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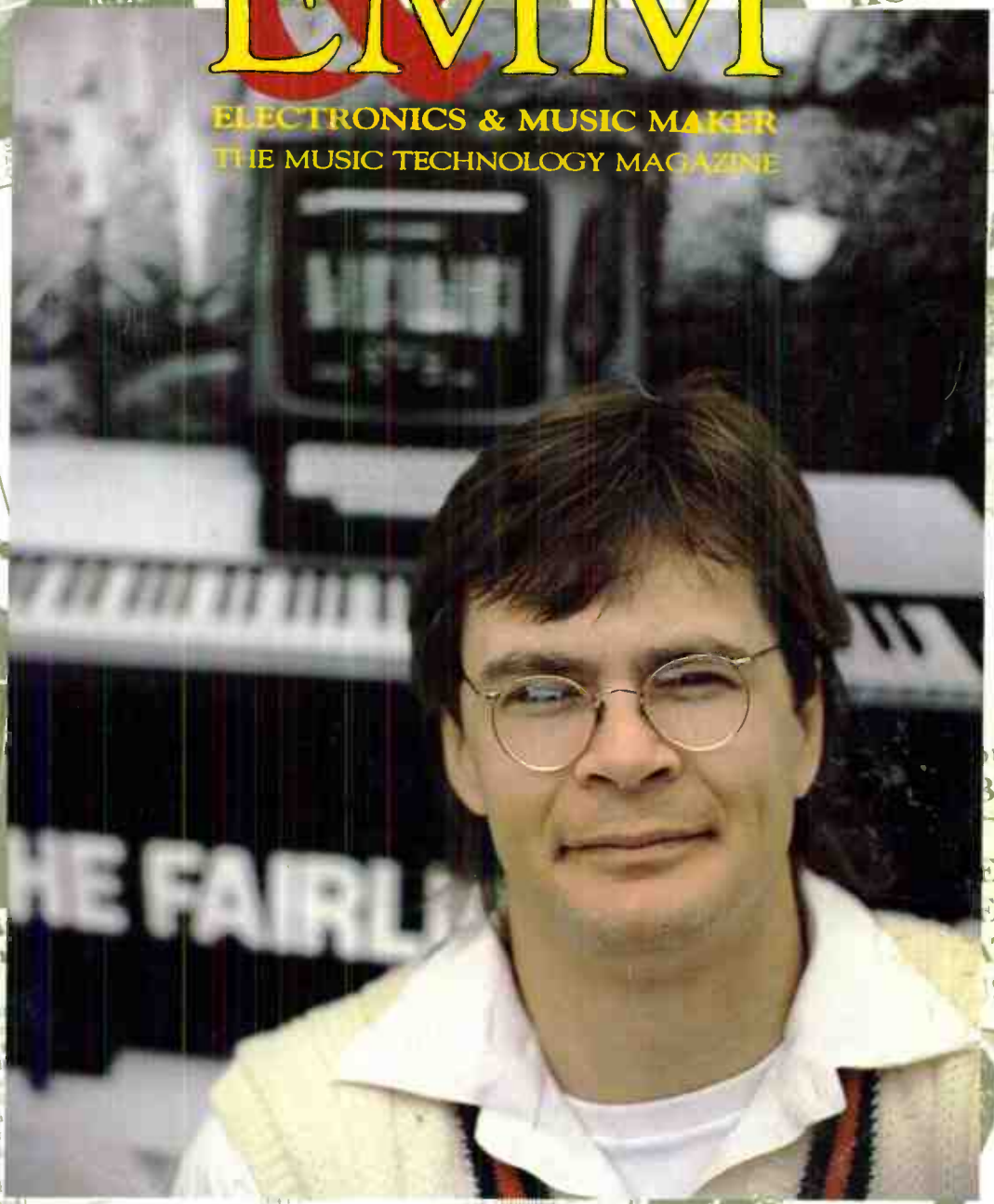
E&MM

ELECTRONICS & MUSIC MAKER
THE MUSIC TECHNOLOGY MAGAZINE



The Noise of Art

J J Jeczalik talks Fairlights, Cricket & ZTT

A Taste of Paradise

London's Hi-tech Studio Heaven

The Appliance of Science

Digicon '85: An Exclusive Report

A Test of Strength

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Vesta Sampler Software from Syntech, Passport & UMI

Roland

the total MIDI concept

1 SRS-120

2 SRV-2000
SEQ-315 × 2
SRA-2400
SRA-4800

3 MKS-80 × 2
MKS-30 × 2
MKS-10
MKS-7

4 RDD-10 × 2
RPH-10 × 2
RGE-10 × 2
RCL-10 × 2
RBF-10 × 2
RAD-10 × 5
SRV-2000 × 6
SDE-1000

5 SDE-3000 × 2
SDE-2500
SEQ-315
SEQ-331
SRA-2400
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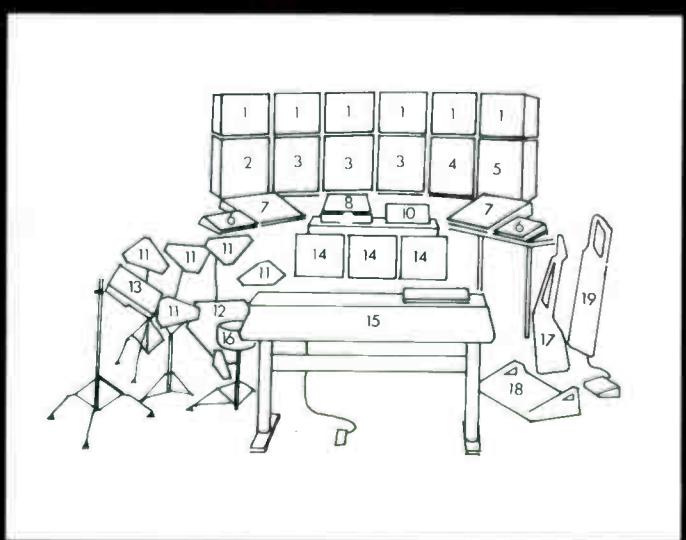

6 BX-800

7 RM-12/4

8 TR-727

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Contents

E&MM November 1985 Volume 5 Number 9

Software Stumbling

The software revolution continues unabated. Or at least, there's more of it available now than there's ever been, as this issue's quota of reviews shows. Three programs, two of them entirely new packages from across the Atlantic, the other an updated version of an established British affair, come under the scrutiny of E&MM's reviewing team in November.

In the pages that follow, Simon Trask examines how the UMI 2B has been improved over its predecessor, the 1B; Ian Waugh revels in Passport's best scorewriting program yet; and Trish McGrath celebrates the arrival of an American Commodore-based package that offers some truly novel facilities – then finds herself regretting that the system, from the Syntech Corporation, isn't yet available this side of the pond.

To an extent, the proliferation of MIDI software packages – most of which are intended to take the place of a dedicated sequencer – is reflected in an increase in the number of computer systems used by today's musicians. The UMI system (the British package mentioned above) now numbers Tears for Fears, The Cars and Vince Clarke among its professional users. And the company that markets UMI, The London Rock Shop, has now sold over a hundred systems.

But when you bear in mind just how much more *comprehensive* so many computer programs are by comparison with their dedicated counterparts, their impact thus far has been fairly limited. Demand for dedicated machines is still buoyant, despite some huge price discrepancies, and the fact that almost all 'software-in-a-box' machines are less friendly to use than their competitors from the home computer world.

Part of the reason for this lies in the sheer logistic awkwardness of a computer-based package. If you're in a gigging band, or just someone who carries their gear about a lot, having to transport synths, software, computer, disk drive and monitor everywhere is a major hassle. You *could* get most of it onto a seat in the cab of the Transit, but the chances of it staying there over the first three bumps in the road are slim.

Then there's the fact that home computers, not being designed for life in the sedate surroundings of a recording studio, let alone the hurly-burly of a concert tour, have a well-deserved reputation for breaking down at awkward moments. That's also true of dedicated instruments that use similar technology (and these days, that's most of them). But somehow, it always seems easier to get a Yamaha sequencer fixed than it is to find someone to go troubleshooting inside a Commodore 64.

But if I had to give the single biggest reason for software's current failure to make big inroads into the sequencer market, I'd point the finger at the retail end of the chain.

Let's face it. If you work in a High Street retail shop and space and time are at a premium, the last thing you need is someone waltzing into the shop and asking for a demonstration of some sequencing software. It's complex and time-consuming to set up, difficult to explain properly, and at best, only going to end up with a sale that's worth the shop perhaps £25 or £30 in pure profit.

That's a shame because, as I've said, software packages offer an awful lot in the way of useful facilities, whether you're a musician without enough hands to play what you want to play, or a composer without any playing ability in the first place.

I get the feeling that if software *is* to become as widely used as it deserves to be, the people who market it are going to have to build in even more facilities, make it even more straightforward to use, and give it a more professional (ie. higher) price-tag.

UMI's success proves that musicians will part with significant sums for their software, so long as the system they get in return does the job. And why not, when dedicated machines of similar power still cost four times as much, and when a small business (which is what a pro band is, after all) can part with ten times as much for a business software package?

In his appraisal of the UMI 2B, Simon Trask points to the fact that it's probably the last of the great eight-bit music software systems. It stretches its host computer (the erstwhile BBC B) to its limits, and much the same is true of similarly comprehensive packages based round similar micros like the Commodore 64 and the Apple.

Try to build in any more complexity, and you're looking at 16-bit micros like the Apple Macintosh – something a number of US software houses have already done with some success. When the new generation of affordable 16-bit computers – spearheaded by the Atari ST and Commodore's Amiga – become generally available, music software will get more convenient, more user-friendly, and more sophisticated than ever.

But don't be surprised if the new-generation software comes a little bit pricier than the current stuff. Because for it to be marketable, it'll need backup from an enthusiastic dealer network that knows its cut is going to be worthwhile. And because, despite the democracy-spreading price reductions of contemporary music hardware, a lot of musicians still equate pounds with performance. ■

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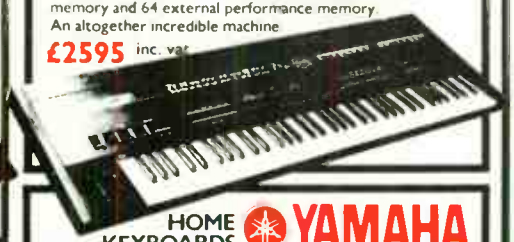

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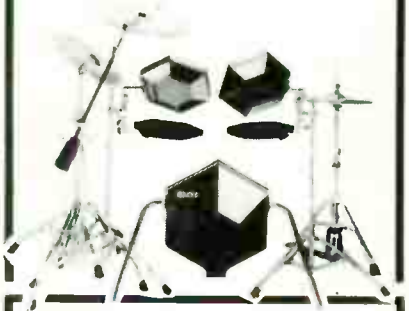

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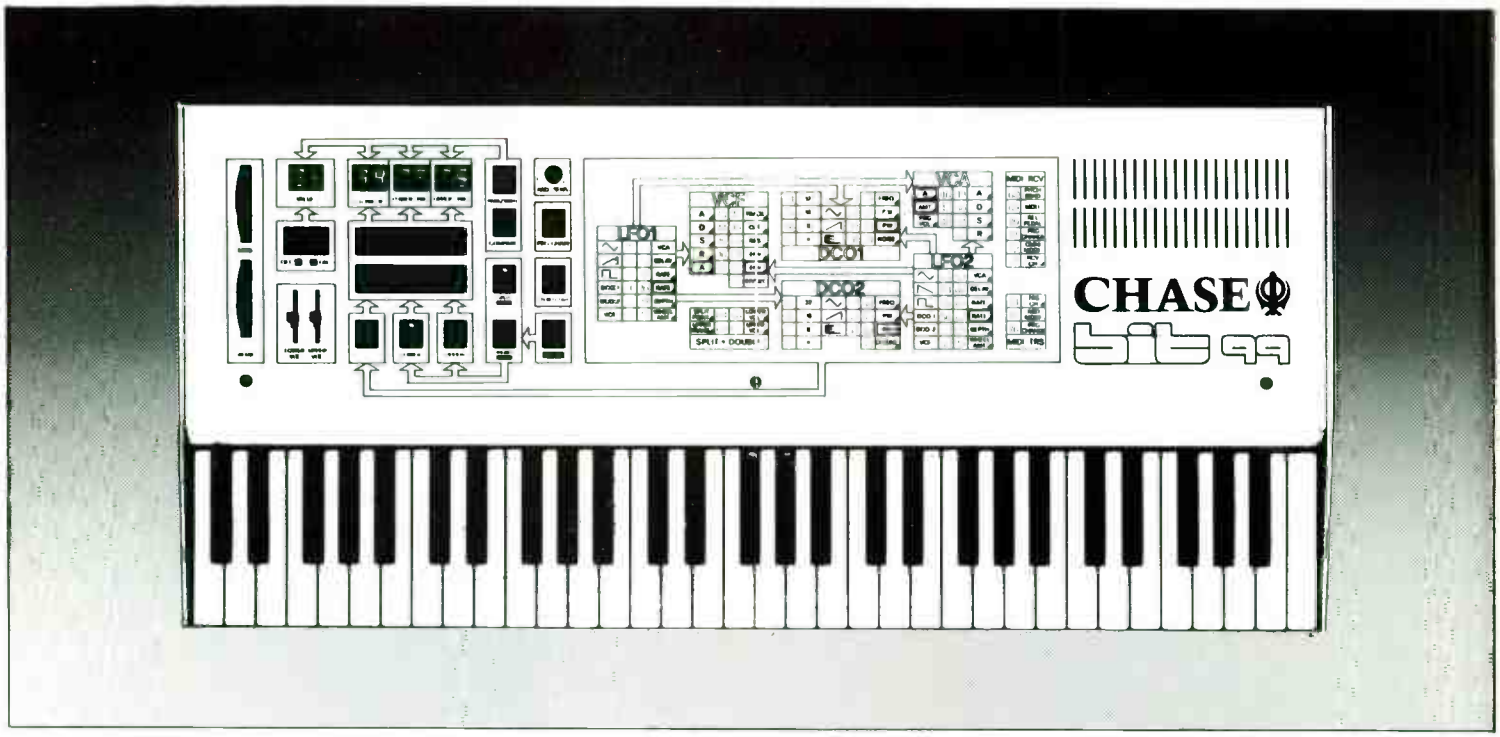

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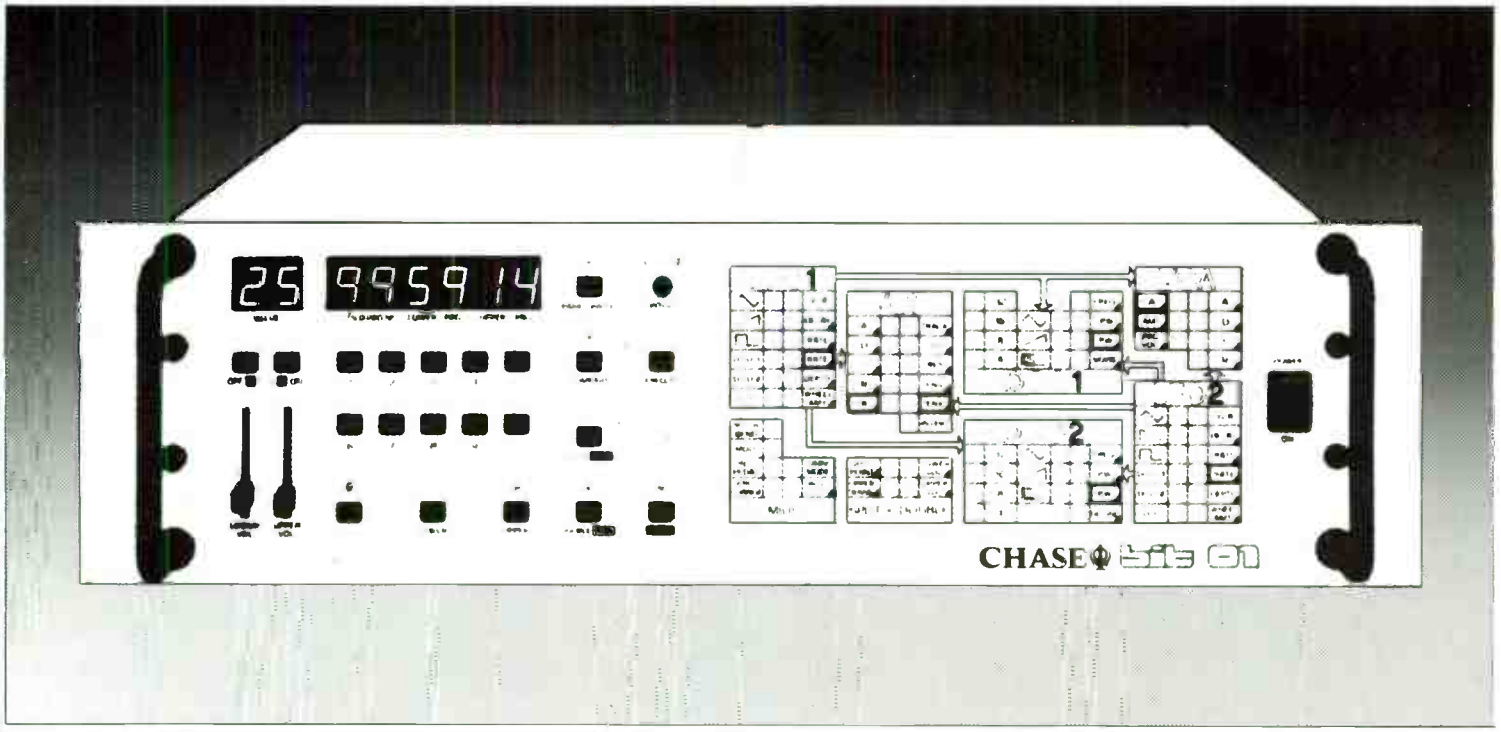

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Newsdesk

More Commodore

Looking for some new FM sounds? Bored of editing the hard way on your DX7? Tired of having to download your TX sounds to your DX7 in order to save them to disk? Well, **Syntech**, the Californian company responsible for the Studio I sequencing software reviewed elsewhere this issue, could have the answer for you. Their DX/TX Master program provides you with 900 new sounds suitable for both the DX7 and TX7, and is designed to perform all editing and dumping tasks with the aid of your neglected Commodore 64. Syntech have also produced the DX-TX EZ Voice, an editing program for the DX7 and TX7 designed for the IBM PC, which utilises colour graphics and four screens, and is therefore slightly more sophisticated than the Commodore version. **More from** *Syntech, 23958 Craftsman Road, Calabasas, CA 91302. ☎ USA (818) 704 8509.* ■

Lion's Share

If, like composer Michael Boddicker in this month's report on Digicon '85, you're having problems with cumulative MIDI delays, a small UK company could well have the answer. Leo'tronics **are the company in question, and their product is the MIDI Six patch box. For a mere £35, the MIDI Six allows control over up to six slave instruments without incurring the delay inherent in the use of a MIDI Thru socket. More from** *Leo'tronics, 5 Leonardin Close, High Crompton, Oldham OL2 7NH. ☎ (0706) 845389.* ■

A Change of Tone

And for those of you either bored or no longer inspired by the bog standard, 12-semitone, black and white keyboard octave, ***Soundscape Productions*** *wish to announce the availability of their range of 40 intonation programs for the Prophet 5 polysynth. The range covers everything from major keys to seven ancient Greek scales, and comes in both disk and cassette formats. Assuming you already have an example of Sequential's classic programmable poly, cost is a mere $25.* **More from** *Soundscape Productions, Postal Box 8891, Stanford CA 94305, USA.* ■

Delayed Sampler

Four months ago, in E&MM August, we mentioned the **Rebis** RA226 digital sampler as part of our roundup of musically meaningful things on show at this year's APRS exhibition in London. Well, Rebis now tell us that they've decided to delay production in order to incorporate certain hardware and software improvements to the unit, most of which have come about thanks to enormous public response to the 226's unveiling. The sampler's price has also yet to be finalised, but production should have begun by the time you read this. **More from** *Sound Technology, Unit 6, Letchworth Business Park, Letchworth, Herts. ☎ (042) 675675.* ■

Trace Grace Drumming

EPAS? It sounded like a spelling mistake to us, but it actually stands for Electronic Percussion Amplification Systems, the latest venture from amp people ***Trace Elliot****. Already established as a force to be reckoned with in bass amplification, they have turned their collective attention towards the problems of amplifying electronic drums and percussion – and come up with two systems. The first is a modest 400-watt stereo setup, while the second offers the choice of 800W in mono (biamping) mode, or 800W full-range stereo. The secret of the systems seems to be a wide dynamic range combined with A-bomb proof cabinets. We hope to be reporting on these soon.* **More from** *Soundwave, Unit 7, 49 Braintree Road, Witham, Essex CM8 2BZ. ☎ (0376) 517237.* ■

Art Into Art

A conference entitled ***Art Into Music Into Art*** *is due to take place at the Sainsbury/Green Park Station Conference Centre in Bath on November 1-3. The purpose of the conference will be to examine the relationship between music and those visual art forms practised by artists working on the boundaries between the two. To raise the general tone of the event, various reputable individuals have agreed to participate, and these include Brian Eno, Emmett Williams, Howard Horne, Simon Frith and John Caskens. Unfortunately, admittance to the proceedings costs £28 (£20 for students), but it should be worth it.* **More from** *the conference organisers on ☎ (0249) 712571.* ■

Hands On Turnkey

In the past it's been restricted only to a weekend, but Turnkey's 'Hands On Show' has been granted an extended lifespan of a whole month this year. The month in question is November, and the show will include daily demonstrations and a number of seminars, as well as ample opportunity to leave your greasy fingerprints on lots of expensive recording and auxiliary equipment. Tickets are required only for the seminars, and you can get hold of them (along with further information on the Hands On month as a whole) just by dropping in to the *Turnkey Shop, Percy Street, Tottenham Court Road, London W1 ☎ 01-202 4366.* ■

Join the Club

Just to show that Newsdesk has an eternally compassionate side to it, we've decided to relieve E&MM's Production Editor, and the problems she has trying to deal with queries about how to get in touch with the DX Owners' Club. So for anyone about to pick up the phone, here's the address yet again: *DX Owners' Club, PO Box 6, Ripon, North Yorks, HG4 2QT.* ■

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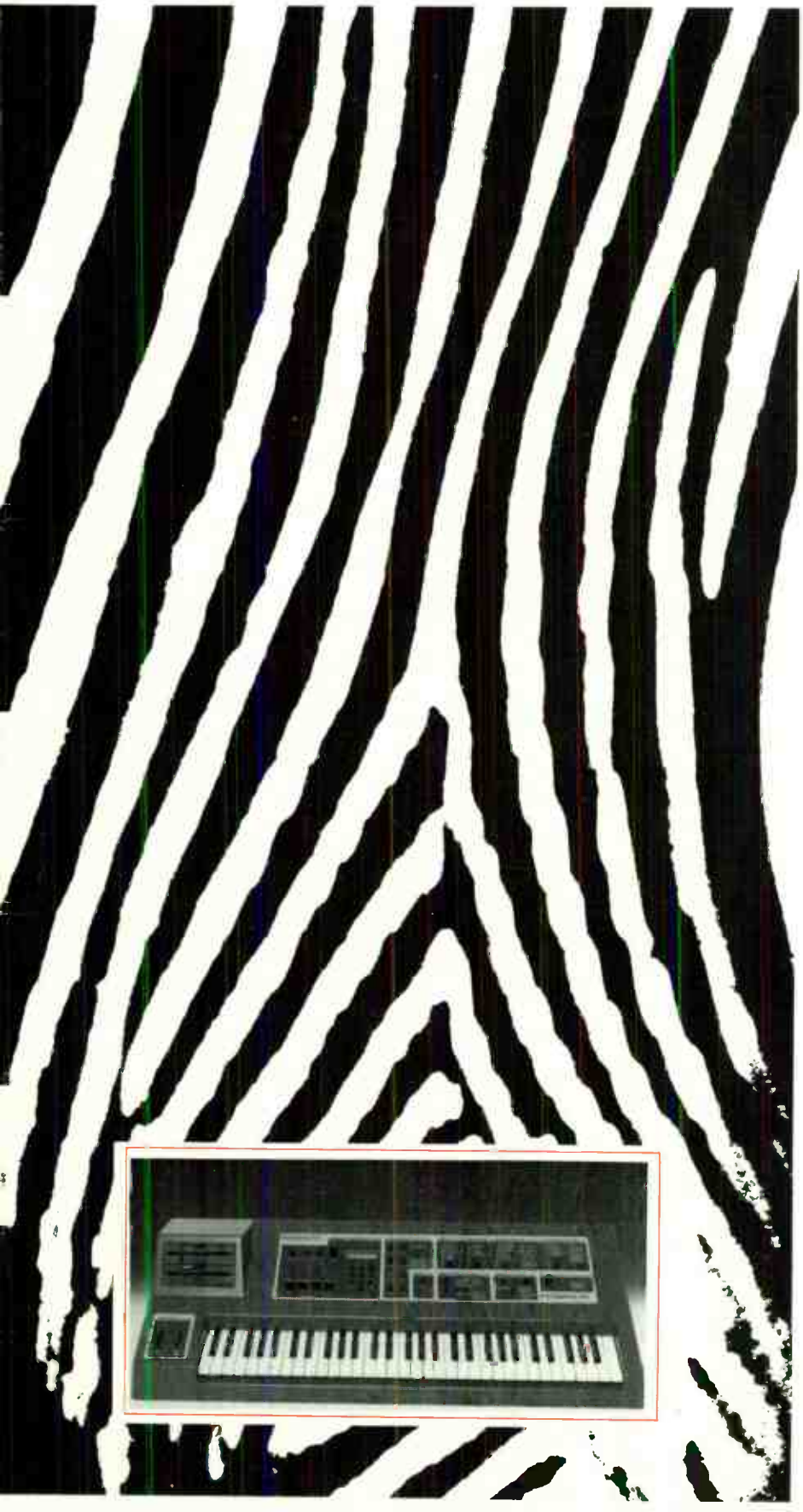

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EII – MORE THAN A SAMPLING KEYBOARD

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Sound Designer, a programme for the EII/ Apple Macintosh, offers very detailed examination of the sounds and parameters in the EII. Fast Fourier analysis, Waveform editing and mixing, and some unique sound generation algorithms are all possible.

The Sound Library for the EII now extends to over 120 professionally sampled sounds, and the manufacturers are increasing this number on a continuing basis.

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DOD Delay

A full seven-second delay time and external trigger facilities are just two of the features of the **DOD** RDS3600 digital delay, a new machine that's also found its way into Dave Simpson's review of the Vesta Kozo sampler in this month's E&MM. The 3600 performs all the usual DDL party tricks like chorus and flanging, and is claimed to be suited to both live and studio applications. **More from** *Rhino Music Spares, Burnham Road, Dartford, Kent.* ☎ *0322 77321.* ■

OSC Burgers

The activities of the Oxford Synthesiser Company have just been expanded to encompass the world of computer software. The people who brought you the OSCar monosynth and should (R&D permitting) soon be offering the Advanced Sound Generator polysynth, have just been announced as official UK distributors for a range of MIDI software from West German company Steinberg Research. Intended to cater for both the professional and educational markets, Steinberg's software is all disk-based and is written mainly for the Commodore 64, though the 16-track Polyphonic Sequencer, Scorewriter and TX7/DX7 Editor are also available for Apple II and IIe computers. In addition to these packages, the range includes a Sound Editor for the Korg DW6000, a Piano Partner educational package dealing with chord and scale relationships, a simllar Guitar Partner that makes specific concessions to the fingerboard, and hardware packages covering a MIDI Interface, a Synchroniser for sequencers, drum machines and tape sync pulses and, finally, a 'Deluxe Package' which combines the last two with additional MIDI facilities. Prices range from £35 for the Synchroniser and educational packages, to £135 for the Deluxe MIDI Interface. More from *OSC, 5 Gladstone Court, Gladstone Road, Headington, Oxford OX3 8LN.* ☎ *(08675) 5277.* ■

Auntie's Playroom Extension

Due to a production cock-up, the equipment listing mentioned in the text was omitted from last month's article on the BBC Radiophonic Workshop titled 'Auntie's Playroom'. Those responsible are now doing (in)voluntary work repairing EDP Gnats, but not wishing to disappoint any readers, we've gone to great lengths to present the listing this month. Read on...

RADIOPHONIC WORKSHOP EQUIPMENT SCHEDULE. PAGE 18.

SYNTHESISERS

MAKE	MODEL	SERIAL NO.	YEAR
EMS	VCS/3	253	
"	"	179	
"	SYNTHI SUITCASE	4226	
YAMAHA	SY-2	1051	
"	"	1508	
"	CS01	23580	
"	CS-15	4088	
"	CS-40M	1584	
"	CS-80	1740	
"	DX-7	7559	1984
"	"	7400	"
"	"	7387	"
"	"	72202	1985
"	"	72217	"
"	DX-1	1006	1984
"	TX816	1072	1985
"	SEQUENCER QX1	1217	"
ROLAND	SYSTEM 100M(191)	820667	
"	"	830732	
"	"	750182	
"	JUPITER 4(COMPUPHONIC)	831074	
"	SEQUENCER CSQ-100	892179	
ARP	ODYSSEY	28791	
"	"	28210623	
OBERHEIM	OBX	804204	
SEQ. CCTS.	PROPHET 5	0692	
CASIOTONE	201	181461	
ELECTRONIC DREAM PLANT	WASP DE LUXE	1001*	
WAVEMKR/K.GALE	REC.MODULE DR1	RW19*	
RWS/WAVEMKR	MODULAR SYNTH	RW12/1*	
"	"	RW12/2*	
"	"	RW12/3*	
"	"	RW12/4*	
"	"	RW12/5*	
RWS	MISC.SYNTH UNIT	RW16*	
RMI	ELECTRIC PIANO 368	BBC3	
ELKA	SYNTHEX	1079	1984
"	"	1151	"
OXFORD SYNTH.CO.	OSCAR	SN0073	"

RADIOPHONIC WORKSHOP EQUIPMENT SCHEDULE. PAGE 19.

SYNTHESISERS(CONT.)

MAKE	MODEL	SERIAL NO.	YEAR
EMU	EMULATOR 2	202	1984/5
FAIRLIGHT	CMI COMPRISING:-		
	CENTRAL PROCESSOR	SNA058172	
	VDU	SNB058173	
	6 OCTAVE KEYBOARD	SNC068173	
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PPG	"WAVE" COMPRISING:-		
	*WAVE 2.3 SYNTH.	-	
	WAVETERM WT	0088	
	PROCESSOR KEYBOARD	-	1984
SISME	GODWIN STRING CONCERT	001438	
"	"	001648	1984

*Replaces PPG 2.2 NO.01163

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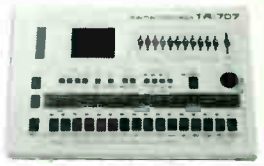

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Unfair 1

Dear E&MM,

As your magazine has always offered moral support to UK Electronica in the past, we were both surprised and disappointed at the negative and harmful way in which this year's event was reviewed in E&MM October.

Whilst we agree that the music presented during the daytime concerts could have been more varied, we cannot agree that this was one of the reasons for the poor attendance, as very few people could have known what style of music to expect in advance. Your other reason for the low turnout was the lack of a 'big, big name at the top'. We would point out that we have never had a 'big, big name' headlining UK Electronica. What we try to do is present acts that the public have had little chance of seeing before. For Robert Schröder (1983)

and Neuronium (1984), it was their debut UK concert; for Ashra, their first for eight years.

We would also like to point out that the Sheffield University Students' Union did not withdraw their support. They were prevented from supporting us by the University authorities, on the basis that the event would take place out of term-time.

We could not postpone the event. Facilities had already been paid for, verbal agreements/contracts with the artists had been agreed, and we had received many letters from the public saying that they had arranged holidays and accommodation so that they could attend. We just could not let these people down.

We agree with your comment that the first two Electronicas were well worth supporting – so was this year's. We know we must change certain aspects of UK Electronica. This is why we did a survey this year, the returns from which have included many constructive criticisms for which we thank the event's supporters.

In your 'Comment' page in the same issue, you say that this year's event marked 'the failure and possible demise of Britain's only EM festival'. The only things that will prevent us from staging the event in the future will be lack of money to hire the venue, PAs, lighting and so on needed to stage it, or lack of support from the artists who every year have performed the daytime concerts in the full knowledge that, should we not make a profit, they would not receive expenses, let alone a fee.

There has never been any doubt about the continuation of the event, and despite your possibly damaging article, our efforts to promote electronic music, both live and recorded, will continue.

Jeanette Emsley
Dennis Emsley
Production Directors, UK Electronica

Unfair 2

Dear E&MM,

I feel compelled to reply to your treatment of this year's UK Electronica.

As a stallholder at the event, I must admit to being dismayed at the turnout in the stall area. However, on going down to the daytime concert hall, I was relieved to see some 350 people enjoying some of the finest electronic artists in the country. I would suggest the relatively fast turnaround of acts by comparison with the last two events, along with the generally high standard of the music, conspired to keep the audience in the hall instead of encouraging them to circulate around the stalls and demonstrations as in previous years.

Added to this was a fairly conservative audience that thoroughly enjoyed a conservatively chosen set of acts.

As for the low turnout, the threat of a rail strike did loom very large that weekend, and I suspect many people didn't want to risk being stranded in Sheffield.

As one of last year's performers, I can tell you that Electronica '85 was far better organised than its predecessors and I applaud the organisers for their efforts. They are a lifeboat in a sea of apathy, and I, for one, look forward to UK Electronica '86.

Joseph Ahmed
Essex

Fair 1

Dear E&MM,

As a first-time visitor to UK Electronica this year, I feel I have to share my disappointment with someone.

To set the record straight, the organisation of the day's events was pleasingly professional and seemed to go with remarkably few hitches, especially when the number of performing artists is taken into account. The stands too were worth a look. What can I possibly say about the E&MM stand? So that's what you look like...

What's the cause of my dissatisfaction? The choice of music, I'm afraid. I respect the origins of the fair and also realise that there are a number of die-hard fans who would be horrified at the suggestion, but isn't it about time that UK Electronica came up to date?

Basically, though not unequivocably, your report was an accurate one. Ian Boddy's set certainly was the daytime highlight, though Mike Brooks pulled his weight too. Land of YRX? No comment!

The evening set started promisingly in a superb concert hall with a splendid set from Steve Jolliffe ***complete with an encore****. But all I can say about Ashra's return after eight years is: why bother? Surely the lack of demand for their performances should have told them something. Given these artists, I* ▷

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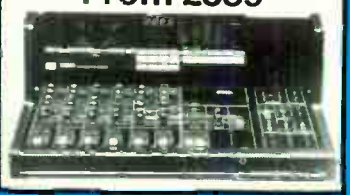

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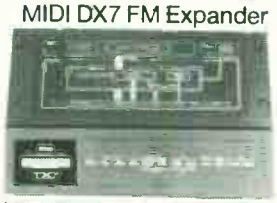

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IMPORTANT NEWS

For all DX7 owners

New Skyslip ROM cartridge for the DX7 designed to function in an entirely different way from existing DX ROMS by Yamaha and Itsibashi. Having a Zero Insertion Force (ZIF) socket into which you plug an eprom containing 64 new sounds. Eproms available that will allow you to build up banks of sound to use with the existing cartridge, being possible to customize your own eproms, and if you owned a BBC computer and eprom blower, you could be provided with the program to do this yourself. Cartridge £49.99 Eprom £16.66

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64 memory RAM pack, fully comptable to all Yamaha models. i.e. RX11, DX7, DX5 etc. £59.80. Also available shortly for Roland TR707/TR727

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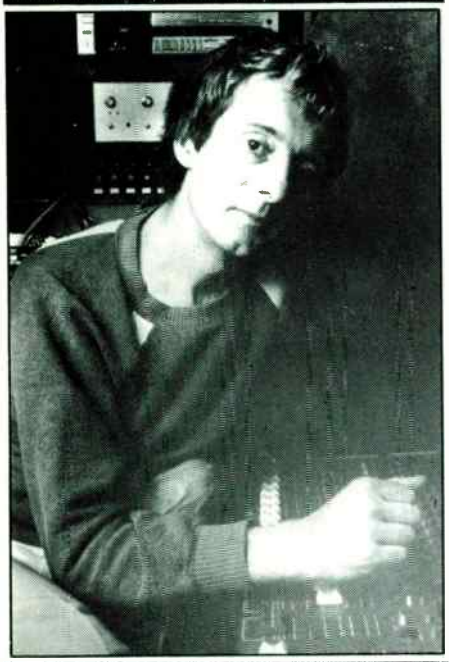
know who I'd have awarded the headline spot to.

But why were we limited to such a narrow area of music? Electronic music has now become such an all-embracing term that there should have been no problem including a far wider variety of musical styles and, in doing



so, providing a far more interesting and educational day's entertainment. Perhaps the organisers don't hold sufficient sway to pull in bigger names or more diverse talents – I don't know. But if a festival like this is to survive, it can't be on an out-dated and loss-making basis.

Death of a festival? I've no wish to see an end to UK Electronica – God knows, there are few enough events around anyway – but you won't see me there next year unless I'm sure I won't feel as if it's 1974 again.

Martin Ellis
Birmingham

Unfair 3

Dear E&MM,

Your review of UK Electronica '85 missed the boat entirely.

The festival is based around music and the feeling it creates – not on the number attending or whether or not the stands were busy. I suggest you really listen to some of the music you are all too busy to put down. Your criticisms seem to be based on statistics and minor problems, and are groundless in the context of the event. If the music comes over, then a festival like UK Electronica is a success.

All credit to the organisers for a great festival.

Richard Fearnehough
York

Unfair 4

Dear E&MM,

Your treatment of this year's UK Electronica was altogether too negative. An event of these proportions is always going to be risky – both financially and artistically. Of all this country's electronic music fans, only INKEY$ have really had a go.

UK Electronica is a chance for fans and musicians to get together, and for new musicians to play their music to an audience alongside more established performers. If your roving reporter had taken a less cynical view, he might have enjoyed the daytime part at least.

Admittedly, even I'd have needed concrete shoes to endure Ashra's epic of cassette mixing, not to mention the silly vocal gurglings that preceded them. No thanks!

But don't give up on live electronic music. Despite its flaws, I thoroughly enjoyed my day in Sheffield – Ian Boddy's concert alone was worth the journey – and I'm sure it'll be even better next year.

A few constructive words from E&MM could make all the difference.

Paul Nagle
Lancashire

Not Music?

Dear E&MM,

All your correspondents in the great digital versus analogue controversy have got the wrong end of the stick. The timbre of a sound is of no importance whatsoever when compared to the amount of performance control that can be imposed upon it. How many synths can you name that feature a useful, working dynamic range of 90dB, and on which vibrato rate and depth, portamento rate, and envelope parameters are all continuously and simultaneously variable without touching a single slider, pushbutton or footpedal? The answer is none at all.

But this amount of control is taken for granted by every decent acoustic wind or string instrument player, all of whom take something like 1000 hours of hard practice just to reach an acceptable standard. And let's face it, a violin note played with neither dynamics nor vibrato sounds extremely mundane – it's the player's control over these factors that makes it sound thrilling.

So let's stop criticising the synth for the quality of its sound. It's obvious that if it can't be played with as much control as that available on acoustic instruments, it really doesn't deserve the title 'musical instrument'.

Brian Thomas
West Midlands

Off Course

Dear E&MM,

In response to Nick Houghton's letter in last month's E&MM, and his school's attempt to set up an electronic keyboard laboratory, let me tell you of our college's accomplishments and disappointments in this field.

First the good news: a two-year full-time Musical Instrument Electronics course (leading to a diploma in musical instrument technology) was launched in September. The course was well laid out and seemed to cover everything, with ten different sections covering such subjects as Electronics, Related Computing, Music Theory and Keyboard Tuition.

But what with it being a full-time course and me working full-time, it wasn't possible for me to take it up. So I decided to do a part-time course instead.

The course was called 'Making Music With Computers'. Its aims were concerned with the co-existence of computers and music, and was to involve hands-on experience and accommodate a wide range of musical tastes. Well, I went along and enroled on the first night, went to where the course was to be held, and was told that it had been cancelled due to lack of interest.

Can you believe it? Surely there are more people out there who'd like to do this sort of thing without having to take it up full-time. Have any other readers encountered this sort of thing? I'd be interested to know the state of education on such matters.

R Danks
Nottingham

Problem Solved

Dear Auntie E&MM,

Thank you for your reply to my French problem. I'm sure it would be very helpful to me if only I knew what it meant, but I never had much luck with my German, either.

I see from the 'commune eek, eh' pages that I'm not the only one benefitting from the help of your helpful and knowledgeable staff – the salesmen with their samples, the bikers with their Yamahas. I'm glad my problem is confined to French letters.

Perplexed
England

Classical Criticism

Dear E&MM,

Although you're a magazine examining the ever-expanding world of the synthesiser, I feel I must write to you not to acclaim the wonders of this instrument, but to criticise it.

Call me a reactionary or whatever, but after years of listening to electronic music, I have become very dissatisfied.

As the music world becomes more confused, with elaborate sounds being generated for the wonderment of all, I have retreated into a world of music which requires no electronic wizardry whatsoever. And believe you me, it's sheer bliss.

Music that uses natural instruments and techniques is beautiful, and can be as elaborate as any of the synthesised music I have ever heard, or am ever likely to hear. The music of composers such as Beethoven and Handel is timeless, and so structurally wonderful it makes you want to cry.

When Roddy Frame of Aztec Camera picks up a guitar and sings, his talent shines through more spectacularly than a 'musician' whose 'talent' needs the assistance of a computer. It seems that synthesisers are being used simply as a crutch to support untalented musicians, and the result of this is that their music will never become as timeless as that of, say, Handel.

I used to be an avid fan of synthesised music. The work of people like Ryuichi Sakamoto used to fill me with awe, and I must admit that purely instrumental tracks still captivate me – they allow me to think freely without the words and thoughts of a lyricist interrupting me. But their power is not as great as that of a classical piece of work.

It seems to me that while the world of music technology is roaring ahead, fans of synthesised music will in time return to simple, effective and equally captivating music, whether it be classical compositions, or simple songs that require no electrical power – just human greatness and musical talent.

Jennifer (15)

EXPAND YOUR 244

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Anyone who has ever owned or used a Tascam 244 Portastudio will know how versatile and easy to use it is.

But we realised that some people want a couple more input channels. Perhaps an easier track assign system. Maybe a couple of effect sends on each channel. How about a two-speed deck with a real-time counter and search-to-cue? Couldn't you switch the dbx off one track only, and why not have an optional remote control as well as the electronic punch-in?

We also realised that we couldn't offer a DIY expansion kit for such major additions, so we brought out a new Portastudio alongside the 244. It's called the 246, and it will only set you back a couple of hundred pounds more than a 244. Not a big price to pay for any recording system with such a specification, let alone a Tascam.

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THE APPLIANCE OF SCIENCE

Vancouver, Canada played host to two major celebrations of new music technology in August of this year. Next month we'll report on the International Computer Music Conference, the academics' showcase. This month it's the turn of the end-users' extravaganza, Digicon '85. *Ron Briefel*

If you're interested in the fusion of art and technology, Vancouver is the place to be. The biggest city in British Columbia, Canada's westernmost state, has modern theatres, art galleries, laboratories and lecture halls by the dozen, a TV and radio network with an admirable attitude towards hi-tech music, and a magnificent new building called the Expo Centre, architectural centrepiece of an artistic and scientific community that's as forward-looking as any other on the face of the globe.

The Centre will be at the heart of the action when Vancouver plays host to the World Exposition (the largest of its kind for well over a decade) in 1986. But in August of this year, it played host to a remarkable festival by the name of Digicon '85.

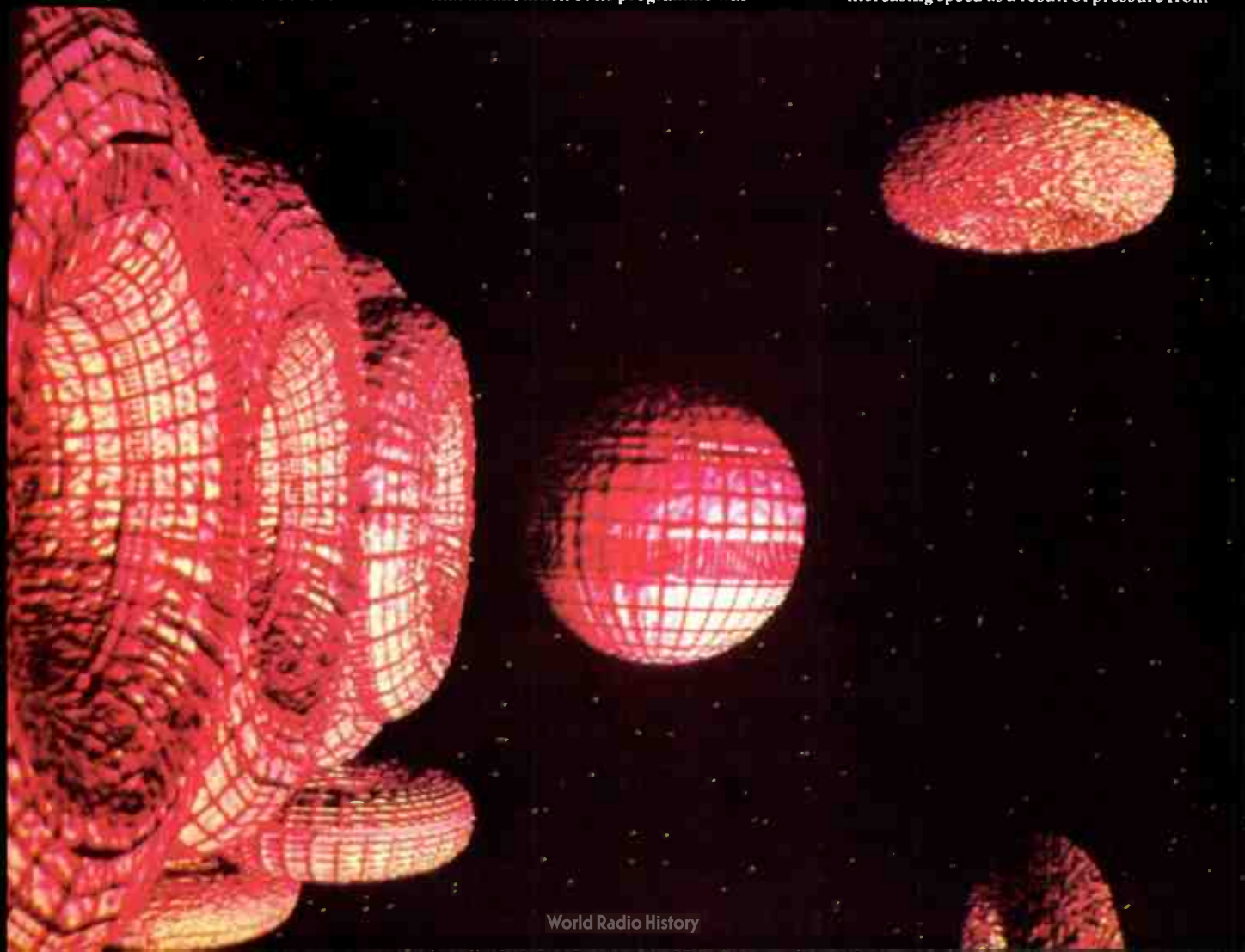
This enthusiastic celebration of things hi-tech coincided with the staging of the International Computer Music Conference in the same city. Which meant that for just over a week, Vancouver was full of people from all over the world, who'd all come to the same place out of a common interest in the use of digital technology in music and the visual arts. While Digicon's itinerary put the emphasis firmly on end users, ICMC had a more academic, more theoretical bias that meant much of its programme was aimed at designers and engineers – though there were still plenty of avant garde composers in evidence at the later event.

