. At under £15, the Sound Studio takes over many of the synthesis capabilities of the now updated Music Maker software, and allows you to enter up to six monophonic lines of music in step time or real time. These can then be edited on a step-by-step display, and played by three voices of the SID chip and three voices of a MIDI instrument, with the help of a suitable interface.

Along with the existing Music Maker software packages, clip-on keyboards and playalong albums of pre-recorded popular tunes, the Sound Expander, Sound Sampler and Sound Studio show just how much can be done with what is only a rudimentary home micro, with no more than a modicum of computing power and comparatively little in the way of memory. None of the Commodore packages is usable in a strictly professional environment like a recording studio, but there's no reason why their capabilities can't be used for their novelty value. And in any case, the *real* value of this range is that it encourages existing computer owners to do more with their machines than just play games. After all, today's Space Invaders player is tomorrow's FM programmer (it says here).

And there are more music add-ons in the pipeline. Like sound library disks for the Expander and Sampler, FM voice editing software, a music composing program similar to that of Yamaha's CX5, the MIDI interface, the full-size keyboard, and so on. Keep an eye out for them, and look out, also for bargain packages comprising a 64, cassette deck, Sound Expander and keyboard, and selling at a ludicrously low £199. First batches should be in the shops by the time you read this. In addition, there'll soon be a complete system available at under £330, and an expansion system for under £150.

Eventually, Music Sales intend to produce a single unit that'll include four-voice polyphonic sampling and editing, mixable and fully programmable FM sounds, a sequencer and a comprehensive set of MIDI functions. Unfortunately, the humble 64 and 128 won't be able to take the strain – the machine *this* awesome package is intended for is the Commodore Amiga. ■

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TRANSATLANTIC TRENDS

The UK music scene is often justifiably accused of being too parochial. But with acts from the other side of the Atlantic breaking new ground in most areas of music-making, it's about time we paid attention to the way things are done 'over there'. We talk to two keyboard-based bands, one American, the other Canadian, about what makes them sound different.

MR MISTER

Interview by Tim Goodyer

To most people, the name Mr Mister has become familiar only recently. But the American band that swung their way into the UK's hearts with the infuriatingly catchy 'Broken Wings' and its follow-up, 'Kyrie', have actually been doing the rounds in their homeland for some ten or more years now – albeit with varying degrees of success.

The band's line-up is conventional, with vocalist/bassist Richard Page taking his lead from keyboard player Steve George, guitarist Steve Farris and drummer Pat Mastelotto. But for a Stateside outfit, there's a lot about Mr Mister's sound that's unconventional. There are questions that need answering, which is why I find myself sitting with Page and George in London's plush Royal Garden Hotel, the day after their one and only British live appearance at the Marquee.

Page instantly declares war. 'I hear the British press are pretty hostile (pronounced "hostle") towards American bands.'

I suppose he's right, really, and as he later agrees, the UK music scene spawns a lot more innovation than its American counterpart. I make a few casual remarks about the difference between E&MM and the music weeklies, the initial reservations are overcome, and a brief history is quickly forthcoming from Page.

'We've been in Los Angeles on and off for about ten years now. I first moved there when I was 18 believing that "a certain guy" was going to make the band that I had, and I'd be a millionaire. That lasted about three months. So I moved back to Phoenix with my tail between my legs, where I first met Steve. After a year at college I moved back to LA again, called Steve up and asked him if he'd like to start writing with me, which he did. So we spent about three years starving and still nothing happened.

'Then we got a deal for the band (then called Pages) and released three albums. That was basically a band of studio musicians which eventually dissolved because nothing really happened – except that we started to see some money at last. Anyway, about three years ago we got together with Pat and Steve, got on well, and put an album out as Mr Mister.'

That LP was Mr Mister's first, entitled *I Wear the Face* and released in mid-1984. The follow-up, currently on release and called *Welcome to the Real World*, went platinum in the States and spawned the successful 'Broken Wings' and 'Kyrie'. Together with a tour supporting Tina Turner, these successes gave Mr Mister sufficient

impetus to cross the waters and take on the British record-buying public.

Our conversation drifts toward equipment. It turns out George now numbers amongst the growing ranks of the QX1 following, though the hi-tech Yamaha sequencer wasn't used in the recording of the LP, being a recent replacement for the Roland MSQ700 the band used on both singles. And regardless of his enthusiasm for his new toy, George has obvious reservations about it.

'At first sight of the manual it seemed like it was going to be a nightmare, but after I'd spent a couple of weeks with it, it became quite easy. It's laborious to program, in that the four modes you have to keep jumping backwards and forwards between keep saying "Executing Now". But once you have everything in there it's great – especially live, where you can have entire songs with the sequences already set up. It's a great tool, and I'm sure we'll be using it to write with in the future.

'Still, my all-time nightmare is being on stage in front of 20,000 people, pressing the button and the sequence doesn't show up. The idea of disk storage worries me – if you get a speck of dirt on them...oops! I've got the disks all backed-up, but on the road, the unit itself could go down.

'I actually don't think floppy disks are going to be around much longer. Hard disks aren't very roadworthy either, so they'll probably be replaced by some sort of RAM cartridge.'

At this point Page has a comment of his own to add.

'What are we doing, why don't we just get back to plugging in and playing?'

Is he serious?

'I think, to a degree, I'm starting to feel swallowed up by all the technology. It seems to me that the most important thing about it is the trap people fall into. They end up relying on technology for technology's sake, and using it because it's there. The creative way to use it is to use it with your musicianship to make it sound that much better, and to constantly make something new out of it. We're already thinking towards the next album and we really have to

have something new. You hear so much drivel, you know, the same synth sound or sequenced bass you've heard everywhere.'

Too true. But there's more.

'It took us three hours to get our stage set up yesterday, and Pat in particular has rows of Simmons stuff, and leads everywhere triggering sequencers and everything. Really it starts to feel a little stiff – we can *still* get up and play, and make it sound great, but all the preparation bothers me. I think technology is such that things will begin to be scaled down, so, eventually, we won't need all that equipment on stage.

In an effort to begin the scaling-down process, George is already using a Roland MKB300 mother keyboard and a comprehensive selection of rack-mounted sound units alongside his more conventional keyboards.

'I'm not using a weighted controller at the moment because I haven't found one that feels all that great. A lot of them have a very sloppy, sluggish action like the Yamaha KX88. To me the Roland weighted keyboards feel a little bit better, but that's just my opinion. I'm presently using mine with a Yamaha TX816 and a Roland MKS30. On stage the QX1 controls my DX7 for things like the bass part on 'Broken Wings' and Richard just sings over the top of that – it's much too hard to sing and play at the same time!

'I have an old Prophet 600 which sounds great MIDI'd to the DX7; the combination of the DX and a nice warm analogue sound gives some good combinations. In fact, most of the sounds we use are a combination of analogue and digital synthesisers.

'I also have a Yamaha CS80 that I used to use on stage, but the roadies didn't appreciate it too much. I still drag it out in the studio every once in a while, though, because there are one or two things it still does well.

'It's actually a very simple setup at the moment, but now that I've got a little bit more money to spend I'm sure it'll be getting more complicated. Who knows where it's going to end?' ▷

Even if he's uncertain of the future of technology in general, George seems sure of the direction he wants his own musical development to take: 'I don't have a Synclavier, but I'd like to get one! Although it's a lot more expensive than the Fairlight I think it'll do a lot more.'

"I'm starting to feel swallowed up by the technology. People end up using it for its own sake, and you hear so much drivel: the same synth sound or sequenced bass you've heard everywhere else."
Richard Page, Mr Mister

Well, it's all right for some. *Everybody* dreams of owning a top-flight computer music system at some stage, but only a few people – like George – actually stand much chance of having those dreams realised. For the rest of us, there are more immediate technological problems, like trying to get a DX7 to sound different from everyone else's. George has had a go at this, too, but not for long.

'I haven't done very much programming with the DX yet – it's *real* complicated. At the moment I'm still altering the presets, though there are a couple of sounds that I've come up with on my own. I haven't delved into it a lot because it's very time-consuming, and that can be a problem...'

'...Especially if you have kids', interjects Page. 'They're always trying to pull the plug out on you!'

Not all Page's observations are this light-hearted, and his concern for the survival of music in the technological jungle is a sincere one.

'There's so much mediocrity about today. Certain producers can take an ordinary song, or even a bad song, and make it sound incredible with modern production – but it's still a bad song, whether it sounds good or not. Similarly, a good song can get mangled by technology or production. One nice thing is that all this new equipment can't write music: it still can't write a good song!'

Although the Marquee gig is the only chance the British have had to see Mr Mister in action this time round, there are plans afoot to return after a world tour which will take in Canada, Australia and Japan. By the time that happens, there should be another album to promote as well.

The interview comes to a premature conclusion when Page and George have to rush to a Radio Luxembourg interview, and then on to *Saturday Live*. But our meeting closes on a lighter note than the one on which it started.

'You haven't asked us the obvious question: where the name came from', observes Page.

"My all-time nightmare is being on stage in front of 20,000 people, pressing the button and the sequence doesn't show up. The idea of disk storage worries me, but on the road, the unit itself could go down."
Steve George, Mr Mister

'OK then, where did the name come from?'

'I'm not telling you', he says with a smile. 'We tell everyone a different story, anyway.' ■

SAGA

Interview by Annabel Scott; photography by Matthew Vosburgh

'You can be really huge in Canada and nobody's even heard of you anywhere else'. Sobering words from Jim Gilmour, keyboard player and songwriter for Saga, one Canadian rock band which has joined the (short) list of those able to claim international success.

We last looked at the band back in January 1984 after the release of their album *Heads or Tales*. They've followed this up with *Behaviour*, still on Polydor, and a more varied set which includes sampling, complex MIDI linking and electronic percussion in its instrumentation. But *Behaviour* retains all the facets of the Saga sound which have given the band such a devoted following – a smooth but powerful feel, good melodies and cryptic lyrics.

On the subject of lyrics, Saga have matured beyond the Space Rock connotations of their early days. Gilmour in fact joined in time for the third album, commenting that 'it was difficult for me to make much of an impression on the band at first. I'd been studying music and left college to join Saga, and before that I'd just been in copy bands. Writing my own songs only came gradually.'

In fact, Gilmour jumped in at just the right point, as Saga set off on their first European tour supporting Styx. Up to that point, life for the band had been difficult.

'A band can have great success in Canada, and do nothing anywhere else. We have bands that sell 300,000 albums in Canada, and that's a lot of albums because 50,000 is a gold record over there. Platinum Blonde and some others are huge there, but not too well-known outside. We were fortunate to break in Europe.'

So are the problems of Canadian rock just to do with the country's small population?

'I'm not sure what the problem is, but for one thing there are only 22 million people there. There's just not the market, and for a while Canadians didn't believe in their own bands either. The attitude was: "you haven't made it anywhere else, so you can't be any good".

'On the last Canadian tour we did, we only played the East coast. We played Toronto, which is our home town, we played Montreal, we played Quebec City and a couple of places further north. You can do a tour of Canada, but if you look at all the big cities...'

At this point Gilmour snatches a map of Canada which is handily lying on the desktop, and gestures to the icy wastelands of the north with some frustration.

'Just look at this! Calgary to Regina is a thousand miles! In the States you can go a couple of hundred miles and there's a big city, so it's much easier to organise a tour. In Canada it's very expensive to tour the whole country.'

Getting out of Canada is a matter of finance as well, as Gilmour found on his first tour with Saga.

'We went on tour with Styx and played everywhere including the Hammersmith Odeon. That's what got the ball rolling, but when you want to break somewhere in Europe you have to pay the headline band you're touring with. In the States it's the other way round, but we paid to go on the Styx tour and since then we've helped a number of other bands in the same way.'

The early Saga albums have dated a little, especially in the area of keyboard sounds. But the 1982 live album *In Transit* still stands up well. Gilmour explains how the keyboard setup developed up to that point.

'There had been two guys taking my part in the band before I joined, and singer Mike Sadler and bassist Jim Crichton have always played some keyboards, too. When I came in I brought my Yamaha CS80 with me, and the band already had the Polymoog which tended to give them their sound.

'There weren't that many polyphonic synthesisers around before that time, and they'd got hold of one of the first Polymoogs. Before that they'd been using a Minimoog and creating chords with it one note at a time, so being able to play chords on the synthesiser was something wonderful.

'But when I get hold of the early recording now I think: "my God, this is horrible!". It sounds so thin, though it was OK for backgrounds and a lot of the songs were written on the Polymoog.

'I changed the sound of the band when I joined because I brought the CS80. I was also using a Fender Rhodes piano, but I got rid of that fairly soon and added a Minimoog, while Michael had a Multimoog on top of the Yamaha CP70 piano.

'We had a Jupiter 8, then I got into the Memorymoog and at one time we had three on stage. Michael has a JX3P now, and the Multimoog is used for basslines on top of the Jupiter 8. After the Memorymoog I got the PPG Wave 2, one of the first in Canada.'

Gilmour's setup has changed again since that stage, but we'll look at the current combination later. Before that, it's worth thinking about the band's musical influences...

'I was a classically-trained player, and although I liked jazz I couldn't really play it. I think some of the classical influence subconsciously comes out in the band, but no-one else in the band reads music so there's no point in me writing out a part for them.

'I can write music, but you don't really need that for rock 'n' roll. I was always interested in bands like UK and Yes which used very complex time signatures. But in Saga it's not really like that: everything is more or less in 4/4, though there's some counterpoint going on that makes it sound more complex.

'I've always admired players like Eddie Jobson, and albums like *Close to the Edge* which have three bars of 4/4, two of 4/5 and so on. Sometime I'd like to do something like that...'

Whatever experiments Gilmour would like to make with Saga's style, there's no doubt the band's sound *is* changing. Part of the reason is that on *Behaviour*, they used MIDI extensively for the first time, even having MIDI/sequencer retrofits to their Memorymoogs for the purpose.

'I still love the sound of the Moogs, but on the whole they haven't been very reliable. I used one MIDI'd up on *Behaviour*, but this is the last time I'll take it out on the road.

'For this tour I've got a pair of Roland Super Jupiter modules and a pair of Planet S modules, and an MKB1000 mother keyboard to control them. It was between that or the Yamaha KX88, but I liked the feel of the Roland better. Obviously I'm used to a firm action, being taught on piano, but I didn't have much trouble getting used to a plastic synth keyboard as well.'

Gilmour's on-stage performance is quite complex. Often, he's taking quite independent left and right hand parts, originally on different keyboards but more recently on either side of an MKB1000 split. The upper modules in his racks play all the upper sounds, the lower modules all the lower sounds, and for the sake of spontaniety, the sound memories aren't arranged in any order – he has to remember the right numbers for each pair of patches.

The Memorymoog and PPG aren't tied into the MIDI system on stage, and usually it isn't necessary to load up new PPG samples during the set since one multisample will hold all the necessary sounds. To round off the keyboard setup, Jim uses a Moog Liberation 'for the poseur solo' on 'Humble Stance' from the first album.

Most PPG, Memorymoog and Super Jupiter owners nowadays could be expected to have a DX7 in there somewhere – but Gilmour is the exception that proves the rule.

'I've never owned one. I know when you start programming it that you can get great things, but who has the time? I've got the PPGs and it's so easy to get original sounds on them compared to a DX. Also there aren't so many people using the PPG, whereas with the DX7 you find everybody uses the same sounds.

'I did use a DX7 on one song on *Behaviour*. That was the first time I'd used MIDI, and at one point we had about 13 keyboards and included the DX7 because it was in ▷

"I want to do some more experimental music outside the framework of Saga, but it's difficult to make that sort of thing successful commercially. I may end up putting some vocals on it and going for a deal with a major label." *Jim Gilmour, Saga*

▷ the studio at the time.'

In the past, Saga's sound has been based on the classic heavy guitar, bass and drums, but under the influence of Gilmour's hi-tech setup, it seems likely there'll be some impetus to examine other fields such as sequencing or sampling.

'I did some sampling on the PPG Waveterm – mainly some vocal things, a few sound effects and reversed sounds. But we haven't gone into it too much yet, and I don't use the sequencer at all.

'I don't mind sequencers in their place, and we've been using the Roland MSQ700 in the studio. But I prefer to play parts when I can. There's nothing so complicated in the band that I can't play by hand, and in the past when we've tried to program things into sequencers, it's always turned out quicker to play them.'

Gilmour's use of sequencers has mainly been confined to a small studio owned by Saga drummer Steve Negus. The studio's an eight-track affair with a decent selection of outboard equipment, and Jim and Steve are currently working on individual projects there.

'I've wanted to do some more experimental music for some time outside the framework of Saga', Gilmour confides. 'But it's very difficult to make that sort of thing successful commercially. We may end up putting some vocals on it, and then going for a deal with one of the major labels.'

A couple of days later, at the Hammersmith Odeon, Saga were playing to a capacity audience. The makeup of that audience emphasised the band's wide appeal: a few heavy metal hairies, of course, but an astonishing number of young accountant types in shirts and spectacles, a disproportionate number of young ladies who knew the words to all the songs (surely they can't all have been there to ogle Michael Sadler?) and even a few mums and dads.

A few treats were in store, too, with the band playing sections from all the 'Chapters' (interlinked sci-fi songs which occur throughout the early albums), Sadler playing a solo on a suitcase Simmons kit accompanying Steve Negus, and Gilmour's closing Moog Liberation solo.

Saga won't be around in the UK for a while now, so you've missed out on a chance to catch them live. But if you can get hold of *In Transit*, you'll hear a really impressive example of modern techno-rock – the way they do it across the Atlantic. ■

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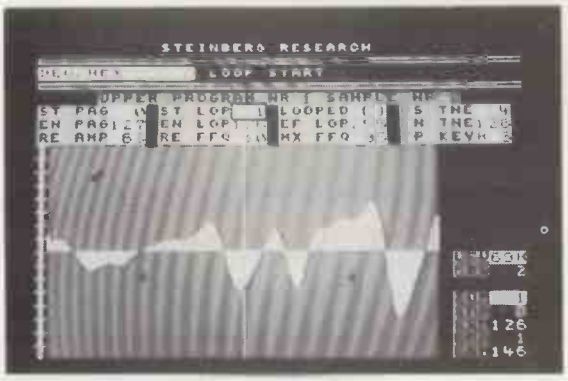

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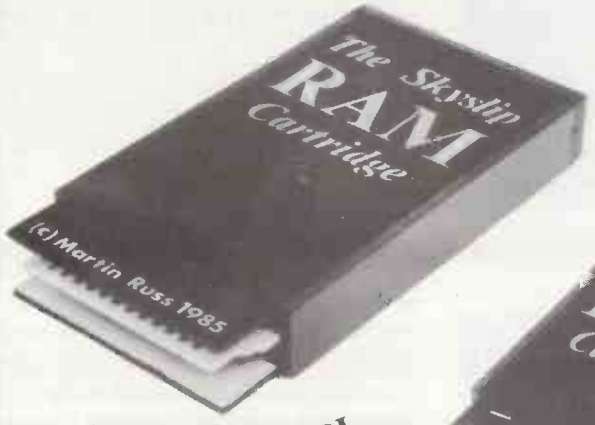

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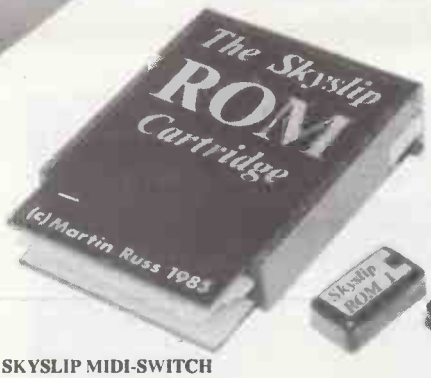

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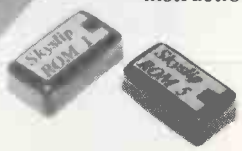

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AMUSEMENT ARCADE

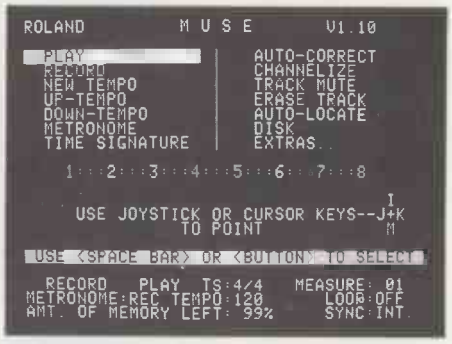
It's taken Roland a while, but now they've come up with some competitive-looking music software for host computers musicians are likely to own. We preview the company's MUSE and MPS composer packages. *Annabel Scott*

No doubt about it, Roland have taken a fair while to get involved in the software business. Until now, they've been content to allow Sequential, SIEL and others to develop sequencing, sound-editing and similar software packages, and stuck to their guns in improving dedicated, stand-alone bits of hardware like the MSQ range of sequencers. Some would say Roland have been wise to hold back, as some of software's earliest supporters have had their fingers burnt trying to market awkward, under-developed packages to a music business too conservative to look any deeper than the first menu.

But now, a couple of years after MIDI software packages started to appear, and with the benefit of experience gained by others, Roland are taking their first tentative steps into the minefield that is the software market. Most of the impetus for the move seems to have come from the States. Certainly the MUSE (MIDI Users Sequencer/Editor) and MPS (Music Processing System) packages have a definite stateside bias, developed as they've been by Roland DG in America, and running as they do on Apple, Commodore and IBM PC home computers.

