

EMM

ELECTRONICS & MUSIC MAKER
THE MUSIC TECHNOLOGY MAGAZINE

OCTOBER 1986
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HOWARD

JONES

One to One with the King of
Solo Synths

KORG DSS1

Sampling for Synthesists

PETER COLLINS

The All-round Producer

ELKA PRO SYNTHS

Analogue vs Digital

REVIEWS

Casio CZ1 Poly

Ensoniq Piano

Digidesign Burner

Boss Dr Pads

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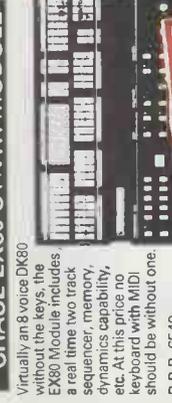
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CHANGES OF IMAGE

Design is subjective' is one of this magazine's Publisher's favourite expressions. He utters it often, as editors, art editors, readers and advertisers add their comments to the design of one of the magazines his company produces.

Personally, I'd always considered good design to be an objective thing, something you could quantify fairly easily by analysing how efficiently it did its job.

Art, on the other hand, is a different ball-game altogether. Artists are an introverted and self-indulgent bunch: they have to be if they're going to create anything that is truly a reflection of their own personality, and unlike designers, they're less prone to analysing the efficiency of their work in any given area.

However, modern musicians and composers are a breed apart from their artistic predecessors. In the age of video and computer technology, musicians can communicate images of themselves, worldwide, in a matter of hours. These images are extensions of the musicians' work, but they aren't the music itself. In fact, they're becoming increasingly divorced from the business of writing a song, arranging it, recording it and performing it.

Howard Jones, for instance, has teamed-up with his photographer to produce the image on the front of this magazine. It's certainly an impressive photograph (well, the editor and the art editor like it: readers and advertisers had yet to

offer their opinion as we went to press), and if Mr Jones wants to be seen standing in baggy clothes in a field of oats, that's fine.

But the crucial thing about the photograph (and, in fact, the vast majority of visual images currently associated with modern music) is that it doesn't tell us anything about Howard Jones' music. His love of oats, maybe, but not his love of notes. To the readers of this magazine, it says nothing about the tools of Jones' trade. And to the record buyer of the eighties, it says nothing about the way Jones makes his music on a more general level.

Perhaps I'm reading too much into the video revolution and the problems of mass communication. But it seems obvious that if successful musicians aren't seen to be playing their music by the majority of people who like it, then fewer of those people will be inspired to go out and try something similar themselves.

Surrealist videos and fields of oats are all very well, but the odd shot of fingers running across keys, sticks hitting drums, or hands moving sliders never did anyone any harm.

Assuming you read magazines from the front, as opposed to reading from the back or starting at the middle, reading forwards and then going back to the front, you won't know that this is the last issue of E&MM as we know it.

The magazine is not about to disappear from newsagents' shelves, but when it reappears next month,

it'll be under the guise of 'Music Technology' — a snappier, more contemporary and more relevant title.

You can read the full story behind the switch in our special pull-out feature in the centre of the magazine, so I won't give too much away here. Suffice it to say that we're all quite excited about the change in title and the improvements in the magazine that it'll enable us to make. We think you'll be excited, too.

To our mild surprise, the music industry has already greeted the news of the name-change with uncharacteristic enthusiasm. There were a few raised eyebrows, of course, and the odd cry of 'why change something everybody knows?' But in general, people have welcomed the idea of a fresher, more accurate title that reflects a fresher, more accessible editorial style.

So now the only thing we have to worry about is that the magazine's readers don't miss out on the first issue of 'Music Technology' because they've spent too long looking for E&MM. To help eliminate this, we've produced a dummy front-cover as part of the above-mentioned introductory feature, so you'll know the sort of thing to look for.

But *don't* look for exactly that cover; it's only a mock-up (well, we don't want to give too much away), and the photography will be completely different. Not necessarily any more musically informative, but certainly different. ■Dg

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The Autumn Collection

KEYBOARDS

SYNTHESISERS

ROLAND

JUNO1
JUNO2
JX10
HS80

ENSONIQ

ESQ1

CASIO

CZ101
CZ3000
CZ1000

YAMAHA

DX5
DX7
DX27

YAMAHA

DX27S
DX21
DX100
TX7

SEQUENTIAL

VECTOR VS

KORG

DW8000
DSS1
AKAI
AX73

RACK MODULES

ROLAND

MKS80
MKS70
MKS30
MKS20

YAMAHA

TX816
TX216
TX7

FBO1

KORG

EX8000

ELECTRIC PIANOS

ROLAND

RD1000
MKS20
HP450
HP350
HP5600
HP5500
HP2000
HP3000

YAMAHA

PF80
PF70

CLAVINOVA

ENSONIQ
PIANO SDP1

KORG

SAMPLING PIANO

TECHNICS
PX1
PX9
PX7

MIDI KEYBOARDS CONTROLLERS

ROLAND

MKB200
AXIS
MKB1000
MKB300

YAMAHA

KX88

KX5

AKAI

MX73

KORG

RK1000



SAMPLERS

ROLAND

HS10
HS50
EMULATOR
E-MAX

ENSONIQ

RACK DMS8
KEYBOARD DSK8

AKAI

S900
MX 7000
S612
YAMAHA
VSS 100

CASIO

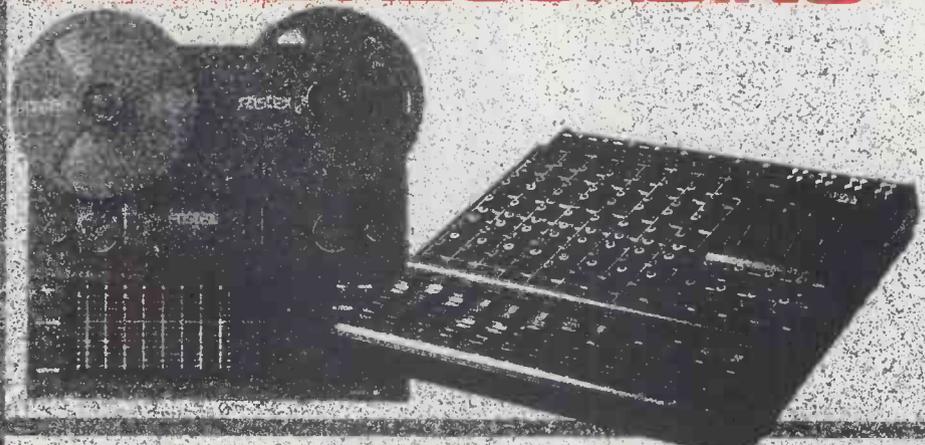
SK1
SEQUENTIAL
2000
2002

STUDIO 440

KORG

DSS1
GREENGATE
DS3
DS4

HOME RECORDING



RECORDERS

FOSTEX

E16 16 TRACK
A80 8 TRACK
E80 1/2" 8 TRACK
E2 MASTER
E22 MASTER
260 MULTITRACK
X15 CASSETTE
YAMAHA
MTIX 4 TRACK
MT44D
AKAI

MG614 4 TRACK

MIXERS

FOSTEX

450 8 TRACK
16 16 TRACK
SECK
18/8/2
12/8/2

SOUNDTRACS

ALLEN HEATH

DYNAMIX

Many others!



FUTURE MUSIC

SEQUENCERS



KORG
SQD1

ROLAND
MC500
MSQ700

YAMAHA
QX1
QX5
QX21
QX27

GUITARS

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SG2000, 3000
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BB500 5 STRING
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CLASSICAL RANGE
IBANEZ
ROADSTAR
GUITAR AND
BASE RANGE
Ovation
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TR707
TR727
CR1000
DR220
YAMAHA
RX11
RX21
RX21L
KORG
DDP
CASIO
RZ1

DRUM MACHINES



ELECTRONIC KITS



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SDS9
SDS100
TM1
SDS1000

ROLAND
DDR30
PAD8
PEARL
DRUM X
YAMAHA
SYSTEM
SONOR
CUTEC

ACOUSTIC KITS

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SIGNATURE
PANTHER
SONORLITE
PERFORMER
YAMAHA
SERIES 9000
SERIES 8000
SERIES 4000
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LUDWIG
TAMA

Many others!



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ROCKETTE 30
SG75 COMBO
FENDER
SIDEKICK RANGE
SIDEKICK CHORUS
ROLAND
JAZZ CHORUS
JC55, 77, 120
DAC 15, 15X
CUBE 60K, 100K
SUPERCUBES



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PAISTE
COLORSOUND
RUDE
3000 SERIES
2002
404
505

ZILDJIAN
A SERIES
K SERIES
Z SERIES
AMIR
IMPULSE
MEINL
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FACT AND FICTION

ONE MAN'S VIEW OF THE PCW SHOW

Once again, the hordes descended on the peace and calm of West Kensington, London, for the Personal Computer World Show, held at Olympia 2 from September 3-7. As during the British Music Fair, Olympia 1 could be relied upon to counterpoint Olympia 2's activities with its own peculiar brand of consumerism – not the highly questionable Saudi Experience this time, but the Autumn Gifts Fair. Horses for courses, I guess.

But back to Olympia 2. Expectations were running high this year, primarily in the direction of a new Atari micro and the much-heralded Amstrad IBM PC-compatible. Although the latter met most of the pre-launch hype, the former didn't quite match the advance (spurious, as it turned out) publicity of a 68020 processor-based machine with blitter and high-quality sound chip.

What were launched (though behind closed doors) were 2Mbyte and 4Mbyte versions of the 1040ST, known, not surprisingly, as the 2080ST and 4160ST. Atari reckon these micros will appeal to 'the specialist audio and visual industries', but, to be honest, I find Atari's ever-upward trend of memory and product numbers a mite yawnful. Perhaps the twinkle in Jack Tramiel's eye that reflects the next generation of STs will add some real ingenuity to Atari's product line.

One new Atari product that was openly launched – and which exceeded expectations – was their version of the Amiga blitter. Although originally slated for the post-1040/520ST micros, the show saw a \$150 blitter chip (well, seven chips actually) add-on that simply plugs in piggy-back fashion into the main board of either the 520ST or 1040ST. Definitely a good move on Atari's part. And the demo of a flock of birds in full flight showed just how effective the blitter is at speeding up ST graphics. In fact, sufficiently impressive to make the Amiga look a very sick bird indeed.

Much of the ST software shown under the collective wing of the Atari Village was equally impressive. On the music front, Steinberg Research's Pro24 MIDI sequencer was doing great things in conjunction with an Ensoniq ESQ1 and a Mirage, and Hybrid Arts' EZ-Track ST added yet more gloss to the favourable appearance of STs in the MIDI sequencer arena.

Notable on the non-musical front were the Art Director (painting) and Film Director (animation) packages from Hungarian company Andromeda (published by Mirrorsoft), which, on admittedly brief acquaintance, seem to compare rather favourably with their more expensive Amiga counterparts.

Amstrad's new PC1512 was also very much in evidence, with serried ranks of technovultures around the stand, agog to see Alan Sugar's latest hi-tech offspring. Launched at a high-pressure, high-turnout press conference on the day before the opening of the PCW show, the PC1512 marks a thoroughly sensible move on Amstrad's part to cash in on the IBM

PC industry standard, by providing a range of low-cost, fully IBM-compatible computers.

The surprise element lies in the fact that the PC1512 actually supplants the IBM PC standard significantly. For a start, the Amstrad is much prettier than the IBM PC or most of the other compatibles, and takes up half as much desk space. The hardware has also been considerably rationalised, with many support chips compressed into large ULAs. More to the point, the processor has been upgraded to an 8086 (a true 16-bit processor, unlike the 8088 in standard IBM PCs) running at 8MHz. Which means compatible IBM software will run a good three times faster on the Amstrad PC.

A further nice feature of the PC1512 is that most of what's extra to a basic IBM PC compatible – extra RAM, colour graphics card, disk interface, real-time clock, serial and parallel ports, and the omnipresent mouse – is provided as standard. And that's just as true for the entry level PC1512 (£399, with a single disk drive and monochrome screen) as for the full-blown PC with colour and a 20Mbyte hard disk (£949).

Now, I'd be the first to admit to finding the IBM PC uninspiring, but there's no escaping the fact that there's one helluva lot of software for it, which includes a growing number of MIDI sequencing packages. Aside from the excellent Roland MPU401-based systems, there's also an intriguing Music Synthesizer System from US company Tecmar that offers 16 channels of sampled sound at up to 50kHz sampling rate, with 64-track sequencing and MIDI included – all for under \$800. On that basis, it's foolish not to think seriously about the IBM PC as the basis for a MIDI studio. And from what I've seen of it, the

Amstrad PC1512 stands to fit that bill rather better than most.

The seemingly ever-popular Spectrum was well-supported at the show from both hardware and software viewpoints. And Sinclair took the opportunity to launch the Spectrum Plus 2, a sort of revamped Spectrum Plus with a decent keyboard, integral cassette drive, and a MIDI Out port. All undeniably good value at just under £150, but more than a little reminiscent of a product Amstrad produced when they didn't have Sinclair in financial tow – the CPC464.

A product showing rather more ingenuity was the Music Machine from Flare Technology on the Ram Electronics stand. This £49.95 add-on for the Spectrum not only provides quality sampling and sound editing, plus software to emulate the average digital drum machine, but also a very workable sequencer that communicates with other musical workhorses via MIDI In, Out, and Thru on the Music Machine hardware. Remarkable value, I'd say.

One company that was particularly low-key at the show was Apple. Mention the key words 'new Apple' to the resident Apple-persons and you received a Mona Lisa-type smile and 'no comment'. But there was a good reason for that insouciance. In fact, Apple Computer had read last month's feature on the Amiga, noticed the reference to the rumoured sound capability of their new micro, and promptly invited E&MM along to a press conference on September 10.

And for once, fact and fiction have turned out to be one and the same. The new computer is called the Apple IIGS, and Apple see it as a logical update to the venerable II+ and its successors, the IIe and IIc. It'll even run



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Briefly, the £995 IIGS is a 16-bit micro (65C816 processor—an update of the 6502 in the original Apple) with 256K RAM (expandable to 8Mbytes), 640×200 pixel colour graphics, a tastily designed keyboard, eight expansion slots (Apple II compatible); a mouse, a monochrome monitor, and a 3.5" disk drive.

None of the above specs is really that earth-shattering—16-bit processors, lots of memory expansion, and superb colour graphics are par for the course these days. But where the IIGS marks a major departure from its predecessors, and, indeed, its competitors, is in its sound capability. One rumour I'd heard some time ago was that Ensoniq were working with Apple on producing a sound chip. I filed that away in the 'interesting, but unsubstantiated' file, and more or less forgot about it. What Apple and Ensoniq have actually done is to equip the IIGS with the same chip that's used in the Mirage and ESQ1.

This Digital Oscillator Chip (DOC) comprises 32 digital oscillators, two of which are used for the chip's internal workings, leaving no less than 30 to provide 15 dual-oscillator voices. With a quoted bandwidth of up to 14kHz (29.4kHz sampling rate), 64K of dedicated sound RAM (though the main RAM can also be used for that purpose), and a built-in analogue-to-digital converter for sampling, the DOC sounds just like what this Doc has been yearning for for years.

If the DOC really is as good as the Q-chip in Ensoniq's own products, then the Apple IIGS is sure to reverberate throughout the music technology industry in no small way. Just imagine: add a bit of software to the Apple IIGS and you've got a Mirage or ESQ1 sound-alike for under a grand, and with a decent 16-bit micro thrown in for good measure.

And the even better news is that there are more than a few US companies already working on software for the IIGS, to do just that and more. ■ David Ellis

REPLAY REPLAY

Old gear acquires a lot more than sentimental value when you discover the latest all-singing, all-dancing toy isn't capable of producing one of your favourite sounds. But what do you do about all the innovation the golden oldie lacks—programmability, MIDI and the rest? In most cases, you either live with the problems or without one of your pet sounds.

But in the case of the old Action Replay sampler for the ZX Spectrum, help is at hand from one of our own readers. Nicholas Gallop has built a keyboard interface that allows MIDI control of the Action Replay over a four-octave range, and has also re-written the software to facilitate waveform editing, Microdrive compatibility, drum machine synchronisation and monophonic CV operation.

More from Nicholas at 33 Grange Avenue, Hastings, East Sussex TN4 2QQ. ■ Tg

FINGER ON THE TRIGGER

No doubt about it—Akai's S900 is one of this autumn's hottest-selling hi-tech musical instruments. It seems dealers can't get enough of them, and the reasons for the machine's success are pretty obvious. Apart from anything it may have now, the S900 has enormous

potential, perhaps more than any comparable unit. When it was released, there were words spoken about software for harmonic synthesis, for example. Well, we're not quite at that stage yet but...

The ASK90 is a hardware modification for the S900 that facilitates triggering from drum pads, drum machines and sequencers. Up to eight separate triggers may be employed, allowing independent control over each voice, with trigger data being converted into MIDI information by the extra circuitry. MIDI velocity information is also derived from the trigger signals.

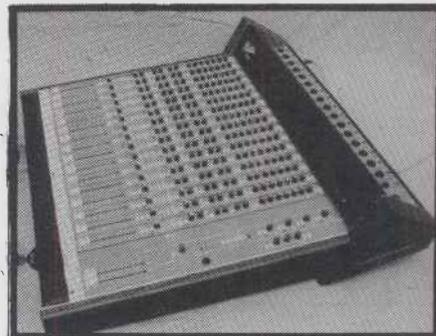
The retail price of the ASK90 is expected to be £169, which isn't bad.

More from Akai UK, EMI Division, Haslemere Heathrow Estate, Silver Jubilee Way, Parkway, Hounslow, Middx TW4 6NQ. ☎ 01-897 6388. ■ Tg

MIXING IT WITH MIDI

The MIDI-compatible mixing desk is a peculiar beast. It's easy to become enthusiastic about an idea that, on second thought, becomes curiously vague and indefinable—just what parameters do you give MIDI control over? Soundtracs have obviously pondered on the same question, and have now come up with the MIDI Series of mixing consoles.

The MIDI Series conforms to the in-line format, and comes in a number of configurations to suit differing requirements—though it's designed primarily with the keyboard



player and synthesiser workshop in mind. It may be assigned to any MIDI channel, and may also be used to control external MIDI effects.

More from Soundout Laboratories, 91 Ewell Road, Surbiton, Surrey KT6 6AH. ☎ 01-399 3392. ■ Tg

BIGGER AND BETTER RAMS

An odd situation is developing around programming Yamaha's DX synths. On the one hand, we are bombarded with stories of programming problems, and the over-use of factory presets and commercially marketed sounds that results, while on the other, we have manufacturers of RAM cartridges striving to produce ever-larger memory capacities for storage of patches.

Perhaps the answer lies in the compatibility of RAM between the DXs and the RX11 drum machine. Either way, Quattro Electronics now claim to market the largest capacity RAM for the DX7/RX11. The Quattro 128 will hold four 32 voice RAM banks that may be accessed by the flick of a switch. The cartridges are said to have a minimum seven-year battery life, and

will cost less than £80.

More from Quattro Electronics, 43 Liddell Gardens, Brondesbury Park, London NW10 3QA; Damian ☎ 01-650 8731, or Nick ☎ 01-969 1719. ■ Tg

TOURING TUBES

Dynamic big band Loose Tubes (see Django Bates interview this issue) are touring England in the second half of October. So now's your chance to catch the liveliest band in the land (it says here). The dates that matter: Bracknell, Wilde Theatre (October 14), London, Logan Hall (15), Southampton, Guildhall (16), Plymouth, Theatre Royal (17), Brighton, Gardner Arts Centre (18), Birmingham, Triangle Arts Centre (19), Sheffield, Octagon (22), Leeds, Trade Club (23), Durham, Dunelm Ballroom (24), Manchester, Opera Theatre RNCM (25), Leicester, Haymarket Theatre (26), Coventry, Warwick University Arts Centre (27), and Liverpool, Bluecoat Arts Centre (29).

More from the Arts Council, ☎ 01-629 9495. ■ St

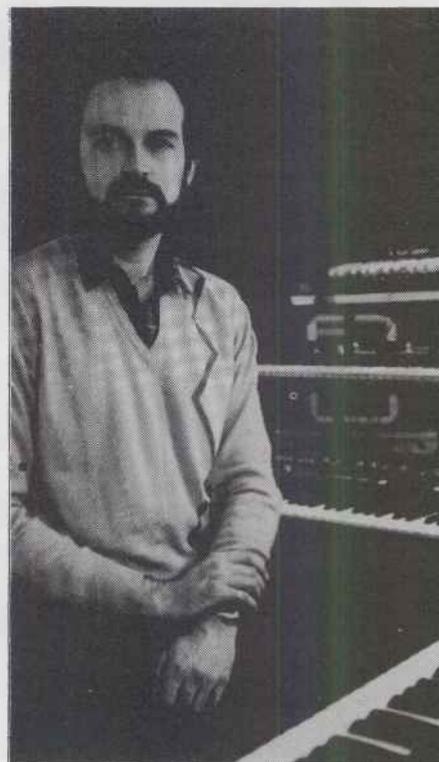
PLANET ROCK

The London Planetarium is an atmospheric, if under-exploited, concert venue that's seen only occasional performances from artists like Kate Bush, Klaus Schulze and Helden.

But now indie label AMP Records have grabbed the Planetarium (and the laser show it contains, Laserium) to showcase two of their artists.

Neutronium star Michel Huygen will be supported by Steve Jolliffe in 'An Evening With AMP Records' on September 29. There will be two shows, beginning at 7pm and 9pm, from both artists, who either have or soon will have material available on AMP.

Tickets costing £5 plus 35p p&p are available from AMP Records, PO Box 387, Wood Green, London N22 6SF. ■ Tg



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Dear E&MM

Gentlemen Take Polaroids

Just a letter of appreciation for your interview with David Sylvian last month. You asked the questions that people would want to ask the man himself, and balanced the article with his development from Japan. It was both enjoyable and informative.

Having glanced at the article again, I was wondering if there were any of Martyn Goddard's photographs 'spare', or gathering dust in a filing cabinet? If there should be any pictures you might normally discard, I'd be more than happy to be your dustbin!

■ Arthur Johnson
Liversedge

Thanks for your praise, Arthur. Unfortunately, we're not in a position to distribute photographers' work without their prior consent.

This also presents an opportunity to offer

apologies to Laurie Lewis, whose photographs of David Sylvian it was graced the front cover of E&MM September and page 52 of the interview. A slight mix-up prevented him from receiving his credit at the time. ■
Tg

Dear E&MM

Program Protection

As a dedicated synth programmer of some years standing, I may be able to throw a little light onto comments I've heard and read concerning synth presets.

What percentage is it of DX7s returned to the factory for servicing that still have the factory presets in memory? Damned if I can remember, but if I return mine for servicing it'll be counted along with all the others.

Can't I program it myself? Sure I can, but I don't intend to pass a machine filled with hours of my work through the hands of a dealer and a servicing department, without any qualms about who may quietly be ripping

off my work and making a few quid on the side from it.

If you send any synth anywhere for any reason, you can take steps to safeguard your work. One method is to corrupt all the data currently in memory – at the risk of making a service engineer's life unnecessarily difficult. After all, what would you conclude if you were faced with a machine that remained silent, no matter which memory location you selected? Or one that produced rubbish all the time?

The factory presets allow the instrument to be tested and serviced with the minimum of trouble, and no risk to your own copyright.

■ Jon Knight
London

Dear E&MM

E&MM Widows

While skimming through my husband's E&MM September, I was delighted to read Graeme Holiday's winning article in the DX100 competition.

As someone to whom a TX7 sounds like a sports car, MIDI a skirt length, a mouse something that eats chocolate biscuits (oh, and isn't MonoPoly a board game?), it was pure pleasure to understand more than the first line.

On second reading, however, my joy turned to trepidation. Poor Mrs H – she is fast on her way to joining the whizz-kids' widows association.

Act now, Mrs H (may I call you Lynn?). Tear up the Access card, confiscate the cheque book, tie him to the bed if all else fails, before it's too late.

Still, you don't have all my sympathy. What woman in her right mind actively encourages a man to buy a synth? I can only put it down to youth and inexperience. My spouse had a fairly comprehensive setup when we were married a long three years ago and, despite my protestations that vacuuming the studio was almost impossible, the monster still grows with no word of encouragement from me.

Not only do I have to contend with all this, but holidays, weekend breaks and their like revolve around trips to music shops where the conversation is decidedly esoteric. A suitably bored expression is no guarantee of an early release. To add insult to injury, his little

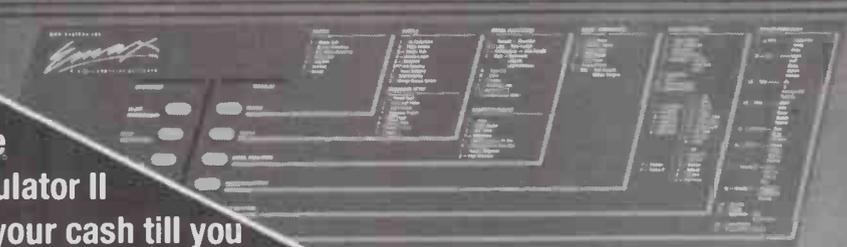
E&MM OCTOBER 1986



E-MAX

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You'd think this half alone would be good value! But check the specs – the E-Max is almost an Emulator II (See August's E&MM review) save your cash till you hear this incredible machine available October from **THE ONLY N-WEST OFFICIAL DEALER PS** also available – Emulator's SP12 Nuclear Turbo Drum Machine at £2,450



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► friends always want to come round and play with the toys in the nursery – tramping about with wet umbrellas and grubby feet, wide-eyed at seeing my husband's expander (I thought that was illegal).

Mind you, there are compensations: no arguments about TV programmes, being able to read in peace, and it does keep him away from other women.

Having both castigated and sympathised with Lynn, let me now offer some words of advice to enable her, and others, to cope with their husbands' addiction. First, have a night out on your own once a week, ensuring that 'Sir' be chauffeur in both directions, thus interrupting the flow of genius at least twice in an evening and reminding him of your existence. Second, and absolutely essential, is a dishwasher to cope with the extra crockery involved in entertaining his playmates. It's also helpful to have an intercom system between yourself and the studio, to avoid the loss of your voice yelling 'dinner's ready'.

Finally, start collecting 'goodies' of your own. Lynn is ideally placed for exploiting this strategy, as Graeme shows all the classic signs of guilt in his writing. I suggest kitchen gadgets or gems as the best possible 'goodies', the latter having the advantage of portability

if the going gets tough. But beware: unlike the purchase of a new electronic musical toy for him, you need to justify being unable to live without an ice-cream maker or a new tiara. Plan well in advance.