Various pre-conference announcements for Digicon promised the participation of such luminaries as John Chowning, Patrick Moraz, Bill Bruford, Allan Holdsworth, Todd Rundgren, and Wendy Carlos. Needless to say, none of these folk could actually make it to the event as such, but unless you were a fully paid-up member of the Autograph Hunters' Club, their absence didn't detract from Digicon's attractiveness.

One of those announcements also made great play of a planned transcontinental recording session called Overture 2000. The performance was to employ a MIDI, PCM and video link by satellite between Los Angeles and Vancouver, with a rhythm section in LA laying down MIDI backing tracks for a group of Vancouver-based musicians to play over just half-a-second later. But owing to some technical problems (the exact nature of which I'll go into later), the Overture was never actually performed. And that *did* annoy some people...

The bulk of the conference programme was dedicated to the visual arts, with a vast range of talks and presentations by artists in the computer graphics and video fields. The music fans among us had to make do with Bob Moog and Roger Linn as 'star' presenters.

A developments in the computer graphics arena occur with increasing speed as a result of pressure from



commercial forces, so those working on the hi-tech side of the visual arts are polarising into two groups: those that accept the process of commercialisation, and those that do not.

The 'real' artists feel that their colleagues in the commercial orbit are too concerned with technique and form for their own sake, and used Digicon as a platform from which to launch their attack. The commercial side responded admirably, but the whole debate (which isn't a million miles removed from the one in the academic music world, where composers who accept commercial instruments do battle with those that do not) soon became rather facile. After all, it's now fairly clear that without the commercial world's continuous demand for new visual imagery, most of the latest image-making technology would never have come into existence at all.

For proof of that, you need look no further than the graphics capabilities of home computers, which are becoming more sophisticated as each week goes by. One 'real' artist who's taken advantage of some of these techniques while retaining academic credibility is David Em, whose graphics images are what grace the page now in front of you.

Em's talk was one of Digicon's highlights, not least because, even though his work currently depends on some of the most sophisticated hardware and software currently available, the *sort* of technology he's using will soon be accessible to the mass market, thanks to the new generation of 16-bit home micros.

Em has succeeded in becoming official Artist in Residence at the California Institute of Technology, where he has access to software written for NASA jet propulsion research projects, amongst other things. Apparently, the Institute's scientists and engineers find it useful to have an artist's feedback on their graphics system's capabilities. They also find Em's imaginative images stimulating and intriguing, as indeed did all those who witnessed his work at Digicon.

Similarly striking were the graphics images produced by one Aloy Roy Smith, project leader of George 'Star Wars' Lucas' computer graphics team. The team have access to just about the most powerful computer graphics systems currently in existence, and as an example of their work, Smith presented an image of a billiard table top, complete with several balls in motion. I for one was certain I was looking at a photograph, but the image turned out to be entirely computer-generated, right down to the finest details like the reflections of the surroundings in the balls, and the motional blur of those that were moving. Very impressive indeed.

And so to Overture 2000, or rather the lack of it. The prime technical reason for its non-appearance (and hence the non-appearance of the big names I mentioned at the start) was the late availability of the multiplex/demultiplex system needed to handle eight separate asynchronous MIDI signals. Had things gone according to plan, the multiplexer would have sliced the MIDI input into a 1.544MHz datastream, which would then have been transmitted via satellite to a demultiplexer at the other end of the 'DIN cable in the sky' for separation back into separate MIDI signals and routing to individual instruments.

As things turned out, none of the invited artists wanted to take the risk of participating without exhaustive tests and trial runs, but we were at least treated to a scaled-down demonstration of the process by the man responsible for its technical development, Ralph Dyck. Within the confines of the conference room, the satellite was replaced by nothing more elaborate than a piece of wire, but the conversion from the standard asynchronous MIDI transmission rate of 31.25kBaud to the synchronous 1.544MHz datastream did take place, so we know it works.

With luck, the system will have been perfected by the time we get to Digicon '87, and Allan Holdsworth really *will* play a jam session with Todd Rundgren via a satellite link-up...

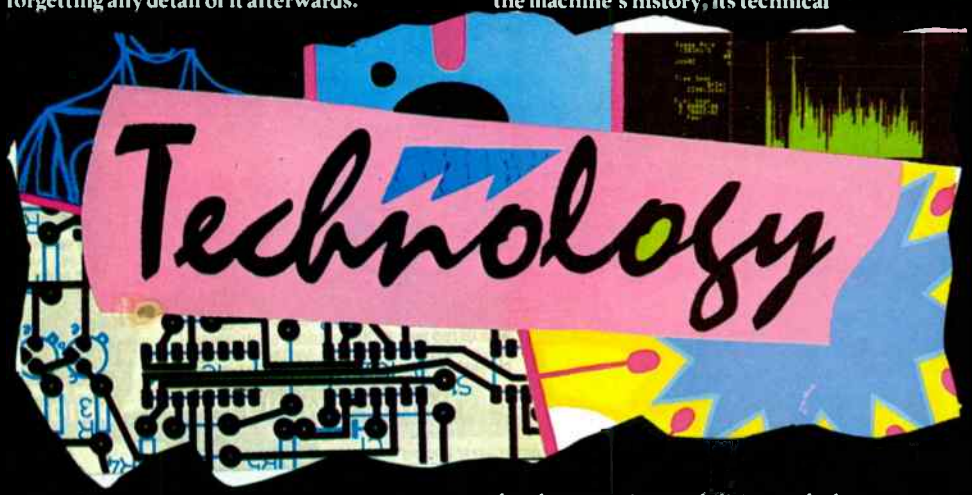
Of the remaining presentations at this year's extravaganza, two stand out as being exceptional.

The first was a performance by computer wizard Ed Tannenbaum and dancer/choreographer Karen Koyanagi. Their display involved Tannenbaum's computer hardware and software actually producing modified images of Koyanagi's movement, and projecting them onto a screen to one side of the stage. Stimulating, inventive, and still with great scope for future experimentation.

The second significant event was the

showing of an Omnimax-format computer graphics film titled *The Magic Egg*. Now, Omnimax is a system of projecting a film onto a hemispherical dome not entirely unlike a planetarium, the difference being that the audience sits right up inside the dome. If you want to experience what I can only describe as a sensational 'surround-vision' effect, it's the only place to be.

The visuals for *The Magic Egg* were a tantalising mixture of terrifyingly realistic 'dangerous flying' effects (swooping over mountains and cities, even crashing on the odd occasion) and some weird and wonderful abstract imagery (huge sunbursts, giant Slinkies turning into butterflies, and other strange spatial transformations). Subtle it was not, but there was no escaping its power, or forgetting any detail of it afterwards.



A surround-sound system took care of the music, a specially-composed set of pieces by US synth magician Michael Boddicker. The morning after the performance, Boddicker brought everything back down to earth again with a detailed talk on the techniques he used in composing and recording the music.

He has a well-equipped keyboard studio that numbers a PPG, a DX7, an Emulator, a Jupiter 6, and several sequencers (including a Linn 9000) among its weaponry of hardware.

Being involved in writing film soundtracks has made Boddicker acutely aware of the importance of timing, and this in turn has forced him to deal with MIDI timing difficulties in a forceful, no-nonsense fashion. He's succeeded in overcoming the delay between MIDI channels so many musicians come up against during sequencing, by the simple expediency of never using more than one MIDI channel in the first place.

More cunning is the method he's devised of getting round the problem of different MIDI instruments taking different lengths of time to process incoming MIDI data from sequencers and the like. According to Boddicker, a DX7 takes around 7-8 milliseconds, an Emulator around 12, and a PPG a massive 24 milliseconds. Naturally, these delays can drastically weaken the impact of what should be a synchronised attack. But Boddicker has devised a method of delaying the click-track of each instrument before their output is laid down on tape.

This works fine so long as he can find out the MIDI implementation delays for each instrument. If he can't, Boddicker resorts to measuring delays with a pair of callipers on a multitrack tape containing a MIDI-implemented, multi-keyboard attack, arranged so that it's perfectly in sync according to the manufacturers' official specifications...

What Boddicker really needs is some sort of programmable MIDI delay compensator, a subject that brings us nicely on to the next musical speaker of note, Roger Linn.

The inventor of the industry standard LinnDrum spends most of his time these days trying to convince people of the worth of his company's Linn 9000 MIDI drum machine/recorder. His talk concentrated on the machine's history, its technical development, its capabilities, and why everybody should have one.

Linn has an easier time selling the 9000 across the pond than he does in the UK, where its dollar-inflated price tag makes it a wildly uncompetitive device desperately in search of some software updates to bring it into line with machines from other manufacturers. As things turned out, Linn used Digicon as the launch pad for some of that new software, which will provide for user-sampling and full step-time writing facilities.

In answer to Michael Boddicker's prayers, Roger Linn went on to confirm that he's working on a 32-track sequencer that will have the ability to shift individual tracks backwards or forwards in time, programmable in milliseconds. As well as being musically useful as an editing system in its own right, such a facility would largely overcome the problems of MIDI processing delays experienced by Boddicker and so many other musicians.

And Linn has extended his MIDI crystal ball-gazing to the more distant future, in which he sees the development of such marvels as an intelligent MIDI data processing computer system. The system would include what Linn terms 'full MIDI database librarian capabilities', which means it would be capable of supporting patch dumps for specified MIDI keyboard setups, configuration programming, MIDI delay analysis and automatic delay compensation.

In the discussions that followed Linn's talk, it became clear that the possibilities for MIDI code destructuring and reprogramming are as endless as the variety of people using the interface. Assorted members of the audience ventured ideas such as manipulating MIDI data to obtain 'reverse pitching', so that going up in pitch on one keyboard results in corresponding descending pitches on another connected via Linn's all-embracing computer system. And how about a pitch-to-patch converter program...?

Next came Bob Moog, grandaddy of them all. Like Linn's, his talk centred around the piece of technology he's currently spending most of his time working with: in this case the Kurzweil 250. Moog describes the Kurzweil as 'the most complex digital instrument that's ever been manufactured for consumers', which probably isn't too far from the truth.

Drawing comparisons between hi-tech instrument design in the mid-80s and the same job 20 years ago, Moog contrasted the vast team of hardware and software engineers which Ray Kurzweil assembled around him to design the 250 with his own situation, two decades earlier, assembling the first Moog analogue synthesiser, without any help from outside, on his kitchen table. We all know Moog is a thorough worker, but you can't get much more detailed than the approach adopted by Kurzweil's engineers, who spend weeks minutely shaping the spectral content of each of their samples, only to subject them to merciless scrutiny by accomplished musicians whose reputation has been made on the acoustic instrument being sampled.

Less well-known than Linn or Moog is the name of Roger Nicols – though if you do ever look at the back of LP covers as well as the front, it could ring a bell. Nicols is a one-time nuclear engineer who has since become a three-time Grammy award winner as producer of albums by the likes of Steely Dan, Donald Fagen, John Denver and Stevie Wonder.

He's also a champion of digital recording technology, perhaps because, in the days before MIDI, he spent months working on ways of getting digitally-recorded instruments perfectly in sync with each other. He managed to devise a means of transferring the codes derived from his recordings directly into a computer, from which he made minute time and frequency adjustment through specially-written software. He then returned the shifted and/or processed sounds to digital tape and played them back in the studio. After doing this for a while, he discovered that shifts of as little as 40 milliseconds could have a marked effect on the overall sound of the interaction between two instruments. The synchronised, repeating piano and bass attacks on Donald Fagen's 'Ruby' were ▷

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YAMAHA TX7 FM TONE GENERATOR

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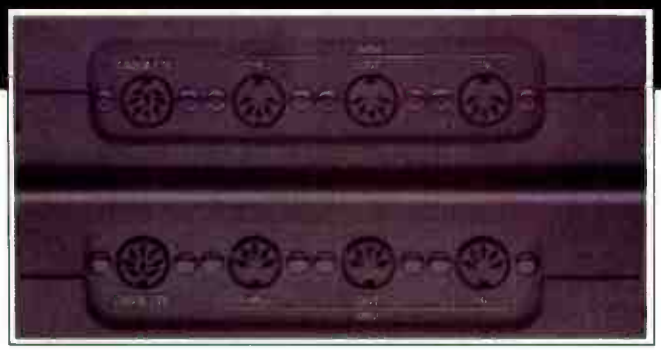


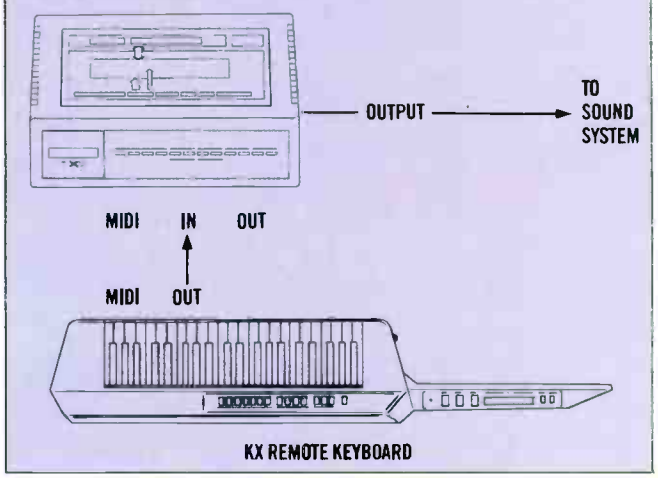
The amazing musical fidelity of Yamaha's DX range of FM Digital synthesizers needs no introduction – there can hardly be a recording studio or professional keyboard player in the country without a DX7. Now Yamaha have produced the **TX7** FM Digital MIDI Expander, designed specifically to enhance and enlarge the already awesome capabilities of the DX7.

If you are a DX7 owner, the **TX7** should undoubtedly be your next step. For less than half the price of a second DX7 it more than doubles your existing creative potential – in real musical terms. Via MIDI the **TX7** combines with your DX not only to extend its existing facilties but to introduce you to a whole new dimension of FM programming.

Composite Programming. The first level of FM is the kind of detailed sounds we are used to hearing from the DX7 and DX9. The second level opens the door to a whole new set of FM programming techniques which involve the complex inter-reaction of different harmonic patterns between DX and **TX**.

Original sounds are synthesized by breaking them down into their component parts. A note from an acoustic guitar, for instance, consists of various elements – the fundamental frequency, its harmonics, the percussive sound of the nail plucking the string, the string striking off the fingerboard, the damping of the string at the end of the note etc. The combination of DX7 and **TX7** vastly increases the wealth of detail your sounds can capture. This can be described thus.

This is the ideal performance system if you want to use a Yamaha KX1 or KX5 type performance keyboard exclusively. The TX7 provides a top-quality FM tone generator, without the need for another complete keyboard.

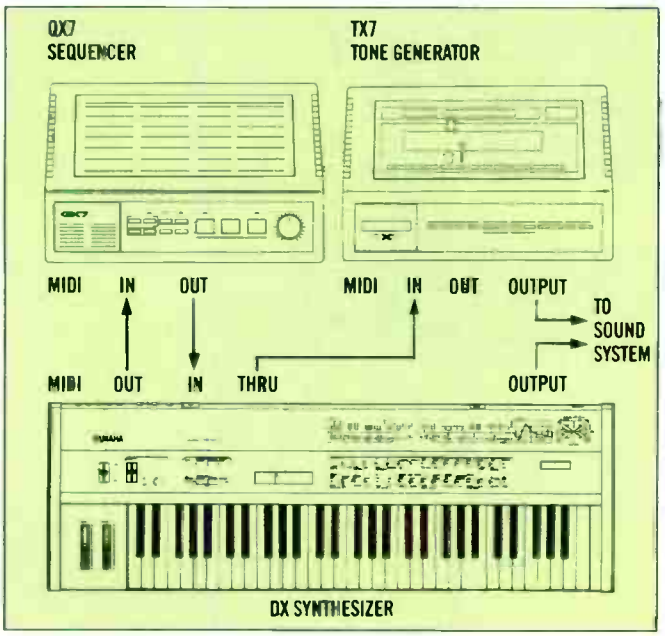


Think of each operator as a digit in a six-digit combination lock, then increase the number of digits to 12 to represent the addition of **TX7**. You have not merely doubled the number of combinations but have increased it factorially. Sort of like a DX7^2

The **TX7**, like the DX7, has a 32-voice internal memory filled with an exciting new set of factory voices. It also has a tape storage facility making it possible to create inexpensively a large library of sounds on normal cassette tapes. In addition to storing all the standard voice parameters, you can also store all the performance control settings such as voice attenuation and

FM SYNTHESIS OGRAMMING

YAMAHA QX7 DIGITAL SEQUENCE RECORDER



note limit (a sophisticated keyboard split).

Pitch bend, modulation wheel, after-pressure and breath control parameters can all be stored as an integral part of each preset. On top of this the **TX7** has on-board a second set of 32 memories to allow such performance parameters to be stored with respect to the DX7's presets.

All this means avoiding the horrifying discovery in the middle of a solo that the pitch bend range is not what it should be! It's all there in memory for you. And for total performance control even the volume balance of the **TX7** can be assigned to the data entry slider of your DX7.

To further aid your performance or recording sessions Yamaha also offer the **QX7**, an inexpensive MIDI sequencer which can be used like a multitrack tape machine to build up synth and drum machine arrangements, line by line. It will faithfully reproduce your performance or allow you remarkably simple step-time programming which will still remember all your dynamics. The **QX7** has a wide range of editing facilities and can even correct your timing for you. It can control as many as 16 different MIDI instruments or can simply be used as a MIDI drum sequencer with full velocity sensitivity.

Without the assistance of such sequencers, many professional musicians would be incapable of producing the polished performances that we all take for granted. In fact you'll be surprised how easy it is to make your tracks sound tight and professional with a little help from the **QX7**.

The **TX7** and **QX7** have both been designed specifically to work as a unique system with the DX7 although they will also work with any other MIDI instruments. But, then again, there's nothing like the real thing.

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achieved by this method.

By way of a diversion, Nicols has carried out investigations into the way musicians introduce delays of their own when playing 'in time' with music. Thus, few people know more than Nicols about the way musicians respond to things like the tempo of the music they're playing to, the position in the bar at which they begin playing, where that bar is situated in the phrase, and the feel of the piece as a whole.

So Nicols has considerable skill and expertise at manipulating temporal musical events – but it does take him an awful long time to produce albums. Personally, I suspect the advent of new technology will do little to speed his work. More likely, it'll delay the process by introducing yet more avenues for Nicols' tireless research...

Still, the producer had some relatively uninvolved things to say about MIDI. His main field of interest here is the development of a low-cost MIDI mixing desk. This would enable tasks such as fading, panning and EQ to be included in the MIDI datastream, and could therefore lead the way towards affordable studio automation. Don't laugh. It could be nearer than you think.

Politics reared its ugly head again as Digicon went into its later stages, but this time, the visitors were entreated to settle their theological differences and settle down to the business of getting the best out of new technology. The man doing the talking was one Bill Buxton, a sort of hi-tech Gandhi who spends his time preaching the vices of confrontation and the virtues of positive dialogue.

Thus, Buxton's Digicon sermon called for more artists in the lab, more scientists in the concert halls, more academics in the marketplace, more studio musicians and engineers in live performance, and so on until the world is a wonderful place to live in and everybody is blissfully happy.

All very praiseworthy, of course, and Buxton is more than just an idealist with nothing better to do than advocate peace, love and understanding. He also happens to be closely involved with a couple of recent hi-tech music developments, one of which is a general-purpose signal processing system accessed through a device called the Touch Tablet.

Basically, the Tablet is a highly touch-sensitive surface that works by sensing the capacitance of the player's fingers as they come into contact with it. It can process both pressure and area information very accurately, and sends the resulting data down an RS232 interface. MIDI data transfer is also available to and from the system.

The Touch Tablet's surface can be configured in a variety of different ways through software, and can be programmed to emulate or execute user-defined devices and operations. When you've decided what you want the Tablet to do and got hold of the necessary software, you place templates on the surface of the device to show each program and the area of the tablet that relates to it.

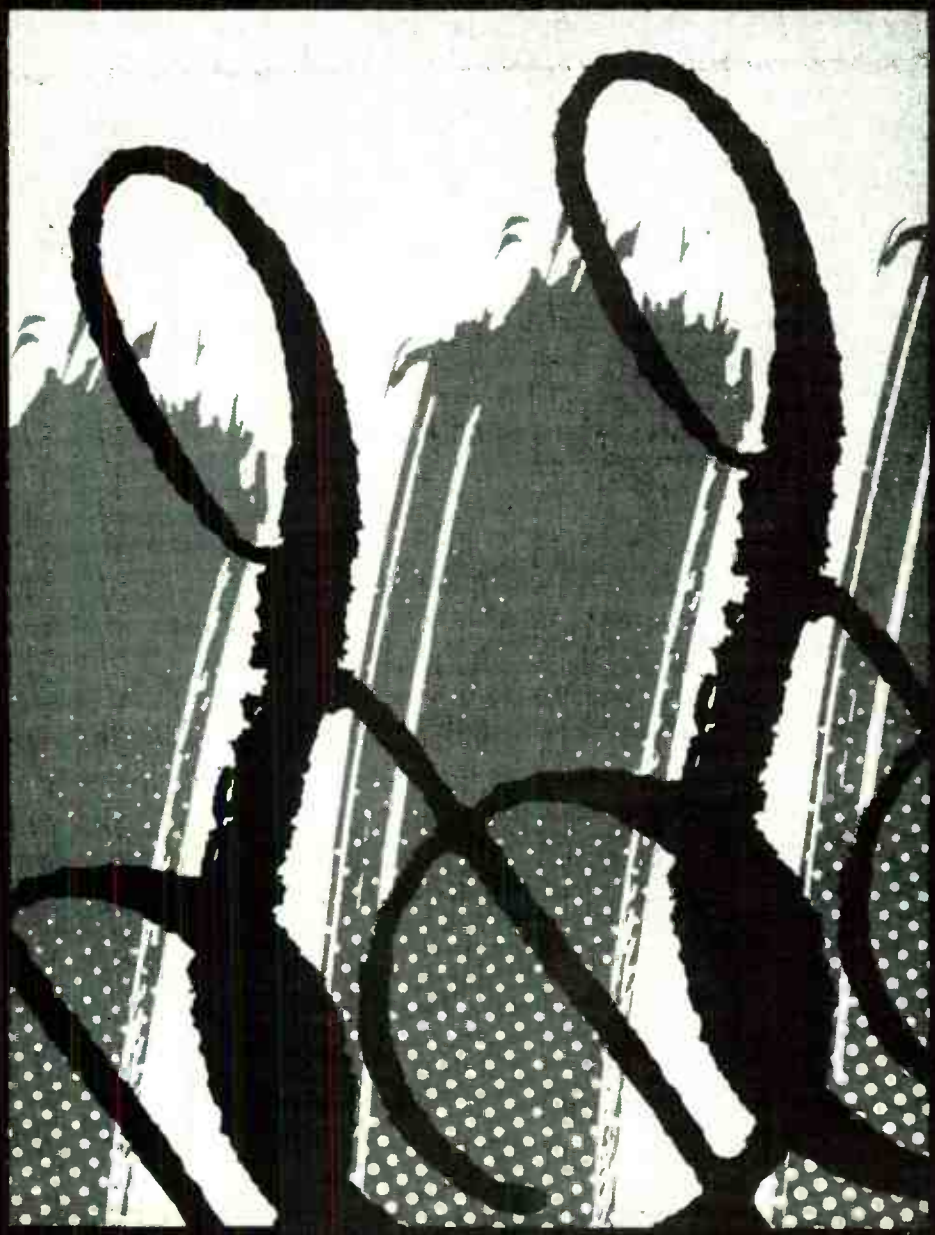
To give you some idea of what can be done, one software package and template provides five-voice FM synthesis capabilities, with specific areas of the Tablet performing control over volume, patch selection and timbre for each voice. To alter one of those parameters, all you do is brush your fingers across the relevant area on the Tablet; the harder you press, the quicker the change in parameter value takes place.

Drum software and a computer graphics 'paintbox' package have also been developed for the Touch Tablet, while an extremely elaborate digital interconnection console for MIDI instruments has also been considered by Buxton. He envisages template areas representing actual musical instruments and outboard effects, so that the user could make or break connections between machines simply by a brush of the hand, or increase the output level of instruments by the same method.

Buxton has also been a great supporter of the IVL Pitchrider (itself a Canadian design), a pitch-to-MIDI control instrument that's been briefly described in these pages before and which was being demonstrated by its manufacturers at Digicon.

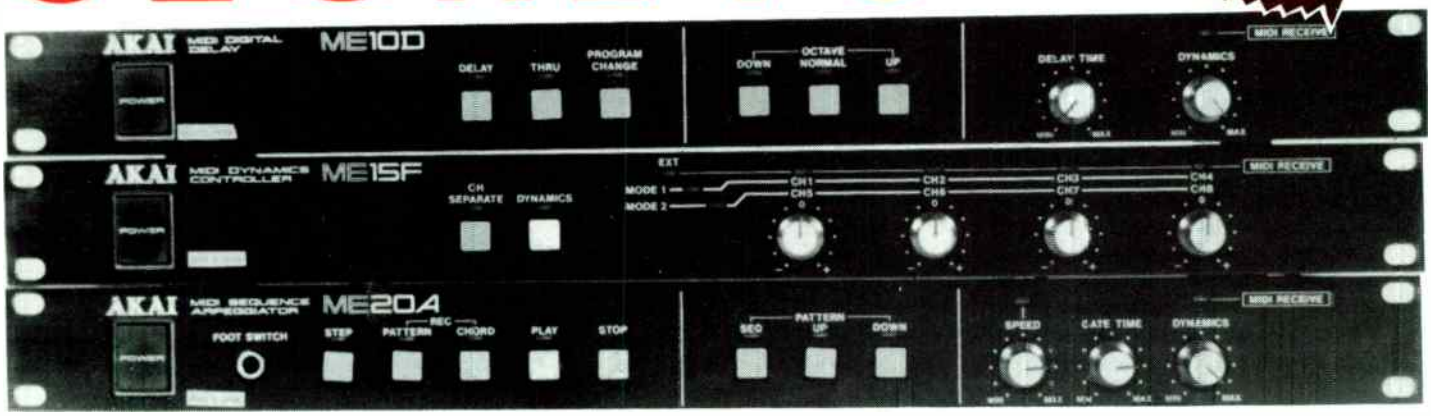
Buxton has been using the Pitchrider 2000 to access MIDI from his saxophone, and claims to find the results unbelievable – even though the model has yet to arrive in the UK pending some software-rewriting by IVL's design team. When it does come, the 2000 will be able to recognise the pitch of any note from a microphone source and convert it into a corresponding MIDI data value. It will also be able to output MIDI data, and provide some simple controls to allow you to set and adjust MIDI parameters such as MIDI channel number, pitchbend range, volume dynamics, operating mode, and so on. You'll also be able to adjust the machine's response time and instruct the Pitchrider to transpose its output.

It shouldn't cost too much, either, but it's only a part of what IVL are capable of achieving. The Pitchrider 7000, a more complex machine based on similar principles, is a fully polyphonic guitar-to-MIDI interface that should enable you to play any MIDI synth or drum machine from a guitar. The system employs a pickup connected close to the bridge of the guitar, and can track lead lines very quickly, reproduce chords faithfully, and even follow string-bending. You can assign each string a different MIDI channel so that each can be used to manipulate a different sound source, and in the same way that the 2000 has already forced several brass and wind players (Buxton included) and even singers to rethink their playing technique, so the Pitchrider 7000 should do the same for guitarists, a breed of musicians that is notoriously set in its ways. ■



BLACK BOX SECRETS

Appraisal



Three rack-mounting boxes that don't have an audio output between them, let alone any sound-generating circuitry. Is this the future of MIDI hardware? Akai obviously think so. *Simon Trask*

Not content with bringing the world the first rack-mounting black box that sampled polyphonically and let you connect it to a keyboard via MIDI, Akai have now excelled themselves in producing three more black boxes – all rack-mounting, and all related directly to MIDI tasks.

The three in question are the ME15F MIDI Dynamics Controller, the ME20A MIDI Sequence Arpeggiator and the ME10D MIDI Digital Delay. Yet although their production versions are housed in the 19" rack-mounting format, photographs of early prototypes show this wasn't always the case (no pun intended).

One point to bear in mind right from the start – it might save some confusion – is that none of them has an audio output, let alone any sound-generating circuitry. They are *MIDI* processors, nothing more, nothing less. To this end, they process the digital MIDI data sent from your synth's MIDI Out port, and send the processed data out on their MIDI Outs. It's up to you whether you connect this signal to your transmitting synth or to another MIDI instrument altogether, or to an entire MIDI system, for that matter.

Before I go any further, a word of warning about the manuals. They aren't very clear. Which is surprising because they *look* as if they should be – plenty of diagrams full of clearly labelled features. But that's not the same as putting all the information together in a way which is truly informative. That, sadly, is something they are not very good at at all.

Of the three machines, it's the ME10D MIDI Digital Delay which presents its options most clearly. Consequently it's a piece of madeira cake to operate, so, being a bit of a coward, I'll tackle this one first.

To understand what a MIDI Digital Delay is all about, it's important to realise that the delay takes place in the transmission of MIDI data. All a MIDI Delay does is wait for a specified time before sending the data it's received via MIDI In over MIDI Out. Rather ironic, at a time when so many people are bending over backwards trying to minimise MIDI delays in the normal scheme of things.

The delay time is continuously adjustable from zero delay to a maximum of one second, and can give some nice effects. But there's no regeneration of the delayed signal, so the most you ever get is a single repeat of each note. Putting it against even a non-dedicated DDL like that onboard Korg's DW8000 polysynth (reviewed elsewhere this issue) makes it clear just how limited the Akai is in this respect. Then again, seeing as a MIDI-based digital delay requires synth voices to play its 'echoes', it's unlikely to achieve the sophistication of a standard DDL – your average synth would soon run out of breath anyway.

But the ME10D does have some other facilities built into it which help to make it a more versatile unit. Specifically, you can choose between octave down, octave up or normal outputs for the delayed signal. Among other things, if you set the delay time to zero, you have an octave divider effect which can be very effective. If you select Thru as well, the source signal is passed on unprocessed, potentially giving you octaves on your destination synth(s). With the right sounds, the combination of delay and octave-shifting (or even just the octave-shifting) can make a synthetic string quartet sound like an orchestra. Well, almost...

The Delay isn't able to pass on anything other than MIDI note on/off information for the delayed notes. Thus any aftertouch, pitchbend or modulation data your original notes had will *not* be reproduced on the delayed notes. So if you're thinking of using the delay at any point, it's best to make sure your sound isn't too dependent on performance tricks like those just mentioned.

Almost incidentally, the ME10D can also function as a MIDI on/off switch. Just switch out the Delay and Thru buttons at the same time, and the job is done. Fortunately, switching these buttons on and off doesn't result in the dreaded MIDI drone, even though the unit doesn't actually prevent on/off from functioning while notes are still active over MIDI. What appears to happen is that the Akai sends the requisite note-off commands itself, which is very sensible of it. That said, I did get notes hanging on once or twice – so tread carefully.

Also thoughtfully included is a Program Change button. As you might well guess, this switches in and out the (re)transmission of MIDI patch change data, so one moment you can be changing patches on your slave instrument(s), the next you can have a patch static while you change only the master instrument.

One of a MIDI delay's strongest plus-points is that you can decide which synths you want to pass the delayed data to. You can simply pass it back to your master synth if you want to (but remember: the notes are doubled, or even tripled if you have Thru and Delay selected, so you have to allow for this in your playing). You can send the data out to another synth and then back to your master (or back to the master and then on to the slave), while if you have a MIDI output selector or 'patchbay' unit (perhaps Akai's own Dynamics Controller – see later), the possibilities increase dramatically. So, a useful addition to any synth player's arsenal of equipment – though the delay processing could *definitely* have been a bit more inventive.

The essential function of the ME15F MIDI Dynamics Controller is to provide a set of master 'faders' for four adjacent MIDI channels at a time. In fact, the pre-19" version had a set of four sliders on its top panel; there are now four rotary knobs on the front panel. But the Dynamics Controller isn't entirely analogous to the common or garden fader – largely because the unit works by adjusting incoming MIDI velocity data. So it won't be much use if your receiving synth isn't velocity-sensitive. And neither can you alter the volume of a note while it's sounding. Why? Well, as the Dynamics Controller works by controlling the attack velocity value of a note, there's nothing it can do once the note has started playing on the receiving synth(s).

What the Controller does is define a maximum attack velocity value that it can pass ▷

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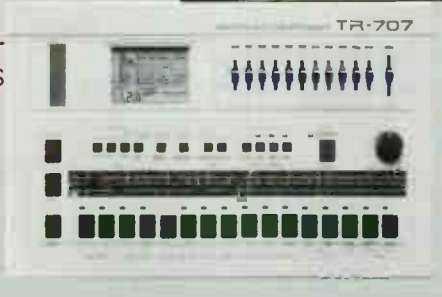

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▷ on, leaving you to play loudly or softly within the limits it has set. Thus, although centre click position on the four controls seems to be equivalent to MIDI's 'no velocity', you can still adjust your playing dynamics on the soft side. Turning the knobs counter-clockwise veers things towards the pianissimo, clockwise towards the fortissimo – though curiously, there's no more adjustment beyond three o' clock on any of them.

But the ME15F can act on more than just volume. Where a synth can be set to respond to attack velocity with changes in timbre, adjustments made on the Dynamics Controller will obviously define the range of timbre you can effect on the slave synth. Which is good news, as although the unit manipulates MIDI data, the effect produced is ultimately defined by how the receiving synth interprets that data.

The Dynamics Controller can affect a maximum of four adjacent MIDI channels (controlled by the aforementioned knobs) at any one time. Flicking a switch on the rear panel gives you access to MIDI channels 1-4 or 5-8. There are four MIDI Outs on the back panel, each one assigned to outputting one of the four relevant channels. If your requirements stretch to simultaneous access to eight channels, you'll have to buy two units.

Each Out passes on data for all 16 MIDI channels, and the dynamically adjusted data for any of channels 1-8 where applicable, so there's no immediate correlation between front panel controls and MIDI Outs. There *is* a correlation when you select the Channel Separate facility, which converts incoming channel information for the currently selected group of four MIDI channels, to channel 1 for output on the four MIDI Outs. However, each Out only outputs data that has been received on its assigned channel, so data received on channel 4 is output on channel 1 only on the MIDI Out labelled '4/8'. Akai's reasoning behind this fairly arcane facility is that it enables synths that can't select a MIDI receive channel to respond selectively to any of the first eight MIDI channels (1-4 or 5-8).

Alongside the four MIDI Outs on the rear panel is a MIDI socket labelled 'Ext'. This is essentially a Thru socket, passing on data for all 16 channels unaltered – though if you select the Channel Separate facility, it doesn't pass on *any* data for the currently selected group of four adjustable channels.

The Dynamics Controller can also provide real-time mixdown facilities between two MIDI sequencers, or from one track of a sequencer to another, or allow you control over dynamics on a sequence playback. Again, you have to bear in mind the limitation of processing channels 1-8 only.

So, a useful and flexible unit, spoilt only by the way it restricts you to four simultaneous channels, and by its lamentably uninformative manual, the worst of the three.

The ME20A MIDI Sequence Arpeggiator is exactly what you expect it to be: a cross between a sequencer and an arpeggiator. Input is in step time from your connected keyboard for both sequences and arpeggios – though as with many step-time sequencers, you can effectively play in real time if you're only using a single note duration and no rests. The unit has a maximum stated capacity of 957 monophonic sounds, but it's more than a monophonic affair (in fact, each step can theoretically be up to 128 notes polyphonic!).

Rests are input by pressing a dedicated Step button on the front panel, and tied notes by pressing the button whilst holding down the relevant notes. Akai have provided a footswitch input that performs a dual function: as a Step button equivalent in record mode, and as a start/stop controller in playback mode. And if you're wondering how you can input more notes than one or even two hands can handle at a time, the Sequence Arpeggiator doesn't move on to the next step until all note-ons have been balanced by note-offs. Thus you can hold down a chord with one hand and play all the notes you want with the other. Fiendishly clever stuff.

There are three types of input: arpeggio sequence patterns, motion chords and sequences. The arpeggio sequence patterns are performable only in conjunction with the other two, while sequences and motion chords can't co-exist; if you record one, the other is instantly erased.

Let's take motion chords first. You input a series of chords, which are then played back in one of three ways: Up, Down or Sequence. The first two arpeggiate the chords up or down respectively, while the third arpeggiates the chords upwards in the rhythm of any arpeggio sequence you've entered – if you haven't entered any, the chords are played straight. If the rhythm of the arpeggio is longer than the number of notes in the chord, the relevant number of notes is played an octave higher. If the rhythm is shorter than the number of notes, it truncates the chords.

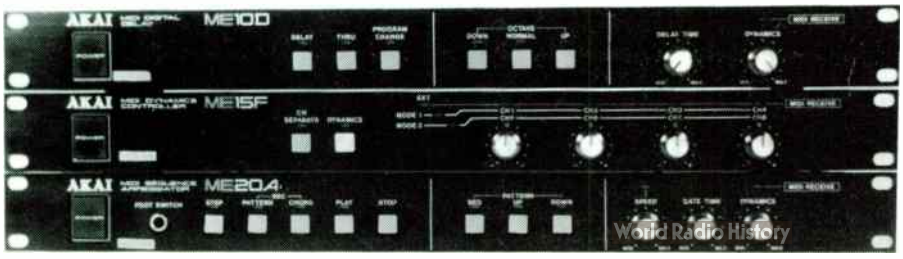
You can easily delete an arpeggio sequence by reselecting its record mode. And just as easily, you can switch from one of the three options to another while the pattern is playing, without interrupting the flow. However, with no sort of feedback as to where you are in a sequence, and minimal editing facilities, I can't see this getting used for anything more than short patterns. So it's a shame that Akai haven't cut down on the number of notes available per sequence and made provision for a number of dynamically-allocated sequence memories. As all data input is memorised through power-down courtesy of good old battery backup, the provision of a number of sequences would have greatly enhanced the Sequence Arpeggiator's usefulness. A missed opportunity, then.

Just as an arpeggio sequence is 'imposed' on a series of motion chords, so it's automatically imposed on any sequence that you record. If you have a chord on a particular sequence step, the chord is arpeggiated in the manner described for motion chords. And where a sequence step consists of a single pitch, a rising pitch sequence translates into rising octaves in the arpeggio sequence rhythm, while a falling pitch sequence translates into falling octaves. Most strange, and not, I'd have thought, especially useful. Each step in the sequence is expanded to the duration of the arpeggio sequence (this goes for rests as well).

There are three real-time controls over playback of note data, each assigned to a dedicated front panel control. These are speed of sequence, gate time and dynamics. Gate time can be varied from staccato to legato, while dynamics operates like the controls on the Dynamics Controller. Neither of the latter are step-programmable features, though.

The Sequence Arpeggiator ignores all MIDI data apart from note on/off. So apart from the more obvious things like pitchbend and aftertouch, it won't record patch changes and, more seriously for a sequencer, can't be synced with a drum machine or another sequencer. Which really seems daft to me, because most people will want to at least sync it to a drum machine, and it *could* so easily have been used as an adjunct to another, more powerful sequencer.

All three Akai boxes have been inventively and (on the whole) elegantly designed. All three involve themselves only in the processing of digital data, so they shouldn't introduce any signal degradation of their own. And all three perform useful functions, both individually and in combination. What's nice is that you can buy them individually and for not much money, in true modular fashion. ■



DATAFILE

ME10D MIDI Digital Delay

Performance *Single delay up to one second*
Controls *Delay octave up/down/normal; alterable dynamic level of delay; program change enable/disable; delay and thru on/off*
Interfacing *MIDI In, Out and Thru*

ME15F MIDI Dynamics Controller

Performance *Individual dynamics adjustment for MIDI channels 1-4 or 5-8; conversion of incoming channels 1-4 or 5-8 to outgoing channel 1*
Controls *Dynamics on/off; Channel separate on/off; Channel dynamics controls × 4*
Interfacing *MIDI Out × 4; MIDI 'Ext'*

ME20A MIDI Sequence Arpeggiator

Performance *Chord/arpeggio and sequence recording in step time; memory retention during power-down; memory capacity 957 monophonic sounds, 128 chords, 128 chord patterns*
Controls *Arpeggio Speed, Gate Time and Dynamics controls (not memorised); Pattern Seq, Up and Down switches; Pattern/Chord Record switches; Step, Play and Stop switches*
Interfacing *Footswitch socket for play start/stop and rest input; MIDI In, Out and Thru*

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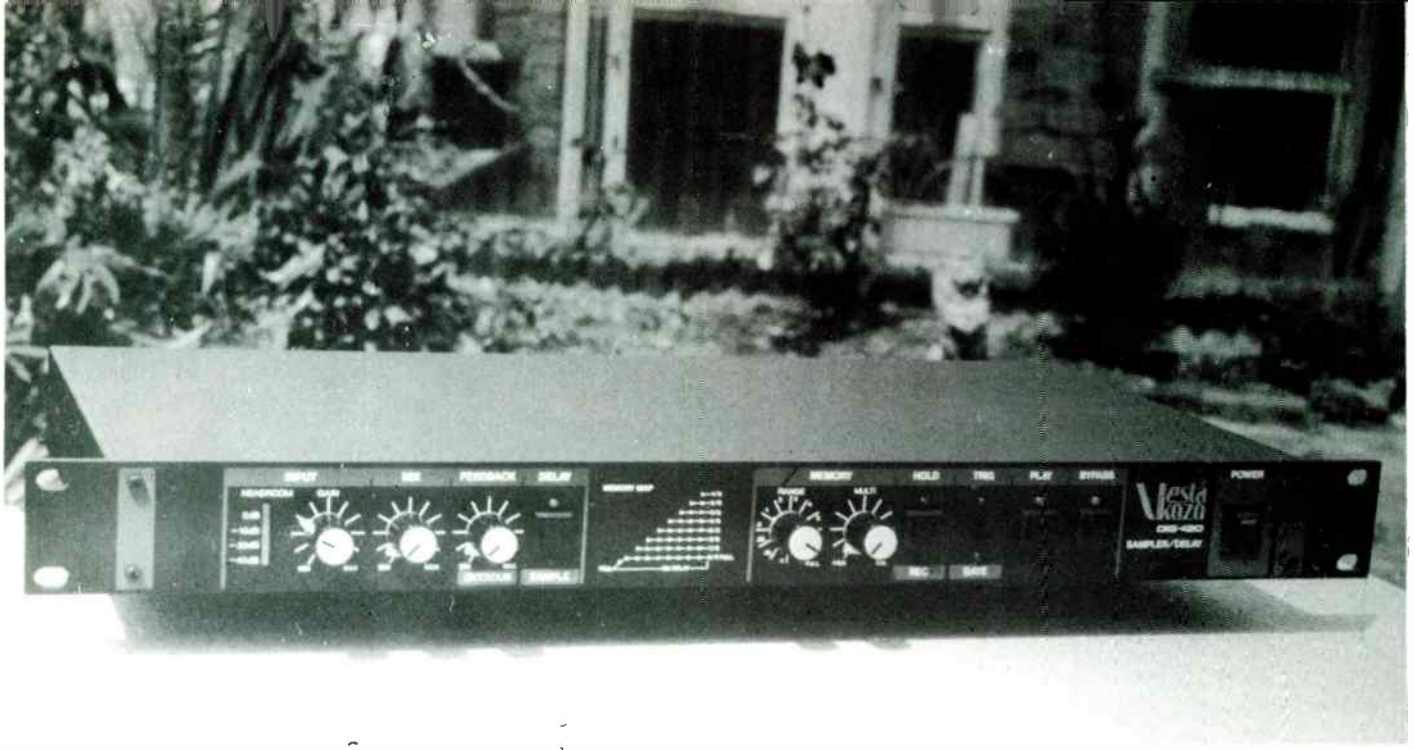

Instant Sampling

If you have a CV monosynth, the Vesta Kozo DIG420 will give you monophonic sound sampling and a digital delay line into the bargain. But are there too many compromises on what is only a £330 machine?

Dave Simpson

I remember the day well. It was sometime in 1968, and it was the day my father bought one of the first pocket calculators in the UK. It was a big day for us, because it had taken a lot of organising. First he had to remortgage the house. Then we had to hire a lorry to bring it home. Finally we installed it in the spare room, but managed to leave just enough space to squeeze past it to open the curtains.

It's been a bit like that with sound samplers. Scarcely had I paid the final instalment on the Fairlight, when along came the Emulator. After a brief trade-in, I pocketed the change and smiled bemusedly as half a dozen samplers subsequently broke the £2000 barrier. Then I laughed (I'd have cried otherwise) when Powertran, Akai and others broke the thousand quid mark. Now, in the autumn of 1985, it's fallen upon me to herald the arrival of the sampler they actually pay you to take away.

Well, that's not strictly true, but the Vesta Kozo DIG420 is certainly the only sampler I know of that falls within just about every musician's budget, *and* has an output that can be changed in pitch by means of an external keyboard, *and* has a one-second digital delay line built into it as well. Want to hear more? Then read on, dear reader, and all (or most) will be revealed.

I won't go into great detail about how a sampler does what it does (though don't be surprised if a word or two of explanation creeps in somewhere along the line). What I'll do instead is take a look at this particular example of the species, and give a brief rundown on what it can do.

I've always been impressed by the finish on Vesta Kozo units – high quality, multicolour screen-printing is standard throughout the range – but have always had qualms about the name itself: change a couple of vowels in the last word, and several unpleasant associations spring to mind.

Enough of that, though. Basically, the DIG420 is a one-second, monophonic sound sampler that lets you trigger the sound stored in its memory in one of four ways: a front panel trigger button, a rear panel footswitch socket, or gate and CV sockets. The sampled sound can be edited from one end (the beginning), and different sounds can be sampled separately and connected together in the memory.

But DIG420 can also act as a one-second delay line, with all the functions you'd normally expect to find on such a unit.

The sampled and delayed sounds can be changed in pitch by means of front panel controls, and both sampler and delay line have a frequency response of 20Hz-7.5kHz.