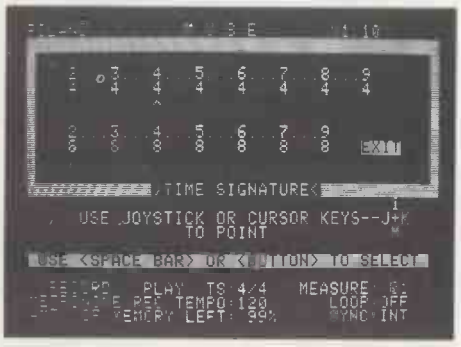
To be precise, you can MUSE along on an Apple II+ or IIe (64K) with an MIF-APL card and Roland MPU401 interface, or MPU-APL internal interface. Alternatively, you can do the same with a C64 and a Roland MPU-C64 interface. Disk drive and monitor are compulsory, as are MIDI-equipped instruments of some description. Joysticks, however, are optional.

MUSE is an eight-track real-time composing package with a capacity of around 6000 notes per song. You can of course store finished songs to disk, and you can edit any measure of any track with a 'cut-and-paste' function. As with many recent packages, MUSE is designed to simulate a multitrack tape machine in some ways, with facilities labelled Auto-Locate, Punch-in, Overdub and Track Mute. Unlike a tape machine, though, the system also offers Time Correct, Merge, Insert/Delete/Move/Copy per measure, Looping by track or song, Track Transposition, Filtering of aftertouch, program change or mod wheel data to save memory, optional Metronome, and Tempo Save. But if you *do* want to combine MUSE with tape, note that there's no tape sync facility on either the MPU-APL or MPU-C64 interfaces, so you'll need another black box somewhere along the line.



MUSE Screen 1

MUSE Screen 2



MUSE Screen 3

The MPU401 interface has been around for a while. It's a paperback-sized unit with MIDI In, two MIDI Outs, Sync, Tape and Metronome Out, Tape In and a multipin connector to the computer card. It's an intelligent unit which usually takes over some of the handling routines from the computer, allowing it to get on with the business of recording and playing.

The computer card to the MPU401 can be inserted into any of the Apple's rear panel slots; after the title page, the MUSE software asks you which slot is in use. After this you come to the Command Screen (Screen 1).

It's handy to use a joystick to move around from one function to another, and usefully, the present tempo, time signature, measure number and other parameters are all displayed along the bottom of the screen.

Once the cursor is placed over a function, you click the joystick fire button or push the space bar to activate it. If you want to enter new numbers you can use the joystick, I/J/K/M keys or number keys, and selecting Record takes you to a new window (Screen 2), with the bottom half of the display being as per the Command Window. Point to a track number, click the joystick, and then either set up the number of measures to be recorded, or just start recording and stop by hitting the space bar. If a pattern has already been recorded, your new first measure can start at some point in the middle of that pattern. In either case you get a two-bar count-in, and MUSE drops out of record mode after the requisite number of measures.

Tempo, as we mentioned, is programmable from 20 to 240 BPM, and the selected tempo is saved to disk with the other song information. Up-Tempo and down-Tempo features allow you to alter the speed by 1 BPM, and the Metronome function allows the metronome to sound during Record only, Record and Play, or

neither.

Time signature, again, is stored to disk, but you can't mix time signatures within a song, which seems slightly limiting – all those old Yes songs you wanted to cover go straight out of the window. Still, you can console yourself by playing around with Auto-Correct, another window for which the top half looks pretty much like the example in Screen 3.

Logically enough, this display refers to timings from quarter-notes, through eighth-note triplets to 32nd-note triplets, but as with most other packages, the auto-correct is a little on the irrevocable side, so it's best to copy a track before attempting any auto-correction.

When tracks are recorded with MUSE, they play back on whatever MIDI channel they were entered on. 'Channelize' allows you to change these MIDI channels, and the independence of channels is preserved even after you've merged tracks, which is good to know.

Auto Locate starts the music from any measure number you enter, while the disk saving routines are pretty routine.

Going through the 'extras' section briefly, you can remove aftertouch, patch-change and even modulation information by switching on the appropriate filters in the interests of saving memory, and can select either a Song Loop (based on the longest track) or a Track Loop (in which all tracks loop independently regardless of length, good for creating Terry Riley-style systems music). You can transpose a track up or down by 12 semitones, but since this function can be repeated, the range is effectively limitless.

Sync mode determines whether you're clocked from tape (FSK 24ppqn), MIDI or Internal, while Merge allows you to combine two tracks to any other, taking a few seconds in the process. Similarly you can copy a track to an empty space, or append it to an existing track or series of tracks (Copy/Chain) or append it from certain bar numbers only (Copy/Edit). Copying and editing uses up memory because it duplicates patterns rather than just setting up pointers to repeat them the way the MSQ700 does, so you may find yourself having to wipe out the originals to save memory once they've been copied.

'Anybody can learn to use MUSE in just a few minutes', claims the handbook, and it's certainly true that it takes longer to set up all the plugs, leads and interfaces than it does to get your first sequence to play back on the system. And as the handbook points out, you don't have to limit your creative flow to a certain number of measures at first – you can play along and just hit the space bar to drop out of Record mode.

Of course, ease of use isn't enough to make you want to buy a sequencing system. But some of the MUSE's other fine points include the Channelize function, the ability to alter the MIDI playback channel (which most hardware sequencers lack), and the fact that you can record MUSE files into an MSQ700 or similar hardware sequencer for live performance when you're happy with them.

And it wouldn't be fair to say that MUSE has any serious bad points. It's easy to learn, it performs reliably (a little more slowly when you're nearing the memory capacity), and it has a good selection of user facilities such as Auto Correct, Looping, Chaining and so on.

On the whole though, MUSE is short of a few fashionable bells and whistles, and gives the impression of being a couple of years old. If you're buying from scratch it doesn't compare favourably with the Steinberg Pro16 package running on the Commodore 64, though if you already have an Apple II, MUSE is a good bet. ■

"It takes longer to set up all the plugs, leads and interfaces than it does to get your first sequence to play back on the MUSE system."

MPS, MUSE's big brother, is based on the IBM PC, a computer found in many front-rooms in the United States. Now, the USA is a country in which two-and-a-half-thousand pounds is a reasonable amount to spend on a computer music system, and in which the Kray Supercomputer is presumably regarded as a small business system.

Sarcasm apart, it must be said that the IBM PC is far from being a home micro in the UK – it's very much a business machine, albeit a successful one. So successful, in fact, that IBM happily allow other companies to bring out 'compatibles' (copies) because they know that every copy serves to establish their original design more firmly.

So it's possible to save money by buying an IBM copy such as the Qubie machine mentioned below, the Compaq or the Olivetti M24.

The cost of using MPS is still pretty substantial, though. To run the system you need something like a Qubie PC (£1517) or the real McCoy (around £3000); plus a Roland MPU401 interface (£149), a Roland MIF IPC card (£75), and the software itself (£595). You'll also need one or (ideally) two disk drives, a monitor, and an IBM-compatible dot-matrix printer if you need it. And even if you use a mono monitor, the computer needs a colour output card (the whole display can be set to any of 16 colours). A 640K computer will give you 65,500 notes' capacity – the minimum requirement is 256K, though you need 320K for cut-and-paste editing of the high-resolution printouts.

So how does MPS work? Basically it's an eight-track polyphonic composition, editing and printing system, recording in real time and offering enormous cursor-driven editing potential, all via the eighth wonder of the musical world: MIDI. As on many other packages, lengthy pieces can be recorded and chained in a Song mode and edited in Score mode, while the Print option is a relatively simple one that allows you to transfer individual phrases (but not entire songs) to paper.

In Song mode, MPS gives a display of eight tracks (each of which can contain polyphonic MIDI information on all 16 channels) and a ninth Conductor track which holds tempo and time signature changes. Many simpler MIDI packages don't allow you to change tempo during the course of a piece, but MPS is more versatile – a phrase which could be used time and again as we examine the package.

Any bars with music recorded are ►

MUSE's big brother *is Music Processing System for IBM PC, costs just under £600, is shown here among Roland gear with which it is compatible*

► reversed out on the display, but it's necessary to go to another function to find out which MIDI channels have been used.

Each section recorded is played in real time from a synth keyboard connected via the MPU401. The IBM's Function keys are used to call up various, er, functions – F10, for example, allows you to alter the Auto Correct value from eighth-notes and eighth-note triplets up to 32nd-note triplet resolution.

Any music recorded goes into a Phrase Buffer which allows you to store, recall and transpose individual phrases to and from disk, and to copy and edit them independently. You can change the MIDI channels of a phrase or apply a general MIDI channel offset from the original values to clear a few working channels. It's also possible to insert a phrase (newly recorded or lifted from disk or from Score mode) at any point in any track.

"With MPS, very few keys are called into action, and tracks can be selected, overdubbed, merged, temporarily muted and auto-corrected with commendable speed."

In the unlikely event that you feel you need to save memory, you can strip incoming notes of velocity or pitchbend information, and it's recommended that if you intend to do any auto-correction, the pitchbend information be recorded separately and merged later – simply because pitchbends are often applied just before a note is played and tend to get confused if any auto-correct changes are made. Similarly, you're advised to auto-correct phrases to clean up their beginnings and ends if you want to append anything to them.

There are a whole load of options involved in moving and combining phrases. You can merge phrases, but this destroys the source track, so you need to save it to disk if it's likely to be needed again. It's possible to separate information on different MIDI channels even after you've merged tracks, though this involves re-plugging the MIDI Out to the MIDI In of the MPU401.

More than many 'user-friendly' systems, MPS is quite an approachable beast. Very few keys are called into action in day-to-day operation, and tracks can be selected, overdubbed, merged, temporarily muted and auto-corrected into a finished piece with commendable speed.

As on an analogue tape machine, you can punch in and punch out of a recording, choosing the length of your count-in and your starting bar. Tempo can be altered with the +/– keys or typed in numerically, and tracks can be transposed individually or together. Transpositions aren't permanent until they're stored to disk, unless you're in Score Mode.

The velocity (volume) level of each track can be set at any value from 0-255, and a recent update allows you to switch the MIDI Song Pointer function on or off. This allows the package to tell external devices which point in a score it has reached, so MPS is capable of synchronising to SMPTE equipment via a Roland SBX80 or something similar. This means, of course, that in a lengthy composition using several tape machines or sequencers, you don't have to start at the start of the piece on each overdub if you want to keep the machines in synchronisation. MPS can also be synchronised to tape or MIDI, so it's far from a 'professionals only' package in that respect.

Other recent changes include the sending of All Notes Off (Poly) data at appropriate times to cure the tendency of some synths to drone on after the end of a piece.

Before you make a master tape of your composition, you might want to have it scored on paper. You have to format the Score Mode resolution – to 16th-notes, say – and define the time signature, and I can foresee this process causing a few unwanted changes if people don't auto-correct everything properly. This is where the Edit and Clean functions come in – it's possible to pick up and change any note with the cursor, then Clean the phrase to close up any gaps you've left (these may not necessarily sound over MIDI, but they do mess up your lovely neat score).

"Ever created a 32,000-bar composition? This could be your chance, though MPS only allows you to see 80 of those 32,000 bars at any one time."

Actually, the Score mode has several clever functions, like Assume, which looks at the length, MIDI channel and velocity value of a note you've edited and 'assumes' that subsequent notes have similar values. This sort of function is invaluable on a system as powerful as MPS, because if you had to take care of all its possibilities individually, you'd be up all night.

You can add ties and other notation, change the gate length of notes for added expression (particularly good for bass passages), alter the stems on notes (though the automatic assignment of stem directions is already very clever), move notes slightly to clarify big chords (this doesn't sound over MIDI), insert accidentals and even lyrics. An update to MPS (usually available at a nominal charge to registered users) adds an icon designer for coda, repeat and other signs.

The Print mode places as many as four staves of up to six bars on one sheet of paper, carefully avoiding cutting bars in half. As is the norm with scorewriting systems of this kind, printing is pretty slow, and as mentioned above, can only cope with one 'phrase' (which admittedly can be very long) at a time. But by the time you've finished a 32,000-bar composition, you'll probably be ready for a cup of tea while it prints out.

So, MPS is an enormously powerful software package that's also speedy in use. It's also expensive, no question about that. But look at the opposition. Most of the dedicated alternatives (QX1, MSQ700 and so on) are nothing like as powerful. There *are* other computer-based composition systems, but those for cheaper micros like the Commodore 64 and Apple are slower and less accessible, while those for the IBM PC, Apple Mac and Atari ST are (or will be) unlikely to cost much less than MPS.

Where MPS falls down slightly is its lack of a good demo piece on disk to show off its capabilities. With luck, MusiCalc (who are distributing MPS) will make one available soon; until then, the system's only demo is a score printed in the handbook.

To accompany MPS, Roland have launched the SJE, an IBM editing/library software package for the Super Jupiter module which comes with a huge number of factory sounds, plus the ability to store sets of two sound banks to cartridge and one to the synth. If you can get hold of DesqView from Quarterdeck, you can use it to make MPS and SJE reside in the computer simultaneously, thereby creating an enormously powerful sound creation/composition system.

Another possible way forward is to get a good IBM emulator package for a cheaper computer such as the Atari 520ST. It's not clear whether such a package will allow other computers to run MPS or SJE, or indeed how you'd load the software from a 5.25-inch disk into a machine that uses the 3.5-inch variety. Worth thinking about, though.

In the meantime, Roland will be pleased to give a comprehensive demo of MPS and SJE to any interested parties, and to advise on which computer to pick, which accessories are vital, and so on. Evidently, MPS has a lot of potential for expansion and the sort of external interfacing denied to other systems, as well as being a damn clever system in its own right. If your studio is in this league, you can't afford not to consider it. ■

Prices *MUSE £180; MPS £595; both RRPs including VAT*

More from *Roland UK, Great West Trading Estate, 983 Great West Road, Brentford, Middx, TW8 9DN, ☎ 01-568 4578; or MusiCalc, 17-19 Alma Road, Wandsworth, London SW18, ☎ 01-870 9912*

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MUSIC FOR PIANO AND VOICE

From Belgium comes the multi-talented Wim Mertens, a contemporary music composer with a nice line in repeating piano patterns, sampled acoustic sounds, and Renaissance singing. It's a curious mixture, but it works.

Interview *Simon Trask* Photography *Matthew Vosburgh*

Belgium. Land of flat fields, good lager and... almost nothing of any musical interest at all. Try writing down the nation's contributions to this century's musical development, and chances are you won't need a second postage stamp. The most Britons ever see of Belgium's native music is the latest aberration perpetuated in the name of Eurovision harmony. And just imagine what would happen if *we* were judged on the likes of the Brotherhood of Man and Mary Hopkin...

But there *is* musical life in Belgium. More specifically, there is a brilliant young systems composer by the name of Wim Mertens – though it says a lot for established channels of communication that I first heard of him through his book on American minimalist composers Young, Riley, Reich and Glass.

Mertens' own music, it turns out, has an affinity with that of Glass and of Michael Nyman, but clearly he has a voice all his own, compellingly lyrical without being trite or sentimental, a pure, precise music that's often haunting and starkly beautiful. A comparison with the still perfection and 'removed longing' of Renaissance painting and sacred music is more apt than it sounds, but at the same time, Mertens couldn't have developed as he did without the music of the minimalists. Repetition is important for him, and his arpeggiated style is reminiscent of Glass'.

The composer visited these shores recently to give a solo concert (piano and vocal) at the ICA in London, and it's there that I am introduced to a soft-spoken, reserved man whose frail appearance gives no clue to the powerful performance he's to give a few hours later.

Fast-talking he is not (Flemish is his first language and it doesn't help), and I'm glad time is on our side. But his opinions come across as being carefully considered. More than perhaps any other quality, Mertens displays an ability to *think* at great length about music – both his own and other people's. Yet it seems the Belgian's contemplative days are all but over.

'From the ages of 20-28 I thought a great deal about music, and I was a musicologist and I wrote the book. But I am not going to write any more about anything in music. That verbal side does not really exist, it is not alive in me any more; I'm *never* going to stimulate that side of me again.'

Mertens is now 32 years old. He began composing what he terms *his* music quite recently. In fact, he's able to pinpoint the exact date: May 29, 1981.

'We're going to have a small celebration in Brussels: my fifth birthday!' he adds wryly. It was on that day that he created 'For Amusement Only', a mixed-media performance 'for two Bally pinball machines, pre-recorded tapes, microprocessor and video' – an oddball mixture, and one Mertens hasn't attempted to use since.

A little while later, he formed an ensemble – Soft Verdict – in the Reich/Glass tradition. Since its formation, the group has played his music in France, England, Italy, Belgium and Japan. But while many people mistake Soft Verdict for being a regular line-up, Mertens is at pains to stress that it's a free-floating aggregation of musicians, a

flexible arrangement that's necessary because Mertens' instrumentation doesn't bear much resemblance to that of a 'band'.

Five years of composing have brought six records, with a seventh due out in three or four months' time. Mertens tailors the record format to the amount of music he wants to produce: thus he's made two albums, a double album, a 12-inch single, a 7-inch single and a mini-album. Individually, his pieces can last anything from two-and-a-half to 19 minutes.

Mertens was not a latecomer to music, though. His education began at the age of eight when he took up studying classical guitar, piano and theory at music college, and ended at the Brussels and Gent Conservatoires, where he studied piano and musicology. Yet although he composed music from the age of nine or ten, Mertens never studied *composition* – a fact he considers important to his own subsequent musical development.

What he did study was European music after World War II, which meant coming to grips with the heady delights (and frustrations) of Stockhausen, Boulez, Berio and the rest of them. This was the predominant 'new music' at the time, but it was not a music which inspired Mertens.

Instead, he turned to the music of the American minimalist composers, travelling to the States on several occasions and submerging himself in the artistic life there. He participated in the New Music America festival in Chicago in 1982, producing a cassette of interviews with and performances by such composers as John Cage, Meredith Monk, Glenn Branca, Robert Ashley and Harold Budd.

Back in Belgium, he began championing the cause of 'minimal' music, recording concerts for Belgian Radio and Television (where he works as a musical producer) by the likes of Philip Glass, Steve Reich, Terry Riley, Gavin Bryars and Urban Sax.

'The real influence the American composers had on me was that I was convinced I should start making my own music', he says.

'One reaction I had to America was that there was a lack of personal style and identity. I feel that if you have some sort of personal aspect, you can develop your skill much better. Nowadays too many people are working in such different ways, with each piece being a "new" piece, using new techniques and so forth. That's very much against my own feeling, which is to retain a clear style and identity.

'Now I'm seeing that I should be looking back to the roots of music in my own country. I'm convinced that I don't want to make a world music, or a third world music. I don't want to be influenced by Indian music, Balinese music or African drumming.'

More than this, Mertens sees no future in currently fashionable 'culture clash' music, and feels it's a mistake for the media to try to bring different musics together. 'Instead I want to look back into my own heritage – the material I'm discovering will provide its own techniques of composition. That's my approach.

'I think it's more relevant and realistic today that one person can only present their own situation. There's no aim for an absolute truth any longer. I'm just aiming for my own truth.

'There's the same problem in Belgian pop music. There's a very active scene, but no real identity. Pop musicians there make the same mistakes as composers who take compositional techniques from India or from Africa, because they adopt the techniques and the gimmicks of American and British pop music. So there's a lot of confusion. I really think you have to wait until you can connect with your own background. Although I've composed since the age of nine or ten, I was nearly 30 before I started writing my own music.'

Does Mertens think the present confusion has anything to do with instrumentation?

'The fact that people throughout the world are using DX7s creates a very new situation. The evolution of instruments and their techniques influences very much the kind of music people write. So if a certain commercial market presents these instruments all over the world, then obviously they will influence people in Africa or in Japan, say. But of course, it is also normal that instruments which have developed step by step in a particular location will be used there better than they will somewhere else. If you bring electric guitars to Africa, which has happened, then their use there is less interesting than in Britain or in America.'

The heritage Mertens refers to is that of 15th and 16th Century Flemish music, and it's an interest that stems from his earliest musical memories of hearing his father sing in church, where the sacred music of that time is still performed. Significantly, he's not so much interested in the structural aspects of the music as in its feel: 'a sort of clarity in the top voice, for instance, which really takes you away from the ground, as if you have a view of eternity.'

This influence is clear in his own music, providing one of its most distinctive and appropriately uplifting qualities. 'Vocal' lines are given either to the soprano sax, or to an early-music-trained voice.

Does all this history-book studying mean Mertens is looking for a national music?

'No. There is no such thing as a national situation any more. Music has much more to do with how you touch certain things, with very basic human values which go further than national situations and problems.'

And even though American minimalism played a significant part in shaping Mertens' career, he has a few harsh words to say about that genre, too. His main criticism ▷

▷ surrounds minimalism's 'anti-personal' mood, a symptom of the style's emphasis on process rather than personal expression.

'I always find that every single musical line, every motif, every melody is such a fragile thing, carries such important information. Melodies should be treated with care, not just be part of a process. You should treat them as being very closely related to yourself, try to refine them, to develop them; it's a life's work.

'But at least the minimalists stay honest to themselves, which is the important thing. And they are great masters, all of them.'

So systems music is OK as far as it goes. But how far afield does Mertens think the style's influence has been felt? Steve Reich's first tape piece 'It's Gonna Rain' has been called the first rap record, while more realistically, Kraftwerk's systems-influenced material has in turn influenced early electro dance music...

'I think that maybe developments in popular and classical music happened at the same time. It's not that pop musicians *must* have been influenced by developments in the classical world. I think maybe people like Jean-Michel Jarre and Klaus Schulze simply wanted to express a mechanical approach to music. It's more of a synchronous development in different areas – something's in the air, and it can be translated into different musics.'

Times have changed, undoubtedly. At one time it was trade routes and wars that defined the paths of artistic evolution. Nowadays, mass communication means artists in all fields are subject to a plethora of cultural and social influences, not least from their own work.

'What kind of feedback did Bach have?' muses Mertens. 'He would hear, say, a cantata of his just once, plus maybe a few rehearsals, and with that information he would go on to write a new piece. But the feedback for a composer today involves records, recording studios, critics, reviews...all of which determine what he will do in his next piece. Whether or not a piece is recorded, for instance, and if so the way in which it is released, will affect him, will affect his final product. That's how things work, and that's what determines whether a composer becomes relevant for his epoch.