The above advice is meant as a guideline to other such unfortunates as Lynn and myself, to enable them to cope with their budding Jean-Michel Jarres. There is, however, no guarantee, and the author takes no responsibility for failure.

One last word. Turn a blind eye on the bathroom – or do it yourself.

■ Sylvia North
Swansea

Dear E&MM

School Of Thought

Yes, it's true. Most music teachers couldn't tell the difference between a drum machine and the back of a buss (sorry). However, there is a growing number of us (yes, I confess, I am a music teacher) who, largely as a result of personal interest in the hi-tech/home recording field, are now using a variety of hi-tech devices in class.

I consider myself fortunate to be able to use

synths, sequencers, drum machines, a multi-track machine and even my own Mirage sampler in class (note: this is a state school).

The response from children of all ages is very favourable, and I feel it has helped generate interest in all sorts of musical activity – rock, pop and classical. (You would have heard all about this if I had won the DX100 competition!)

But personally I feel very isolated, despite the developing (though somewhat ill-directed) interest in 'modern music' resulting from the new GCSE exam. We must hope that consumer (ie. pupil) demand will force the issue as 'trained' musicians seem to be a pretty conservative bunch on the whole.

As for courses, I am arranging a series of one-day sessions for those interested in doing the kind of thing I get up to in class. They will cater mainly for beginners who want hands-on experience of hi-tech equipment, and will provide guidelines on using sequencers, synths, samplers and so on in a creative way – though I won't be delving too far into the subtle nuances of FM programming or MIDI codes just yet.

■ Patrick Dunn
Head of Music
Daventry School

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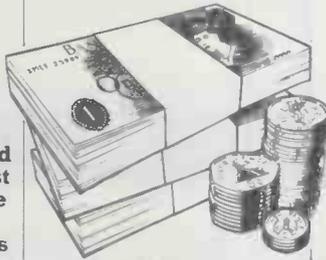
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Interface

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

Q My recording setup consists of a Roland MC500 sequencer, Casio CZ101 synth, Yamaha FB01 expander, TR707 drum machine and a Juno 60, all of which are MIDI-equipped with the exception of the Juno.

As I find many uses for the arpeggiation facilities on the Juno, I'd like to output information to the MC500 using a Roland MD8 DCB-to-MIDI converter. Will the MD8 recog-

And can you recommend any books about MIDI?

■ John O'Connell
Galway,
Ireland

A Hinton Instruments in the UK market an 'intelligent' RS232/MIDI interface called MIDIC (a full review appeared in E&MM July '85). This rather clever black box plugs into any

Q My interest has recently been aroused by the Yamaha RX21 MIDI drum machine (the first piece of Yamaha gear to do this for a long time). But, if I buy one, I'd like to connect it to a Roland CSQ600 sequencer. Now as you may know, the CSQ600 is pre-MIDI, but it will drive my old CR78 Compurhythm (remember them?) which is something I would like, if possible, to continue doing. Is there a way I can connect an RX21 to my CSQ600, or should I look at Roland's TR505 as a possible alternative?

■ Anthony Braine
Bristol

A To sync the RX21 and CSQ600 together, you'll need the services of a sync box of some description. This will involve making the CSQ600 the master time-keeper, and slaving the other two units to it. The Korg KMS30 sync box is worth considering, as it'll accept the incoming Roland Sync 24 information from the CSQ600 and convert it to the MIDI clock for the RX21. Of course, you can continue to use the Clock and Start/Stop jack outputs on the CSQ600 to synchronise the CR78 without interfering with the operation of the KMS30.

On the subject of the TR505, you'll find the problems facing you there much the same, as it doesn't cater for Roland's Sync 24 standard. ■ Tg

nise arpeggiator data? If not, is there any other way I can get the arpeggiator into data the MC500 will recognise?

■ John Chilton
Kent

A Useful though arpeggiators are to some people, it's one area of data transmission that's frequently neglected. The crux of your problem is whether or not arpeggiator note data is transmitted by the DCB as, without it, the MD8 will have nothing to work with. A quick call to Roland (thanks, Alan) has revealed that no such information is forthcoming from the DCB - sorry.

Without any means of gaining access to the note data generated by the arpeggiator, there's no way of transferring it to the MC500 at all. The only remaining solution is to invest in something like the Akai ME20A sequencer/arpeggiator, which would generate arpeggiation data in a MIDI-digestible form. ■ Tg

Q Do you know of any way to make the RS232 interface talk to a MIDI interface? Is there any sort of standard, universal RS232-to-MIDI converter?

computer with RS232, and in addition to allowing you to transfer data in either direction between MIDI and RS232 devices, provides features such as MIDI data filtering, tempo generation and multisplit keyboard assignments.

Unfortunately, to our knowledge MIDIC has yet to spawn commercially-available MIDI software. However, if you're interested in writing your own MIDI software, MIDIC might be just what you're looking for, as it handles a lot of the mundane 'housekeeping' chores that are part and parcel of writing MIDI software, leaving you to get on with the more interesting bits.

Hinton Instruments may be contacted at 168 Abingdon Road, Oxford OX1 4RA, ☎ (0865) 721731 (24-hour answering service).

As for books on MIDI, Craig Anderton's aptly-titled 'MIDI for Musicians' can be recommended as an accessible and well-informed introduction to the subject, and includes a copy of the 1.0 spec. It's available in the UK through Music Sales.

Another book on MIDI which has just come to our attention is 'The MIDI Book: Using MIDI and Related Interfaces' by 'Keyboard' magazine columnist Steve de Furia. It's published by Hal Leonard in the States, but we're pleased to say is also available directly from F&MM (see elsewhere this issue for details).

Q I recently bought an old and rather badly abused ARP Axse mono-synth. Luckily, all the circuitry appears to be in working order, but I do need to find a replacement key (D) to get it into a playable condition. Do you know where I can get such a key, as I've already tried a few shops but nobody seems to have the right type in stock?

■ Rory Cargill
London

A As ARP are no longer operating, you've got something of a problem child here. Contacting Rod Argent's in Denmark Street would seem to be your best bet: they told us they 'could probably do something with it'.

The obvious, though expensive, alternative is to replace the whole keyboard with a new one. This would have the additional advantage of making it more readily repairable, the next time you catch your sleeve on those projecting key ends... ■ Tg

E&MM OCTOBER 1986



ENSONIQ PIANO



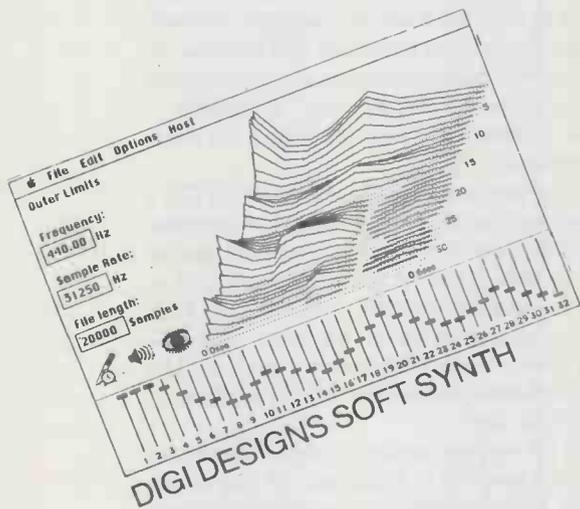
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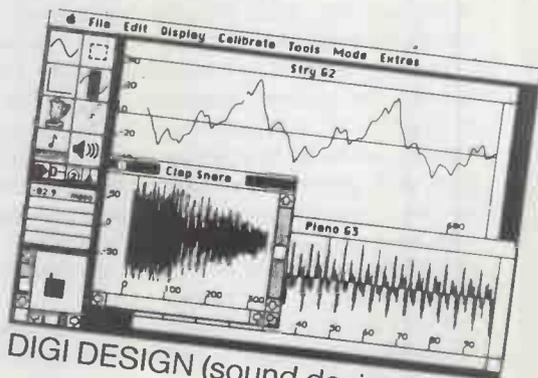
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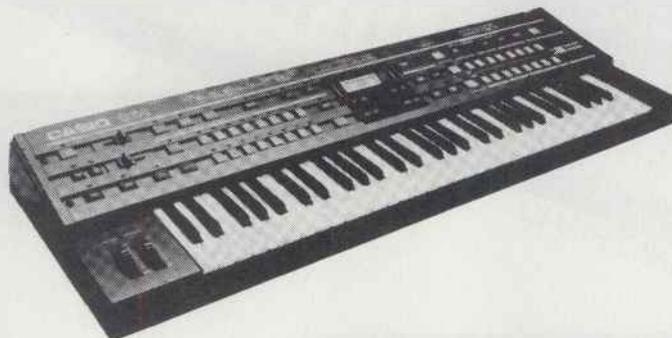
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Casio CZ1 Polyphonic Synthesiser



Phase Distortion. Not a very catchy phrase, it has to be said, but the concept it embraces has certainly caught on. Casio's CZ series of synthesisers – the first machines to use PD – have been a huge success story worldwide, with all kinds of musicians playing all kinds of music on them, and programming all kinds of sounds into them.

Thus far, though, all the CZs have lacked a touch-sensitive keyboard. That obviously hasn't bothered buyers of the budget CZ101 and 1000 too much, but since those machines were released, some rival synths, even if they've not had touch-sensitive keyboards, have been given the ability to respond to touch via MIDI. Meanwhile, Casio's updates on the basic CZ idea (the CZ5000, 3000 and 230S) have remained steadfastly non-sensitive.

With the new CZ1, all that has changed. In appearance and facilities the CZ1 is similar to the CZ5000 and 3000. That means all its facilities are readily accessible from the front panel, and included are both split and dual performance facilities (the former with floating split point). But in addition to touch-sensitivity, there are a number of other new features lurking behind the CZ1's helpful exterior.

The five-octave CZ1 is sensitive to both attack velocity and channel aftertouch, with amounts programmable independently for each program. Velocity can be set to affect amplitude, timbre and pitch, while aftertouch can be set to affect modulation and amplitude; not only are these settings independent for each patch, they're also independent for each of the two DCOs, two DCWs and two DCAs that can make up a CZ sound.

And those familiar Phase Distortion voices respond to the CZ1's onslaught of performance sensitivity very effectively.

Not content to rest on their laurels, Casio have also given each of the two 'lines' (DCO-DCW-DCA combinations) its own level setting, which the velocity and aftertouch settings operate within.

The number of programs has been increased over the CZ1's predecessors, with 64 preset and 64 programmable memories (initially set to the same sounds) onboard, together with a further 64 on cartridge. Also included are a healthy 64 Operation memories (you may know them as performance memories) which allow you to store front-panel key split, tone mix, portamento, glide, bend, modulation and solo settings. So you can instantly move from, say, a key split combination of slap bass and electric

piano, to a tone mix combination of bells and motorcycle.

Key split and tone mix modes have also been given added features. In addition to the ability to program volume levels for each sound, you can now turn chorus on and off independently for each patch in a key split and tone mix, turn sustain on and off, select octave shifts independently for each patch in a key split, and detune patches in a tone mix.

You can also edit and then store individual sounds from within the key split and tone mix modes, making it easier to tailor certain sounds within the context you intend to use them for.

If you've ever had trouble organising your sounds in a CZ machine's memory, you'll be glad to know Casio have included an Exchange facility (similar to that found in CZ editing software for computers) which allows you to swap the positions of any pair of sounds in memory (internal and cartridge). And when you're in the white heat of sound creation, you can now copy sound parameters from one line to another – particularly useful when setting up the CZ's eight-stage envelopes.

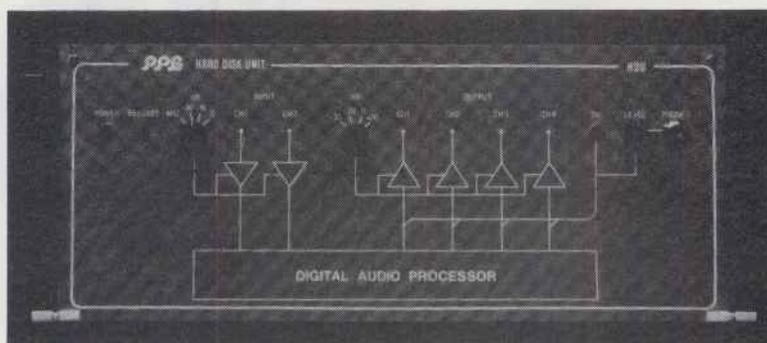
Casio have also paid a lot of attention to the CZ1's MIDI implementation. Most notable is a development of MIDI Mode 4 (Mono Mode), which Casio call Multimode. With it, you can select any channels up to a maximum of eight for MIDI reception, and then choose any one of these as the basic channel – meaning that certain information (such as main volume, pitch-bend, and local on/off) can be allocated to a particular part.

You can allocate any number of the CZ's voices to each channel specified in Multimode, as long as the total doesn't exceed eight voices – so you're no longer limited to monophonic parts. Usefully, you can also specify a volume level for the voices on each channel, and sustain on/off can be specified separately for each channel.

All in all, the CZ1 is a very responsive instrument that's benefitted not only from touch-sensitivity, but from a number of other new facilities, the inclusion of which is a heartening indication that instrument manufacturers are listening to what musicians have to say. ■ *Simon Trask*

Price £999 including VAT
More from Casio, Unit 6, 1000 North Circular Road,
London NW2 7JD. ☎ 01-450 9131

PPG Hard Disk Unit



The distinction between digital tape recording (as typified by the Sony PCM system) and sound-sampling is becoming decidedly blurred. The PPG HDU, for instance, is a machine developed by a company renowned for devices in the latter category (like the Waveterm), yet it could easily provide a solid-state substitute for a tape-based system.

The basic concept behind the HDU is to use an 85-Megabyte Winchester drive to store 12 minutes of 16-bit digital recording at 44.6kHz sample rate (which is exactly the same sampling format as the Compact Disc process). The total sample time is divided between 10 tracks, each of which is 72 seconds in length, and you can output four of these tracks simultaneously via the four output jacks.

In a 12-minute mono sample, the HDU uses all 10 tracks to make an uninterrupted recording. Alternatively, the sections recorded on each track can be triggered at the appropriate points during a piece of music programmed into a MIDI sequencer (the HDU recognises both MIDI Clock and Song Position pointers). This means that the acoustic sounds in a song (vocals, pianos, guitars, whatever) can now be sequenced via MIDI alongside synthesiser parts and digital drum sounds.

The HDU can also be played from a MIDI keyboard, and in this application, the fact that each track can hold 10 separate samples (sharing the 72 seconds between them) is especially exciting. In this way, 100 samples can be immediately accessed – and you can trigger any of these from a sequencer.

Onboard the HDU, any 64 of the 100 samples can be chained together into 'songs'. These allow you to order your samples as necessary, and then trigger events at the appropriate point in your visual moments.

Even more interesting for people who work in film and video is the Time Manipulation function, which allows you to match recorded audio with video when the two are of different length. For example, if you have an audio passage that is 35.2 seconds in length, but video that's only 30 seconds long, the Time Manipulation function matches the two together without any change in pitch. Listening to this function, it's considerably better than an average

'harmonised' signal, with no noticeable glitching in the signal. Frankly, I'm still wondering exactly how this is done.

The HDU's real-time processors are able to generate a wide range of signal-processing effects digitally (ie. without the degeneration you'd get from turning the signal back into analogue and the line noise that results from patching). These effects include echo, flanging, phasing, delay, distortion and harmonising. And if you use an external sound source, you can use two effects simultaneously.

Although using a sample from the Winchester means you can use only one effect at a time, you can resample the result to another part of the Hard Disk Unit, the signal going through the D-to-A and A-to-D converters.

Mixing tracks together (often referred to as bouncing or ping-ponging) is also possible in the digital domain, so again, there is no loss in signal or build-up in tape noise. You can also simulate different types of amplifiers (such as a tube or certain vintage brand of amplifier) in real time.

The HDU comes complete with a remote control, the PPG Commander. With it, you can call up all programs and data in the memory of the HDU, as well as all other functions. Every function has its own 'Page', where the controls and parameters are displayed numerically or in a graphic form. Everything is controlled via eight analogue controls: six knobs and two faders. On the rear of the Commander, there are four jacks in the remote control for connecting pedals and switches. And at any point, the display tells you what controllers are connected.

By the end of this year, PPG plan to offer options like a SMPTE card interface and a Streaming Tape back-up for downloading samples and setup information. These options will include both software and hardware in one package.

And even as you read this, the boffins at PPG are working on further software updates and features, and after their clever tricks with time and pitch correction, who knows what they will come up with next? ■ Paul Wiffen

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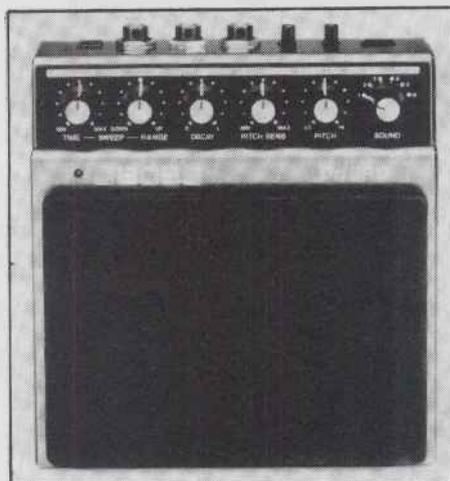
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I·N B·R·I·E·F
Boss Dr Pads



They're square. You hit them. They make noises. They're the simplest, but by no means the least useful, of all the Doctors to emerge from the Boss division of Roland Corporation in Japan.

In some ways, these new Dr Pads resemble the Swedish ddrum digital percussion controllers. The difference is that the Boss units use PCM voices (similar to those found in Roland digital drum machines), which are cheaper to fit than digital samples. Thus each Dr Pad comes with no fewer than six percussion sounds built in – though there's no apparent means of swapping sounds with fresh ones when you get bored with your first half-dozen.

All you can do, if you do get bored, is to buy another Dr Pad. There are three in the range: the DRP1, with two snares, tambourine, handclap and timpani; the DRP2, with a pair of bass drums, an electronic tom, a steel drum, a small gong and the 'star chime' off the Roland TR727; and the DRP3, with a more off-the-wall range of sounds comprising smashing glass, cowbell, timbale, scratch, quijada (also from the 727), and large gong.

The Dr Pads present a very modern outlook on drum sounds. The snares are crisp, bright, and forceful, the bass drums heavy, decidedly non-acoustic, and very hip hop.

Overall sound quality is extremely high – there isn't one voice of the 18 available that really fails to deliver the goods – and my only regret is that those TR727 percussion sounds have already been heard before on commercially released records, and have lost much of their novelty as a result.

Voices are selected one at a time with an awkward rotary switch better suited to adjusting continuously variable parameters. In fact, there are five such parameters on the Dr Pads: Pitch, Pitch Sensitivity, Decay, Sweep Range and Sweep Time.

Pitch and Decay are fairly self-explanatory – though it's worth noting that both offer a wider range of adjustment than many musicians will be expecting. As a result, you can obtain some pretty wild sounds – long-envelope record scratches, silly high-pitched gongs – using these two controls alone.

Things get more interesting, though, when you come on to Pitch Sensitivity. Not surprisingly, the rubber pads on each DRP are touch-sensitive: the harder you hit them, the louder they sound. But the touch-sensing circuitry is also routed internally to pitch, so that hard hitting produces a higher output

pitch than subtle stroking. Using the Pitch Sensitivity control, you can adjust the difference in pitch caused by varying dynamics.

Obviously, this makes for a more realistic live effect; many acoustic percussion instruments alter in pitch depending on how hard you hit them. But it can also, with clever tweaking, result in some less likely effects – like two timpani tuned apart in fifths, and the sound of massed clapping.

And so to Sweep, an analogue parameter that's an unlikely – but very welcome – feature on what are essentially digital instruments. To begin with, any sound can be filter-swept either upward or downward – depending on whether you set the Sweep Range control clockwise or counter-clockwise. Extreme settings in either direction deepen the sweeping effect.

Shifting the Sweep Time control clockwise increases the amount of time the sweep takes to do its work, though in the context of sounds that don't naturally have much decay (kick drums, claps and so on), long sweeps don't work too well. More striking are long, dramatically swept gongs, and rapid-decay snare drums that sweep for a moment and then die – almost as if they were going through gated reverb.

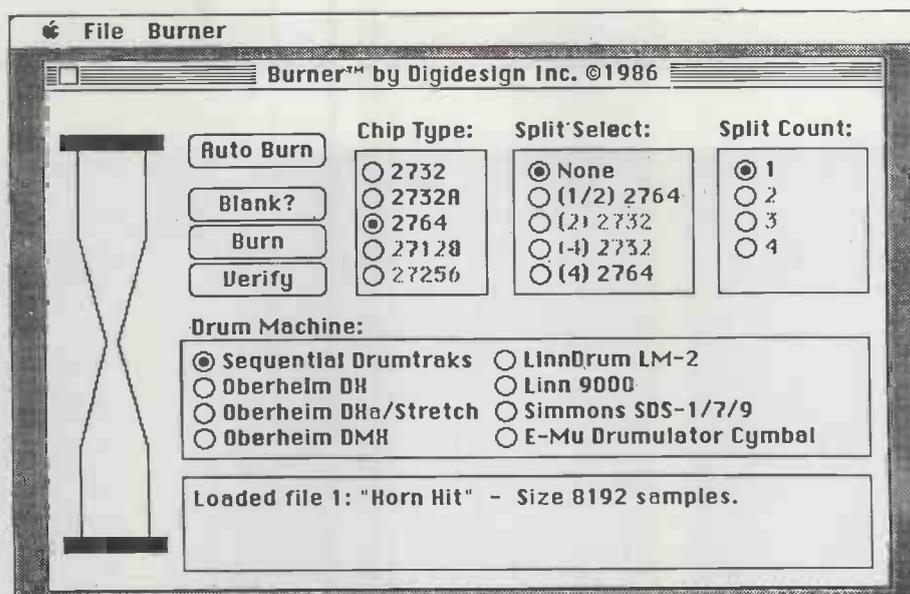
The Dr Pads have well-equipped back panels, with rotary controls for pad sensitivity and output level, and three jack connectors for the main output, mix input (for connecting more than one unit together in series), and trigger input for connection to any drum machine that has a trigger out. If your beat box has three such outputs, you could connect each one to a separate Dr Pad, and have a choice of 18 new sounds to add to your rhythm patterns.

So the Dr Pads sound good, offer an intriguing range of sound-adjustment for all their voices, and would go equally well alongside an acoustic or electronic drum kit, or as part of a drum machine setup.

The sounds you create by varying the Dr Pads' parameters aren't storable in any way, so switching between voices isn't just a matter of turning a knob – you have to turn several. But that aside, they're highly usable and surprisingly versatile instruments, and should find a lot of friends. ■ *Dan Goldstein*

Price RRP £149 each, including VAT
More from Roland UK, Great West Trading Estate, 983
Great West Road, Brentford, Middx. ☎ 01-568 4578

Digidesign Burner Software



When Linn introduced the LMI drum machine in the early eighties, everyone and their mother was impressed by the quality of eight-bit drum samples, and the ease with which patterns could be assembled using them. Soon enough, a number of competing devices appeared, and proved that there was a huge market for drum machines if the price was right. Since these drum machines had their sampled drum sounds on EPROMs which were, in general, easy to replace, there was soon a demand for alternative sounds. If the drum machine's manufacturer didn't offer alternative sounds, then an independent company would.

Many moons later, samplers have started to take over the drum machines' role in the recording process. The drum machines may be recorded onto tape to begin with, but often each sound is recorded on a separate channel so that later, it can trigger a sampler and be replaced by another sound. These days, there appears to be little time to have your samples converted into drum chips.

Which is too bad, really, since EPROMs don't lose memory when power is switched off, and are also a good deal more roadworthy than the 3½" disk drives currently featured on many samplers. Digidesign (who started off as DigiDrums, by the way, producing alternative drum chip sets for various drum machines) have recognised the number of drum machine owners who are trying to keep their sounds up to date, and come up with Burner, a hardware/software package for the Apple Macintosh (and Macintosh Plus) which 'burns' EPROMs for a variety of drum machines, using Sound Designer sound files. It does require owning Sound Designer, or at least obtaining Sound Designer files, but Digidesign appear to have already taken that into consideration. Anyway, before we get into obtaining sound files, a look at Burner's operation is in order.

The Burner package consists of a program disk and an EPROM burner which can be used in other applications as well. There is only one screen in the Burner program, and burning an EPROM is easy.

First, to make sure that the EPROM you are about to burn has been erased, you insert the EPROM into

the ZIF (Zero Insertion Force) socket on the burner itself, then select the 'Blank?' utility. If the EPROM fails the test, it must be erased with an ultra-violet EPROM eraser, and then tested again. Once that's out of the way, the burning process continues: load in a sample file on the Mac, select the type of EPROM, the drum machine for which it is intended, the number of 'split' in the chip or in the sound, then select the 'Burn' utility and wait for the hourglass display to 'run out'. Each of these functions, incidentally, is carried out using the Mac's mouse. It's then recommended that you verify the EPROM has been successfully burned, and a utility exists for this as well.

The sound files themselves are stored in 16-bit format, so Burner converts the data into whichever format is required (eight-bit linear, eight-bit companding, or whatever) by the drum machine in question. Currently, Burner makes EPROMs for the Linn LM2, Linn 9000, Oberheim DMX, DX, DXa/Stretch, Sequential Drumtraks, Simmons SDS1, SDS7 and SDS9, and the cymbal chip for the E-mu Drumulator. It's unfortunate that it doesn't burn the other Drumulator chips, but this is apparently due to the complexity of the 'header' which must be included with the sample data on the EPROM in order for the Drumulator to know where to find each sample.

So what happens if you don't happen to own the Sound Designer program, but want to get sound files for Burner? Well, it appears that Digidesign will make sound files available by modem through their BBS, and in any case, they emphasise that since most percussion sounds are relatively short, sound files could easily be transferred over networks such as the American PAN system.

Personally, I can see Burner receiving a warm welcome from many musicians who will be happy to find that the technology which at one time appeared to have left their drum machines behind, has come back to give them a lift. ■ Rick Davies

Price To be announced
More from Rod Argent's Keyboards, 20 Denmark Street, London WC2. ☎ 01-379 6690

D J A N G O J I V E



Talented keyboardist Django Bates is at the forefront of a new wave of British modern jazz musicians – players who are absorbing new technology and new influences to create a brighter, more accessible music.