Let's start with what appears on the face of it to be a limited bandwidth. Over the past couple of years, we've all come to expect fully professional bandwidths from even budget equipment, and I must admit that 7.5kHz is far from being a professional spec. That said, it's one thing looking at figures on paper, but quite another to judge a unit's frequency response by listening to it. In that respect, the Vesta handled every instrument I pushed through it well. Even vocals emerged clear and distinct from the machine's processing. Now, there's no way you could claim the sampled or echoed sound was indistinguishable from the original – some of the high transients and harmonics were conspicuous by their absence, even more so when I attempted sampling anything like cymbals, for instance. But used with reasonably undemanding signals, during a mixdown, with just a touch of reverb, you'd have trouble spotting the difference.

When it comes to front panel controls, most of the DIG420's have dual functions – which isn't surprising given the machine's dual audio identity. I'll examine the sampler functions first as they're probably the ones of most interest to E&MM readers, and give a brief rundown of the delay facilities afterwards.

At the extreme left of the front panel is the standard LED column that tells you whether the setting of the Input Gain control immediately to its right is in danger of overloading the unit. If you adjust the input signal level so that the single red LED at the head of the column flashes occasionally, you know you've reached maximum signal-to-noise ratio.

A curious feature of the Input Gain control is that when you play back a sampled sound, it magically becomes an Output Level control. Stranger still is the fact that in this second mode, it functions in the opposite manner to every other rotary pot in the known universe – turn the control anti-clockwise and you turn the level up. I found this rather disconcerting initially when, thinking that the Vesta's output level was too high, I automatically turned the control to what I thought was full off. Reglazing all the cracked windows wasn't too bad, but replacing all the speakers in my monitors was trickier – and rather more ▷

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▷ expensive. Not a very clever arrangement, then, though doubtless there's some overwhelming technical reason for it.

To the right of the Gain control is one marked Mix which adjusts the balance between dry and sampled signal. This control sees most of its use when the unit is functioning as a DDL, and sets the balance between dry and delayed signal. In sampling mode, it's likely you'd set this control to 'sample' most of the time, which would give you the signal you actually want to hear.

Next in line is the Overdub control, which allows a new signal to be overdubbed onto a signal already in the DIG420's memory. In practice, you can make several overdubs without affecting the sound quality too drastically. The ratio of sampled signal to overdub is user-controllable, and this results in a facility that's as flexible as it is musically useful. Working alone, you could build up a three-part vocal harmony, and then control the pitch using the Multi control (more of that in a moment).

To the right of these three controls is a fairly crucial button – the one that determines whether the Vesta is going to work as a delay line or a sound sampler.

Skipping the screen-printed memory map (which shows how editing can be done), we find two controls under the combined heading of Memory – one labelled Range and the other labelled Multi. Basically, the 420's memory is divided into eight segments, a division that serves two purposes.

First, it allows the sampled sound to be edited from the front. In practice, what this means is that if you sample a word into the Vesta and the start of the word doesn't coincide exactly with the start of the memory (resulting in a slight delay whenever the memory is triggered), you can turn the Range control one notch at a time to reduce the memory space until the start of both the word and the memory coincide. Move the control a little further, and syllables can be isolated and triggered at will. Adjusting the Range control doesn't permanently affect the memory unless the unit is actually in the process of recording a sample, though. When you return it to its original position, the full amount of memory space is restored instantly.

The second function of the Range control comes into play when you use it in conjunction with the Record button. In this context, it allows up to eight different items, each up to ⅛ second long, to be put into the memory one at a time, allowing phrases, arpeggios or anything else to be constructed – providing, of course, that the finished sample doesn't have a total length of more than one second.

During the test period, I built up synth

phrases which ordinarily I wouldn't have been able to play, and triggered them during a track at the right time (and in the correct pitch) using a keyboard. Very useful.

The Multi control seems to do two different things. I say 'seems' because the literature that accompanies the DIG420 (I won't pay it the compliment of calling it a handbook) is fairly basic, to say the least. Anyway, during recording the control fine-tunes the memory time, so as well as increments of an eighth of a second, any interval in between becomes possible as well. It does the same kind of thing on playback, except that if the speed of playback is changed, the pitch of the sampled signal obviously changes too – in practice, then, the Multi control acts as a pitch adjuster whenever you're in the process of replaying sound samples.

The Record button, strange though it may seem, is what you press when you want to record a signal into the Vesta's memory. Once you've pressed it, a red light immediately above the switch indicates the duration of recording, and the amount of signal allowed into the memory is dependent on the input gain and overdub knobs.

Last of all, we come to a switch and two buttons. The switch has two markings (Trig and Gate) and enables the memory to be cued either by triggering it via the playback switch, or by an increase in the gate signal (accessed via the back panel).

The playback button does just that: pressing it causes the contents of the machine's memory to spill out all over your lounge floor. The bypass button, meanwhile, allows you access to the rear panel triggering facilities.

In fact, two types of trigger input are possible from the rear panel. First, any trigger or gate outputs from a synth or drum machine can be used via the Gate In socket. Second, the pitch of the sampled sound can be changed by connecting a keyboard CV output (with a 0-3V range) to the CV input socket. Pitch variation can be by as much as three octaves.

Frankly, this final feature came as a complete surprise to me on a unit of this price; it was only when I plugged a keyboard in that I realised the DIG420 could do it at all. In practice, though, this method of pitch-changing a signal has its limitations. Your first problem is that the higher the playback pitch, the shorter the duration of the note or signal will be. The second hitch is that as the pitch is raised, 'munchkinsation' begins to make its presence felt, making excessive pitch changes sound like Sandra Dickinson impersonations.

Given these inherent limitations, experimentation is the order of the day. Try percussive sounds, like the old standby of a glass bottle breaking. (The only problem with this one is that it can get a bit messy if you don't sample it first time.)

You're not going to get polyphonic playback of samples on a machine costing less than £500, but you can get around this to some extent by sampling a full chord, or by overdubbing one in.

The digital delay side of the DIG420 is a fairly straightforward affair, with no complicated modulation facilities. Depressing the Delay/Sample button switches the unit into DDL mode, after which it functions pretty much as a normal digital delay, with a front panel Hold function, control over delay length, and pitch-shifting of the delayed signal via the Multi control. The delay can also be cued via the trigger inputs, and it's worth noting that whenever you send the machine into Delay mode, the Vesta automatically creates a loop, with the loop time equalling the memory time which, in turn, can be lengthened or shortened via the Range control.

You can adjust the echo amount relative to the original signal using the Mix and Overdub controls – which then become effectively a Feedback (or Regen) control, a transformation that lets you feed the delayed signal back on itself.

With a retail price of some three hundred and thirty green ones, the DIG420 is the only commercially-marketed sampler with an output pitch that can be controlled from a keyboard, save Logitech's CSDD1, which is only available direct from the manufacturer. It's also a reasonably flexible digital delay line, and both sampler and delay sections are triggerable in a variety of ways.

There have been compromises, of course. Most important of these are the limited (compared with other DDLs and samplers) bandwidth and the fairly short sampling time of just over a second. Given that Vesta Fire have also just brought out a DDL with a 16kHz bandwidth retailing at under £200, I don't think it would've put the company too much out of pocket to have given the same sort of spec to the DIG420. A longer sampling time such as that on the new DOD RDS3600 would also have been nice, even if it had come at the expense of bandwidth. Still, in the context of current sampler prices, these points shouldn't really be construed as criticisms. They're more like suggestions as to what Vesta could improve when they bring out the MkII version...

The DIG420 represents yet *another* step on the road to making sampling an affordable musical technique – especially seeing as CV synths like the Roland SH101 are kicking around in the homes of almost every modern keyboard player in the UK. And even in my own 16-track professional studio, the sampler has found a niche for itself. In fact, I liked it so much I nearly bought the company – though if I did, the first thing I'd do would be to change that God-awful name. ■

Value *'Even in my own 16-track studio, the sampler has found a niche for itself...I liked it so much I nearly bought the company.'*

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Paradise FOUND

One of a new breed of recording studios that specialises in things hi-tech, Paradise lives up to its name by providing a healthy selection of keyboard instruments old and new. We gauge its success and talk to its resident engineer.

Words *Simon Trask* **Photographs** *Matthew Vosburgh*

QUESTION: *What do you do if you've got a Fairlight sitting in your living room and your name isn't Peter Gabriel or Kate Bush? Well, you could return it to the shop from whence it came and plead temporary madness. Or you could hire it out for sessions at a time at an extortionate daily rate. Or you could start up a recording studio based around it.*

A certain man by the name of Gerald Gouriet went for the third option, and that, essentially, is how Paradise Studios came into being just over a year ago. Paradise is one of a new breed of studios that places little emphasis on acoustic recording, and consequently centres its activities in the control room. There you'll commonly find row upon row of synthesisers and other hi-tech gear lining its walls, ready to be called into concerted action. And because this equipment is such a central feature of the Paradise modus operandi, use of all the instruments including the Fairlight is included in the basic studio rate.

If you've been drifting in search of paradise for a long time, I'll spoil everything by telling you it's located at the lower end of Chiswick High Road in West London. And Abbey Road it is not. The studio is so small you'd have trouble swinging a cat, let alone a synthesiser, yet somehow it manages to give the appearance of being reasonably spacious. But then, the people who run a studio like Paradise don't have to worry too much about space – they're probably never going to record a ten-piece brass section, let alone an orchestra.

Having visited Paradise at the beginning of the year and been impressed by what it had to offer, I conveyed an interest to the Editor to discover more. He wasn't too sure at the time, but made the mistake of going on holiday shortly afterwards. I took swift advantage of this, and one sunny morning in September found me wending my way westwards, trusty Walkman in hand, to speak to first engineer Martyn Phillips, who joined in October of last year and is therefore something of a Paradise veteran.

WHEN PARADISE *opened its doors to mere mortals for the first time, it had the aforementioned Fairlight, a DX7, a JX3P and a Drumulator to its*

name, together with a Soundtrack 24-track tape machine and a custom-built RAM 42-into-24 mixer. In addition to Phillips, the staff currently consists of Greta Gouriet (Gerald's sister), who handles the administration, a roster of freelance engineers that includes Danny Hyde and Phil Da Costa, and tape op Adrian Fry. Between them, they keep Paradise open 24 hours a day, which is bad news for burglars.

The Soundcraft machine was replaced in January by an Otari MTR90 24-track, while April of this year saw the studio undergoing a refit at the hands of Turnkey Two. This gave them a modestly-proportioned acoustic area, a new desk in the shape of an Amek Angela 32-into-24 (which is due for computerisation in '86), and a PPG Wave 2.3 and Waveterm A to complement the Fairlight.

The photographs should give you some idea of the range of keyboards that greets you on entering Paradise. Some bands come to the studio to do nothing but keyboard overdubs, while others will do all their recording work at Paradise and go to one of the bigger SSL studios, such as Sarm West or Good Earth, to do the mix ('SSL is still flavour of the month' – Phillips).

Bands who've used Paradise include Fashion, Psychic TV, the Cocteau Twins and Carmel, but the studio takes on work from a variety of other sources, too. In the past, Paradise has been a temporary resting place for The Spiral Dance Company (music composed by Barrington Pheloung, a well-known composer in the modern dance arena), a Channel 4 wildlife documentary, background music for Rediffusion TV, music for a new Paul Daniels kids show, and the latest Pernod cinema advertisement. Free the spirit, as they say...

And the variety of clients the studio attracts is reflected in a similar variety of requirements Paradise has to cater for in order to keep customers happy and sustain its reputation. Some come in and play around with the sounds available until they find something that triggers them off, others have a very clear idea of what they want to do and the sounds they want to do it with. Dance music producers are particularly prone to coming in with a record and saying 'I want that sound'.

As for the most popular thing in Paradise, honours are currently shared between the Fairlight and (wait for it) the Minimoog.

Phillips: 'People want the Minimoog for its bass sounds or for playing lead lines. I must confess I've found nothing to outdo the Minimoog in terms of bass lines. Everybody says that, but it's true. We also often find ourselves sampling a note into the Fairlight or the PPG, and using the basic timbre of the Minimoog polyphonically.'

THE FAIRLIGHT is still the most-used item in Paradise's arsenal of equipment, though. Predictably, it's Page R that's used the most, by virtue of the fact that it's quick and easy to use. Phillips finds it's possible to get results from Page R much more quickly than with any other system he's worked with, and in an environment where time means money, that's obviously a great attraction.

In contrast, he can only ever recall the Fairlight's MCL being used once – most people just aren't familiar enough with its workings to make its use practical in a studio environment.

Customers also appreciate the CMI ▷

▷ *for the ease with which they can create effective samples on it. Phillips again: 'If someone thinks of a sound, it's very easy to come in here, sample something which approximates it, and then manipulate the sample till it sounds correct. The beauty of sampling on the Fairlight, as opposed to any of the other machines, is what you can do with the sample once you've sampled it. You don't need such a good sample as you do with, say, the PPG or the Synclavier. We've got some good samples which were taken off cassette and then worked on heavily.'*

Paradise now has a library of Fairlight samples that consists of some 60-70 disks, and these cover a broad spectrum of sounds. In fact, Paradise has most of the popular drum machines either sampled into the Fairlight or recorded on Sony PCM – from which sounds can be sampled at a moment's notice into the Fairlight or PPG, or put into the AMS DMX or Bel BD80, to be triggered off a click on Page R. If anything, recent sessions have seen the AMS and the Bel used instead of a Fairlight sample, simply because they have a better bandwidth and 16-bit resolution.

The eagle-eyed among you will have spotted a real piano (a Yamaha upright, in fact) cohabiting with a Simmons SDS7 kit in the acoustic recording area. Acoustic miking is by no means foreign to what is extensively a solid state Paradise, and the piano gets used quite a lot.

'There's still no substitute for the piano', says Phillips, with more integrity than originality. 'The Kurzweil comes very close, and I know some people prefer it, but the beauty of the piano is that you can mike it up in different ways to get different sounds, which you just can't do with the Kurzweil, of course.'

The Simmons brain is used more often than the kit, usually triggered off Page R as most of the studio's clients don't use live drummers. If drummers are brought in, they're most likely to use an acoustic kit together with a couple of Simmons toms.

Paradise bought their PPG system after witnessing the 2.3 and Waveterm B in action at the Frankfurt Music Fair last February. It was the 'B' that swung the pendulum in the PPG's direction, so upgrade to that version is imminent. The PRK Processor Keyboard, latest component in the PPG system, is also on the Paradise shopping list.

Phillips has found that effective sampling is harder to achieve with the Waveterm than with the Fairlight, but values the German system for the quality of its samples, which he says have a very sharp, clear character. For this reason, the PPG is often used for sampling percussive sounds, while the system's synth section has filled a gap on the purely electronic side of things.

Phillips: 'What it really boils down to is that the PPG has its own unique sound quality. The acid test is to sample something into the Fairlight and PPG, and they sound radically different. After a while it becomes very apparent that what is needed is not another Fairlight sound, but a PPG sound. This also applies to the other instruments. It's generally clear whether what is required is a DX7 sound, or a Prophet or other analogue sound.

'I find it quite useful to juggle between completely analogue sounds and digitised analogue sounds. Each of them has a certain way of placing sounds in a mix, in the same way that using different instruments or using reverb can place sounds in a certain way.'

THE MINIMOOG *has qualities already referred to, but what of the other synthesisers? Well, the Paradise Prophet 5 gets used for chordal parts and 'odd noises'. Phillips: 'It's very quick to rustle up a sound on, so if someone thinks up an abstract synthesiser noise, the Prophet is usually the first thing I turn to'.*

The Juno 106, meanwhile, tends to find use for its lush string-type sounds, while its Roland stablemate, the JX3P, has a more edgy sound and is capable of producing more complex voices. 'I don't find it as rich as the Juno, so I don't tend to use its chorus', says the engineer.

Phillips has been programming sounds on the DX7 since the early days of the instrument, and appreciates its versatility. But many clients simply don't possess the patience to wait around for five minutes while the engineer comes up with a suitable sound. And Phillips has noticed that whereas at one time nobody had anything apart from the factory presets, quite a lot of clients nowadays come in with their own RAM packs, containing voices of their own and sounds culled from various other sources. In Paradise, the resident DX7 has Syco's MX1 memory expansion board (which has 128 sounds onboard), five RAM cartridges, the TX7 sounds, and the two original ROMs.

Yet according to Phillips, all is not well with FM synthesis in a studio situation... 'The DX7 seems to be losing popularity. I think I've learnt some of its limitations in terms of sonic capabilities. It's a fine-sounding instrument on its own, but it has a very annoying habit of disappearing in the middle of a mix once things are overdubbed on top of it, so you have to use it with care.

'On the other hand, you can often get similar sounds on the PPG which

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retain their presence. The Fairlight also cuts through well. But even so, if you use PPG on everything, things tend to become clouded and you can't distinguish what's going on.'

As an engineer who's spent a large part of his working life surrounded by keyboards, Phillips' views on the rôle of musical instruments in the contemporary studio are worth hearing, too.

'I regard the keyboards almost as an extension of the mixing desk. They are other elements to the sound that you've got control over. In most studios you just get control of all the outboard gear off the mixing desk. With keyboards, you've got filters and everything else thrown in as well.'

And the extent to which Phillips regards the keyboards as an integral part of the sound-structuring process is evidenced by his description of a stock multi-instrument string sound, which uses everything. 'I use the DX for a little bit of bow at the front, a PPG string sample for the continuing bow, a bit of pulse-width Prophet to give a nice top end, and both Rolands chorused up to give added richness – with perhaps a bit of Fairlight to add some more to the front end. You can get some very nice string sounds that way!'

SO THAT'S what happens when you're surrounded by rackfulls of keyboards all day, every day. Mind you, there's a more serious aspect to working alongside so much modern technology. More than most in-house engineers, Phillips is at the beck and call of people who think they know what they want. And if he can't deliver the goods, or provide the customer with a more suitable alternative, he's in trouble.

'You could spend a whole morning going through the Fairlight library, discovering whether any sounds are particularly useful to you. So if someone says "I'd like a bass drum sound", you can say "well, I can offer you 30 samples on the Fairlight, 10 on the PPG, and sounds from the Drumulator, RX11, Linn and Linn II, Linn 9000 and TR707 (on PCM), and the Simmons Brain...but I think what you probably want is this".

'A few people who come in do know about the Fairlight, but they are in the minority. Certainly, having the Fairlight here means that the engineers who work here usually have a better knowledge than the Fairlight operators who come in, who perhaps haven't had so long with the machine. The professional Fairlight programmers are often slower than the service we can provide, because we're working with it all the time.' Now there's confidence for you.

Yet although the Fairlight is the most-used of Paradise's machines, Phillips sees it as part of his job to encourage clients to make use of other instruments as well.

'Occasionally someone comes in who would never consider using a DX7, or never consider using a Juno. But in general, it's easy to show people that everything has its own place, everything has its use. There are very few instruments that are inherently bad. Even the Korg MS20 gets used every now and again, because it has the right sound for a certain piece.

'One of the beauties of a setup like ours is that you appreciate everything for its strengths and use it for its strengths, without having to put up with its weak points as well.'

More generally, Phillips feels that a lot of music technology is under-used, the equipment at Paradise being no exception – though in the studio's case, it's time that must shoulder most of the blame. 'The only times we really try to stretch the machines are when we're doing in-house work, when obviously we're not paying for the time. Then we can spend time valuably experimenting with the more time-consuming aspects of a machine – like the Fairlight's tuning page, for instance. You then get quicker, and end up being able to offer these services as a realistic part of the session.'

As for the recording medium itself, Phillips foresees analogue tape sticking around for some while yet. It's his experience that analogue recording can help a great deal when it comes to 'containing' synthesised sounds, which have a tendency to sound 'dissipated' when used together. On the other hand, digital recording seems to work best for natural sounds.

If all this sounds a bit much, Phillips admits that 'engineers are generally much more pernickety than clients when it comes to getting a sound absolutely right – and the engineer is the last one who's happy with a sound'.

But then that's part of their job, I guess.

IN A PLACE like Paradise, it's inevitable that that interface will play some sort of rôle in the proceedings. In fact, Phillips sees MIDI's greatest asset as being that it encourages the use of all the studio instruments because of its ability to create composite sounds through layering. Almost all the instruments at Paradise are MIDI'd up to one another, with the Quark 999 MIDILink 'patchbay' at the heart of things. Even the Minimoog is MIDI'd via the JMS CGX MIDI-to-CV interface, and at the time of writing, the Fairlight was just about to undergo a MIDI retrofitting operation. Only the Korg MS20 is not directly sequenceable, though it's still triggerable.

The MIDILink allows all the outputs from a single input to run in parallel, and therefore avoids the worst problems inherent in chaining via MIDI Thrus. It had been Phillips' experience that chaining more than four synths resulted in bits frequently getting lost en route, resulting in Note Off problems. 'There's also the omnipresent MIDI delay, which you learn to work around by having the most percussive sound, or the voice that has the sharpest attack, on your master instrument.'

Paradise's setup of Fairlight, PPG and MSQ700 sequencers allows most of the music that's recorded there to be put onto sequencers before going onto tape, even if, in practice, some clients get 'a bit panicky' if nothing is on tape by the latter part of the session.

'Most people are used to thinking in terms of developing one line at a time, putting it down on tape, and then turning to the next problem.' Not surprisingly, then, multi-part sequences are far from being the order of the day at Paradise. Instead, the usual approach is to have several instruments playing a single part over one MIDI channel.

Still, Phillips finds himself continually disappointed by new sequencers, so much so that he's yet to find one that allows him to do what he wants to all the time. His ideal would be a polyphonic Page R with all the MIDI control of a QX1, but that looks no nearer coming into being than it did a year ago or more.

Mention of a polyphonic Page R brings us to that looming pinnacle of excellence, the Series III Fairlight. Unlike a lot of people, Phillips doesn't leap at every opportunity to condemn the current Fairlight for its limited bandwidth and eight-bit sampling. If anything, he finds the shortcomings can be something of a boon when working with other instruments, as the colourations they induce can help to place a sound in its own environment. At the same time, he's wary of some of the present model's age-induced idiosyncracies, such as the requirement to pre-assign numbers of voices to different samples across the keyboard (something that's in direct contrast to the PPG, which dynamically reallocates voices to match your playing), which he hopes won't find their way onto the new machine.

Still, like everyone else and their dog who owns a Fairlight, the management at Paradise plan to upgrade to the Series III as soon as possible – which, with luck, could mean early next year. The new Page R (retitled CAPS, for Composer/Arranger/Performer/Sequencer), which offers 16 polyphonic tracks utilising the Fairlight's own voices and a further 64 tracks that can be sent to either slave CMI voice units or via four MIDI Out ports, should prove an irresistible addition to Paradise.

CONTRARY to what Kid Creole would have you believe, there doesn't seem to be much wrong with Paradise at all. There's not a cloud or a harp-strumming angel in sight, but the atmosphere is cosy, the equipment list enviably long, the staff knowledgeable and helpful, and the rates low enough for you to be able to afford a couple of bars of Bounty mid-session.

DATAFILE

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It's back to polysynths, voice expanders, and controlling keyboards for this month's edition of CHECKLIST, the buyer's guide to beat all buyer's guides.

If you're new to the listing, it's worth our pointing out that this is the only regularly-published, regularly-updated price guide in the modern musical instrument scene, a fact that's made it essential reading for musicians the length and breadth of the UK, and beyond.

But CHECKLIST is more than just a price guide in the conventional sense. Because as well as listing available products and their typical selling prices, we also include some brief specification details, and the comments – for, against, and summing-up – of E&MM's reviewing team where possible. That way, you get some idea not only of what machines are available, but also of their relative specifications and how they compare in performance terms.

The peak times for new product launches (or should that be lunches?) are traditionally the depth of winter and the height of summer – which means there haven't been many changes to the polysynth market since CHECKLIST last featured it three autumnal months ago.

The significant alterations are the inclusion of some brief details on a couple of as yet unavailable polys (the Akai AX60 and Oberheim's Matrix 6), the reinstatement of the Juno 106 (those responsible for its omission last time have been deported to Albania), and the latest results of the hi-tech field's continuing downward price spiral. Among these are yet another drop (to £799) in the price of the Akai AX80, and the introduction of two synths (the Chase Bit 99 and the Korg DW8000) which actually have RRPs below those of their predecessors, despite having significantly better facilities.

So, armed with a copy of this month's CHECKLIST, you should be able to approach the High Street music shop with more than an inkling as to what to expect in terms of instrument selection, pricing, specification and performance. Which probably gives you a head start on most of the musicians on your block...

POLYSYNTH

AKAI

AX60 – £TBA Six-voice, two-oscillator per voice analogue polysynth; 16 preset/programmable voices, five-octave keyboard, built-in MIDI delay, stereo chorus, arpeggiator. Due for release early 1986. *To be reviewed.*

AX80 – £799 Eight-voice, two-oscillator per voice analogue polysynth; 32 preset and 64 programmable onboard voice memories, five-

octave velocity-sensitive keyboard. + *Three LFOs, chord memory, good keyboard, excellent bar graph system makes digital parameter access more user-friendly;* − *doesn't really possess any sonic character of its own;* = *recent price reduction makes Akai's first synth more attractive than it previously was. Yer pays yer money....*

CASIO

CZ101 – £345 Four/eight-voice, two/one DCO per voice, Phase Distortion polysynth; 16 preset and 16 programmable voice memories, four-octave miniature keyboard. + *Excellent range of both 'analogue' and 'digital' synth sounds, five-octave MIDI-compatible octave range, voice layering, comparatively easy to program, built-in ring modulator, 16-voice RAM cartridge storage, eight-stage transient envelopes, fine MIDI implementation;* − *small, short keyboard, awkward bend wheel;* = *revolutionary Phase Distortion principle offers value for money without sonic compromise – if you can stand the mini-keyboard.*

CZ1000 – £495 Spec as for CZ101, but with full-size, four-octave keyboard. = *The professional's Casio: nothing around to beat it for versatility, ease of programming and MIDI features at this price level.*

CZ5000 – £975 Eight/16-voice, two/one oscillator per voice Phase Distortion polysynth; 32 preset and 32 programmable voice memories, five-octave keyboard, built-in eight-track step- and real-time sequencer. + *Twice the 101/1000's synth facilities means correspondingly greater sound potential, excellent multitrack sequencer is far more than just last-minute afterthought, useful multitimbral MIDI implementation;* − *undynamic keyboard, no separate outputs for multitimbral voices;* = *the last word in Phase Distortion synthesis, and it works a treat – so don't let the name put you off.*

CHASE

Bit 99 – £699 Six-voice, two-oscillator per voice analogue polysynth; 63 programmable voice memories, five-octave velocity-sensitive keyboard. + *Superb range of analogue sounds, both acoustic and electronic, plenty of keyboard performance options;* − *no sequencing or arpeggiation features;* = *all in all, probably the best budget analogue poly, now has better MIDI implementation and programming facilities than Bit One predecessor, and at a lower price, too.*

CHROMA

POLARIS – £1699 Six-voice, two-oscillator per voice analogue polysynth; 132 programmable voice memories, five-octave velocity-sensitive keyboard. + *Good, rich analogue sound, neat onboard sequencer, extensive interfacing facilities include wide range of MIDI options;* − *complicated to use, overpriced, some design priorities now outdated;* = *a synth with a lot of potential for those with enough patience to exploit it, but the competition is already too tough, and getting tougher all the time.*

ELKA

Synthex – £999 Eight-voice, two-oscillator per voice analogue polysynth; 40 preset and 40 programmable voice memories, five-octave keyboard. + *Considerable (but largely ignored) sonic versatility, split and layering facilities using two MIDI channels, onboard four-track sequencer, digital ring mod;* − *some may find sound dated, possible servicing difficulties now that synth is out of production in Italy;* = *good facilities for its (recently reduced) asking price: if this is your sound, go for it.*

KORG

Poly 800 – £549 Six-voice, two-oscillator per voice analogue polysynth; 64 programmable voice memories, four-octave keyboard. + *Competitive price, three six-stage envelopes, onboard sequencer and chorus unit, portability;* − *only one filter for all six voices, short keyboard,* = *the world's best-selling polysynth, in spite of its limitations: but there's competition looming.*

DW6000 – £999 Six-voice, two-oscillator per voice, digital waveform generation polysynth; 64 programmable onboard memories, five-octave keyboard. + *First synth to combine clarity of digital voicing with easy access of analogue synth configuration, six-stage VCA & VCF envelopes, built-in chorus;* − *keyboard has no velocity or aftertouch sensitivity, poor feel of performance control joystick;* = *the polysynth world's biggest technological compromise – but it works, and you can pick it up very cheaply now.*

DW8000 – £1075 Similar in spec to DW6000, but with pressure- and velocity-sensitive keyboard, built-in DDL. + *Factory presets are more* ▷

impressive than 6000's, DDL is more than just a gimmick, dynamic keyboard makes a big difference; [-] feel of keyboard and joystick could be better, digital access system little improved by new panel layout; [-] corrects all the DW6000's faults, yet costs less than its predecessor did when it was launched – therefore a real contender.

OBERHEIM

Matrix 6 – £TBA Six-voice, two-oscillator per voice analogue polysynth; 100 single and 50 multipatch voice memories, velocity- and pressure-sensitive five-octave keyboard. Due for release early 1986. *To be reviewed.*
Matrix 12 – £4599 Spec similar to that of two Xpanders controlled by XK keyboard – see relevant sections for details.

OCTAVE PLATEAU

Voyetra 8 – £3999 Eight-voice, two-oscillator per voice analogue polysynth; 100 programmable voice memories, velocity- and pressure-sensitive five-octave keyboard. [+] *Excellent sonic potential in the American analogue tradition, built-in polyphonic sequencer and arpeggiator, comprehensive split and layering facilities; [-] hideously involved system of parameter access makes editing a real chore, dollar-inflated price-tag; [=] competent, professional synth system – at a price.*

ROLAND

Juno 106 – £799 Six-voice, one-oscillator per voice analogue polysynth; 128 programmable voice memories, five-octave keyboard. [+] *Ease of use, built-in chorus; [-] beginning to sound a little dated, lacks arpeggiator; [=] a classic among budget polysynths, but with limited potential now that competition has hotted up. Also available:* ***Synth Plus 60 (£899)****, circuitry of Juno 106 in a domestically-acceptable format (built-in amp and speakers), unlikely to venture far outside the average living room.*

JX8P – £1250 Six-voice, two-oscillator per voice analogue polysynth; 64 preset and 32 programmable onboard voice memories, five-octave pressure- and velocity-sensitive keyboard. [+] *Another example of Roland squeezing new sounds out of old design techniques (the 8P competes with the best of the analogues), voltage controlled mixer section, RAM cartridge voice storage, good MIDI implementation; [-] only eight memories hold aftertouch and performance data, requires optional PG800 programmer for sound editing to become really straightforward; [=] lacks character, but ultimately a rewarding and versatile analogue poly that proves Roland aren't going to be left behind without a fight.*
Jupiter 6 – £1299 Six-voice, two-oscillator per voice analogue polysynth; 48 programmable voice memories or 32 patch presets (for split programs), five-octave keyboard. [+] *Inherently flexible and versatile programming system, excellent sonic potential, split-keyboard facilities, sophisticated – and syncable – arpeggiator; [-] no velocity- or pressure-sensitivity, might just have too many facilities for its own good; [=] excellent analogue synth that continues Jupiter tradition admirably, but complex control layout has meant shortage of takers, hence newly attractive price level.*

SEQUENTIAL

MAX – £495 Six-voice, one-oscillator per voice, multi-timbral analogue polysynth; 80 preset voice memories, four-octave keyboard. + *As SixTrak;* − *also as SixTrak, but not readily user-programmable without CBM64 and software;* = *tries to be computer peripheral and voice expander in one, succeeds in being neither.*

SixTrak – £595 Six-voice, one-oscillator per voice multi-timbral analogue polysynth; 100 programmable sound memories, four-octave keyboard. + *Unique (in this price range) multi-timbrality extends to built-in six-channel sequencer, 'stack' mode and MIDI implementation;* − *awkward parameter adjustment, short keyboard, synth doesn't actually sound too impressive;* = *in the process of being displaced by newer MAX and MultiTrak, therefore very cheap.*

Split Eight – £TBA Eight-voice, one-oscillator per voice analogue polysynth; 64 pre-programmed sounds and user-programmable voice memories, five-octave keyboard, split/layer and unison performance modes. *To be reviewed.*

MultiTrak – £1199 Six-voice, one-oscillator per voice analogue polysynth; 100 programmable voice memories, five-octave, velocity-sensitive keyboard. + *Adds 'professional' facilities to SixTrak spec;* − *doesn't add anything better in the sound department;* = *new low price, and the only choice if you value sequencing and MIDI facilities above sheer sonic potential.*

T8 – £4700 Eight-voice, two-oscillator per voice analogue polysynth; 128 programmable voice memories, six-and-a-half octave keyboard sensitive to pressure and velocity. + *Excellent analogue sound capability, weighted-key action and individual aftertouch for each key, fine split and layering facilities, built-in sequencer;* − *heavy on the hand and even heavier on the wallet;* = *professional instrument at a professional price.*

SIEL

DK80 – £699 Six-voice, two-oscillator per voice analogue polysynth; 10 programmable and 40 preset voice memories, velocity-sensitive five-octave keyboard. + *More facilities for the money than just about anything;* − *40 fixed memories, basic sound could be better;* = *really astonishing value for money, though first impressions might not be all that favourable. Performance-oriented DK70 coming soon.*

DK600 – £999 Six-voice, two-oscillator per voice analogue polysynth; 100 programmable voice memories, five-octave velocity-sensitive keyboard. + *Fine sound quality (especially brass and percussion presets), programmable dynamics, plenty of good software available;* − *the odd operational idiosyncracy;* = *competent but underrated analogue poly, neatly styled and well constructed.*

WERSI

MK1 – £TBA 16-voice polyphonic Fourier Synthesis polysynth; five-octave velocity- and pressure-sensitive keyboard. *To be reviewed.*

YAMAHA

DX21 – £699 Eight-voice, fully programmable FM digital polysynth; 128 factory preset sounds, 32 programmable voice memories, 32 performance memories, five-octave keyboard. + *Broad selection of factory sounds that rival DX7's for quality, useful voice-specific performance*

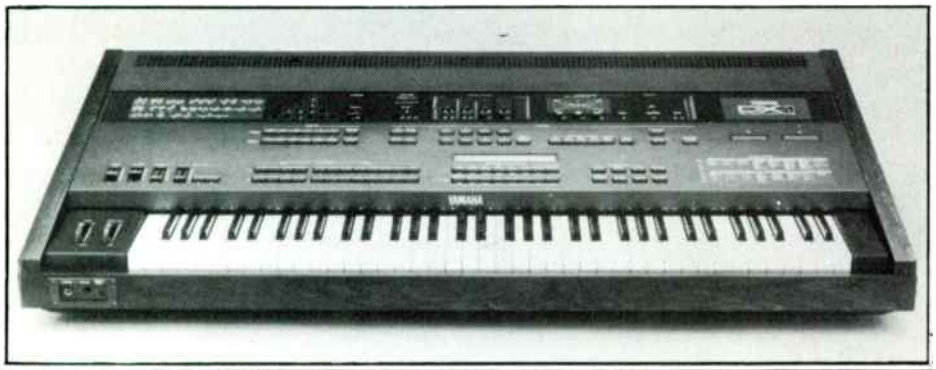
memories, inclusion of split and dual modes, probably easier to program than first-generation DXs, almost laughably cheap; ➖ *undynamic keyboard, no cartridge storage facilities, could still do with a better display;* ➖ *Yamaha's answer to the march of the budget polysynth, and a mightily impressive one at that, shows company haven't been resting on DX7 laurels.*

DX7 – £1250 16-voice, fully programmable FM digital polysynth; 32 voice memories, five-octave velocity- and pressure-sensitive keyboard. ➕ *Immense sonic and programming versatility still unmatched by any competing instrument, vast range of custom-designed hardware and software now available to accompany it from a variety of sources;* ➖ *a real pig to program, hence many preset sounds becoming clichéd, still niggling doubts about ability to recreate fat, traditional analogue synth sounds;* ➖ *an industry standard like no synth before it, and justifiably so – if only it was as easy to edit as it is to listen to...*

DX5 – £2999 FM digital polysynth, spec similar to two DX7s with additional performance memories; 76-note touch- and velocity-sensitive keyboard. ➕ *Excellent sound and facilities;* ➖ *beaten on price by Yamaha's own DX7/TX7 combination;* ➖ *now you've a choice between convenience and cost, though sizeable back orders for the DX5 indicate some people are wealthier than is good for them.*

DX1 – £8999 16-voice polyphonic, FM digital polysynth; 64 programmable voice memories, six-octave velocity- and pressure-sensitive keyboard. ➕ *Easier editing than cheaper DXs thanks to comprehensive control and display layout, marvellous weighted-action keyboard has individual aftertouch for each key;* ➖ *bulky, weighty and outrageously expensive;* ➖ *thoroughly desirable – the ultimate dedicated FM poly, but logic says it's outclassed by cheaper hardware from the same stable.*

EXPANDER



AKAI

VX90 – £TBA Similar facilities to AX90 poly, but in 19" rack-mounting format. *To be reviewed.*

CHASE

Bit 01 – £699 Similar in spec to Bit One poly, in rack-mounted casing and with improved MIDI implementation. ➕ *Puts excellent analogue sounds in a modular format well-suited to the needs of digital-polysynth owners, factory presets are sonically matched to corresponding Bit One voices, rack-mounting convenience;* ➖ *a little pricey next to Bit One, still the odd MIDI hiccup;* ➖ *like Bit 99, stands out as being the most cost-effective analogue unit in its price bracket – more MIDI modules promised by Italian factory for release in near future.*

KORG

EX800 – £449 Identical in spec to Poly 800: 64 programmable voice memories, built-in sequencer.

OBERHEIM

Xpander – £3945 Six-voice polyphonic analogue/FM digital hybrid synthesiser; 31 LFOs, 30 EGs,

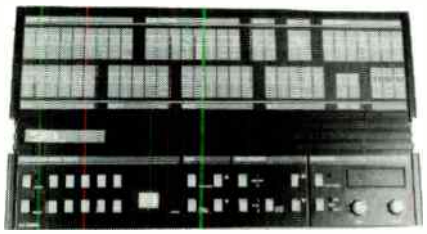
12 oscillators, 90 VCAs, 100 programmable voice memories, recognises MIDI pressure and velocity information. + *Vast range of sounds both analogue and digital, easier to program than most digital access designs, matchless programming versatility;* − *only the cost;* = *brilliantly conceived and superbly built – if you can afford it, don't hesitate.*

ROLAND

MKS7 – £TBA Rack-mounting MIDI voice module incorporating separate melody, chord, bass and rhythm units. *To be reviewed.*
MKS30 – £875 Same overall spec as JX3P poly, but 64 programmable voice memories, and fully responsive to velocity and pressure information. + *It doesn't sound bad;* − *requires optional PG200 programmer for conventional 'pot' control;* = *module costs more than a JX3P!*
MKS10 – £990 Sixteen-voice polyphonic piano-family voice module, fully velocity- and pressure-responsive, 16 preset voice memories. + *Neatly styled, built-in chorus/flanger helps strengthen sound output;* − *eight voices only accessible through mother keyboard, expensive for what it is;* = *only really of value if you've got a keyboard – and a playing technique – that'll do it justice.*
MKS80 – £1800 Similar spec to now-discontinued Jupiter 8: eight-voice polyphony, two oscillators per voice, 64 voice memories and 64 patch preset memories onboard, fully responsive to velocity and aftertouch information. + *Wonderful range of analogue-type sounds, optional RAM packs can hold 128 voices or patch presets;* − *again, requires optional programmer (this time the MPG80) for editing not to be a chore;* = *an excellent package that's notable good value next to the other Roland modules, but price still puts it firmly in the professional league.*

SIEL

Expander 80 – £399 Similar in spec to DK80 poly, but only monotimbral. + *Incredibly cheap, so lots of features for your money, cartridge*



storage facility unexpected on a machine of this price level; − *presets are identical to DK80's, hence more than a few sonic disappointments;* = *currently the cheapest way into analogue MIDI synthesis, and a godsend to the impoverished – it's not brilliant, though.*

YAMAHA

TX7 – £649 Identical in spec to DX7, with addition of performance memories for each voice. + *A logical upgrade for all DX7 owners;* − *but not so much fun if your controlling synth is analogue;* = *Yamaha's most economical route to FM duplication.*
TX216 – £1899 Two DX7s (or one DX5) in rack-mounted format, with facility for adding TF1 modules (one DX7's worth) at £449 each. *For comments see TX816.*
TX816 – £4299 Essentially eight DX7 voicing modules in one rack, each with its own MIDI connection. + *Who could say no to eight DX7s?* − *MIDI implementation could be better;* = *the ultimate FM music synthesiser – no self-respecting studio should be without one.*

CONTROLLER Checklist

AKAI

MX76 – £TBA Six-and-a-half octave, velocity- and pressure-sensitive, weighted-action splittable keyboard; 96 voice selectors. *To be reviewed.*

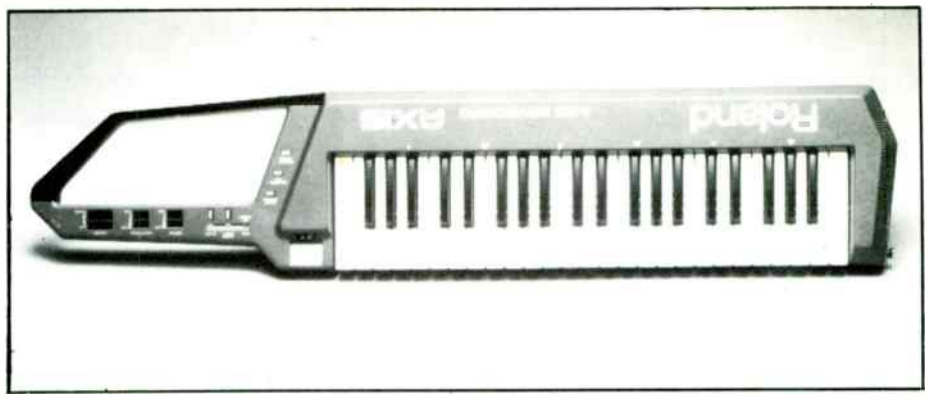
KORG

RK100 – £475 Three-and-a-half octave portable keyboard with volume, pitchbend, modulation controllers, 64 voice selectors. + *Price, spec includes thoughtful touches like lockable MIDI connectors;* − *octave range sacrificed in the cause of portability, no dynamics;* = *all things considered, the best-value 'poser's keyboard' currently available.*

OBERHEIM

XK Remote Keyboard – £TBA. New pressure-and velocity-sensitive five-octave keyboard for connection to up to six MIDI synth modules, incorporates three-way split/layer facilities and other performance features. *To be reviewed.* ▷

ROLAND



▷ **Axis 1 – £999** Three-and-a-half octave portable keyboard with volume, pitchbend, modulation controllers, velocity- and pressure-sensitivity, 120 voice selectors. *To be reviewed.*

MKB200 – £TBA New 61-note version of MKB300. *To be reviewed.*

MKB300 – £999 76-note mother keyboard, velocity-sensitive, split and layering facilities, 128 voice selectors, volume, pitchbend, modulation controls. + *Sturdy construction, looks;* − *not sensitive to pressure, price;* = *overshadowed, in most respects, by MKB1000.*

MKB1000 – £1499 Velocity- and pressure-sensitive 88-note keyboard, overall volume,

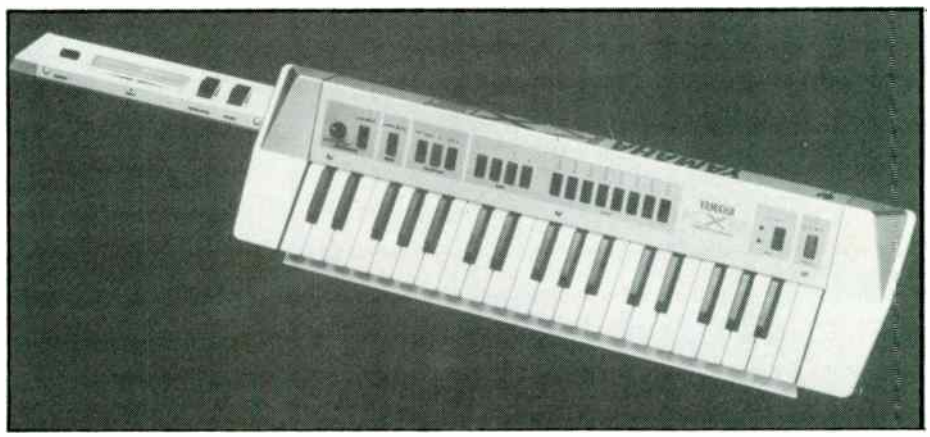
pitchbend, modulation controllers, 128 voice selectors, MIDI split and layering facilities. + *Excellent action from weighted wooden keys, superlative construction;* − *no individual level controls, lack of remote programming facilities, price;* = *another professional people's product, though even they might find its acquisition hard to justify.*

YAMAHA

KX5 – £199 Identical in spec to KX1, but miniature keys. *To be reviewed.*

KX1 – £799 Three-and-a-half octave, velocity- and pressure-sensitive keyboard, volume, pitchbend, modulation controllers, 32 voice selectors. *To be reviewed.*

KX88 – £1399 88-note velocity- and pressure-sensitive weighted keyboard, 17 user-assignable performance controllers, split and layering facilities. + *Vast range of performance options, onboard programming facilities coupled with user-assignable parameter control area, keyboard adds new dimension to many DX voices;* − *keyboard has slightly spongey feel absent on DX1;* = *more of what a master keyboard should be, but is a piano-type keyboard the best medium for applying aftertouch?* ■



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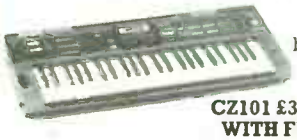

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SYNTECH STUDIO I

As a nation of musicians, Britain seems to be well-endowed with MIDI sequencing software based round the Commodore 64. But is the ultimate package an American design that's yet to see the light of day across the pond?

Trish McGrath

It's not often E&MM reviews software yet to be distributed this side of the Atlantic. After all, if you can't get at the product without travelling 5000 miles to see it, there isn't much point devoting three pages of a magazine to an article singing its praises. But it won't be long before Syntech's Studio I package becomes freely available in the UK. In fact, it wouldn't surprise me if dealers end up fighting for it. Because it's really very, very good.

Although probably far from being a household name in the States, Syntech have been supplying MIDI cards to independent companies such as Mimetics, Decillionix and Music Data, as well as software to Hybrid Arts, for some time now. So, extending their operations to include a range of their own hardware and software packages makes not a little commercial and technological sense.

The company's disk-based software is available for three micros at present, the Commodore 64, Apple IIe/+ and IBM PC (with packages titled Studio I, II, III respectively), and although Syntech manufacture their own interfaces for all three machines, compatibility with Passport and Sequential MIDI cards is assured. The Syntech interface for the CBM64 used during review is a compact little number, featuring MIDI In, Out, and Clock DIN sockets, and with mini-jack connections for Tape Sync In and Out.