'I accept living with these conditions: the only question is how to deal with them. You can do many different things, and you can and should react. I decide, for instance, what output I want to give, what I want to tell you: I won't tell you something that will harm me personally or musically.

'But this situation creates an enormous problem for many people – for pop musicians particularly. The way they're treated... In that sense I am quite happy that my music is not so easy to categorise or define. Maybe that's why I draw together different elements in my music, to give me some space: it's a kind of tactic.'

As already mentioned, Mertens is well aware of the effect a new instrument can have on the music a composer writes, and much of his own music is written for familiar acoustic sources: the piano is prominent, along with soprano sax, clarinet and harp. Now he sees himself moving further toward a vocal style, away from the keyboard. He uses synthesised textures rarely, and listening to his music, you could be forgiven for thinking the synthesiser had passed him by completely. As it turns out, this is far from being the case. Mertens is acquainted with a great arsenal of modern keyboards: JX3P, DX7, Jupiter 8, Jupiter 6, and Prophets 5 and 10 of the synth breed, while on the sampling front, the Mirage, Emulator II and Synclavier II have all passed through his hands.

The Synclavier Mertens dismisses as 'very good but too complicated', and mutters something about a 'bad experience' which he refuses to elaborate on. The EII comes up trumps in his books, but the Mirage doesn't fare so well. 'It's not so good over a wide octave range. I tried multisampling a Steinway piano over three or four octaves and it just didn't sound good enough'. Each to his own. Mertens seems to judge his hi-tech instruments on their ability to sound acoustic, and nothing I can say will change his mind.

So what role do these hi-tech instruments play in Mertens' music if they don't appear on his records? Does he play them in the bath? Well, not exactly.

The Belgian places himself 'in the tradition of written music', so his material is always fully scored out before he enters the studio. He then gets his engineer to program accompaniment parts into a Roland MSQ700 (an MC4 in pre-MIDI days), selecting patches or samples similar to the intended acoustic instrumentation. These parts are then laid down on multitrack tape, after which Mertens gets in his performers to replace them with the 'real thing'. Occasionally he combines samples with acoustic instruments, but only rarely do synths appear in the final mix.

Mertens considers his approach 'a way of working with a limited number of musicians', which slightly puzzles me. But the warning gong has been sounded, and we must draw to a close. Mertens mentions that his technician works a lot with voice expanders now. 'I think these are the future: the keyboard is not needed any more.'

But he is adamant the piano will live on. 'What is it about the piano that you can't get from a synth?' I venture innocently. 'Everything', comes the helpful reply. 'I can take you much further with a piano than I could with any synthesiser. You will trust me much more, and you will go easier along with me tonight while I play on piano. It's much more convincing for you that I play on piano.'

And in the evening, Wim Mertens proves his point. His playing style makes full use of the piano's unique resonant properties, as he eschews the more easily imitated (and more commonplace) percussive approach. As for his Renaissance-style singing, the sheer power of expression it contains is a wonder to behold, as much for its dynamism as its uniqueness.

I keep returning to Mertens' records. It's more than a temporary fascination. His music combines accessibility with substance and a strikingly individual voice which deserves to be more widely heard. And I'm more convinced than ever now. There is *life* outside of the mainstream, and some of it is breathing in Belgium. ■

DATAFILE

Discography

For Amusement Only (1981) TWI049
At Home/Not at Home (1982) TWI046
Vergessen (1982) TWI092
Close Cover (1983) TWI154
Struggle for Pleasure (1983) TWI189
Maximizing the Audience (1984) TWI480

All available on Les Disques du Crepuscule, distributed in the UK by Rough Trade

Book

American Minimal Music (London: Kahn & Averill; New York: Alexander Broude Inc, 1983)

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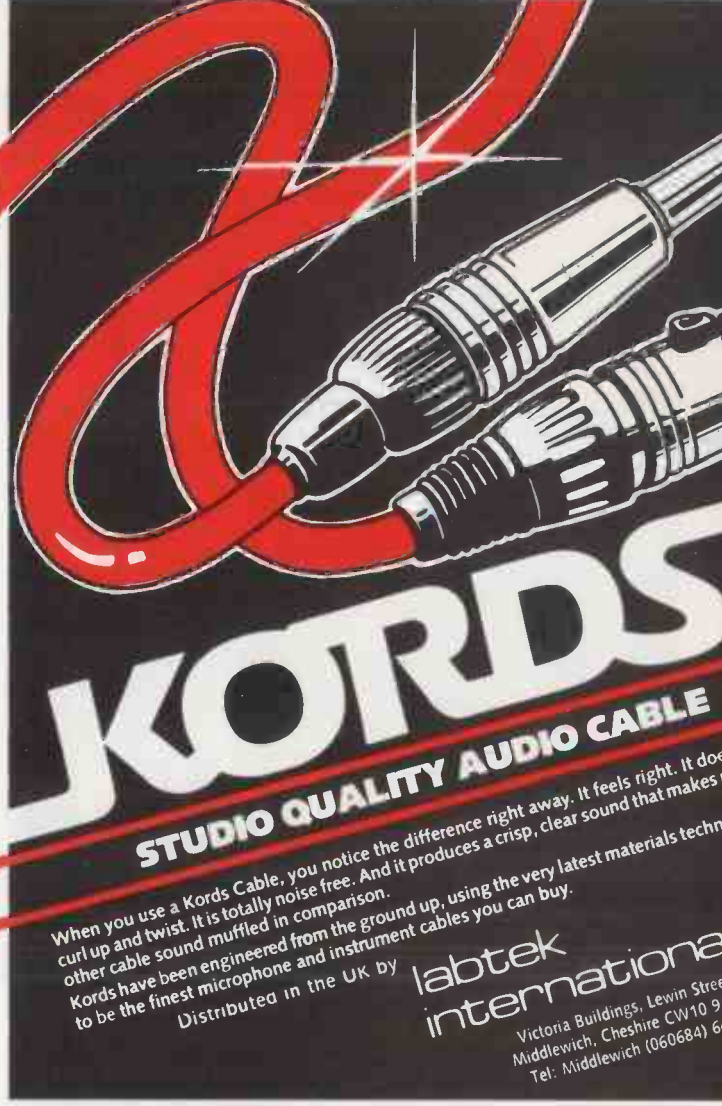

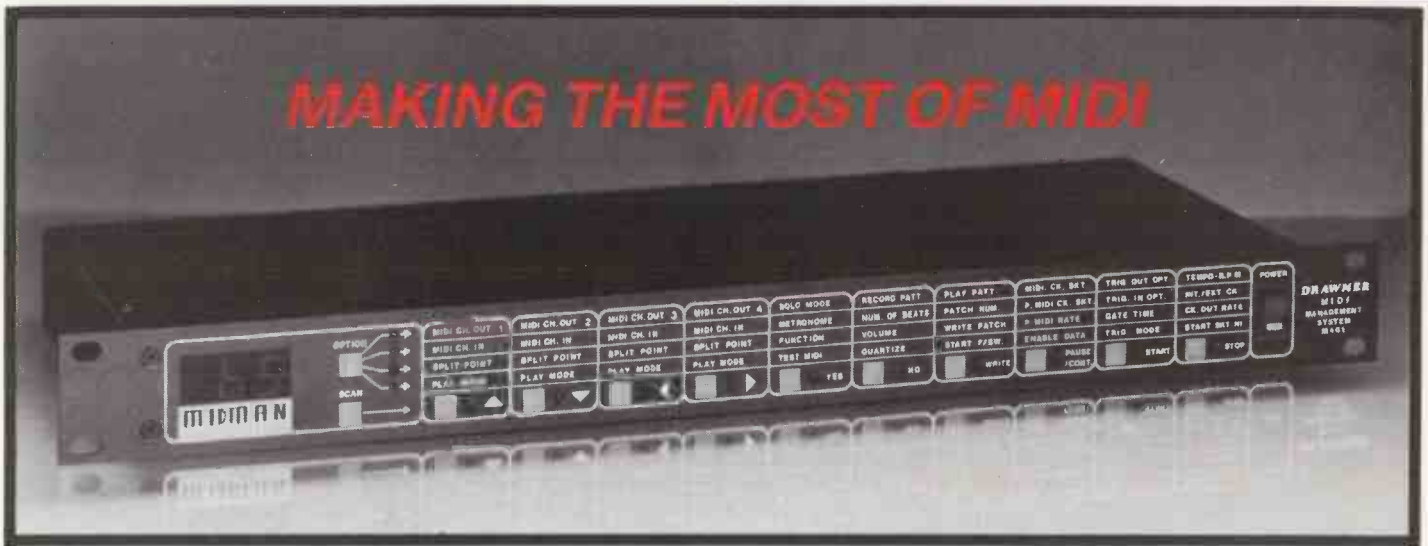

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PROPHECY FULFILLED

After previewing Sequential's first digital synthesiser two months ago, we take a trip to the company's California HQ to find out what it's really like. Our findings are conclusive: Vector Synthesis is a winner. *Pete Schlesinger*

Some simple but appetite-whetting press releases, a couple of all-too-brief trade show demonstrations, an advert or two, and some natty blue and black casework. That was all I'd seen of the Prophet VS, up until a recent visit to Sequential's closely-guarded California headquarters. It had been enough to get my mind racing as to what the new machine might be capable of, but in retrospect, it did little to prepare me for the sheer size of the leap between the VS and every other 'affordable' polyphonic synthesiser you care to name.

Four oscillators per voice to start with (even Moog, in their heyday, only ever got up to three), and separate envelopes for volume, filter and oscillator mix. Useful additions to the synth player's arsenal, even if they weren't accompanied by major innovations. But they are.

Most obvious of the innovations is the joystick, not a newcomer to synth ergonomics by any means (Korg have been using them for years), but in this incarnation, a vital new tool that allows an unprecedented degree of real-time control over harmonic content, during both performance and programming. In the latter, you use it to adjust the mix between the four oscillators, either for creating new waveforms, or for defining the five possible levels in the new Prophet's 12-parameter envelopes. And if those envelopes aren't comprehensive enough, any portion can be repeated a fixed number of times or continuously.

A host of other niceties is available onboard the VS, including what must be the most sophisticated arpeggiator ever seen on a synth (more on that later). But before discussing these, it would be churlish not to describe the way the VS goes about generating sound.

Vector is a term borrowed from Cartesian mathematics, and is used to describe a line not just in terms of length, but also with reference to the position of its start and end points. These would normally be specified as x-y co-ordinates, and the length and direction of the vector is deduced by subtracting the end co-ordinates from those of the start.

What has all this got to do with synthesis? The connection comes from the fact that there are four sound sources to be mixed together in real time, while notes are sounding. Ordinarily, mixing two synth oscillators together is easily accomplished using a balance knob or lever, so achieving a mix of four oscillators is simply a matter of splitting the task into two groups using two levers. Or is it? Not really. You still need some way to control the relative mix between the two groups, and this can be accomplished by mounting the two levers on different axes of the same device, so that two separate parameters can be altered interactively, as it were. Korg have been fitting a control for this purpose for years, as an alternative to the two wheels that most manufacturers use for pitch and mod control. It's called a joystick, and computer-game addicts will probably be intimately acquainted with its advantages: you can move in two dimensions when the aliens are after you. Well, there are no extra-terrestrials lurking inside the VS (though some of the sounds have an unearthly quality), but the principle is the same. Using a joystick, you have complete control over the levels of four oscillators simultaneously. This is done by placing one oscillator at each corner of the diamond-shape through which the joystick moves. These are labelled A, B, C and D in the west, north, east and south corners respectively. When the joystick is pushed hard up against any corner, you hear only one oscillator. In any other position, you hear a mix based on the distance the joystick is from each oscillator's corner. The nearer it is to a particular corner, the louder that particular oscillator sounds.

What's more, the position of the joystick can be used to mark the start and end points of transitions between one mix and another. This is how the mix envelope is programmed, as we'll see later on. First, though, let's look at the waveforms each oscillator can generate.

The VS comes with 128 waveform storage locations, of which 96 are factory preset and 32 can be over-written by the user. The first and last of the factory presets are old friends – sinewave and white noise – so you won't be completely at a loss.

More traditional, harmonically satisfying waveforms like sawtooth and pulse shapes are also offered, but all waveforms are identified solely by a number, so you need to be able to recognise the *sound* of traditional waveshapes if you want to use them. This may sound a bit silly, but the manual rightly points out that 'as they were created and are edited by ear, there is no point attempting to discuss the specific harmonic content of the ROM waveforms'. This refers primarily to waveforms whose shape cannot be conveniently described by such colourful terms as Sawtooth and Square, but in my view, there's no harm in approaching all the factory preset waveforms without the pre-conceptions imposed by names.

Amongst my own favourites are some wonderfully spikey-sounding numbers, reminiscent of the sort of thing you'd normally need Sync or Ring Mod to achieve, as well as mellower-sounding shapes for people who don't have my taste for the filthier, more distorted side of synthesised life. There are plenty of good starting points for strings and brass sounds; and as it turns out, the filtered string factory preset is possibly the most beautiful synthetic string sound I have ever heard.

More intriguing than all this, however, are the waveforms that allow you to create sounds which *don't* fall into conventional musical categories; waveforms with harmonic contents that aren't possible to create using analogue or FM techniques. No reasonably-priced synth has ever offered such a wide range of waveforms as a starting point for sound-generation. And the best news of all is that this process is very quick and easy to use, and the results can be heard in real-time (ie. as you make the changes).

This is how you actually go about creating your own custom waveforms. Using the Oscillator Select switch to cycle round the four oscillators, assign each one a Wave Number and a harmonic multiplier which doubles, trebles, or quadruples (and so on, the choice is yours) the fundamental frequency.

Now comes the difficult bit. Grasp the joystick firmly between thumb and forefinger, and move it about until you hear something you like. Now press Store and, miracle of miracles, you've just created your own unique waveform.

This delightfully straightforward process belies its own flexibility. In reality, there are several ways of using this procedure to create sounds that are individual to you.

If you feel additive synthesis represents the ultimate in terms of purity of method, assign a sinewave to all four oscillators, giving each a different harmonic number. Then you can vary the levels of all four harmonics (choose from any between the fundamental and the 32nd harmonic) using the joystick, and hear the results as you go. Because the four oscillators are independently controlled, the VS' processor doesn't need to compute the waveform each time a change in relative levels is made. Thus the VS' additive synthesis capacity is more instantly accessible than those of mortgage-priced systems like the Fairlight, though it must be stressed that the Prophet can only deal with a maximum of four harmonic levels simultaneously. To add progressively more harmonics, you simply save the combination of the first four in one of the user locations, and then, in the next stage of editing, place that waveform on one of the oscillators and use the other three to bring new sinewave harmonics into play. This process can be repeated any number of times to build up as complex a sound as you like.

If you haven't the stamina to build up everything from scratch like this, fear not: you can take a shortcut by using the joystick to select four different wave numbers, any of which can be either preset or user-programmed. In this way, you can take advantage of complex waveforms that have been created in advance, and quickly combine them into a new waveform. Programming buffs will readily appreciate just how easy it is to spend *hours* fiddling with the VS joystick, learning about how sound is made up and, with luck, creating some interesting synth voices in the process.

When you've finally selected the four waveforms you want to use (decisions, decisions), you can use the joystick as a performance control to mix them together while you're playing. Alternatively, if you don't fancy yourself as one of the new generation of synth-playing virtuosi, you can control the respective levels via the mix envelope. Setting the varying levels of four oscillators could have been quite a long-winded procedure, but fortunately, Sequential have managed to press the joystick into service here, too. All you do is waggle the joystick to set the mix you want at each stage of the envelope, whilst playing the keyboard to hear how the harmonic content changes through time.

If setting five distinct mixes to occur during the course of a note isn't enough, you simply invoke the next Sequential innovation – looping envelopes. All you have to do is select the envelope stages that you want to loop between, choose the desired looping mode – forwards or backwards/forwards – and away you go.

Essentially, looping envelopes can be seen as programmable LFOs which give you the ability to define specific and complex waveshapes to control your modulations. And these 'custom LFOs' can also be used to govern the VS' more standard analogue components, like the Filter and Amplifier sections. The accompanying illustration shows how the various looping options affect the resulting envelope-LFO hybrid.

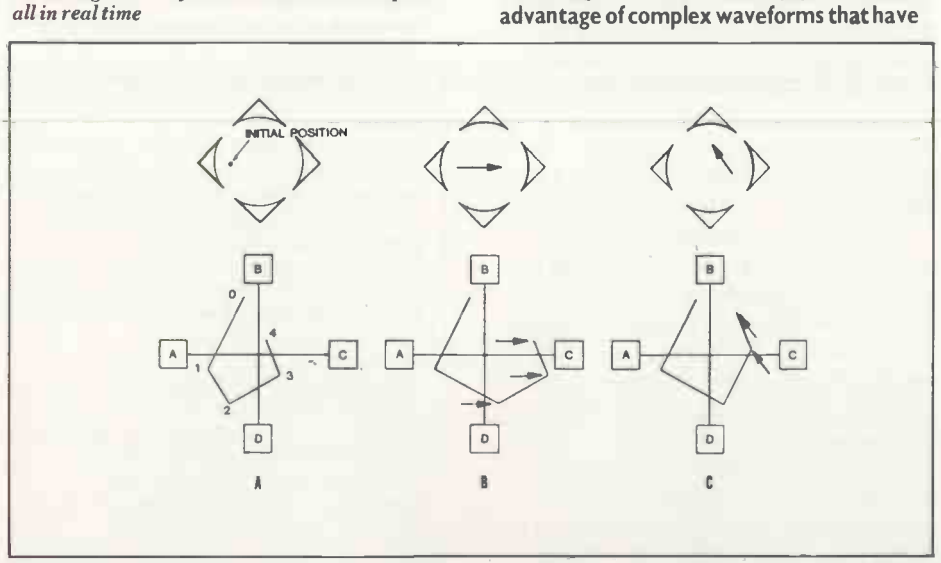
To cure old-timers' moans about mercurial digital synthesisers not having good old analogue filter sections on the end of them, Sequential have provided each VS voice with a Curtis filter that will sound very familiar to anyone who's spent any time at all with the Prophet 5 and its relatives.

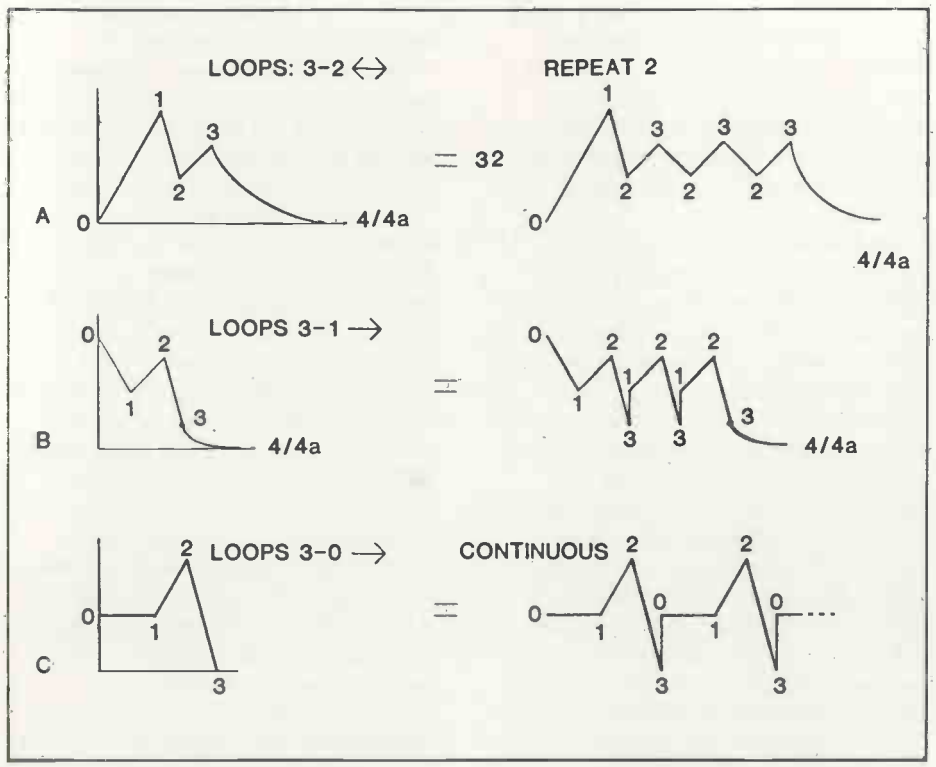
Using the new Prophet simply as an old-fashioned four-oscillator synth running through a butch four-pole filter, you can make sounds which put old standard analogue polys from the likes of Moog, Oberheim and even the old-look SCI in the shade: punchy synthetic brass and silky, sweeping strings can be quickly conjured from the VS, with all the warmth and depth you'd expect from a high-ticket analogue synth.

The conventional ADSR envelopes normally associated with the better analogues have been expanded to the same 12-parameter, five-stage versions which the mix envelope uses, but don't worry: standard ADSR shapes are easily produced.

But the most exciting aspect of the VS is the sounds you start to obtain when you make both the analogue *and* digital sections ▷

Joystick position *on VS front panel is used to specify five mix envelope stages, as well as balancing between four oscillator waveshapes, all in real time*





Envelope looping *is affected by setting different loop stages and directions*

of the instrument work for their living. Get four interesting sounds up on the oscillators, create a dynamic mix of them using the joystick to set up the mix envelope, stick a nice bold filter-sweep on top, and you've got the best of both worlds. I couldn't leave it alone...

In addition to all this, a wide variety of modulation options lies within the VS' configuration: two LFOs, velocity, pressure, keyboard track and mod wheels can be routed to control almost everything on the machine from pitch and filter cutoff through mix and amp levels to stereo panning and chorusing. The number of possible combinations of sources and destinations produced is enough to keep any self-respecting synth programmer in transports of delight for at least a couple of months (*doesn't sound like enough to me – Ed*).