Will it attract a mass following?

Interview *Simon Trask* Photography *Matthew Vosburgh*

THE LOT OF THE JAZZ musician in Britain has never been an easy one. But in the face of continued public apathy and record company complacency, the music and the musicians have survived — albeit at a price. Too many jazz musicians have accepted the status quo, and with it the belief that popularity equates with poor quality.

But one group of musicians are currently running riot through the conventions of what jazz 'ought' to be — and insist that their music can gain popular appeal without making sacrifices. Collectively they make up a 21-piece big band called Loose Tubes, whose gigs have consistently garnered rave reviews for their musical eclecticism, highly polished performances, and sheer, vital exuberance.

Prominent among this new generation of musicians is 26-year-old keyboard player and composer Django Bates. Currently he divides his time between Loose Tubes, the Iain Ballamy Quartet, First House, his own band Human Chain, and a new quartet with drummer Bill Bruford. While First House is an all-acoustic quartet, the other bands feature Bates' electronic setup of Prophet 5, DX7 and Mirage keyboard sampler. The Bruford quartet has been set up to operate at the experimental end of hi-tech instrumentation.

'Bill's been using Simmons MIDI'd to a keyboard, playing notes as well as percussive sounds', says Bates. 'He wanted to do something specifically using that setup. The band's still in the early stages, and we're still finding out what works and what doesn't, but we did some gigs in Japan which went really well. We'll be doing a record for EG in October.'

Bates' exposure to music started 'at the age of zero' courtesy of his father's record collection: jazz rubbing shoulders with African and Romanian folk music. He started playing piano on his own at an early age, later taking lessons in piano, trumpet, violin and guitar. While at school he attended the ILEA Centre for Young Musicians in South London, where his training was exclusively classical.

'For a while I thought that classical music was the only way. At the time there seemed to be too much chance in improvised music, too many things to go wrong or just not sound good. Sometimes now I feel a bit the same way; I tend to fluctuate from one to the other. I do like things to be quite organised.'

On leaving school, Bates took a two-year full-time course at Morley College. The course was again devoted to classical music, but Bates was introduced to the more contemporary

music of composers like Steve Reich, Charles Ives and Olivier Messiaen by then-resident teacher and composer Dave Smith. It was also at Morley that Bates began playing jazz.

The musician then began a four-year composition course at the Royal College of Music, but left after two weeks, realising that he wanted to play jazz piano rather than learn about Monteverdi operas.

'When I had the choice of either going to the Royal College for four years or just going out and trying to play, that's when I took the decision to go out and play some jazz. I also wanted to teach myself all that I needed to know about composing and improvising.

'For a while I was doing a couple of gigs a week at somewhere like the Tramshed in Woolwich, and washing up in hotels at lunchtimes. I thought that was brilliant, really glamorous — having to wash up to survive.'

There followed a year during 1979-80 as leader of a resident support band at a weekly jazz club at the Waterside Theatre in Rotherhithe. The band played in between the sets of established musicians such as Stan Tracey, Harry Beckett and Dudu Pukwana.

'We never got paid, but it was brilliant — just the experience of playing in front of a lot of people. We started writing our own material, which consisted of ridiculous chord sequences that we really couldn't play over! But we used to get very encouraging comments from the other musicians who played there, people who were our heroes.'

Another residency at the delightfully-named Dizzy's Diner wine-bar in Beckenham led to the formation of Bates' own band Humans (later Human Chain) in 1981. He also joined Tim Whitehead's Borderline, which led to his first record, and in 1982 played for a while with reggae band Skank Orchestra. Ever a man to challenge himself with new musical situations, Bates joined Dudu Pukwana's Zila in 1983 to play music which had its roots in the townships of South Africa — music he had been exposed to from an early age.

ABUSY ENOUGH LIFE for most musicians, it might seem, but Bates was also playing what he pointedly terms 'commercial' gigs.

'I'd take any gig that was offered to me, simply because I wanted to play. Some gigs were absolutely dreadful. I'd

get there and it would be just a singer and me with my battered Fender Rhodes, no bass or drums. I didn't know any of the tunes and the singer didn't have any music!

'But it was good in one sense, good for my ears. I'd never just give up and accept that it was going to be shit. I'd spend the whole gig struggling to make it not too embarrassing; it was horrible but also good.'

Loose Tubes grew out of a rehearsal band formed by Graham Collier in 1983 to play charts by established British jazz composers. When the musicians started to bring in their own compositions, the band began to take on a musical identity of its own. The band members also decided they wanted to run things their own way, adopting a democratic organisation that ensured all the musicians had a say in the running of the band — hard enough to achieve in a small band, but a minor miracle with a group of 21 musicians.

Not surprisingly, Loose Tubes' eclectic approach to music springs from the varied musical tastes of its members.

'Maybe it's just coincidence but all of us have got into a really wide variety of music', muses Bates. 'The trumpet player Chris Batchelor, for instance, has got loads of records of Irish pipe music and Balkan clarinet music. That sounds really pretentious but it's not; he just really likes that music. And I've always been into Romanian folk music.'

'Those are the stranger ones, but there's also a lot of different pop music that people in the band like.'

Popular myth has it that jazz musicians are a notoriously introverted bunch, sticking to the music they know and rarely drifting far afield. Nowadays, though, modern jazz players are more open to working in other areas of music. They've got the facility they've always had, but they've also got the interest, and are now willing to admit they can gain musically from the experience of branching out. The musicians in Sting's band are only the most visible example of this trend, as Bates confirms.

'Yeah. Jazz used to be very much a private club atmosphere. Bebop and stuff went out of its way to be itself and not let anyone else in. But now the whole thing is opening up, which is why I still hold out hope that radio stations might one day give jazz adequate coverage. I don't think one sort of music is more likely to be popular than any other. It's just a matter of being able to hear enough of it, and maybe, maybe, having the music explained. With jazz I think the message is usually pretty clear; whatever the message is, it usually comes over strongly.'

'The response to Loose Tubes has always been good. Whatever people ►

▶ have been expecting to hear, they always seem to like us.'

JAZZ MUSIC IN THE UK has a history of dissemination through musician-owned labels. The big-league record companies have never seen jazz as a marketable commodity – conveniently ignoring their own role in defining what is and what isn't marketable.

Loose Tubes Records has so far released the first two Loose Tubes records, and the first disc by Human Chain (currently a duo comprising Bates and drummer Steve Arguelles). Not unexpectedly, Bates is an enthusiastic supporter of the DIY route to getting music out to the people.

'I wish everyone would work like that and bypass the established system. There are so many people in between your music and getting it played on the

"I've got some brilliant ideas for sampling on the Mirage, but I don't get time for that side of things. I've done a lot of programming on the Prophet 5 because I enjoy altering the sounds."

radio, for instance, who are just there to make money. That really annoys me.

'You can sell records at gigs. The whole operation becomes so scaled down that to some people it might seem pointless, but to me it seems really good – it's like starting up your own little shop.

'With the Human Chain record we paid for everything ourselves, from recording right through to the finished product. We spent thousands of quid just because we wanted to make a record, not because we think we're going to get our money back. We had a thousand printed. There's no way we're going to get our money back even if we sell every copy, but that isn't the point.

'I've been to record companies in Japan with the Loose Tubes and Human Chain records. That was my first experience of hustling with those sort of people, and it was horrible. They knew what they were going to do that year, what they were going to make popular. They weren't interested in putting on a record and saying "God! I've never heard anything like that before", because it didn't matter whether they'd heard it or not.

'In Japan the big thing was reissuing old Blue Note records on Compact Disc, which is great because those are brilliant records, but why spend all that money on something that they missed out on first time around?'



But dealing in nostalgia can be a lot cheaper than investing in what's happening now...

'That's a good point – though CBS have put together a "new jazz" compilation, which includes 'Yellow Hill' off the first Loose Tubes album. But then, would they have paid for Loose Tubes to go and record an album? I don't think they'd have had the nerve.'

Bates' trip to Japan was also disappointing for another reason.

'I just didn't get to hear any Japanese music. All I heard was American music – and the bland stuff, at that.'

A recent trip to Malawi with fellow Loose Tubes musician John Eacott, however, was more successful in discovering the local music – after some effort.

'We went to a school where my mother was teaching. There was one music teacher for the school, and his attitude was that there wasn't much point getting the kids to play anything because it's just impossible to make a living playing music in Malawi. There's only one band, which works in the Longwi Hotel.

'John and I asked if we could sit in on a lesson, and then we spent the whole lesson desperately trying to steer it in the direction of playing some music. In the end we did. We got some of the kids to show us rhythms from their villages. They were really embarrassed at first – in fact, they confessed that when they come to school they pretend they don't

know anything about their village life. It took a lot of persuasion for them to show us how they built up their rhythms. The end result was brilliant; the music teacher couldn't believe it either.'

FROM ANCIENT TO MODERN. Bates' introduction to the synthesiser came about in 1983, through playing in a commercial band.

'I just had a Fender Rhodes at the time, and the leader of one band kept on nagging me to get a synthesiser. Every gig he'd tell me at least 10 times, and eventually I decided to get one just to shut him up.

'I ended up getting a secondhand Prophet 5, purely by chance, and very reluctantly started using it at the gigs. To begin with I thought "I don't like this at all", but gradually I began to see all the possibilities.'

The Prophet is now integral to Bates' music-making, along with his DX7 and Mirage.

'The Prophet is nearly always my frontline instrument. The DX7 I either use on its own for backing sounds, or MIDI'd up to the Mirage for basslines. Sometimes I use the Mirage and the DX to play single-line things, but for me it's very hard to find something that's as good as the Prophet. I want a synth to sound like some strange horn instrument or strings, and the DX doesn't really do that for me at all. In fact, I'm not really sure that I really like digital synths that much. I haven't heard any that make me go: "Wow!"'

It seems that keyboard manufacturers are aiming at a different market to the one I'm in. Maybe that's why I'm using an older keyboard. When I play through the presets on

most synths I don't like any of them. Maybe I need a live-in programmer.

'I bought a Prophet T8 a while ago. Touch-sensitivity and a longer keyboard together with those Prophet sounds — I thought it would be the answer to all my problems. When I got

"I don't think one sort of music is more likely to be popular than any other. It's just a matter of being able to hear enough of it, and maybe having the music explained."

it I spent ages trying to get the same sounds that I had on my Prophet 5, but no matter how hard I tried, there was always quite a big difference. In the end I just gave up, and now it's lying at home gathering dust; every time I walk past it I feel guilty.

'I've got what I think would be some brilliant ideas for sampling on the Mirage, but I just don't get time for that side of things. I've done a lot of programming on the Prophet because I really enjoy altering the sounds on that. Rather than be happy to use just preset sounds, I'd rather go out of my way to find my own sounds, or get someone to come up with the sort of sounds I want.

'Having said that, with the DX there's only about four sounds that I use, and they really are useful.'

And how much do sounds encourage musical inspiration in certain directions?

'For me quite a lot. If I have to do a gig on those three keyboards and no acoustic piano, it's quite a challenge for me, because I was brought up playing acoustic instruments and to me they're still very important. There's something not quite right about not using them on a gig, but in a way that's good because it challenges me to try and get these instruments to sound human.

'So if I'm getting some material together I can't just sit down at the piano and write a tune. I have to get the sounds and find out what's going to work. Actually, it's not quite that straightforward; the sounds and the musical ideas go together. I've got to bear in mind, when I'm writing for keyboards, that the music's going to have to be playable with a certain set of sounds.

'Some sounds I really like on synthesisers and some I really detest, though I find it hard to explain why. I don't go for hard sounds very often,

which is perhaps a reflection of the way I play.

'I suppose I like human sounds, whatever that might mean. I like sounds to be slightly out of tune, and the Prophet's brilliant for that because you can tune each note separately. But it's very hard to play with other people using different tunings; you can't tell the double-bass player to keep playing the third and the fifth sharp and the seventh flat.'

On stage, Bates likes to use a real piano in preference to electronic imitations, feeling that nothing can reproduce the full dynamic and timbral range of the piano.

'Someone has graded 55 different dynamics on one note on the piano, and for each dynamic you get a slightly different tone. And if you play a chord you get a whole lot of different harmonics, which you don't seem to get with digital pianos. To capture all that information digitally is no easy task.

'I bought a Yamaha electric grand at one time, thinking it would solve all my problems. But each note with its pickup seemed to take only the sound of that note; you never got the whole keyboard sound like you do with a piano's sounding board. I tired of the Yamaha's sound really quickly.'

"I had the choice of going to the Royal College for four years or just going out and trying to play, and that's when I decided to go out and play jazz."

Yet the acoustic piano has given Bates problems which he feels can only be resolved through the adoption of electronic instruments.

'The problem I've found is that you can't do a gig with acoustic piano and drums. It's just so hard to get the two things to work together; somehow the drums seem to block out harmonics on the piano. So you try miking the piano and the piano sound changes, and then some of the drum sound leaks into the piano mic. That's one reason why I started using synths.

'Another reason is that you so rarely find a good piano at a gig. I remember once I went on tour in Finland with First House, which is an acoustic group, and I thought I'd just take a piano pickup and rely on the pianos that I found there. I suppose I wasn't being very realistic. You can't play a terrible piano with that band, though I ended up

trying a few times. But some places didn't even have a piano, so we ended up hiring a PF15 in each village and using that. Actually I quite like the PF.'

As for other keyboard players, Bates numbers Keith Jarrett, Joe Zawinul, Bill Evans and Bud Powell among his past influences. Jarrett's influence, in particular, at one time threatened to overwhelm the young musician.

'When I heard Keith Jarrett's music for the first time and was trying to understand what was going on, I just listened to him again and again and again. I started trying to play too much like him, or rather, when I was playing I was always aware that I either wasn't sounding enough like him, or I was sounding too much like him.

'The other thing was that Keith Jarrett's playing was so perfect that I decided nothing could ever be any better, including my own playing. In the end I felt that I had to stop listening to him; the whole situation was so negative. Sometimes I still listen to him and think "that is the ultimate". His playing is a mixture of so much that it almost includes everything I've ever liked. It's not a problem for me any more, though.'

BATES IS A MUSICIAN who knows where he's going and has his priorities firmly fixed. With his own standards of musical excellence, he is scathing of the inferior music which is prevalent nowadays.

'Someone like Herbie Hancock can come along and do something really good, with a lot of thought in it, but it's so easy for millions of other people to turn on a drum machine and overdub some really naff keyboard playing.

'Somewhere along the line, people forget to actually think about what's good and what isn't. It seems that it's possible to get away with just about anything if someone will put enough money into producing, advertising and selling it. That's all you need, which is a shame. But there's good hip hop, there's good rock 'n' roll...there's good in any kind of music.'

Words which neatly sum up the attitude of today's young jazz musicians — and go a long way towards explaining why they're producing some of the most exciting, accessible and relevant music of the moment.

Whether they will break out of the mould and reach the sort of mass audience their music deserves remains to be seen. But with a Loose Tubes tour covering the length and breadth of England in the second half of October, this is your chance to catch them first hand. Open your ears, and be prepared for a real treat. ■



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THE Q-CHIP PIANO



The Ensoniq Piano is the company's third keyboard to make use of the custom Q-chip for reproducing sampled sounds. Its pedigree is impeccable, but competition in the digital piano market is fierce...

David Ellis

Keyboards may come and go, but a grand piano is the one instrument which, until recently, resisted most of the fads and fancies of the music technology industry. But that doesn't mean all is rosy among piano manufacturers. As one worried, head-scratching distributor of grand pianos put it to me at the British Music Fair, 'pianos don't grab the imagination like the latest synthesiser'.

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In some respects, he was right: pianos have remained roughly similar in construction since the early 19th Century, when English piano manufacturer Broadwood constructed 'a wondrous new instrument' for Beethoven. But he was also mistaken. Ask any concert promoter what flavour of concerto will pull the biggest crowds, and they'll mention one of the piano concerto biggies

('Tchaikovsky 1', 'Rachmaninov 2', and so on). And if the soloist happens to have just won the Leeds or Tchaikovsky competitions, the promoters are sure to be rubbing their hands in glee.

The almost mystical folklore of the solo piano repertoire also rubs off on the behaviour of its performers. Glenn Gould wore white gloves when not playing, and used to sit on a stool so low that his chin virtually touched the keys. Horowitz refuses to travel without his Steinway, Michaelangeli has cancelled concerts because of inadequate instruments, and Thomas Dolby even sleeps on his Bosendorfer. All of which tends to prove that the piano can capture the imagination of both performer and public in no small way.

But one change that is significant is the environment in which pianos are played today. A grand piano that owes its mechanism to Victorian traditions may be all very well in a living room of Victorian proportions, but it doesn't make much

► sense if that room has been divided up into the living room, bedroom, kitchen, and bathroom so beloved of property developers. And space is also at a premium in recording studios and music school practice rooms. To cap it all, the ever-rising cost of parts and labour has resulted in spiralling costs for the manufacturer, putting the price of a good grand piano well above the average musician's financial ceiling.

So, as we said in last month's review of the Roland RD1000, the dual desire for greater portability and cheaper manufacturing costs has prompted a lot of attention towards finding an electric or electronic

The keyboard is 10-note polyphonic, but the sensible voice assignment employed by Ensoniq often makes this seem more. In general, if more than 10 notes are played at once, it's the first notes that are stolen. However, to avoid a sudden gap at the bottom if a bass note is sustained with note-greedy chords played on top, the piano applies 'lowest-note priority' in order to hang on to the bass. Where the 10-note limitation is rather more obvious is if you're playing a glissando sweep up the keyboard or a rapid series of chords with the sustain pedal down. Switching in the bass option leaves the keyboard with eight-note polyphony above the split

functional, but a far cry from that of the all-encompassing ESQ1. The piano operates only in Mode 3 (Omni Off/Poly Mode), and transmission and reception can't be set to different MIDI channels. One exception to this generalisation is the bass section, which can be set to a different channel than the main part of the keyboard. Actually setting MIDI channels involves pressing the MIDI switch and one of the Bank A (1-8) or Bank B (9-16) buttons. Although the manual shows the channel number lettering to the right-hand side of the buttons, the machine itself is bereft of such useful visual clues.

Specification "The keyboard is 10-note polyphonic, but the sensible voice assignment employed by Ensoniq often makes this seem more."

replacement for the piano. Early representatives of this ilk, like the Hohner Pianet/Clavinet and Fender Rhodes, are indelibly inscribed on rock's roll call of classic instruments. The fact that they sounded little like the real thing didn't matter one iota, because they had that rare commodity – personality.

In truth, reproducing the sound of vibrating strings without using vibrating strings is difficult. Tine bars just don't vibrate in the same way. Neither does a triangle wave put through some sort of envelope shaper.

But now that most keyboard manufacturers have got sampling well and truly under their belts, reproducing the sound of the grand piano has at last become a practical reality for electronic instruments. And as it happens, this summer has seen something of a scramble to the top of the critical pile for the authentic sampled piano, with no less than five manufacturers (Ensoniq, Korg, Roland, Technics, and Yamaha) in more or less direct competition, and Kurzweil to follow suit shortly.

Ensoniq's Piano is certainly a good-looking instrument. At a mere 44lbs (20kg), it's also a good deal lighter than either the Roland RD1000 (95lbs) or the Technics PX series (upwards of 66lbs). But what you gain in portability is lost in length of keyboard; since the Ensoniq Piano limits itself to 76 notes (E-G), rather than stretching to the full 88-note keyboard of the Roland, Korg, or Technics instruments. Whether that's likely to be a problem comes down to your repertoire and/or love of pianistic lows and highs. Each of the full-size keys is weighted, and Ensoniq claim to use a controlled resistance system to 'further emulate the feel of an acoustic piano'. I found the action comfortable to play, but a touch on the heavy side.

As with other sampled pianos, the keyboard action is velocity-sensitive, but it doesn't generate aftertouch data. A useful feature is a programmable bass split point, which allows you to assign an electric or string bass sound up to B3 (key 32) on the keyboard.

30

and two-note polyphony below, and neither section can steal notes from the other.

Controls are on the left of the keyboard, and are just about as basic as you can get these days, without an LCD in sight. The top row of buttons includes Stereo (which switches in an effective but very noisy stereo simulation circuit), Volume, Bank A and Bank B (which select between the two banks of five sounds), and Key Transpose (which transposes the entire keyboard over an octave range).

Personally, I find it confusing to play one thing and hear something else, but I guess the facility will have some use for accompanists who have to cope with the pitching idiosyncracies of singers. Beneath that row there are two buttons to select bass sounds, labelled Upright and Electric, followed by Octave (which transposes the piano down by an octave to compensate for the bass section using up keys), the five sound selection buttons, and last of all, the MIDI Channel button.

Some of these buttons fulfil a dual role. For example, pressing MIDI Channel and Stereo

Like some other manufacturers, Ensoniq have used multi-sampling to store and reconstruct their piano's sounds. In all, 36 samples are used across the keyboard, which translates to around two notes per sample.

They've done this well, too, because it's hard to distinguish any obvious discontinuities of tone going from one note to another. The one exception is with the three (acoustic) piano samples, where notes in the top octave have a rather prolonged release time in comparison to the rest of the keyboard. Piano 1 is actually the default sound engaged on power-up. Definitely a grand rather than an upright, this has a good, solid bass, but, above middle C, the sound tends towards a rather wooden, enclosed quality which I found rather tiring.

Piano 2 is essentially Piano 1 detuned. However, rather than being a true out-of-tune piano (Ensoniq describe it as 'a bar-room upright piano that hasn't had a visit from the piano tuner in several years'), it simply sounds as if it's been subjected to some exaggerated oscillator detuning – and that includes the bottom octave of the keyboard where there

Sounds "Piano 2 is Piano 1 detuned, but rather than being a true out-of-tune piano, it simply sounds as if it's been subjected to exaggerated oscillator detuning."

together instructs the piano to retune its filters. The manual introduces the facility in this way: 'You may feel it necessary to retune the internal filters of the Piano after it has warmed up for a few minutes. This is primarily a decision your ears will make.' Now, quite why the user should have to do this is beyond me, especially when you're not even allowed to alter the filtering characteristics to make the sound more or less bright. Frankly, it sounds as if something's amiss circuit-wise if such retuning is necessary. And anyway, it's your brain, rather than your ears, that makes the decision.

The rear of the keyboard includes the mains switch and fuse, MIDI In, Thru, and Out, an A440 tuning control, and a set of jack sockets for the dual foot pedal (sostenuto and sustain), headphones, left and right outputs, and separate bass output.

The Ensoniq Piano's MIDI implementation is

should only be one string vibrating anyway. In other words, Piano 2 succeeds in being neither one thing nor the other, but hints at the days when every self-respecting electronic piano had to have a preset labelled 'Honky-Tonk'.

Piano 3 is said to be a 'close-miked rock 'n' roll' piano sound', but a brighter, EQ'd version of Piano 1 seems nearer the truth. In fact, my suspicion is that Pianos 1, 2, and 3 all come from the same multi-sampled set. And because of that common basis, all three sound like a dubiously-miked piano coming over a bass-dominant PA system.

The other two sounds in Bank A are a couple of electric pianos - E-Piano 1 and E-Piano 2. E-Piano 1 is more or less everyone's friend, the Fender Rhodes, but a mite less bright than the real McCoy, and a good bit woolier in the bass. E-Piano 2 is the same multi-sample set but with chorusing added,

creating a softer, more delicate piano that's good for ballads and other romantic interludes.

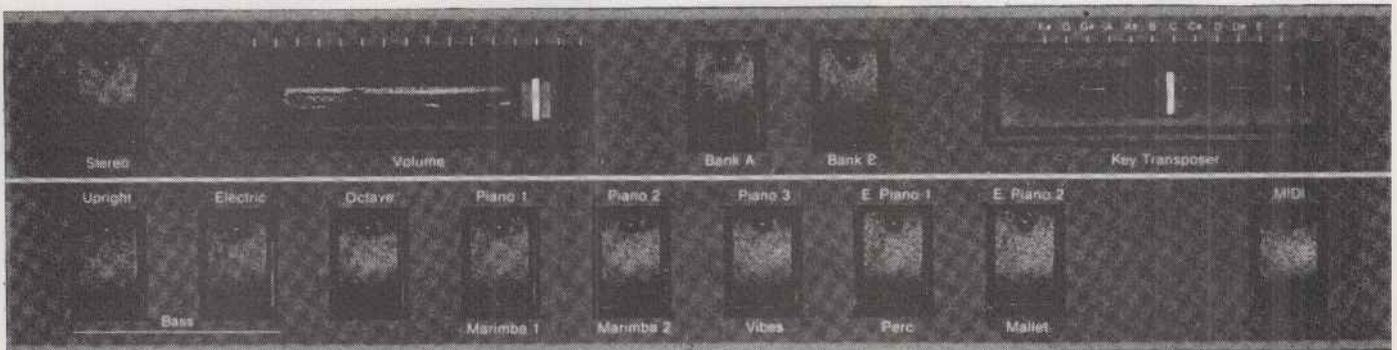
Bank B starts off with Marimba 1 and 2. Unlike a real marimba (which goes from C below middle C to C four octaves higher), Ensoniq's vision of a marimba covers the full range of the keyboard. Since there's no instrument around to multi-sample to the full extent of 76 notes, some jiggery-pokery is employed to simulate what a full-length marimba might sound like. Although the end result is excellent, with a rich, deep tone, notes sustain far

In fact, there are two more sounds belonging to the bass section of the instrument. The Upright (ie. string) bass isn't at all bad in the bottom couple of octaves, but loses its identity above that. The same is true for the Electric bass, which is powerful at the bottom (though lacking a bit in string twang), but less characterful at the top.

One major difference between Ensoniq's and other manufacturers' approaches to reconstructing the sound of acoustic instruments is what they do with velocity data. Kurzweil, for instance,

nuisance if you intend to use the keyboard for jazz or classical performance. And in an age when most manufacturers of sampled pianos are adding some element of programmability (equalisation and chorus, for instance), the Ensoniq Piano's sounds seem a little dated, harking back to an era of fixed presets.

To add insult to injury, the stereo chorus is almost unusable because of its high noise quotient (complete with a frequency sweep reminiscent of that seventies sexist stalwart, the Deluxe Electric



longer than those from the real instrument. Still, given the general quality of this reincarnation of a marimba, poetic licence wins over any purist concerns.

Marimba 2 follows on with a chorused version of Marimba 1, using a softer attack. This sounds as if the same multi-sample set has been put through detuning and envelope shaping, losing its real identity in the process. Effects for effects' sake, I'd say.