Hardware requirements span the usual computer, disk drive, monitor, interface, and MIDI synth (the more the merrier), and the program's loading time is a respectable 80 seconds. Studio I can record a stream of MIDI data in both real and step time, and has extensive editing facilities that include punch in and out, non-destructive bouncing (*sounds fun – **Ed.***), autocorrection, transposition, shifting, and a host of disk options that allow your compositions to be floppily preserved for future reference.

Recording takes place in sequences (of which there are 16, labelled A-P), with each sequence comprising eight tracks (1-8). And as memory is dynamically assigned, you're free to use the complete 99 units of memory in one track, should you so wish.

From there, Sequences can be ordered into up to four Songs, with 24 steps or sequences in each. So much for whetting the appetite – let's turn to the rest of the menu...

Well, the Main Menu is where the action is, so to speak. As you'll see from the accompanying photo (if our photographer was sober and managed to focus properly, and you haven't already put a dripping coffee cup on it), this menu is quite a busy one. Not surprising, considering you encounter this screen during record, playback, and editing of sequences.

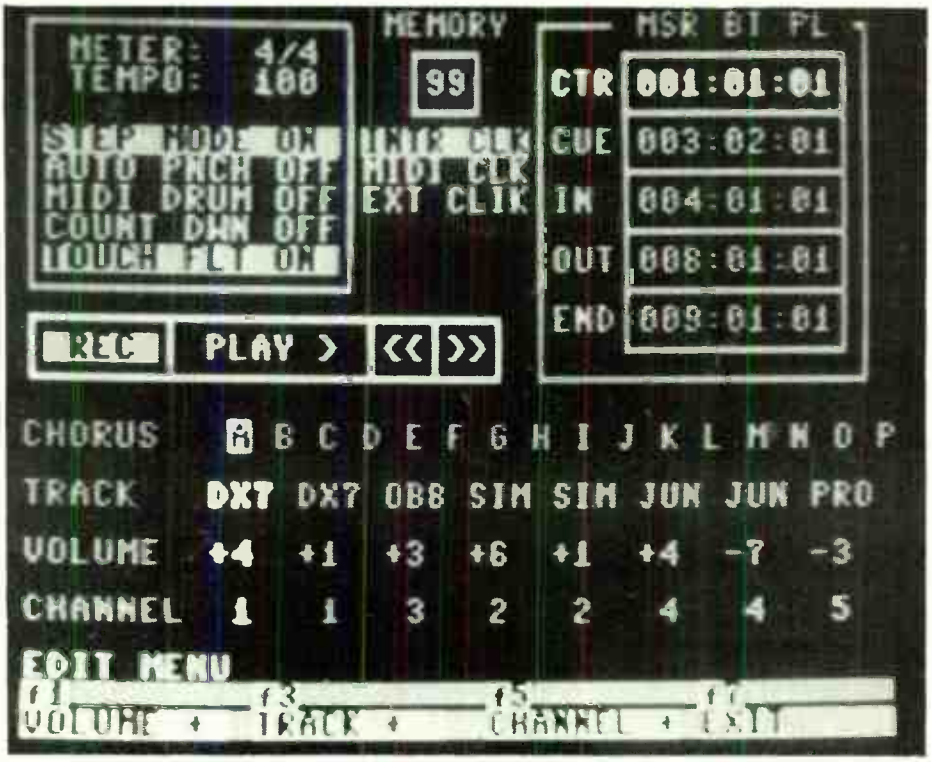
Facilities *'The Shift Track feature allows you to move a track forwards and backwards in time...and can create some stunning delay effects.'*

The centre displays the line of available Sequences (A-P) and Tracks (1-8) and the current sequence and track is always highlighted. Along the bottom of the screen is the list of 16 options available, these being selected by the Commodore's four function keys. Syntech have managed this feat by arranging the options in four levels accessed by depressing a combination of keys, ie. normal, shift, control, and shift+control. Clever stuff, and once you get the hang of it, it works a treat.

The first and most obvious options include moving forwards and backwards through Sequences and Tracks – and it was nice to find that the screen didn't redraw itself when a new sequence was selected. The Meter (or time signature) defaults to 4/4, but can be set for each sequence to anything between 1 and 24 beats to a measure, with a beat value of either a quarter, an eighth or a sixteenth note.

Tempo, meanwhile, relates to the internal clock speed, and is variable for each sequence from 44 to 240 quarter notes per minute, incremented in steps of four. If you're used to working at tempi not possible with this resolution, you may find an answer within the Set Clock options, of which there are four. The first is Internal Drum, where the computer controls the tempo while simultaneously emitting a Sync pulse code of 24, 48, or 96ppqn (including start/stop signals) over the Clock output socket; ideal for yer average Roland, Korg and Oberheim machines. However, the choice of pulse rate is made when loading up, and I can't imagine a way round changing the number without reloading – a nuisance if you like swapping between one drum machine and the next while composing. Internal Click is used when laying down a click-track to tape (determined by the internal clock speed), and External Click allows you to use the click-track later as the master clock for recording, or for playback when committing tracks to tape. MIDI Click is selected when a MIDI drum machine or sequencer is to drive the program, but since this entails occupying the MIDI In socket, you're tied to using the facility for playback only. If you need to drive a MIDI drum machine, look no further than the toggling MIDI Drum. This is selectable in any clock mode, and causes the MIDI clock to be output along with key note data whenever a sequence is playing back; simply connect your drum machine or sequencer to the MIDI Thru on your synth, or to one of the MIDI Outs if you're using a MIDI Thru box.

Anyway, once I'd set the meter and tempo,



it was time to record some music (*that's debatable* – ***Ed.***). Selecting Track 1, Sequence A, and pressing the oblique sign and space bar sets the metronome rolling, and the centre line of Rec, Play, Reverse, and Forwards simulates the transport controls of a tape recorder. The top-right of the screen is occupied by the counter box, which indicates which part of the sequence is playing at any given moment, along with the length of the recorded sequence.

From top to bottom, the five counters comprise the main Counter, Cue/In/Out (which come into play when setting an autopunch) and End, all of which are divided usefully into Measure, Beat, and Pulse components. Moving backwards and forwards through a recorded sequence can be achieved in either whole beats or individual pulses (the number of pulses is determined by the ppqn number selected beforehand).

Recording can commence by playing the keyboard or, if you want silence at the beginning of your *magnum opus*, by pressing f7 and waiting the requisite time. The space bar stops record mode, and another jab at it activates playback, stopping and continuing it at your will. The sequence is always looped continously, but pressing f1 persuades it to play back just once, while Return 'pauses' playback and continues it from the next whole beat when pressed again.

Track 1 should now be in reverse field on the monitor screen to show that it's been recorded. Any recorded track can be Muted simply by pressing the corresponding track number on the 64's keyboard, which has the effect of displaying the appropriate track in white on black. What's more, the End counter displays the length of the first track to the nearest whole beat, and more importantly, this length is adopted as the actual sequence length. A bit inflexible, this, but you can select a new end care of the Set End feature, and even chop the end off a sequence in the event that a new end turns out to be shorter than the original.

Overdubbing is carried out by moving to Track 2, selecting Countdown for a one-bar lead-in, and going into record mode again. If you think you can do better at any time, you can reselect any track and record over it. You don't have to begin recording from the start, either: just move to the required beat and enter record mode, remembering that anything previously recorded on the track you're working on will be erased.

One thing that begins to impress as you get to know Studio I, is that you can't erase anything from memory, or carry out a number of editing functions, without replying 'Yes' or 'No' to a prompt. Syntech's policy appears to be one of 'better to be safe than sorry', which is both wise and wonderful to those of us who consistently press first and think later.

And if real-time entry isn't your particular forté, you're free to switch to step-time input at any time. Pressing 'S' activates Step Mode, which then presents you with a window menu from which you select the size of step you wish to use. There are the usual 4/8/16/32 steps per measure options, along with their triplet counterparts. You can replay tracks manually step by step by advancing the clock by the step value selected, or at increments of whole beats or even individual pulses.

Step-time recording is carried out by holding down a note or chord, and pressing Return to advance to the next step. If you want a rest or two, just press Return on its own; or more than once if you want the note tied. Couldn't be much easier, *and* you can reselect a different step value for every track, or even mix and match within a track, if you need to.

So what if you record a track that's damn-near-perfect except for one small blunder? Fear not. Studio I allows for the punching-in of notes into a track in a couple of ways, either live or automatically.

Live punching consists of playing the track in either real or step mode and pressing 'P' both to punch in and later punch out, unless you reach the end of the sequence first. Designed to be 'quick and easy to use', this facility proved to be just that, and in step mode, often succeeded in homing-in on the exact pulse harbouring an errant note or chord. (I say 'often' because unless the track has been quantised, you may find a note on a pulse that isn't an exact division of a beat.) It also proved useful for inserting a program change in a track.

Autopunch, meanwhile, requires the setting of the Cue, In and Out counters. But it gives you the advantage of being able to play along to the track in real time, and letting the program switch to Record at the preset beat – which means you don't waste any time getting your hands into position over the keyboard. You can even rehearse the drop-in to your heart's content before actually recording it; pressing the '£' sign advances playback to the Cue position.

To be honest, setting the counters proved a bit tedious at times, but there's no doubt this method of autopunching works, and works well.

When you're building up tracks in a sequence, even during playback, the Mute feature allows for tracks to be muted individually, all tracks to be muted at the same time, or for one track to 'solo' with all the others muted.

Once you've got the bones of a sequence down, a number of possibilities are presented to you by the Edit Menu.

Most of these options, again arranged in four levels, affect just one track at a time. The first of these, Volume, is not a means of magically controlling the volume pot on your synth. It actually refers to the velocity-sensitivity of the sound, and will only work if your synth is of the velocity-sensitive breed.

In these days of multitimbral synths and complex MIDI synth systems, no self-respecting MIDI sequencer would be without a means of setting a channel number. The Syntech system automatically records a track on the channel number it was received on, and then lets you shift it up or down afterwards. Studio I also allows you to send out an Omni Off/Poly On message over all connected channels (ideal for synths that default to Omni On, like the JX3P). Another command allows for all pitch and mod wheels to be zeroed at one fell swoop, which also has the effect of releasing any sustain pedals.

The Edit Menu also allows for the bouncing-down of tracks, a task that encompasses both 'copying' (for backup before quantising) and 'merging'. Both operations are very straightforward, and the non-destructive nature of the bounce means that any Volume or Channel settings are preserved as part of the destination track – though if you've merged two or more tracks together, you won't be free to make any changes to one of the tracks later on.

In Use *'You can't erase anything from memory, or carry out a number of editing functions, without replying to a prompt – better safe than sorry.'*

The ubiquitous Autocorrect makes an entrance here too, and quantises the track according to a chosen step value (courtesy of a window boasting identical values to those offered in step mode). Bearing in mind that autocorrecting cannot be undone, it's not a ▷

▷ bad idea to either save to disk beforehand, or bounce the part to a vacant track before quantising.

Transposing a track by a set number of intervals is also a piece of cake, thanks to a handy feature called Xpose Track. All you do is press a note whose interval relative to middle C is the amount by which you want the track to be transposed. In other words, select G above middle C to transpose up a perfect fifth. And if the cap doesn't fit, you're free to transpose again or revert to the original pitch.

You can end up with some interesting effects by careful use of the Shift Track feature, which basically allows you to move a track forwards and backwards in time by individual pulses, bearing in mind the limitations imposed by the start and end of the track. For instance, by copying the lead line to a vacant track, shifting it backwards a number of pulses, lowering the volume slightly, and possibly even allocating the shifted track a different sound, you end up with some quite stunning delay effects on your hands.

And provided you've enough spare tracks and memory, you can repeat this procedure to your heart's content, merging the results when you're good and ready.

Given Syntech's mastery of specifics, though, I was surprised to find that if I went to shift a previously shifted track, it didn't remind me how much it was already shifted. As it was, I found it useful for reference purposes to use the Name Track feature to indicate the number of pulses the track had been shifted, at least until I was ready to merge.

Name Track, as you may have guessed, is really intended for denoting the instrument each track is assigned to, and you can use up to three characters for a name (not enough for Fairlight, but PPG would seem to fit nicely). The remaining editing options allow provision for erasing tracks, naming the actual sequence, and appending one sequence onto the end of another (though the second sequence automatically adopts the tempo and meter of the first, so beware).

I was a bit surprised to find no means of looping a track within a sequence – though by appending a sequence to itself, you can manage to double the recorded tracks and can continue to carry out this procedure till you run out of memory, if you're determined enough. But that's the crunch: appending uses up memory, and memory is one thing Studio I doesn't have in abundance, especially if you tend to use aftertouch, pitchbend or modulation to any degree. Blocks of aftertouched chords can actually *eat* into memory in front of your very eyes – which is why an Aftertouch Filter is provided as an option. In fact, there were times when I ran out of memory while still recording my *first* sequence. Luckily, syncing to tape is possible, and this also allows the one-synth owner to compose using different sounds, so this shortcoming can be overcome.

If you run out of memory due to the over-use of performance effects, you can resort to the Track Mods Menu. This allows for the individual removal of program-change, aftertouch, pitchbend or modulation data from a track, thus releasing more memory for use.

Copying a sequence to another can be carried out indirectly by saving, say, Seq A to disk and loading it back to Seq B, courtesy of the Disk Menu (Sequences). And apart from loading and saving sequences using their given names, you can also display the disk directory, format disks, and delete sequence files from this menu. As usual, the software prompts you fully along the way, just to confirm your intentions.

Of course, being able to compose various sequences would be a fat lot of good without some means of stringing them along in a given order. In answer to this obvious need, the Song screen allows you to construct up to four Songs (called a Song Set) by chaining up to 24 sections (or sequences) together. Which, in effect, allows you to compile four different versions of a song using the same 16 sequences. Options are again presented in four levels along the bottom of the screen, and building up a song really couldn't be more straightforward. If you've assigned different tempos to sequences, these are automatically acted upon – though the program doesn't aspire to more elaborate accelerandos or ritardandos. Playback is activated by the space bar, and can commence from the beginning of any section.

If you've given a sequence a name, you'll find it's displayed as you enter arrangements, along with any information from the Track, Volume and Channel lines as displayed by the Sequence screen. You can go back and Insert or Delete a section to a song, transpose a section just like you would a track (so key-changes are no problem), Name Song, Name Song Set, Erase Song, or advance to Next Song.

When it comes to saving everything to disk, the Disk Menu (Songs) has all the answers. This allows for Song Sets to be saved and loaded (complete with the 16 sequences from which they're compiled), and accesses the directory, deletes song sets, and formats new disks.

A few commands not yet covered relate to erasing all sequences and songs from memory, along with a feature called Play Thru. This lets you record from a master keyboard whilst hearing the sound from an expander or another synth. Quite a neat feature, this, since if you intend to use a particular sound from an expander for, say, a lead line, it's essential that your performance is tailored exactly to its sound contour.

Incidentally, testing was carried out with a Yamaha DX7, Roland JX8P, Korg DW8000, and Chase Bit 99, and with no incompatibility problems right across the board; apart, of course, from the Bit's quirk of denoting Program Change Transmit On with 00, and Receive On with a 01. So much for Italian design...

Like all good sequencing packages, Studio I takes a while to get thoroughly familiar with – the excellent user's manual is essential reading. It's easily one of the most comprehensive and easy-to-use sequencing programs I've yet encountered for the CBM64. The Joreth Music Composer System is arguably more facility-laden, but not quite as user-friendly. My only reservation relates to the speed with which the available memory depletes as soon as you introduce performance controls to your recording, but to a greater or lesser extent, that's true of all MIDI programs.

It's refreshing to find a package that serves to stimulate, not frustrate, the musician's creative flow. And whilst Studio I may not be the everyman's sequencing package for the CBM64, it's a darn sight better than most of the current competition.

Here's hoping UK distribution won't be too far away. ■

DATAFILE

Syntech Studio I Sequencer

Hardware requirements *Commodore 64, MIDI card (Syntech or Passport), TV, disk drive*

Specification *16 Sequences, 8 tracks, 4 songs of 24 steps*

Main features *Real- and step-time input, autocorrect, transposition, bouncing, live and auto punch-in/outs, track muting, track shifting, sequence appending, disk saving and loading of data, disk formatting, variable meter and tempo, MIDI channel assignment, filtering of aftertouch, pitch-bend, modulation, program changes, sync to/from tape, sync to/from external MIDI clock.*

Prices *Studio I (CBM64), Studio II (Apple II+/e) $225.95; MIDI card $129.95, c/w tape sync $199.95; Tape Master package (Studio I/II and MIDI card c/w tape sync) $399.95.*

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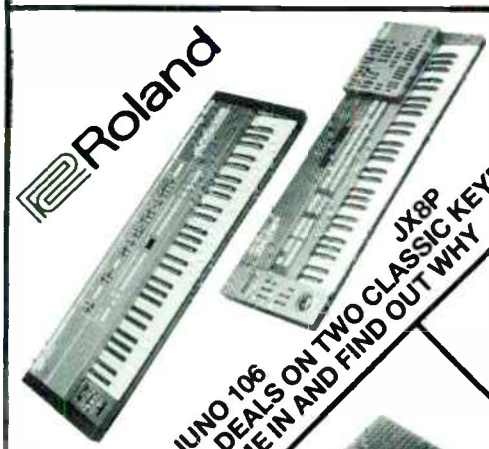

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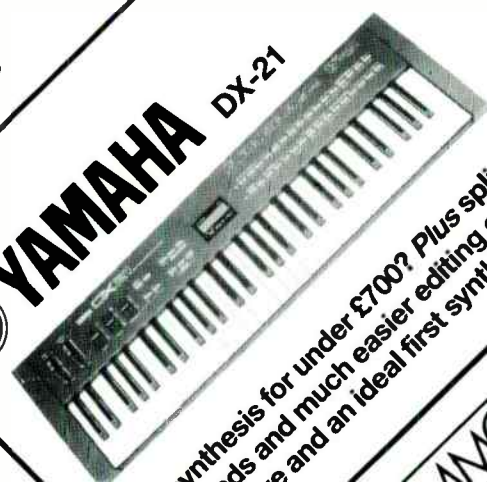

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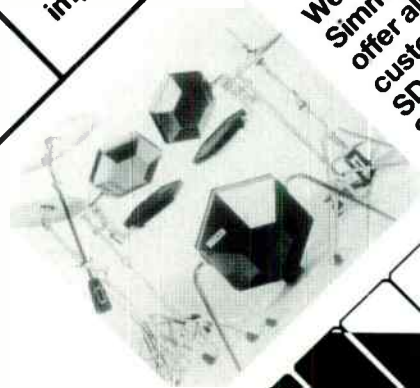

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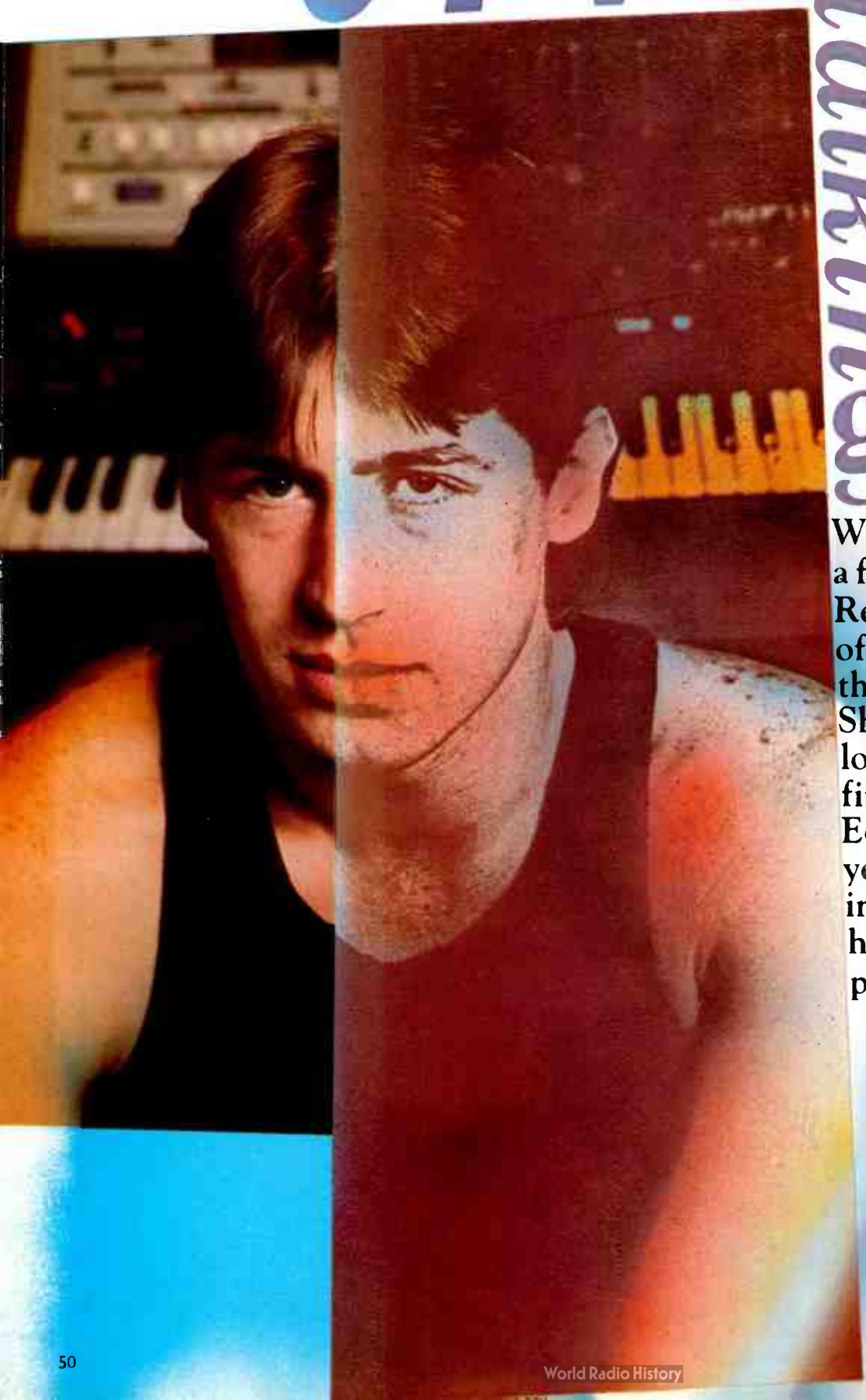


With the release of a first album for Jive Records and a host of other projects in the pipeline, Mark Shreeve has come a long way since his first appearance in E&MM's pages two years ago. But the increased publicity has brought its problems.

Annabel Scott

This magazine is proud of Mark Shreeve. Why? Because back in February 1983, in E&MM's old *Home Electro-Musician* slot, Shreeve penned his first piece of major media publicity. He declared it his desire 'to own a mammoth studio equipped with massive wallpaper-job synthesisers, 24-track tape machines, goodness knows how-many-track mixing desks, and all kinds of digital doobries with a lovely entangled mess of wires and leads sprouting from every nook and cranny.'

Times change, though. You'd hardly regard Shreeve as a home-based musician any more, even though his London flat now contains a synthesiser setup sufficiently comprehensive to make many musicians green with envy.

But he's an experienced studio hand now, and his new long-playing release on the Jive Electro label, 'Legion', uses everything from Fairlight and PPG to sophisticated effects units from AMS, Quantec and Lexicon. There's even a goodness knows how-many-track mixing desk, courtesy of Solid State Logic. He's recorded a commercial pop single that's still in search of a singer, is being pushed for film soundtrack work in the big league, and has persuaded Tangerine Dream's Chris Franke to guest on his album.

Yet Shreeve still has his day job, remains in many ways uncertain about the way forward, and reckons the next purchase for the home studio is going to be nothing more prestigious than a Roland Drumatix drum machine.

So how has Mark Shreeve risen through the ranks from home recordist to mega-synth manipulator? How does a man who started musical life on a Revox A77 cope with 48-track recording? And how much easier is it to progress when you've got a young, apparently dynamic company like Jive behind you?

To find the answers to those questions, you need to look at a little history.

Shreeve's interest in music started as a young lad in Wales, when he found himself at the mercy of heavy rock bands such as Judas Priest and Black Sabbath. But more than these, he was dazzled by the keyboard pyrotechnics of Keith Emerson. After moving to the bright lights of London, he managed to save up enough money for a synthesiser – a Yamaha CS30. Then, like so many other synth players before and since, Shreeve began taking an interest in the exploits of bands that used little but synthesisers, notably Tangerine Dream. It was their work, perhaps more than any other, that got him thinking he could take the plunge and start making some serious electronic music of his own.

Early experiments with CS30 and aforementioned low-speed Revox led to the adoption of a sound-on-sound recording method, often with the whole of Shreeve's musical output being bounced from left to right with a short time delay. He sent some tapes of this early material to Martin Reed of Mirage, who liked them so much he released several cassettes, including *Embryo*, *Phantom* and *Firemusic*. There was to be a fourth tape, *Thoughts of War*, but Reed sent this to a newly-established Norwegian record label, Uniton, who specialised in the off-the-wall, the unexpected and the individual. They liked it enough to press it up as an album. Enter the first, black-and-white packaged, genuine 100% Mark Shreeve vinyl excursion.

In anticipation of some advance money from Uniton, Shreeve took a giant leap and invested in an eight-track Tascam, a 16-8-2 Dynamix desk, a Juno 60, a Pro One and a couple of hand-built effects units. With the loan of a TR808 drum machine, he completed a second LP titled *Assassin*. Musically, it threw up the first evidence of a heavier Shreeve sound, with deeply reverbed drums and screaming synth lead lines. And it was this music that Shreeve performed at the first UK Electronica festival at Milton Keynes in September '83. It must have come as something of a shock to fans who'd only heard *Thoughts of War*.

But a split with Uniton put a spanner in the works before *Assassin* could get properly released – so Klaus Schulze's IC label stepped in and took over the rights to the album. They pressed a few test copies and prepared a contract for Shreeve, but there was another twist in the tale to come.

Word has it we have Lotus Records to blame for suggesting Shreeve to the newly-formed Jive Electro label, a subsidiary of the Jive label (A Flock of Seagulls, Tight Fit and so on) who consulted them for possible signings. 'At the time', admits Shreeve, 'I hadn't even heard of Jive. But when I went down to see their studios (Battery in North London), I was absolutely knocked out. They had everything!'

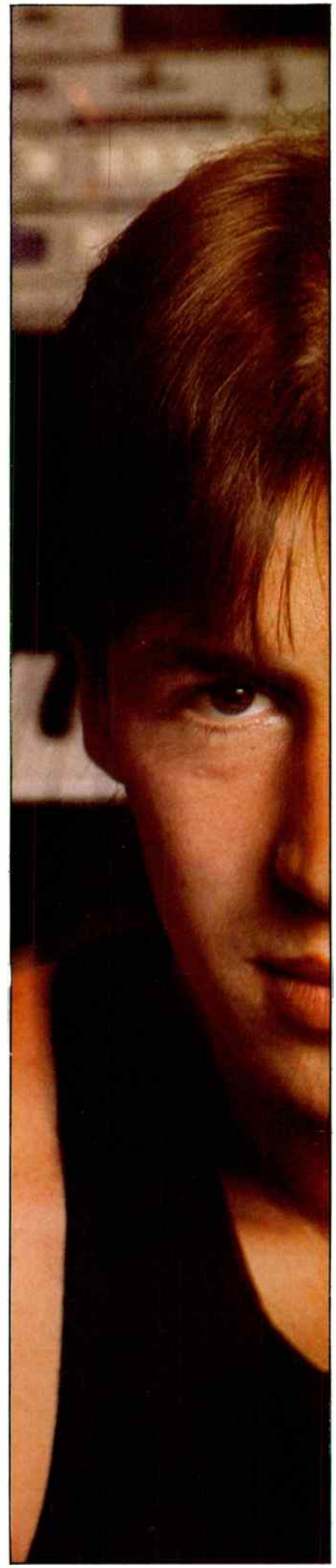
Before long the composer had signed to Jive, who re-released *Assassin* with a new sleeve but very little publicity. They were more interested in pushing an album made in their own studios, so Shreeve started work on new material using a Yamaha DX7, Roland Jupiter 6, SCI Drumtraks and Roland MSQ700 sequencer bought with Jive's advance. In the meantime, the label had given him some company – Neuronium from Spain and, in a shock horror move from Virgin, Shreeve's old heroes Tangerine Dream.

Then it was down to almost a solid year of work (though sometimes only a couple of days at a time), on the album which was to become known to the world as *Legion*. Very often, material that's taken such a long gestation period in which to evolve becomes tired and tiring. Did Shreeve find that to be the case with any of the pieces on *Legion*?

'The earliest of them, 'Flagg', must be a couple of years old now as a tune. It remained more or less the same from UK Electronica '83 until I got it into Jive's studio, and then working with two other people (Jive's engineer and a Fairlight programmer) and their recording equipment changed it considerably. But all the tunes changed to some extent. We were dropping things like the droning chords, the typical "cosmic" beginnings.'

So now the album is out, what's the critical reaction been like?

'John Gill of *Time Out* got me confused with Mike Shrieve who used to be in Santana ▶



▷ and Stomu Yamashta's 'Go' – which seems odd since I don't look anything like the guy! And some people have been critical of the 12-inch version of the title track, which also seems odd because it's intended as a dance mix, so obviously it's mainly percussion and very little melody.

'But sales have been good. It sold over a thousand in the first couple of weeks before any advertising was done, and apparently the 12-inch is selling well in the clubs – particularly gay clubs, I've been told!'

So what was involved in preparing the gay mix of 'Legion'?

'There was a hell of a lot of percussion on the track – about 27 different sounds from various drum machines in all, including things like reversed cowbells – and because of that and the tempo, we automatically thought of doing a dance mix. It was just a bit of fun really, but by the time we'd finished we'd had to make about 30 edits. One section comes from another track, 'Storm Column'. We remixed that from the multitrack, played it into an AMS delay triggered from a LinnDrum nine seconds at a time, and altered the tempo on playback until it matched. Because it's mainly percussion sounds the pitch didn't matter too much, although by coincidence, one track was in A flat and the other in B flat, and once we'd matched the tempos they were more or less in the same key as well.

'They had a Linn 9000 at Jive's studios. It kept locking up but now they've got all the latest software and it's fine.'

'We didn't have to change much on the album except for a couple of titles for the US market. I had one track called 'Captain Death' which apparently wouldn't have gone down too well. That was interesting because Steve Jolliffe had to change his *Death of a Japanese Butterfly* album title to just *Japanese Butterfly* for the American market. Then there was a track which I had called 'Zyklon Factor' which we changed to 'Sybex Factor', and another called 'Hell Child' ended up as 'Icon'. But it doesn't matter because they're all just working titles, and I'm prepared to change them if we come up with anything better. We even took a title off one track and used it for another at one point.'

'Icon' is the piece that features Chris Franke of Tangerine Dream. How did the collaboration go?

'It was marvellous. He was very professional: he came in straight off the plane one morning and spent a whole day on it. I'd already recorded the backing, and he added the melody, some help on the chords, and some Tangerine Dream sound effects I'd always wanted to use! He brought those over on quarter-inch tape and we sampled them into an AMS and played them back at the right pitch. Most people will probably assume that Chris did all the sequencer work and I did the melodies, but in fact it was the other way around.'

And the next move, now that the album and 12-inch are finally out?

'Sit back and get rich! In fact, I don't expect to get rich on album sales, but the publishing deal which covers airplay, film use and so on is separate, so I might make something out of that. Jive are dealing with an unknown quantity with this sort of music, but they've spent a lot of time on it and they seem committed to the Electro label. They're trying to involve me in film soundtracks, and I've recorded a pop single for which they've auditioned scores of female vocalists. But that would come out under the singer's name rather than mine.

'Then I'm doing some work for their club act, The Willesden Dodgers, and I've turned in some very sparse, dance-oriented demos for that.'

Of all those projects, it's the possibility of doing film work that would take Shreeve into the least familiar territory. Would he strive for complete artistic control, or work to the strict guidelines laid out by those involved in creating the film's visual images?

'I've never worked to visuals, and there are lots of technical aspects I don't know anything about. But then I didn't know how to work a Fairlight before going to Jive. Come to think of it, I still don't. But I wouldn't mind working to order for films – it would be quite a challenge.'

Back home, Shreeve retains his studio setup, using it to record demos for exposure to the staff at Jive. After that, it's into the studio proper.

'I can do things on Page R of the Fairlight that I can't do at home, like getting chords to fall in between notes in a sequence, so inevitably pieces will change after the demo stage. But I'm looking for more modern sounds now, better drum sounds on new chips for the Drumtraks, and often I don't actually record that on tape but run it into the mix live from a tape click.

'I've got a lot of guitar-type sounds on the DX7 which I play through a fuzz box, and I'd like to use more guitar and real drums in future.

'For live work I'd ideally like to have a Simmons drummer and a real guitarist, but since we worked out that we'd need seven Fairlights to play 'Legion' alone, I think we'd have to cheat and use a Betamax digital backing tape. In any case, even if you played live you'd need a tape to synchronise the sequencers together and give the drummer a click to play along with.

'I can't afford a PPG or anything like it at the moment, and it seems pointless spending £800 on a MIDI digital delay if you can have a polyphonic sampler for around £1800. But the trouble with having something like a Fairlight at home is that people like Kate Bush seem to end up composing tracks purely based on a particular sound. I wouldn't turn down a Fairlight if it was offered to me, but I don't like that approach. I think that if you can make something sound good on relatively cheap equipment, say using a DX7 piano sound rather than a sample, then you're onto a winner once you get it into the studio.

'I'd like to get a TR606 or a TR808 for the Willesden Dodgers stuff, because it's easier having both step-time and real-time programming and I like the 808 snare. But apart from that the only piece of equipment I've really been taken with is the Emulator II, which they now have permanently at Jive. They had a very early Linn 9000 as well, which I'd like. It kept locking up but now they've got all the latest software and it's fine.

'Pete Harris, who was my Fairlight programmer, now uses the Linn 9000 almost to the exclusion of Page R, even though the Fairlight has a MIDI card which allows it to control up to eight patterns on anything from one to eight synths. That's good for bass sequence lines, and they're also updating their PPG Wave 2.2 to the full Wave 2.3 spec with the Waveterm B.

'I didn't use the PPG sequencer on the album, though. The PPG is my favourite single keyboard, but we didn't use as many of its sounds as I expected. It didn't seem to cut through too well – I think I need more time with it.'

Shreeve's main musical problem is one that'll be familiar to anyone who's ever tried to inject the emotion of one style into the instrumentation of another. By trying to add something of the energy of rock music to the cold precision of the hi-tech, he runs the risk of alienating his die-hard electronic fans without managing to acquire a new following from any other arena.

It's a problem he's acutely aware of, though he wouldn't dream of altering his musical direction in the interests of gaining commercial acceptance...

'A lot of people have asked me why the sound is so aggressive now, and it's partly because I think it should be able to appeal to rock fans. There's no way they'd normally get to hear this kind of music, and I'd like to do something like supporting Girlschool in a concert to see how the fans react. We have the guitarists from Girlschool and Mama's Boys on the album, and like I say, I certainly want to use more rock instruments in the future.

'I really think of my music as rock music, though. Being linked to Tangerine Dream's label has some disadvantages in that sense,

'I imagine quite a lot of hardcore electronic music fans might be disappointed by *Legion* because it's too aggressive.'

because people have a very old-fashioned view of the electronic music acts they've heard of. People aren't prepared to listen to it, and I imagine quite a lot of hardcore electronic music fans will be disappointed by *Legion* because they'll think it's too aggressive. But a lot of people still think the best thing I've ever done is the second side of 'Thoughts of War', so what can you do?'

What indeed? Mark Shreeve is a musician with more than the odd predicament facing him in the foreseeable future, but since he's faced quite a number in the past and overcome them with flying colours, they're unlikely to start bothering him now.

In 1983, he was a nobody with no money, little equipment, but bags of enthusiasm. In 1985, he has the backing of an energetic record company, a little money, all the equipment he needs – and more enthusiasm than ever. He deserves to succeed. ■

PLAY BACK

VOLUME 1 AUTUMN 1985

FEATURING KORG AND VOX
AND MUCH MORE.

STEP BY STEP

Building your own studio with a little help from Korg and Clarion. Who needs a tuner anyway?

BACK TO BACK

Brian May on DiMarzio and Vox, Julian Colbeck on Korg Digital Waveform Technology.

REVIEW-REVIEW

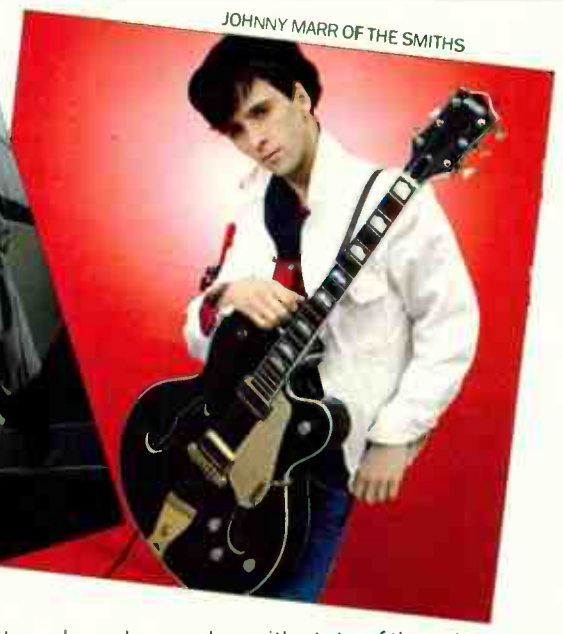
The Vox story. From Harps to Guitars. Ovation and Takamine special.

REVIEW

VOX, THE ORIGINAL BRITISH SOUND

THE story of Vox is as old and as famous as rock itself. From the late 50's when Tom Jennings introduced the world famous AC30, Vox has been an essential part of the modern musician's vocabulary. From the heady days of Shea Stadium to Wembley in 1985, Vox amplifiers and their unique sound have enthralled the world.


THE STYLE COUNCIL AND VOX


JOHNNY MARR OF THE SMITHS

THE AC30 AND THE VOX VENUE: THE WORLD'S FAVOURITE SOUNDS

No other amplifier can boast such a pedigree – a seemingly endless list of users which reads like the rock and roll hall of fame.

Whereas Vox are chalking up another first – the first amplifier to celebrate its 25th anniversary – Vox have never been a company to rest on its laurels.

Since its inception the word Vox has been synonymous with innovation, so while international stars like Brian May and Tom Petty continue to play the AC30, stars of the 80's like Paul Weller and Johnny Marr have been quick to recognise in the Vox Venue series sounds and features to put today's musicians on the map and keep them there.

The Vox Venue Solid State series has since its launch in 1984 been the fastest growing amplifier in sales terms. Its success is firmly based in a sense in history for it was Vox's original policy to provide for the current musician a product that would enhance his performance and give him today's sound at a price he could afford.

From the mains battery busker through 30, 50, and 100 Watt lead and bass combos to a remarkable 100 Watt keyboard amplifier and 120 and 200 Watt PA systems, the Venue series is already thrilling audiences in every major market in the world, from the USA to Australia, from Europe to Japan.

THE NEW CONCERT SERIES, KEEPING UP TRADITIONS

For the valve player however Vox is still innovating and the result of its latest extensive research and product development is the Concert series. The Concert 501 made its debut this year. No longer is the AC30 out there on its own.

First in the Concert series comes the 501, 50 Watt combo fulfilling the need for a compact yet powerful all valve combo, with state of the art facilities and Vox sound. Switchable, twin channel permitting preset clean and overload sounds at any individual volume level with independent channel equalisation is accompanied by many extra features to give the player the best opportunity of realising in perfomance his true potential – reverb, send and return effects, remote switching for reverb and channel, LED indicators, variable level direct injection and many more.

THE POWERFUL NEW VOX CONCERT SERIES

GUITARS. EVERY NOTE AS GOOD AS THE AMPS

Another major innovation on the Vox front, is the outstanding new White Shadow 'M' Series lead and bass guitars. Available in '86, these guitars feature rosewood fingerboard, maple neck and basswood bodies. The Lead range is available both with and without locking tremelo, the bass with or without frets. And all produce that clean crisp sound Vox has always been famous for.

So whether it is valves or solid state, lead or bass guitar, Vox is where it always has been – out front leading the way throughout the world.

REVIEW

FROM HARPS TO GUITARS

LEE OSKAR HARMONICAS

LEE Oskar is a name that's been at the very top of the harmonica playing tree for over twenty years now.

He's played with War, made untold guest appearances on albums and thrilled millions of people live.

Now, together with Tombo MI Co Ltd, Lee's given his name to a range of 10-hole harps that rate amongst the best in the world. Designed to have no air-leakage, with self tightened bolts,

THE ORIGINAL LEE OSKAR HARP

every Lee Oskar harmonica's tuned to maintain exactly the right pitch, no matter what the key.

Available in Major Diatonic, Harmonic Minor and the unique Natural (Blues) Minor, these outstanding instruments come in slide detachable cases so you can carry as many different keys as you like.

GUYATONE EFFECTS

Tokyo Sound, the company that make Guyatone effects pedals, have

THE WELL PRICED GUYATONE EFFECTS PEDALS

been in the business for over 50 years, and in that time, they've earned themselves the reputation of pioneers in the effects field.

They're always updating their pedals and extending their range to meet the everchanging needs of today's guitarists.

There are now 20 pedals in the range, including the new Noise Gate, each one offering exceptional value. Especially when you consider some, like Chorus Flanger and Distortion & Chorus give you two effects for the price of one.

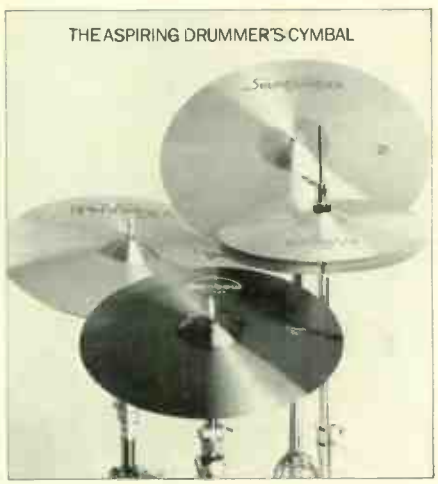
Others have unique features like a battery indicator light that not only shows when the unit's on, but also indicates when the battery's nearly dead by changing from red to green.

All Guyatone effects are naturally built to last and have extra durable microswitches. They also have a luminous seal for easy identification on stage and an AC adaptor jack (Guyatone AC102 power supply sold separately).

The new Guyatone Gate Loop pedal has one distinct advantage over others of its ilk: it can be connected to other effects pedals and can therefore control the level of signal and noise across the whole circuit. Controls include: Threshold, Release and Level.

VADER CYMBALS

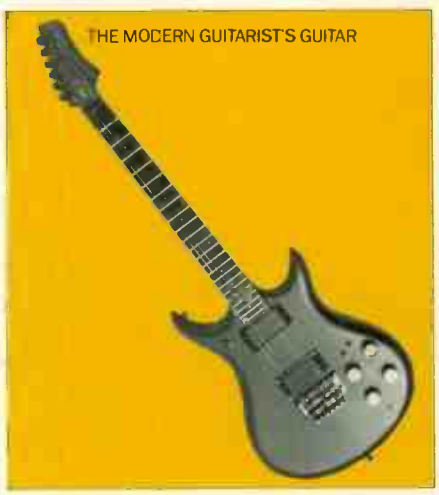
German built, Vader Cymbals is a new name to the market that's already causing a big stir with today's drummers.



THE ASPIRING DRUMMER'S CYMBAL

Why? Well, Vader originally set out to produce hard-wearing but easily-affordable cymbals with the complete beginner and semi-pro in mind.

The range includes INVADER, a brass alloy cymbal with a rich warm ride and voluminous crash, NUVADER, a nickel and silver cymbal with excellent projection and quick response, RAINBOW, a cymbal with powerful crash and ride effects which comes in either black or red and finally, SOUNDVADER. The top end of the Vader range, this high grade bronze alloy cymbal has been designed for the semi-pro and has clear, precise characteristics.



THE MODERN GUITARIST'S GUITAR

VANTAGE GUITARS

Aggressively shaped and available in black, red or white, the Vantage range of Guitars and Bass's have proved incredibly popular in the year or so they've been around.

Ideally suited to the aspiring electric guitarist, the Vantage range marries affordability with sound quality and reliability.

They have a clear, sharp sound with a distinct edge and as the action's light, they're easy to play.

Built to take the hardest of knocks, the Vantage range starts at £150 and is available through Rose-Morris in the UK.

BACK T

BRIAN MAY ON VOX

EVER since Day One, Queen have built much of their phenomenal success around guitarist Brian May's very individual sound.

How did that come about? Over to Brian.

"I got my first guitar when I was eight – a three quarter acoustic that I built a pick-up for myself.

Once I'd got to grips with chords and so on, my dad and I set about building an electric guitar.

It eventually cost us the princely sum of eight quid and took us two years to make.

We used all sorts of junk in the body to keep costs down – bits of fireplace, an out-size knitting needle, a saddle bag supporter, that sort of thing. But when it came to getting the sound I was after, that was another matter.

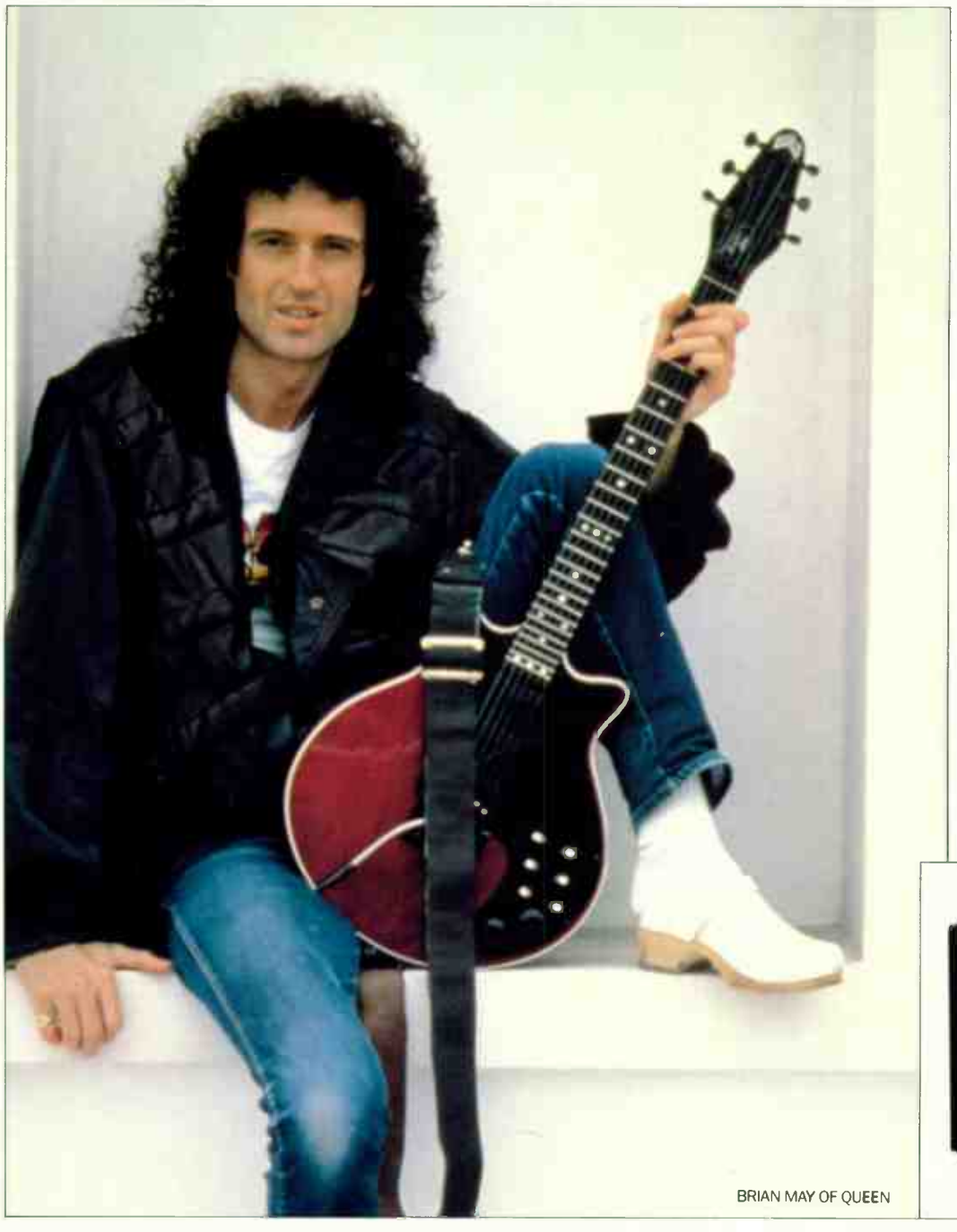
The only way I can describe how we went about it, is 'scientifically.' By that I mean we approached everything very logically, very meticulously to ensure we got exactly the warmth and clarity of sound that the guitar's since become famous for.