All I can really do, in the space available here, is give you a taste of what's available by looking at a few of the more instantly appealing configurations.

To start with, stereo positioning. This is one of the new territories which the VS explores for the first time. Each patch can hold its own stereo setup, which can range from a split patch being sent left and right, to spectacular auto-panning effects – though with a much finer degree of positional control. You can, for example, specify a pan position for the sound to start at, and then use an LFO or the filter envelope to move it around that mean position. Or you can use additional keyboard pressure to suddenly move everything to the left. Or use keyboard position to place the sound in a more 'natural' stereo spread.

These stereo facilities come into their own during live performance, and although their studio usefulness is limited by the fact that most stereo instruments are ordinarily shoved through two separate input channels on the mixing desk, their complex assignment possibilities ensure they never become redundant.

The Prophet's built-in chorus unit has programmable depth and rate parameters, and both of the latter can be controlled from things like the mod wheel and pressure-sensitivity – very expressive. That's as far as the section goes, though, which is a bit disappointing when you consider Korg are putting a fully-fledged, patch-programmable DDL inside the Poly 800II, which sells for just over a quarter of the VS' price.

When you've finally stored your patch, you can combine it with other patches in several ways. To access two programs simultaneously, you have to 'Link' them together. When you've done this, you can decide whether you want to use the two programs in a Split or Double format. The Split mode is fairly straightforward, but Double has a couple of nice features that represent an extension of the Stack mode on the Prophet 2000. You can detune the secondary or Linked program from the first by a certain number of cents, or delay the Linked program by a certain number of milliseconds. The most obvious use for this is Linking a program to itself, to provide further fattening-up or echo effects respectively; but why limit yourself to the obvious?

Sequential more or less invented MIDI, so you'd expect the VS to be well-equipped on that score. It is. Apart from standard facilities like MIDI clock, pressure, program-change and so on, the MIDI feature to look out for is the VS' ability to receive small quantities of sample data from the Prophet 2000, or any other sampler which implements the MIDI sample dump spec agreed last year. Now, before you get all excited that the VS can play samples too, I'd better tell you that the length of sample it can accept is only 128 words. However, by sampling the correct pitches (which the VS manual tells you how to do), you can extract a single waveform from a sample and use that as one of the VS oscillators. Potentially, *any* audible waveform could therefore act as a source for new sounds on the VS. And it almost goes without saying that you dump programs and wave data out via MIDI, so the process can work both ways.

Finally on the MIDI front, the arpeggiator recognises and sends all sorts of goodies via MIDI.

Looking back over this review, it's clear that in the course of all this waxing lyrical, I've omitted to mention some of the fundamental facts of the VS' spec sheet. You'll find most of these covered in the accompanying Datafile, but the rather unusual nature of this review does, I think, reflect the extraordinary nature of the VS, an instrument whose innovations are so numerous, they distract you from answering the standard 'how many programs has it got?' and 'how good a brass sound can it produce?' queries that synth players ask so often.

As for comparisons, putting the VS next to most other synths in its price range and trying to make a judgement would belittle its flexibility. Yes, I heard sounds which could have been made by a DX7. Yes, I heard sounds which could have been a PPG. Yes, I heard sounds which could have been a Prophet 5. But more important, I heard sounds I've never heard before, and manipulated them quickly and easily.

In a world where the sampling keyboard can capture any sound that has already been recorded somewhere, what we desperately need is a keyboard that can help us find new sounds. I think the VS is it. ■

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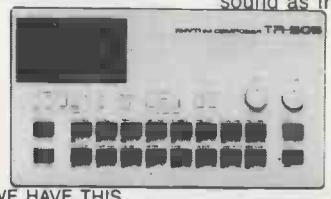

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DODGY PRACTICES

Since time immemorial, musicians have had a peculiar habit of meeting up for a spot of pointless in-fighting, otherwise known as 'rehearsing'. But contrary to popular belief, introducing a little variety and commonsense into those rehearsals can lead to an altogether more rewarding and productive time for all concerned.

Instruction *Trevor Gilchrist* Illustration *Sophie Lawrence-Jones*

OK you're in a band, you're working towards a recording session or you're doing gigs and you've got this practising business well and truly licked.

Everybody in your band turns up on time, *every* time, having brought what they were asked to bring only-last-night-on-the-phone, and you're all bubbling with anticipation at the thought of missing the last episode of *Black Adder* in order to spend an evening tirelessly re-working your established numbers and writing new material. Everyone's looking forward with exhilaration to the prospect of mature and constructive discussions about the band's 'image' and future, knowing that the evening will undoubtedly draw to a close with each musician drifting reluctantly home in a state of mild, creative euphoria to reflect on another job well done...

Sound familiar to you? Thought not.

The truth is, in the *real* world, 'rehearsals' tend not to be the inspiring, motivating or fruitful adventures we all know they ought to be. The majority of them, though arranged with the best intentions, develop into little more than a glorified jam-session, or a good excuse for an argument that results in at least one member of the band flicking the power switch on his Peavey, and storming home in the sort of sulk that would make America's reaction to Pearl Harbour look like *The Muppet Show*.

Having recently witnessed the heats of a local amateur Rock Competition, my eyes have been opened to the fact that a distressing number of bands seem to regard the whole business of rehearsing as little more than a tiresome chore, a poor relation to gigging and recording (the tasty bits).

Maybe you've never really thought about it before, but you're going to think about it now. So just stop *everything*, cease the frantic battering of Octapads, put your Portastudio on Pause, and let you and me take some time out to re-assess a few basics.

Let's start with a monumental home-truth: fail to *rehearse* properly and you'll fail to *perform* properly.

In front of an audience, it means you're going to lose their interest as a result of sloppy count-ins, unrealistically fast or unstable tempos (*tempi, strictly speaking — Ed*), poorly tuned instruments and noticeable confusion amongst the members of the band as to *who* is supposed to be doing what and when. (We've all been there, so just bite your lip and read on.)

By way of example, it soon became obvious at the aforementioned competition that *despite* the venue's tortuous acoustics (the Guildhall, Cambridge is not known for having been designed for rock 'n' roll, just as the Zeppelin was never remembered for being 'nippy about town'), there were still a few bands who managed to do justice to themselves and their music, simply because they'd taken the trouble, at some previous juncture, to discuss and finalise what the other bands seemed to

treat as expendable trivia: namely, their behaviour and activity on stage during and between numbers, general agreement on the most practical tempo for each song, and just who was going to count everyone in each time. What saddened me about almost all the bands was the fact that although I was quite prepared to have any of them paint a smile of delight on my tired lips, I had still, after hours of patient watching, to be actually smiled *at*. 'If these musicians are enjoying themselves', I thought, 'it seems they don't want me or anyone else out here to know it.'

WHY? The answer was simple. Most of the musicians *weren't* enjoying themselves.

Yet the chapter of disasters that occurred (despite the assurances of Friends and Relations that it wouldn't) needn't have happened to those musicians at all. It certainly needn't happen to you, because by arranging a rehearsal, any band can provide itself with the perfect opportunity to *dispel* confusion, to practise and perfect all those 'non-musical' aspects of performance, and as a result, step up on stage with greater confidence and enthusiasm.

In front of a recording engineer, the fact that you've neglected your rehearsals means a different thing entirely. Unlike your audience, engineers aren't there to be entertained, but to do a job of work. If you turn up at a studio with the 'oh, it's all right, we'll sort that kind of thing out when we get there' attitude, you'll simply come over, at best, as a bunch of timewasters.

Never make the mistake of confusing recording sessions with rehearsal sessions. Remember that audiences and engineers are interested *only* in your band's finished product. Go to them with anything less and be prepared to lose face and lose money – two things an amateur band has to be kinda thrifty with at the best of times.

So, *how* do you go about improving your rehearsals?

You can start by re-assessing your reasons for choosing a place in which to practise. Try, whenever possible, to get into a proper rehearsal 'studio'. You'll find that paying for the privilege of practising automatically injects a greater feeling of importance and (dare I say it) discipline into what you're doing. You shouldn't be charged more than about £3 per hour, and you'll often find that for your money you get the use of a resident PA system, or something that you should be able to utilise – even if it's only an extra mic stand. If you don't know any such places, try asking at local music shops and recording studios; not only will they know what's available in the area, they may even have facilities of their own. If those avenues prove unproductive, try asking the members of other local bands where *they* practise. Quite a number of private individuals, usually working musicians themselves, soundproof their garages (most working musicians can't afford cars, remember) and look to supplement their income by hiring it out to bands as a rehearsal room. If you're successful in this direction, try to get some sort of commitment (both from your fellow musicians and from the person who lets the room) so that you'll be able to make a regular booking, say, every Wednesday evening, 8-11pm.

As far as the frequency of rehearsals is concerned, you'll obviously be dictated to by the habits and circumstances of all the individuals involved, but the golden rule to follow is: 'quality first, quantity if possible'. Better to have just one productive meeting a week than several four-hour arguments.

So, you've found a place to rehearse, you know it's going to cost £2.50 an hour, and you've managed to force a nod of approval from your fellow musicians at the suggestion of booking a session every Wednesday evening. What do you do now?

IT'S certainly no use just turning up and expecting things to happen – that's what you *used* to do, remember? So your first move is to sit down with the rest of the band, as far away as possible from anything even resembling a musical instrument, and do yourselves the favour of discussing exactly what it is you want to achieve. You might find it helpful to write this list of topics down and work through them with the whole band:

1 Which other bands do we all like and why?
2 Which other bands don't we all like?
3 Do we like our own band? (It sounds funny but you'd be surprised at how many musicians don't). If not, why not?
4 Of all the bands we've seen, which one enjoys the sort of success/respect/following that *we* would most like to enjoy? Why?
5 What do we think about our own appearance/dress/behaviour on stage?
6 What do other people seem to think of it?
7 What are our strengths as a group?
8 What seems to be the band's weakest link?

Work through a list like this, get some sensible answers, and you'll be halfway toward discovering a comforting sense of purpose and direction, around which you'll be able to organise future rehearsals. If you're going to be successful as a band, even on a local scale, you're going to set about achieving it in those three-hour rehearsal sessions.

It's important, though, that you avoid planning to do too much in any one rehearsal. A good starting workrate is between two and three numbers per three hours if you want to do reasonable justice to each (obviously this will depend on the type of music you play). But, I hear you cry, spending three hours on just three, five-minute numbers is going to get a little tedious, if not *completely* boring.

Well, or course it is, but only if you've forgotten *why* you're rehearsing. Look at it this way...

Why do you go to see a band? Do you take a pair of binoculars and the *Observer's Book of Digital Delays*, to study chord progressions and the application of new technology? Probably not. Whilst such aspects of any performance are often of justifiable interest to most keen-to-learn musicians, what we all really turn out in the cold for is *entertainment*. That's what it all comes down to, regardless of the type of music you're playing. If you still don't believe it, try naming a band in the public eye that's got where it is today by *failing* to entertain audiences.

So, set about rehearsing those three numbers with such an attitude in mind, knowing that you've also got to incorporate the standardising of count-ins, your movements and behaviour on stage, the way you smile, the way you look, the new ways you could be 'communicating' with the audience and/or impressing your sound engineer and, believe me, you'll find three hours will go like three minutes. Which is just how it should be. Obviously, every band has its off days when things don't come together, but you should find them few and far between.

Perhaps most important of all, you've got to work to get the message across to your audience that you want to play for them, not at them. If you manage that, you'll discover the vast difference between a bunch of songs and a performance. You'll enjoy yourselves more, too.

If we are honest with ourselves, we know that our reasons for becoming involved with a band in the first place stem from the uncanny desire to experience the 'pleasure of making music', and the tempting possibility of a little respect/fame/money to boot.

If you want to enhance that pleasure for yourself and your audience, and you really want to gain that respect, don't be content just playing ten numbers one after the other. *Use* your rehearsals to make sure you really put on a show. ■

REMOTE

Oberheim's top-notch MIDI controlling keyboard, the Xk, is well thought-out, strongly

Back in the mists of time (about 18 months ago), a couple of companies introduced the idea of the MIDI controller keyboard, a mechanical device that made no noise at all, but simply acted as a means of controlling machines (expanders) that *did* make noise.

MIDI controller keyboards haven't been a runaway success in the UK, where it seems many musicians still prefer their musical instruments to reside in one box, rather than two or three. But the manufacturers have persevered with the modular approach, and now, expanders are becoming almost as common as their keyboard brethren, while several popular polysynths benefit from being played from a dynamic controller. One advantage of a controller keyboard over a synth or sampler (or even the new MIDI electronic pianos) is that it can allow you to create all sorts of sonic configurations of slave instruments, without imposing its own (inappropriate) sounds. Add to this the fact that designers seem to be getting the hang of what other advantages a remote controller can offer, and the current plethora of new arrivals in this area begins to make sense.

The key to designing an effective controller keyboard lies in devising a system which is flexible enough to be useful, yet isn't too unwieldy to be practical. This is an area in which American companies such as Oberheim and Sequential seem to excel, so it's no surprise that the former's Xk controller keyboard is straightforward to use. Much of this has to do with a sensible front-panel layout, a successful compromise between digital parameter access and the older style of dedicated knobs and buttons. All parameters are listed on the panel and clearly grouped into related functions, with each group having its own LED and a selector button which allows you to loop around all the parameters associated with it. When you've selected the parameter you want, you can alter its value using the numeric keypad and increment/decrement switches (parameter values are shown in a two-digit LED display).

I found myself taking to this system very quickly, and what's so pleasant about using the Xk is that it allows you to do what you want to do with minimum fuss and maximum speed. Which is, after all, no more than you should expect from an instrument that's all about control.

Unlike Roland (MKB1000) and Yamaha (KX88), Oberheim have kept the Xk's keyboard to regular synth proportions, ie. five octaves. However, you can instantly adjust this range up or down two octaves in octave steps, and since held notes aren't affected by the octave change, you can play simultaneously over a wide pitch range.

And you can do a great deal more with this set of keys than you can with most. Two keyboard velocity scales can be selected, allowing you to choose between greater sensitivity in the middle or upper value range, while it's also possible to select the maximum velocity value that can be transmitted. Scales and settings apply to both attack and release velocities.

The Xk shows its Matrix lineage in its adoption of three keyboard zones, each of which can have its own user-defined range from one note to the entire length of the keyboard – so you can split and overlap zones in any way you want. This wouldn't be of much use unless you had some way of distinguishing zones, though, so you can program a MIDI transmit channel (1-16) for each zone.

Xk also allows you to program a patch number for each zone, which means you can send out up to three different patch numbers on three different MIDI channels – which goes some way towards alleviating the usual problems of aligning patches. Included for Matrix and Xpander owners is a facility for selecting single or multipatches, too.

Further zone-programmable features are the number of notes that the zone can play (up to 16), a transpose value (up an octave in semitone steps), MIDI Mono mode on/off, aftertouch transmit on/off, levers transmit on/off, and values for the continuous

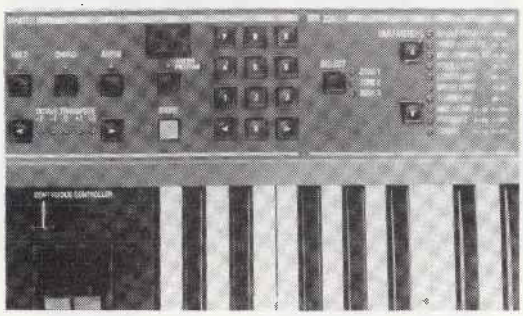
built and offers plenty of handy features. But it faces some strong competition. *Simon Trask*

controller, footswitch and negative lever.

Setting a note limit under 16 for each zone brings the Xk's 'note spillover' system into action: any notes active in a zone over and above the specified amount are automatically sent on the next higher MIDI channel.

Lots of functions, then, but also lots of buttons to press each time you want to select a few of them. To avoid this, the Xk can store complete settings in any of 100 Master programs – equivalent to the Multipatches found on the Matrix synths and the Xpander. Oberheim haven't included the ability to chain these programs together and step through them with a footswitch, though, so it isn't as useful live as it could be. As it is, tapping in a two-digit number can instantly change your sonic configuration from piano, strings and harmonica to dijeridu, organ and gunshot. Being able to choose which pitch ranges these voices sound over, and which sounds respond to performance controllers (pitchbend and sustain, for instance) is potentially invaluable for both live and studio work. And the ability to multisplit a synth keyboard for MIDI data transmission is still rare, so the Xk really scores here.

You want programmable performance controllers? You got 'em. The Xk has two levers, one dedicated to pitchbend and the other programmable



in forward and 'negative' directions, a 'continuous controller' slider, and a single footswitch input. Between them, they can be set to any of the 96 MIDI performance controller numbers, which means you can control any MIDI-introduced effect such as modulation, volume, sustain or portamento. The negative lever, continuous controller slider and footswitch are programmable per zone as well as per Master program, which rather usefully allows you to (say) sustain one of two layered sounds, but not the other.

The Xk also includes arpeggio, Chord and Hold facilities which may be associated with any one of the three zones; you can accompany yourself by playing on the keyboard whilst an arpeggio is playing back. The arpeggio's tempo can be controlled in real time from the front panel, but Oberheim have also included an external clock input designed to interface the arpeggiator with the Click Out (positive-edge trigger) of a pre-MIDI sequencer or drum machine, which might appeal to users of Oberheim's own pre-MIDI gear, for instance.

Hold allows you to sustain up to 15 notes indefinitely (providing you're using sustaining sounds, of course), while the Chord facility allows the notes input using Hold to be one-finger-played as a chord (with suitable transpositions) from any note.

Personally, I'm not sure about this aspect of the Xk's design. While some players will find the arpeggiator useful, I can't help feeling an onboard sequencer (even a fairly straightforward one) would have been a more tempting option.

And it's in the area of sequencing that the Xk poses an interesting problem. Modern sequencers invariably see MIDI recording as being based on a single channel; in other words, any given performance is allocated to one MIDI channel, either at the time of recording or retrospectively. Yet the Xk allows you to play over three MIDI channels simultaneously, with different patch-change and controller information for each channel. So how can you record an integrated multitimbral performance in the way that the Xk allows you to perform it? Tricky one.

Appropriately for a MIDI controller, the Xk allows you to trigger MIDI sequencers and drum machines from its front panel. You can send Start, Stop and Continue codes and MIDI Song Select numbers, but beyond that, you can't control the tempo or the position of a sequence remotely from the Xk, which is a pity.

Also included is the ability to send a MIDI Tune request and an All Notes Off command. The former isn't MIDI's version of *Family Favourites*, but an instruction for analogue synths to tune their oscillators. The usefulness of the latter (which is intended to offer a quick solution to those potentially embarrassing situations where notes are left hanging for some reason) is limited by the fact that not all synths respond to the command; like several other grey areas of the MIDI spec, its implementation was left optional.

For me, the idea of a separate controller keyboard is beginning to make more sense – though only if you've already got enough instruments to make it worthwhile, and enough money *not* to wish you'd bought a synth instead.

The Xk has plenty to recommend it, not least in its happy balance between flexibility and accessibility. Its three keyboard zones, together with the parameters that are definable for each zone, make it more flexible as a controller than any synth I can think of other than Oberheim's own Matrix 12. The plastic keyboard has a shallow travel, is pleasing to play, and responds to attack and release velocity and channel aftertouch – though not polyphonic aftertouch. It won't please the piano fans, but it's nicer than most ordinary synth keyboards.

The problem is that the Xk sells at just over a grand, which is not cheap, especially as it faces imminent new competition from Roland, Akai and Bit. But it's a neatly thought-out and durable instrument, and I wish it well. ■

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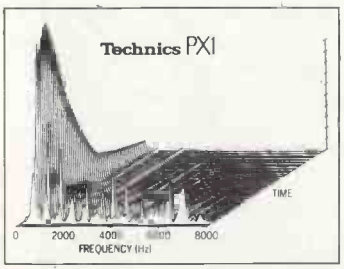

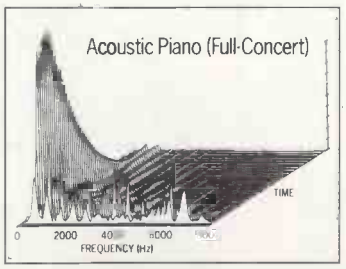

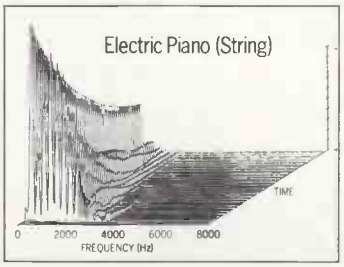

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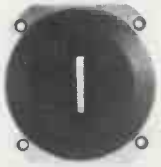

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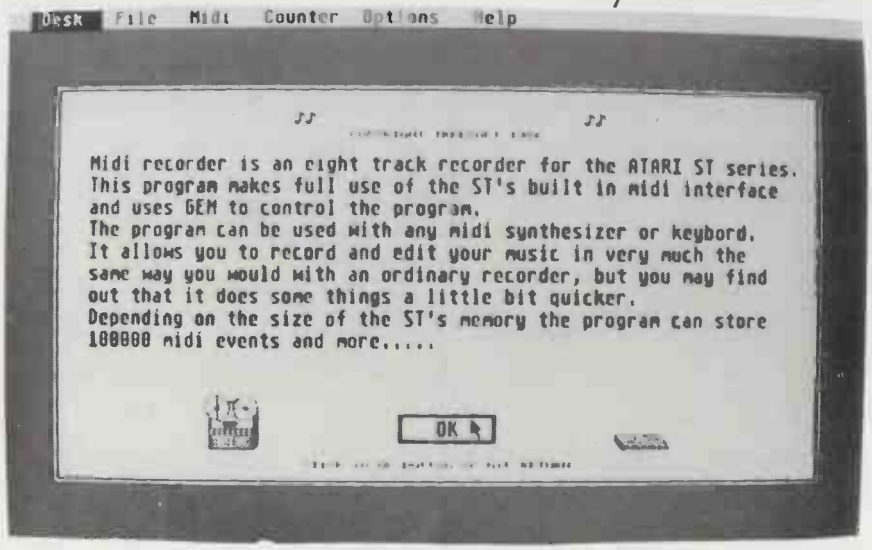

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Checklist

Our unique buyer's guide returns to the subject of electronic percussion for the first time in four months. The listing covers both kinds of electro-drumming device – those you program using switches, and those you can hit – though the dividing line between the two is getting difficult to draw, what with Roland coming out with real-time programming/performance aids like the PAD8 Octapad. It's certain that more such MIDI-based machines will follow, enabling musicians to gain instant 'playable' access to the facilities they've previously had to push buttons to make use of, and giving our Checklist compiling team another headache in the process.