The third sound in Bank B, Vibes, has a similarly quasi-synthetic basis as the marimba; there's no way that 76 notes of 'vibraphone' can be multi-sampled

developed a technique of extrapolating a particular sound by interpolating (or mixing) between different samples of the same note made with different key velocities (the so-called 'contoured sound modelling'). Roland do something very similar with the Structured/Adaptive system in the RD 1000 keyboard and MKS20 rack unit. In both cases, the designers devoted a good deal of time and money to developing models of how instrument timbre varies with dynamics. They then had to apply the results to resynthesis software (Kurzweil) or special VLSI chips (Roland).

Ensoniq, on the other hand, have elected to use

Mistress). Even with 'Stereo' switched out, the noise level is a little too high for comfort. But to be fair, the noise problem may be peculiar to the unit provided for review – after all, serial numbers don't come any earlier than the '0001' inscribed on the review model – especially as the latest word from Ensoniq has it that recent improvements to the chorusing circuitry have reduced the noise considerably.

On the positive side, some of the sounds are extremely good – the straight marimba and the upper half of the vibes, for instance. All the samples reveal encouragingly low quantisation noise levels, and also demonstrate that Ensoniq have got their multi-sampling and looping off to a fine art (much better than the Kurzweil 250 in that respect, in fact).

But for me at least, the piano samples don't quite come up to scratch. Given that the Q-chip circuitry permits detuning between pairs of oscillators, I wonder why Ensoniq didn't provide that option on the Piano as a programmable feature, rather than enforcing it on the user, and using up valuable preset buttons in the process. And surely it would have been better to get a solid set of samples from Steinway and Bosendorfer grands (as Roland did), and then allow the users to program EQ to suit their own taste?

Finally, the lack of any facility to add to the range of sounds by means of an expansion cartridge seems a curious omission, considering how expandable the Mirage and ESQ I are. ■

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Performance *"Velocity sensing is achieved by applying key velocities to opening or closing the filters on the Q-chip's outputs. You wouldn't expect to be convinced, but it works well."*

from a three-octave instrument. This time, the end result suffers from the simulation process, with pitch-shifting below middle C giving rise to a disturbing harmonic bloom. Above middle C, on the other hand, it has an entirely different and engagingly authentic character.

The final two sounds in Bank B are Clav 1 and Clav 2. The Piano displays an identity crisis at this point, as the relevant buttons are clearly labelled 'Perc' and 'Mallet'. Curious. Clav 1 is, not surprisingly, another hark back to earlier days: a rather dull sounding Clavinet-type sound. Clav 2 follows this by adding yet another generous helping of chorusing to the basic sound.

So, to recap, only five of the 10 sounds seem to be separate multi-sample sets; the remainder appear to be derived by internal (meaning pre-programmed) treatment of the sample sets.

the well-proven hardware in the Mirage and ESQ I (the Q-chip), which steers a simpler route through the territory of dynamic timbres. In consequence, velocity sensing on the Ensoniq Piano is achieved by simply applying key velocities to opening or closing the filters on the Q-chip's outputs. On the face of it, you wouldn't expect to be convinced by this approach. But, in general, it seems to work well.

Certainly, the Ensoniq Piano is good value. But it's an instrument that reflects cost-cutting compromises. The 76-note keyboard may make it a darn sight more portable than its 88-note competitors, but the loss of those notes is a

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GETTING THE MOST FROM...

MONO MODE



Continuing with samplers, this month we look at a rackmount unit – the Akai S900 – which can respond to MIDI Mode 4 data, sending different samples to separate outputs. *Paul Wiffen*

Last month's piece on the Prophet 2000 showed how Mono Mode could be used to sequence a number of samples independently. But on the Sequential machine, you can't process each sound individually unless you sync your sequencer to tape, and run each MIDI channel one at a time.

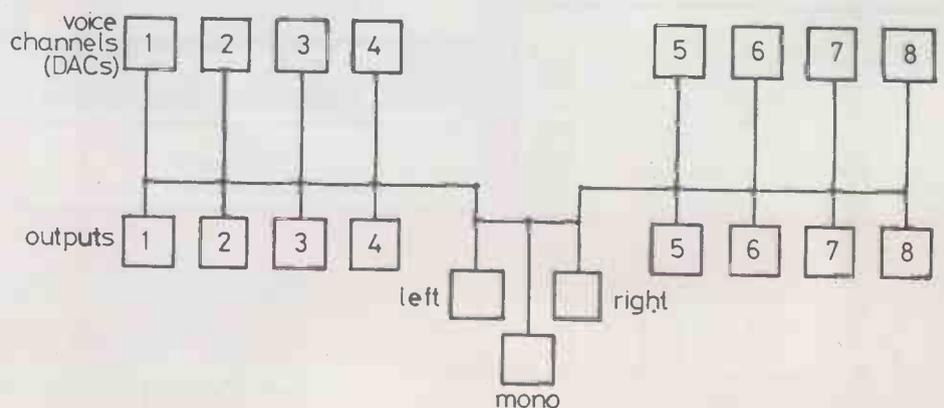
As an alternative, the Akai S900 boasts eight individual outputs *plus* Stereo Left and Right. Can we integrate this into a Mode 4 setup which combines the flexibility of the Prophet's MIDI implementation, with the audio separation? The answer is yes, but before we begin we need to understand how the internal architecture of the S900 is configured.

We can in fact use the Akai just like the Prophet, although it takes a little

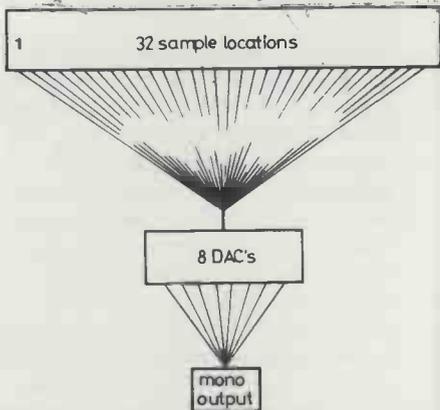
longer to assign the samples to the various MIDI channels, something that happens automatically on the 2000. But it's worth taking the extra time to do this, as you can assign two samples to different MIDI note ranges on the same

MIDI channel. So, you can achieve independent MIDI access to all 32 of the sample locations possible on the S900 (as opposed to 16 on the Prophet). And although only eight notes can be played at any one time (the S900 has

S900 internal architecture

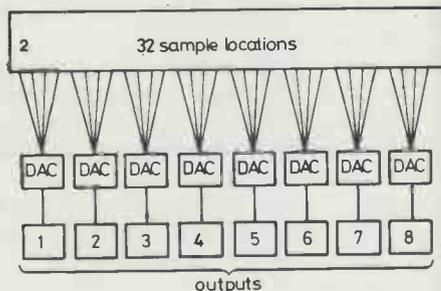


eight hardware voice channels, just like the Prophet), as soon as each voice has finished playing one sample, it is



instantly ready to play any of the other 31 samples. So within one piece of music, the S900 can play 32 different samples with up to eight-note polyphony on each ($32 \times 8 = 256$, hence the term 'pseudo-256 voice operation'). This, unfortunately, only applies when we're listening to the sum of all eight outputs, ie. the Mono Mix output (as shown in Diagram 1).

If we're using the eight separate outputs, which is the advantage of using the S900, and we want eight or more different samples, we're

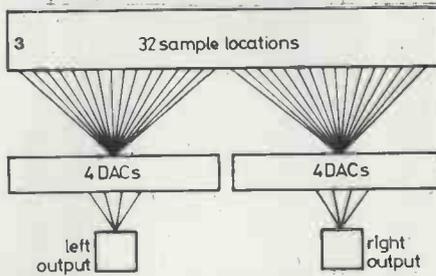


restricted to monophonic operation. This is because the same sample always has to appear at the specified output, which means that the same D-to-A converter has to be used every time a particular sample appears. We can send several different samples to the same output provided they don't need to sound simultaneously; the way the S900 is configured for this application is shown in Diagram 2.

So far then, we can play all 32 samples with up to eight-voice polyphony if we only use the Mono output, but each sample of the 32 samples can only be played monophonically if we use the individual outputs.

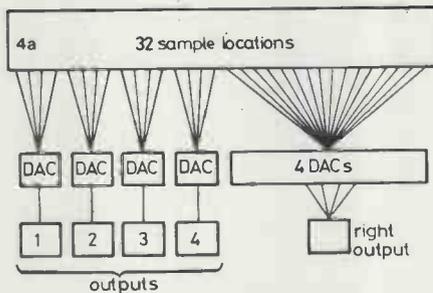
Luckily, there is a compromise possible between these two extremes. If we have two different samples that need to be played polyphonically but come from different outputs, we can assign one set to appear at the Left output and the other at the Right. This allows each to be played with four-note

polyphony. Of course, if we don't mind certain sounds appearing at the same output (ie. there will only be four notes

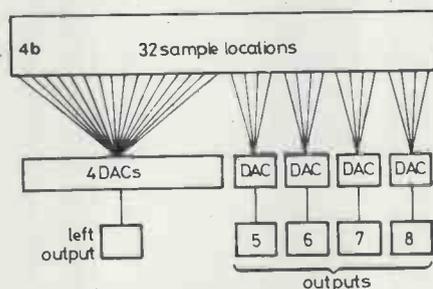


available at any one time for all the sounds assigned to that output, and they will have the same audio processing), then we can treat the left and right outputs as two separate pseudo-64 voice systems (see Diagram 3).

But we can go even further than this. If we need to play some samples polyphonically, while others (drum sounds, basslines, whatever) only need to be monophonic, we can use one side of the stereo for four-voice polyphony,



and the other side as four monophonic channels. To do this we need to know that outputs 1-4 are summed to make



the stereo left output, while 5-8 go to make up the right output. This done, we can put the drum sounds through individual outputs 1-4 (so that they can be individually processed) while the polyphonic samples can be taken from the Right output (see Diagram 4a). Alternatively, we can route four-voice poly sounds to the Left output and use individual outs 5-8 for monophonic samples (Diagram 4b).

The assignment of keygroup to outputs is done via the final 'page' of the Edit Preset mode (shown in the header photograph). The possible assignments are listed in the display: the individual outputs are selected by

entering 01 to 08, the Left Output is represented by 09 and the Right 10, while the Mono Mix routing is 00.

Once you've decided how you are going to assign your outputs to the appropriate keygroups on the S900, the hard work for Mono Mode is done.

The MIDI channel that each Keygroup is assigned to is specified using the Edit Preset page before the output assignments we've just been looking at (don't go looking among the MIDI pages for the Mono Mode setup parameters), so all we need do is press the Page ∇ once to have the required parameters at our fingertips. The MIDI channel of each keygroup is actually specified as an offset from the Base MIDI channel (which is set on a MIDI parameter page), but in case you find this confusing, the display tells you the resulting channel assignment to the right of the number you can alter (the offset number). But a word of warning here: before you try any MIDI channel assignments, make sure that Omni Mode (first page of MIDI parameters) is switched off. If it isn't, all your efforts will be in vain.

So how should you go about assigning your samples to MIDI channels and then to outputs? Well, far be it from me to dictate to anyone how to configure their own systems, but here are a few possible applications.

In Application 1, we'll assume that everything is being played live from a master keyboard which can transmit on two MIDI channels. With Application 2 you might use a sequencer to trigger all the samples on your sampler. And in Application 3, all drum sounds are set up to run from a MIDI drum machine, while the other sounds can be sequenced from a MIDI recorder with MIDI Mix Mode switched on.

In Application 1, Mono Mode is being somewhat under-used simply to recreate the sort of setup you might get with that dying breed of synth, the split/layer machine. This allows you to control the strings on MIDI channel 5 and take the resulting signal from the Left output of the S900, while the Brass (on channel 6) emerges from stereo Right. Changing channels on your controller will access a different sound without the need to touch the S900. Note also that by switching Omni On, you can create a 'doubled' or 'layered' effect, triggering both sounds together.

In this example the note range, set early on in the Edit Preset pages, is as important as the MIDI channel assignment. This serves to illustrate another distinct advantage which the S900's implementation of Mono Mode has over that on the Prophet 2000: you can have related samples (several multi-

Application 1

Sample	Keygroup	Note Range	MIDI Channel	Output
Cellos	1	C0 to C4	5	Left
Violin	2	C#5 to C8	5	Left
Trombones	3	C0 to C4	6	Right
Trumpets	4	C#4 to C8	6	Right

Application 2

Sample	Keygroup	MIDI Channel	Output
Bass drum	1	1	1
Snare	2	2	2
Hi-hat Open	3 (loud)	3	3
Hi-hat Closed	3 (soft)	3	3
Toms	4	4	4
Bass	5	5	4
Strings	6	6	Right
Piano	7	7	Right

Application 3

Sample	Keygroup	Note Range	MIDI Channel	Output
Bass drum	1	B0 to C1	10	5
Snare	2	D1 to E1	10	6
Toms	3	F1	10	7
Hi-hat Closed	4	F#1	10	8
Toms	5	G1	10	7
Hi-hat Closed	6	G#1	10	8
Toms	7	A1	10	7
Hi-hat Open	8	A#1	10	8
Toms	9	B1 to E2	10	7
Bass	10	F2 to C4	1	1
Guitar	11	C#4 to C5	2	2
Marimba	12	C#5 to C7	3	3
Orch Stab	13	C#7 to C8	4	4

► samples of a piano, say, or string and brass instruments with different ranges as here) on the same MIDI channel, and unrelated samples assigned to the same note range but on separate MIDI channels.

In Application 2, we're using the first four individual outputs (sequenced on the first five MIDI channels) to carry the monophonic samples which make up the rhythm section, allowing for

separate signal-processing of each drum sound. The piano and strings share the four voices of the Right output and the same signal-treatment setting. Note this example uses the same output for the bass as the toms, mainly because—in my own experience—nothing much happens to the bass during tom fills. For your own purposes, you may find that the toms would be better off sharing the same output as

the snare. Note also that we're using the same keygroup to deal with open and closed hi-hat, using MIDI velocity data to switch between the two samples.

Of all the examples, Application 3 is the most complex but also the most useful. To begin with, all the drums are on MIDI channel 10 (something of a convention with Roland) and are assigned to the MIDI note numbers which the Roland and Sequential drum machines use. This means you can replace the drum sounds on your Roland TR505, 707, 727 or 909, or Sequential Drumtraks or Tom, simply by plugging it in and setting it to MIDI channel 10. (If you have a Yamaha drum machine, you'll need to set the following MIDI note numbers: Bass drum—36, Snare—38, Tom 4—41, Tom 3—45, Tom 2—48, Tom 1—52, Closed Hi-hat—42, and Open Hi-hat—46.)

Your drum machine's pattern data will now trigger the sounds on the S900. If you have a sequencer with MIDI Mix Mode (as it's called on Roland machines) or Echo Back (Yamaha's terminology), then you can trigger the drums from your drum machine (by plugging the drum machine to the MIDI In of your sequencer), playing back your sequences in sync (by switching sync to MIDI clock on the sequencer) all the while.

As far as the outputs are concerned here, all eight sounds have their own individual outputs, so they all have to be triggered monophonically—a true example of Mono Mode as in the original MIDI 1.0 spec definition. But in addition, the Left output can be used as a drum monitor, while the Right channel contains a mix of all the tuned sounds.

These examples by no means exhaust the flexibility of the S900's Mode 4 implementation. But they should give you some idea of how to combine the note range, MIDI channel and output assignments for maximum independence between sound samples. Don't forget that so long as they don't need to sound at the same time, you can route as many samples as you like through each output—always assuming you don't run out of sample memory or sample locations.

Next time, we turn our attention to the use of MIDI Mode 4 in the field of signal-processing, with a look at its application on the Yamaha SPX90 effects processor. ■

If you're having problems fitting a suitable number of sounds into the Akai S900 at once, Paul Wiffen has prepared a disk for Akai that has a preset set up especially for Mode 4 use. You can get a copy of this disk from any authorised Akai dealer.

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HOWARD'S WAY



Synth composer, band arranger, pop singer and social commentator. Howard Jones is all of these things, and successful with it. What lessons have three years at the top of the pop tree taught him? Interview *Tim Gooyer*

THINK OF THE ACTS that brought about the establishment of the solo synthesist/synth duo as an alternative to the 'pop group' a few years back, and who do you think of? The Human League. Depeche Mode. Yazoo. Thomas Dolby. Blancmange. And not long afterwards, a solo synth player and songwriter with a neat line in infectious pop hooks and a keen eye

for socially aware lyrics, by the name of Howard Jones.

For while other artists were concerning themselves with adding brass sections and extra percussionists to their line-ups, Jones was among that select few who put their faith in their own talents and (notoriously unreliable) technology, in the search for new sounds and greater artistic freedom.

Howard Jones, however, doesn't
E&MM OCTOBER 1986

fall into the category of 'modern pop composer using electronics to make up for inability to play music'.

'I started playing the piano when I was seven', he explains, 'and then I spent 14 years studying classical music. I do value my training and technique, but I admire guys that concentrate on programming, rather than playing, just as much.'

'Music comes from the mind and, if you're not restricted by your own playing abilities, then producing it becomes a purely cerebral exercise. Possessing a particular technique inevitably leads you into certain areas; having no technique means each song can take you into a new area.'

Jones formed a partnership with mime artist Jed Hoyle to help with the visual problems of a one-man show, and quickly established an individual musical identity characterised by bright synth sounds, tightly interwoven drum and sequencer patterns, and a pleading, honest-to-goodness vocal.

His first single, 'New Song', made number three in the charts late in '83, and set the pattern for the string of successful singles that was to follow, among them the raunchy dancefloor workout 'What Is Love?', the downbeat ballad 'Hide and Seek' and the irreverently poppy 'Like to Get to Know You Well'.

Two albums, *Human's Lib* released early in '84 and *Dream Into Action* a year later, scored similar success both at home and abroad, and did a fine job of demonstrating Jones' skills as solo songwriter, lyricist, performer and teen idol.

A third album, *One To One*, is scheduled for release in mid-October. Although mixed and produced by Arif Mardin in New York, it was recorded at Windmill Lane Studios in Jones' new home town of Dublin. The move away from High Wycombe was made for the usual 'tax reasons', but Jones has found the relaxed atmosphere and the local traditional music contributory factors to the sound of *One To One*. And the inclusion of a number of guest musicians also marks another stage in Jones' steady departure from his original practice of monopolising the playing credits.

'Most of the guests on the album aren't famous at all', he says. 'They're local musicians playing traditional instruments I used to inject atmosphere. The opening track actually starts with Sean Potts from the Chieftains playing Irish flutes.'

Also novel on the atmosphere front (an aspect of recording that's always received Jones' special attention) is the inclusion of noises from Max Eastleigh's Sound Sculptures. For the uninitiated, E&MM OCTOBER 1986

these are sculptures in various materials that combine visual and acoustic art. In each case, the viewer has to interact in some way with the sculpture to produce sound in some form.

'Don't ask me why, but I was watching *Pebble Mill at One* one afternoon and there was this guy on with all these weird instruments making strange noises. The sounds were so unusual. I found them so fascinating I got in touch with him, and we ended up spending a day in the studio sampling some of the sounds.'

'The ones I liked most were the whirly ones, where you have to swing something around your head. There's one called The Bullroarer which I particularly liked; we used that at the start of a song called 'Don't Want To Fight Anymore'. There's another one we used called The Ark - that's like a plank with a hinge in it and a piece of wire strung across it which you can bow or pluck. We modified all the sounds quite heavily, and used them for very short moments to help create atmospheres.'

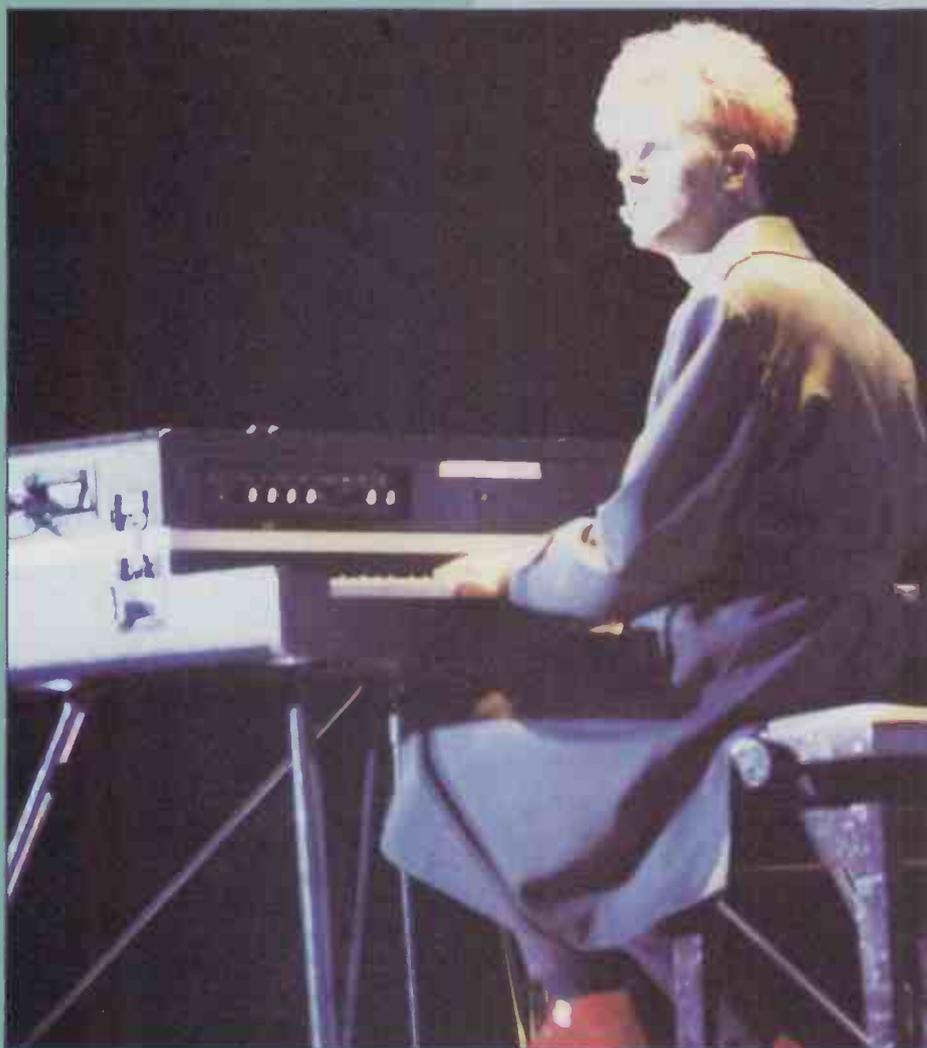
CREATING A UNIQUE ATMOSPHERE for each song began in earnest with *Dream Into Action*. Looking back at *Human's Lib*, you'll find a collection of finely crafted songs, with Jones' manipulation of melody bringing the emphasis to rest firmly on commercial appeal. In terms of songwriting, if not saleability, it set a standard the artist failed to sustain with *Dream Into Action*, on which the songwriting became less finely focused.

'The last LP was a lot more experimental', he explains. 'I can understand why people might not have liked it as much as *Human's Lib*. It was difficult because, at the time, I didn't really know which direction I wanted to take. So I concentrated a lot on the creation of specific atmospheres for each song. In that respect I think *Dream Into Action* was very good. Songs like 'Automaton' - that had a great atmosphere to it.'

'On this album I wanted to spend a lot of time giving each song its own individual set of sounds. I spent one day just walking around the house collecting everyday things to sample into the Fairlight, things like saucepans. It's amazing how such humble-looking objects can produce such beautiful sounds.'

But Jones' resourcefulness goes way beyond such mundane things as saucepans...

'There's a tap-dance solo in the middle of a track called 'Step Into These Shoes'. One of the ladies that does the cooking at Windmill Lane also tap-dances, so we sampled her ►



► and played a solo with her.'

As usual, the creation of distinctive atmospheres is to some extent dependent on modern music hardware. And over the years, Jones has amassed a huge collection of equipment, simply by not selling old gear as he added newer and ever more sophisticated items to his armoury.

'I'm loath to get rid of anything, really. Each instrument has its own strengths – things it will do better than anything else – and I use all the old gear for those things. Whatever instruments you use, you find you become attached to particular sounds they make that can't be replaced by anything else. One thing I'm still very fond of is the Moog Prodigy, because of the oscillator sync sounds it has.'

Right now, Jones' obsession means he has in tow a DX7, Emulator II, Prophet T8, Juno 60, Jupiter 8, Super Jupiter module, and Moog Prodigy... The Fairlight and a Linn 9000 arrived earlier this year, to make life a little more colourful.

'I always swore I'd never buy a Fairlight', Jones confesses, 'but the new Series III has proved to be very wonderful. The quality of the sampling in particular is very, very good, and I've used it a lot on the album.'

'I've found the Super Jupiter very good. Having MIDI's great, but in

the lower registers it's got a lot more guts than the Jupiter 8 used to have. I always had trouble getting good bass sounds out of that. I've got into the MiniMoog for bass sounds on this album, too.

'Most of the new album was programmed on the Linn 9000. I decided not to use the Fairlight because I hadn't had it all that long, and I'd spent a year learning how to use the Linn. It seemed silly to go into the studio without knowing more about it.

'The recording was all done through MIDI: using 16 channels it was possible to do all the arrangements without using tape. In fact, on some of the tracks there are almost no separate overdubs apart from the vocals. MIDI's fine for that sort of thing, but you do run into problems with the delays. I learned big things from working with Arif: you simply can't assume that everything is going to respond together. The DX7 is bang-on, but the Emulator is always late. And samples don't seem to reach their peak if you trigger them *on* time, they take a while to build up so you trigger them early. I don't like to edit them, because you risk losing the nice beginning you had.

'We ended up measuring all the inaccuracies and using the SRC to pull everything together. I never realised what a huge difference a few milliseconds can make to a groove. It can totally change the feel of a track; it can make it or destroy it. In that respect we treated *everything* as an overdub – delaying it or advancing it to fit the part.'

IN THE EARLY DAYS of Jones' one-man career, though, MIDI was a nice idea that had yet to see the light of day. Yet the almost total incompatibility between gear from different manufacturers (not to mention some manufacturers' own equipment) didn't preclude Jones performing live with the kind of spontaneity rarely found with electronic acts. And while it's easy to assume that MIDI is the key to the flexibility of Jones' current live setup, he maintains his on-stage freedom is no greater now than it was at the start.

'I don't think people realised just how much freedom I had then', he says. 'I was using a Pro One for the sequencing with the Juno 60 arpeggiating over the top of it. Between being very careful with arrangements, playing and mixing, I was able to do a lot of things that weren't generally regarded as practical. Some parts would be running throughout a song but would only be pulled in when they were needed from the mixing desk.'