When we were developing my Signature guitar just recently, we thought long and hard before choosing a company to produce pick-ups that could match my original's and we eventually picked Di Marzio.

They've always been regarded as the best, but on this project they surpassed themselves. They worked really hard to get the sound I wanted.

Amps, like guitars and pick-ups have their own personalities and sounds. I was very lucky when I was looking: a friend let me have a go on his Vox AC30 and that was it – I was hooked for life. As far as I'm concerned, there is no other amp that can match the AC30. It has a lovely, clear, warm sound that's ideal for recording work and on stage.

What would you use if you had a one-off guitar like mine?"



BRIAN MAY OF QUEEN

THE VOX AC30. THE CLASSIC AMP

BACK O

JULIAN COLBECK ON KORG

DURING the past 20 years, Julian Colbeck has played keyboards for such bands as Charlie, and just recently John Miles

He's been Musical Director of several theatre shows, and has written features for Sounds, One Two Testing, Kerrang, Music World, Sound Engineer and International Musician.

Over the past ten years, he's covered almost every keyboard produced, and in August '85 Virgin published his first book: "Keyfax" – a complete guide to electronic keyboards.

THE DIGITAL WAVEFORM GENERATOR SYSTEM

With their DWGS Digital Waveform Generator System it seems that Korg solved a problem that I've had sculling around my brain for a couple of years now, namely that while mid 80's ears are most certainly attuned to digital sounds, mid 80's brains remain firmly rooted in analog procedures.

Since a certain well-known mid-priced digital synth burst on the scene in 1983, bristling with clean-cut, edgy, harmonically brilliant sounds, classic, warm analog synths began to take on the demeanour of yesterday's men.

Almost overnight, 'classic' became 'old fashioned'; 'warm' became 'muddy'; 'analog' – 'overtly electronic.' Though aurally the new breed of digital synths proved spectacularly successful, in terms of programmability they have, almost without exception, proved miserable flops.

"Who needs to be able to program when we can just swipe sounds from anyone's instrument, or even record!" comes the cry from the even newer breed of keyboard samplers. Well that's true up to a point, but even the latest batch of our thieving friends are still not cheap, and, as most owners will testify, loading disks, finding looping points, and generally managing samples are all time-consuming and fiddly affairs.

KORG SOLVE THE PROBLEM

Korg's answer for their latest range of synths has been to combine certain elements from all three protagonists in the Great Synthesizer Sound Source contest.

The DWGS is a complex digital synthesis technique whereby samples of acoustic or electric instruments have been reconstructed by additive synthesis, and the results then being stored on a pair of 256k bit ROM chips.

The thinking and technology behind the DWGS may well be high powered and equally as confusing to understand as FM, but Korg neatly side-step the issue of possible brain damage by presenting the DWGS on their instruments, in the most simple way imaginable.

Instead of the normal analog routine of equipping a synth with a pair of oscillators and a choice of sawtooth, square, and triangle waveforms, Korg have equipped their new instruments with a selection of these digitally encoded reconstructions of 'real' sounds.

KORG S 16 DIGITAL WAVEFORM DW8000

And what this means in practice, is that far from starting off with a rather lifeless square wave, from which you then subtract sundry elements in order to finalise your sound, your starting off point is already a complex, harmonically rich structure.

WHEN DID DWGS FIRST COME ON THE SCENE?

The DWGS first appeared on Korg's DW6000, on which there are eight such digitally stored waveforms. Each note can select and harness two different oscillators, so even without using the filters or envelope generators you have 64 waveform combinations at your fingertips.

But having made your choice of waveform(s), you are then free to use the wide range of familiar and easily-defined controls such as low pass filter, 6-stage envelope generator, etc., etc., in order to complete programming.

INTRODUCING THE DW 8000

Launched at the 1985 British Music Fair, the DW8000 is Korg's latest DWGS offering, which not only boasts 16 digital waveforms for a staggering 256 possible combinations, but a built-in digital delay (along with the customary editing parameters) whose effects can be programmed into each individual sound.

This is a first, and in many ways even outstrips a dedicated MIDI digital delay, since all 64 programs on the DW8000 can be stored with their own specific delay settings. There's no need then to worry about the possible limitations of memories or MIDI channels. What Korg's Digital Waveform Generator System does, is provide you with an exceptionally high quality level of basic sound.

These sounds are rich and complex because they are based on actual samples of 'complete' instruments. And when you consider that this system is merely your starting off point, it's no wonder that the DW8000 – with the added attraction of a touch sensitive keyboard and built-in DDL is an attractive proposition indeed.

STEP B

BUILDING YOUR OWN STU

AT the heart of a home recording system is a multitrack tape recorder. At the heart of a developing Midi system is a Midi Sequencer. We look at what is available and how the development of Midi complements home recording requirements.

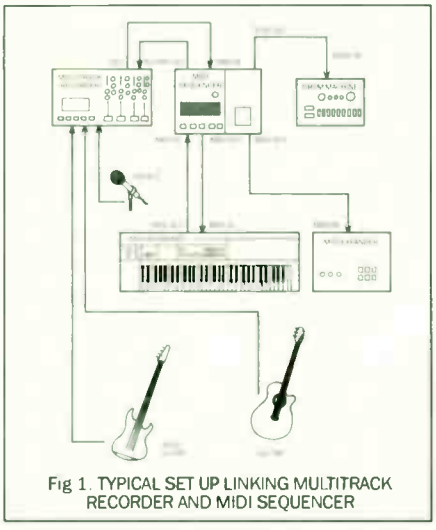


Fig 1. TYPICAL SET UP LINKING MULTITRACK RECORDER AND MIDI SEQUENCER

The new Korg SQD-1 Midi Recorder has rapidly established itself as the state of the art unit for anyone with a Midi instrument.

It is more that just a Midi Sequencer and is far more versatile than a multitrack tape recorder. Because the SQD-1 stores information digitally, any Midi information can be overdubbed any number of times without any reduction in sound quality.

THE NEW KORG SQD1 MIDI RECORDER

THE INCREDIBLE NEW CLARION XD6500

For example, a complex chord progression can be built up one note at a time (step time recording) and when finished, performance controls (pitch bends, program changes, etc.) can be overdubbed.

Real time recording is also possible with different resolutions so a great deal of flexibility is available for different timings to be explored. 15,000 notes can be stored in the internal memory whilst the built in disk drive enables 30,000 notes per double sided disk to be stored and retrieved very quickly.

Ten songs can be stored on each disk making the SQD-1 ideal for live use on stage as well as at home and in the studio.

The SQD-1 can run more than one Midi instrument, in fact, up to 16 different units can play 16 different polyphonic parts at the same time. So as you build up a system with extra Midi instruments, the SQD-1 becomes more and more useful.

Korg have two budget priced Midi units which can be used to expand any Midi system. The Korg MR-16 Midi Rhythm Unit contains 19 percussion sounds including everything in a standard drum kit.

Each sound is played via Midi and the MR-16 has separate outputs and separate volume and pan controls.

The MR-16 frees the musician from limitations of patterns and song

WHO NEEDS A T

KORG'S QUICK AND SIMPLE TO USE TU

WHEN many young musicians start out, they tend to believe that, if they can't tune their instruments without a tuner, they're poor musicians.

Wrong. A tuner is simply a quicker, more convenient way of tuning anything from one string to a whole band.

(That's why so many top pros rely on electronic models.)

A chromatic tuner, such as the new Korg DT-1 can be used to check individual note tuning in the middle of a song live on stage—just hold down a

note that's in the right key for the song and the tuner will instantly tell you what note is being played and just how in tune it is.

The Korg AT-12 is the ultimate in chromatic tuners, tuning over 7 octaves and producing 4 octaves of tones. Both the AT-12 and DT-1 tuners require no note setting as this is automatic. Both tuners have slow

Y STEP

IDIO-WE SHOW YOU HOW

memories and enables far more flexible rhythm patterns to be created when used with a Midi Sequencer such as the SQD-1.

The Korg EX800 is a programmable synth module that works as a sound source for any Midi keyboard or sequencer. It is based upon the highly successful Poly 800 Synthesizer and is essentially a Poly 800 without its keyboard.

It can be played from all Midi keyboards including Midi pianos, organs and computers as well as synthesizers and sequencers such as the SQD-1.

For those who already own a drum machine, the SQD-1 Midi Recorder can be timed from an external drum machine and can provide a click track for syncing to a multitrack tape recorder. This is an important link because it can sync all Midi instruments (controlled from the SQD-1) to all non-Midi instruments such as vocals and guitars which are recorded on the multitrack machine (See Fig 1)

The latest development in multitrack recording equipment comes from Clarion. The new XD-6500 is a 4 track, high-speed recording cassette deck with built in mixing facilities. The XD6500 has dBX type II noise reduction, punch-in and punch-out, accessory send and returns for each track and the option of rack mounting. Link this to the Korg SQD-1 and you have a formidable base from which to build a home recording system.

One effect, more than any other, makes an amateur recording sound professional and that is reverb. Most good quality reverb units are very

expensive but Korg have just launched a good value Gated Reverb, the Korg GR-1. This is a stereo reverb, but the addition of a Gate section allows all the latest special effects to be produced.

The only other essential effect to have in a home recording studio is some form of delay unit. These units can be used for echo effects as well as chorus and flanging. Korg have two delay units, the SDD1000 and SDD2000, both of which enable sampling.

Using the SDD1000 a sound of up to 2.048 seconds can be sampled and then played back repeatedly. The pitch of the sample can be varied.

The SDD2000 has 64 program memories and Midi. This means that up to 64 different effects can be memorised and program changes can be carried out via Midi. Up to 4.368 seconds of sound can be sampled and then played back in pitch using any Midi keyboard. So with an SDD2000 you can transform a Poly 800, for example, into a sampling keyboard and each program sound on the Poly 800 can have a different delay effect.

To help anyone with sampling units such as the SDD1000 and SDD2000, Korg have produced a sampling sound cassette, the STP-2000 which features 165 unique effects and sounds from pianos and saxophones to whole orchestras, fireworks and elephants.

Korg produce a wide range of accessories to help the musician setting up a system. Everything from powered monitors to connecting cables, from headphones to twin channel volume pedals. For example, the TM03 Table Monitor is ultra compact, with a built-in battery powered amplifier. Korg's connecting cables have numbered collars on the plugs to end confusion when connecting large numbers of leads. Korg also produce Midi cables up to 12 metres in length.

Many musicians have already discovered the Korg KMS-30 Midi Synchronizer is the solution to timing problems and for linking Midi, sync and tape. Others use the KMT-60 Midi Thru unit which has one Midi input and six Midi outputs.

Whatever your music and whatever your set up, Korg and Clarion have a great deal to contribute.

TUNER ANYWAY?

INERS, CHORD PROCESSORS AND EFFECTS

or fast meter response and this is particularly useful for classical musicians for pitch training.

The GT60X guitar tuner is a budget priced compact guitar and bass tuner.

Korg have recently launched three Chord Processors which can quickly display visually all popular chords and how to play them. Select major minor and 7th chords and also see what diminished suspended fourth, seventh flat five, sixth, major seventh, added ninth, ninth, eleventh and thirteenth chords look like. There is a keyboard version, a guitar version, and one with a musical score display.

The Korg Professional Modular Effects system features a mains powered pedal board and a number of interchangeable modules all of which are studio quality effects. Because no batteries are involved, circuits are far superior to those used in conventional pedal effects plus the Korg PME system is more compact and convenient. There are currently 16 modules to choose from.

Korg experience in high quality effects has led to the introduction of a range of individual pedal effects. Each effect is housed in a heavy duty shielded enclosure and offers the musician high quality and reliability as well as value for money.

Jammin

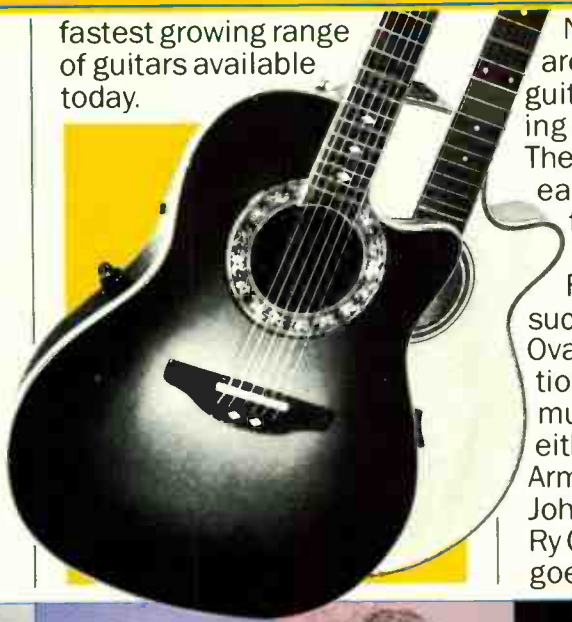
THE WORLD'S GREATEST MUSICIANS PLAY THE WORLD'S FINEST GUITARS.

BACK in the days when money couldn't buy love and dedicated followers of fashion were even more dedicated than they are today, two men, thousands of miles apart had the same idea.

To build the best acoustic and electric acoustic guitars the world had ever seen. They both succeeded.

However, Mass Hirade and Charlie Kaman, founders of Takamine and Ovation respectively, set about achieving their aims in different ways.

Hirade, way up in the Takamine mountains in Japan used traditional woods and woodworking skills to build his guitars. Each is individually hand-built by craftsmen using woods that have to be left to condition over some eight years. The revolutionary palathetic pick-ups found on Takamine instruments complete the picture on these the fastest growing range of guitars available today.



Nowadays, Ovation guitars are the most widely used guitars in studios, both recording and TV, all over the world. Their true, clean sound can easily be reproduced on stage too, which makes them ideal for any guitarist anywhere.

Few would challenge the success of both Takamine and Ovation since their conception. In fact, literally every musician of any note plays either one or the other. Joan Armatrading, Al Di Meola, Johnny Marr, Jimmy Page, Ry Cooder, Kevin Peek – the list goes on and on and on.

Glenn Frey – Takamine

Ry Cooder – Takamine

Kevin Peek – Takamine

Larry Coryell – Ovation

Nancy Wilson – Ovation

Joan Armatrading – Ovation

Kaman on the other hand, set about revolutionising the shape of guitars by applying science: he used theories of vibration and acoustics developed in the helicopter industry to design the now familiar roundback Ovation guitar – the first being the Balladeer 6 and 12 string models.

If you'd like to join them, now's your chance. Simply nip down to your local music store where you'll find entry forms for the great Ovation competition. Simply buy a set of Adamas, Ovation, Kaman or Omega strings and you could be on your way to owning one of the world's greatest guitars.

We hope you've found Playback, the new Rose-Morris magazine, both entertaining and informative. Now, we'd like some feedback from you. Tell us what you liked, and what you didn't, tell us what you'd like to see and hear in the future, so we can make sure Playback becomes the sort of magazine you, the musician, really wants to read.

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EVERYONE LOVES A CUB

For those keyboard players that still indulge in that unnatural perversion known as playing live, there have been precious few compact, affordable keyboard combos to choose from. Until Custom Sound released the Keyboard Cub 60, that is. *Paul White*

So there I was, at about five minutes before midnight on an especially gloomy summer's night, preparing to sneak out of the office early. Then, out of the blue, I was intercepted by a man claiming to be the Editor of E&MM. After a few minutes' small talk passing the time of night, and discussing the pros and cons of reviewing amplification equipment in the office after the rest of the staff had gone home, he conned me into reviewing this combo. So here I am, slaving over a hot word processor whilst he lives the life of Riley in the pubs and clubs of downtown Cambridge.

But back to the job in hand. Custom Sound have been making a wide range of group amp gear for some while now, but until fairly recently, they hadn't attempted a foray into the compact, portable amp market that's previously been dominated by the Japanese. Fairly recently was when the UK company introduced a range of small, cuddly little amps called Cubs. Externally, they look rather reminiscent of Roland's Cube amplifiers, as their dimensions are fairly similar and they even have a similar name.

Yet although the Keyboard member of the Cub family measures only a petite 18" × 18" × 12.5", it weighs more (23kg) than you'd think from a cursory glance, mostly because it seems to be made out of the special grade of chipboard H M Government normally reserves for constructing fallout shelters. Lurking within this structure is a Fane 12" speaker and a small horn tweeter, fed from a 60-watt bipolar amplifier which, in turn, is fed from a dual-channel preamp.

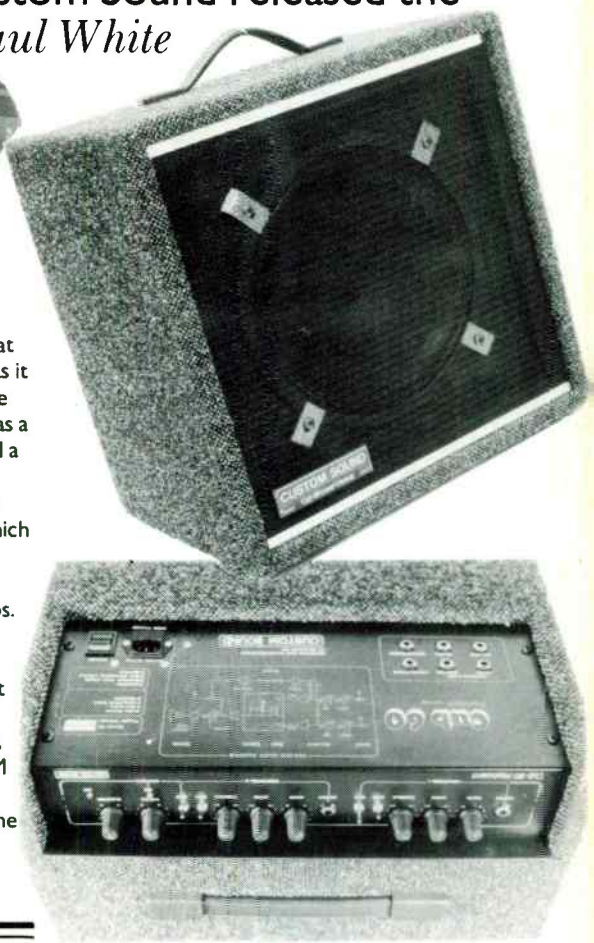
With the exception of inputs, all connections are made via sockets on the Cub's rear panel. These include an effects loop, DI Out, Slave Out, Headphones and a Footswitch socket for the amp's built-in reverb. Mains enters by means of the now familiar IEC connector and the Power switch has a neon built into it so that you can tell the power station up the road is (a) working as it should do and (b) supplying a small part of its output to your keyboard combo.

What sets the Cub's appearance apart from that of its Oriental competition is the material covering its cabinet. Not for Custom Sound the bland predictability of black leatherette or perforated PVC. Instead, they've gone for a woven textile which looks distinctive and is said to be resistant to snags and tears.

No amplifier would be complete without controls, and the Cub has quite a few of them. There are two sound channels which in point of fact turn out to be identical – so, at the end of the day, we might as well just, as it were, talk about one of them and leave the other to your imagination. Each channel has a Gain control, Treble and Bass controls and a couple of switches titled Rev and Eff. The former switch brings in a very respectable spring reverb unit, the sound quality of which comes as a real freshener after the endeavours of some of the circuits that occupy similar positions in competing amps. It's not a Quantec, but it does its job well enough.

The Eff switch does a similar job, except that it brings into play any effect you may care to plug into the external effects loop, such as a trusty DDL, chorus unit, or WEM Copicat.

The master section incorporates only the master Volume control and the Reverb Depth control, a red LED informing you when the reverb is active.



Performance *'The sound remains clean up to surprisingly high levels, due largely to the choice of speakers.'*

One good thing about testing an amplifier late at night is that you can wind it up to high levels without offending customers at the furniture showroom downstairs, or aggravating the researchers at the software company up the corridor. With all those tucked safely in their beds, you're free to decide whether amplification equipment really *can* amplify things properly without introducing nasty side-effects of its own.

And all in all, the performance of the Custom Sound belies its modest cost. The sound remains clean up to surprisingly high levels, due largely, I suspect, to the choice of speakers. The reverb is warm yet fairly bright, and doesn't add greatly to the pleasantly low background noise. As for the two-band EQ, it's never going to be world-shatteringly exciting, but again, does its job with no fuss.

The solid cabinet construction and *that* covering material combine to give a sound free from nasty resonances or undue colouration, even at the low end. This size of cabinet is never going to win prizes for its bass response, but the Cub still gives a punchy, fat sound at the bottom end... And we all know how the Editor likes a fat bottom.

For practice work or for small club gigs, the Keyboard Cub is hard to beat. Its sound quality is not at all bad, especially when you consider that some shops will be discounting it to under £200. The reverb works well, and the circuitry as a whole runs quietly – important if you want to do any recording or if you just don't like the sound of frying chips accompanying your music.

I reckon this British product should leave the Japanese wondering just how we can do it for the price. Which makes a change, as it's the reverse that's usually true. The Cub sounds good, it looks good, and it's furry enough to keep you warm in winter. ■

More from ***Custom Sound, Audio House, Robin Lane, Pudsey, Leeds LS28 9HY. ☎ (0532) 561949***

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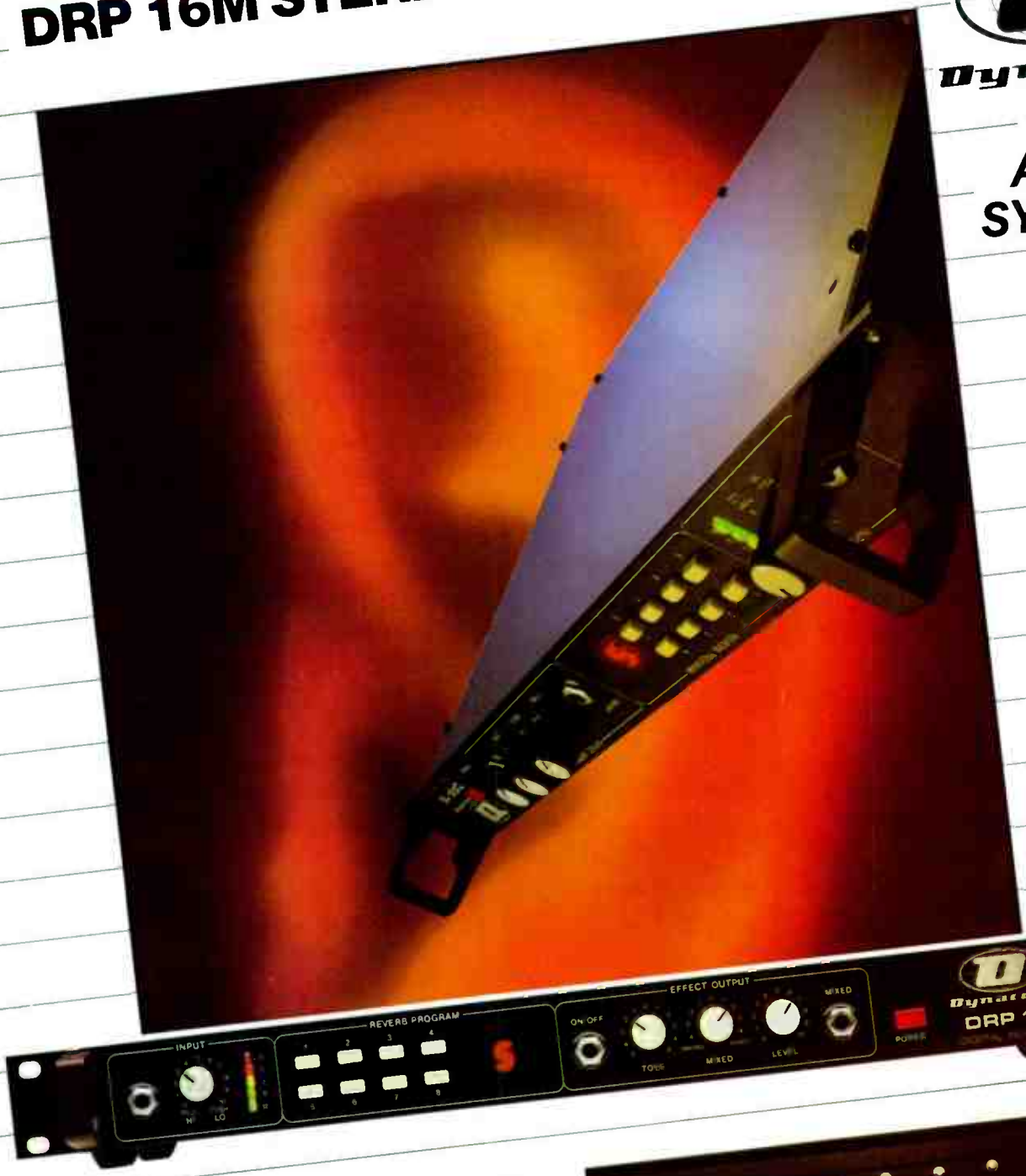

PFS 14

With the DRP 16M DYNACORD now presents for stage and studio application, a stereo digital reverb system which provides up to 16 different and extremely natural-sounding programs with excellent spatial effects. Any program may be recalled by pushbutton, with the PFS 14 footswitch or by an external MIDI source.
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BeeBMIDI Monitor

The second and concluding feature on our MIDI data display program for the BBC Micro. This month: the listing, a description of how it works, and some pictures to give some idea of what it can do. *Jay Chapman*

So you missed last month's E&MM because the newsagents had sold out which, in turn, was because you went there too late, and now you're wondering just what all this BeeBMIDI Monitor business is about.

Well, the only way you're going to know exactly what it's about is to buy last month's episode from E&MM's Back Issues department. But just in case you haven't had time to do that yet (I know a lot of you are very busy people), I'll just say that Monitor is a new software package that intercepts MIDI data from suitably-equipped musical instruments, and displays it on the nearest connected TV or monitor – hence the name.

The version of the program described here (see the listing) is the straightforward one that records a copy of the bytes flowing down the MIDI link that's being observed, and then displays a colour-coded sequence of MIDI messages. These messages represent sets of status and data bytes which group together to form such things as, for example, a Key On event or an Active Sensing message.

The program listed is slightly optimised for my own synth setup, though, so feel free to make some alterations of your own in the same vein. The optimisation is concerned with two points. First, neither of the synths I'm observing use MIDI running status, so my version of the Monitor program is slightly simplified because it doesn't have to keep track of what the last status byte means in terms of the number of data bytes required (1 or 2) to form a message. Second, where particular MIDI controller numbers have a specific meaning on the particular synthesisers being observed, I can make the Monitor program display more specific in terms of naming these controllers, eg. `DX7 DATA SLIDER` in preference to the impersonal `CONTROLLER 6`.

Before the main program can run, there's some setting-up to be done. In particular, the assembler level code must be translated and connected to the NMI interrupt. Don't forget to connect the NMI link (and not the IRQ link) on the BeeBMIDI board, because if you don't, you're not going to see an awful lot of action.

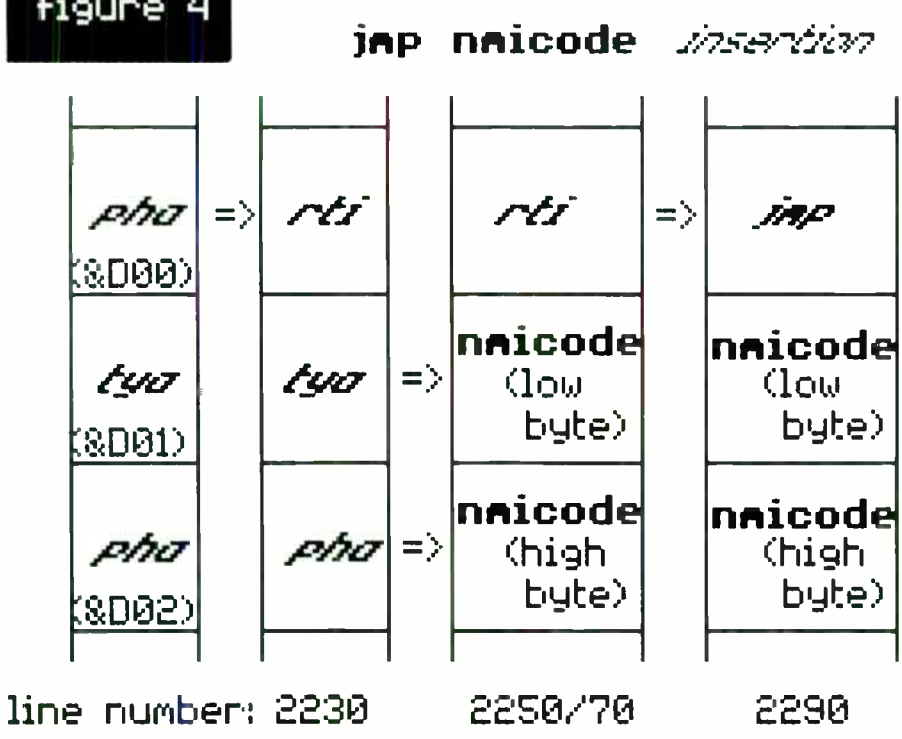
If you have an early BeeBMIDI board, you'll need to cut the track on the circuit board leading to the IRQ pin on the 1MHz bus connector, and connect the track to the NMI pin on the 1MHz bus connector. This was all described and discussed by yours truly in the BeeBMIDI 4 article in E&MM November '84.

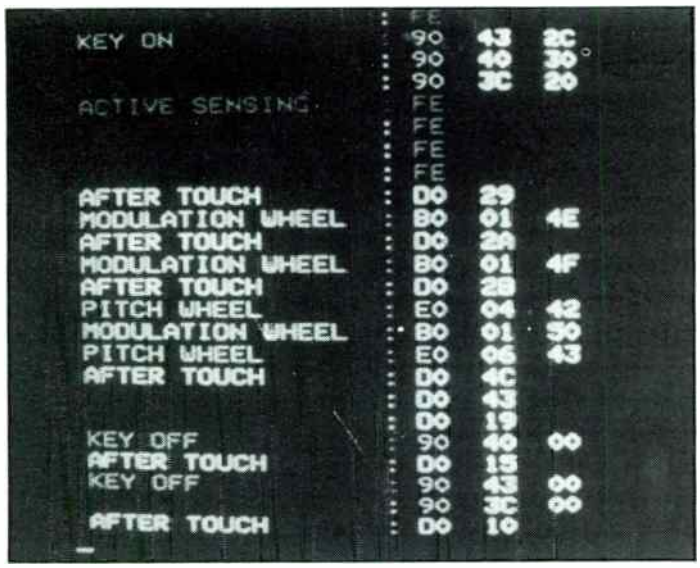
`PROCsetup` starts at line 2090. Line 2100 sets up a string of the hexadecimal digits which are used in a general method of displaying hexadecimal numbers (in line 2020). The BBC Micro can, in fact, display values in hexadecimal (by use of the ~ prefix in the `PRINT` statement), but some other micros can't, so I thought you might be interested to see how easily it can be done... Line 2110 sets up the characters that need to be printed to change the colour of text on the BBC Micro's Mode 7 screen. `R$` is red, `G$` green, and so on.

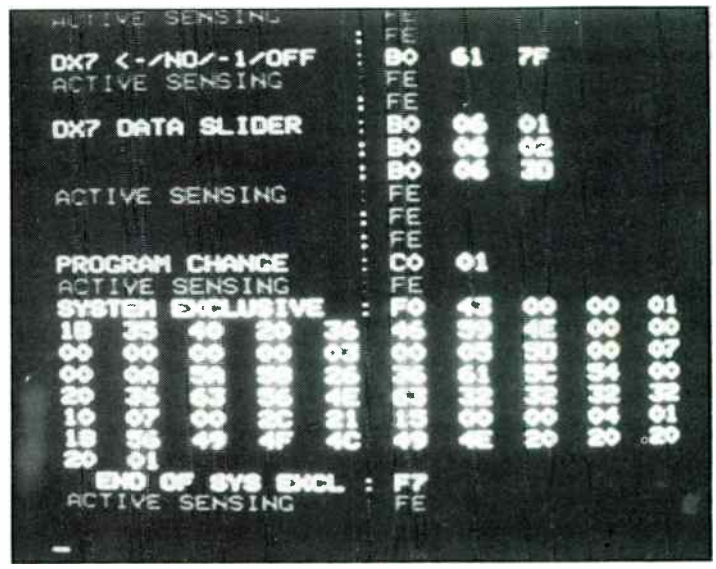
In line 2130, the size of the buffer into which the MIDI bytes will be saved is defined as 10,240 bytes, which should allow enough space for most events to be recorded. Locations &70 and &71 (the '&' prefix means hexadecimal), named as `bufpointer%`, are used to hold the address of the next free position in the buffer. The DIM statement in line 2140 defines an area of 1000 bytes to hold the translated assembler code, followed by the actual space for the buffer whose address is assigned to the variable `buffer%`. The variables `start_rec%` and `stop_rec%` hold the addresses of two single byte locations which are used as flags – I'll describe what they're used for later. Lines 2050 and 2060 set up variables holding the addresses of the BeeBMIDI 6850 ACIA's registers.

The rest of the procedure organises the translation of the assembly code. Let's look at each of the routines in turn. Subroutine `setup` (lines 2220 to 2320) is called once to connect the interrupt routine called `nmicode` to the NMI (non-maskable interrupt), and to reset the 6850 ACIA. The reset just ▷

figure 4







mentioned is necessary to ensure that BeeBMIDI has no possibility of causing NMIs before you're ready to deal with them. The BBC Micro's NMI is used only by very high-priority devices such as disk and Econet interfaces, both of which should not be active when the Monitor software is running. If NMIs are allowed to occur (because BeeBMIDI has been left switched on and not reset and is interrupting, say) when you're trying to use the disks, all sorts of strange things can happen, such as the directory seeming to be empty. You have been warned. Ideally, as soon as you've finished running Monitor you should disconnect BeeBMIDI and reset your Beeb with a control_break.

Whenever an NMI occurs, the code starting at &D00 is entered and, of course, you have to ensure that your code is run to see if the NMI was from BeeBMIDI. Unlike the maskable IRQ interrupt, there's no vector location for you to intercept, so you have to do some dirty work to grab the NMI. What you do is replace the first three bytes of whatever routine already exists at &D00 with a `jmp nmicode` *(which is three bytes long). So, whenever an NMI occurs, the code at &D00 is run which immediately jumps to your code located at the label* `nmicode` *(line 2430).*

On my system, there are only two possibilities for what might already exist at &D00: (a) the single byte `rti`*, or (b)* `phatyapha`*. Case (a) is when the disk system is not yet active (OK, to be more accurate, it means that nobody is currently claiming NMI), and is just a safety default. In other words, no NMIs should occur, but if they do, just ignore them and return cleanly from NMI. In case (b), we have the first three bytes of the NMI routine for handling interrupts from the disk drives. You can see that the Accumulator and the Y register are saved on the stack, so that the disk routine can use them without corrupting the mainline program (which is usually the BASIC interpreter 'running' your BASIC program).*

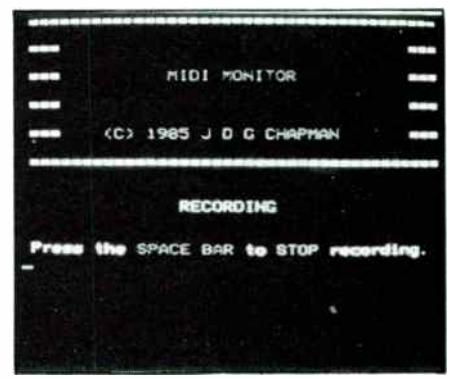
When an NMI occurs, the first job your routine will have to do is check whether the NMI is for you or for somebody else, ie. the disk interface on my system. Yes, I know I said the disks shouldn't be active when Monitor is running, but if the NMI intercept code does handle this check correctly, I won't need to worry about de-intercepting it when I exit Monitor.

If the NMI is for the disks, you must ensure that the three instructions you have replaced at &D00 are executed; you then continue with the original code at &D03. In case (a) above, there isn't any further code at &D03. Will the system go bang, fall over, die, or worse at this point? The answer is No, since you'll have loaded the Monitor program from disk, so the code at &D03 will have been set up to deal with that. Additionally, if the disks aren't in use (or you're still living in constant pain – sorry, I mean using tapes), there won't be any disk NMIs, so you'd always run your code and not dive off to &D03.

Figure 4 (the first three were printed last month, dummy) shows the changes performed by subroutine setup to the locations starting at &D00, assuming that the disk interface NMI code was already in place. First, no matter what was in &D00, you replace it with an `rti`*. This is really just me being over-cautious, but at least if an NMI comes in before you have the full* `jmp nmicode` *set up, the machine won't have a fit. The two address bytes for the* `jmp` *being formed are set, low byte then high byte, into locations &D01 and &D02 in lines 2240/2250 and 2260/2270 respectively. Finally, the* `jmp` *opcode is set into &D00 in lines 2220/2230.*

It shouldn't come as too much of a surprise that the saving of the Accumulator and Y register suits our purposes admirably, since you need some registers to work with anyway. So, the first thing you do in NMICODE is execute (lines 2430 to 2450) the `phatyapha` *sequence of instructions effectively 'transferred' from locations &D00 to &D02. You then check the 6850 ACIA's status register for the arrival of a byte at MIDI In and* `jmp` *to &D03 if no byte has arrived (lines 2460 to 2490).*

So, at the label `nmicode1`*, you know that the NMI was for you, and that a byte has arrived. You get the byte from the ACIA's Receive register*



into the accumulator (line 2500) and immediately put a copy straight into the ACIA's Transmit register (line 2510), so that the original MIDI connection apparently works without interference, as discussed earlier.

This is where we come to the use of the `start_rec%` *flag. Even with a large buffer, it's a good idea not to start recording until you're ready, in order to save space and (especially) to avoid the first 300 lines of the display, which are all Active Sensing. When you are ready to store the MIDI bytes, you press the space bar, which sets the* `start_rec%` *flag (see lines 1120 to 1180). You test the* `start_rec%` *flag in line 2520 to see if you should bother storing the byte just received. If you should, you head for the label* `record` *rather than exiting via* `nmiret`*. If you do exit (lines 2550 to 2580), you should remember to restore the Y register and Accumulator – in the correct order – from the stack.*

If you are recording the byte, you should employ a form of indirect addressing (line 2610) that uses `bufpointer%` *(locations &70 and &71) to point to the next free location in* `buffer%`*. The complexities of addressing on the 6502 mean you have to zero the Y register, which is normally used as an index register in this context because you're going to increment the two-byte pointer* `bufpointer%` *directly. You must be able to handle more than the 256-byte space that the Y register can index, since* `buffer%` *is larger than 256 bytes. Personally, I reckon that effectively ignoring the Y register makes life a lot easier in this*

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*case. If all this sounds complex (oh no, not a bit of it – **Ed.**), just take my word for it that lines 2600 and 2610 cause the byte just received to be stored in the* `buffer%` *location pointed to by* `bufpointer%`.

Lines 2620 to 2640 increment the two-byte pointer, carefully accounting for any carry between the low byte (`bufpointer%`*, location &70) and the high byte (*`bufpointer%+1`*, location &71). Note that a carry occurs when the low byte is incremented from its largest value (255) to zero. This is just like 9 + 1 = 10 in decimal: when the units column becomes a '0' there's a carry, and exactly the same principle is what's at work here. You just happen to be working modulo 256, rather than modulo 10!*

Having incremented `bufpointer%`*, you check whether the byte now pointed to (into which the next MIDI byte will be placed) is, in fact, the first byte beyond* `buffer%` *(lines 2650 to 2700). If it is, you'd best not record any more bytes, as you've run out of space and might start overwriting something important. The* `stop_rec%` *flag is set (line 2720) to tell the BASIC program (which is patiently waiting to be told by the user to stop recording), that buffer space is exhausted. This will result in the message* BUFFER FULL *being displayed (line 1260). The* `start_rec%` *flag is turned off so that recording is immediately prevented.*

So whilst recording is taking place, the main BASIC program is held in the Repeat Until loop in line 1230, waiting for you to press the space bar for the second time – which will then stop recording unless `buffer%` *becomes full first.*

The only other assembly routine is `setupbuf` *(lines 2340 to 2410), which makes* `bufpointer%` *point to the very start of* `buffer%` *and resets both the* `start_rec%` *and* `stop_rec%` *flags. This routine is called at the start of each attempt at recording from line 1100.*

And now (cue sounding of fanfare, drumming of drums, firing of 31-gun salute) we come to the main program.

After setting the BBC Micro's screen into Mode 7 to give coloured text, `PROCsetup` *is called, and the link into the NMI is then made by* `calling` *the machine code subroutine* `setup`. *The program then loops forever (lines 1020 to 2060), recording and displaying.*

A title screen appears, the buffer pointer and flags are set up by a `call setupbuf`*, and you, the long-suffering end user, are asked to start and stop recording by pressing the space bar once in each case. Note that only when recording starts is the ACIA completely configured by setting &95 into the control register (line 1170). This is to avoid any spurious ACIA interrupts before you are ready for them. As soon as recording stops, the ACIA is reset for the same reason by setting &03 into the control register (line 1250).*

Line 1300 looks vicious, but all it's really doing is working out how many bytes you've actually recorded by subtracting the start address of `buffer%` *from the final address pointed to by* `bufpointer%`. *If there are some bytes to display (checked in line 1320), you set up variables in line 1340 to say that you haven't yet had any MIDI status bytes. Later in the display part of the program, you can avoid reprinting the name of a status (eg. Key On) when you keep the same status over many messages.*

So, having carefully stowed away a load of MIDI bytes in `buffer%`*, you display them, in colour-coded messages, on your monitor screen. The* `FOR` *loop from lines 1380 to 2030 deals with each stored byte in turn. After the next byte has been peeked from* `buffer%` *into the variable* `byte%` *in line 1390, you can choose to ignore it if it's an active sensing byte (line 1400).*

This is purely for convenience to avoid streams of active sensing messages on the screen corresponding to moments when you aren't playing your synthesiser during recording.