Actually, things have stayed fairly quiet on the electro-percussion front in the last few months. February's Frankfurt show played host to a noticeably small number of new programmable beat boxes, though those that did appear were pretty significant: Roland's TR505 takes the digital voices of the upmarket 707 and 727 to follow on from the company's massively successful budget Drumatix, while the Casio RZ1 becomes the world's cheapest sampling drum machine by a margin of some £2500 this month.

The electronic drum sector has been busier, with two UK companies – MPC and Ultimate Percussion – hitting the headlines for the worst possible reason: liquidation. MPC are now all but dead (though see this month's Newsdesk for info on how some of their technology is being made available again), while the immediate future of Ultimate Percussion was uncertain at press time.

Elsewhere, though, things are looking healthier. Two established acoustic drum manufacturers – Pearl and Premier – unveiled new electronic drum systems at Frankfurt. Pearl's is noteworthy for featuring some nifty new digital hi-hats and cymbals, while the Premier Powerpak is the company's first venture into electronic territory. ■

DRUM MACHINES

AHB

Inpulse One – £1595 Eight-voice digital drum machine. Eight pads for live performance, 99 programmable patterns, 15 songs, trigger inputs, individual voice outputs; 16-voice basic sound library includes bass drum, snare, handclaps, timpani, gunshot, conga, claves, hi-hat. + *Build quality, ease of use, expanding library of additional voices;* – *some sonic disappointments, has been difficult to get hold of – though machine is now in full production;* = *a fine machine that combines editing facilities with real-time playability, sadly underrated.* • *Reviewed March '84.*

BOHM

Dr Böhm – £669 (kit), £949 (built) 24-voice digital drum machine. 180 pre-programmed patterns, 36 programmable rhythms, 8 separate outputs; 2 bass drums, 3 snares, 2 rimshot snare rolls, 12 toms, 2 bongos, woodblock, 2 congas, 4 closed hi-hats, 2 open hi-hats, 4 cymbals, 2 tambourines, 2 maracas, claves, cowbell, handclap. + *Vast range of built-in sounds, kit package gives the soldering-iron crowd a real bargain;* – *bewildering control layout, lack of decent interfacing facilities, ready-built price-tag slightly high;* = *a bit of an oddity these days, but pre-programmed patterns are useful building blocks for inexperienced programmers.* • *Reviewed February '84.*

BOSS

Dr Rhythm Graphic DR110 – £125 Six-voice analogue drum machine. Built-in LCD, mono output; bass drum, snare drum, open & closed hi-hat, cymbal, handclap. + *Superb display makes writing and editing patterns a doddle, unbeatable analogue clap sound;* – *balance control offers only limited adjustment of voice levels;* = *successor to the immortal DR55 and justifiably popular, proves analogue technology still rules the roost at bottom end of electro-drum market.* • *Reviewed March '84.*

CASIO

RZ1 – £349 Sampling digital drum machine. 100 programmable patterns, 20 songs, cassette storage of programs, MIDI sync; bass drum, snare drum, rimshot, cowbell, 3 toms, handclap, open and closed hi-hat, crash and ride cymbals; four user sampled voices (max total sample time 0.8secs). + *Plenty of knobs and switches for the money, easy to use, sampling is great fun;* – *MIDI-only sync facilities, ROM sounds could be brighter, sample memories can't be extended into ROM space;* = *a real breakthrough, valuable for anybody easily bored with preset drum sounds and who fancies sampling some of their own, at a price that's ludicrously cheap.* • *Reviewed April '86.*

E-MU SYSTEMS

Emulator SP12 – £2850 24-voice (16 preset, 8 user-sampled) digital drum machine. 100 segments chainable into 100 songs (minimum capacity 5000 notes), MIDI (In, Out, Thru) and SMPTE equipped; bass, snare, electronic snare, rimshot, 4 toms, 4 electronic toms, hi-hat, crash & ride cymbals, claps, cowbell. + *Wonderful digital sound quality thanks to 12-bit resolution, user-sampling equally impressive, easy to use, first US drum machine to offer genuine step-time programming;* – *high demand means limited availability;* = *probably the best drum machine available anywhere, completely without rival (at least for the time being) and easily upgradable through hardware/software updates.* • *Machine reviewed September '85, updates reviewed May '86.*

HAMMOND

DPM48 – £499 23-voice (15 programmable) digital drum machine. Seven programmable patterns, MIDI (In, Out, Thru) equipped; 4 toms, 3 bass drums, 3 hi-hats, 3 snares, 3 cymbals, 2 cabasas, clap, 2 agogos, rimshot. + *Sounds good despite home organ origins, MIDI retrofit makes interfacing facilities complete;* – *lacks the informative display facilities of more recent models;* = *recent £200 price drop makes Hammond's only pro instrument irresistible: if only they'd come up with more...* • *Reviewed March '84.*

KORG

DDM110 – £195 Nine-voice digital drum machine. 32 programmable patterns, LED display, real- and step-time programming, programmable trigger out, stereo output, sync (48ppqn); bass drum, snare, rimshot, 2 toms, open & closed hi-hat, cymbal, handclaps. + *Cheapest digital drum machine on the UK market, links neatly to MIDI (and tape) with optional KMS30 interface;* – *you don't get impeccable sound quality for this money, so some sounds bettered by analogue equivalents;* = *another justifiably popular machine, even with (unavoidable) digital noise problems.* • *Reviewed December '84.*

DDM220 – £195 Latin Percussion version of DDM110, spec as above except for voicing; 2 congas, timbale, wood block, cowbell, ▷

▷ agogos, cabasa, tambourine. + *Marvellously realistic approximations of Latin drums that really do sound different;* – *nothing at this price, except non-Roland standard sync;* = *the first drum machine to offer more than the usual rock percussion setup, much imitated since its appearance 18 months ago.* • *Reviewed October '84.*

MR16 – £449 19-voice digital drum machine for connection to pre-existing MIDI software, individual and stereo outputs. + *Voices identical to those of DDM110/220, hence pretty good;* – *some dodgy ergonomics, not cheap when combined with essential SQD1 sequencer;* = *a sound enough idea that now has an excellent sequencer (Korg's own SQD1) to go with it, though there's still no specific drum software to perform specific drum tasks.* • *Reviewed May '85.*

LINN

LinnDrum – £1600 23-voice digital drum machine. 42 preset and 56 programmable patterns, 49 songs, individual and stereo outputs, cassette storage of programs, alternative sound chips available; 2 bass drums, 3 snares, sidestick, 3 hi-hats, 3 toms, 3 cymbals, 2 cabasas, 2 tambourines, 2 congas, cowbell, handclap. + *The original still sounds excellent, open-ended voice structure, healthy service back-up the world over thanks to instrument's popularity;* – *compared with digital machines from Japan, still a bit on the pricey side;* = *recent price decrease means it remains an attractive proposition, even when set against newer rivals.* • *Reviewed February '83.*

Linn 9000 – £5745 18-voice digital drum machine and MIDI sequencer. Individual and stereo outputs, 2 programmable trigger outs, MIDI (In, Out, Thru), tape sync facility, 32-track polyphonic keyboard sequencer, disk and cassette storage of programs; bass drum, snare, hi-hat, 4 toms, 2 congas, 4 cymbals, cowbell, handclaps, cabasa, sidestick, tambourine. + *Superlative drum sounds, elegant all-in-one-box design concept;* – *horrendous price-tag, lack of step-time input and other crucial recording facilities, no sampling yet;* = *without its promised hardware and software updates (step-time input, editing, sampling), an expensive dinosaur. To be replaced by MIDIstudio, if and when company can summon the necessary wherewithal.* • *Reviewed April '85.*

MFB

512 – £299 Nine-voice digital drum machine. Eight song, 64 programmable patterns, trigger in, trigger out, individual (DIN) and stereo outputs; bass drum, snare, 3 toms, handclaps, cymbal, open & closed hi-hat. + *Wonderful sounds for the money, light and compact;* – *terrible ergonomics, thus difficult to use;* = *Germany's little digital gem, though made in small quantities so you don't see many about.* • *Reviewed June '84.*

OBERHEIM

DX – £1575 18-voice digital drum machine. 100 programmable patterns, 50 songs, LED display, individual, stereo and mono outputs, real- and step-time programming, instrument sync (96ppqn) and sync to and from tape facilities, alternative sound chips available; 3 bass drums, 3 snares, 3 hi-hats, 3 toms, 3 cymbals, 2 shakers, handclap. + *Usual Stateside virtues of good sounds and easy chip replacement for voicing variety;* – *usual Stateside vice of relatively high cost;* = *an underrated machine with price-tag that's ensured a low profile in UK, but updated version with MIDI as standard available soon, £TBA.* • *Reviewed September '83.*

DX Stretch – £TBA Hardware add-on for **DX** giving additional voices and MIDI facility. • *To be reviewed.*

DMX – £2975 20-voice digital drum machine. 200 programmable patterns, 100 songs, real- and step-time programming, individual, stereo and mono outputs, sync (96ppqn), cassette storage of programs; 3 bass drums, 3 snares, hi-hat, gunshot, 2 toms, noise, conga, timbale, tambourine, rimshot, shaker, handclaps, cowbells, clave, 2 cymbals, punch. + *As for DX, plus usefully large range of onboard voices;* – *again, mainly the price;* = *the original Linn-beater, but like its rival, feeling the pinch from more cost-effective competition.* • *Reviewed January '84.*

ROLAND

TR505 – £225 16-voice digital drum machine. Real- and step-time programming, liquid crystal display, stereo audio outs, MIDI (In, Out), cassette storage of programs; bass drum, snare, 3 toms, rimshot, open and closed hi-hat, crash and ride cymbals, handclap, hi and low cowbell, timbale, hi and lo conga. + *Wonderful PCM sounds taken from 707 and 727, LCD almost as good as 707's more sophisticated version, programming system familiar to all previous TR users;* – *lacks separate outputs and non-MIDI syncing, single timbale is curious, not too usable provision;* = *more than worthy*

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There's nothing worse than rushing round to your local newsagent, hard-earned £1.20 in hand, only to find that a load of other musicians have beaten you to the store's allocation of E&MMs. You scour the bookshelves for hours, you ask the girl behind the counter if there are any at the back of the shop, you even try the Swedish magazine importer round the corner – all to no avail.

The reason for this is simple. Only one musicians' magazine has been looking at music technology thoroughly, accurately and objectively for over four years. Only one musicians' magazine has the reputation for carrying the most authoritative appraisals of new music hardware and software. And only one musicians' magazine has consistently inquiring, informative interviews with the people that are applying new technology to today's music. That magazine is the one you're holding in your hands now, but as anyone who's lived through the above story will know, getting it there isn't always that simple.

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**Please delete as applicable*

digital successor to the revolutionary Drumatix, probably the best budget drum machine there is, though it won't please the 'analogue is best' beat box revivalists. • Reviewed May '86.

TR707 – £550 12-voice digital drum machine. 64 programmable patterns, liquid crystal display, real- and step-time programming, individual and stereo audio outputs, MIDI (In, Out) and Sync 24 equipped, cartridge and cassette storage of programs; 2 bass drums, 2 snares, 3 toms, rimshot, cowbell, handclap, tambourine, open & closed hi-hat, 2 cymbals. + *Marvellous sounds, DR110-like display makes programming a piece of cake once you're suitably acclimatised, cartridge storage is great relief after tape, useful set of separate outputs;* − *not nearly as well-built as Roland's old TR808 analogue flagship, idiosyncratic programming technique, no individual voice tuning;* − *despite its limitations, the best middle-market drum box available – if you like Roland's programming system. • Reviewed December '84.*

TR727 – £550 15-voice percussion version of TR707: facilities as above except for voicing. 2 bongos, 3 congas, 2 timbales, 2 agogos, 2 whistles, quijada, cabasa, maracas, star chimes. + *All the 707's attributes, with an equally marvellous selection of sounds;* − *707 and 727 together cost too much: if only Roland believed in replacement voice chips;* − *like a big-budget Korg DDM220 and every bit as useful – if you like Latin sounds. • Reviewed August '85.*

SEQUENTIAL

TOM – £495 Eight-voice digital drum machine. 99 programmable patterns, programmable tuning and volume, reverse play of sounds, real- and step-time programming, MIDI-equipped. + *Basic sounds are pretty good, more sounds available on cartridge, unique sample reversal is a great gimmick;* − *lacks separate voice outputs, not as well-built as Drumtraks;* − *confirmation of Sequential's electro-drum prowess, now very cheap indeed, though lack of individual outputs should ensure continued success of Drumtraks as well. • Reviewed July '85.*

Drumtraks – £895 13-voice digital drum machine. 99 programmable patterns, LED display, programmable pitch and volume, individual and mono output, MIDI (In, Out), sync (24 or 48 out, 24ppqn in) equipped, cassette storage of programs, alternative sound chips available; bass drum, snare, rimshot, 2 toms, 2 cymbals, open & closed hi-hat, claps, tambourine, cowbell, cabasa. + *Superb sounds, tuning and editing facilities unrivalled at this price, sound chips interchangeable with Linn's;* − *not as well laid-out as later TOM, though it's not that tricky to use anyway;* − *in terms of programming and tuning flexibility, still very hard to beat. • Reviewed March '84.*

TECHNICS

DP50 – £595 25-voice (15 programmable) digital drum machine. Stereo outputs, MIDI (In, Out, Thru), 7 programmable patterns, 4 preset patterns per programmable voice; programmable sounds: bass drum, snare, 4 toms, 2 congas, tambourine, handclaps. + *Well built, some excellent (but non-programmable) exotic percussion sounds;* − *complicated to use, no proper song storage or output facilities, preset patterns take up vital memory space, programmable sounds lack definition;* − *too flawed for professionals to take it seriously – unless they work in a cocktail bar. • Reviewed May '85.*

YAMAHA

RX21 – £249 Nine-voice version of RX11 and RX15. 56 programmable and 44 preset patterns, real- and step-time programming, built-in LCD, stereo outputs, MIDI (In, Out), cassette storage of programs; bass drum, snare, 3 toms, open & closed hi-hat, crash cymbal, handclaps. + *Same strong sounds as its more expensive RX brethren, disarmingly cheap;* − *same programming difficulties as RX15/11, stereo outputs are restricting, suspect build quality in places;* − *excellent value for money if stereo outputs aren't an insurmountable problem, spells big trouble*

for the rest of the big drum machine guns, new RX21L (with Latin sounds) also available. • Reviewed September '85.

RX15 – £499 15-voice version of RX11; spec as below except: stereo only outputs, cassette-only storage; bass drum, 2 snares, rimshot, 3 hi-hats, 3 toms, 2 cymbals, handclaps, cowbell, shaker. + *Fine sounds, good range of editing facilities, informative (if limited) LCD;* − *not the easiest machine to use, lacks individual voice tuning;* − ▷

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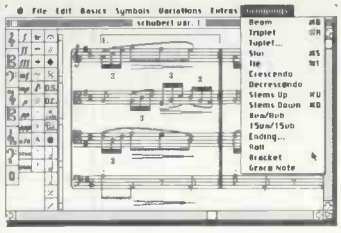

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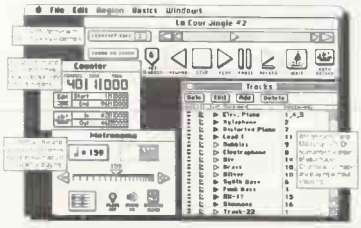

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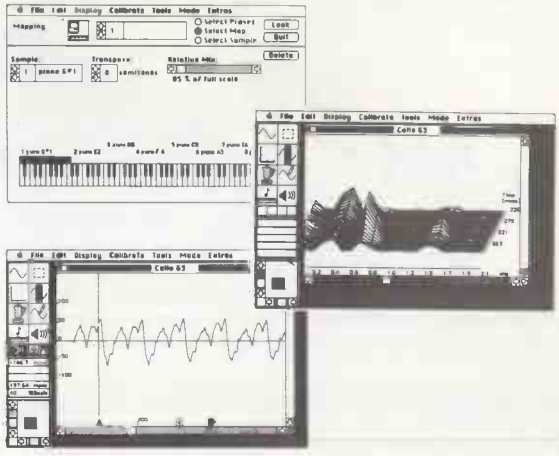

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▷ *Yamaha's first venture into programmable drum machines is a real success, especially in the context of an X-series MIDI system. • Reviewed October '84.*

RX11 – £799 29-voice digital drum machine. 99 programmable patterns, real- and step-time programming, liquid crystal display, individual and stereo outputs, MIDI (In, Out) and selectable sync outputs, cartridge and cassette storage of programs; 3 bass drums, 8 snares, 2 rimshots, 5 hi-hats, 4 toms, 2 cymbals, 2 handclaps, 2 cowbells, shaker. + *As RX15 only more so, separate outputs make it a studio user's dream;* − *more complicated than RX15, hence even trickier to use, range of sounds lacks imagination;* = *serious competitor for Roland TR707, once you've overcome its user-unfriendliness. • Reviewed October '85.*

ELECTRONIC DRUMS

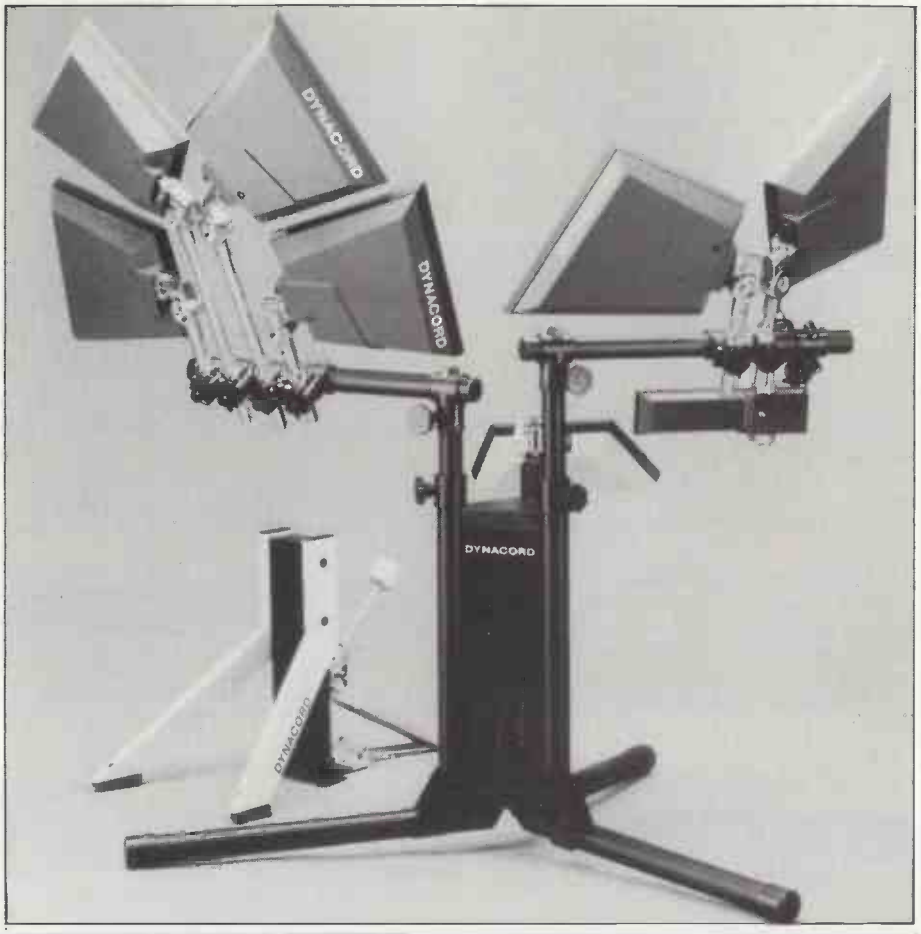
CLAVIA

ddrum – £295 Single-pad digital unit using ROM cartridges. Different duration sample chips available, battery powered, pitch control, trigger in. + *Magnificent sound quality thanks to sample recording care on factory's part, vast (and expanding) range of sounds both conventional and unconventional;* − *almost absurdly expensive, digital noise intrudes on some samples, not everybody likes the idea of hitting a small, square pad;* = *the Rolls-Royce of digital drum units and similarly pricey, now distributed by the Nomis complex. • Reviewed October '84.*

ddrum Rack System – £2025 Five-channel, rack-mounted digital electronic drum kit comprising ddrum electronics and set of Remo heads, expandable to eight channels, individual outputs. • *To be reviewed.*