'Even now, people think it's all on tape and that I'm just miming, but ►

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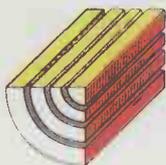
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► it's never been that way. I'm just using modern equipment to create something exciting.

'I hate the idea of a song being the same every night. You've got to retain a live element or you stop experimenting and learning. The big difference with MIDI is that it allows you to go into very great detail in the construction of a song.'

Jones has now abandoned the idea of the one-man show, integrating the electronic gymnastics of yesteryear into a fully-fledged band. On his last live excursion almost a year ago, Jones' entourage included drummer extraordinaire Trevor Morais, female vocal team Afrodiziak, and bass-playing brother Martin Jones.

'The same idea of freedom applies to the band as well', Jones maintains. 'Two-thirds of an arrangement will be predetermined, and from then on the song can run free.'

Remembering the last tour, Jones certainly had plenty of freedom of his own. The image is still clear in my mind: a tall, lanky man hurtling around the stage, remote keyboard slung around his neck, firing sampled guitar riffs at a stunned audience.

'It was an Emulator sample and a Yamaha KX5 remote keyboard', Jones reveals. 'I tried to adapt my keyboard technique to sound as much like a guitarist as possible. You can do it quite well really, and it becomes very expressive. The KX5 is quite good because of the performance controls on the neck; the trouble with it is that it looks like a toy. I'm thinking of customising mine to make it look more mean.'

There's plenty of guitar to be heard on *One To One*, including a suspiciously 'real' solo from a song previewed on the tour. How much of it is attributable to the Jones/Emu/KX5 combination?

'About 60% of the guitar on the album *isn't* real', says the artist. 'Nile Rogers played most of it that is.'

And the solo on 'You Know I Love You, Don't You?...'

'...Is a real one, yes.'

Another tour is currently in the planning stage, and is set to begin in February next year. This time, Jones intends to take a guitarist, along with yet another of the Jones family.

'That's Roy. He plays keyboards and sings.'

The Joneses are beginning to sound like the Jacksons...

'...There's another one you've still yet to see', Howard continues, obviously enjoying the moment, 'a fourth brother who plays the drums...'

Although all Jones' work falls

under the umbrella of pop, the diversity of his material to date is testament to his versatility as a songwriter. It's not a role he undertakes lightly.

'I like the idea of crafting a song. I spend a long time writing a song: some I write on piano, but most of them are written with all the gear to hand. I prefer it that way so that I can try things out as I go.'

'Generally I start with a bassline or a rhythm pattern, but I do try to write in as many different ways as I can. I don't like any two songs to sound the same. I love programming, but I love just sitting and playing the piano, too. The trouble with the piano is that you accumulate clichés over the years.'

'I like doing things that surprise, but which still remain within the format of pop. Like the gospel piano that's in the middle bit of 'Good Luck, Bad Luck' (from *One To One*) — that's there as a surprise.'

'And I'm really into intros. Often I'll spend as much time on an introduction as I will on the rest of the song. I enjoy creating one atmosphere with the intro, and then changing it completely with the rest of the song. I suppose I just like leading people up the garden path.'

But don't the limitations of pop represent restrictions to a man of Jones' talent?

'There's a lifetime's work exploring this so-called restrictive framework. In spite of the apparent restrictions, I think there's still so much room for innovation within the pop format. It's nice simply to explore those possibilities, and with the advent of sampling, there's such a huge palette of sounds to choose from.'

Well yes, sampling *is* one of Howard Jones' current passions. But, in contrast to those artists who jealously guard their sounds against theft, this one regards the 'open season' on sounds as a healthy situation.

'I actually don't sample off other people's records, but I don't give a damn who takes sounds off mine. I do sometimes take sounds off my own records, but I always alter the sounds I sample anyway. I don't think people want to hear the same sounds again — they want to hear something fresh.'

'It's different if you're talking about nicking a chord structure or a melody line, I don't go along with that.'

'But I think sampling represents the most significant development in music technology for years, especially now it's becoming so cheap. It's almost like the electric guitar being invented all over again.' ■



MUSIC

technology

*formerly
E&MM*



MORE *pages*
MORE *interviews*
MORE *reviews*

MORE *data*
MORE *advice*
MORE *news*

WHAT'S

in a name?

As from November, 'Electronics & Music Maker' will cease to exist. But don't panic. The world's longest-running and most successful hi-tech music magazine is not about to disappear overnight. It'll be on newsagents' shelves again in November, much as usual. But it'll carry a different name: 'Music Technology'.

The decision to change has not been taken lightly. 'Electronics & Music Maker' is hardly the neatest and sharpest of magazine titles, but the initials by which it became known

successful composers and musicians working in the hi-tech arena.

Thus, in August '85, the 'Electronics & Music Maker' logo gave way to one that read simply 'E&MM', with the line 'The Music Technology Magazine' underneath.

The final chapter in the story came in June of this year, when Music Maker Publications, the people who publish E&MM and four other musicians' magazines in the UK, launched an American edition of E&MM. We called it 'Music Technology', because it summed up the content of the magazine, its style and its purpose in life, better than any other title.

'Music Technology' is only just publishing its fourth issue as you read this, yet already it seems we have a winner on our hands. The US public's reaction to the magazine – and *that* title – has been more unreservedly enthusiastic than even our most optimistic dreams could have predicted. It's meant more work for us, and for our new Los Angeles office. But it's also benefitted the magazines we publish in the UK, by providing us with in-depth news of Stateside developments, faster than any other music magazine publisher can muster.

That, in a nutshell, is why 'E&MM' will become 'Music Technology' as from next issue. The new name is brighter, more immediate, more contemporary, and more relevant than its predecessor – not to mention easier to say over the phone.

after only its first issue – 'E&MM' – are almost as much of a music industry standard as EMI, LP or MIDI.

When those initials first became used, of course, E&MM was a rather different beast to the magazine we know today. In addition to devoting a small amount of coverage to hi-tech musical instruments and the people involved in using them, it also embraced CB radio, disco and lighting equipment, hi-fi, and the construction of electronic projects such as car battery testers and model railway speed controllers.

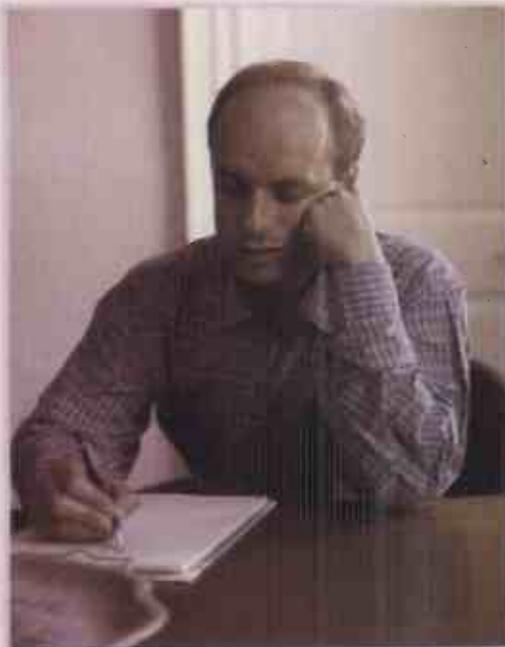
But as time passed, the market for new musical instruments broadened significantly, and E&MM's coverage of them broadened with it. By 1983, just two years after the magazine's first issue, well over three-quarters of E&MM's editorial content dealt specifically with the new music technology that was affecting everyone in the music business – from musicians and producers to record buyers and record company bosses.

Two years later, and the entire magazine had become dedicated to informing its readership of new musical and technological developments, reporting on the latest hardware and software innovations, and revealing the secrets of



A TASTE

of things to come



But there'd be little point changing the name of a magazine if the magazine itself wasn't subject to a few improvements in its own right.

How could we improve E&MM, you ask? Well, it wasn't easy. The question we kept asking ourselves was the old chestnut – why change a successful formula? We decided there was no point, which left us with just one option open. Like the Mars bar people, we decided to make the magazine better by making it bigger. In other words, the formula stays broadly the same – it's just that, from now on, there'll be more of it.

November's issue – the first under the 'Music Technology' banner – will have 24 pages more than the last under the E&MM name. And almost all of those pages will be editorial, not advertising – giving 'MT' the best ed-ad ratio in the business.

What will those extra pages contain? Well, like we said, more of the same. A greater number of news pages, for a start, containing more stories, written in more detail than ever before. More space for reader participation, too, with an expanded 'Patchwork' section for musicians' own synth sounds, readers' charts for music and musical instruments, and more pages for comments (in the *Communiqué* section) and

technical queries (under *Interface*), with free subscriptions going out to the best letters each month.

But as well as our readers speaking for themselves, 'Music Technology' will be letting more industry figures have more of a say, too. There'll be a wider variety of personalities – musicians, composers, engineers, producers, technicians and software writers – interviewed in each issue. And the results of those personalities' labours – the records, the concerts, the festivals – will be given more space as part of an extended review section.

None of which will detract from what has always been one of the most popular features of the magazine – its appraisals of new musical instruments. These will be as detailed and as authoritative as ever, and there'll be a greater number of 'In Brief' sneak previews and long-term user reports, in addition to the standard equipment reviews.

Yet any new instrument is of limited use unless the people who play and program it know a bit about what they're doing. With this in mind, 'Music Technology' will devote more space to features that give practical advice – on both creating sounds using new technology, and linking those sounds to produce music. Composing, performing, recording and programming will all feature heavily.

Finally, regular competitions – such a popular feature in E&MM in the past – will have a stronger presence than ever. We'll be kicking off with a bumper giveaway in the November issue, with equipment prizes worth thousands... And there's more to come.



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DON'T

miss out

The improvements we're making with the advent of 'Music Technology' may mean it becomes scarce on newsagents' shelves within days of publication. You can always risk finding a solitary copy in a small paper shop on the other side of town, or you can order a monthly copy from your newsagent.

But the best way to avoid missing out on 'Music Technology' is to subscribe direct from the people who produce it. An annual subscription saves you time, money, and

an awful lot of hassle. And if you subscribe now, before the first issue of the new-look magazine, you'll save even more money. At the moment, subscription rates for 'Music Technology' are the same as those for E&MM. But this introductory offer won't last long, so to take advantage of it, you'll have to act quickly.

Fill out the form below, pop it in the post, and leave the rest to us and 'Music Technology'.

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IS IT LIVE, OR IS IT ART?

How do a band of studio engineers, misfit composers and session players take sampling technology out of the studio and onto the live stage. Report *Chris Meyer Photography Tim Goodyer*

THE HYPE

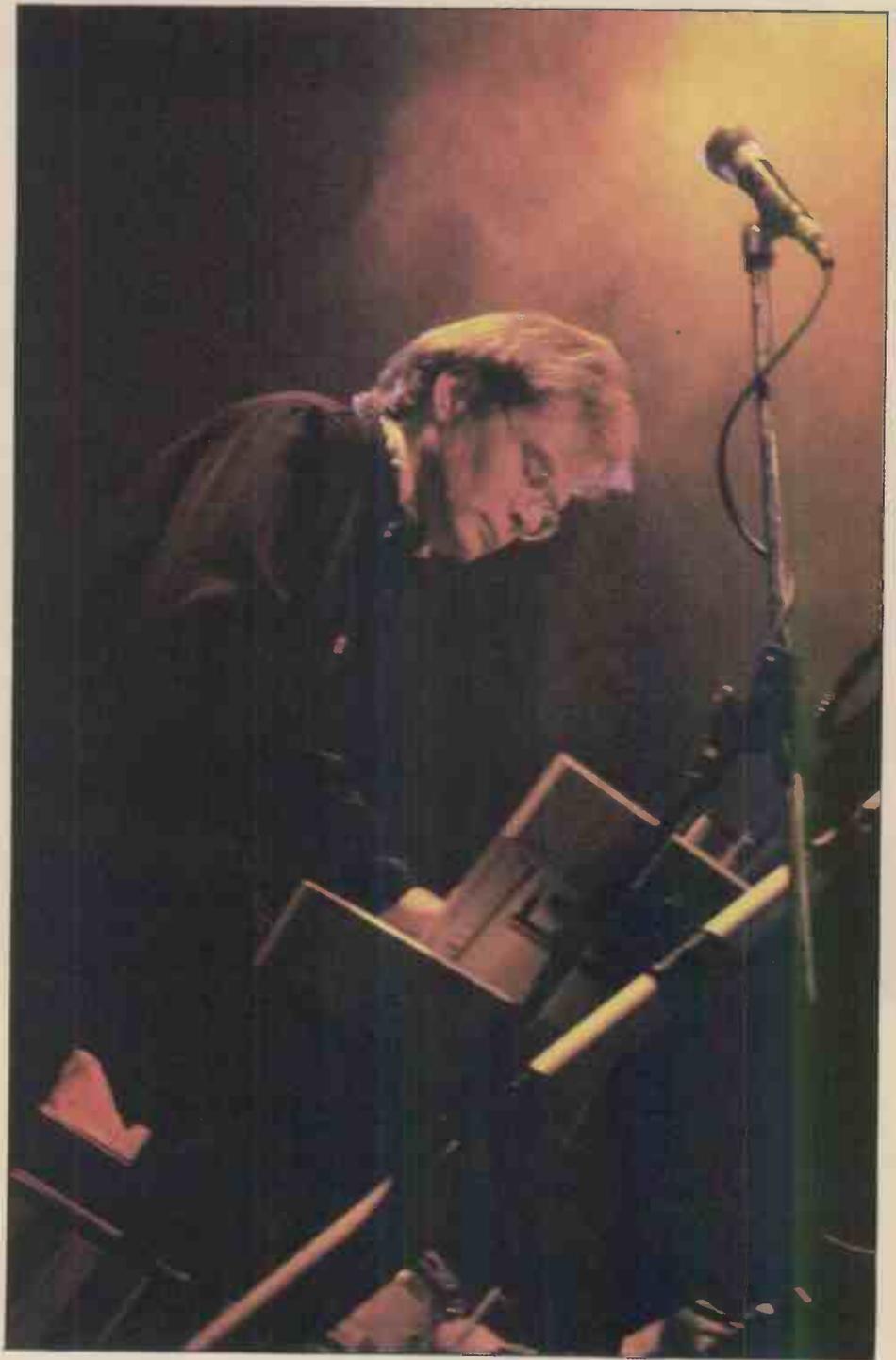
SO HOW DOES ONE ATTACK the Art of Noise? Well, there are several ways. Remember how all the professionals moaned that synthesisers were being used to only a small fraction of their potential, and that too many people were willing to cash in on clichés and factory presets, instead of investing some time and originality in their machines? Well, it's even worse with samplers. Here are machines that can cover at least the same ground as many synthesisers, and also open up whole new vocabularies of sound based on both sampling and a cross-pollination of the two.

But just as they were with synthesisers, the vast majority of musicians are either in the camp of the flashy keyboardist looking for a new (or even imitative) vehicle for the same old solos, or in the camp of the low-skilled musician or record producer looking for a wonderful (and again, clichéd) hook. In this environment, it is wonderful, and in my stronger moments I would even say essential, that a group of anythings such as the Art of Noise exists.

To listen to the band's *In Visible Silence* album with sharply attentive ears is to get a listen on the innovative uses of sampling. These include exploitation of the process' weaknesses, such as the mechanical quality of the same sample played over and over (the orchestral poundings on the start of 'Chameleon's Dish'); clock aliasing noise (the slowed-down orchestra effect plus the metallic yell of 'No more!' on 'Instruments of Darkness'), plus ingenious uses of layering, with one car starting à la 'Peter Gunn', and even digital reverb (switching programs and delay times throughout the album).

It is interesting that it's not normal musicians, but a group of studio producers and engineers, who have brought us all this in an accessible form.

So, the Art of Noise have hip videos. 'Legs', 'Beat Box', and



'Peter Gunn' crashing through dance clubs, singles bars, and meat markets. Backing music to commercials. Fun interviews. Max Headroom! Plus an added show, and

the worst crowding I've ever seen at Wolfgang's, San Francisco, complete with an enormous queue. I had both a normal ticket and a guest pass waiting at the door. (Later,

trying to scalp one of our tickets, we even got one of them stolen.)

Since I'm supposed to be wearing the music critic's hat in this review, let me put it on firmly by making



some broad generalisations about music. Most appreciated music can, more or less, be fitted into three categories: 1) Technically challenging, where the musicianship or complex pop composition is the main draw (like avant-garde or much of progressive jazz and rock); 2) Emotional, where the basic feeling of the music strikes some responsive chord (no pun intended), or some basic emotion or primitive instinct (such as blues, new age, and some heavy metal); and 3) Sonic fireworks, where the lure is the massiveness and newness of the sounds involved, be they DX7 pianos, 'mondo' drums or, yes, samplers. Into this last category, for better or worse, is the vast majority of modern pop music, and the Art of Noise.

The question is this. Can music that relies on excellent sound quality, careful mixes, and unique sonic tricks cut it in the always less-than-perfect environment of a live concert?

THE EQUIPMENT

OUR ADVANCE MAN, Rick Huber, got to the show several hours early to secure our passes and take an inventory of the equipment. Anne Dudley was set up stage right with a Fairlight, PPG Wave 2.2, MemoryMoog, and grand piano. (Incidentally, that kind of line-up is a roadie's nightmare, including as it does the four pieces of equipment known as 'most likely to break down' or, in the case of the piano, go out of tune). JJ Jeczalik was set up stage left with brain to Anne's Fairlight and a Fairlight of his own, along with a Friend-Chip SRC. Gary Langan decided not to tour, and instead the band was rounded out by a bass player (David Bronze) with a Roland GR77B driving an Akai S612, a drummer (Paul Kevin Robinson) with a Simmons set driving an Akai S900, a percussionist (Simon Moreton),

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and three leather-clad backing female vocalists, the Noisettes.

At the mix position were two Lexicon 224s, a Korg DSP1, and the drummer's S900 and Simmons MTM. Drum sounds were switched at the mixing console, following the conventional wisdom that a drummer should be made to think as little as possible. Also on the equipment list was one cheerful, crowded audience, half of which was waiting on the dancefloor.

THE CONCERT

WE POLITELY WAITED through a set by rockabilly band Blue Movie, then Max Headroom came on to a projector screen for an amusing several-minute monologue, which included references to the Art of Noise as one of his backing bands. Then to the strains of 'Peter Gunn', the Art of Noise took the stage, and unfortunately spent the first two songs, 'Close to the Edit' and 'Paranoimia', warming up (wooden performances, off-key vocals, you know the sort of thing). Were my worst fears realised? Was this strictly a studio band?

But then some magic occurred. The band started to loosen up. Anne and JJ traded off pattering with the audience between numbers. A good performance of 'Eye of the Needle' was ended with a piano solo by Anne, proving that her roots are closer to bar jazz and classical than Jerry Lee Lewis.

This was followed by a rousing version of 'Legs' and a faithful, beautiful 'Moments in Love', concluding with another piano solo.

Then the band actually started jamming, with JJ leading off 'Beat Box' with a 'car starting' solo. In the middle was an extended solo with the bass player driving the 'Duh'

sample on the Akai. I was left devastated. His licks were perfectly matched to the timbre and timing of the sample he was playing. (Unlike the drummer, who did normal drum solo licks with vocal samples later on in the show. Interesting in effect, but nowhere near as powerful.)

Then came a stripped-down version of 'Instruments of Darkness', a jam on 'Flip of the Tongue', with JJ live-loading a sequence loop as a solo, and 'Back Beat'. Finally, JJ did his best imitation of a country DJ in announcing Duane Eddy, and the Art closed with 'Peter Gunn'. (Eddy left the stage, shaking hands with the audience, seemingly very happy to be back in the limelight again.)

Encores consisted of 'Opus 4' (first half done by the Noisettes, second half featuring the aforementioned drum solo), and a fun cover of the Andrews Sisters' version of 'In the Mood' done amazingly straight, except for JJ's sampled vocal lead in the middle. Nobody danced during the whole show, perhaps due to the overcrowded condition of the dancefloor.

After the show, a strange crowd (including ourselves, and a sole songwriter, trying to sell some of his songs to the band) tried unsuccessfully to haggle their way past one of the Art's managers.

Outside was an even longer queue for the second show. And despite the fact that I enjoyed myself, I came away vaguely disappointed by the weak mix, the stripped-down arrangements (although, to their credit, the band did indeed play the majority of the music live), and the loose timing. In short, the sonic fireworks weren't fully there. ■



THE SYNTH THAT SAMPLES



The flood of 12-bit sampling machines at man-in-the-street prices goes on. This month, Korg join the club with a sampler that boasts many traditional synth features, plus waveform creation and additive synthesis. Its potential is enormous.

Paul Wiffen

Not so long ago it was Akai, then it was E-mu, this month it's Korg. Next month it'll probably be Roland. It seems that at the moment, all the synth manufacturers are releasing 12-bit samplers one

after another. How is anybody supposed to choose between them?

The spec hunters will tell you to compare memory, sample rate, number of sample locations and so on. Others will point to large libraries of samples available for older machines and

recommend them. But both these approaches miss what many consider to be the most important factor: what each machine allows you to do with samples once you've made them.

And this is where the new Korg DSS1 scores over some of its rivals, even though they may have

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larger memories or more disks currently available. It features more sound-creation facilities and after-the-event processing than any other 12-bit sampler. These encompass long-established traditional analogue features like sync and oscillator detuning, along with the latest digital techniques – waveform drawing, additive synthesis and digital delay lines (two of them).

But we're getting ahead of ourselves. Let's begin with sound quality. The paper spec gives good cause for optimism. Sample quality is a product of (among other things) sample analysis and sample rate, and the DSS1 uses 12-bit analysis, which puts it on a par with all the samplers released this year, while its maximum sample rate of 48kHz puts all the others in the shade. In fact, there are four possible sample rates: 48, 32, 24 and 16kHz.

The factory disks supplied with the DSS1 are of variable quality. Some samples – like the acoustic guitar and solo strings – are superbly authentic, but others – like the pianos – give away their multi-sampled origins all too easily, with glaringly obvious changes between samples as you play across the keyboard.

On the other hand, the synth sounds the DSS1 comes with are uniformly excellent, ranging from the synth strings and brass (which everybody started to ask for as soon as samplers made accurate acoustic sounds available) to 'pure' synthetic bass and lead sounds.

Accessing a new set of sounds on the DSS1 requires a fair amount of patience. The double-sided disks hold four complete memory setups of the DSS1 which are known as Systems, with each one containing samples, synth sounds, and (initially) blank user locations. But it takes five separate actions to set the loading process going (four switches and a fiddly slider movement) and then the disk drive takes over 50 seconds to load one of these systems. Korg don't try to hide the fact (the display does say "Please wait a minute" while loading), but 50 seconds is a very long time to load 256K of memory. The Prophet 2000, Akai S900 and Emulator II manage to load twice as much memory in 40 seconds or less. I don't know how people using the DSS1 live will cope with the minute or so it will take to change systems, though inevitably there'll still be a couple of other keyboards around to make noises while the DSS1 is otherwise engaged. Let's hope a future update will speed up the Disk Operating System...

Making your own samples on the DSS1 is straightforward enough, and the machine guides you through any decisions you have to make before you can begin sampling. Hitting the Sample button gets the ball rolling by putting you in the correct mode, and the display prompts you to choose your sample rate (which you do by moving the data entry slider). Hitting Enter then moves you on to setting the Total Time for your sample. Depending on the sample rate you've selected, this gives you a choice of times which correspond to half or all of the DSS1's memory.

Now comes the point where you have to decide if you're going to use multi-samples (to make a more accurate representation of the instrument

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you're sampling over the five octaves of the keyboard) or just one sample. You do this by specifying how many memory divisions you want, and the DSS1 automatically divides the time set between the number of samples you want to make (1, 2, 4, 8 or 16). Then you input the number of the particular sample you want to record. The DSS1 now offers default keyboard positions (C3 for a single sample or various positions up the keyboard for multi-samples), or you can place the imminent sample wherever you like on the keyboard.

Now, if you want to, you can begin sampling straight away by pressing zero on the keypad (all such parameters are listed on the front panel). But it's as well to check the level of the incoming signal first (2 on the keypad gives you a VU-type reading in the display), and alter it if necessary via the data sliders. You might also want to set a trigger threshold, which is represented as a star within the VU-type display, so you can see just when your threshold is being exceeded by the signal. At any point, you can press zero and make a sample.

The whole system is breathtakingly easy to use, but I can't help feeling that, for the experienced sampler (person, not instrument), the procedure could get a little l.c.-g-winded and restrictive with continuous use.

With only the bare minimum of preparation and familiarisation, we successfully created some impressive samples from sound sources ranging from a dynamic Peter Gabriel CD to RAD's recently released album of Bulgarian vocal music (which the Cross-Fade Loop parameter looped very smoothly).

Of course, you don't get anything for nothing in this world: the 48kHz rate uses up all 256K of memory in no more than 5.5 seconds. A 32kHz rate gives you 8 seconds, while the 24kHz sample rate gives a generous 11 seconds, and the 16kHz rate (best reserved for special effects) gives 16 seconds of continuous sampling.

In terms of memory, the 256K of the DSS1 compares favourably with that of the unexpanded Prophet 2000, but as far as we've been able to establish, it's not possible to expand the memory to the 512K which looks like being standard soon for

samplers in the Korg's price bracket.

Once you're happy with the quality of your sample, you have the choice of naming it and saving it to disk, which you can do either straightaway or after some editing. The first thing Edit Sample mode allows you to do is truncate the start and/or length of your sample. This means you should set the start point first, otherwise the point at which your sample ends will move when you move the start point, as the loop length fixes the end by reference to the number of individual samples after the start.

More experimentally, you can reverse, link, or mix samples (with splice or crossfade) to build up new sounds in a quasi-Musique Concrète approach. The penultimate function of Edit Sample mode (just before the Save function) allows you to view and edit the value of each 'word' of sample data individually. No other sampler on the market allows you to do this without a VDU, and it's an incredible feature – though it would be a brave programmer who'd attempt to make major changes via this method – it could well take all night. That said, it should prove invaluable for removing small blemishes in samples caused by clicks and pops.

Strangely, a more standard function which you'd normally expect to find in the Edit Sample section – looping – is actually to be found in the Multi-Sound area of the machine. But having found it, it is well worth the search, as it offers you three levels of help with your looping. Loops are set up by specifying a start point and a length for each sound within the Multi-Sound (this terminology can get confusing, can't it?). This means that each sample can be looped independently of all the others.