Line 1420 checks whether `byte%` *contains a MIDI status byte by seeing if its sign bit is on which would make the value of the byte greater than or equal to 128.*

I'll quickly deal with the MIDI data bytes first, but note that if you have a MIDI status byte, the variable `offset%` *is set to zero (line 1560) so that the relative position of following data bytes can be calculated to keep printing tidy. The net result of the code dealing with data bytes (lines 1440 to 1520) is that either the byte is printed in white immediately following the last displayed byte if it forms part of the same message, or on the next line if it's the start of the data part of the next message. Have a look at the screen*

```
 1000MODE 7:PROCsetup:CALLsetup
 1010
 1020REPEAT:CLS
 1030PRINT Y$"========================================"
 1040PRINT Y$"===                                  ==="
 1050PRINT Y$"==="B$"          MIDI MONITOR          "Y$"==="
 1060PRINT Y$"===                                  ==="
 1070PRINT Y$"==="B$"    (C) 1985 J D G CHAPMAN      "Y$"==="
 1080PRINT Y$"========================================"
 1090
 1100CALL setupbuf
 1110
 1120REM START RECORDING
 1130
 1140PRINT TAB(0,13)Y$"Press the"B$"SPACE BAR"Y$"to"G$"START"Y$"recording."
 1150REPEAT UNTIL INKEY$(10)=" "
 1160?start_rec%=&FF:REM tell the interrupt routine to start recording
 1170?control_reg%=&95:REM set up 6850 ACIA (baud rate, interrupts, etc.)
 1180PRINT TAB(0,13)G$"              RECORDING                 "
 1190
 1200REM STOP RECORDING
 1210
 1220PRINT 'Y$"Press the"B$"SPACE BAR"Y$"to"R$"STOP"Y$"recording."
 1230REPEAT UNTIL ?stop_rec% OR INKEY$(10)=" "
 1240?start_rec%=0:REM tell interrupt routine to stop recording
 1250?control_reg%=&03:REM Make sure 6850 is not left strangling NMI!
 1260IF ?stop_rec% THEN PRINT 'R$"     BUFFER FULL"
 1270
 1280REM WORK OUT HOW MANY BYTES WERE RECORDED
 1290
 1300length% = ?(bufpointer%+1) * &100 + ?bufpointer% - buffer%
 1310PRINT 'Y$"   "length%" bytes recorded.":D$=INKEY$(100)
 1320IF length%=0 THEN 2060
 1330
 1340last_status%=0:last_par%=TRUE:S$="":REM i.e. haven't had a status yet
 1350
 1360REM DISPLAY LOOP
 1370
 1380FOR I%=0 TO length% - 1
 1390byte%=buffer%?I%
 1400REM remove REMark to ignore ACTIVE SENSING:IF byte%=&FE THEN 2030
 1410
 1420IF byte% >= 128 THEN 1540:REM sign bit on - go deal with MIDI status byte
 1430
 1440REM MIDI DATA BYTE - offset% forces newline after each set of data bytes
 1450
 1460PRINT W$;
 1470offset%=offset%+1:REM note that we have another data byte
 1480IF last_status% DIV 16 = &F THEN 2020
 1490IF ((last_status% DIV 32 = 6) AND (offset% > 1)) OR ((offset% > 2) AND ((o
ffset% - 1) MOD 2 = 0)) THEN 1520
 1500IF (offset% > 2) AND ((offset% - 1) MOD 2 = 0) THEN 1520
 1510GOTO 2020
 1520PRINT:PRINT TAB(24);W$;
 1530
 1540REM MIDI STATUS BYTE
 1550
 1560offset%=0:REM status => 0; 1st data => 1; 2nd data => 2
 1570
 1580REM check for same status (and sub-status where necessary) as last status
 1590REM to avoid redisplaying description on repeats
 1600
 1610nibble%=byte% DIV 16:REM get left hand 4 bits
 1620IF last_status%=byte% AND ((nibble%<>&9) AND (nibble%<>&B) OR ((nibble%=&9
) AND ((buffer%?(I%+2) > 0) = last_par%)) OR ((nibble%=&B) AND (buffer%?(I%+1)
= last_par%)) ) THEN PRINT S$;:GOTO 2000
 1630last_status%=byte%:IF nibble% = &9 THEN last_par% = buffer%?(I%+2) > 0
 1640IF nibble% = &B THEN last_par% = buffer%?(I%+1)
 1650PRINT
 1660
 1670REM deal with the KEY OFF status byte and the fact that
 1680REM KEY ON with velocity=0 is also KEY OFF
 1690
 1700IF nibble% = &8 THEN S$=R$:PRINT S$"KEY OFF";:GOTO 2000
 1710IF nibble% <> &9 THEN 1750
 1720IF buffer%?(I%+2) = 0 THEN S$=R$:PRINT S$"KEY OFF";:GOTO 2000
```