DYNACORD

Percuter S – £550 Eight-channel digital ▷



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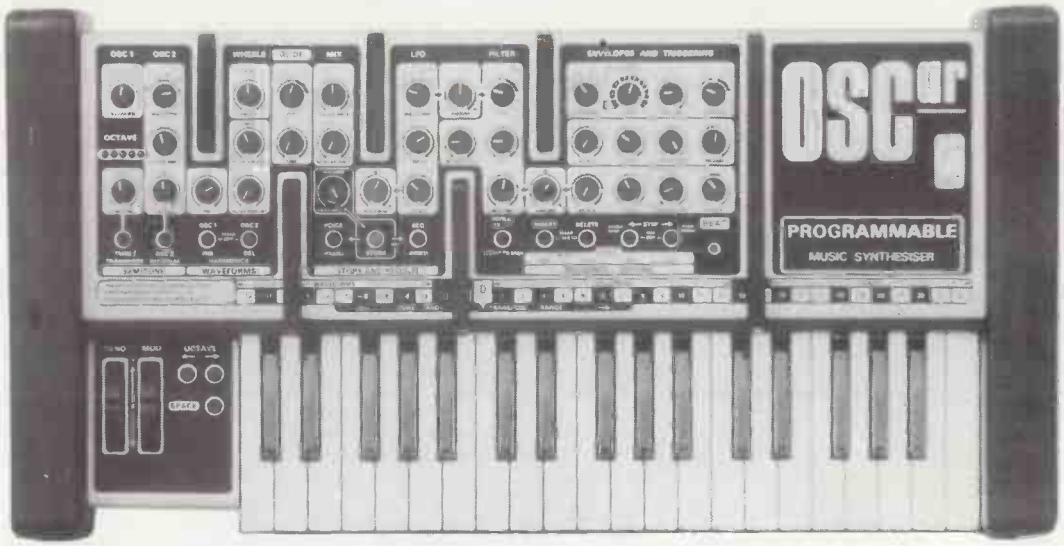

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▷ electronic drum kit. Interchangeable digital modules, individual and stereo outputs. + *Excellent sounds, flexibility of interchangeable voice ROMs, well constructed pads;* − *voices can't be edited, pads soon to be replaced by new, more stylish set, a little bit pricey;* = *fine system from company that represents the one European threat to Simmons.* • *Reviewed March '86.*

Big Brain – £795 16-channel drum sequencer. 50 programmable songs, 100 user-programmable patterns (50 optional preset or programmable), cassette storage of programs, MIDI (In, Out, Thru), Sync In & Out. • *To be reviewed.*

Boomer – £725 Digital percussion sound-sampler. Trigger in from pad or sequencer, editing facilities. • *To be reviewed.*

ADD-One – £TBA New programmable electronic percussion 'brain', currently at prototype stage. • *To be reviewed.*

KLONE

MultiKlone – £399, individual modules – £195 Five-channel analogue drum kit. 5 identical sound channels, 5 Trigger Ins, 5 Audio Outs, auto flam facility. + *Flexible budget electronic drum kit, useful as either an add-on to an acoustic kit or in its own right;* − *only one preset and one user-programmed sound simultaneously available for each channel;* = *remarkably good sounds for very little money, deserves to rule the budget roost for quite a while.* • *Reviewed September '85.*

Dual Percussion Synthesiser – £195 Two-channel analogue electronic drum add-on. Basic spec as Kit 2. + *Again, it looks good and it sounds OK, plenty of scope for weird sound effects in addition to conventional percussion voices;* − *drum sounds lack bottom, feel;* = *useful addition to either a MultiKlone or (better) an acoustic set-up.* • *Reviewed April '84.*

PEARL

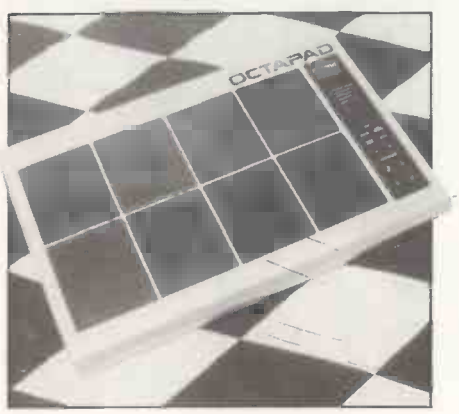
Drum X – £TBA New electronic drum system with redesigned pads and voicing circuitry, replaces DRX1 previously listed. Now updated to include electronic hi-hat and cymbals. • *To be reviewed.*

PREMIER

Powerpak – £TBA New analogue electronic drum system. • *To be reviewed.*

ROLAND

PAD8 – £395 Eight-pad MIDI drum controller, features user-assignable channel numbers and touch-sensitive pads. • *Reviewed February '86.*



DDR30 – £999 Digital electronic drum kit. Six-voice rack-mounted sound module, eight memories per voice, 32 kit memories, MIDI In and Out, individual and stereo outputs, links with standard PD10 (£85) and PD20 bass (£175) drum pads. + *Looks fantastic, high sound quality, typical Roland dependability and sturdy construction, easy to use;* − *not as versatile as some of its competition, all-digital voicing means old-fashioned analogue electronic sounds are out;* = *at its reduced price, a serious and worthwhile Simmons alternative you can buy bit by bit if the wallet is looking thin.* • *Reviewed December '85.*

SIMMONS

SDS1 – £170 Single pad digital module/pad. Derives sound from EPROM, battery power, external trigger. • *Reviewed March '85.*

SDS7 – £2155 Five-channel analogue/digital hybrid electronic drum kit. Expandable to 12 channels, each channel has individually-controllable analogue, digital and noise sound sources, 100 different 'kit' programs. + *Unrivalled sonic flexibility thanks to variety of sound sources, handy 'pad' program selector, impeccable pad design;* − *if you can afford it, nothing;* = *rapidly becoming to the electronic drum world what the Emulator SP12 is to the drum machine market, and deservedly so.* • *Reviewed April '84.*

SDS9 – £1199 Five-channel analogue/digital hybrid electronic drum kit. Interchangeable PROM sounds, 20 user-programmable kits, 20 factory-programmed kits, auto-trigger facility, tape storage of sounds, individual outputs, MIDI-equipped. Software-generated bass drum, sampled snare, cross-stick and rimshot, 3 analogue toms. + *Jam-packed full of features, all of them useful, well packaged and above all, extremely good-sounding;* − *not particularly cheap, doesn't make the tea;* = *has just about everything a modern drummer, studio owner, or session programmer could want from an electronic drum kit.* • *Reviewed August '85.*

SDS200 – £315 Twin-channel analogue electronic tom synth. Individual, stereo and mix outputs. • *To be reviewed.*

SDS400 – £550 Four-channel analogue electronic tom synth. Individual, stereo and mix outputs, run generator feature. • *To be reviewed.*

SDS800 – £550 Four-channel analogue electronic drum kit. Bass drum, snare, two tom channels, individual, stereo and mix outputs, built-in run generator. • *To be reviewed.*

SDS EPB – £395 EPROM blower to be triggered by SDS7 and SDS1. Blows 8K and 16K EPROMs from onboard RAM, variable sample speed. + *Quick, easy way of making your electronic drum kit sound like no-one else's, fits in neatly with Simmons scheme of things;* − *no avoiding the fact that sampling quality could be better;* = *pioneer product that serves its purpose while leaving room for subsequent improvement.* • *Reviewed January '85.*

SDS1000 – £650 Programmable five-pad, five-channel analogue/digital hybrid electronic drum kit. Digitally sampled snare, software generated bass drum and analogue toms, five preset kit programs and five user-programmer memories. • *To be reviewed.*

TED

Digisound – £125 (single-sound), £150 (dual) Sampled-sound percussion machine triggered by built-in switch or external source. Sounds stored on EPROM. + *High sound quality, ever-growing factory library of EPROM voices, now dynamic as well;* − *a teeny bit expensive, dual bass-and-snare model a bit silly as sounds can't be triggered together;* = *a neat electro-percussion add-on for non-drummers fed up with their drum-machine sounds.* • *Reviewed July '84.*

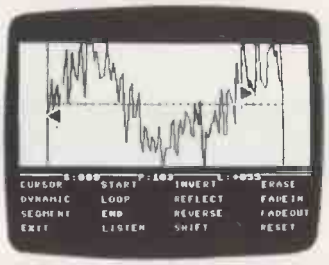
Digimemory – £140 Universal EPROM version of Digisound. • *To be reviewed.*

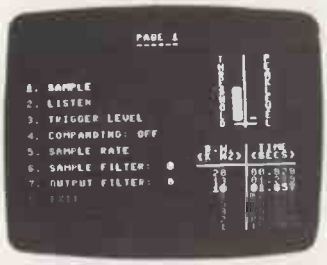
The Winner – £TBA Microprocessor-controlled EPROM blower/programmer, built-in MIDI and serial computer interfacing. • *To be reviewed.*

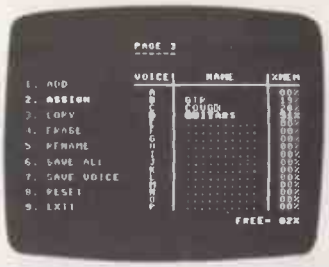
WERSI

CX5 – £TBA Electronic drum system comprising digitally-sampled drum sounds, five triggering pads, drum sequencer with 27 drum sounds, 64 pre-programmed rhythm patterns and one user-programmable song. • *To be reviewed.*

MICROVOX LOOKS GOOD..... SOUNDS BETTER!







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Just £229.95 buys the MICROVOX hardware and software (reckon on spending £500 if you don't already have the computer and disk). Input and output filters eliminate aliasing and quantisation noise, whilst companding gives effective 10-bit resolution. A high quality digital delay is included as standard and the MICROVOX PRO upgrade package allows you to generate other special effects such as harmonizing, phasing and flanging. MICROVOX PRO also features auto-looping and velocity sensitivity!

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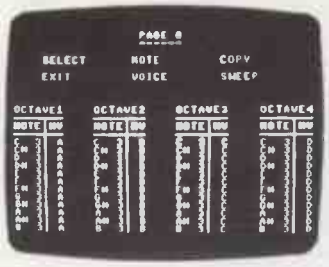

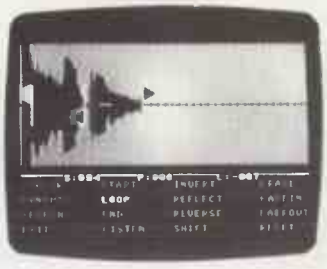

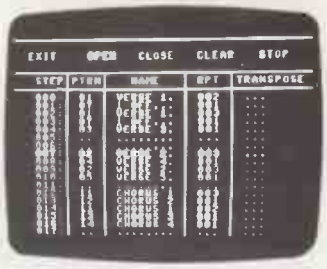

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*The Songwriter disks for the 2000 are best used with a MIDI sequencer
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Depeche Mode
Black Celebration

Mute LP

In which the Basildon Boys rediscover their songwriting maturity, Daniel Miller rediscovers imaginative arranging, and the pair of them waltz off into a still wider range of musical styles from which to gain inspiration.

Listen to 'It Doesn't Matter Two' and its arpeggiated vocal samples, and you could be listening to Philip Glass; catch an aural glimpse of 'Sometimes' and you'd swear it was a George Michael single – reverberant piano and a big, sad, lonely voice; listen to 'Dressed in Black' and its barrel-organ synth chords, and you'd be forgiven for thinking the Stranglers were making a guest appearance.

Like all the best musical mélanges, though, *Black Celebration* is held together by a steadiness of purpose, a consistency of melody (M L Gore in overdrive), and a liberal sprinkling of clever production touches that have a *job* to do other than just entertain: every time *Black Celebration* hits the platter, the ears are assaulted by another truck-load of industrial snapshots, quirky classical guitar samples, unexpected vocal inflexions, and transient digital tinklings.

Of all the 'all-synth' bands that made it big in or around 1982, Depeche Mode are *easily* the strongest willed and, on this hearing, the most deeply and hearteningly talented. ■ D*g*

Ryuichi Sakamoto
Illustrated Musical Encyclopedia

10/Virgin LP

Sakamoto's latest LP offering opens with his recent single, the Thomas Dolby collaboration 'Field Work', albeit in one of its more condensed forms. Unfortunately, this represents one of the most healthy of the popular western elements to be found here, leaving Sakamoto's own oriental background to provide the most exciting aspect of *Encyclopedia*.

Influences from the west are evident throughout, and fusions with classical and jazz music abound – though with varying degrees of success. 'M A Y in the Backyard' is the most obvious classically-inspired piece, employing a typically oriental percussive synth patch dramatically counterpointed by Fairlight orchestral strikes that somehow avoid sounding as clichéd as they ought.

The main failing of the album is Sakamoto's habit of falling into jazz-funk rhythm tracks that could have been regurgitated by any talentless novice, and undermining his considerable talents as a synth and rhythm programmer in the process. Perhaps it's because 'Steppin' into Asia' brings those talents together (along with a beautiful vocal performance from Akiko Yano) that it stands out as being the best on the album. The combination of refreshing (non-western) drum patterns and Sakamoto's

entrancing Fairlight patches leaves no doubt: we could still learn a lot from the Japanese. ■ T*g*

Pet Shop Boys
Please

Parlophone LP

If Neil Tennant can go from third-rate music critic to Europop hero, there's hope for us all yet. Especially when he does it with a single as simply structured as 'West End Girls' and a vocal that convinces you Al Stewart has made a well-timed comeback.

Simplicity and the Stewart soundalike vocal are *Please*'s obvious themes. But underneath them lurk a fine songwriting poise and some slick production work from man-at-the-sliders Stephen Hague.

'Two Divided by Zero' is a song written around a sampled, spoken sentence that puts Hardcastle's game-playing '19' in its true light, while 'Opportunities (Let's Make Lots of Money)' is a delightful piece of business backstabbing hung on a latter-day Kraftwerk rhythm track.

Flip the disc over, and 'Violence' hurls moody microphone sociology over a series of home-organ drum fills, a threatening bass line and a couple of synth-wah stabs, and 'Later Tonight' is the sort of unpretentious piano-and-string-synth ballad Lionel Richie used to write before he discovered Peace, Love and Understanding.

Hague relieves the vocal monotony by changing one component in the Pet Shop Boys' synth armoury each time a song fades out, and only rarely fails to stop *Please* sounding like a drum-machine demo record. The result is a likeable fusion between the styles of mid-70s singer/songwriter and mid-80s funkateer. Not exactly earth-shattering, but it all works. ■ D*g*

The Art of Noise
In Visible Silence

China Records LP

Jeczalik & Co have ended their association with ZTT and Paul Morley, and begun another with the legendary Duane Eddy.

Fear not, though: sampling experimentation is still the name of the futurists' game, even if the musical steps are a little safer than they were on the Art of Noise's first vinyl outing.

The opener is a live (as opposed to sampled) vocal piece previewed on *The Tube* and entitled 'Opus 4'. It's an intriguing piece, and a fascinating natural contrast to the technological manipulation that follows. A contrast more than adequately underlined by the succeeding 'Eye of a Needle', which draws heavily on sampled vocals and interweaves them with a programmed rhythm track that avoids just about all the usual percussive sounds. The result? Innovation in all areas save for Fairlight colouration of sampled sound. Time to update to a Series III, guys?

Eddy's guitar makes a prestigious if unimpressive contribution to 'Peter Gunn', but no doubt you've already heard the single. What you probably haven't heard is the ELP version of the same Mancini gem that graced *ELP In Concert* back in 1979. If you have you'll realise that, no matter how old, the ELP version relies on dynamically similar patch (from the old Yamaha GX1) that actually sounds *better* than AoN's Fairlight. That's progress for you, I guess.

Meanwhile, 'Instruments of Darkness' is a heavily political (see Gabriel's 'Biko') and classically-inspired (see Stravinsky) piece that uses '19'-style historical speeches without cluttering them with overworked sample stutter. ■ T*g*

Alison's Secret
Sweet King

Suprise 45

Proving it doesn't take a six-figure budget and a garrison of A&R men to get a single out, Andy Alison offers the world 'Sweet King'. Self-penned and self-financed, Alison's Secret have a song that plays off powerfully programmed drum and bass sequences against bright guitars and a clutch of catchy melodies. Most of the sequence work comes courtesy of a DX7 but is no less forceful for it, while an unidentified drum machine sounds as raw in the production as if it were a badly treated acoustic kit, which makes a change. The main shortcoming is a vocal that lies too low in the final mix, but on this showing, there should be a follow-up to remedy that.

Just been turned down by CBS for the fifth time this year? Take heart. ■ T*g*

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Demo Roland JX-3P	£1075	£625
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S/Y Yamaha SK50D + pedals	£2799	£695
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Demo Roland HP350	£1175	£899
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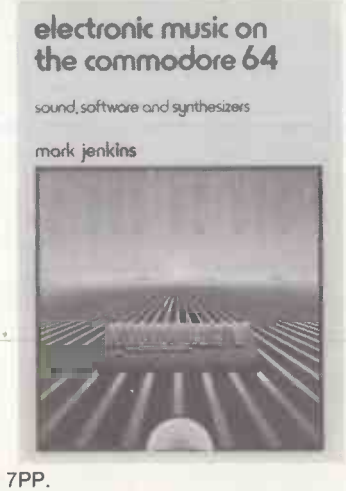

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SOUND SALES

THE AUDIO PEOPLE

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Just as we were beginning to think everyone out there owns either a CZ or a DX synth, along come a couple of newcomers to Patchwork, in the shape of the Bit One polysynth and CX5M computer (OK, so it is just a DX synth in disguise). But there's still a lot of synth territory so far left unexplored by Patchwork – so how about all you Alpha Juno, Korg DW, Akai AX80 and Oberheim Matrix owners getting those programming fingers into gear?

Seeing as Patchwork now accommodates reviews of sound libraries (cartridges, disks, cassettes, chips and so on) for all types of synths and samplers, we'll be looking at the latest range of Skyslip ROMs for the DX7 next month.

Don't forget that if your patch gets published, a free year's subscription will wing its way to your front door with our compliments. So send us your favourite sounds on a copy of an owner's manual chart (coupled with a blank one for artwork purposes), including a good description of your 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. ■

Casio CZ101/1000
Orchestral Aura
M C Perry, Worcester

PARAMETER	LINE SELECT	MODULATION RING	MODULATION NOISE	DETUNE +/–	DETUNE OCTAVE	DETUNE NOTE	DETUNE FINE	VIBRATO WAVE	VIBRATO DELAY	VIBRATO RATE	VIBRATO DEPTH	OCTAVE +/–	OCTAVE RANGE
	1+1'	ON	–	+	0	0	10	–	–	–	–		0
	(1,2,1+2',1+1')	(ON/OFF)		(+/–)	(0–3)	(0–11)	(0–60)	(1–4)	(0–99)	(0–99)	(0–99)	(+/–)	(0–1)

1

DCO 1

WAVE FORM FIRST	WAVE FORM SECOND
2	3
(1–8)	(0–8)

In amongst the pile of good patches for the CZ this month was this unassuming little number. It takes more than a cursory earful to appreciate the subtlety of 'Orchestral Aura', but it's a nice atmospheric patch, best suited for slow chordal movements. However, a shorter attack time (increase the rate of Step 1 of the amplitude envelope) may prove useful, and since the orchestral element is created by a combination of Ring Modulation and Fine Detuning, a bit of fine adjustment in the latter department should reap rich rewards. ■

E N V (PITCH)

STEP	1	2	3	4	5	6	7	8	
RATE	99	99							(0–99)
LEVEL	66	00							(0–99)
SUS/END		END							

DCW 1

KEY FOLLOW	
9	(0–9)

E N V (WAVE)

STEP	1	2	3	4	5	6	7	8	
RATE	30	13	54	00					(0–99)
LEVEL	51	24	19	00					(0–99)
SUS/END	SUS			END					

DCA 1

KEY FOLLOW	
0	(0–9)

E N V (AMP)

STEP	1	2	3	4	5	6	7	8	
RATE	82	95	92	29					(0–99)
LEVEL	99	87	99	00					(0–99)
SUS/END			SUS	END					

Bit One
A Soft Touch
Steve Butler, Kenilworth

It appears that synths supplied without patch charts in their manuals are a bit shy when it comes to making a Patchwork appearance. Rest assured, though: it's no trouble for the parameter values to be presented in list form, and 'A Soft Touch' is seen here paving the way for Bit owners. This patch uses key velocity to control the attack time of the VCA, and with a very soft touch and the mod wheel opened up, it's well suited to atmospheric backings and the like. Play normally for a faster attack curve. ■

Parameter	Value	Notes
1	1	LFO
4	1	LFO1 DCO1
5	1	LFO1 DCO2
8	63	Depth
9	30	Delay
10	23	Rate
12	13	VCF Attack
13	32	VCF Decay
14	31	VCF Sustain
15	18	VCF Release
16	22	VCF Track
17	63	VCF Velocity to attack
18	4	VCF Cutoff
20	63	Env Depth
21	20	Touch Env Depth
23	1	32'
28	1	DCO
34	1	32'
38	1	
40	1	
43	16	PW
45	63	VCA Touch Attack
46	20	Key Volume
47	0	Attack
48	19	Decay
49	38	Sustain
50	21	Release

Yamaha CX5M
Compupatch
Ian Taylor, Middlesbrough

It seems the neglected CX5M is getting a look-in now, and DX9 owners may be able to interpret these patches to suit their own ends as well. 'Plucked Synth' is described as a sharp sound with plenty of attack, suited to all those Tangerine Dream-type arpeggiated sequences, while 'Clear Bell' is just that – a bright clear chime, just right for Vince Clarke covers... ■

Voice –	< PLUCKED SYNTH >		LFO 1
Code –			Syc 0
Tr 0			Spd 2
LR 11	Ne 0	Nf 0	Wf 200
Ams 1	A1 6	Fb 7	Amd 2
Pms 3			Pmd 7

[1] F2	IF 0	[2] F0	IF 0
A 22	Dt 0	A 31	Dt 0
D 15	Ks 0	D 15	Ks 0
S 8	Kd 0	S 8	Kd 0
D 8	Rk 0	D 8	Rk 0
R 6	Vs 4	R 6	Vs 3
0 110	Aj 0	0 110	Aj 0