The most basic way of looping is to set the start and loop lengths manually, a method which virtually all samplers on the market offer. These points can be altered in four ways. Data entry slider A (there are two of them) allows you to move through the sample memory in steps of 10K (10,000 samples), while the associated Δ and ∇ switches move in 1K jumps (1000 samples). Data entry slider B gets even finer resolution with every 20 samples, and using the switches next to this slider, you can step through each individual sample.

Assuming you don't instantly find the ideal sample points manually (and it can take a long time, as programmers who have samplers with only this method of looping will testify), the DSS1 offers you ▶



More than a Grand



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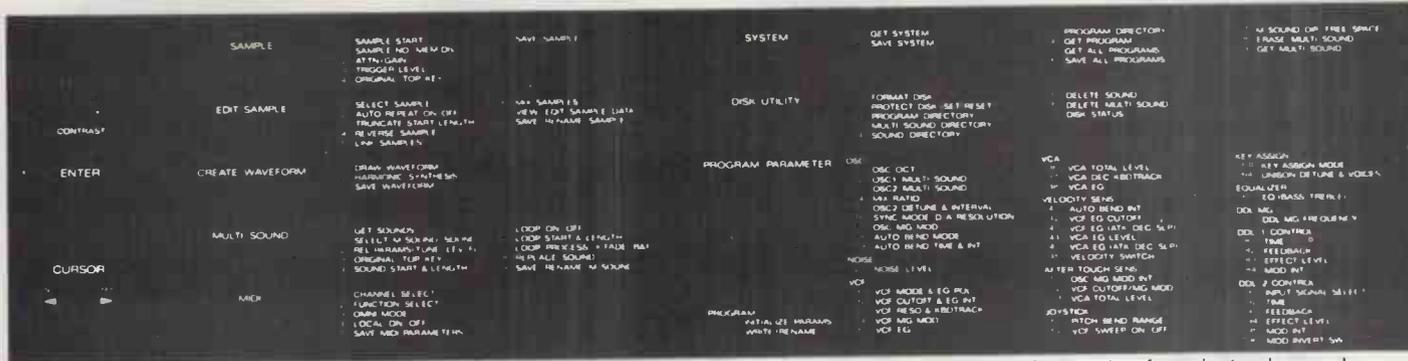
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▶ the chance to use an Autoloop function. This is all very fine when it works, but unless you've already moved the start and length values to something suitable, the Autoloop often comes up with 'Not Found' in the display. Once you get to the right place with your manual settings, though, you can keep pressing Enter to step through suitable zero crossings until you find the best one.

And if that still doesn't find you a perfect loop, you can bring in the heavy artillery and use Crossfade Looping. This feature is nothing new (it's been available for a while now through Digidesign's Sound Designer, and will be on the Emax), but the DSS1's implementation is unique in that it allows you to hear what the Crossfade Loop will actually sound like, before the sample data is permanently altered. This is invaluable, as it allows you to try numerous different crossfade lengths and sample points before you decide which one gives the best results.

So, you can make a finite sample sound continuously in the same way as a traditional synthesiser oscillator. And by using the Multi-Sound section, you can get a good representation of your original source over the whole five-octave keyboard (or 10½ octaves via MIDI).

Yet the DSS1 offers you two alternative ways to produce digital waveforms in addition to sampling. This makes the machine a proper synthesiser as well as a sampler, and seeing as the digital waveforms you can create from scratch take up very little memory, there should be no worries on that score.

The first method of waveform creation is drawing. This is done by moving one of the data entry sliders to plot the waveform in a slowed-down, real-time operation which represents one cycle. This lasts about eight seconds, and in that time, any movements you make with the slider are recorded and used to plot the waveform (see Diagrams).

This movement of the slider generates a 512-segment waveform, or 512 different levels, all of which can then be viewed and edited in a similar way to the sample data. Such analysis and editing doesn't represent quite such a marathon task, either, as there are only 512 levels to look at, rather than the thousands involved in just a couple of seconds of sampling. And the neat thing about this process is that you can set up a complex waveshape very quickly using the drawing, and then tailor it by E&MM OCTOBER 1986

means of the View/Edit function.

What waveforms can you come up with via this method? Well, I soon found how to make traditional shapes like sawtooth (slowly raise the level over the whole eight seconds) and square (start with the slider at full level and pull sharply down to the bottom after four seconds), but shortly afterwards discovered these waveforms are available as starting points for Harmonic Addition. More unconventionally, pushing the slider up and down rapidly gives you a lot of high harmonics; moving it less jerkily gives you a purer waveform.

What eventually transpires from all these hand movements is that, in the static mode you obtain from a single cycle, many radically different waveforms end up sounding fairly similar. To correct this, you apply a slow filter sweep in the analogue section (which we'll come to in a while), so that the different harmonic structures of each waveshape become audible.

The same turns out to be true of Harmonic Synthesis, the other option in Create Waveform mode. This method allows you to specify a different level for each of 128 harmonics. Again, this is a flexible system that can involve the user in a rather long-winded procedure. Fortunately, Korg offer you a good selection of starting waveforms besides the Blank one (all harmonics at zero level). This means you can start with an old friend like 'sawtooth' or an organ-type sound, or even the 'current' waveform – which can be one you've just drawn, or even one cycle of a sample.

You can't hear the difference that changing the level of a harmonic makes instantly. When you've made any changes you think are appropriate, you press Enter and the DSS1 computes the resulting waveform. You then go through this process as many times as is necessary, until you're happy with the result.

When you've finished creating your waveform – whether by drawing, editing or altering harmonic levels – you can save it to disk with a name, just as if it were a sample.

And now it can be used as a source waveform for the DSS1's synthesiser, just as though it were a sample. On most sampling machines, the 'synthesiser' section is there simply to 'clean up' samples, and is rarely a very versatile beast. But on the DSS1 you have a fully-fledged synth section: each of the eight voices boasts two oscillators plus noise, and a VCA and VCF with independent

envelope sections for each – in other words, virtually all the features of Korg's flagship polyphonic synth, the DW8000.

However, the synth section is not multitimbral, so all samples within a Multisound are affected by the same set of synth parameters. This isn't to say you can't create multisamples and split effects through sampling on the DSS1. But as soon as you start synthesising these samples, you hit the monotimbral limitation.

And it's symptomatic of the DSS1's design that to make the best use of the instrument, you'll probably want to use your samples (which of course take up precious memory) in both synthesised and unsynthesised forms.

To be fair, Korg have conceived the DSS1 as an extension of the synthesiser tradition – more specifically, I suppose, their synthesiser tradition, in which multitimbral synths don't figure. Thus you won't find individual audio outs on the instrument's rear panel, or an implementation of MIDI Mode 4 (the 'multitimbral' mode).

Anyway, all the Program Parameters (as the synth section is labelled) are accessible in three ways: by typing the parameter number on the keypad, by moving data entry slider A, or by stepping through associated Δ/∇ switches. This system is no substitute for traditional knobs and dials, but once you get used to it, you can whizz around between parameters without too many headaches.

Generally speaking, the available parameters are explained quite fully in the display when you call them up (which is just as well, as the preliminary manual we received ignored them completely).

There simply isn't the space here to examine each synth parameter in detail, so I'll just pick out the unusual and unique features for comment, bearing in mind that standard features like filter cutoff and VCA level do their job admirably.

The most remarkable feature of this section appears early on, with the OSC1 and OSC2 Multi-Sound parameters. As I've already implied, these allow you to select different sound sources for each oscillator. These can be drawn from the full range of standard (square, sawtooth and so on), created (drawn and/or harmonically synthesised), or user-sampled sources.

So, you can put a multi-sample on OSC1 and an 'analogue' waveform on OSC2, and then mix them, detune them, sync them, switch between them with velocity, and so on. The system's potential is huge, ranging from standard synth setups with two traditional waveforms, through hybrid ▶

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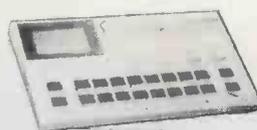
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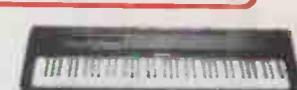
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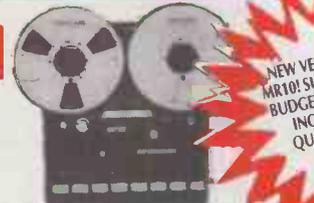
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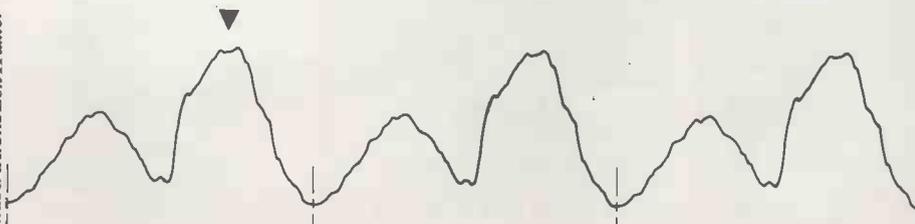
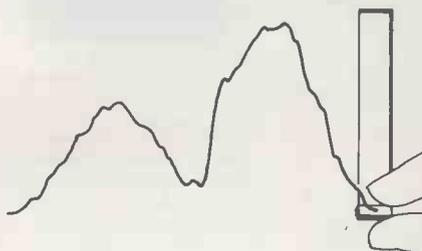
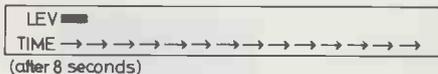
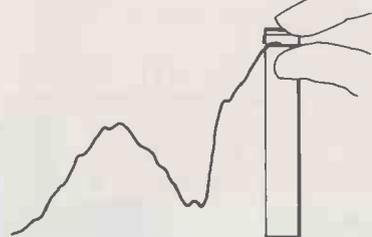
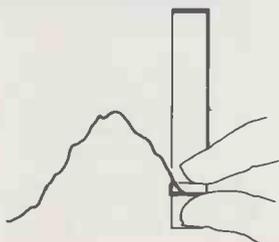
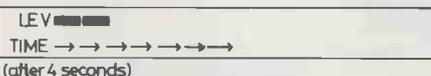
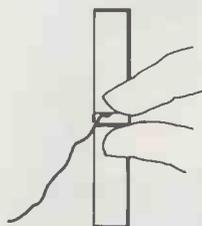
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arrangements combining synthesis and sampling, to purely sampled setups such as velocity crossfades. Of all the digital sound-creation systems whose possibilities are claimed to be truly infinite, this is the one I can foresee programmers becoming less bored with less quickly. Truly awesome, as they say in California.

One 'analogue' technique that's an old favourite of mine appears early on in the parameter list, but the Editor has asked me not to rave on about it for too long. It's called sync (*that's enough - Ed*), and it allows you to force OSC2's waveform cycle to restart every time OSC1 does. In combination with pitch-shifting of OSC2 (via the built-in LFO or Auto-Bend), this can be used not only for Jan Hammer-type lead synth sounds (of which there are a couple of beauties on the factory disks), but also for strikingly realistic effects like bowing at the beginning of string samples.

The next unusual parameter the DSS1 offers is a filter cutoff slope switchable between 24dB and 12dB/octave, which allows you to determine how sharply the brighter frequencies are cut off.

The filter also features keyboard-tracking and resonance as well as the expanded ADBSSR (Attack, Decay, Breakpoint, Slope, Sustain and Release) envelope. The latter is a design Korg have been using since the launch of the Poly 800 synth, and it's a fairly versatile one, as it allows a second attack or decay to be inserted before the sustain section.

The DSS1's velocity-sensitivity can be used to affect VCF cutoff and VCA level, the attack, decay and slope of each envelope, plus the amount of auto-bend. You can also use it to switch or crossfade between the oscillators (especially useful on samples, this). Aftertouch (or pressure-sensitivity, as it's often known) can be routed to bring in OSC MG MOD INT (snappy Korg jargon for vibrato) and filter mod, or to open up the filter or VCA.

Korg's now standard joystick (not my favourite type of performance control, though many musicians swear by them) can control pitch-bend and filter cutoff (left-right movement) and modulation (up for oscillator - another oblique way of referring to vibrato - and down for the filter).

The Key Assign section is excellent, allowing two different types of Poly mode - cyclic and fixed assignment - and a great Unison mode where the number of voices used (2, 4, 6 or 8) and the detuning between them can be preset.

Finally in the Parameter section, we come to the controls for onboard signal processing. The programmable EQ allows both bass and treble to be cut or boosted over a -4 to +8dB range. But the real beauty of this section lies in the two DDLs. These can be used in series or in parallel, so you can have two different effects from each stereo out, or

gang one effect after another. The parameters available allow for a wide range of DDL effects such as delay, chorus, flanging and ADT, and whatever effects you set up are stored as part of the program in question. This means that, live, you can be sure that both your synthesiser and sampled sounds are getting the signal-processing they need.

And so to MIDI, and that 10 1/2-octave MIDI note range. The most notable thing about this is that you can put drum samples and other sounds outside the keyboard range, and trigger them from a sequencer while you play other sounds live. Aftertouch is transmitted as channel pressure, and active sensing ensures you're not left with any embarrassing drones should MIDI connections be broken.

The lack of Mono Mode implementation means the DSS1 isn't quite the MIDI control centre it could have been, but Poly and Omni modes are fully supported. You can also send and receive System Exclusive data, and Digidesign are already hard at work converting the excellent Macintosh Sound Designer program for use with the new Korg.

The DSS1 is one of the most inspiring all-round instruments to appear in quite a while. It goes far beyond the scope of machines which are limited to sampling as their only means of sound-generation, and you'd need to add something like Digidesign's SoftSynth program and the Macintosh it runs on to make those other samplers compete with the Korg.

Its problems lie in its slothful disk drive, hardware-limited memory and lack of MIDI Mono Mode implementation. But for me - and, I suspect, for a lot of other musicians - the DSS1 more than makes up for this by making waveform-creation as easy as it makes sampling, and by taking the synthesising and signal-processing further than any other sampler currently available. Bar none. ■

DATA FILE

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His name may not be as well known as that of today's star producers, but Peter Collins is arguably more versatile than any of the big guns.

His dedication and open-minded attitude give some clue to his popularity with artists and record companies alike.

Interview *Paul Tingen*

Photography *Matthew Vosburgh*

HE'S WORKED WITH BLANCMANGE, Tracy Ullman, Musical Youth, Matt Bianco, Shakin' Stevens, Rush, and Nik Kershaw. He recently had two major hits with Gary Moore's 'Empty Rooms' and 'Out in the Fields' (the latter featuring the late Phil Lynott on vocals). Yet as a producer, he's never attracted the acclaim enjoyed by men like Rupert Hine, Steve Lillywhite or Hugh Padgham.

Perhaps that's because Peter

Collins doesn't have as obvious a trademark as some of his more famous colleagues. He's worked with as many different artists as styles of music, never pushing his views forward in an obvious way. Still, he is known as somebody well acquainted with the hi-tech area, in particular, and he has a thing or two to say on his work with hi-tech gear in the studio.

Collins has a reputation of being fast and efficient. As we enter Trevor Horn's Sarm East studio in ▶

► London for a one-hour interview session with him, we are greeted with a sharp '55 minutes left'.

Indeed, we are five minutes late, and the 35-year-old producer is already waiting in the control room. Leaning backwards, one foot against a 40-channel Solid State Logic desk, he peers at us disparagingly from behind his glasses. He then explains courteously that he is very strict about working times.

'I usually start working at 11am and finish at eight in the evening. Sometimes, if an artist is really happening at eight o'clock at night, of course I'm not going to stop, but see a performance through. But generally speaking, nine hours a day in the studio – and we *do* work pretty intensively – is enough. You get the maximum out of people, because if everybody knows there's a finishing time, you work harder during the day. Otherwise you get this kind of sitting around. I'm a daytime person anyway, and this also gives people a chance to go home after sessions, be human, have dinner and come to the studio fresh the next day.'

A business-like approach which may sound odd (or refreshing) to those used to the widespread studio practice of working until the early hours. In Collins' case, it makes him a popular producer with studios, since they can book in sessions after him, as Sarm East do all too happily.

And though his approach may be business-like, Collins moves on to explain that it was a great love for the studio and its atmosphere that turned him to his present job. He started his career – as so many do – as a singer/songwriter/guitarist in the late sixties, and recorded one album for Decca: *Peter Collins' First Album*. It was also his last.

'As a writer and artist, one of the things which knocked me out in the studio was that all the musicians were there for me and my music. Still, the biggest thing was being there and hearing music coming out of these speakers. There was the desk and everything, and the whole atmosphere of the place was just totally tantalising.

'I realised, while making that album, that I didn't have what it took to be an artist, and the excitement of being in the studio was where it was at for me. In the absence of any other career ambitions, that's what I went for.'

So Collins got a job as a studio assistant at Decca.

'In practice that came down to being tea boy, but after a while I managed to do some after-hour recordings in which I recorded

jingles for radio and TV. The money I earned with that I put into my own production again.'

COLLINS GOT HIS FIRST carte-blanche job in 1979, when a record company asked him to do the production honours for rockabilly band Matchbox. The success of that venture sparked off a glut of offers of work which, in turn, has led to the present, very successful state of his career.

So Collins is in great demand, a rare state for any producer to find himself in these days. What does he see as his strongest point, the key asset for which musicians and record companies want to work with him? The reply comes slowly, precisely.

'Being able to look at what an artist is doing and bring out the best in them. To help them project what they want to project. Because often they're not doing what they think they're doing, and are not able to say on a record what they want to say. My strongest asset as a producer is being able to bring that out, with a mind to commerciality.'

Which obviously makes Peter Collins very popular with record companies and artists. His approach is flexible, though.

'There is definitely not something like "The Peter Collins Sound". For example, from a sound point of view, the last album I worked on was *Power Windows* by Rush, and the drummer – Neil Peart – has a snare sound which is fairly high-pitched and cracky. With Billy Squier, with whom I'm working at the moment, there was a completely different, deep, thud-like heavy-rock sound on the snare. The two albums will come out sounding completely different.

'On synth sounds and arrangements, I also follow the band. What I do is say to a band "Well, look here, there's too much happening here", or "we need a little melody here", or "I think this needs a bridge", and then get them to do it. I will try and get them to be creative, so that I can say "great, that's it". I'm like the editor of their ideas.'

Collins rises abruptly to order coffee from a passing studio assistant, and then continues, hand under chin.

'I always try to do as much pre-production as possible to get the arrangements OK. Then, in the studio, I start with putting down the SMPTE and the tempo. For that I get the whole band in, to make sure

everybody is happy. Then I'll have the keyboard player putting down some chords which are absolutely perfectly in tune. Next the guide vocals go down, and maybe one more synth and a guitar part and *then* we start recording.

'In this way, everybody can see where the verses and choruses are, and perhaps get new ideas at this point. You can hear whether a song may need another dynamic change or is too long or whatever. Usually that sort of thing is sorted out in pre-production, but this is a good point to reassess.'

And there's no difference between working on a single and an album track?

'I produce a track the way I think it should sound. If it turns out to be a single, great; but if it turns out to be an album track, then that's fine too. I'm not going to throw a track away for that reason. Occasionally with a rock act there is the obvious head-banging track, which is not going to be a single – then I don't really worry too much about it and let the band do their thing, especially if I have been very microscopic about elements in other tracks.

'Still, it's really dangerous to write a track off as a single. Things

"If you can invent a new sound and then give it a classic quality so it won't sound old-fashioned in five years, you've achieved something."

can happen in a studio. An idea can totally transform a sound and suddenly make it very commercial. Subconsciously, I'm always thinking about the potential commerciality of a song. That's just my nature. But my first aim is always to make an exciting and fresh-sounding record, with lots of dynamic changes.'

TYPICAL OF COLLINS' ATTITUDE towards music technology is the fact that he owns substantial amounts of electronic equipment. He has a 19" rack (in which there are, amongst others, two AMS samplers and a Sony PCM F1), a Fairlight II, a Linn 9000, two SRC SMPTE-reading clocks, and various synths. He once owned an Emulator II, but recently sold it to Nik Kershaw after transferring its sounds to the Fairlight.

'I have those machines for three reasons. First, I get a chance to get

to know the new gear intimately, and know what it is capable of. Second, it is a lot cheaper than renting it. And last, I have my own library of sounds and can expand and use it whenever I want to.

'I also have to have a knowledge of what the engineer's gig is, what is available to him, what the limitations and possibilities are. Though with a really good engineer I don't have to say: "Now could you boost it at 10K please!" Rather, I'll say to him: "It needs a bit more of a razor edge to it, it's a bit lifeless." I won't talk to him in really technical terms, but more in graphic terms. I now work only with my own engineer, James Barton. We've worked together for two years now, and we communicate really well.

'I also see it as part of my job to introduce artists to what is happening now - to bring them up to date and offer them new sounds. A lot of bands that have had success in the past are locked into that past, and I try to give them new impulses.'

The two AMS machines each have a sample time of 14½ seconds: Collins uses them to fly in vocals and guitars.

'If I've recorded a chorus with which I am very happy, or which has taken a long time to get perfect, I then record that bit on the AMS and use it in chorus 2. The new Window Recorder is very good for this purpose as well; I was very impressed with it. Once it's stereo I'll buy it. You can also do this with the Fairlight III, but the quality of the sample on my Fairlight is not high enough.'

Collins has some pertinent views on the musical consequences of using computer technology.

'I think that, generally speaking, people are sick of rhythm machines, drum-boxes and quirky, gimmicky sounds. And a strange thing has happened. With the prominence of machines, people working in studios have become very, very conscious of strict timing. That has led to the expectation of drummers having to play extremely tight, almost like machines. In fact, producers, including myself, tend to use machines to help that process, even though I prefer to use as many real drums as possible. I have always worked with a click-track, even back in 1979 with Matchbox. But in those days, we moved around *within* the click-track enormously. Now my ability to tolerate an instrument moving around a click-track has greatly diminished.

'All this means that it's quite hard for young English drummers to find

their way into the studio world. Usually they don't have the ability to play that tight. So it tends to encourage producers to use machines rather than real players, and I think that's bad. On the other hand, the technology enables kids to make fantastic demos in their front room.

'I think that a lot of young bands are very aware of the new technology, but they don't really know how to approach it, and feel threatened by it. I've heard of producers who have given young drummers a click-track to play against and nothing else. They've then got this thing bashing in their heads, and are supposed to play in time with it. That's the most awful thing that can happen to a new drummer coming into the studio. It's much better to give them a sequenced synthesiser playing eighths. I also give them a guide vocal and put a lot of guide stuff down for them to play with, so that they can really play with some music.'

'On the other hand, you've got experienced drummers like Charlie Morgan. He's absolutely rock solid to a click-track. The beauty of good professional drummers is that they can work with the technology, and still put some humanity into it. In using really good and experienced people, who are not intimidated by click-tracks and technology, who've used it and enjoy it, you get the best of both worlds.'

'Still, a lot of passion has gone out of drums. The subtle nuances of well-recorded drums, played by a real musician, have gone. That's a shame... though the recent paradox is that, with the sophistication of drum machines, you can put in more and more expression again.'

SCEPTICAL AS HE MAY BE of the improvements modern technology can bring about, Collins doesn't hold with the idea that rock music has become more sterile in recent years. As he says, today's record buyers are more likely to be impressed by the rich, new sounds sampling has brought with it, than they are by the subtleties of classic drumming.

'I don't think pop music is any better or worse than it was five years ago. It's just different. Fresh sounds help making records that come out sounding fresh. If you can invent a fresh, new sound and then manage to give it a little bit of a classic quality, so that it won't sound old-fashioned in five years, then I think you've achieved something good.'

'There's a lot of records that were made five or six years ago that now sound terribly out of date. It is a risk when you are working with the latest technology, and I'm constantly aware of that. I usually go for more classic sounds, and tend to veto sounds which I think are too stylised.'

'A lot of the PPG sounds have become dated, for example. They've been used a lot on *The Lexicon of Love*, the choir and the bell sounds. Still it's a very useful tool. I love its Fender Rhodes sound. It has this funny digital racket, which I love, though a lot of engineers filter it away.'



'I like to use synths for their different characteristics. Some people talk a lot about the DX7 sound, which is supposed to be too identifiable. I think that's nonsense. The DX7 has a lot of very useful sounds; it's especially good for small quirky sounds, and its piano sound is very nice. I like the clear quality of digital synths, and the thick, wholesome quality of the analogues, which you can't get otherwise.'

'Still, it's the context in which you use these sounds that will make them stylised or old-fashioned. My own taste is gearing towards natural sounds. I like to take a natural sound and put it into a slightly unnatural context. That can be very alluring; there's something mysterious about it. I'm always looking for the possibility to make things slightly unreal. A record is a fantasy, and all those little elements can give that special extra which is what it's all about.' ■

ONE MAN'S MEAT...



Photos: Trevor Gilchrist.

While some synth players lust after the latest digital instruments and others mourn the capabilities of analogue machines, Elka produce two new synthesisers that offer musicians the choice. We test them both. *Paul Wiffen*

Elka. What does the name mean to you? Home keyboards, probably. Pretty good home keyboards, as it turns out, and in amongst the

organs, personal keyboards and accompaniment units, a fair amount of modern pro musician's gear, too – from the Rhapsody string synths of the seventies, to the Synthex polysynth of a couple of years back.

In fact, the history books tell us that a number of big-name 'pro' acts have used Elka equipment to propel them to the top and keep them there. Among them, Tangerine Dream with the Rhapsody, Jean-Michel Jarre with the Elka 77 organ, Geoff

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Downes and Keith Emerson with the Synthex, and Mike MacNeil of Simple Minds with Elka's new MIDI accordion controller.

And now, in the wake of such innovations as MIDI, digital synthesis and dynamic keyboards, the Italian company have introduced a completely new range of 'professional' hi-tech equipment. To begin with, there are two keyboards: the EK22, based on traditional analogue techniques (though under

Background "The two new keyboards have several things in common with each other, but internally they're as different as chalk and cheese."

digital control), and the EK44, along more purist digital lines. There are also modular expander versions of each.

These new instruments follow (at quite some distance, time-wise) in the footsteps of the Synthex. This was Elka's first attempt at a polyphonic synthesiser, and in this reviewer's opinion, one of the finest of the analogue breed ever designed. The Synthex was the first polyphonic to use digitally-controlled oscillators with analogue waveforms, sync, ring mod and cross pulse width modulation, plus an in-built digital sequencer. Even when MIDI threatened to leave it behind, Elka refused to abandon the Synthex and (unlike many other manufacturers of the time, who used MIDI to sell newer machines) came up with a MIDI update which supported all 16 MIDI channels and the sequencer.