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```
1730S$=R$:PRINT S$"KEY ON";:GOTO 2000
1740
1750IF nibble% <> &B THEN 1850:REM i.e. skip controller stuff
1760
1770REM deal with known controllers first e.g. DX7
1780IF buffer%?(I%+1) = &06 THEN S$=C$:PRINT S$"DX7 DATA SLIDER";:GOTO 2000
1790IF buffer%?(I%+1) = &01 THEN S$=C$:PRINT S$"MODULATION WHEEL";:GOTO 2000
1800IF buffer%?(I%+1) = &02 THEN S$=C$:PRINT S$"DX7 BREATH CNTRL";:GOTO 2000
1810IF buffer%?(I%+1) = &60 THEN S$=C$:PRINT S$"DX7 YES/+1/ON/->";:GOTO 2000
1820IF buffer%?(I%+1) = &61 THEN S$=C$:PRINT S$"DX7 <-/NO/-1/OFF";:GOTO 2000
1830IF nibble% = &B THEN S$=C$:PRINT S$"CONTROLLER";:GOTO 2000
1840
1850IF nibble% = &C THEN S$=M$:PRINT S$"PROGRAM CHANGE";:GOTO 2000
1860IF nibble% = &D THEN S$=Y$:PRINT S$"AFTER TOUCH";:GOTO 2000
1870IF nibble% = &E THEN S$=G$:PRINT S$"PITCH WHEEL";:GOTO 2000
1880
1890IF byte% = &F0 THEN S$=W$:PRINT S$"SYSTEM EXCLUSIVE";:GOTO 2000
1900IF byte% = &F7 THEN S$=W$:PRINT S$"  END OF SYS EXCL";:GOTO 2000
1910IF byte% = &F8 THEN S$=B$:PRINT S$"CLOCK";:GOTO 2000
1920IF byte% = &FA THEN S$=G$:PRINT S$"START";:GOTO 2000
1930IF byte% = &FB THEN S$=G$:PRINT S$"CONTINUE";:GOTO 2000
1940IF byte% = &FC THEN S$=R$:PRINT S$"STOP";:GOTO 2000
1950IF byte% = &FE THEN S$=B$:PRINT S$"ACTIVE SENSING";:GOTO 2000
1960IF byte% = &FF THEN S$=R$:PRINT S$"SYSTEM RESET";:GOTO 2000
1970
1980S$=Y$:PRINT S$;:REM default case for any code not dealt with above
1990
2000PRINT TAB(19)":"S$;
2010
2020PRINT MID$( digits$, byte% DIV 16 + 1, 1 );MID$( digits$, byte% MOD 16 +
1, 1 );" ";
2030NEXT I%
2040
2050PRINT ''Y$"     DISPLAY AGAIN? ("R$"Y"Y$" = YES)":A$=GET$:IF A$="Y" THEN 1
310
2060UNTIL FALSE
2070END
2080
2090DEF PROCsetup
2100digits$ = "0123456789ABCDEF"
2110R$=CHR$(129):G$=CHR$(130):Y$=CHR$(131):B$=CHR$(132):M$=CHR$(133):C$=CHR$(
133):W$=CHR$(135)
2120
2130bufsize% = 10*1024:bufpointer% = &70
2140DIM machine_code% 1000, buffer% bufsize%, start_rec% 0, stop_rec% 0
2150control_reg% = &FCFC:status_reg% = &FCFC
2160transmit_reg% = &FCFD:receive_reg% = &FCFD
2170
2180FOR opt% = 0 TO 3 STEP 3
2190P% = machine_code%
2200[OPT 0 \ replace the 0 by opt% to see the assembly
2210
2220.setup     lda #&40            \ overwrite 1st byte of NMI code with an RTI
2230           sta &D00            \ to avoid problems if an NMI comes in ...
2240           lda #nmicode MOD &100 \ low order byte of address of our code
2250           sta &D01
2260           lda #nmicode DIV &100 \ high order byte of address of our code
2270           sta &D02
2280           lda #&4C            \ 'jmp' opcode into &D00 (replacing our RTI)
2290           sta &D00            \ 1st NMI instruction now is 'jmp nmicode'
2300           lda #&03            \ reset
2310           sta control_reg%    \ the 6850 ACIA
2320           rts
2330
2340.setupbuf lda #buffer% MOD &100 \ set low byte of buffer address
2350           sta bufpointer%
2360           lda #buffer% DIV &100 \ and high byte
2370           sta bufpointer%+1
2380           lda #0              \ unset the 'started' and 'stopped'
2390           sta start_rec%      \ recording flags
2400           sta stop_rec%
2410           rts
2420
2430.nmicode   pha                 \ save mainstream's Accumulator
2440           tya                 \ and Y register
2450           pha                 \ (these three opcodes overwritten at &D00)
2460           lda status_reg%     \ check that a byte arrived
2470           and #&01            \ i.e. look at RX REG FULL bit
2480           bne nmicode1        \ yes - this NMI is ours
2490           jmp &D03            \ not us - do original NMI code
2500.nmicode1 lda receive_reg%    \ get the byte that arrived
2510           sta transmit_reg%   \ copy to MIDI OUT - quick!
2520           bit start_rec%      \ see if we have already started recording
2530           bmi record          \ yes - go record this byte
2540
2550.nmiret   pla                 \ no  - restore mainstream's Accumulator
2560           tay                 \ restore mainstream's Y register
2570           pla                 \ and Accumulator
2580           rti                 \ note return from interrupt
2590
2600.record   ldy #0              \ clear Y register for indirect addressing
2610           sta (bufpointer%),Y \ store received byte
2620           inc bufpointer%     \ increment low byte of pointer
2630           bne record1         \ skip high byte increment if didn't wrap
2640           inc bufpointer%+1   \ increment high byte of pointer
2650.record1  lda bufpointer%+1   \ get high byte to check for buffer end
2660           cmp #(buffer%+bufsize%) DIV &100 \ is pointer off buffer end?
2670           bne nmiret          \ high byte still ok
2680           lda bufpointer%     \ high byte 'full' check low byte
2690           cmp #(buffer%+bufsize%) MOD &100 \ to see if ok
2700           bne nmiret          \ low byte still ok
2710           lda #&FF            \ end of buffer reached so set
2720           sta stop_rec%       \ the stop recording flag
2730           lda #0              \ unset start recording flag
2740           sta start_rec%
2750           jmp nmiret          \ and exit the interrupt code
2760
2770]
2780NEXT opt%
2790ENDPROC
```

photographs – a picture's worth a thousand words.

In the case of a MIDI status byte, lines 1610 to 1650 check whether you have the same status as the last message to avoid repeatedly printing the same status name – this makes the display easier to read because repeated message types, like four Key Ons one after the other, appear as a distinct block of messages on the screen.

Lines 1670 to 1730 deal with the special case where a Key On actually means a Key Off, ie. when a Key On message has its second data byte (the velocity byte) set to zero. You can tell whether there has been a real Key Off, rather than a special Key On meaning off, because the status byte's value is still displayed on the screen.

Lines 1770 to 2000 deal with most of the MIDI status codes. If you're interested in any that I've missed out, you'll need to add some lines of your own before line 1980, to set the printing colour for the messages associated with the current status byte into the variable S$, and to print the relevant title.

Taking line 1860 as an example, you can see that a status byte whose left nibble (a nibble is four bits, by the way) is &D has the title `AFTER TOUCH` *and will print in yellow (*`Y$`*). Notice that where more detail is available, as in the case of the controllers, more detail is displayed. In lines 1770 to 1820, the first data byte of the controller message tells you exactly which controller you're dealing with.*

Finally, the value of the byte (status or data) that you've dealt with this time round the FOR loop is printed out as two hexadecimal digits, in the correct colour if status or white if data, by line 2020. Once the complete contents of `buffer%` *have been displayed, you have the choice of viewing them again or trying for another recording (line 2050).*

The Monitor program is the sort of software tool that anyone seriously working with MIDI tends to have around in a more or less sophisticated (and finished!) form. In my own case, it's tended to grow in a rather unstructured manner as I required different facilities to help debug specific problems.

There's plenty of scope for you to add code to optimise Monitor so that you can observe the various machines in your own MIDI system – in much the same way that my version displays the names of some of the DX7's MIDI controllers. If your synth responds to particular System Exclusive messages, it shouldn't be too difficult to arrange for the Monitor program to send the request message from BeeBMIDI's MIDI Out when told to start recording, and observe the response arriving via MIDI In.

Well, I must get on now, as I've got a little job for the Monitor software. It's a prototype combined Jew's harp, G-string and euphonium MIDI retrofit 17-track recording package that the Editor has asked me to give top priority to. And it isn't quite working yet. ■

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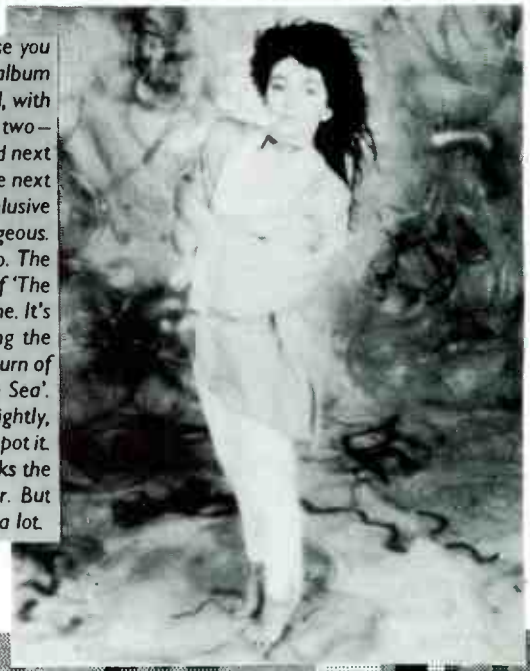
OUTTAKES

Another round of record and tape releases receives what we consider to be constructive critical comment. The recipients might not agree...

Tim Goodyer

VINYLTAKES



The wait was well worth it for the single. What of the even longer-awaited album? In case you hadn't managed to guess, the subject of the speculation is ***Kate Bush****'s* Hounds of Love *album (EMI). Obviously, 'Running up that Hill' is here in all its glory, but what of its company? Well, with the assistance of some well-respected names – Eberhard Weber and Morris Pert to drop but two – Side 1 is a conventional collection of competent Bush songs that culminates in the projected next single 'Cloudbusting'. Its initial punch is limited, but give it the benefit of a few listens and the next 45 really grows on you. It's also blessed with a real string arrangement, courtesy of the elusive Dave Lawson. Generally though, the first side's pieces are competent without being outrageous. Instrumentally, they could easily have been realised with the technology of a few years ago. The second side is riskier, more adventurous, and a lot more fun. Under the conceptual title of 'The Ninth Wave', it's a collection of seven songs concerning someone in danger of drowning alone. It's full of clever touches and memorable moments, like the busy sequencer work of 'Waking the Witch', the intriguing 'Jig of Life' (complete with fiddles, bouzouki, Uillean pipes and the return of the dijeridu), and a surprise appearance by the sonar from 'Voyage to the Bottom of the Sea'. Inevitably, there are some dodgy bits. Richard Hickox's choral arrangement drifts slightly, painfully flat as it progresses through 'Hello Earth' – though you'd need a reasonable ear to spot it. Hounds of Love doesn't really sound as if it's the result of three years' hard work, and lacks the adventure of either 'Running up that Hill' or* The Dreaming, *Bush's previous long-player. But [illegible] have difficulty justifying not buying it, or not listening to it much, or not liking it a lot.*

After five years together and a not inconsiderable struggle, brother and sister partnership** Sophie and Peter Johnston **have succeeded in graduating from DemoTakes to VinylTakes. Their fortunes thus far have involved them in two failed record company deals, sessions for John Peel on Radio 1, and submitting the Tape of the Month to E&MM way back in October 1982, when their music was described as 'extremely commercial and accomplished'. Now immortalised by a debut single on their own Smash the Majors label, our duo have taken the opportunity to sample everything they could imagine (including some of their own demos) on a modified Roland SDE3000, and reorganise them into a remarkable semblance of music. The result is a splendidly produced, leisurely-paced ballad with a lot to commend it both in terms of composition and execution. Top marks for perseverence – and good luck!

Regardless of the favour it's found in other quarters, ***Grace Jones****'s 'Slave to the Rhythm' (ZTT) is high on my current list of disappointing singles. Coming from the same source as such classic albums as* Warm Leatherette *and* Nightclubbing, *and bearing the names of Trevor Horn and Steve Lipson in the arrangement/production credits, this song erupts from the speakers with all the vehemence of a non-dairy cream éclair. The song itself is pleasantly memorable enough, but sufficiently uninspiring to be beyond the rescusitation of a Horn production job. Not that the production is any more than adequate, anyway. It's slick and competent without ever looking as though it's going to spring a surprise or catch the listener unawares – and some of the synth patches are very familiar. A beautifully wrapped gift that promises much but never gets anywhere near delivering the goods.*

You could also call *First Quest* (Filmtrax) an individual album – I certainly would. It's intended to be an audio accompaniment to cult rôle-playing game Dungeons & Dragons, though getting the music and the game to run together entails contriving the latter slightly – the sleevenotes explain all. This is actually a double album, and is the result of 14 months' work by a collective of British composers, among them ex-members of Expandis and Tubeway Army founder member Denis Haines. The music is as pompous, pretentious and dated as the imagery associated with D&D. Which makes it tedious and uninspiring listening in isolation, if you don't happen to be a fan of the sword and sorcery school. Still, a lot of the arrangements are heavily synthesised, so you can always play 'Spot the DX7' or something similar when things start to get heavy going. File under 'Miscellaneous'.

Without the resources of Messrs Horn and Lipson, **Leitmotiv** have managed to make their third single release a much more palatable dish. 'Say Remain' (Cryptic) is a hard-hitting number that puts the emphasis firmly on bass and drum interaction – making it what is termed in polite circles as 'a bit of a stomper'. Instrumentally, the single sounds like New Order mixed with a hint of Killing Joke, but a few strategically placed synth flourishes lift the delivery to a fresh, invigorating level. Married with this is a Duran-style vocal placed well down in the mix, giving it an urgency Duran themselves will never have. The whole thing works a treat – much to the credit of all concerned.

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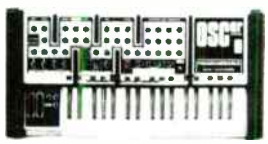
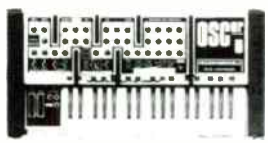

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ACCESSIT & SECK IN STOCK

Oasis (MCA) is the latest in a very long line of work by Crusader **Joe Sample**. It includes bass player and fellow Crusader Wilton Felder amongst its long list of contributors, but sadly, the album is *exactly* what you'd expect given any familiarity with Crusader progress. It's a shame that a man of such indisputable talent is unable to see the error of his ways in producing yet another bland, predictable, safe-as-houses American jazz album. The first side saunters on, entirely oblivious of the outside world and any demands it places on the music that enters it. The first hint of any invention appears at the intro to the last track, 'Asian Eyes', but this is quickly forgotten again once the piece gets going. Side 2 has a little more to offer in the form of the only vocal track on the platter, an uptempo number which stands out in the poor relief of what has preceded it, and the closing cut, 'Mirage' which ventures a little further from the safety of the other songs, and consequently becomes the best that a highly unremarkable album has to offer.

In contrast, the debut album from** Belouis Some **(Parlophone) is remarkable. Remarkable if only for the calibre of the musicians a relatively unknown artist (Belouis Some is just one man) has managed to involve: Bowie guitarists Carlos Alomar and Earl Slick (with Alomar helping on song arrangements), Bernard Edwards (confined for once to bass guitar), drummers Tony Thompson and Andy Duncan, and the list is still far from complete. Belouis Some has already had a degree of Stateside success with the single 'Imagination', though the only thing it achieved here was controversy over its blatantly-insulting-to-women video. It's an instant, meaty dance concoction that waltzes into the memory cells without you really noticing, and the same is true of 'Walk Away' and the album's title track, 'Some People'. The Bowie influence makes its presence felt in the man's vocal delivery and in some of the arrangements, but it doesn't conceal the art with which many of the songs have been put together; Belouis Some's musical style has taken five painstaking years to evolve. Bright, poppy, but individual enough to be worthwhile, Some People is an impressive debut that holds promise of great things to come. So long as they don't take another five years coming, I'll be happy.

DEMOTAKES

London-based Empire of Lights **open this month's DemoTakes with the sort of demo that's a pleasure to review. Four songs of unusually high standard that revel in a healthy diversity of instrumentation and are finished with a real singer's voice. Next to the songs themselves, which are distinctive enough in their own right, the highlight of the show is undoubtedly that vocal, delivered thoughtfully and effectively by singer Maggie. This woman has a voice, and she knows how to use it, too. There are other contributors to the successful formula. Drumming chores fall to a Drumtraks, which proves itself well up to the task in the hands of an intelligent programmer, while some tasty trumpet work makes full use of some subtle double-tracking. The band's keyboard setup is modest – Juno 106 with a little assistance from a JX3P on occasions – but it's their application that counts, and in this case it's more than enough. Production is the only area in which Empire of Lights let themselves down, despite the use of an eight-track recorder. One to watch, though.**

DemoTakes has been chosen by **Paul Roberts** to be the recipients of his first demo, titled 'For Those Who Have Ears'. Roberts' declared intentions lie in the direction of songwriting as opposed to performance or recording of his own work and, to an extent, this intention is reflected in the standard of the demo. The arrangements are lacklustre and the lack of original sound programs for the DX7 is lamentable. To Roberts' credit, the six songs here represent a healthy diversity of styles, even if this inevitably means that some are more impressive than others. At the disappointing end of the scale are a couple of ballads that are really too sickly to entertain for very long. There's also a similarity to Alan Parsons lurking in there somewhere, but the winning track is an instrumental in waltz time called 'Living on Top of the World'. It has a good pace, some pleasant and some excellent sax soloing to help it on its way. Give it a decent bass line, and this track would be a real gem.

And so to this month's real band'.** The Perishers **are a Nottingham five-piece who use real drums (read it again if you're not certain). To be fair, there is a Korg KPR77 in there helping to keep drummer and sequencer in sync, though it's not audibly evident. The drums certainly offer a welcome alternative to the usual deluge of TR606s, and it's a shame this positive theme isn't continued throughout The Perishers' recordings. The greatest failings are the vocals, which suffer from being hesitant and rather characterless, and the synth camp, afflicted by a similar disease. The vocal and melody lines are the first and most scrutinised elements of a song, and this is especially true of a demo. Sadly, scrutiny of The Perishers' efforts in these areas isn't particularly rewarding. I'm not sure whether or not the band are a gigging outfit. If they aren't, it's possible the rigours of playing in front of an audience might help to build their musical character, and thus bring about an improvement in demo quality.

***Junk 57** are a band with a little bit of history behind them, coming as they do from San Francisco and having supported the likes of the Ramones and Iggy Pop. They arrived on these shores earlier this year, hoping to secure club dates in the interests of 'showing England where the future lies'. How are they hoping to do it? Well, with some strong rhythms, inventive arrangements and the occasional hint of the oriental in places. The distorted guitar is especially effective, and a welcome change from the now depressingly familiar chopped funk rhythms. Equipment details are scarce, as is personnel information, but the recording is an impressive one for a Portastudio affair, the healthy trend of structured drum programming is continued here. The only problem is the cheap-sounding reverb – though even this serves its purpose in the context of the overall sound.*

*Finally a name that should be familiar to anyone who read last month's UK Electronica report. **Mike Brooks** finds his way into DemoTakes by submitting the third of his four cassette releases for review. Entitled 'Realms of Darkness', the tape was recorded on a Cutec MR402 four-track cassette machine and sounds very clean for its trouble. Keyboard stars of the show are a Juno 106, a JX3P and an SH101, accompanied by an MC202 and (wait for it) a TR606. The sounds are rich, sequences understated and, thankfully, drum patterns sparse and effective. There's a nice balance between the differing sound textures that exist, and the absence of any digital technology doesn't restrict the pieces in the way many a DX7 owner would have you believe. A worthy sequel to a good live performance.* ■

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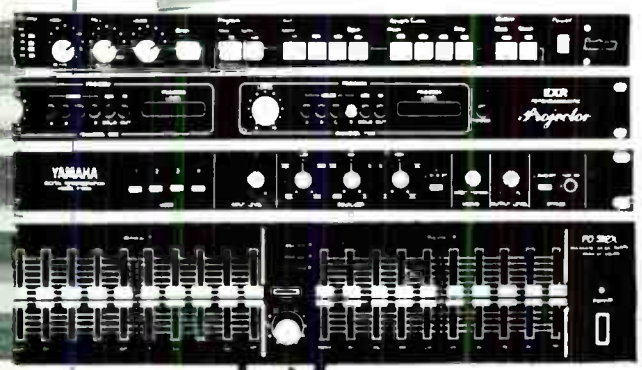

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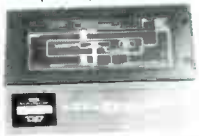

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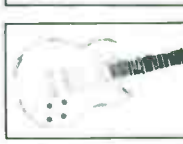

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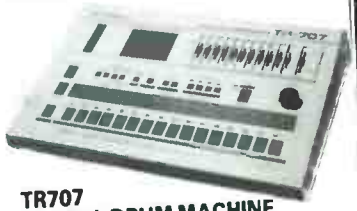

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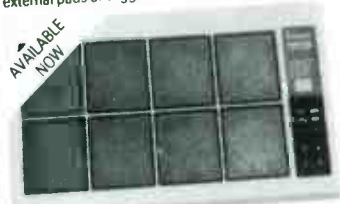

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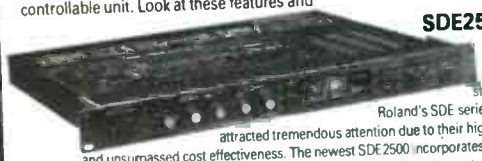

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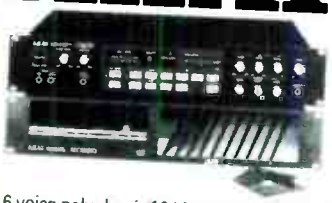

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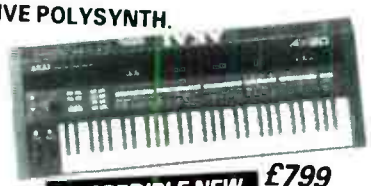

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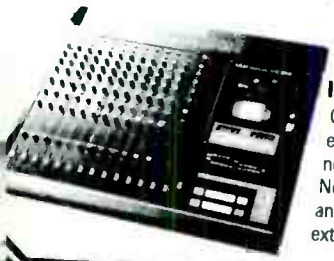

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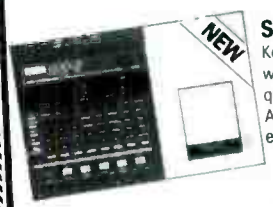

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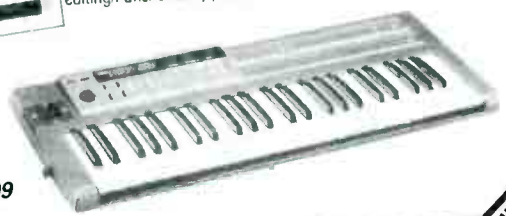

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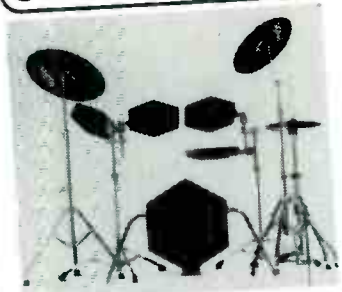

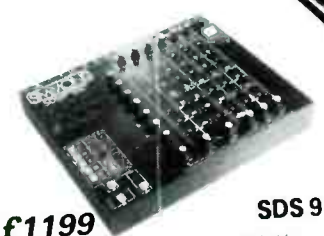

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▲ UP AND RUNNING:
the nightcatchers

▲ We start an occasional series on acts that are halfway between making bedroom demos and achieving mass success. ▲ This month: a Birmingham five-piece with a novel approach to creating a big sound. ▲ Words and pictures *Tim Goodyer*

It may come as a surprise to you to learn that Birmingham, known usually as nothing more than the home of Duran Duran, UB40, Bovril and large amounts of heavy metal, still plays host to talented bands struggling to gain recognition in the eyes of the rest of civilisation. Yet this is the case, and the Nightcatchers are just such a band: a home-grown five-piece with their sights set jointly, but realistically, on the charts and long-term survival in the music business.

In a typically populated and decorated rehearsal studio that's previously been witness to many of the band's changing fortunes, founder member, guitarist and vocalist Roger Cornish and keyboard player Andy Murtagh are eager to make their collective voice audible to the sympathetic ear of your favourite musician's magazine.

The band's history began about four years ago, with the partnership of Cornish and vocalist Nikki Leeger already established from a previous venture. The pair quickly joined forces with Murtagh as a result of he and Cornish working in a local music shop which, incidentally and unknowingly, assisted with equipment loans in the early days.

This three-strong nucleus jointly decided that dance was their forté, and began writing songs to that end. They also believed there to be a 'big sound' which they considered was missing from the guitar-based music of the day, and opted to work towards its inclusion in their own sound. As a result of this, there ensued a flirtation with an 11-strong outfit that involved two keyboard players, percussionists and a four-piece brass section, amongst other things.

Once that line-up had died a natural death thanks to impracticalities, the band took a novel approach to filling the drumming vacancy that had resulted. Cornish elaborates.

'We got a list of the only three Simmons hirers in Birmingham, phoned them up and told them we didn't want to hire their services, but would they come down for an audition. Only Pete (Briggs-Fish, present drummer) agreed, but it was good, and we got a Simmons kit and a good player out of it!'

At this time, the band were also keeping the company of bass player Tony Franklin, who later left to join Jimmy Page and Roy Harper in The Firm, leaving an unfilled position behind him.

'At that point we were experimenting a lot with the electronic side of things,' Murtagh explains. 'A lot of the things that previously involved both bass synths and bass guitar sounded a lot cleaner with just the synths.'

Meanwhile, the search for that elusive big sound continued, with a greater emphasis on synthesisers and a lesser one on personnel. It was with this depleted line-up that the band received the first interest the music industry was prepared to offer. All did not go according to plan, though. The first stumbling block took the form of a brief and unhappy signing to an independent label, something over which the band themselves have very mixed feelings.

'We signed our first deal with a small independent label and recorded and mastered some songs for them, but nothing was ever released', Cornish recalls. 'That wasn't any good because, without a product, who the hell was going to know about us?

'What we did get out of it was an *Oxford Road Show* performance, which came about as a result of someone putting us in touch with Russ Lindsey, Peter Powell's assistant. Peter got to hear our material and gave us a session on his radio show where we did four songs, and one of them we later performed live on the ORS. That was the first real appearance we'd made in the public eye, so it was very useful.'

Powell's enthusiasm was well up to its normal standards, and the experience proved useful enough to lead to a publishing deal with Chappell Music. Once the links with the

independent company had been severed, the Nightcatchers were once again free to vie for the attention of the major labels, and now with the confidence of a major publisher behind them.

It was at this point that Lady Luck stepped in – as she does in all the best stories – and one of the staff at Chappell's, Jeff Chegwin, moved to the RCA A&R department, taking his interest in the band with him.

Cornish picks up the story again: 'Jeff was instrumental in that he obviously still liked the stuff, gave our name a bit of a shout, and convinced the right people there. And we were duly signed to RCA about 12 months ago.

'Basically we're signed for a couple of singles and an album. But if the record company take up all their options, it's about a four-year deal with a corresponding number of albums and singles.

'We'd already recorded the first single, 'I Can't Believe', very crudely in a flat in Birmingham. RCA were well into that, but as record companies are wont to do, they said: "Yeah, yeah, this song is really good but we'd like to hear it done again". So you have to go through this building-up process.

'We actually choose to fund most of our demos ourselves. We don't go into a studio to record in the way that most people would approach a demo. It's very expensive and, as I say, record companies have this habit of wanting it done again. You *can* get a budget out of them to do that, but I feel that if you do most of your demos on a Portastudio and then master them, you retain a lot more of the freshness and spontaneity than you would if you'd already gone into it too deeply and exhausted some of the possibilities, or pushed them too far. I think it's a better idea to go in as fresh as you can to master. And rather than get the record company to put up money towards the studio, we'd prefer to have more gear here, like an eight-track or something.'

A Record company advances seem to take almost as many different forms as their recipients. And for every act that gets signed up, there's a different view as to the best kind of deal to go for. What was the Nightcatchers' approach?

'We went for a deal with low advances but reasonable percentages on sales. Advances are a weird thing because if you get a huge amount of money like some bands – say £100,000 – then you've got to pay for all your recording time out of that, but you're able to wear more expensive clothes, eat a little better and drink a bit more when you want.

The problem is that you're only throwing it away if you do that – you're not making it work for you. We've chosen to do it our way because we envisage ourselves staying in the business for a reasonable amount of time. We're not trying to get just one hit single and then quit.'

One single Nightcatchers have had, the 'hit' remains in the realms of fantasy for the moment. But the experience has been far from catastrophic, especially when the name of the producer turns out to be none other than Mark King, ace bass player with Level 42. RCA decided to bring in a producer for the A-side of the single, but allowed the band themselves to produce its reverse. So how did the single fair in the battlefield of radio station playlists?

'I think commercially it's flopped', admits Cornish frankly. 'Peter Powell championed it on Radio 1 and we got onto local radio playlists and did a couple of interviews with them, but that tends to be their diplomacy, so that if you do any good they can claim to have given you your first push.

'Tony Blackburn wouldn't play it because it wasn't souly enough, so that was Capital Radio and another respected name in the area we were trying to get into, that we'd lost. It's just not enough. We could have got TV, but without Radio 1 the television won't touch you, even though they might like to.

'But it's helping build us up in the same way as the ORS appearance, so I wouldn't call it a total failure in recognition terms. I wouldn't have liked the first single to get into the Top 10 anyway – you gain more respect by working your way up.'

And so to the subjects of the recording and the producer. How did a bunch of fresh-faced nobodies approach the prospect of the studio, and a name like King's to work with? Over to Murtagh.

'A short meeting was arranged with Mark at RCA but we didn't talk much about the music side of things, it was just to see if we thought we could work together or not. We both decided we could so we went ahead.

'We went away and spent quite a lot of time beforehand programming the drum machines and sequencers, because we weren't given a lot of time to actually master, so the idea was to go in with as much of it prepared as possible. In retrospect, we probably spent a bit too long preparing for it, but it was a reasonable job and we did it very quickly.'

'The choice of producer seemed appropriate', continues Cornish, 'as the song relies quite heavily on sequenced bass rhythms. We really wanted it to rock. I know I'm knocking our own material, but the problem was that there was so much there – we *could* have taken bits out, but it wouldn't have flowed. It would have been difficult to break it down without harming the arrangement of the song, and it would have involved a lot more programming and a lot more time in the studio.'

The success of magazines like the one you're reading now proves that the subject of equipment is rarely far from musicians' thoughts. That's probably more true today than it's ever been, and it's as true of the Nightcatchers as it is to anybody. Currently, the band use two Korg Polysixes, a MonoPoly from the same stable, two Roland MC202 MicroComposers, and a DX7 they've had access to for a short while. Surprisingly, Murtagh shows no enthusiasm for letting some of the older stuff go, though that doesn't preclude the acceptance of any new gear, should it become available.

'The Polysix is probably one of the better synths around. There are obviously limitations, but within those limitations it has some really good sounds. I've found the majority of MIDI analogue synths aren't very flexible, mostly because of the digital access. I prefer to have access to all the parameters without having to go into the memory. I'd like to get the Polysixes MIDI'd. I don't know how practical that is, but it'd give us a lot more flexibility in the studio, and live, for that matter. And the ability to link them to the DX would be an asset for the tonal colouration it would give.

'I'd like to get a DX permanently in here, so that I can come to terms with it a bit better. It's taking a bit of time to suss it out properly, with the different concept of the algorithms and all that. There are a lot of good sounds in there, but it gets a bit boring when you hear a record and you know that it's a factory sound. I'd like to know it in sufficient detail to be able to create a sound that I've got in my head.

'I'd like to get hold of a Mirage as well, if possible, as it's in the affordable category – but I'm interested in sampling in general.'

Highest on the Nightcatchers' current list of playing priorities is the writing and demoing of new material, a task for which two Portastudios are being put to work.

The inclusion of two MC202s was originally a concert measure, but has since proven itself to have applications beyond the band's live setup. Murtagh explains.

'More recently we've been using the 202s as tempo-controlling devices for the drum machines, and also experimenting with sync pulses on tape. With only four tracks to play with on the Portastudio it's given us a bit of useful extra scope with the drums. Using the sync pulses, it's really good to be able to re-program the drum pattern once you've got a few other things down on tape. You start off with a basic rhythm – a two- or four-bar pattern – and then rework the rhythm track once you've got the bass line and a few keyboards down.

'The drum machine we're using now is a TR909, but we've been using it to trigger the bass drum from the SDS5. Occasionally we use the Simmons toms too, but I've found the toms on the 909 quite adequate for demos. The Simmons bass drum isn't exactly the best bass drum sound around. It really is a bit dated, but again it's OK for demos. On the B-side of the single we used a ddrum, which gave us a great, punchy sound. I'd like to use that again.

'Before we had the 909 we were using a TR808 to trigger the Simmons bass and snare drums, but we were using two snare sounds then, and taking three triggers from the 808 meant we couldn't use the accent. Occasionally we used audio triggers to get round this, but the 808 is so limited program-wise, and it takes so long to program that it became impractical. The 909 snare seems to be pretty good and the hi-hat's a much better sound anyway, so we don't use the Simmons so much now. That'll come back into its own when we do some more live work.'

In fact, the band have previously placed a lot more emphasis on a live set, organised around pre-programmed rhythm patterns and sequences interworked with a live drummer. Under that regime, Nightcatchers material was adapted for studio recording when necessary. By today's standards that's not an unusual approach, and nor are the problems that invariably accompany it.

But the band's dissatisfaction with that way of working is more musical than technical. As a result, a lot of the band's songs are now being reworked using an acoustic drum kit, even though recording hassles still make it more practical to use a combination of drum machine and Simmons drums for demos.

Cornish: 'Although pressing a lot of buttons seems easier and more controllable than working as a complete band, it isn't quite so spontaneous.'

Murtagh picks the point up: 'When we were playing live we found we were limited by the arrangements we'd chosen for the songs. We never had the option to extend a song by another chorus or anything. And Pete was having to play in headphones all the time, which was rather restricting.'

Cornish again: 'I think it's a case of using what we've learnt programming sequencers and drum machines for the whole length of a song to allow us to use them within the context of playing in a band. Technology being technology, it will come round to being more controllable and help in getting that human feel back into the music – because that's what's been missing.'

Well, there's a lot of people waiting for something like that to happen – not least RCA Records, who've taken up the option of a second Nightcatchers single. The band have yet to decide which song they're going to nominate for the next 45, but is their hesitation a result of the record industry pressure we've all come to know and hate?

Cornish: 'I think we're under our own pressure more than theirs, because as soon as we've got the single, we'll know it's the one and they'll know it too. But we're still demoing at the moment. In my mind and, I think, in the minds of the record and management companies, the material we've written is strong enough, but not yet arranged in a commercial enough way. It's a problem because it's always difficult to disassociate yourself from your own material to see things their way.

'As soon as we've got the song and the producer for the next single we'll be back in the studio, probably early next year. I know we're going to come up with the goods because we all feel good about rehearsing like this. It's taken us a long time, but in that time we've been learning the recording side and the business side of it. That's the most depressing part: it's all money!'

In the meantime, the Nightcatchers have given themselves another confidence booster by taking on saxophonist Linton Levy. His permanent involvement follows frequent sessions and a guest appearance on the single, and his decision to join followed a long period of deliberation after his name was mis-spelt on the single sleeve. In the light of this potentially dangerous topic, I ventured one final question in Levy's direction.

Is the sax an endangered species in the present climate of ever higher technology and sophisticated sampling techniques?

The last words are his: 'No chance!' ■

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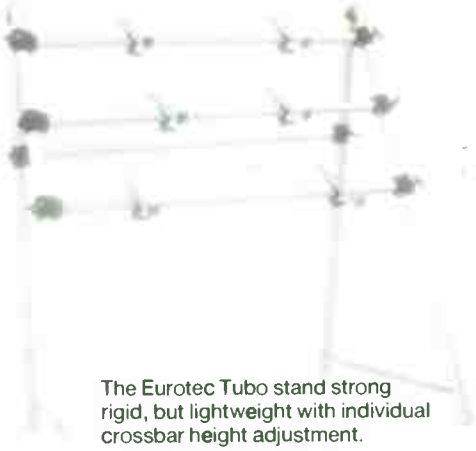

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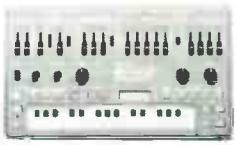

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WINDOW *shopping*

The Music Shop for MIDI is Passport's latest step-time composing software package. It works on the Commodore 64, it costs less than you expect, and it's pretty good. *Ian Waugh*

'There are two sides to every coin', my father would say with monotonous regularity when I was a lad. It was true, of course, but he obviously hadn't calculated the odds of it falling on its edge – or, if it was my coin, vanishing down a hole in the road. He also never considered the topological coin, which falls both sides down (or up, if you want to be optimistic), and which is probably the same thing as having your cake and eating it.

OK, so the above is hardly the last bastion of philosophical argument. But similar discussions are rife among MIDI software users at the moment. The only difference is that here the arguments rage over whether real-time note entry is better than step-time – and vice versa. Now, we looked at Passport's MIDI/4 Plus and MIDI/8 Plus real-time software packages in E&MM July, so it seems only right that we flip the coin over to look at the same company's step-time package, rather inelegantly titled The Music Shop for MIDI. So without further ado, let's open up the box and peer at the goodies.

It transpires that there are only two of these goodies: a software disk and an accompanying user manual. Of course, you need Passport's MIDI interface, too, which will put you the wrong side of £110. As we've mentioned in these pages before, several other manufacturers have adopted (or copied) Passport's interface, so you *may* be able to use one of these. Looming deadlines precluded practical tests of any of them, though, so try before you buy.

The program is designed around the Commodore 64 home computer, which must now be familiar ground to an awful lot of people. It supports Commodore's VIC1525 and MPS801 printers, as well as most other makes when used with one of those awfully clever interfaces which emulate Commodore graphics. There are actually two programs on the disk, and you must load the correct one for your printer. Once loaded, the program

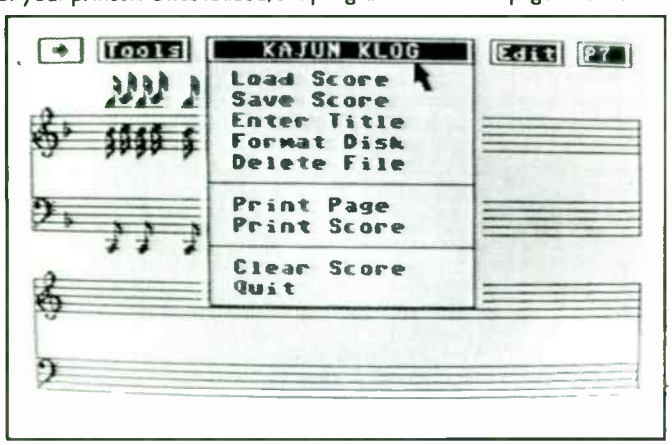
automatically plays through the demo files on the disk. These range from a decent 1812 Overture to the worst arrangement of 'Popeye' (the sailor man, toot, toot) I've ever heard.

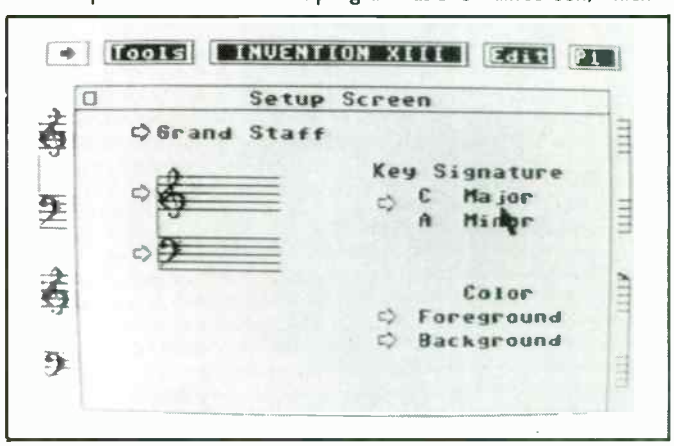
Loading takes a couple of minutes, and a quick glance at the manual while the drive is whirling reveals what appear to be photocopied sheets, some a little faint, and written entirely in upper case. However, all 42 pages are well-written and a couple of reference pages at the back summarise all the commands. A professionally-produced manual would have been nice; after all, apart from the nebulous disk, this is all you see for your money.

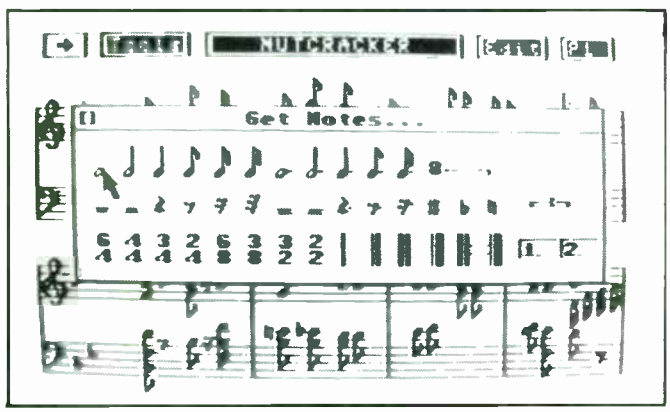
At the Start *'The demo pieces range from a decent 1812 Overture to the worst arrangement of "Popeye" I've ever heard.'*

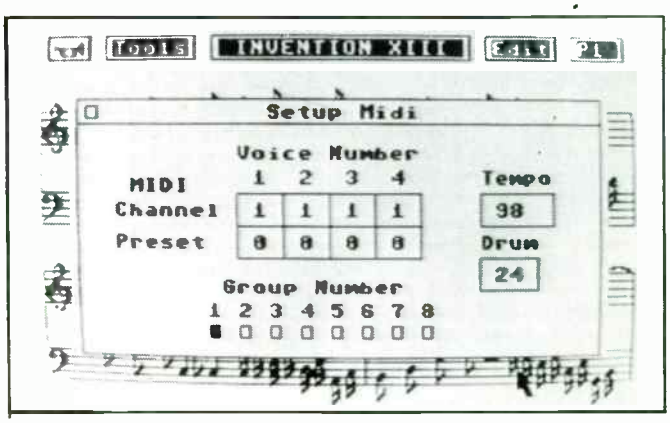
Anyway, let's skip the demo and make some music.

The program has one main screen, which









contains the staves on which you enter the music. Above the staves are three menu boxes – Tools, Title and Edit – and two status boxes. Menus and their options are selected by moving an arrow around the screen with a joystick (if you have one), the keyboard, or a combination of both. The joystick is initially the easier to use, but since many commands can be selected with a single key press (this bypasses the menus and selects options directly), key-pressing becomes the quickest and easiest option once a little familiarity has set in. Until then, point the arrow at a menu box, press the fire button and down pops the menu. Further movement of the joystick highlights each option, and pressing the fire button selects it.

The Tools menu contains the following options: Setup Screen, Get Notes, Setup MIDI, Verify Timing, MIDI On/Off and Single/Double Spacing. Setup Screen is what you use to select the type of stave you want to see displayed: Single Stave, Grand Stave (a double stave such as you might use for piano music) and Quartet (four staves). Music is entered in a series of Pages – a Page being as much as you can cram onto a single screen. You can write up to 96 pages using a Quartet Stave, 48 pages in Grand Stave mode, and 32 with a Single Stave. The initial key signature is selected from Setup Screen, too, along with the foreground and background colours. 'Just imagine,' says the manual, '"Greensleeves" in green, or "The Yellow Rose of Texas" in Yellow...' Alright, so it isn't exactly mind-boggling, but it does help find the best contrast to suit your eyes and TV/monitor. In fact, I often find myself wishing all computer programs had adjustable colour. Brilliant white text on a black background smudges all over my set.

A time signature is selected from Get Notes. You won't find anything as exotic as 5/4 or 7/4, but seeing as bar lines are purely arbitrary anyway, this probably won't worry you if you're advanced enough to use exotic time signatures. Get Notes also contains the notes, rests and accidentals, double bar and repeat bar lines, 8va, triplets and first and second time bar indicators. Items are selected by pointing the arrow and pressing the fire button. It's not necessary to select this menu for each new note, as these can be selected from the computer keyboard using 1 for a whole note (semibreve), 2 for a half note (minim), and so on.

Notes and symbols can also be 'picked up' from the screen by positioning the arrow (or currently-held symbol) over them and pressing the fire button. As soon as a symbol has been selected, a 'shadow' version of it appears above the arrow head. There are two or three ways of doing most things, so you can pick the method which suits you best. And although it might sound unlikely, the choice actually simplifies matters rather than confusing them, and the excellent reference page at the back is an instant answer to any queries.

You can place notes on the stave with the joystick, or you can just select the required horizontal position and press the required note or notes on a MIDI keyboard. The arrow then moves automatically to the next position.

This is where the Spacing option comes in. Single spacing places each note as close to its neighbours as possible, while double spacing leaves a note's gap in between. You can enter only one note at a time manually, but this

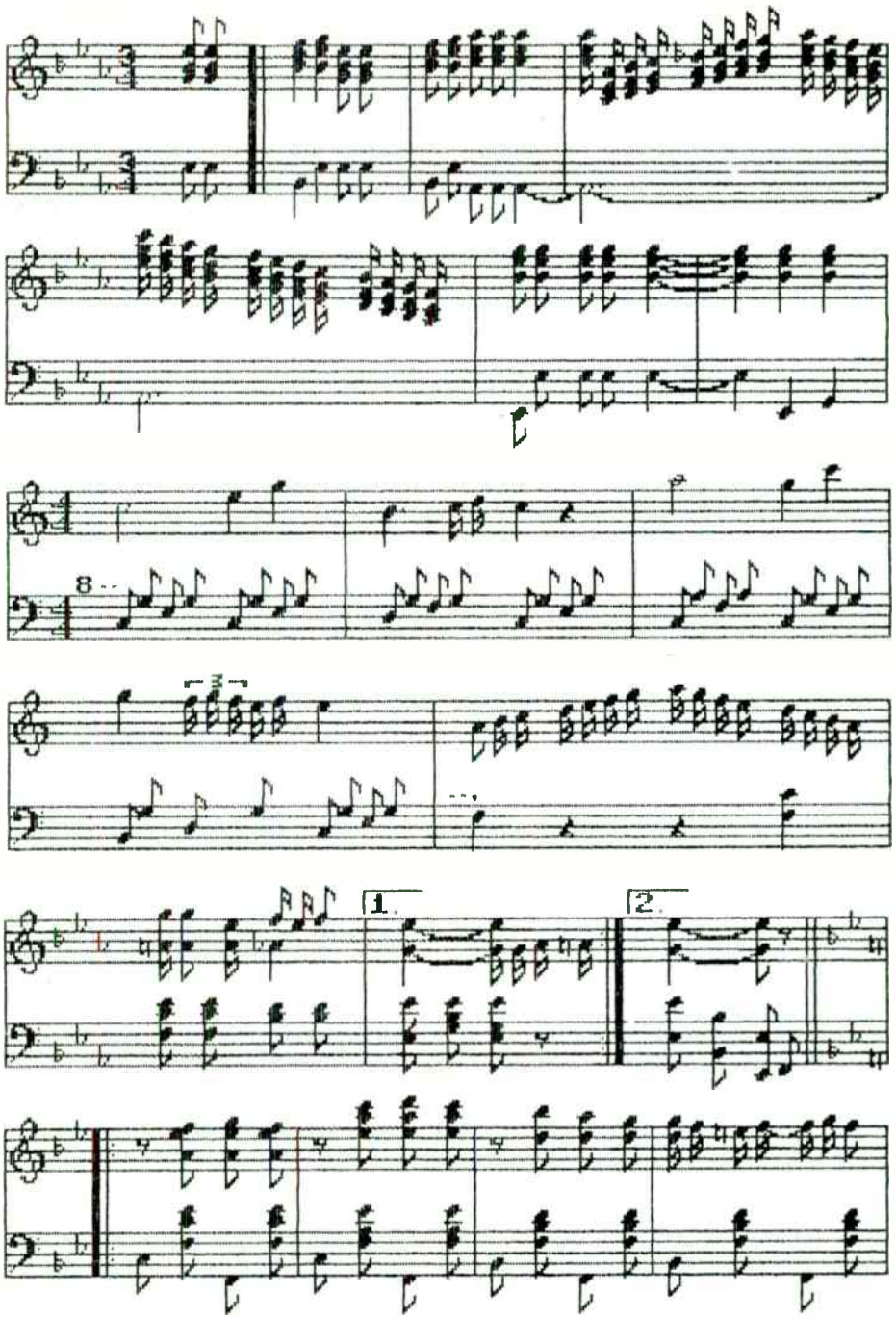


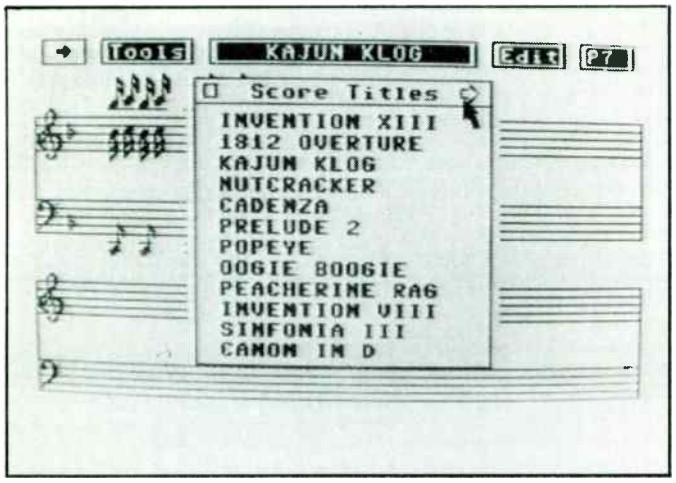
figure increases to eight if you're inputting from a synthesiser. Using a synth in single spacing mode, accidentals print on top of a previous note if the notes are close together, like C and C#. And the spacing takes no account of note values so, for example, four quavers occupy the same space as four semiquavers. This is important, because in order for the software to synchronise the piece correctly, notes that are to sound together have to be aligned vertically. If you want two lines of demisemiquavers (one above the other) to play together, you must keep an eye on the extra spaces between notes caused by accidentals – or plonk accidentals over the previous note, which makes for a very messy score.

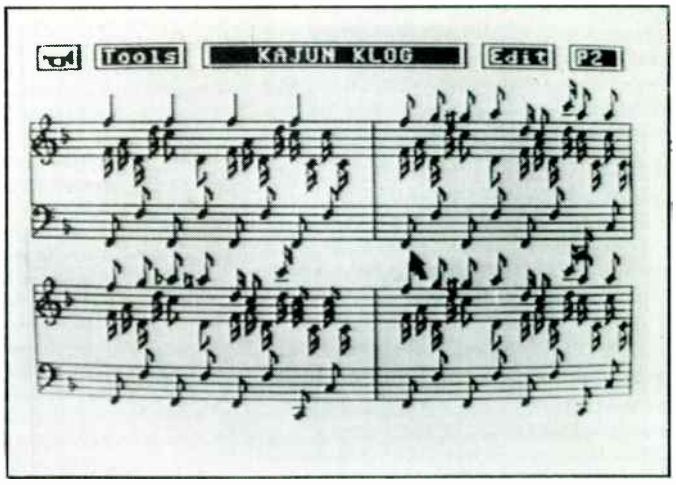
Rests are obtained from the Get Notes menu or by pressing R. It would be nice if they automatically centred on the stave, but they don't. To erase a note or symbol, you place the shadow symbol over the error and press the fire button twice or the E key.

Spaces can be inserted and deleted easily, but as soon as you insert a space, everything to the right of the space is shifted right. If you insert too many spaces, they push notes off the end of the stave, never to return – each stave is thus a little island unto itself. Notes don't automatically fall off the top stave and onto the bottom one, nor do they flow from one page to the next. Each new page must be purposely selected, as must movement from one stave to the next.

You'll find your piece of compositional genius builds up a screen or page at a time, and the page number is displayed in the top right status box. While you can insert spaces within a stave, you *can't* insert extra pages. That might sound like an important editing omission, but in practice it should only prove a nuisance if you're careless and accidentally miss out a whole chunk of music. Even then, chances are you'll find a means of editing your way around the problem.

Bar lines, if you want them, have to be inserted manually, and the accidentals rule (affecting a note only for the duration of the bar) is obeyed. The Verify Timing option checks to see if each bar has the correct number of beats in it. This can be a great help in some situations, but during testing, it took a dislike to some of my wilder musical extravagances, and reported errors where





none existed – on screen, at least; who knows what was going on in the software?

The Edit Menu is used to handle large blocks of music, as opposed to little note-by-note melody sections. Its first option is Capture, which puts you in control of a rubber-band box that you use to surround your target. With the box in position, you can select Cut to remove what it contains from your score, or Copy if you want to copy it somewhere else. Clear erases the entire section and leaves an empty abyss in its place, while Cut moves up the remaining notes on the stave. Finally, Paste lets you stick a Captured section elsewhere in your score.

The Title menu offers the following: Load Score, Save Score, Enter Title, Format Disc, Delete File, Print Page, Print Score, Clear Score and Quit. The Load option lists the available files so you don't have to break out of the program to catalogue a disk. The Format option is an especially welcome facility, and one that *should* be included in all utility programs (journalist gets down off soapbox).

Print Page does what its name suggests it might, but it only prints your music, not the title you've given it. An MPS801 printer took about two minutes to print a page, which is OK. Print Score prints from the currently-selected page to the last page it finds notes in.

The printout is basically nothing more elaborate than a screen dump, but it produces excellent results. The legibility of the music still depends on you, though.

The Setup MIDI option allows you to set MIDI channels and program which of the connected instrument's sounds you want to hear. The software controls only four Voices, but each of these can be assigned a MIDI channel from 1 to 16. Each Voice is allocated a Preset number from 0 to 99, which selects the voice to be played by whatever's connected to that channel. A drum clock rate can be set to 24 or 48ppqn, and an overall tempo control runs from 40 to 200 beats per minute. These settings are saved together as a group number, and you can program up to eight such groups. While you're messing about – or finely tuning the system, whichever way you want to look at it – you can put the music into a continuous loop so you can hear how the various voice settings affect it. The eight groupings are programmed onto the music score by pressing the CMDR key and the group number – this prints the number inside a small box.

The program assigns voices to channels according to the Stave in use, so that on a Grand Stave, for instance, notes on the top stave with their stems up are assigned to Voice 1, those with their stems down are assigned to Voice 2. The lower stave is assigned Voices 3 and 4. There's no provision for storing pitchbend, modulation or velocity data, which some will see as a more important omission than others. Presumably, Passport's software writers don't feel people interested in a 'composing' package like this one are going to be too worried about 'performance' features such as those above. I'm not so sure about that. After all, there's no reason why users of step-time software shouldn't want access to keyboard dynamics in much the same way as they want access to keyboard pitch information – or so I'd have thought.

Conclusions? Well, let's face it, real-time programming isn't for everyone. It's particularly useless for those less deft of finger than nimble of brain (that probably lets me out on both counts), and step-time programming overcomes a lot of real-time's problems without introducing too many of its own. It allows you to program lines which are physically impossible to play, and it makes sure any arrangement is note-perfect in a way few real-time systems, even those with quantisation, can equal.

All in all, it proved quite easy to enter a piece of music using Passport's route to step-time happiness. I was averaging three to four minutes per bar, one of which could contain upwards of 30 notes. That *is* a long time by comparison with real-time recording, but this is the price you pay for the versatility step-time writing gives you – and I was trying to keep my scores as tidy as possible.

The program is easy to understand and therefore easy to use, and if you're reasonably familiar with traditional musical notation, it's a fine introduction to how that notation can play a part (no pun intended) in the world of MIDI sequencing.

At the End *'It proved quite easy to enter a piece of music using The Music Shop... I was averaging three to four minutes per bar.'*

Still, a couple of things did start to niggle me after I'd been using The Music Shop for a while. The first revolved around the editing facilities. I should confess that, having used a good many music editors in the past, I tend to look for my favourite features on each new one – which is why I eventually found fault with what Passport have and have not provided on this package.

For instance, why not scroll the staves across the screen the way Island Logic's Music System does? I missed auto bar line insertion, too, and occasionally hungered for correct spacing of notes and positioning of rests to appear automatically. Also missing are a simple way of block-erasing a cluster of notes and a facility for stopping the arrow moving on automatically after each note entry.

MIDI-wise, channels and voicings are a doddle to set up, but as I've said, quite a few MIDI options are just not included, which is a shame.

The ideal, of course, is the topological software package that incorporates real- and step-time note entry. Only trouble is, it's not very often a coin lands both sides up, so there aren't too many topological packages that do more than show a hint of what real- and step-time writing can achieve without really offering the best of either. If you *are* keen to have the best of both worlds, you can always buy The Music Shop for your step-time composing and another package for real-time recording. Which is OK in theory, but likely to cost a lot of money, and leave you with the unfortunate impossibility of not being able to transfer music from one package to another.

The blurb on the case claims The Music Shop for MIDI '...is to a musician what a word processor is to a writer'. If that's the case, its way of doing things is more Alastair Maclean than Franz Kafka – quick, neat and properly sorted, but not quite as sophisticated as it might be. ■

Thanks to Steve Currie and Alan Maughan of Currie and Maughan for use of their MPS801 printer.

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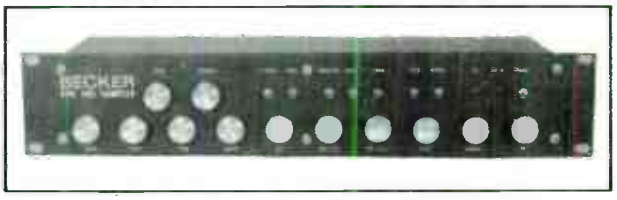

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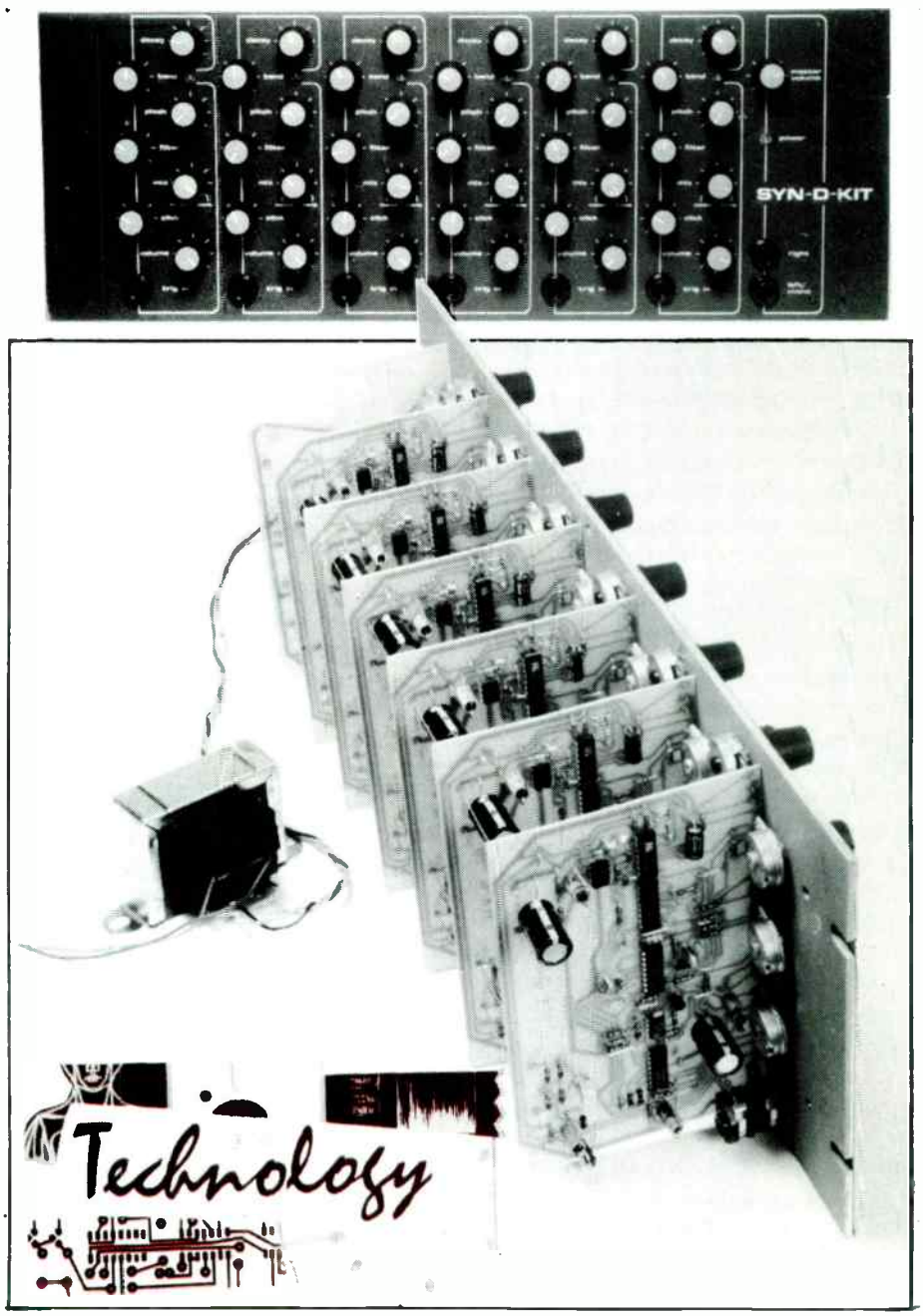
EXCLUSIVE

SYN-D-KATION

E&MM maintains relations with its sister magazine, 'Rhythm', long enough to bring you details of a DIY electronic drum system called the Syn-D-Kit. The designer has the details. *Paul White*



You've read the adverts, you've seen the drums on telly, and you've even played them down at your local High Street music shop. But each time you look at your bank statement, an electronic drum system seems further away than ever.

This is not to say that the current electronic kits don't give value for money – most do. But quite simply, if you ain't got enough dosh, you ain't got enough dosh, right? Wrong.

Armed with a modicum of electronics skill (or a friend with a modicum of electronics skill), and a fair amount of enthusiasm, it should be quite possible for you to enter the world of electronic drums – even if you're stricken with chronic constriction of the wallet.

Designed here in the offices of the multi-national Music Maker publishing conglomerate, the Syn-D-Kit is an easy-to-build analogue drum kit, capable of producing all the contemporary electronic drum sounds – which means you too can play drums on the soundtrack to a TV cop show of your choice.

It has up to six fully-variable channels, with mono/stereo mixed or separate outputs, and the whole system fits neatly into a 4U × 19" rack-mountable case. It's designed in modular form, which not only makes it a doddle to build and test, but also allows you to construct one channel at a time, expanding it as and when finances allow. Additionally, you can also choose between buying commercially-made drum pads (a five-piece set of which we're running a special offer on) or building your own.

In order to keep costs to a minimum whilst retaining a high standard of performance, certain fancy items such as factory presets and programmability have been left out. Apart from that, Syn-D-Kit has everything you need to get on the road to electronic drum stardom. All you have to add is talent...

Construction is fairly straightforward and incorporates only two different types of circuit board – the 'voice' board and the 'master' board. As its name implies, the voice board generates the basic sound with one being necessary for each channel, and a maximum of six channels may be assembled in the 19" cabinet. The master board contains a master volume control and its associated mixing circuitry, and also the power supply used to power the voice boards.

Wiring between boards is minimal, consisting as it does of a few straight wire 'bus bars' – though separate wiring with co-ax cable is required for the outputs, and there's also a little wiring to and from the transformer. As previously intimated, the Syn-D-Kit, is quite straightforward to build, but a certain amount of electronic knowledge has to be assumed, and I wouldn't recommend this as anyone's first electronic constructional project.

Basically, you'll need to be able to solder neatly, identify components, and be able to read the resistor colour code. After that it should be plain ▷

It'll sound just as good down the Victoria as it will in the Albert Hall.

Whether it's a small or large venue the AX80 has the power to produce the goods. It's built to be played at gigs of all shapes and sizes, and to give you a big sound.

The eight-voice programmable polyphonic synthesiser offers ease of operation combined with the best of today's music technology.

The keyboard has a superb feel, offering full touch sensitivity.

Our stylish front panel allows the selection of 32 internal presets through reliable and positive touch-pads.

And you can store up to 64 of your own sounds editing them to suit any of their characteristics simply by means of a single button.

The oscillator, filter, LFO envelope-generator and VCA functions are also selected at the press of a button, while the unique fluorescent bar-graphs give you accurate graphic displays of the sounds you create.

In fact, the AX80 is so easy to operate that others find it hard to follow.

The price is hard to follow too. At under £800 the AX80 is a great buy.

It could be your first step to the Albert Hall.

The AX80 high velocity synthesiser. AKAI

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▷ *sailing – providing you double-check everything thoroughly before switching on.*

As far as tools go, you'll need (in addition to a soldering iron), a pair of side cutters, a pair of snipe-nosed pliers, and a drill (preferably electric). A desoldering tool would be a definite advantage, too.

There's nothing more frustrating than finding that half the items required to build a kit are unobtainable through commonly-accessible component suppliers. The best way of solving this would be for us to make available a complete kit of parts for the project, but sadly cost and logistics mean this just isn't possible. Still, we've come up with what we consider to be a very good compromise.

All the electronic components required to build the Syn-D-Kit are available from Maplin Electronic Supplies, who besides selling components by mail order, also have five branches in various parts of the country – so at least you shouldn't have to chase up and down looking for obscure ICs and the like.

The PCBs are available through E&MM, as is the 4U rack-mounting case and a self-adhesive control panel overlay, which gives the unit a very professional appearance; not only that, but all the holes are marked on it so you stand a good chance of drilling in the right places. Ordering any of these items also gets you full details on how to go about building and testing the Syn-D-Kit, plus a complete parts list – thus leaving as small a margin for error as possible.

Alright, so you've been tempted into giving it a go. What do you get for your money? Well, all the voice channels are identical and are capable of producing electronic bass drum, snare and tom-tom voicings, using the ingredients of tone, noise and stick click. Additionally, each channel has its own Sensitivity and Pan controls, but as panel space is scarce, these are preset controls mounted on the circuit board.

The panel controls themselves are Decay, Bend, Pitch, Filter, Mix, Click and Volume, the trigger input being via a quarter-inch jack socket. To the right of the front panel is the master volume control, while below this are the left and right master outputs, which provide a stereo mix of all six channels. Each channel also has its own separate output, which can be connected to a socket on the rear panel if required.

Most commercial drum pads (with the possible exception of Simmons) have a sufficiently large output to 'fire' the Syn-D-Kit modules, but the Music Maker empire, in conjunction with MPC Electronics, has arranged to supply sets of either red or chrome circular pads with a rubberised playing surface, and complete with stands and leads, at a very advantageous price to readers (see later).

In the interests of keeping costs down as much as possible without sacrificing sound quality, we've omitted such niceties as preset sounds and programmability. Which means you're pretty much on your own when it comes to setting up drum voices. Not quite on your own, though, because what follows is a brief guide to getting decent sounds out of your Syn-D-Kit without bother.

If you've used an electronic drum synthesiser before, you'll know that in addition to the jolly splendid sounds that can be produced, there is also an infinite number of quite nasty ones lying in wait to assault you whenever you're caught unawares. However, to design a drum synth that produces only good sounds would seriously limit its creative use, and above all else, the Syn-D-Kit is intended to be versatile.

The first thing that most musicians want to do with any drum synth is to get it to sound like a kit containing a bass drum, a snare drum and a number of toms. Sod the imagination: that's what a drum synth is supposed to do, isn't it?

OK, let's start off with the bass drum sound, as this isn't usually too difficult to get right. You'll need to plug the Syn-D-Kit into a decent amplification system if you're going to get a convincing sound out of it. An acoustic kit can put out the equivalent of a couple of hundred watts, so piddling little practice amps or Auntie Ethel's old gramophone are out. Likewise headphones which, unless you go for very expensive ones, tend to lack the punch to do the job properly – though having said that, they are ideal for practice.

Start off by setting the Pitch control to minimum, and use the Bend control to tune the sound. The Balance control should initially be set so that the output is all tone and no noise – you add the noise later. At this point, you'll have something resembling a dull, lifeless thud. Once you've got that far, you then have to vary the Decay time so that the thud becomes short and punchy.

Unless you are easily satisfied, the sound will still be unacceptable – that's largely because it has no attack. Using the Click control, add just enough click to give a convincing impact to the sound and things should start sounding a lot better – though you may well find things are still a bit too clean even at this stage.

The Balance control allows you to blend noise with the basic tone, and this can create the illusion of a drum head flapping, or in the case of the snare drum, of the snares vibrating. Additionally, the Filter control changes the tonal structure of the noise, and in the case of the bass drum, this should be set to give it a soft character.

To set up a decent snare drum sound, proceed in much the same way as you did for the bass drum, though setting the pitch higher, obviously; this is best achieved by using more Bend and slightly increasing the setting of the Pitch control. The sound of the snares themselves can be introduced by turning the Balance control until the noise is louder than the tone, and then tuning the filter to give the required brightness of snare rattle. Re-adjusting the Balance control to the optimum tone/snare ratio should leave you with a fair imitation of an acoustic snare drum.

Tom-toms also require that you begin in the same way you did for the bass drum – though you should try to get the pitches of the various toms sorted out so that there is a sensible interval between drums. It's possible to tune the toms using only the Bend control, but if this gives too great a pitch sweep, reduce the setting and raise the pitch using the Pitch control instead. The setting of the Noise filter can play an important part in achieving a realistic sound, but your ear will soon tell you what is right on this score. Don't add too much noise unless you specifically want an 'electronic' sound, but remember that a little noise can often help the sound cut through the rest of the music a band makes, for instance.

Decay time is also important, because if you set it too long, the sound will again be obviously electronic. Which is fine if you like that type of sound, but not so hot if you'd like something a bit more conventional. If you fall into the latter category, keep the decay times shorter and try adding a little reverb (if available) to improve sustain. As with all drum simulations, a short decay time will give you a tight, dry result that sounds more like a damped studio kit than a synthesiser.