[3] F1	IF 0	[4] F1	IF 0
A 31	Dt 0	A 31	Dt 0
D 13	Ks 0	D 12	Ks 0
S 9	Kd 0	S 9	Kd 0
D 8	Rk 0	D 9	Rk 0
R 6	Vs 6	R 7	Vs 7
0 110	Aj 0	0 127	Aj 0

Voice-	< CLEAR BELL >		LFO 1
Code-			Syc 1
Tr 12			Spd 200
LR 11	Ne -	Nf -	Wf 2
Ams 1	A1 7	Fb 0	Amd 10
Pms 3			Pmd 100

[1] F4	IF 0	[2] F1	IF 0
A 31	Dt 0	A 31	Dt 0
D 0	Ks 0	D 10	Ks 0
S 15	Kd 0	S 0	Kd 0
D 0	Rk 0	D 0	Rk 0
R 0	Vs 0	R 5	Vs 7
0 110	Aj 5	0 120	Aj 5

[3] F1	IF 0	[4] F1	IF 0
A 14	Dt 0	A 14	Dt 0
D 10	Ks 1	D 10	Ks 1
S 0	Kd 2	S 0	Kd 2
D 0	Rk 0	D 0	Rk 0
R 6	Vs 7	R 6	Vs 7
0 127	Aj 5	0 127	Aj 5

YAMAHA DX7
Fairlight
Avram Taylor, Newcastle upon Tyne

ALGO-RITHM	FEED-BACK	WAVE	SPEED	DELAY	PMD	AMD	SYNC	PITCH	AMPLI-TUDE
		LFO						MOD. SENSITIVITY	
3	0	Sine	35	16	12	0	On	3	

OP: 6 5 4 3 2 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	POLY/MONO	PITCH BEND RANGE	PITCH BEND STEP	PORTAMENTO MODE	PORTAMENTO GLISS-ANDO	PORTAMENTO TIME									

OP			MODE/SYNC	FREQ. COARSE	FREQ. FINE	DETUNE	EG RATE 1 2 3 4	EG LEVEL 1 2 3 4	BREAK POINT	KEYBOARD LEVEL SCALING L	KEYBOARD LEVEL SCALING R	KEYBOARD RATE SCALING	OUTPUT LEVEL	VELOCITY SENS.	PITCH EG RATE 1 2 3 4	PITCH EG LEVEL 1 2 3 4	KEY TRANSPOSE	VOICE NAME
6	F	ON	1.000	950	0	48 31 22 50	99 80 80 0	A-1	-L	-L	0	0	56	0	99 99 99 99	50 50 50 50	C3	FAIRLIGHT
5	R		2	50	-7	48 31 22 50	99 80 80 0	A-1	-L	-L	0	0	53	0				
4	R		1	00	-5	51 50 50 55	99 95 95 0	A-1	-L	-L	0	0	99	0				
3	R		1	00	0	51 50 50 55	99 95 95 0	A-1	-L	-L	0	0	67	0				
2	R		2	00	+5	25 25 25 55	25 95 45 0	A-1	-L	-L	0	0	65	0				
1	R		1	00	+7	51 50 50 55	99 95 95 0	A-1	-L	-L	0	0	99	0				

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
MODULATION WHEEL				FOOT CONTROL				BREATH CONTROL				AFTER TOUCH			
RANGE	PITCH	AMPLI-TUDE	EG BIAS	RANGE	PITCH	AMPLI-TUDE	EG BIAS	RANGE	PITCH	AMPLI-TUDE	EG BIAS	RANGE	PITCH	AMPLI-TUDE	EG BIAS

Anyone calling their patch 'Fairlight' has got to be ambitious. Avram's reasoning is that his sound seeks to emulate a much-used Fairlight effect, as featured on Culture Club's latest single. We're not so sure, but try it and judge for yourself.

The sound has a nasal, breathy quality – piercing, we'd call it – which Avram describes as 'effective for slow, single-note melodies or chord progressions that don't involve "fat" chords'. It's also handy for fast runs, where it acquires a delicate, almost breathless quality. Quite a versatile sound, all in all. ■

Corrigendum: *Apologies to anyone who was confused by the* ***Resin Bass*** *patch for the DX7, published in E&MM February. Operator 6, Left Curve, should have read +L and not −L as stated.*

"...you must remember this..."

E&MM's editorial team have covered so much ground over the last couple of years, just missing one issue can cause large gaps in a reader's knowledge of contemporary music technology. But if you have missed an issue or two, don't panic. Help is on hand in the form of E&MM's Mail Order Department, who can offer you 1984/5/6 Back Issues at just £1.40 including post and packing. Earlier issues are even cheaper: just £1.00. Those prices refer to the UK and surface mail delivery to Europe and Overseas, though if you are overseas, you can get your issues sent air mail by adding an extra £2.00 per magazine. And don't despair if you want to read something that's in an out-of-stock issue. Photocopies of articles from sold out issues *only* are available at just 50p per article. So, orders please (sterling cheques/POs payable to Music Maker Publications) to: *E&MM Mail Order Department, Alexander House, 1 Milton Road, Cambridge CB4 1UY.* Please allow 28 days for delivery, as the mail order people are a busy lot these days. E&MM January '85 carried a full index to everything we wrote about during 1984, while next month's issue will contain an abbreviated list of 1981-83 Back Issues.

1984

JANUARY

Music *Simple Minds, Saga, Hawkwind, Dave Hewson* **Appraisal** *Oberheim OB8, Vigier Bass, SIEL Cruise, The Kit & Accessories, Passport Soundchaser* **Technology** *Using Sequencers, Electronic Metronome* **Studio** *Ibanez DM2000*

FEBRUARY

Music *Daniel Miller, China Crisis, Don Airey, Mainframe* **Appraisal** *Korg Poly 800, SIEL PX, Yamaha PS55, Eko EM12, Roland Chorus Cube 60, Washburn Bantam Bass, Carlsbro Marlin, Dr Böhm Digital Drums* **Technology** *Drumatix Mods, Voltage-Controlled Clock* **Studio** *University of Surrey Music Studio, Boss DE200*

MARCH

Music *Vince Clarke & Eric Radcliffe, Blancmange* **Appraisal** *Sequential SixTrak, Roland SDE3000, Roland System 100M, Electronic Percussion Guide (nine reviews inc Sequential Drumtraks, Boss DR110, AHB Impulse One, Hammond DPM48)* **Technology** *Music Composition Languages Pt3, S-trigger Converter, Lead Tester, Using Sequencers Pt2*

April *Sold Out*

Music *Fad Gadget, Vic Emerson (Sad Café), Brian Chatton* **Appraisal** *Simmons SDS7 & SDS8, Roland Jupiter 6, TR909 & MSQ700, Yamaha PS Keyboards, Crumar Composer, Klone Dual Percussion Synth, Vox White Shadow Bass* **Technology** *Gentle Art of Transcription Pt1, Ins & Outs of Digital Design, Understanding the DX7 Pt1, Syndrom Pt1, Bass Pedal Synth* **Studio** *Ibanez UE400 & UE405*

MAY

Music *Wang Chung* **Appraisal** *PPG Wave 2.3 & Waveterm, Roland Juno 106, Roland JSQ60, Casio 310, M&A Electronic Drums,* **Technology** *PDSG Pt1, Understanding the DX7 Pt2, String Damper, Clap Sounds* **MIDI Supplement Pt1** *Specification, Theory & Practice, Product Guide* **Studio** *Huddersfield Polytechnic Music Studio, Steve Levine on MIDI, Dynacord PDD14*

JUNE *Sold Out*

Music *Orchestral Manoeuvres in the Dark, Indie labels* **Appraisal** *Roland GR700/G707, SynthAxe, SIEL Expander 6, Sequential Model 64 Sequencer, MFB512 Digital Drum m/c, Jen Musipack 1.0, Boss DD2 Delay Pedal* **Technology** *Gentle Art of Transcription Pt2, PDSG Pt2, Understanding the DX7 Pt3, Syndrom Pt2, Multiwave LFO* **MIDI Supplement Pt2** *Inside MIDI, MIDI & The Micro, BeeBMIDI Interface 1 (construction)*

JULY

Music *Human League, Steve Jolliffe, Jade Warrior* **Appraisal** *Yamaha DX9, Korg Super Section, Yamaha MK100, Microsound CBM64 add-on, TED Digisound, JMS MIDI Software* **Technology** *PDSG Pt3, Spectrum MIDI (Sequential Six-Trak and DX7 Patch Dump), Understanding the DX7 Pt4, Rack-Pack, BeeBMIDI 2 (construction)* **Studio** *Ibanez DM1100*

AUGUST

Music *Rusty Egan (Visage), Cocteau Twins, Hans-Joachim Roedelius* **Appraisal** *Synclavier Update, Technics SXK250, Yamaha PF10 & PF15, SIEL Piano Quattro & PX jr, Roland HP300, HP400, PB300 & PR800, Garfield MiniDoc, E-H Instant & Super Replays, EMR BBC MIDI Software* **Technology** *Fairlight Explained Pt1, Understanding the DX7 Pt5, BeeBMIDI 3 (DX7 Voice Dump), Syndrom Pt3, Miniblo, SynthMix Pt1*

SEPTEMBER

Music *Thomas Leer, Chris & Cosey* **Appraisal** *Oberheim Xpander, Korg EX800 & RK100, DigiAtom 4800, MicroLink ML10 System, Roland MPU401 & Software, Sycologic AMI & MX1, Passport MIDI/4 Software* **Technology** *OMDAC Update, Fairlight Explained Pt2, Step-time Composition on the Sequential Model 64, SynthMix Pt2, Dual VCLFO, Understanding the DX7 Pt6* **Studio** *Cutec MX1210*

OCTOBER *Sold Out*

Music *Ultravox* **Appraisal** *Yamaha CX5M & Software, Roland Mother Keyboard System, 360 Systems Update, Yamaha PS6100, ddrums, Yamaha RX11 & RX15, Korg DDM220, Tama Techstar Electronic Kit, Frazer Wyatt Speakers, Greengate DS3 Sampler* **Technology** *PDSG Pt4, Fairlight Explained Pt3, OMDAC Update 2, Powertran MCS1 Pt1, Understanding the DX7 Pt7* **Studio** *Reports on ELCS, Hollow Sun, Computer Music Studios*

NOVEMBER *Sold Out*

Music *Cabaret Voltaire, Peter Hammill, Axxess, UK Electronica* **Appraisal** *Chroma Polaris, Emulator II, Chase Bit One, Casio CT6000, Ricol Action Replay, Amstrad CPC464 Computer* **Technology** *BeeBMIDI 4 (programming with interrupts), Fairlight Explained Pt4, PDSG Pt5, Drum Sequencer (BBC B), Wasp/CBM64 Sequencer, Powertran MCS1 Pt2* **Studio** *Yamaha D1500 MIDI Delay, Everything but the Kitchen... (syncing to tape)*

DECEMBER *Sold Out*

Music *Vangelis, Tangerine Dream, Musica Nova* **Appraisal** *Kurzweil 250, Akai AX80, Siel DK600, Technics Digital 10, Roland TR707, Korg DDM110, MPC DSM8, Ultimate Percussion UP5, Acorn Music 500, Software roundup inc reviews on Music Maker (CBM64), SIEL Expander Editor (Spectrum), Island Logic Music System (BBC), UMI 1B (BBC), SIEL Composer/Arranger (CBM64), JMS 12-track Recording Studio (CBM64)* **Technology** *BeeBMIDI 5 (buffers), Fairlight Explained Pt5, Powertran MCS1 Pt3, Syndrom Pt4* **Studio** *Everything but the Kitchen... (interfacing analogue synths)*

1985

JANUARY *Sold Out*

Music *Tears For Fears, Neuronium* **Appraisal** *Casio CZ101, Simmons SDS EPB, Keyboard Combo Roundup, Elka X30, Sequential MAX, TED Digisound Update, SIEL MK900, LEMI MIDI Software* **Technology** *BeeBMIDI 6 (Juno 106 voice dump), Powertran MCS1, Back to Basics* **Studio** *Everything but the Kitchen... (syncing drum machines & sequencers)*

FEBRUARY *Sold Out*

Music *Laurie Anderson, Jean-Michel Jarre, Ars Electronica & ICMC* **Appraisal** *Roland JX8P, MPC Programmer 8, Roland SBX80, Korg KMS30, Roland MSQ100, SIEL 16-track Sequencer, EMR MIDItrack Performer* **Technology** *Digisound Voice Card, Back to Basics (VCOs)* **Studio** *Newcastle College of Art & Technology, Everything but the Kitchen... (syncing with timecodes)*

MARCH

Music *New Order, Steve Tibbetts* **Appraisal** *Korg DW6000, MPC DSM32, Synclavier Performance System, Simmons SDS1, OSC Advanced Sound Generator (synth preview), Sycologic M14, ATPL Symphony BBC add-on* **Technology** *CX5M Revisited, Fairlight Explained Pt6, BeeBMIDI 7 (DX7 Editor Pt1)*

APRIL

Music *Keith Emerson, China Crisis, Tim Souster* **Appraisal** *SIEL DK80, Pearl DRX1 Electronic Drums, Yamaha TX7 Expander & QX7 Sequencer, Linn 9000, Datel Sound Sampler, SDS DX7 Voice Editor, Zlatna ACS100* **Technology** *BeeBMIDI 8 (DX7 Editor Pt2), Fairlight Explained Pt7, Powertran BBC-MIDI Interface, Time Machine syncing project* **Studio** *Delta SX301 DDL add-on*

MAY

Music *Bill Sharpe, I-Level, Severed Heads* **Appraisal** *Yamaha TX816 MIDI Rack, QX1 Sequencer, KX88 Mother Keyboard, Akai S612 Sampler, Sequential MultiTrak, Korg MR16 MIDI Rhythm Sound Unit, Technics DP50 Drum Machine, Joreth Music Composer Software (CBM64)* **Technology** *TechTalk (Robert Moog), Time Machine add-on (RX15-MC202), Powertran MCS1 Software, Fairlight Explained Pt8*

JUNE

Music *Mick Roberts (King), Loose Ends, Ian Boddy* **Appraisal** *Casio CZ5000 Poly, Oberheim Matrix 12, The Anvil (drum machine preview), Keyboard Stand Roundup, MIDI FX (JMS MIDI Master Synchroniser, Quark MIDI Link 999, JMS CGX Interface, Bokse US8 Universal Synchroniser), Microsound CBM64 Sampling System, XRI Micon Software* **Technology** *TechTalk (Dave Simmons), Fairlight Explained Pt9, Fairlight Goes MIDI* **Studio** *Powertran DDL sampling add-on*

JULY

Music *Patrick Moraz & Bill Bruford, Level 42* **Appraisal** *Ensoniq Mirage, Chase Bit 01, SIEL Expander 80, Sequential TOM, Atari 520ST Micro, Passport MIDI/4 Plus & MIDI/8 Plus, Hinton MIDIC, Microskill AS32 (synth preview)* **Technology** *Music 500 AMPLE program* **Studio** *Zeus B Held, Korg SDD2000*

AUGUST

Music *Tim Lever (Dead or Alive), Sting, Stewart Copeland* **Appraisal** *Yamaha DX21, Roland TR727, Simmons SDS9, PolyMIDI I Sequencer, SIEL DK80 Graphic Editor & MIDI Data Base software (CBM64), Roland MIDI FX, Micro Musical ML50 Pedalboard* **Technology** *Minimoog retrospective* **Studio** *Eric van Tijn & Jochum Fluitsma (Mai Tai), APRS findings, Logitech sampler*

SEPTEMBER

Music *Godley & Creme, Trans X, Philip Glass* **Appraisal** *Emulator SP12, Yamaha RX21, Korg SQD1, MultiKlone kit, Casio SZ1, Sycologic PSP* **Technology** *BMF Report, TechTalk (John Chowning) Pt1, Gallery of Misfits Pt1* **Studio** *Yamaha REV7, Roland SRV2000*

OCTOBER

Music *Shriekback, Jansen & Barbieri, Michael Nyman, UK Electronica* **Appraisal** *Yamaha DX5, Boss DSD2 Sampling Pedal, Syntron Digidrum (CBM64), The Music System (CBM64), Chase Bit 99, Prophet 2000 preview* **Technology** *TechTalk (John Chowning) Pt2, Gallery of Misfits Pt2, BeeBMIDI Monitor Pt1* **Studio** *BBC Radiophonic Workshop, Roland SDE2500*

NOVEMBER

Music *J J Jeczalik, Mark Shreeve* **Appraisal** *Korg DW8000, UMI 2B (BBC B), Passport Music Shop (CBM64), Syntech Studio I (CBM64), Akai MIDI FX, Custom Sound Kbd Combo* **Technology** *Syn-D-Kit (DIY), BeebMIDI Monitor Pt2* **Studio** *Paradise Studios, Vesta Kozo DIG420*

DECEMBER

Music *Brian Eno, Stockhausen, Gary Numan* **Appraisal** *Prophet 2000, Roland Electronic Drums, Sound Designer software (Emulator II/Apple Mac), Yamaha CX5M software (DMS 8-track Sequencer, DX21 Editor, RX Editor), Gibson Explorer synth, RAP software (Spectrum/CBM64)* **Technology** *ICMC '85* **Studio** *CTS Studio 4*

1986

JANUARY

Music *Thompson Twins, Penguin Café Orchestra* **Appraisal** *Roland Alpha Juno 1, Oberheim Matrix 6, JMS Scorewriter (CBM64), Mirage Update, Akai S612 Update* **Technology** *TechTalk (Steve Cunningham), Amiga preview, Atari ST* **Studio** *Rebis RA226 sampler*

FEBRUARY

Music *Jan Hammer, Bronski Beat, Roger Eno* **Appraisal** *Yamaha DX100, Roland Alpha Juno 2, Casio CZ3000, Roland PAD8 Octapad, Steinberg Pro16 Sequencer (CBM64), RSF DD30 drum m/c, Dynacord MCC1 MIDI FX* **Studio** *DOD RDS3600, MDB Window Recorder, First Take (studio newcomers' guide)*

MARCH

Music *Talk Talk, Steve Reich, Drum Theatre* **Appraisal** *Linn Sequencer, Dynacord Percuter S, Steinberg Scorewriter (CBM64), CZ Editing Software (XRI/Spectrum, Joreth/CBM64)* **Studio** *Lexicon PCM70, Boss RSD10, Cassette Multitracking Guide*

APRIL

Music *Belouis Some, Mike Oldfield, Sigue Sigue Sputnik* **Appraisal** *Korg Poly 800II, Technics PX1 Digital Piano, Casio RZ1, Yamaha QX21, 360 Systems MIDI Bass, MoPro Atari ST software, Sycologic M16 MIDI Matrix, Digisound PKT PitchTracker, Microvox Sampler (CBM64)* **Technology** *TechTalk (Rob Hubbard), Fairlight Series III preview, PPG Realizer preview, Zlatna profile* **Studio** *Mike Howlett, Alesis MIDIverb*

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Keyboards

CASIO CT202 poly, 49 sounds, £69. Shure 50W monitor, £49. Speaker cab 15" and horn £20. ☎ 01-684 9571.

CASIO CT1000P boxed, as new, 1000 sounds, arpeggiator, £160. ☎ Brighton (0273) 723884.

CASIO CT1000P synth with sequencer and drum sync, plus Roland TR606 Drumatix, leads, accessories inc. £350. Martin ☎ 01-679 3114.

CASIO CZ101 battery/mains portable synth + mains adaptor, boxes, vgc, 5½ months old, guaranteed, £200 ono. ☎ (0245) 87919.

CASIO CZ101 mint condition, still boxed with manuals and power supply, £235 ono. ☎ Leighton Buzzard (0525) 370242 evenings.

CASIO CZ1000 six months old, excellent condition, £340 ono. ☎ Medway (0634) 242182.

CASIO CZ1000 one month old, as new, £325. Neil ☎ Weybridge (0932) 52636 after 7pm.

CASIO CZ1000 £350. Roland CR8000 £175. Korg MS20 and SQ10 £200. Interesting swaps considered. Paul ☎ (0774 78) 4335 anytime.

CHASE BIT ONE ungigged, six months old, home use only. Yes! £470. ☎ (0229) 30812, 6-8pm.

CHASE BIT ONE £550. RV2 Dual Reverb £190. Commodore 64, Microsound 64 full-size keyboard, software, drive, £390. Wanted (p/ex?) DX7. ☎ 01-249 9569.

CHASE BIT 99 £550, boxed. Fostex 250 £480, vgc. Boss DM100 Delay chorus unit, £100, home use only. ☎ (0706) 352572.

CHROMA POLARIS six-voice touch-sensitive, MIDI, 32 memories, sequencer, split keyboard, layering, guarantee, boxed, mint £700 ono. p/ex. ☎ 01-859 3177.

DIGISOUND 80 modular synth, 18 modules, plus keyboard, fully working, £450. John ☎ 01-968 6387.

E&MM SPECTRUM synth, fully built, not fully operational, £200 ono, or swap for Roland MC202. Martin ☎ South Benfleet (03745) 52663.

EMS VOCODER 1000 rack-mounting, 16-channel analysis, as new £400. ☎ (0726) 883265.

FENDER RHODES Stage 73, easy action, £250. Swap for Sequential Tom, Tascam 38, DX7 or Soundcraft mixer + cash. ☎ 01-360 5620.

INSTASTRING STRING SYNTH four-octave, four voices, £35. Also home-built Maplin Auto-Waa Pedal, great guitar effect, £19. ☎ 01-607 5057.

JEN SX1000 vgc, £75. Boss DR110 excellent condition, with manuals, £80. Tony ☎ Boston (0205) 61173.

JEN SYNX 508 polysynth, 64 memories, five-octave keyboard, sequencer, £250. 1 Briarwood Ave, Wythenshawe, Manchester M23 9AY.

KORG BX3 with flightcase, £675. ☎ 01-609 4550.