The two new keyboards have several things in common with each other, despite the different ways they go about shaping sound. They both boast velocity- and pressure-sensitivity from a five-octave weighted keyboard, and they use the same 32-character display angled to prevent stage-light glare.

Both hold 96 sounds internally, split between 64 factory presets and 32 user locations. These can be augmented with ROM (factory sounds) or RAM (user storage) cartridges, each with 64 sounds. For live work, they both have 16 Performance Registrations which hold the assignments of various sound programs to associated keyboard modes and split points. And to cap it all, both are built into the same casing, and have front-panel layouts that are very similar.

But don't let any of this kid you for a moment. Internally, these machines are as different as chalk and cheese. You might say they exemplify the two most popular schools of synthesis at opposite ends of the spectrum; one completely digital, the other an amalgam of traditional analogue techniques.

Of the two, the EK44 has the more immediately impressive paper spec. It's an 18-voice instrument with eight oscillators per voice, making a mammoth total of 144 oscillators. The keyboard
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assignments available allow these to be used in different ways. In Dual mode, you can play nine notes with two sound programs on each note, while in Split Mode you can have nine notes with a different sound on each side of the split point. But most impressive, Multi Split mode lets you spread nine zones across the keyboard (ie. eight split points), with complete dynamic allocation between them. This means you can play all the available notes at once (continuously changing the zones you're playing in), and they will be assigned a timbre depending on where on the keyboard they're located.

Let's go back to the beginning and look at how the EK44 goes about its fundamental business – synthesising sound. Looking through the parameter list on the front panel, I had a definite sense of déjà vu. Terms like Envelope Scaling, Feedback and Pitch Envelope Level will certainly ring bells with most keyboard players, unless they've been on an expedition up the Amazon for the last three years. It all sounds a little like FM synthesis to me, but the configuration of the eight oscillators in the process is shrouded in mystery. Exactly what lies behind the parameter named Oscillator Combination is not explained on the front panel (though the envelope and level scalings are shown diagrammatically), and there was no manual available at the time of the review. But call up one of the presets and step through the possible Oscillator Combinations (which are referred to by number only), and it does sound very similar to what happens when you step through the algorithms on a DX.

The first 12 Edit parameters are grouped together as Oscillator Controls, and when you call them up, you discover that the settings for all eight oscillators are shown simultaneously.

The oscillator whose parameter value you're altering is shown by a flashing cursor. In Edit mode, the first eight Performance Registration buttons allow you to select which oscillator you want to work on, while the second eight allow you to toggle each oscillator on and off. This system works fine: you can keep your eye on what is going on with all eight oscillators simultaneously.

Each oscillator has a six-parameter envelope covering Attack, Decay, Sustain (Level and Rate), Release and Scaling values. To avoid confusion here, both envelope shape and scaling rates are represented diagrammatically on the EK44's panel. The two sustain parameters, Level and Rate, are worth noting as they allow you to make sustain either a constant level (as in the standard ADSR), or a second decay (by entering a Rate greater than zero) suitable for percussive envelopes like pianos, guitars and so on. You can also program the amount of keyboard velocity effect for each oscillator, as well as how the level of each increases or decreases as you go up and down the keyboard (Level Scaling Sign and Amount).

The second set of Edit parameters deals with shared parameters for the whole sound. Including the mysterious Oscillator Combination already mentioned, these range from the overall pitch

envelope and the LFO (Vibrato) settings to the programmable Chorus.

For me, the last item is where the EK44 scores over any other digital synth. There isn't a single electronic instrument which doesn't benefit from being put through a chorus unit, and now that the likes of Sequential and E-mu have started putting these devices on upmarket keyboards, built-in chorus sections are shaking themselves free of the stigma that associated them with cheap 'cure rather than prevention' instruments. What baffles me is that, with all the criticism levelled at digital synths for their clinical lack of warmth, nobody has thought of putting a chorus unit on a digital machine before. But now Elka have taken this step, and I have to say that when you add the chorus to certain programs, the EK44 produces a warmth and movement which many musicians have just about decided digital synths can't do. For adding that Leslie effect to organ sounds, there's nothing better.

Once you've set up a program that's to your liking, you can use the Level parameter to match levels between different programs. This is useful, because although there are 'live' sliders controlling the volume of each sound when you're in Split or Double mode (so you can make adjustments on stage if necessary), you can use this programmable level to 'preset' balances in these modes, making concert life that little bit more problem-free.

Level is the last of the 27 Edit parameters – those which are stored as part of a sound program. But there are another 23 Function parameters which govern the setup of the EK44 in general. These are



grouped into Modulation, DCG, Transpose, Split & MIDI Edit, and MIDI Function On/Off.

The first of these covers the range and amount of pitch-bend, modulation (vibrato) and portamento. Next come the controls for the DCGs (Digital Control Generators – Elka's jargon for the EK44's voicing). These cover specifying Detune amounts between the two sound programs in Dual mode, and assigning the pitch range over which the voices sound in Split. The first of these allows further fattening up of the sound (especially if you use the same program on each DCG), while the second allows you to establish zones (overlapping if ▶



► required) where the different programs will sound on the keyboard.

As well as fairly standard facilities in the Transposition section (Semitone and Fine Tuning), there's an unusual third option called Arabian Scale. Now, either this is an immensely subtle effect (involving microtones of detuning) or else it just wasn't implemented on the prototype EK44 I had for review: I certainly couldn't hear any difference.

Parameters 10, 11 and 12 are utility functions: Edit Recall allows you to compare edited versions with original presets, while Voice Initialisation allows you to start programming from scratch. Program Sequence Recorder allows you to string an order of programs together, which can then be advanced through using a footswitch.

Now we come to my favourite section of the EK44: Split and MIDI Edit. This is where the instrument excels by taking a leaf out of the multi-

EK44 Spec "The first eight buttons allow you to select which oscillator you want to work on, while the second eight let you toggle each oscillator on and off."

sampling book, à la Sequential and Akai. Using the Multi Split mode I mentioned at the start, you can designate eight separate split points across the keyboard, and better still, assign a different MIDI channel for each, which allows for complete external multi-timbral control of the machine from a sequencer via MIDI Mode 4—still with full dynamic allocation of polyphony. What this piece of

jargonese means is that you can play, say, five notes in one zone (or on one MIDI channel) and five in (or on) another, and the next second, you can be playing in different areas (or receiving notes on different MIDI channels), without needing any pause for the synth to reset itself. You can also specify modulation, portamento and pedal controls separately for each zone or channel.

As far as the transmission and reception of MIDI data goes, Modulation data (pitch-bend, mod amount, portamento and the rest), program changes and System Exclusive info can be enabled or disabled at will. But on the prototype I reviewed, the Second Touch (otherwise known as aftertouch or pressure-sensitivity) data couldn't be disabled as it could on the EK22. One of the biggest problems using the DX7 with a MIDI sequencer is that MIDI aftertouch data (which can't be disabled even if it's not routed anywhere on the machine) uses up loads of memory and drastically reduces the number of notes you can record. Nowadays, many dedicated and computer-based sequencers have a MIDI data filter which can be used to remove such memory-wasting data, but I hope the EK44 will soon emulate its analogue brother in this respect.

But enough of these parameter discussions. How does the thing *sound*? Things begin well with what is perhaps the best synthesised acoustic piano sound I have yet heard, coupled with excellent touch response. This is followed by a splendidly distorted Hammond sound, complete with key-click and Leslie. A quick run through the rest of the presets reveals several sounds very reminiscent of the DX range, in name as well as sound (Syn Clav,

Evolution, Koto and Steel Drum are a few), but listening to the strings and organ sounds reveals the benefit of that built-in chorus unit—they're richer than anything you could or dinarily obtain from a digital synth.

I'll confess right now that I'm no great lover of all-digital synthesis. For me, nothing will replace the speed and flexibility of an analogue filter. But I have to admit that the EK44 is a damn good machine which not only performs beautifully in the creation of digital sounds, but performs impressive imitations of analogue timbres as well. If you're looking for the best of both worlds, this could well be the solution to your dilemma.

In much the same way as the EK44 invites comparison with the Yamaha DX range, so the EK22 will inevitably be compared with the original Synthex by anyone who has used it.

Obviously, some compromises have had to be made to achieve the reduction in price (less than a third of the Synthex's original asking price). A prime example is the substitution of digital parameter access (which, sadly, people almost accept without complaint nowadays) for old-fashioned switches and sliders. But on the whole, the EK22 upholds the tradition well.

Both the EK22 and its expander version (the EM22) use digital control techniques to recreate conventional analogue methods of synthesis. Thus the EK22 has much in common with the Synthex,

EK22 Spec "You can modulate the filter cutoff frequency using the oscillators, so if you set the filter to oscillate, you can create FM-type sounds."

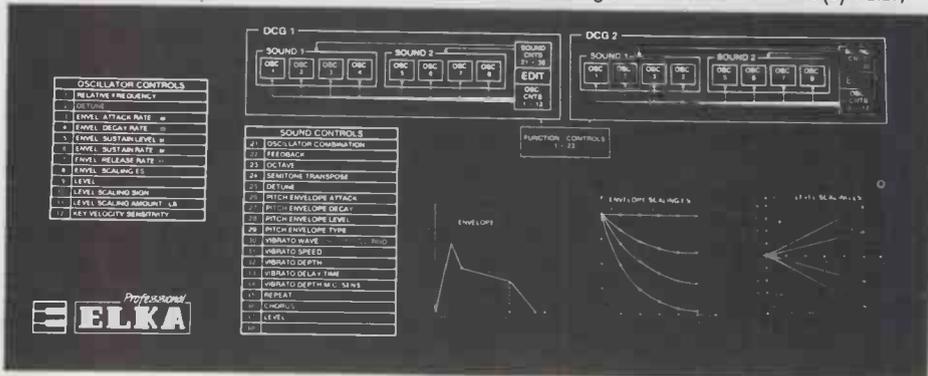
and because it is velocity- and pressure-sensitive, it actually goes well beyond the scope of its predecessor as far as expression is concerned.

The EK22 is six-voice polyphonic, splittable 5/1 or 1/5 across the same five-octave weighted keyboard as the EK44. The factory programs give a good range of the sort of standard sounds people seem to want—the ol' piano, strings and brass—but also feature more interesting and creative sounds like Sync Lead and Filtr.Wave.

Each of the two oscillators (DCOs) can play a mix of Wave A (a pulse with width variable from 50%—a square wave—to 95%) and Wave B (a triangular waveform variable in eight stages between a straight sawtooth and a pulse triangle). So, Wave B can produce waveforms not previously available on any synth, while Wave A covers the full range of pulse waveforms. In addition, the pulse width of Wave A can be continuously modulated by the LFO. This produces PWM (Pulse Width Modulation), the process responsible for some of the fattest sounds available from any type of synthesis. My only regret here is that Elka haven't included the cross-PWM between oscillators which was so successful on the Synthex.

This time, though, Elka are offering another innovation in the DCO section: Cutoff Cross Modulation. This modulates the filter cutoff frequency using the oscillators, so that if you set the filter to oscillate (by turning the resonance up to full), you can create FM-type sounds, like the

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BRIGHT NEW THINGS



Gary Numan, electropop pioneer turned record business entrepreneur, has renewed his partnership with Shakatak keyboardist Bill Sharpe to make a new single, 'New Thing From London Town'. Will the unlikely tie-up become permanent? Interview *Dan Goldstein*

Photography *Trevor Gilchrist*

NOW THIS IS AN ODD couple, a marriage of extremes. Bill Sharpe, the archetypal classically trained pianist, a successful jazz-rock keyboard player for some years. And Gary Numan, a rock 'n' roll

rebel weaned on a diet of Sex Pistols and Kraftwerk, once as bright and as influential a star as you can get, now something of a supernova, a man whose career seems to be at an eternal crossroads.

The couple teamed up, quite by

chance, 18 months ago to produce 'Change Your Mind' – a catchy, moody piece of dancefloor confectionery that made a bigger dent on the nation's charts than either musician had dared to expect. Sharpe had written the song as part of a collection unsuitable for his band, Shakatak, but eminently usable on a solo album. Numan happened to be in the same studio at the same time, and sang Sharpe's lyrics with all the passion and precision that had distinguished his vocal style since the beginning of his pop career.

At the time, neither artist had plans to renew the collaboration: it was a one-off that worked as far as it went, with both benefitting from the experiment, artistically and financially.

A year and a half later, though, and Sharpe and Numan are sharing a record sleeve again. The single is called 'New Thing From London Town', and the similarities between it and 'Change Your Mind' are obvious: it has the same heavyweight (though subtly programmed) drum sounds, a similarly infectious hook, and a sprinkling of synth sounds whose appeal lies not so much in their originality, as in the sympathy with which Sharpe plays them.

The couple sit, some distance from each other, in the relaxation lounge of Numan's Rock City studios in Shepperton, Middlesex. The film is in the camera, the tape is running. The first question: How?

Sharpe: 'It was a song I'd had around for a while. I re-did an old demo of it, sent a cassette to Gary, and he liked it. It's the same sort of atmosphere as the last one we did, but this one was a little bit more planned. We knew more about each other this time, but it's a similar kind of thing.'

'The track was recorded here at Rock City, and mixed down in Taunton by the same people who did 'Change Your Mind'. I quite like the idea of other people mixing a track – they add a new dimension to it. On this one, the mixing engineer was rushing around sampling tool-boxes and things to make the track sound different. So the snare drum on the single isn't really a snare at all; it's actually a tool-box being hit with a wooden mallet.'

'The instrumentation is very straightforward. The drums are a Linn LM2, with various samples that I made on the Kurzweil, and which I nicked off other records –

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though I'm not saying whose. It seems a pretty standard thing these days. My advice is: don't leave four bars of drums at the end of your record, because somebody will nick the sounds. Somebody will probably nick the drum sounds off this single, because they sound pretty good on the 12-inch...

'The synth sounds are mainly DX7 and TX7, with the Kurzweil being used as a master keyboard. And that's it, really. There's Gary's vocals and some backing vocals, but that's all there is in the way of instruments.

'It's all actually played, though, not sequenced. It suits the track because it's not perfect, some bits are just that little bit out of time.'

GETTING 'NEW THING' to its finished state took five days of work in the studio. By Sharpe's standards that's fast, but Numan, ever the maverick with his simple melodic compositions and down-to-earth arrangements, isn't convinced.

Sharpe: 'It's quick working for me, yes. Coming to do this from Shakatak, where it can take us two years to make an album, is refreshing because so many of the decisions are left up to me. Shakatak is a very democratic band, and everything we do is put to the vote — that's why it takes us so long to record anything.

'I really like the idea of working within a band that's just two people. You can achieve things much more quickly, and once a track is really starting to happen in the studio, all it takes is a bit of fairly intensive work, and it's finished.'

Numan: 'I suppose five days isn't very long to make a single these days. But I can remember, back in 1978 and '79, making a whole album in that time. And we still took our time — it wasn't particularly intensive work.

'Part of the reason for that was that I always wanted my own way. I was the one that took all the decisions because it was my band, and we were playing my songs. I must have been terrible to work with, though I think I'm getting better at working with other people now.

'Then again, there weren't so many things you could do in the studio then. We used to play everything live, overdub the odd bit of synth or guitar, and then do the mixing — which was nothing like the process it is today. It was just a matter of setting a couple of EQ controls and getting the levels right. There wasn't the amount of outboard gear to start fiddling with, and something like sampling wasn't much more than a pipe dream in

1979. Everything has accelerated so much since then.

'I think the quality of recording has gone up a lot since those days, but...I'm not sure I really prefer to work in the studio with all this new equipment. I've just spent a terrible two months in the studio trying to record my new album. Rather than write most of it at home and go in with a master plan already drawn up, which is what I normally do, I thought I'd just go into the studio and see what happens. I was hoping something nice and spontaneous would come out of it, but instead almost nothing came out of it at all.

'The problem with being stuck in the studio is that, if you don't know how you want a song to turn out, you keep on trying new things, most of which don't get used. You might put down six tracks in case a song goes in one direction, then another six in case it goes another way.

'I got really pissed off with it, really frustrated. So I ended up going home and sitting writing songs again, developing what ideas I had had in the studio, and thinking of new ones.

'It's an experiment I won't repeat. I think I'm better off working the way Bill does: writing songs and doing decent demos of them at home, so that you've got something definite to aim for once you go into the studio. And when you do that, the quality of the demo can only get better.

'...The way things are going generally, these days, you only need one instrument to make a record. With samplers you can take any sound you want and use it, and then all you need to do is sequence all those sounds together. I've just done a lot of my new album using the PPG system, as before, but I got a Prophet 2000 towards the end, and I reckon I could have done the whole album on that — it's absolutely brilliant.

'In a way things have only gone full circle. In the early days people only had one synth, and used that to do everything. Then people started getting loads of synths up on stage with them, because one did a good bass sound while another was good for strings.

'The only old synth I still use on stage is the ARP Odyssey, because it's the only machine that makes sounds you can't make on anything else. Everything else goes onto one.'

'I've still got my Odyssey, too', says Sharpe. 'Even with the Kurzweil at home, there are things only the Odyssey can do. I've still got my Solina strings synth too, and the same goes for that. The problem with the Odyssey, of course, is that it keeps going out of tune, but I wouldn't get rid of it...'

BOOTH SHARPE AND NUMAN are sufficiently encouraged by 'New Thing' to want to take the partnership further, perhaps with a collaborative album project.

'I've got four or five other songs in demo form', says Sharpe, 'which could all suit Gary's voice and the way we work. I'd definitely like to take it further, as something that we can both do outside of our main careers.'

'We've got nothing to lose really', Numan affirms. 'Bill's still got Shakatak and I've still got my solo career. If we do an album together and it's successful, then it'll benefit both of us individually. If it's not successful, we've both got outside interests to go back to...'

For Numan, the main outside musical interest remains his solo career (the new album, provisionally titled *Strange Charm*, is due out this autumn) and the independent record label he runs from Shepperton, Numa Records.

But Numan is no more fashionable a face now than he was when he founded the label two-and-a-half years ago, and mass media attention — crucial airplay included — has eluded both him and the other acts on Numa.

'It doesn't bother me too much about my own career', he says, with characteristic selflessness. 'I don't think I really want to be Number One again — there are just too many hassles. I'm at the stage where I can still get Top 30 singles without getting any airplay whatsoever, because the following I've got is strong enough and loyal enough. But with the unknown acts that are signed to my label, they can't get anywhere without airplay, and that's what upsets me.'

'Airplay is vital', echoes Sharpe, ruefully. 'It's a shame about the situation with Radio 1. I mean, the Network Chart has given it some competition nationally, and some of the local stations are good, but it's still true that to get anywhere with a new act, you really need airplay on Radio 1.'

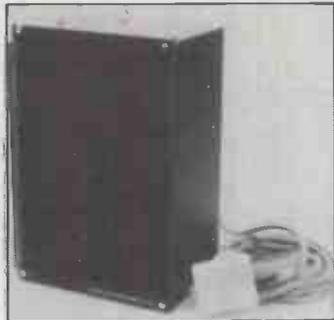
So has one company's virtual monopoly over modern musical taste resulted in a decline in the worth of pop music? Numan surprises us by leaping to its defence...

'Personally I don't think today's pop music is any worse now than it was 20 years ago. You're always going to get your Chicken Songs, and you're always going to get something like the last Robert Palmer single, which to me was brilliant. Those are the two extremes, really.'

Which, if I remember correctly, is where we came in. ■

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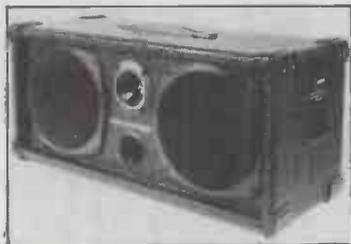
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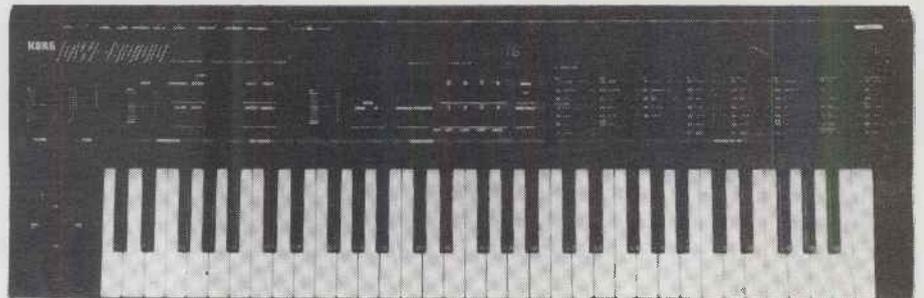
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**Korg DW8000
Emerson GX1**

Richard Bagley, West Yorkshire

Richard was spurred on by the return of Keith Emerson to the active music scene (as well as the lack of patches for the DW8000 in Patchwork), to submit a patch based on the GX1 sound used by Emerson on 'Pirates' (see 'Works Vol 1' by the original ELP). It's a powerful, full-bodied and versatile patch which has characteristic vibrato as part of the aftertouch facility. The fast auto-bend and portamento effects are best illustrated by alternating octave bass and right-hand chords. ■



11 16	21 16	31 32	41 3	51 0	61 0	71 3	81 2
12 1	22 10	32 0	42 12	52 0	62 24	72 15	82 1
13 31	23 31	33 2	43 8	53 31	63 0	73 13	83 0
14 1	24 1	34 1	44 24	54 26	64 0	74 6	84 1
15 1	25 4	35 17	45 7	55 31	65 0	75 12	85 1
16 4	26 0		46 10	56 10	66 2	76 15	86 1
17 13			47 6	57 3	67 0	77 4	87 2

NAME	Tri Bronze	Quad Bronze	Mahabient	Chinesynth	No Strings	Not Brass	Minimono1	Minimono2
ALGORITHM	4	4	4	3	1	3	3	3
FEEDBACK	6	6	5	5	7	7	7	7
LFO WAVE	Sq	Sq	Tri	Tri	Tri	Tri	Tri	Tri
SPEED	0	0	32	32	32	33	31	30
DELAY	0	0	20	20	10	11	0	0
PMD	66	66	3	-3	15	10	2	3
AMD	0	0	0	0	0	0	0	0
SYNC	on	on	off	off	off	off	off	off
M.S. PITCH	6	6	5	5	5	5	7	7
AMPLITUDE	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0
EG BIAS	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0
VELOCITY	2 1 1 0	2 1 1 0	2 0 0 3	3 2 2 0	3 1 1 2	2 0 0 0	0 0 0 0	0 0 0 0
OSC. FREQ.								
OP 1 & 2	3.46 7.00	3.46 7.00	1.00 1.00	1.00 1.00	1.00 1.00	2.00 1.00	1.00 1.00	1.00 3.00
OP 3 & 4	3.46 10.38	3.46 10.38	1.00 1.00	8.00 2.00	1.00 5.00	12.11 1.00	1.00 1.00	7.00 1.00
DETUNE	-3 -3 +3 +3	-3 -3 +3 +3	0 0 0 0	0 0 0 0	0 0 0 +3	0 -3 0 -2	0 0 0 0	0 +1 -2 -1
E.G. AR	31 31 31 31	31 22 31 31	31 10 21 11	31 31 30 11	18 14 14 14	20 25 27 25	19 19 19 21	19 9 19 21
D1R	8 6 7 8	8 6 7 8	31 31 31 7	31 11 10 7	31 31 31 15	31 23 12 7	31 31 31 31	31 31 31 31
D1L	0 8 0 0	0 10 0 0	15 15 15 0	15 11 12 0	15 15 15 12	15 13 10 13	15 15 15 15	15 15 15 15
D2R	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 2 0 0	0 0 0 0	0 0 0 0
RR	.5 4 2 2	.5 4 2 2	.5 4 8 9	.5 4 8 5	.5 3 5 6	.6 3 5 5	.4 5 3 2	.4 6 3 2
OP. LEVEL	99 75 85 0	99 75 69 70	99 78 75 74	99 70 80 76	99 75 75 75	99 50 85 78	99 71 60 69	99 65 55 68
K.S. RATE	0 3 0 0	0 3 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	0 0 0 0	0 0 0 0
LEVEL	0 0 0 0	0 0 0 0	0 0 0 47	0 0 0 47	0 0 0 0	0 17 0 0	0 0 0 0	0 0 0 0
TRANSPOSE	C1		C3				C3	
POLY/MONO	Poly		Poly				Mono	
P.B. RANGE	5		2				4	
PORTA. MODE	Full T.		Full T.				Full T.	
TIME	0		0				10	
F.S. ASSIGN	Sus.		Sus.				Por	
W.R. PITCH	0		.50				25	
AMPLITUDE	0		0				0	
B.C. PITCH	0							
AMPLITUDE	0							
P. BIAS	50							
E.G. BIAS	0							

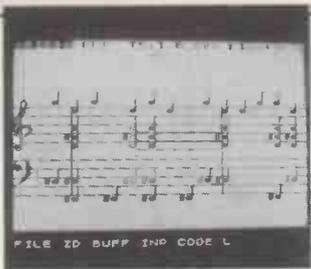
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Jörgen Bergfors, Sweden

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However, 'Minimono 1' and '2' are intended for the poseurs among you who like to use the DX100 as a strap-on lead synth, though we didn't feel either to be particularly inspired.

Our favourites were 'Tri-Bronze', 'Quad-Bronze' and 'Chinesynth', and the demo tape showed the sounds off in a very classical manner – complete with a rendition of Beethoven's Fifth. ■▶



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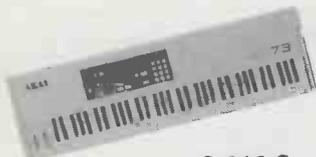
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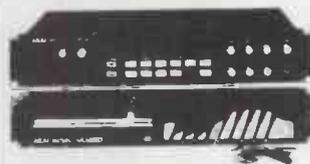
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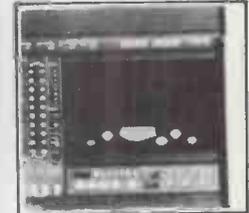
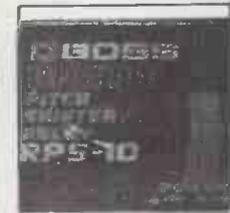
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VINYL

T·A·K·E·S

Human League

Crash

Virgin LP

If you hadn't forgotten completely about the Human League, you could be forgiven for expecting great things from *Crash*. Apart from the band's own track record as masters of the modern electro-pop idiom, that of producers Jimmy Jam and Terry Lewis includes Janet Jackson's production masterpiece *Control*. But as it turns out, *Crash* is neither of the things these two facts might lead you to believe.