Outside the conventional voices of a drum-kit, the Syn-D-Kit is of course capable of a whole range of weird and wonderful sounds. You may well end up feeling this is what it is best used for. Experimentation is clearly the order of the day here, and once you've got used to the controls (and it shouldn't take too long), you'll be able to set up your own sounds quickly and instinctively. If you happen to come across a setting that's so wonderful you think we ought to know about it, tell us and we'll give it a try and pass it on.

As the output from the Syn-D-Kit is electronic, effects units can be connected directly between the output and the amplifier, making sound treatment simplicity itself. Effects such as reverb, echo and flanging can be particularly effective. ■

Syn-D-Kit Prices *Voice and output PCBs £4.95 each (includes parts list and assembly/testing instructions); six-channel overlay panel £4.95; 19" rack-mounting cabinet £22.95; set of five MPC drum pads including stands and leads, £149.95 (please state choice of either red or chrome). All prices include VAT and postage & packing. Please make cheques/POs payable to Music Maker Publications, or ring our Mail Order Department and quote your Access/Visa number. Please allow 28 days for delivery.*

prophet 2000

Digital Sampling Keyboard Instrument

Sequential is proud to introduce the Prophet 2000, an 8-voice professional quality sampling instrument. Based on 12-bit digital technology, the Prophet 2000 will reproduce any sound you sample with astounding realism and studio quality audio fidelity. And that's just the beginning! Once you've sampled a sound (or selected one from our library of pre-recorded factory disks), you can modify it by using the many digital, analog, and keyboard controls provided. Each voice features a 4-pole, low pass VCF, a VCA, and velocity controlled, four stage envelopes. You can assign multiple samples (up to 16) anywhere on the keyboard. By assigning two or more samples to the same keyboard range you can create layered sounds and multiple-voice stacks for unison effects.

The Prophet 2000's velocity sensing 5-octave keyboard provides you with precise control over loudness, modulation amount, timbre, sample start points and crossfading between two separate sounds. The keyboard's weighted action responds positively to every nuance of your playing technique. Additional user-sampling enhancements include a variable input level control, complex sample editing (reverse, mix, truncate), and automated looping functions such as computer assisted zero cross-over and zero slope selection to help you find the best possible loop points.

The Prophet 2000 comes with multiple wavetables stored in on-board memory for building "traditional" synthesizer sounds. You can play these sounds alone or in conjunction with sampled sounds by splitting the keyboard or layering sounds on top of each other. The on-board 3½-inch disk drive provides you with a fast and easy method of storing your sounds and custom programs.

The Prophet 2000 features complete MIDI implementation, as well as very impressive arpeggio capabilities including programmable up, down, assign, extend, auto-latch, and transpose modes.

Superior sound quality has long been a trademark of Prophet instruments. The Prophet 2000 adds to this legacy.

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HERE IN BLACK & WHITE...

...is Korg's latest flagship polysynth, the DW8000. It adds keyboard sensitivity, a bigger synth section and a built-in digital delay line to the spec of its predecessor, the 6000. And they make a big difference. Words *Simon Trask* Shots *Tim Goodyer*

Your eyes do not deceive you. The new Korg DW8000 has its origins in the company's previous top-model polysynth, the DW6000. That machine was released to generally favourable reviews earlier this year (E&MM reviewed it in March '85), but at an initial asking price of £1099, its lack of a touch-sensitive keyboard meant that it came off badly in the face of immediate competition from Roland's JX8P and Yamaha's DX7.

Six months later, the 6000 has fallen to a more realistic price of around £700, and the 8000 has arisen to take its place at £1075. Not only is the DW8000 touch-sensitive (attack velocity and channel aftertouch), but it also replaces the 6000's built-in chorus with what must be a world first on a synth: a built-in digital delay line.

You may well have seen, or even have had a brief go on, the DW8000 at the British Music Fair. You may even have set eyes on a prototype voice expander, the EX8000, which packs all the new synth's sound circuitry (including a duplicate DDL) into a rack-mounting MIDI box. What you may not know is that as soon as the Fair was over, the synth was whisked back to the land of Korg to have a better keyboard fitted, and a better set of sounds programmed into it. Which is why it's only now that we've been able to get our hands on one.

Now, you're not going to get a wooden

weighted keyboard for this sort of money, but the new set of ivories(?) is pleasant enough to play, and have probably been worth the extra effort Korg have gone to. The sounds, meanwhile, have *definitely* been worth it.

In fact, touch-sensitivity and the built-in DDL are only the 8000's most obvious additions. Other developments over the 6000 are an increase to eight voices (hence the 8000: geddit?), the inclusion of 16 as opposed to eight digital waveforms, and the addition of an arpeggiator, a fourth key assign mode, a choice of waveforms for the modulation generator, and a new 'auto-bend' feature which allows an initial slur up or down to the main note(s) to be programmed for each oscillator. There are also, of course, extra voice-programmable parameters to handle the digital delay, aftertouch and velocity-sensitivity.

The back panel reveals the same selection of sockets and switches as on the 6000, ie. MIDI In, Out and Thru, left/mono and right stereo outputs, stereo headphone output, damper (hold), portamento and program up pedals, tape in/out mini-jacks, a tape enable/disable switch, and a write enable/disable switch (which allows or disallows storage of patches). Like the 6000, the 8000's external storage is to tape only, unless some bright spark comes along and writes some suitable patch-dump software that'll work via MIDI.

If you're not a fan of Korg's approach to front panel access (pioneered on the Poly 61, the first of Korg's polys to use digital access), then you're unlikely to be enamoured with the 8000 – it uses exactly the same system. Thus, there are two buttons for selecting programs and parameters, numeric keys for selecting program and parameter numbers, and a data slider and +/– buttons for selecting parameter values.

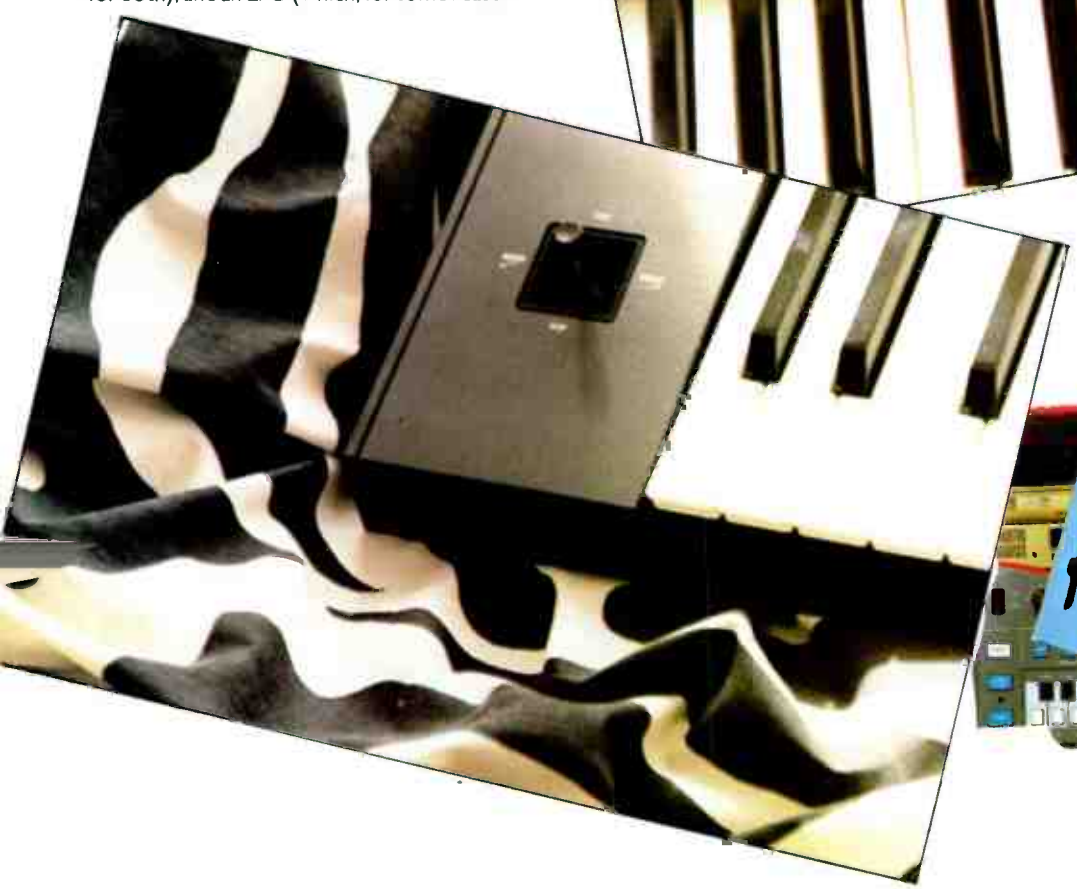
Thankfully, the visual layout of the 8000's parameter table is much improved over that of the 6000, while the clear layout of the various selector buttons is the same as before. Also retained is a very useful facility called Bank Hold. Summoned at the press of the ▷

▷ button, this allows the left-hand digit of either the program or the parameter display (depending on which you select) to be 'held', enabling single-keypress changes to be made within a bank. This is particularly useful when you're editing parameters, where it can be handy to freeze the bank number while you're working within a bank (the DDL parameters, for instance, are parameter numbers 71-76). Personally, I don't find Korg's editing system as it's presented on the 8000 to be too bad – but it would still be handy if the company could come up with an 'analogue' programmer to serve the same function as Roland's PG800 does for their JX8P poly.

Like its predecessor, the DW8000 uses a sound-generation system of Korg's own devising, called the Digital Waveform Generator System. (So now you know where the 'DW' comes from as well; aren't these names wonderfully logical?) I won't go into the system in detail as it's already been covered in the aforementioned review of the DW6000. So suffice to say that it's based on digitally-encoded complex waveforms, created by additive synthesis and then stored on ROM chips. There are two digital oscillators for each of the 8000's voices, which allows different waveforms to be mixed together.

Facilities *'The arpeggio section is a half-hearted affair that's more a relic from the past than a useful facility for the present.'*

On top of this digital complexity, Korg have put an analogue noise generator, VCF and VCA (with independent six-stage envelopes for both), and an LFO (which, for some reason



best known to themselves, Korg have always termed a Modulation Generator).

What all this gives the budding synth programmer is a system that's essentially familiar and therefore easy to use. It's capable of producing rich analogue-type sounds (including some *very* nice electric piano and string voices) as well as some typically electronic ones. But you can also coax it into producing a hard, metallic edge to its output that's as clear as the DXs' without being quite as strident. If you buy an 8000, it'll come to you complete with a cassette containing 128 different factory patches, 64 of which are not on the synth when you power it up.

MIDI *'An interesting feature is the Device ID Request, which allows a computer to receive the 8000's MIDI ID number.'*

As for the synth's new-found sensitivity in the keyboard department, you can set velocity-sensitivity to act on either amplitude or timbre (which means connecting it to the VCA or VCF respectively). Aftertouch can be applied in a similar direction, and also to the modulation generator's oscillator.

If you've ever crossed swords with Korg's flimsy joystick performance controller in the past, you won't be overjoyed to learn that it's still present on the 8000. My own personal feeling is that though it *does* look tacky and is a bit on the insubstantial side, it nonetheless provides a handy degree of flexibility in combining performance effects. Pitchbend up/down, filter cutoff frequency, and modulation of the VCF and oscillators by the MG can all be controlled from the joystick, more or less at the same time – and that's something traditional pitch and mod wheels don't normally cope with.

Korg didn't put an arpeggiator on the 6000, and frankly, I don't really see why one has found its way onto the 8000. What it gives you is a Speed Change control, an Octave switch that allows you to decide whether you want your arpeggio reproduced over one, two or all available octaves (a feature that dates back to the Korg Polysix), up/down and assignable modes of operation (the latter reproduces the notes in the order you play them), and a Latch switch which allows your arpeggio to carry on playing once you've lifted fingers from keys (it's advisable to switch this on *before* you start playing).

OK, so you can produce some pretty patterns without really being able to play. But the 8000 can't remember your arpeggio once you exit the arpeggiator, and you can't play along with it on the synth itself – so you'll need another machine if you want to do any more than listen to your handiwork. The arpeggiator can be synced to a MIDI sequencer, but overall the section strikes me as a very half-hearted affair which is more a relic from the past than a useful facility for the present. Even the Poly 800's sequencer had more to offer.

Much more worthwhile is Korg's built-in DDL. This manifests itself as six voice-programmable parameters, so that each of the 8000's 64 patches can have its own DDL patch, too. Parameters are Delay Time (adjustable in a range of 2-512 milliseconds), Factor (which is a fine adjustment of the delay time, from × 0.5 to × 1.0), Feedback, Modulation Frequency (speed of the LFO output used to modulate the delay time), Modulation Intensity, and Effect Level (level of effect in relation to original sound). That's a more comprehensive array than you'll find on many a budget dedicated delay, and it's flexible enough for you to be able to set up a healthy quantity of different treatments, ranging from very dry, sparse effects to long, repeating echoes, with everything in between.

I approached the DW's delay line with scepticism because it looked like a gimmick. In reality, it turned out to be an intriguing and extremely useful addition to the synth's arsenal of programmable parameters. The only fault I can find with it is that, not being a MIDI-derived delay, its results are not communicable over MIDI. So if you had ideas of transferring repeat echoes from a sound on the DW8000 to another on another MIDI synth, you're in for a disappointment. Personally, all I'm waiting for now is the time when manufacturers get round to including digital *reverb* as a voice-programmable feature in synthesisers. Now that really will be something...

MIDI parameters available from the Korg's front panel are memorised, but are not voice-programmable. These parameters are MIDI channel number (same for send and receive), note data or all data send/receive (as on Yamaha's more recent synths, this allows for distinctly non-selective data filtering), Omni reception on/off (annoyingly, this is reset to On every time you power up), and internal/external clock (with three different note values) for syncing the arpeggiator to MIDI sequencers and drum machines. Not a particularly versatile set of facilities, especially when you consider that Roland's JX8P offers a much more thoughtful set of MIDI parameters, including more selective data filtering. Still, Korg have included a facility that lets you put the 8000 to rights very quickly if it starts playing up in a MIDI system: just press the front-panel Write button and the 8000's circuitry is automatically reset. A helpful, realistic thing to have around.

Sounds *'Korg's DWGS is never going to make as big a splash as FM did...but it's capable of producing a whole host of excellent voices.'*

One area where Korg deserve a lot of praise is the MIDI documentation that's in the 8000's manual. Specifically, the pages house full details of the various System Exclusive send/receive messages necessary to establish communication with the outside world, together with the 8000's bit map and cross references to the parameters themselves. In short, there's everything an enterprising software house needs to come up with some sophisticated MIDI patch dump and editing software for the DW8000.

An interesting MIDI feature is the Device ID Request, which allows a computer to request and receive the 8000's MIDI ID number. Now, being able to identify which instrument is on the end of a particular MIDI channel opens up the possibility of detailed interrogation of a synth's capabilities – and that could mean one hell of an intelligent sequencing package in the not-too-distant future.

The new Korg's parameters can be edited in 'real time' over MIDI, and interestingly, the company's implementation of System Exclusive on the 8000 makes all data transfer and associated requests channel-specific, something that allows for sophisticated addressing of one or more DW8000s within a MIDI system.

The DW8000 is the instrument the 6000 should have been. Even though its built-in DDL is the only thing about the big Korg that stands out as being genuinely new, the synth performs and sounds well enough for it to stand up against the best of the competition from Roland, Yamaha and the rest.

Korg's proprietary Digital Waveform Generator System is never going to make the same size splash as Yamaha's FM did; when all is said and done, it's basically traditional analogue with some added advantages courtesy of digital manipulation and memory. Yet it does seem to be capable of producing a whole host of excellent sounds, now better-programmed by the factory, more responsive thanks to the addition of touch-sensitivity, and given greater potential by the inclusion of the DDL.

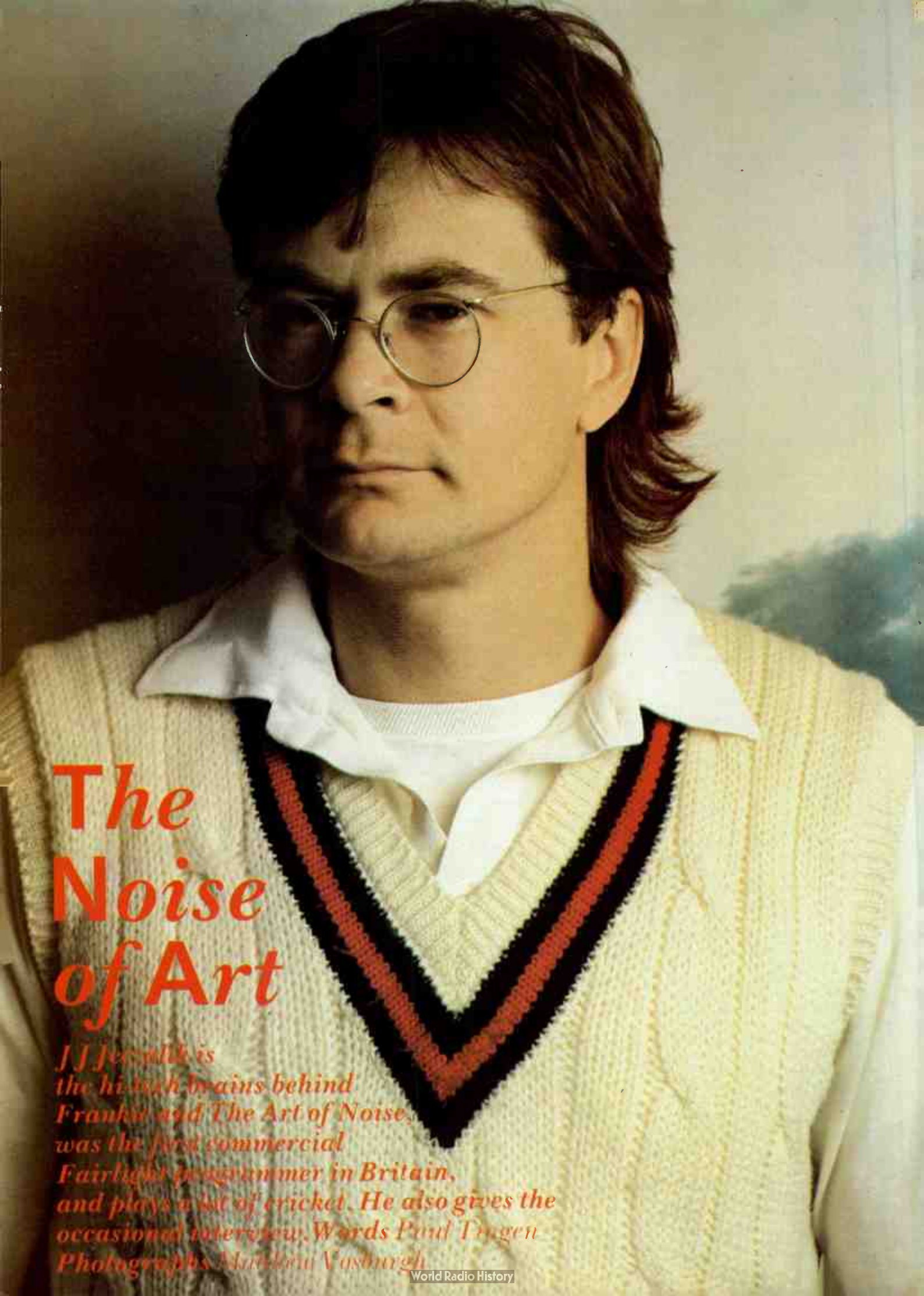
On the performance front, the DW8000 doesn't have anything to compete with the new-fangled split and dual keyboards or Yamaha's performance memories, but as I've already mentioned, its joystick is more versatile – and more usable – than many, and its keyboard is one of the best Korg have fitted to a synth for some while.

In an ideal world, every synth player would have an analogue synth and a digital one. Failing that, the average musician would probably opt for an analogue instrument that could also have a bash at digital-type sounds without being knocked out in the first round. Which, as luck would have it, is exactly the sort of instrument the DW8000 is. ■

DATAFILE

Korg DW8000 Programmable Digital Waveform Polysynth

Keyboard *61-note C-to-C; attack velocity and channel aftertouch*
Sound source *16 digitally-encoded waveforms stored in four 256kBit ROM chips*
Voicing *Poly 1 & Poly 2 eight-note polyphonic, two digital oscillators per voice; Unison 1 & Unison 2, all eight voices assigned to each note played, choice of single- or multi-triggering*
Memory *64-voice RAM*
Display *3 × 2-digit LED windows*
Interfacing *L/Mono and Right stereo outputs; stereo headphone output; damper, portamento and program up pedal inputs; Tape In & Out mini-jacks; Tape and Write Enable/Disable switches; MIDI In, Out and Thru*
Dimensions *998(W) × 338(D) × 101(H)mm*
Weight *10.9kg*
Price *RRP £1075 including VAT*
More from *Korg UK, 32-34 Gordon House Road, London NW5. ☎ 01-267 5151*



The Noise of Art

JJ Jeczalik is the hi-tech brains behind Frankie and The Art of Noise, was the first commercial Fairlight programmer in Britain, and plays a bit of cricket. He also gives the occasional interview. Words Paul Tingen Photographs Matthew Vosburgh

The village of Bagshot, just about far enough from the metropolis to be Surrey first and London second, is exactly the sort of place you'd expect to find J J Jeczalik. It's full of sedate, half-timbred houses, leafy avenues, big back gardens with tennis courts in them, and above all, cricket pitches. For a sound engineer turned producer turned computer programmer turned silly mid-off, it's an ideal place of residence.

The Saturday morning we go down to meet him is sunny and bright, and Jeczalik, a tall, sturdily-built man, is already in his whites pending a limited-overs game against the next village but one, postponed for many weeks during what has been one of cricket's worst summers for years. He displays a dry sense of humour, a knowing, intelligent smile, and a very evident love for the word 'wacky'.

Which isn't surprising, seeing as Jeczalik is the man responsible for most of the 'wacky' Fairlight noises on Frankie Goes To Hollywood records. That's his single biggest claim to fame, but there are a host of smaller ones, like producing Stephen Tintin Duffy's 'Kiss Me', and acting as the hi-tech nerve centre behind The Art of Noise, who are Very Wacky Indeed.

Before he did any of those things, Jeczalik was one of the first Fairlight programmers in Europe, and as such, contributed to a wide range of records by an equally wide range of artists, from ABC to Paul McCartney, from Kate Bush to Dollar.

Born in Oxfordshire of an English mother and a Polish father, the programmer entered the music business as a roadie for Landscape, after deciding that his place on a Geography degree course could be more constructively filled by somebody else. He quickly swapped Landscape for The Buggles when offered the job of supervising Geoffrey Downes' keyboard gear.

And that's where Jeczalik and Fairlight had their first, momentous meeting. Downes owned the ninth Fairlight ever made, which probably made it about the second or third in the UK. Unable to communicate properly with the machine, he gave the job to Jeczalik, who'd acquired a little computer experience whilst at University.

'The Fairlight wasn't very popular with musicians', remarks Jeczalik with the benefit of hindsight, 'because it had no faders you could slide or knobs you could turn. Being a typewriter, a TV screen and a normal keyboard, it was very alien. Fairlight got it a bit wrong in that respect. But it meant that people like me, who could handle that kind of communication, could step in and bridge the gap.'

When the public's enthusiasm for The Buggles' well- manicured pop waned, and their brief flirtation with Yes had come to an end, Downes and colleague Trevor Horn split, seemingly for good. Jeczalik went to work with Horn, and the machine. In the years that followed he did the bulk of his session work as a programmer, long before most people had any idea such a figure had a right to exist in a recording studio. As a result, he developed a unique and very personal understanding of sound-sampling techniques and how to use them.

Spend two minutes talking to JJ about working with the Fairlight, and chances are he'll mention his long-standing philosophy that the way to get the best out of it is not to use it as a tool for imitating the sounds of regular musical instruments.

'It struck me when I first met the machine as almost silly to try and recreate real things on it. If you want to sample a clarinet into any machine, it's easy – unless you're a complete idiot. But why should you? People have this unerring will to try and make all the computerised stuff sound as good as the original thing, which to my mind is a complete waste of time. It's no justification for using it.

'What I discovered with the Fairlight is that it's the mistakes you make that are the most interesting. The car starting on 'Close (to the Edit)' (The Art of Noise's biggest- selling disc to date) is a prime example. I was in Highgate, actually trying to record a horse. I'd arranged for this woman to ride by on a horse. A little while before the horse arrives, a neighbour comes out of her garage, reverses up the drive, stalls, starts up again and drives away. When I listened to the tape the horse sounded dreadful, but the car was great!'

Another reason for refraining from petty acoustic imitation is what Jeczalik calls 'the rock 'n' rollness of the Fairlight'. To the consumer or the uneducated critic, it doesn't sound sensible to refer to a piece of cold, heartless high technology in the context of one of music's warmest, most rootsy genres. Yet to anyone who's used the Fairlight for any length of time, and especially to someone like JJ who's been using it for years, nothing could be more obvious.

'Right from the start I noticed that when you put a sound in the Fairlight, it comes out differently. It's obvious: it must get transformed. The Fairlight is very rock 'n' roll because everything gets very dirty and raunchy and gritty, as if it's been through a Marshall 100W amplifier. I developed this idea that if that's what it was like, then I should make it sound worse, so that it stands out.

'I've never gone out for really hifi samples for the Fairlight, because it isn't a great-sounding machine. I'd sample things on a cassette recorder, or a Walkman if necessary. If you put those into a Synclavier you'd hear how bad they really were, but with the Fairlight it doesn't really matter. You shouldn't forget that the technology in the machine, from its first inception, is maybe 10 or 11 years old. It's very slow.'

Jeczalik has enough experience of other samplers to know not only that he puts the Fairlight top of the list, but why he puts it there. He's worked with both generations of Emulator, and recently took the reins of a Synclavier for Trio.

'To me the Emulator II sounds dreadful. You put something in it and it sounds too close to the original. At least with the Fairlight I can generally make some things smooth and warm and others nasty with a bit of Marshall 100W distortion. The times I've worked with the Emulator, I've found it sounding thin and uninteresting.

'A lot of these new sampling machines, like the AMS, the Window, or the Synclavier, have phenomenal sample rates. It's just that there's still something odd about what they produce: the sounds still lose something. The Fairlight is the worst example, of course, but that's what makes it interesting.

'I'm not a great lover of digital equipment in general. I don't know why it is. When you take a digital sequencer playing a digital sound, a digital tape machine and a digital reverb, it all sounds a bit thin; there's no depth to it. Perhaps it's to do with time. In the analogue system there's a continual stream of information being processed. It's constantly changing and it's very fast. With sampling it takes a little while to get processed. Even with the Mitsubishi digital multitracks, something always gets lost.'

Perhaps it's his wariness of things digital that's made Jeczalik one of the most adept at working with them. On Frankie's 'Relax', his Fairlight ▷

Midge Ure might not be a soldier or a painter, but he is a musician. Midge uses a Studiomaster 16.4.2 for getting his ideas together. The 16.4.2 is ideal for this application — its compact, gives great sound quality and represents superb value for money.

If you want to be a musician like Midge Ure, shouldn't you have a Studiomaster?

STUDIOMASTER

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played all the bass parts (the drums were Linn) and a few 'wacky' sounds, leaving a rhythm section barren of human blood, sweat and tears. But it swings. Swings the way a pub rock band can swing when they've had six pints inside them and their audience has had more; swings the way a jazz group can swing when they've run out of sheet music and only improvisation remains; and swings the way so many of today's techno- poppers (Depeche Mode and ABC among them) clearly cannot swing at all.

Undoubtedly, much of the responsibility for that lies with JJ, yet the programmer is at a loss to describe precisely what goes into making up the swing formula.

'You can make machines swing, but it's not easy', he sighs. 'The basic bed of 'Relax' has got groove, but if you're asking "What groove is that?", then I don't know. You can just hear it. It's either there or it isn't.'

There is a slight pause for thought, then 'you have to search very hard for the rhythmic device that will generate the kind of mood you want. I don't think it's any one thing, though. It's a melting pot of ideas which is impossible to describe.

'My advice is: don't get hung up in the machines themselves. Whatever you do has to be pleasing to the ear and to your sense of rhythm. People have strayed into the area where they say this is good because it's done on an X or a Y. That's all crap. Before anything else, music has got to appeal. The brain is a hypersensitive thing and you can't cheat it. You have to work hard on getting rhythmic devices to work.

'You meet people who say: "listen, I've sampled this Art of Noise snare, it sounds fantastic!" But an Art of Noise snare doesn't make a good song. A snare is a beat on the second or fourth crotchet of a 4/4 bar – nothing more, nothing less. There are people devoting **days** to searching for a good bass drum sound or a good snare sound. But in the meantime they're forgetting that a bass drum with a hi-hat, a snare, and a bass guitar have generally in the past formed what's been known as a rhythm section. And a rhythm section has to work before it has groove.

'That's what people have forgotten. They're messing about with all these machines, and really it's a load of shit. That's why I can't be bothered about sampling other people's sounds, or when people sample my sounds.

'In The Art of Noise it's not the sound which is important, but what it does in the rhythm. Of course some sounds work better than others, but it's the whole context of what happens around it which is important.

'Trevor Horn has always been utterly ruthless about this. If it doesn't make sense musically, then it doesn't belong.

'Trevor really is a traditionalist. Forget all the whizz-bang-funk-crash-wallop over the top stuff. If you actually analyse it, it's dead, dead simple, dead straightforward, traditional approaches to the way you arrange and play rhythm. Trevor played in dance bands and he knows what gets people going.'

'Of course I sample things from other people's records. But thanks to the Fairlight, they all become totally unrecognisable.'

It's at this point that Jeczalik, though he doesn't play an instrument himself, commences a short discourse on musical skills. On how nowadays, overdoses of technology seem to be used to mask a lack of playing dexterity. And on how often JJ finds himself hired to make up for the performing shortfalls of young musicians. He cites as an example the sampling of a complete chorus vocal, something Horn also produced for Frankie.

'You have to deal with the ineptitude of most contemporary bands, who are maybe 17 or 18 years old, who aren't professional in any way, who aren't prepared to master their art, who don't take singing lessons or bass lessons. They come to people like myself who can arrange technology in such a way that if they happen to sing a good chorus, you can then use it again and again in a lot of places.'

This is where the distinction between the rôles of programmer and producer starts to get blurred. Time and again, JJ has been called in to act as producer when all people have wanted him to do is sample a few noises into a Fairlight. Equally often, he's found himself turning to the Fairlight for new arrangements when all he's been asked to do is a simple remix.

In fact, Jeczalik rarely produces without programming, or vice versa. But whatever the job, he's certainly done it successfully. After mixing for Billy Idol and Scritti Politti amongst others, JJ was approached by Stephen Duffy to remix 'Kiss Me'. Jeczalik's version, a re-recorded and rearranged 'remix', became a gigantic hit.

'Whenever I remix something, I always make it drastically different. I see producing as an exercise in psychology. You have to make the engineer think that he is the greatest thing since sliced bread. You've got to make the whole thing work. Whereas a musician might love the chord progression throughout the chorus, he may not come to terms with the fact that the rest of the programming isn't

▷ hanging together to make it work.

'You need to understand the overview of who you're trying to control and what you're trying to control – and what you're trying to end up with. So some of the best producers I've come across have been bass players. They have an understanding of rhythm, groove and melody.'

It's strange, but significant, that a computer programmer should value musical understanding higher than technological know-how. And while you couldn't accuse JJ of having an unhealthily high regard for those obsessed with music theory, he's even less enamoured of the techno-freaks, the R&D people, and the salesmen that beat a regular path to his door, offering some new 'innovation' as if it had become indispensable overnight.

'They have this thing called Total Recall, which is a complete load of crap, because it doesn't recall anything really. It memorises certain positions of the faders on the desk, but there's tons of outboard gear that doesn't even come into account, and which you have to write down manually. Total Recall is one of the great lies of rock 'n' roll, because I honestly don't think it helps the creative process. It means, for example, that you keep on remixing until you go blue in the face, because you play your mix to the A&R department and they say: "ah, you did it on SSL, so you can remix it and just put the voice in the chorus louder." But you just can't do that. When you put the voice up, the entire song's perspective alters; everything changes.

'In the end I think that the SSL desks caused more problems than they've solved. They're fantastically expensive, so it's expensive to hire a studio that's got one, and I honestly don't believe they sound that good.

'Innovations like that just confuse the issue, which is melody and rhythm. A proper arrangement of those is what makes a song work.

'For that reason, it's really useful to listen to other forms of music. If you're in a rock band, buy some classical records. Buy Bach's Brandenburg Concertos or something by Mozart of Mussorgsky. You'll find there is art, there is strength, and there is power. And things sound massive, not because they're loud, but because they're arranged properly and conducted in a manner which makes things big.'

From The Noise of Art to The Art of Noise, that enigmatic collection of individuals that gave us an unlikely British and European hit with 'Close (to the Edit)', and a number one in the American Billboard disco chart with 'Beat Box'. They also gave us an album, 'Who's Afraid of The Art of Noise?', on which the two 45s are surrounded by a bubbling concoction of outrageous sound samples, naive melodies, bizarre arrangements and the odd moment of pure workshop genius. 'Wacky' sums it up, but it only tells half the story.

Officially, the group consisted of ZTT bosses Trevor Horn and Paul Morley, together with Jeczalik, Gary Langan and Anne Dudley (still enjoying notoriety as the lady who drilled the strings section on ABC's 'Lexicon of Love' into playing in time with the beat).

Jeczalik: 'The Art of Noise came out of drugs, dope and giggles. Gary had this idea and off we went. We mainly wrote the bass and drum parts and some tunes here and there, which you can actually recognise by their banality. I mean, the pom-pom-pompompompompom tralala of 'Close (to the Edit)' is really silly. No keyboard player worth his socks would write a thing like that.

'Then Anne would come up with some chords that fitted. She also arranged and wrote some tunes. She is the musician. It would have taken Gary and me years to work out what we've done without her.

'Trevor was guiding, I suppose. He would come in and make some tea. Morley would give everything a name, and that was it.

'90% of the album consists of the original demos. We tried to redo things on 24 track with reverb and everything, but it never came out the same. So we ended up releasing the original stuff, which was done on quarter- or half-inch tape in stereo. We would play the Fairlight through an eight-track mixer and put it straight onto tape.

'I would say that 85% of the record was produced via the Fairlight and 15% were bits and pieces, pianos, spoken words... Anne always did those.'

Like the Frankie arrangements, 'Who's Afraid of The Art of Noise?' has a human vulnerability that belies its computerised origins. And as with 'Relax', trying to find out exactly where that human appeal comes from is a thankless task. There's the odd fragment of recognisable music, the occasional (and lovable) quirk of composition. But J J Jeczalik can't put his finger on where his group's record succeeds, and refuses point-blank to answer questions on the origins of some of his samples...

'Of course I sample things from other people's records. There's stuff all over the album that's sueable in one form or another. Courtesy of the Fairlight, though, it sounds so hopelessly different that nobody can distinguish it. It sounds so disgusting that even the people who made it haven't recognised it.

'I sample off other people's sounds and they sample mine. Why shouldn't that be justifiable? You do it in such a way that no one ever knows, anyway.

'If you think that an Art of Noise drum sound gives you a hit single, you've got it all wrong; you might as well sample everything, because your overview is wrong.'

Meanwhile, Jeczalik, Langan and Dudley have left ZTT (they're the first act to do so), and signed a contract with China Records, a new independent label set up by Derek Green (formerly managing director of A&M) and licensed through Chrysalis. JJ points to a lapse in the contract with ZTT (through which they found themselves temporarily out of contract) and general dissatisfaction with their unstable position as the reasons that led to the move. A single and a 12-inch are scheduled for the Autumn, and a new album should be out in January.

Will the new material be along similar lines to the old?

'We feel that people want more of the same, and we also feel that we haven't explored fully the kind of area that we're in.

'It's going to be harder though, because when we first started The Art of Noise, I have to admit that my view on what I was doing was very naive. I just did things because they sounded good, like one of my rhythm sections that started with a snare and went 'tak-boom-boom, tak-boom-boom'. I now understand a great deal more, and that definitely makes it harder.

'Artistic form, whether it's TV, taking photographs, or making music, is what it's all about. Being able to stand back and say: I see relations here that create form.

'And a lot of contemporary music has no form at all. It's noise. It's become worse with the introduction of all these machines, because people don't know how to deal with them. Saying that the Fairlight is the ultimate device which makes all other keyboards redundant is just nonsense. The Fairlight, or the Synclavier, or any other machine, is just another tool for making music. It isn't the ultimate, it isn't the best, and it isn't the worst. It's just something that you should use as befits the situation.

'But I feel that an emphasis on form will come back again. It will come full circle.'

Brave words from a brave man, undeniably. ■

2·B O·R N·O·T 2·B

The world's most expensive home micro-based music software package is also one of the most comprehensive and one of the easiest to use. But is there still a place for it now that programs for a new generation of computers are on the horizon? *Simon Trask*

We all know that the future of computer music software lies with the new generation of 16-bit micros, with their multi-tasking and their superior graphics. Just how far away that future lies isn't really clear, though, and in the meantime, there are plenty of software writers devoting attention to older computers which already have a large following of everyday users behind them.

Umusic, the people behind the UMI 2B 16-track MIDI sequencing system reviewed here, have stuck their necks out and gone for the BBC Micro, which has enough trouble competing with the cheaper and bigger-memory Commodore 64, let alone the hordes of 16-bit invaders to come. Their system has neither the graphics features of new-generation software, nor the ability to contemplate doing more than one task at a time. Yet it's a powerful, well-thought-out, and well-designed system that goes out of its way to be flexible and responsive to the demands of the musician, rather than impose its own set of demands.

That was pretty much the conclusion we came to when we tested the package's predecessor, UMI 1B, in E&MM December '84. The 2B – as before, distributed exclusively by the London Rock Shop – is better still.

Like its forerunner, UMI 2B takes advantage of the Beeb's ability to hold several ROM chips full of software, which you plug into the appropriate socket inside the machine and then forget about. What this means is that when you power up the Beeb you just type *U. and you're instantly into the UMI system, which beats loading from disk any day. It also has the added advantage that the software doesn't have to reside in main memory, so there's more space free for sequence storage. There was quite a bit of memory inside December's test micro anyway, seeing as it was equipped with an Aries B20 20K expansion board. However, the Aries is no longer available as a separate item, so the 52K version of UMI 2B is sitting waiting for new memory boards as I write this.

Price of the basic 2B package is £495 including VAT, which means a total cost of around £1000 if you don't already own a Beeb. OK, so it's not cheap. But it's under half the price of a Yamaha QX1, which is probably the sequencer most people will draw comparisons with. A second ROM will be available soon to add a number of facilities to the system which, presumably, have come about in response to feedback from users.

Background *'There are now quite a few pro musicians using UMI – which isn't something that happens to a lot of MIDI software packages.'*

Speaking of which, there are now quite a number of pro and semi-pro musicians using UMI in one or other of its forms – which isn't something that happens to too many music software packages. Musicians currently using

the system include Vince Clarke, Depeche Mode, Blancmange and Tears For Fears. On the studio front, Battery, Mayfair and Hollywood studios all have a UMI system installed, too. There's even one just gone out to America to receive a test drive from the Cars (sorry).

There are two parts to UMI: the software on ROM and the hardware (designed by Umusic's Lynton Naiff and Paul Ludgate respectively). The latter comes in the form of a slimline, custom-designed hardware interface unit which plugs into the Beeb's 1MHz bus, and allows the software to interact with the outside world. A single button sits atop the unit (this is the Run/Stop button and controls pattern and song start/stop, as well as any drum machines or sequencers connected to the hardware unit), while all the sockets are spread out across the unit's rear panel. No stingyness here: in addition to the rather essential MIDI In, there are no fewer than four MIDI Outs. These are divided into two pairs, with each pair linked to a different ACIA (Asynchronous Communication Interface Adaptor, as if you didn't know). This gives parallel processing of outgoing MIDI data, with each ACIA processing eight of MIDI's 16 tracks – a great help in reducing bottlenecks caused by MIDI's serial nature.

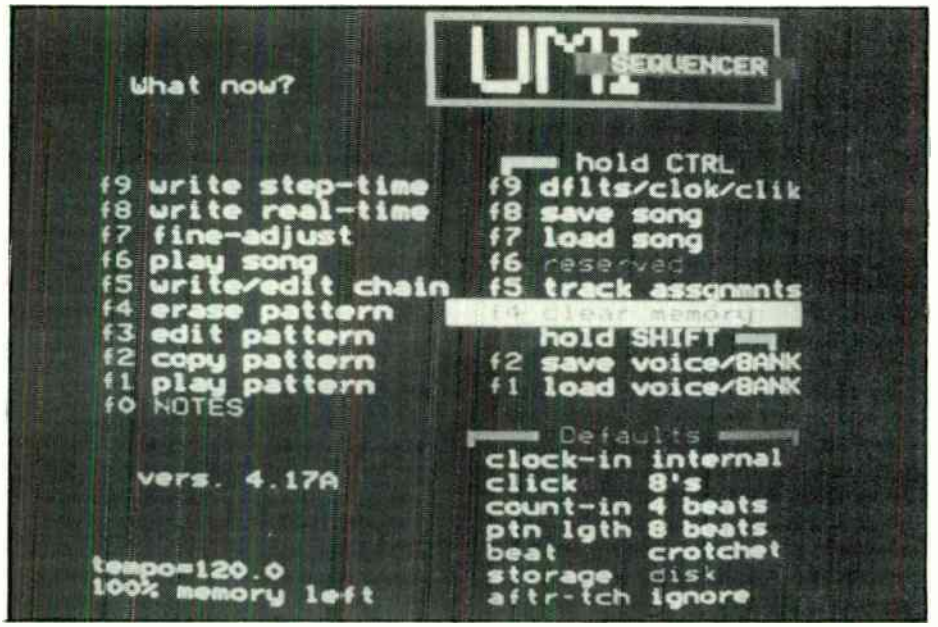
But UMI doesn't confine itself to MIDI communication. There's also Roland's DIN Sync 24 (output only, unfortunately), Clock In and Out (Out set to 24ppqn, In variable over 24, 48 and 96ppqn) and Start/Stop jacks, Trigger Out (determined by the selected clock rate), Click Out (for the internal metronome) and, wonder of wonders, Sync-to-tape In/Out. Plenty enough to keep a lot of people happy.

Surprisingly, you can't sync UMI directly to a MIDI drum machine or sequencer. The system simply won't send or receive the requisite MIDI Start/Stop codes (let alone Continue) or timing bytes. Clearly, UMI's designers want you to use their system to record and play rhythm patterns by taking advantage of the facility commonly found on MIDI drum machines whereby specific pitches (conveyed as MIDI note numbers) are assigned to trigger each drum voice. Ultimately, this system does give you the greatest flexibility.

But what about all those great patterns you've already got recorded in your drum machine, just waiting to be played at the press of a button? And what happens if you don't want to use up any of UMI's patterns or processing time when your drum machine has its own memory and its own processor, just waiting to be used?

Well, if your drum machine has some suitable connections on its back panel, you can take advantage of UMI's non-MIDI triggering facilities to provide straightforward start/stop functions. But if it hasn't, or you're using a sequencer that hasn't, you're going to need a synchronising box like Korg's KMS30 before UMI will talk the same language as your existing machinery.

And just in case you're thinking of hooking this software up to a broader recording setup using SMPTE in preference to UMI's sync-to-tape facility, you'll have to rely on the Clock In and Out for your interfacing. Still, at least until MIDI gains a standardised song file format which can then be used to interface with SMPTE in a more extensive way – there's not much difference between the information conveyed over MIDI and non-MIDI channels.



So much for the hardware – time for an overview of the software. The first thing you're confronted with on entering UMI is a clearly laid-out menu page which displays every option together with the key required to access its relevant page. Each page is accessed by pressing one of the Beeb's bright red function keys, which seems eminently sensible.

Operation *'Having to keep returning to menus can be annoying...but UMI lets you move directly from one page to another at any time.'*

Menus (and having to return to them) can become rather annoying once you've learnt all the appropriate keypresses, and again, UMI's designers have recognised this: UMI 2B allows you to move directly from one page to another at any moment (provided a pattern or song isn't playing) by pressing the relevant function key. Meanwhile, the usual method of returning to the main menu screen is to press the Return key, and this can be done from virtually any point in the system providing a sequence isn't running. As mentioned earlier, Pattern and Song start/stop are controlled by the only button not found on the Beeb's own keyboard: the R/S (run/stop) button found atop the UMI hardware unit. So keyboard input is minimised and movement around the system is made as speedy as possible.

And it's because you *can* access every part of the system quickly that operation of UMI becomes a very 'integrated' affair. Much more than is the case with most currently available software packages, UMI lets you use it in the way that best suits you – very, very quickly.

UMI adopts a programming approach that'll already be familiar to a lot of people through working with drum machines, using patterns as basic building blocks which are then chained into songs. But unlike a song on a drum machine, a UMI piece can have up to 16 chains running concurrently, giving 16 'tracks' each of which can be globally assigned to any one of the 16 MIDI channels (so it doesn't matter which MIDI channel you used for inputting your music).

Each track is capable of chaining together almost 100 patterns, and UMI has provision for a maximum of 127 patterns to be resident in memory at any one time. The system has been designed to hold a single song in memory, but this poses no problems: saving to and loading from disk is very fast, and automatically saves all pattern data along with the song data, so you can easily start on a new song, save that too, and then call up any other song you might want. A nice feature of the Save and Load pages is that you can catalogue a disk at any time so you know precisely what's on each disk.

As things stand, you can't save patterns to disk independently from songs. But one of the second ROM's updates will allow individual patterns to be saved and loaded in their own right as well, so you'll be able to build up libraries of patterns and load them into a song where appropriate, or use them as the basis for a new song.

A pattern can be as little as one beat or as many as 64 beats long (with a beat definable as either a quaver or a crotchet), which gives a maximum pattern length of 16 bars in good ol' 4/4 time.

Real-time recording allows you to specify a count-in period of up to nine beats (set up in the Defaults section of the main menu) or launch straight into record simply by starting to play on your synth. When you reach the end of the pattern, UMI switches automatically to looped playback of the pattern – which means, sadly, that you don't get the typical drum machine feature of looping in record mode so you can add new bits each time around.

In pattern record mode, you have the software option to set UMI's MIDI Outs to become effectively MIDI Thrus, so that the music you play into the sequencer is passed out to any attached instruments as well as being recorded – useful if the pattern you're ▷

recording requires a layered sound. What you can't do, however, is use this facility and play back an existing sequence at the same time; the system will record, but not pass on, your incoming data.

On entering the step-time recording page, you're presented with a five-column matrix display of pitch names, one octave per column. First off, you define how many beats per bar and how many steps per beat you want. The latter figure can be as high as 24 steps per beat, while the former allows UMI to indicate which bar you're currently in. That's useful for knowing where you are in longer patterns, but it would be more worthwhile still if it told you which beat you were currently on, too.

You input pitches by playing the relevant note or notes on your synth, and these are then highlighted on the matrix display. If you enter a wrong note, you can delete it simply by rekeying the note before moving on to the next step; the relevant highlight is removed to show you that all trace of the miscreant note has indeed been eradicated from the face of the Earth.

Notes or chords which last longer than a single event can be indicated by typing in an event count after entering notes, and you input rests by typing in an event count without playing any notes – all very logical. You can hear the pattern at any stage by pressing the R/S button, which is *extremely* useful. It's also possible to give each step its own attack velocity value by typing in a number from 1-127 (the MIDI velocity range), and select 'gate' lengths of 10%, 30% and 75% for each step.

UMI's step-time editing facilities are a touch on the minimal side, though. You can step back through your pattern to change anything while remaining in record mode, but unfortunately, every step is deleted along the way. So if you want to change a note or a velocity value 10 steps back, you have to re-input the intervening nine steps as well.

And once you've reached the end of a pattern, there are no step-based editing facilities except for Erase Notes, which allows you to step through any pattern and selectively erase notes in the manner described above.

When you've finished recording a pattern in either real or step time, you can go to the Edit page for any further work. It's from this page that it becomes possible to overdub onto the pattern in real time. This is a useful and very easy way of building up a pattern, and UMI allows you to do a seemingly endless number of overdubs – the only limits are the voice capabilities of your synth and your own sanity. Overdubbing is also a useful way of adding things like pitchbend, modulation and patch changes. Again, you'll find your pattern going into an endless playback loop until you stop it by hitting the R/S button.

If you aren't happy with your overdub, you simply select Overdub again and your previous overdub is replaced. If you *are* happy with what you've done, select the Commit Overdub option and it'll become part of the pattern.

All of which gives you admirable flexibility, spoilt only by one unfortunate omission: you can't listen to any other patterns while performing an overdub. As it is, you have to set up the relevant patterns in Song mode, make a copy of the pattern you're about to overdub, do the overdub, go into Song mode to hear it in context (which commits the overdub for you), and if you don't like the result, call back the original pattern from its copied position and start again. A slightly long-winded way of doing things in what is generally a very fast sytem.

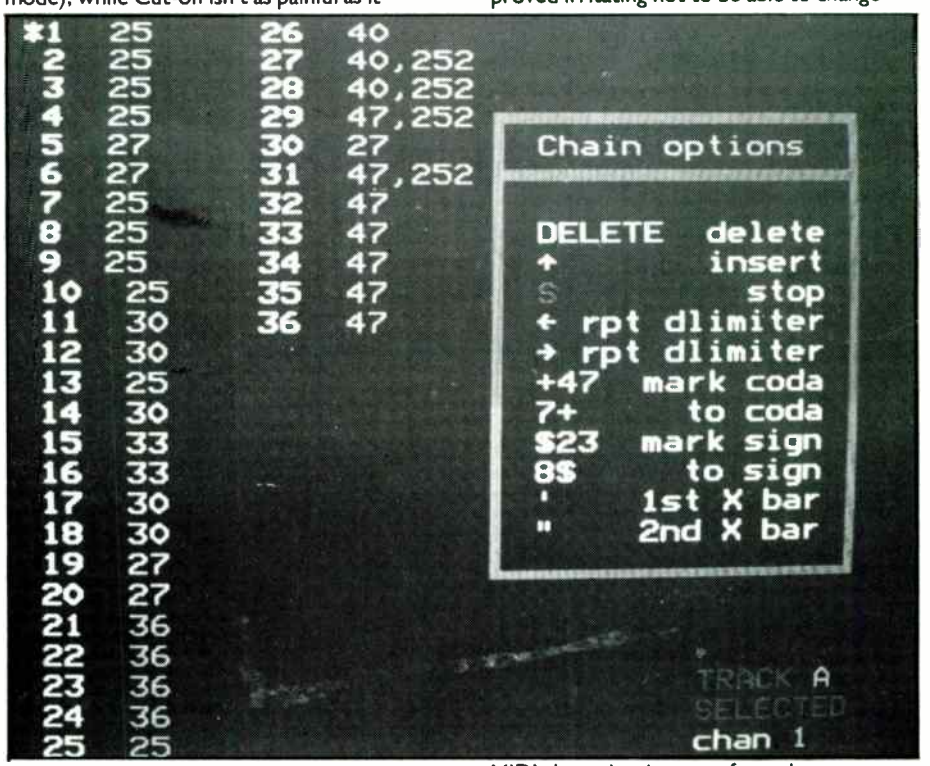
Other options on the Edit page allow you to change the auto-correct value (anything from crotchet to triplet semiquavers), compact pitchbend and modulation data, and erase pitchbend, modulation and patch change data. Two further pattern-based editing facilities on their way (on the new ROM) are real-time velocity sensitivity expand/contract and a universal controller code erase. The Retrieve function acts on all the above modifications except Erase Notes to return the pattern to its unmodified state (so long as you use it before exiting Edit mode), while Cut-off isn't as painful as it sounds: if you're left with notes hanging on at the end of a pattern because you didn't release them in time, this option sorts the problem out for you.

Further pages dealing with patterns as opposed to songs are Erase Pattern and Copy Pattern. With the latter, you can specify an additional parameter which is the length of the new pattern, and this can be either longer or shorter than the original. If it's longer, you'll obviously have some blank beats at the end, which you can record into by overdubbing – a neat way of building up longer patterns. A further option allows you to isolate any number of beats from a pattern (always beginning from the first beat) and copy them into a blank pattern with a specified number of repeats.

And so, finally, to songs. There are two pages relating to these: Write/Edit Chain and Play Song. UMI's 16 tracks are labelled A to P, so you can access any track with a single keypress. Each song page displays the links in the chain for one track, and you flip from one track to another by keying the appropriate track letter.

Both song pages also display the current track letter, the MIDI channel allocated to that track and, if you've entered them, the names of the synths playing that track. It proved irritating not to be able to change MIDI channel assignment from the Write/Edit Chain page (you have to go to the Track Assignment page and step to the appropriate track). But you've guessed it, this irritation is due to be remedied as one of the updates on the forthcoming second ROM.

Links (ie. pattern numbers) are entered in three columns, with all links being numbered on entry automatically. At the sequencer's simplest level of operation, all you have to do is type in the pattern number and press ▷



THE FORMULA 1+1=3

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The JMS Scorewriter brings to the musician his own personal staff of arrangers and copyists — on his Commodore 64 Computer!

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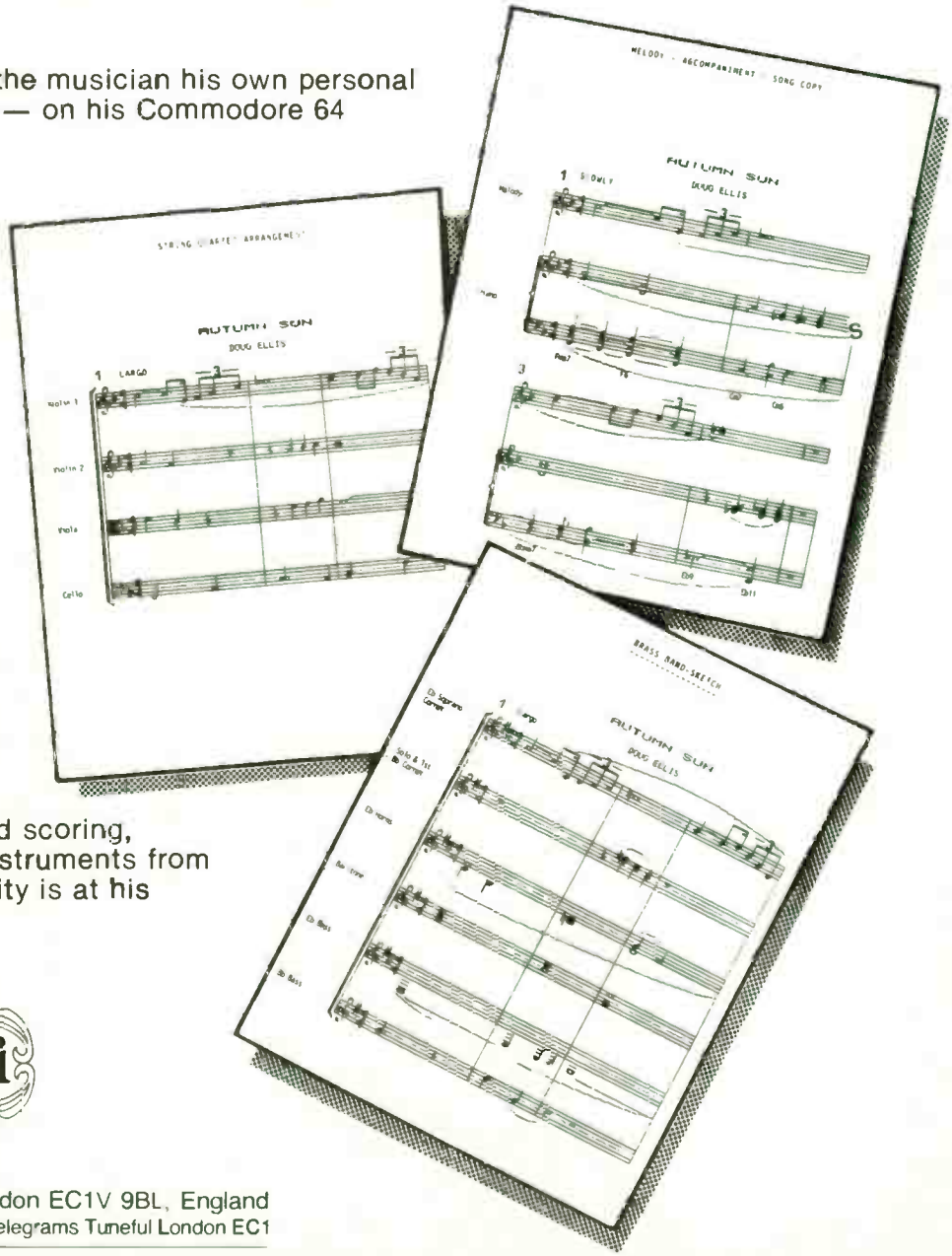

Here is the ultimate tool for the musician who takes his work seriously. Whether for orchestral arranging, brass band scoring, teaching, writing parts for all instruments from synthesiser to viola — the facility is at his fingertips.

Rosetti

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▷ Return for each link. On playback, the song loops continuously unless you've typed in an 'S' at the end of track A.

In this way, it's possible to set up basic sequences very quickly. You can also specify a transposition value up or down for each link, over what is effectively the entire MIDI-playable range of 127 pitches. So you can easily experiment with patterns in different octaves, or with mixing different harmonies derived from the same pattern, or create octave divider effects.

Editing facilities available are Link Insert, Delete and Overwrite, and you can move a cursor around the screen to any link. Complete chains can be copied from one track to another, and a useful facility allows you to specify an offset number – so that pattern 11 with offset 10 becomes pattern 21. New patterns created in this way don't actually have to exist, so you can align related pattern numbers for easy cross-referencing when you're recording. Patterns 11-19 run in parallel with patterns 21-29, for instance.

But UMI also provides what are rather endearingly called 'routemap pointers'. These allow you to define such niceties as looping sections, first- and second-time repeats, jump to coda and return to sign. The looping facility provides an infinite repeat for any number of links, which is useful if you want a repeat-to-fade at the end of a song. Otherwise, you can use it in conjunction with the first- and second-time repeat markers, in which case you can use repeats more than once in a track.

A more usable approach would've been to allow any number of repeats to be specified for each loop. But what *has* been usefully included is a facility for redefining the start point of a sequence – which allows you to home in on a particular section of a song very quickly.

UMI uses track A as a master track for defining routemap pointers. Thus whatever 'route' you set up on track A is automatically adopted by the other tracks.

Track A also governs the other tracks when it comes to pattern length. All links across the 16 tracks have to be in step with one another, so if a pattern on track A is eight beats long and the concurrent pattern on track C is four beats long, track C will wait until track A has finished playing its pattern. This is where the copying facility comes in useful, as you can build up a short pattern into a longer one that'll align with, say, a long phrase on track A.

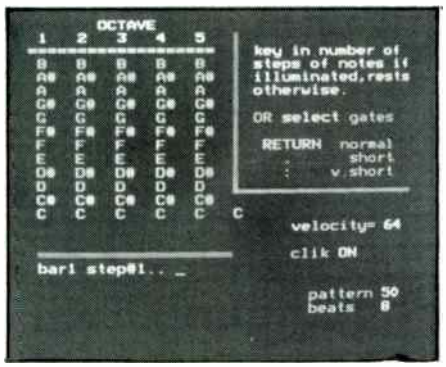
One update which'll figure on that second ROM, and should prove useful for reconciling patterns of different lengths, will allow any number of patterns of any length to be merged into one pattern, so long as the result isn't longer than the maximum pattern length of 64 beats.

A side-effect of pattern alignment allows you to define empty patterns very easily. Because so long as track A has all its pattern lengths defined, you can use an undefined pattern as a 'floating' blank bar which adjusts its own length to the length of the corresponding pattern in track A.

The maximum recording period of 64 beats is one limitation you have to accept when working with UMI, as it's part of the philosophy underlying the package to present the musician with certain restrictions, in order that the system ultimately *gains* in flexibility.

UMI isn't intended to function as a straightforward recorder, so if you want to record lengthy improvisations or extended solos, or even just play a composition straight through, UMI won't be of much use to you. If you want to record extended passages over UMI's backing tracks, your best bet is probably to go for a cheap MIDI sequencer like the Casio SZ1. But then, that'd lead you back to the syncing problems I mentioned at the start...

Frankly, though, I think it's unlikely that all of UMI's 16 tracks will be used to the full at the same time by many people. What that large number does allow you to do is incorporate a rhythm track or two as described earlier, or a multitimbral instrument, and still have enough tracks left not to feel too constrained.



Facilities *'There's a Notes page that allows you to create a basic track listing for all 16 tracks on-screen, so things don't get too hairy.'*

It *would* be nice to be able to turn a particular track on or off at the press of a key, but you can simulate this by assigning a track to a MIDI channel which isn't allocated within your system. It would also be nice to have some sort of block move facility which would allow you to shift sections of music around within a track and across tracks. Who knows? If I suggest it to Umusic, they might include it on that wondrous second ROM...

With 16 tracks at your disposal, things can easily get a bit hairy when it comes to knowing what's on which track. It's a practical point not lost on UMI's designers, who've included a Notes page that allows you to create a basic track listing for all 16 tracks on-screen, with columns headed 'synth', 'sound' and 'remarks'. You have to be concise in your wording, but it's surprising how informative this page can be.

Together with the Track To Channel Assignments page (which tells you at a glance which MIDI channel is assigned to each of the 16 tracks and allows you to reassign MIDI channels), Notes provides a useful ready-reference guide for each song setup. And the information on both these pages is automatically saved and loaded when you save or load a song, which is handy.

Perhaps wisely, UMI goes against current software fashion by *not* offering any means of printing out the music stored within it in notation form. I say 'wisely' because I'm not too sure a machine like the Beeb is really capable of printing out 16 tracks of music with any accuracy – though that new generation of 16-bit machines certainly will be.

In fact, there's no way you can print out anything you do with UMI. Which is a shame, as it would have been nice to have been able to have hard copy versions of the Notes and Track Assignment pages.

In addition to its sequencing duties, UMI is capable of saving and loading DX7 patches, singly and in banks. And the London Rock Shop also market a ten-disk set of DX7 patches containing some 500 sounds for around £80. An extra bonus (or added incentive) for owners of one of the most popular MIDI synths around.

UMI's manual isn't one of the best, though. While most of the relevant information is there, the layout could be a lot neater, and a more thorough Contents page – or some kind of Index – would make finding out what you want to know a much easier task.

Does UMI work? The answer is an emphatic Yes. I spent many hours working with UMI (far too many, probably), using four synths and a MIDI drum machine, and the package proved to be very, very reliable. Should the system freeze, you can press the Break key to reset UMI *with your material remaining intact* – a nice failsafe measure.

More than any software package I can think of, UMI succeeds in combining flexibility with supreme ease of use. As a straight-ahead, no-frills sequencer, it's one of the most powerful and flexible currently on the market, rivalled only by the QX1 but costing a heck of a lot less.

It doesn't have extensive step-time editing facilities, a great depth of access to MIDI codes, or the ability to record great chunks of music in one go – things that some of its competition (QX1, Joreth software) do include in their spec sheets. But the fact is that *none* of its competitors have all those facilities and a means of accessing them that's as easy as the way UMI presents its capabilities.

So if you're at all serious about sequencing, give UMI some serious consideration – regardless of whether or not you already own a BBC micro. It's a professional among amateurs. ■

DATAFILE

UMI 2B MIDI Sequencer

Hardware Requirements *BBC B, TV, disk drive or cassette*
Specification *16-track real- and step-time recording, 127 patterns, 1 song*
Main features *Pattern-based recording, extensive overdubbing capability, after-touch filter, pitchbend and modulation compaction, pattern transposition, extra song construction facilities, MIDI channel reallocation, save/load song to disk or cassette, disk catalogue facility, track-list notes page, four MIDI Outs, clock in/out (variable in), DIN sync out, sync to/from tape.*
Price *£495.00 w/o memory expansion (currently unavailable)*
More from *The London Rock Shop, 26 Chalk Farm Road, London NW1 ☎ 01-267 5381.*

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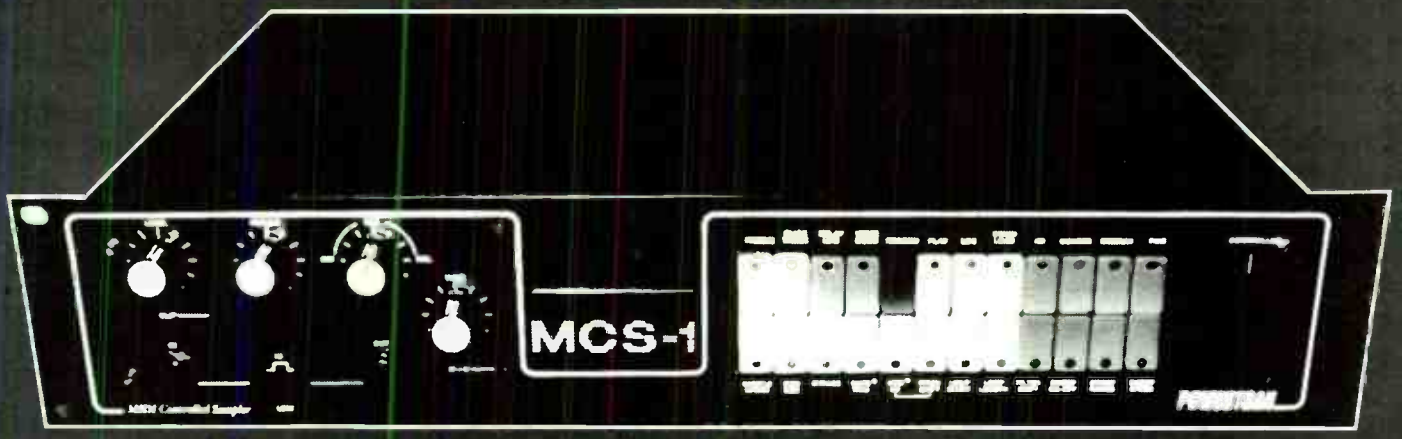

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Audio Bandwidth: Variable from 12 KHz to 300 Hz.
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"you must remember this"

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 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 *Bad 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

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 SixTrak and DX7 Patch Dump), Understanding the DX7 Pt4, RackPack, 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-II 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, Steptime 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 System 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, Pete 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** *BeeB-MIDI 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, LEM1 MIDI Software* **Technology** *BeeBMIDI 6*

(Juno 106 voice dump), Powertran MCS1, Back to Basics **Studio** *Everything but the Kitchen... (syncing drum machines & sequencers)*

FEBRUARY

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* **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 1 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* **Studio** *BBC Radiophonic Workshop, Roland SDE2500*

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CHASE SYNX 508 £400 or swap for Casio CZ1000 or similar poly synth. Nick ☎ Rotherham (0709) 558293.

CLEF 88-note electric piano £125. Clef CMS keyboard plus BBC computer software £250. Alec ☎ 01-952 2333 ext 158.

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E&MM SPECTRUM synth, not working properly but complete and makes a sound, in wooden case, £80. David ☎ Maidstone (0622) 26861.

ENSONIQ MIRAGE digital sampling keyboard, as new, home use only, sensible offers invited. Peter ☎ (0229) 33941 after 6pm.

HOHNER EK4 STRINGS keyboard, complete with pedal and carrying case, £150 ono. Ande ☎ (0278) 789323.

JHS HARMONISER strings, brass, reeds etc, recently overhauled, £95. Also Kawai 100F Synth £45. Offers considered. G Manning ☎ (0532) 620857.

KAWAI SX210 POLY 32-patch, £500 ono. Roland SH101 mono plus mod grip, plus flanger pedal £200 ono. R Harvey, Dagenham ☎ 01-595 4622.

KORG EPS1 dynamic piano and strings, separate outputs, built-in chorus, £300. Andy (0935) 76441 evenings.

KORG MONO/POLY 4-VCO synth, excellent condition, home use only, £220 ono. Dean ☎ Toddington (05255) 4068. Possible delivery if close.

KORG MONO/POLY only driven by little old lady on Sundays, £350. Roland Drumatix, £140. Yamaha CS5, £100. ☎ (0229) 34951.

KORG MONO/POLY first class condition, only home used, £325. Lawrence ☎ St Albans (0727) 35580.

KORG MS10 good condition, still boxed, £75. Pete ☎ (0202) 475715, 6-7pm weekdays only

KORG MS10 Swap for Roland MC202 or £110. Pete ☎ (03744) 65031 evenings.

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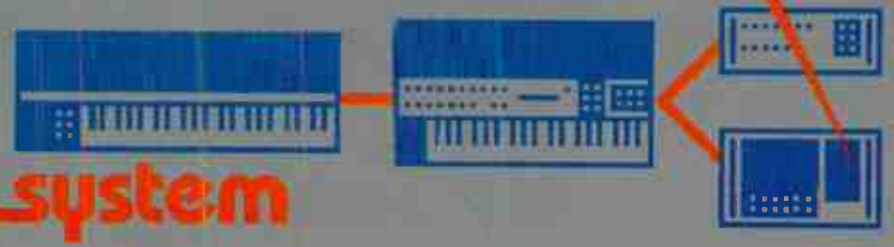

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