KORG DELTA polysynth, vgc, £200 ono. Roland TR808 drum m/c, vgc, £180 ono. Will swap for MIDI equipment. Paul ☎ 01-846 9653 (Hammersmith).

KORG DELTA polysynth/strings, excellent condition, £180 ono. Rik ☎ 01-560 8377.

KORG MONO/POLY £260. Roland Drumatix £100. Yamaha CS5 £110. Barry, 61 School Street, Barrow-in-Furness, Cumbria.

KORG POLYSIX, Delta polysynth, PSS50. Roland SH101, hardcase, adaptor. Also keyboard stand + ext. Home use only. ☎ (0203) 310808.

KORG POLYSIX 32 memories, powerful unison mode, chorus, with data cassettes and hard case. Bargain £350. ☎ 01-689 8372.

KORG POLYSIX, Delta polysynth, PSS50 Super Section, cases, stands, home use only, £900 lot, will split. ☎ (0203) 310808.

KORG POLY 800 home use only, £320 ono. ☎ (0325) 462394 daytime or (0783) 844141 evenings and Sundays.

KORG POLY 800 home use only, with extra taped sounds, white on black keys, £290. Paul ☎ 01-889 5975.

KORG SAS20 hard case, stand, extra rhythm cartridges, excellent condition, home use only, £550 ono. ☎ (0970) 3932 after 6pm.

MOOG LIBERATION synth with flightcase, vgc, collector's instrument, offers. ☎ (0563) 28178 evenings.

MOOG PRODIGY with case, hardly used, in excellent nick, £130 ono. Tim ☎ Cheltenham 521049 evenings.

MOOG PRODIGY powerful bass as used by Howard Jones, £90. Paul ☎ Basingstoke (0256) 28115 after 7pm.

MOOG ROGUE monosynth, £80 ono. ☎ (0563) 28178.

MOOG ROGUE monosynth, twin oscillators, condition as new, £85. ☎ Southend (0702) 351026.

OBERHEIM OB1 great bass/lead sounds, eight memories, flightcase, in top ten in Keyfax keyboard guide, £350. ☎ 01-281 1918.

ROLAND ALPHA JUNO 1 two weeks old, unwanted gift, £465. Andy ☎ (0904) 798126 after 6pm.

ROLAND BARGAINS Juno 60, perfect condition, only £399 ono. TR909 drum m/c fantastic at only £299 ono. ☎ Bedford 41071.

ROLAND JUNO 6 perfect condition, as new, £300 ono. Dave ☎ Derby (0332) 756173.

ROLAND JUNO 6 perfect condition, hard case, owner's manual, £300. Can deliver. ☎ Durham (0385) 782377 Mon-Fri eves.

ROLAND JUNO 60 £500. Roland Space Echo RE201 £230. Digital Stereo Reverb (Dynacord) with Bank 'B' expansion £500. Brian ☎ Worksop (0909) 486971.

ROLAND JUNO 60 plus JSQ60 2600-note polyphonic sequencer, excellent value, only £495. Dave ☎ Coventry (0203) 453364.

ROLAND JUNO 106 £495. Moog Prodigy £130. Roland MSQ700 £525. MXR 01a Digital Reverb £795. Immaculate. ☎ 01-467 4603.

ROLAND JUNO 106 two months old, unused, £495. Roland Bassline, boxed, vgc, £75. ☎ 01-851 5911 anytime.

ROLAND JX3P excellent condition with stand. Also Boss 4-track keyboard mixer. Phone for low price. Nick ☎ Beaconsfield 2760.

ROLAND JX3P plus PG200 programmer, boxed, with manuals, excellent condition, home use only, £500. Paul ☎ 01-640 8766 eves.

ROLAND JX3P £450. Roland TR606 £100. Both excellent condition. Jeff ☎ (0206) 241921 evenings or (0206) 892538 days.

ROLAND JX3P one year old, mint condition, boxed, manuals, free Boss DM2 delay unit, £400 ono. ☎ Windsor 69711.

ROLAND JX8P brand new, unused, must sell fast, £860. Paul ☎ 01-470 7874 evenings.

ROLAND 100M modular synth, 3 racks, 15 modules, MC4 keyboard, leads, manuals, etc. £950 ono. ☎ Romsey (Hants) 514890.

ROLAND RS09 £200. Roland TR606 £100. Bell 100W amp plus big cab, loud! £150. All ono. Jason ☎ (0706) 217260.

ROLAND RS202 strings keyboard, £85. Moog Prodigy £75. Korg Micro Preset synth £40. MR10 drums £20. ☎ 01-577 7966.

ROLAND SH101 monosynth, immaculate condition £130 ono. Simon ☎ 01-304 2709.

ROLAND SH101 and CSQ100, real-time, twin-channel sequencer, excellent condition, together £120. Phil ☎ Sheffield (0909) 563564.

ROLAND SH101 £165. Korg DDM110, £150. Both as new, still boxed. ☎ Bentham (0468) 62258.

ROLAND SH09 and pro f/case, £95 ono. Dale ☎ Langley Mill 761564 or 764563.

SCI PRO ONE immaculate condition, £140. Also MC202 two-channel sequencer, £90. ☎ 01-471 4348.

SCI PRO ONE £135, excellent condition with manual and boxed. Also MC202 £100. Ben ☎ 01-980 3232, 9am-4pm.

SCI SIX-TRAK £400. Model 64 sequencer, £110 ono. Both good condition, home use only. ☎ (0246) 851466.

SCI SIX-TRAK 64 sequencer, 910 expansion software, manuals (Commodore 64 based). Great system, £410, as new. Pip ☎ 01-840 6658.

SCI SIX-TRAK + Model 64 sequencer + 910 expansion software, £375. Roland Bassline + MC202, £150 the pair. ☎ (0225) 65744 or 65207.

SIEL EX80 expander, still boxed, £185. Boss handclap pedal, £20. Roland Drumatix £80. Home use only. ☎ (0229) 21733.

61-VOICE TOUCH sensitive polysynth, swap for MCS1 digital sampler kit/built or SH101 and grip. Mike ☎ 01-907 4755.

SWAP DX21, Poly 800, hard cases, all perfect, for DX7 good condition. Mick ☎ Barnoldswick (0282) 813130.

YAMAHA CS70M perfect condition, keyboard split, massive poly sequencer, 12 oscillators, 30 programmable sounds. £600. Colin ☎ 061-224 0221.

YAMAHA DX7 home use only, vgc, £900 ono. ☎ (0749) 76635 after 6pm.

YAMAHA DX7 home studio use, boxed, £900. Also Sequential Drumtraks, boxed, £650 ono. Paul ☎ 021-445 5571.

YAMAHA DX7 perfect condition, RAM cartridge, breath controller, sustain pedal, headphones, stand, case, £895. ☎ 01-866 2491 evenings.

YAMAHA DX7 immaculate, less than twelve hours use, £920. Dominic Alldis ☎ 01-935 8073.

YAMAHA DX9 absolutely immaculate condition, home use only, ungigged, £485. ☎ Bexhill 212744.

YAMAHA DX100 brand new, boxed, £300. Casio MT400V synth with filter, £145. ☎ Sheffield (0742) 553169.

YAMAHA MK100 Portasound keyboard, multi-prog, perfect condition. Mike ☎ 01-993 0647.

YAMAHA PF80 boxed, touch-sensitive, 88 weighted keys, MIDI controller etc, £885. ☎ 01-668 4934.

YAMAHA PS6100 FM voices, PCM rhythms, home use only, £700 ono. Ian ☎ 01-366 3581 (Enfield), evenings.

Sampling

AKAI SAMPLER + disk drive, £550. Yamaha RX11 £300. MT44D £200. DX9 £450. All immaculate. ☎ Birtley 091-410 9442.

MH RECORDINGS, GREENGATE OWNERS' CLUB. More members welcome, send for newsletter to: 31 Arundel Road, Luton, Beds.

POWERTRAN MCS1 sampler/delay £300 ono. ADC SS3 graphic EQ, 12-band stereo, £125. Swap both for TX7. Dave ☎ 01-461 3169.

Sequencers

CASIO SZ1 MIDI sequencer, four-track real- and step-time recording, £199. ☎ Ruislip (08956) 76873 evenings.

CASIO SZ1 MIDI sequencer, £170. Cutec MR402, 4-track cassette £280. CBM64, disk, cassette, books, software, £300. ☎ (04302) 3204.

FIRSTMAN SQ01 synth sequencer, £110 ono. ☎ (0325) 462394 during day or (0783) 844141 evenings.

ROLAND MC202 excellent condition with power supply and instructions £110. Roy ☎ Erith (03224) 35883.

ROLAND MC202 Microcomposer, good condition, boxed with manual, £110. ☎ Southend (0702) 351026.

ROLAND MC4B Microcomposer, sophisticated flexible sequencer plays up to eight synths or JP8 MIDI. £500. Martin ☎ 01-903 4611, (03744) 65674.

Drums

ANOTHER CHANCE to buy my Korg DDM110, immaculate, boxed, instructions, PSU etc, £110 ono. Bill ☎ 01-444 6755 eves.

BOSS DR110 rhythm unit, excellent condition, original batteries, £80 ono. Paul ☎ 01-889 5975.

BOSS DR110 mint £75. Jon ☎ 01-734 4257/8 days, 01-603 4907 eves.

BOSS DR110 drum m/c, home use only, perfect condition, c/w manuals, £70 ono. ☎ 01-761 4136.

BOSS DR110 perfect condition, great h/clap, boxed with manual, £95. Paul ☎ Basingstoke (0256) 28115 after 7pm.

BOSS DR110 includes power supply and leads, £60 ono. Matthew ☎ (0305) 788361 evenings.

BOSS DR110 excellent condition with PSU, manual, boxed £70. Paul ☎ Guildford (Surrey) 67882.

BOSS DR110 very good condition, boxed with manual, selling to upgrade, £70. Daniel ☎ 01-657 0308 evenings and weekends.

CLEF MASTER RHYTHM excellent condition, all instructions included, £50. Mike ☎ 01-677 5628 eves.

DRUMTRAKS OWNERS Any sound on a chip, your tapes digitised too, from £10. SAE, PO Box 387, London N22 6SF.

KLONE MULTIKLONE module, great Simmons sounds, triggered by pads, buttons or machines. See Sept '85. £150. ☎ Basildon 559872.

KORG DDM110 boxed, leads, only £160. Pete Thomas ☎ (0707) 326747 after 6pm weekdays.

KORG DDM220 digital percussion, £100. ☎ Wantage (02357) 4146.

KORG KPR77 programmable drums, modified trigger outs with interface to drive E&MM Syndroms, £120 ono. Bill ☎ Knowle 78488.

PEARL SYNCUSSION two drums, console, stands and leads. Lots of great sounds, only £60. Mick ☎ 01-807 5747 (Edmonton area).

ROLAND DRUMATIX and Bassline, excellent condition, £130 the pair. Get there first! Craig ☎ (0296) 622463 evenings.

ROLAND TR606 Drumatix, separate outputs, soft case, manuals, perfect £90 ono. Phil ☎ 01-876 0599.

ROLAND TR606 Drumatix, mint condition, as new, hardly used, still with original batteries, £90. Christian ☎ (0924) 279637 evenings.

ROLAND TR606 plus TB303 with cases, home use only, excellent condition. £130. John ☎ (0443) 791159 (South Wales).

ROLAND TR606 good condition, batteries and patch charts included, boxed with instruction manuals, £120/ good offer. Martin ☎ (03745) 52663.

ROLAND TR606 £100. Moog monosynth £80. Hand Clap synth £25. Quick sale £170. Interested? ☎ 01-777 2372 evenings.

ROLAND TR808 drum m/c, £250. Transcendent 2000 monosynth £75. ☎ (0934) 415441.

ROLAND TR909 MIDI, independent outputs, volume and tuning, etc, £370 ono. ☎ 01-885 2199, 24hrs answerphone.

ROLAND TR909 separate outputs, level, decay, owners manual, MIDI, £325 ono. ☎ Southend (0702) 510274 after 6pm.

SIMMONS SDS5 bass, four toms, all leads and stands inc, offers around £700. ☎ Deeside 817353.

SIMMONS SDS5 hi-hat and cymbal module uses EPROM, pedal included, perfect condition, £75. ☎ 01-444 2903.

SIMMONS SDS8 black, gigged once, £425. MPC Sync Track, boxed, used once, £25. Mick ☎ Wivenhoe 2328 (Colchester area).

SYCO MFB512 digital drum machine, individual and stereo outputs, nine voices, trigger I/O, 128 patterns, vgc, £135. ☎ 01-455 3608.

ULTIMATE PERCUSSION 'one-up' synth drum, as new plus high quality 'L' clamp double tom stand, £58. ☎ Southend (0702) 618505.

UNFINISHED PROJECT modified Remo kit, with two Syntom II, Synbal, Synclap, power supply, £85. Paul ☎ Swindon 828832.

Computing

ACORN MUSIC 500 + ATPL keyboard, leads, manuals and all software, mint condition, £175 ono. David ☎ Kilsyth (0236) 824825 after 6pm.

ACORN MUSIC 500 for BBC B. Mint condition, £99 ono for quick sale. ☎ 01-485 1394.

ACORN MUSIC 500 and MIDI interface, with 6-track real-time MIDI recording, £250 ono. Sean ☎ Rushden (0933) 314016, after 6pm.

ATARI 400 48K + program recorder, lightpen, joystick, assembler cartridge, manuals, books, memory maps, software. Bargain £100 ono. ☎ (0536) 20038.

BOOK AND DISK 'Creative Sound on BBC Micro'. £15. Sean ☎ (0933) 314016.

CHANGE DATA SOUNDS DX7, Casio CZ101, Juno 106, and Ensoniq samplers. Write to Carlos Carcaho, C.Avila No 21, Madrid, Spain 28020.

CX5M PRINTER Toshiba HPX550, prints all Yamaha characters, staves, notes, etc. Superior to Yamaha's own. £199 ono. ☎ (0474) 60495.

MICROSOUND 64 system for CBM 64, cassette software, hardly used, includes all instructions, £150 ono. ☎ Lough (0507) 602251.

SIEL INTERFACE and 16-track composer software for CBM64, £95. ☎ Cheltenham (0242) 35328.

SOUNDCHASER/APPLE music system comprising 4/oct keyboard, m/hardware, oscillator cards plus extensive software, £425 ono. ☎ (0532) 497881.

SWAP ROLAND BASSLINE, mint condition, for Commodore 64 or Korg DDM220 or WHY. ☎ Rotherham 817648.

UMI 2B EPROM for BBC. Keyboard stand £18. ☎ 01-367 5502.

YAMAHA CX5M small keyboard, Composer, Voice Editor, ROMs, boxed £250. ☎ Torquay (0803) 33833.

YAMAHA CX5M + new DMS 8-track sequencer, voicing, composer software, keyboard, boxed, £325 ono. Gary ☎ 01-871 0157.

YAMAHA CX5M large keyboard and ROM, £300 ono. Twin reverb combo £140. Korg DDM110 £80. Consider swaps. ☎ (0255) 52143.

Recording

AKAI 4000DS £70. Aurex stereo noise reduction (2) suitable 4-track, £50 pair, Sansui graphic £50. ☎ Romford (0708) 61646.

BOSS RCL10 compressor/gate, four months old, home use only, £75. ☎ (0926) 613625.

DYNACORD digital reverb, excellent condition, £399. ☎ 01-341 1585.

DYNAMIX 12:2 ideal for PA and recording, 4-band EQ, PFL and balanced inputs, 4-way switchable monitoring, £200 ono. ☎ (028 577) 498.

FOSTEX B16+Remote £2995. Half-inch Ampex 456, £15. Dynacord Percuter, 14 modules, £645. SDS8 Brain £195. ☎ (0602) 414892.

FOSTEX 250 Multitracker, £470. ☎ 01-699 6128.

FOSTEX X15 Multitracker, two months old, £200. Mike ☎ 01-907 4755.

KORG GR1 reverb, gated, full stereo onboard EQ, two months old, mint. £195 ono. ☎ 01-455 3608.

PHILIPS home recording system, twin tape decks, +50W amp, echo unit, still boxed £80 ono. ☎ (0909) 567628.

POWERTRAN DDL 1.6sec, £160, offers. Roland Bolt 60W, vgc, £175, offers. Wanted: MC202, p/x? ☎ (0702) 332700.

ROLAND SRV2000 reverb, £900. RAM Micro RM16 mixer, £600. CX5M, large keyboard, 3 cartridges, including DMS sequencer, £250. ☎ (0707) 55274.

RSD STUDIOMASTER Studio 4, as new, £500. Ian ☎ 01-445 9169, before 9pm.

TASCAM 244 Portastudio, hardly used, £690 new, bargain at £485. ☎ Cheltenham (0242) 35328.

TASCAM 244 Portastudio, mint condition, boxed, very little use. £495. Amdek 6-channel stereo mixer £40. ☎ 01-205 6652 eves.

TEAC A3440 plus remote, £550. RSD Studiomaster 16:4:2, £700. Both mint, will split, offers. Paul ☎ Sheffield (0742) 581442.

TASCAM PORTA ONE superb condition, four-track cassette/mixer, etc, £260 ono. ☎ Daventry (0327) 843449, evenings.

VESTA FIRE RV3 dual reverb, four months' home use only, £150. Casio CZ101, immaculate, £280. ☎ (0926) 613625.

YAMAHA R1000 digital reverb, perfect condition, £250 ono. Vintage synth, original Clavioline, offers. ☎ (0332) 558728.

Amps

H/H STUDIO 60 including Monitor 60 and footswitch (2×12" 100W combo), suitable for any purpose, vgc, £160. Simon ☎ 01-304 2709.

H/H GUITAR 100W combo first offer of £50 secures. ☎ (0563) 28178 evenings.

LANEY 40W bass combo, perfect ungigged with para EQ, £85 ono. ☎ 01-761 4136.

TRACE ELLIOT 1110 Combo, one year old, £475 ono. ☎ (0628) 29012 evenings.

WAL PRO ONE bass, beautiful instrument, perfect condition, £340 ono. ☎ 01-761 4136.

Misc

AMP RECORDS The finest synth albums around. SAE for new catalogue. AMP Records needs exceptional synth artists for their second compilation album. Tapes to AMP Records, PO Box 387, London N22 6SF.

BACK ISSUES E&MM ES&CM, Sound International. SAE for details: Trevor Else, 13 Hudson Place, Harehills, Leeds LS9 6EJ.

CASIO 201 £250. TR606, mint, £90. GBS, mint, £100. All items home use only. ☎ (0226) 204315.

DEMO TO DEAL We can do the whole package for you for £300 or less. Interested? ☎ 051-722 6084.

FOUR-OCTAVE MAPLIN keyboard, all 49 contacts painstakingly fitted, ideal for experimenters, £20. ☎ Ruislip (08956) 76873 evenings.

MIDI, DIN SYNC, digital, analogue gear, mods, repairs, interfacing, programming, tuition. Expensive? No! Richard ☎ 01-743 7321, daytime.

RECORDS European, electronic, avant-garde. SAE for details: Trevor Else, 13 Hudson Place, Harehills, Leeds LS9 6EJ.

RICKENBACKER 4001 bass, left-handed, immaculate condition, £225. ☎ (0268) 284761.

ROLAND JUNO 6 Westone Thunder 1A bass, Korg MS10, Korg DDM110, Powertran MCS1, DOD Phaser, £1050 ono. ☎ (0602) 830382.

SHURE UNIDYNE B £20. Ibanez Distortion £12. Sinclair ZX81 £15. Volume Pedal £5. ☎ Sheffield (0742) 553169.

TX7 £400. Bassline, Drumatix, Clap, £200. All excellent condition, boxed. Rok Star ☎ (0484) 546062.

Personnel

BASSIST/Lead Vocalist wanted: Wetton, Lake, G Lee, R Page. Drummer wanted, Simmons, double b/drum: Bozio, Palmer, Paice, Powell, Cobham. ☎ 01-727 1499.

GUITARIST age 23, with gear, transport, experience, feel, seeks serious modern band, W/London Heathrow area. ☎ 01-898 4964 anytime.

MARRIED MAN younger than he looks, seeks young females (especially Sam Fox lookalikes) into Elvis, Eagles, Mantovani, for guitar/vocal duets, fun and frolics, bondage, in back seat of go-kart-eating Ford Sierra. Anyone interested call Tony, ☎ (0223) 323392. Please help, I'm desperate.

TRANSVESTITE/ELECTRONIC (heterosexual) musicians needed for outrageous electronic band, electronic drummer, synthesist, 2 guitar synthesists, 2 outrageous girl dancers, sax/keyboard player. ☎ (0908) 677495.

VOCALIST REQUIRED for Cambridge-based band. Pete ☎ (0223) 327582.

Wanted

ALTERNATIVE SOUND chips wanted for SCI Drumtraks. Chris ☎ (06284) 73393.

BIT ONE SOUND data tapes (wrong phone number last time) ☎ Bristol 567495, 5.30-7pm and sociable hours weekends.

BOSS KM400 mono mixer, or similar small mixer. Also Sinclair Spectrum 48K. Peter ☎ 01-203 3070.

BROKEN, faulty, recording equipment, mixers, echoes, synths, recorders, etc, anything. Cash waiting, send: Bateman, 65, Roseland, Waunarlwydd, Swansea.

CARLSBRO COBRA 90 PA amp, any condition but must be in working order. ☎ (0992) 460110.

CONTACT WITH YAMAHA DX7 programmers to exchange sounds and discuss problems. Helen Cebis, 19 Wanndina Avenue, Dianella, Western Australia 6062.

HELP! I have an Alpha Syntauri, unoperational. Any info, manuals, software, suggestions. Rik ☎ 01-560 8377.

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JUNO 106, RX15, must both be in good working order. Paul ☎ Guildford 67882.

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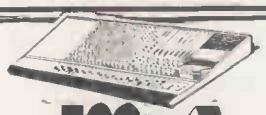

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