Recorded over an extended period in Minneapolis, the album reaches back to *Dare* for many of its ideas, though boldly declares: 'There are no sequencers on this record'. The practical upshot of this is manual playing of sequencer lines. Was it worth the fuss?

But *Crash* doesn't grab at sampling or multitudinous DX patches to replace the old MC4. The synth sounds are predominantly analogue, and there's even a little TR808 to be heard on 'Love Is All That Matters'. Credit for much of the synth playing and programming goes to Paul Rübiger, who makes an excellent job of building a rich backdrop over which Phil Oakey's characteristic voice croons unhindered.

In addition to the production, some of the songwriting has been entrusted to the Jam/Lewis partnership. In spite of this, both songs and production sound as if they belong to the League. Perhaps the days of producers obscuring their artists are, at last, drawing to a close. *Crash* is *Dare* in 1986, not 1986's *Dare*. Take it or leave it. ■ Tg

Hans-Joachim Roedelius

Like the Whispering of the Wind

Cicada Records LP

An album of charming piano improvisations from one of avant-garde music's most charming characters. Like *Gift of the Moment* a couple of years back, *Whispering* is a collection of calm, delicately meandering pieces arising from spontaneous doodling on the part of their creator.

The six pieces cover a broad range of moods: from the pastoral spaciousness of 'Beneath Blooming Trees' (recorded live at Roedelius' Bloomsbury Theatre concert in July '85) to the whimsical, almost Eastern balladeering of 'Uphill'. But none of the compositions clashes against any of the others, and you can listen to *Whispering* over

and over again without a single jarring moment.

Technically, Roedelius doesn't possess the keyboard-playing prowess of (at extreme ends of the stylistic scale) a Jarrett or a Wakeman. But the comparative lack of dexterity actually works to his advantage: the pieces on *Whispering* take myriad unexpected turns as the performer surprises himself with the occasional key-change.

A disarmingly honest record, and a fine example of musical innocence making for rewarding listening. ■ Dg

DMC Re-mixes

DMC Records

The idea of putting two identical singles on a pair of turntables then scratching and mixing between them is hardly new. But until now, it's remained primarily the territory of DJs and hip hop recording artists.

In essence, the Re-mix package consists of two LPs containing the original 7" and 12" mixes of a song, plus a series of other specialised mixes: instrumental, a capella, percussion dub and so on.

For their first Re-mix release, DMC have chosen Tina Charles' disco classic 'I Love To Love'. Although the original recording lends itself well to the Re-mix concept it also, unfortunately, brings out all the most clichéd elements of disco. The latin and a capella mixes have a certain fascination to begin with, but there's a finite number of times the human ear can safely endure Tina's party-time whoops without danger of insanity.

Realistically, the opportunities presented by the Re-mix concept stretch from those intended by DMC, to a golden source of potential sound-samples that isn't available anywhere else. So what about covering some decent material, DMC? ■ Tg

This Mortal Coil

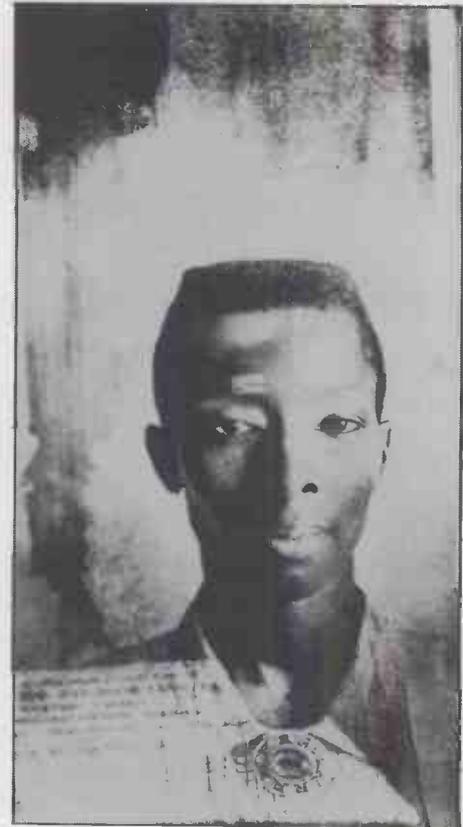
Filigree & Shadow

4AD double LP

'Studio projects' are something of a rarity these days. No bad thing, perhaps, when you think back to the musical horrors inflicted on us by studio-written concept albums during the seventies.

But This Mortal Coil is a studio project with a difference. Spearheaded by 4AD label boss Ivo Watts-Russell (who co-produces the album with engineer John Fryer), the 'band' has just completed this double album of original songs, cover versions and instrumental mood pieces.

There are 25 tracks in all, though some are



little more than transient, half-structured atmospheres - 'Inch-Blue', with its simple strings textures, and the tribally rhythmic 'At First, And Then' are the most striking of these.

Of the songs, Tim Buckley's 'I Must Have Been Blind' is given a deliciously haunting treatment by singer Richenel and keyboardist John Turner (the latter a strong and distinctive influence throughout *Filigree*), while the Colourbox oldie 'Tarantula' gets a dramatically clear, spartan arrangement from Turner and singers Dominic Appleton and Deidre and Louise Rutkowski.

Every note, every sound of *Filigree and Shadow* appears to have been struck with care and dedication. Every word is sung with compassion, and every treatment carefully considered. As a whole, the album contains some fine original synth textures and powerful delay effects.

Yet 80 minutes of this kind of studied seriousness makes for a landscape that initially refreshes but ultimately becomes flat and featureless - something the monotonous drum programming of some of the tracks does little to brighten. If you're going to be calm and reflective, you need more than a sprinkling of production ideas and talented performers to make it last a double album.

Miss this record, though, and you miss a dreamworld of glittering arrangements, finely detailed engineering, and stunning vocal technique. ■ Dg

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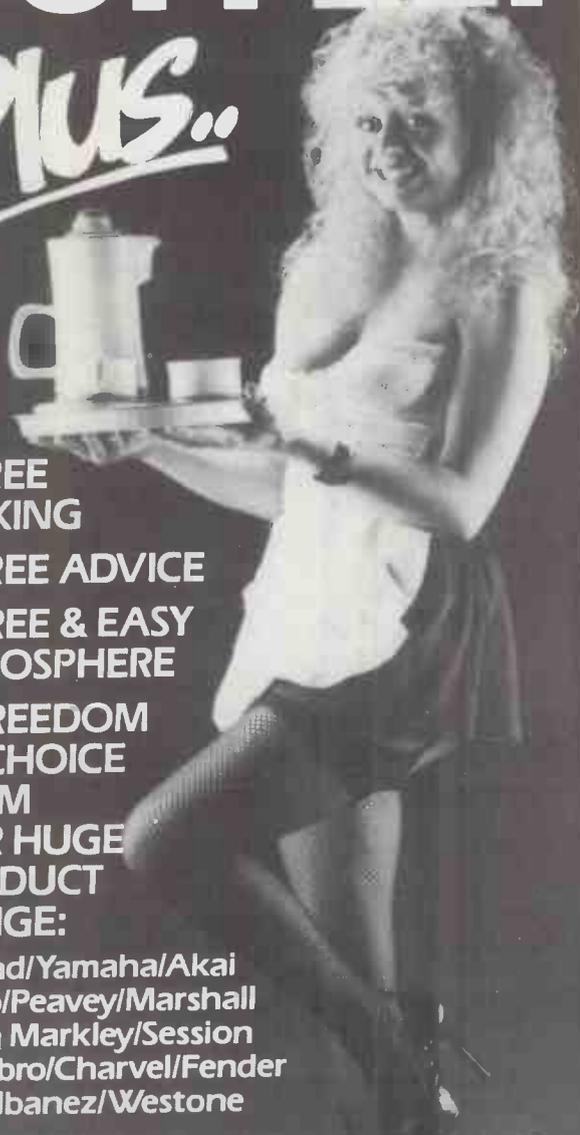
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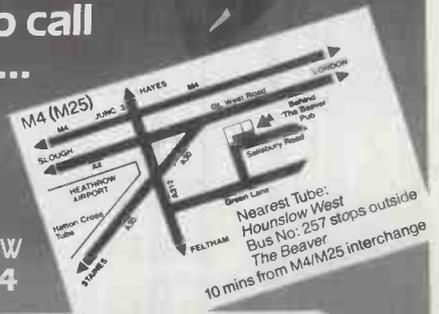
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A couple of tracks all the way from Runcorn tell us that **High Crime** are an electronic duo with a healthy interest in black music.

Getting the criticisms over first, the recording quality is clean but devoid of any serious attempt at production – and well below the standard deserved by the songs found here. A proliferation of Yamaha gear takes care of most of the musical chores: an MT44D multitrack, DX7 and DX100 synths, an RX11 drum machine and a QX21 for the sequencing. Pity about the programming, though: the synth patches are adequate without being exciting and the drum patterns over-complex – a particularly sad state of affairs considering they've been programmed by a drummer.

All that said, "Who Do You Want To Love?" opens with a jazzy DX bassline and funk DX brass stabs that provide a lively platform for Damian McMullen's vocals. The bass sounds like it's sequenced, and a lot more thought has gone into it than the drums and synths put together, since it provides plenty of punch while allowing the music to breathe. The vocals are strong, and are enhanced by some beautiful harmony work. A little guitar from two guest musicians adds the final touches, giving the song anything it may have lacked had the instrumental voicings all been synthetic.

But best of all are the songs themselves. Between them, McMullen and synth player Gary Horabin

have an undeniable talent for writing catchy, distinctive and commercial songs.

Sort out some decent sounds, lads, and get into a studio.

Given a little more vocal presence, the two-song demo from **Antic Hay** would make very impressive listening.

Submerging tape hiss in high signal levels and noisy music are just two ways of combating the limitations of recording on a tight budget. Faced with a Fostex X15, Antic Hay found themselves employing a Boss DE200 delay to add dub effects to the drum track. And considering the weight of music that draws heavily on distorted guitars and aggressive cross-modulated synth sounds, the Korg DDM110 entrusted with the beat can use all the help it can get. Meanwhile, the DE200 also finds itself regurgitating the odd vocal sample to augment the busy but infectious sequences flowing from an old MC202 Microcomposer.

Keyboardman Tony's (JX3P) synth programming is well suited to this particular brand of energetic pop, and avoiding obvious sound-creation pitfalls seems to come as easily to him as finding a memorable melody does to singer Brenn. Only Dermott's guitar solos sit uncomfortably, falling midway between the over-simplistic and the musically superfluous.

Odd how rarely good music and presentable

recordings find their way onto the same demo. Suffice it to say that **Steve Dixon** and **Steve Winder** have made an excellent job of recording 'Dreaming of Kerry' and 'War of the Heart'. And that the music falls painfully into the sickly love song/Eurovision category, even though it is well arranged and faultlessly performed.

Again, the equipment listing reads like a Yamaha brochure, with an impressive-looking MT44/RX15/DX7/CX5M combination. Keyboard sounds revolve around inoffensive tinkling presets, well suited to this style of songwriting. Unfortunately, Messrs Dixon and Winder are not the only casualties of a musical backwater that modern, modular technology makes so dangerous.

The key to the success of the recording is subtle use of reverb, stereo and, in particular, advance planning. The reverb on Dixon's voice, especially, plays a large part in turning a good vocal into an excellent one. Recording in stereo can present big problems when you're limited to four tracks, but a single, careful bounce and a moment's thought before rushing headlong into the recording can pay huge dividends. ■ Tg

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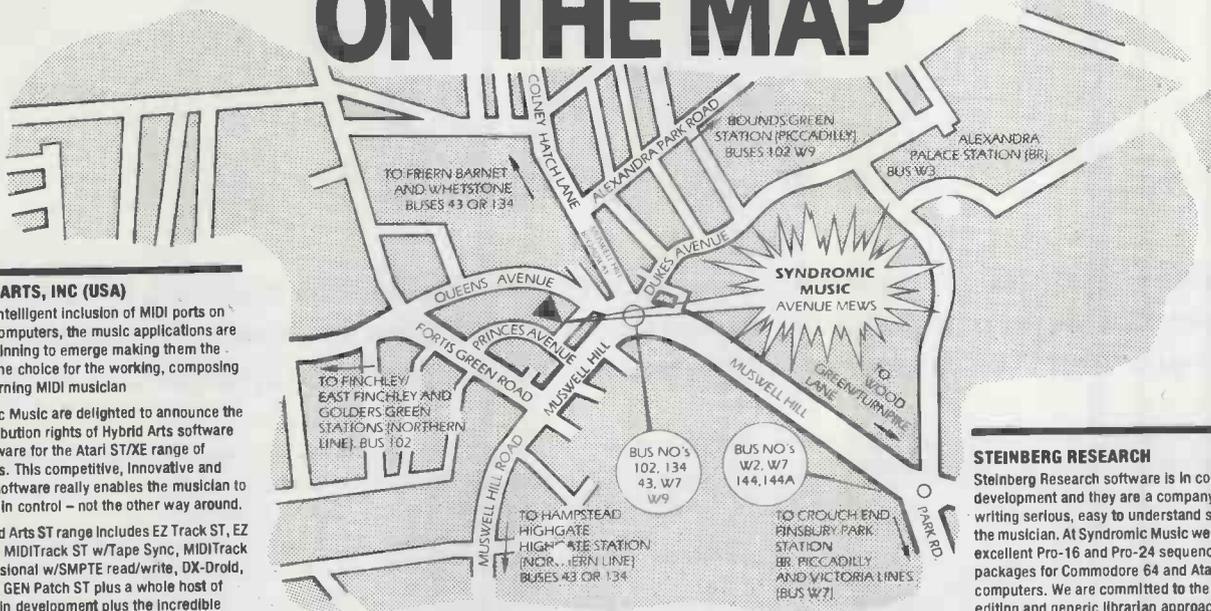
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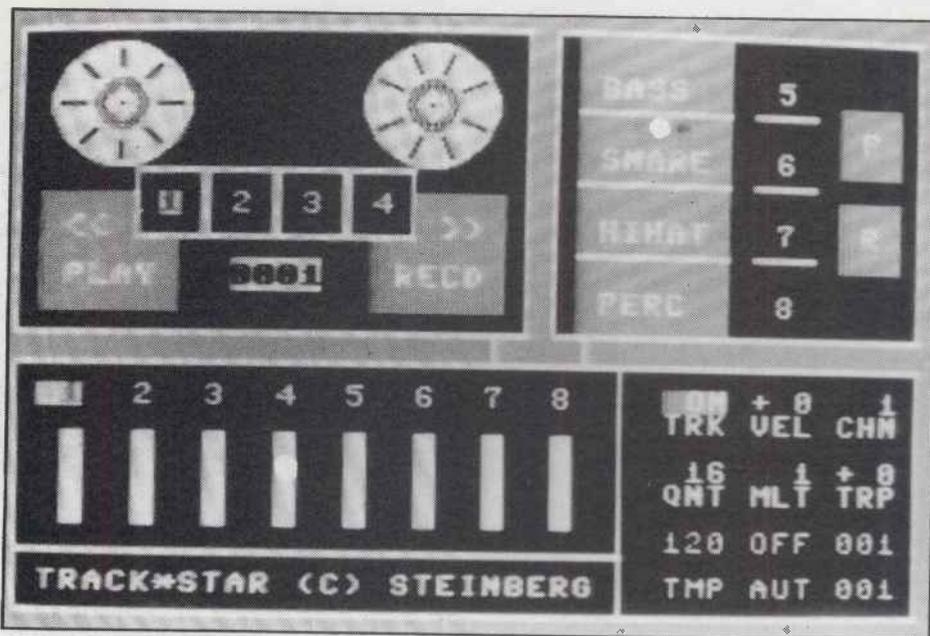


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RISING STAR

Trackstar, Steinberg's new software package for the Commodore 64, is a simple, inexpensive sequencing system aimed at getting novices interested in the idea of MIDI recording. Is it friendly enough to whet the beginner's appetite? *Ian Waugh*



No. This is not an in-depth interview with Steve Cram (Track Star, geddit?). It's a look at Steinberg's latest MIDI package for the family of Commodore 64-compatible computers.

Another Steinberg package? What on Earth can they add to their much-vaunted Pro16 and Pro24 to justify the release of another one? The answer is quite simply nothing, because, having produced pro-quality software for the pro and semi-pro musician, Steinberg are now aiming at the semi-pro, the amateur and the home musician.

Regression? Not at all. There are thousands of people out there just dying to get into computer music, but who lack the confidence, expertise – or money. If that sounds like you – come on now, own up – Trackstar could just be what you've been waiting for.

Since I've already written half my conclusion, I may as well continue in this retrogressive manner and mention the price – £70. For this, you get a small interface, the MMI, with a MIDI In and two

MIDI Outs. You also get a bright-red floppy disk, a plastic covered 22-page manual, and a big box.

Trackstar is very much an introduction to MIDI, and the manual carefully explains what MIDI is and what Trackstar does in terms that even I can understand. It's been designed to operate like a tape recorder to bridge the gap between audio and full-blooded digital recording, a method which seems to work well but which has its drawbacks, as we'll see.

Trackstar is an eight-track sequencer, but you can only record music on the first four. Tracks 5 to 8 can only play one note per track, and are reserved for a drum machine. We'll get to this in a moment. It's mainly a real-time system, but you can enter notes in step-time, too.

The screen display – there is only one – is divided into four sections. The top left shows a tape recorder with play, record and fast forward and rewind controls. The spools actually revolve during tape operations, and slide off the screen when you select a disk option, which is a nice touch of

animation. Contrary to rumour, though, a small pair of hands does not appear at regular intervals to clean the tape heads...

In between the two spools are the numbers 1 to 4, representing the first four tracks. A tape counter cleverly ticks off in crotchet increments, so it's fairly easy to work out where you are.

Under the tape machine is the track box, which lists the tracks 1 to 8. Under each track is a velocity indicator which shows the volume of each track during recording and playback. At the bottom of this display is a one-line text window into which you type filenames when saving and loading pieces. You can get a directory of the disk by pressing Shift-D.

The top right of the screen shows tracks 5 to 8. These are allocated to bass drum, snare, hi-hat and percussion (ie. anything else) respectively. There are play and record indicators here, too.

The lower right section is the parameter area. From here you can switch individual tracks on and off, alter their channel numbers, set quantisation, transposition and tempo. You can also adjust the velocity on each track by up to ± 63 . This allows you to balance track levels independently of the synth producing the sounds, providing it's velocity-sensitive. There is a double-speed facility called MLT (is it me, or are abbreviations and acronyms getting more obscure?). A track which plays twice as fast only lasts half as long (yes, that makes sense), so if it previously took eight bars to play, it'll be over in four bars with MLT. The other tracks will play at normal speed, so the feature's use needs to be well-planned. Very handy for the tricky bits. Finally, an Auto Repeat feature continuously plays a section of tape.

Using Supertrack is straightforward enough. You can record with or without an eight-beat count-in, and this is where the auto repeat can be especially useful. When this is selected, the program goes into a 'record on hold' mode, and plays through without wiping what's already there. It starts recording when you hit a note, and ►

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► continues recording until the end of the section. If you stop playing before the repeat, it reverts again to 'record on hold'. So, to keep playing a piece until you get it right is simplicity itself.

To help you move quickly around the tape, the function keys can be programmed to make the counter jump to preselected tape positions.

Quantisation can be set to 4, 6, 8, 12, 16, 24, 64 and 0 – why no 32? It defaults to 16, and the 0 value is actually 192 which, as the manual points out, is probably near enough to no quantisation at all for most people.

Step-time input uses the quantisation value as the note duration, and you can tie notes by holding a key and pressing the space bar. Pressing the space bar alone enters a rest.

This system works fine, but you can't alter the quantisation value while recording, so you have to tie lots of small notes together. A missed chance for very easy step-time input.

As I've said, tracks 5 to 8 are reserved for creating drum parts. You can run a MIDI drum machine by plugging it into the second MIDI Out socket, and the program synchronises everything with a clock pulse. The program also produces its own drums from the SID chip, and plays them through your TV. In all honesty, these are pretty awful, but if you've no drum machine they're better than nothing. You can program patterns easily from

the keyboard, as any note triggers the drum you've selected.

Compared with more upmarket packages, Trackstar has few frills. You can copy one part of the track to another, but you can't copy individual tracks or merge tracks. Copying actually does just that – copy – and uses an equivalent amount of memory, too: one of the drawbacks of a tape machine simulation. It's possible to lock up the machine if you try to copy more than the memory can hold, and you know it's locked up because you get a Record Buffer Full message. Tut, tut, Steinberg.

In total, there's enough memory for several minutes of music, though as usual, the amount you can store varies according to the number of notes you play. You're only told how much memory is free when you press R (to record without a count-in), not Shift-R (for a count-in), something the manual doesn't tell you.

The program works a treat with Casio CZ synths, and it's easy to build up four mono tracks to make use of their multi-timbral facilities. You can switch this feature on from the program, and it'll even remember the voices (well, they have to be set initially from the Casio first), so you don't have to mess about with the MIDI and Solo buttons on the synth each time you play a piece. The program accepts voice-change and pitch-bend information,

too, though the pitch-bend resolution depends on the quantisation setting. A value of 4, for example, just produces jumps, not a smooth transition.

Let's important to remember that Trackstar is an introductory package, and we reviewers who have sampled the delights of mega programs could easily be tempted to put down a simpler program. When MIDI first arrived and I didn't know a track from a channel, I'd have given my eye teeth for something like Trackstar.

For all it's a simple package, Trackstar still has a few niggles, but if you're hesitant about taking the plunge into computer music because of the technicalities, then this package will get you going – without tears. And if you do decide you want all the bells and whistles, the Pro 16 program will run quite happily with Trackstar's interface.

Trackstar is maybe not quite a nova, but it's certainly a star that should encourage more people to plug their keyboard into their computer. It's what your MIDI socket's for, innit? ■

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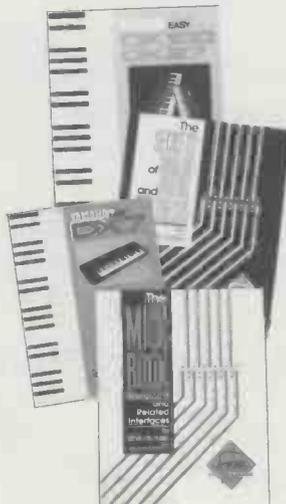
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YAMAHA DX7, £860 ono. Yamaha RX11, £430 ono. Roland MSQ100, £160. Fostex A8, £850. Kevin ☎ (062 84) 74752.

YAMAHA DX7 very new, £950. James ☎ (0792) 202027, after 6pm.

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YAMAHA DX7, £825. Paul ☎ (0484) 602193.

YAMAHA DX9 excellent condition, home use only, £425. ☎ 01-254 8764.

YAMAHA DX9 excellent condition, with 30W amp, will separate, £450 ono. ☎ Basildon 550975, anytime.

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YAMAHA DX21 10mths old, boxed for last 8mths, new piano forces sale, perfect condition, £380 ono. ☎ (0628) 29513.

YAMAHA DX21 home use only, guaranteed, as new, + 160 new sounds on tapes, quick-sale, £500. ☎ 01-504 0964.

YAMAHA DX27 MIDI synth, good condition, plus Korg Poly 800, £650, echo, stands (will split). Phil ☎ 061-7940180.

YAMAHA DX100, 1mth old, boxed, £250. Korg Mono/Poly, flexible bass/lead sounds, £200. ☎ (0324) 482348 (Scotland).

YAMAHA DX100 under 1mth old, £275. Reason for sale? Buying t/wo FG01s. ☎ Basildon (0268) 411890, after 7.30pm.

YAMAHA DX100, 2mths old, mains adaptor, excellent condition, £265 or possibly p/x or swap Arp Pro Soloist. Offers? ☎ (0926) 36668.

YAMAHA MK100 good condition, programmable sounds, drum m/c and bassline, boxed, £170. ☎ 01-643 7905.

YAMAHA PF10 piano, good condition, with case. Must sell, offers around £350. ☎ (0742) 589068.
YAMAHA PF10 electric piano, home use only, immaculate £400. ☎ Durham ☎ (0385) 62103, after 5pm.
YAMAHA PF15 good condition, £650 ono. 30W stereo mixer amp, £150 ono. Parris, 124 Chelston Avenue, Yeovil BA21 4PR.
YAMAHA PS6100, £680. Korg DW8000 £995, c/w f/case. MEX (Korg) memory expander £169. Korg EX800 £169. Tascam M1B line mixer £195. Torque PA cabs 50W £80 pair. Will separate. ☎ (0268) 794879, eves/weekends.

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In addition to standard synthesizer waveforms, the ESQ-1 features complex multi-sampled waves for a total of 32 waveforms on board. Each of the ESQ-1's 8 voices uses 3 digital oscillators with the ability to assign a different waveform to each oscillator. That's thousands of distinct sonic possibilities.

The ESQ-1 is simple to program because it lets you see what's really going on inside. Its 80-character lighted display shows ten programs or parameters simultaneously. So you'll spend less time writing down numbers and more time laying down music.

A built-in 8-track polyphonic sequencer makes the ESQ-1 an ideal MIDI studio. Each track can play internal voices, external MIDI instruments, or a combination of both. And each track can be assigned a separate program and MIDI channel. Like any good studio, the ESQ-1 can auto-correct timing, auto-locate passages and balance individual tracks during mixdown.

You can build songs made up of 30 different sequences and store them internally, externally on tape or on 3.5" diskettes using the Mirage Sampling Keyboard or Multi-Sampler.

If controlling other MIDI instruments is on your list of priorities, the ESQ-1 puts you in the driver's seat. It supports poly, omni and mono modes along with Ensoniq's multi and overflow modes that extend the MIDI capability of the ESQ-1 far beyond ordinary synths. You won't ever have to leave the comfort of its 61-note weighted, velocity sensitive keyboard to play any MIDI instrument in your setup.

Comparable high performance digital waveform synthesizers and MIDI sequencers can easily exceed the legal limits of your cash on hand. But the good news is that the ESQ-1 comes from Ensoniq—at a sane price of just \$1395. For a glimpse of technology that's earned the name "advanced", put an ESQ-1 through its paces at your authorized Ensoniq dealer today.

Although you should always fasten your seat belt when playing the ESQ-1, you don't have to wear a helmet or obey the 55mph speed limit. ESQ-1 and Mirage are trademarks of ENSONIQ Corp.

ensoniq®

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Synthesizer

8-voice polyphonic and polytimbral
32 synthesized and sampled waveforms
40 internal, 80 cartridge programs
80-character lighted display
Each voice features:
3 digital oscillators
3 multi-waveform LFO's
4-pole analog filters
15 routable modulation sources
4 complex envelope generators

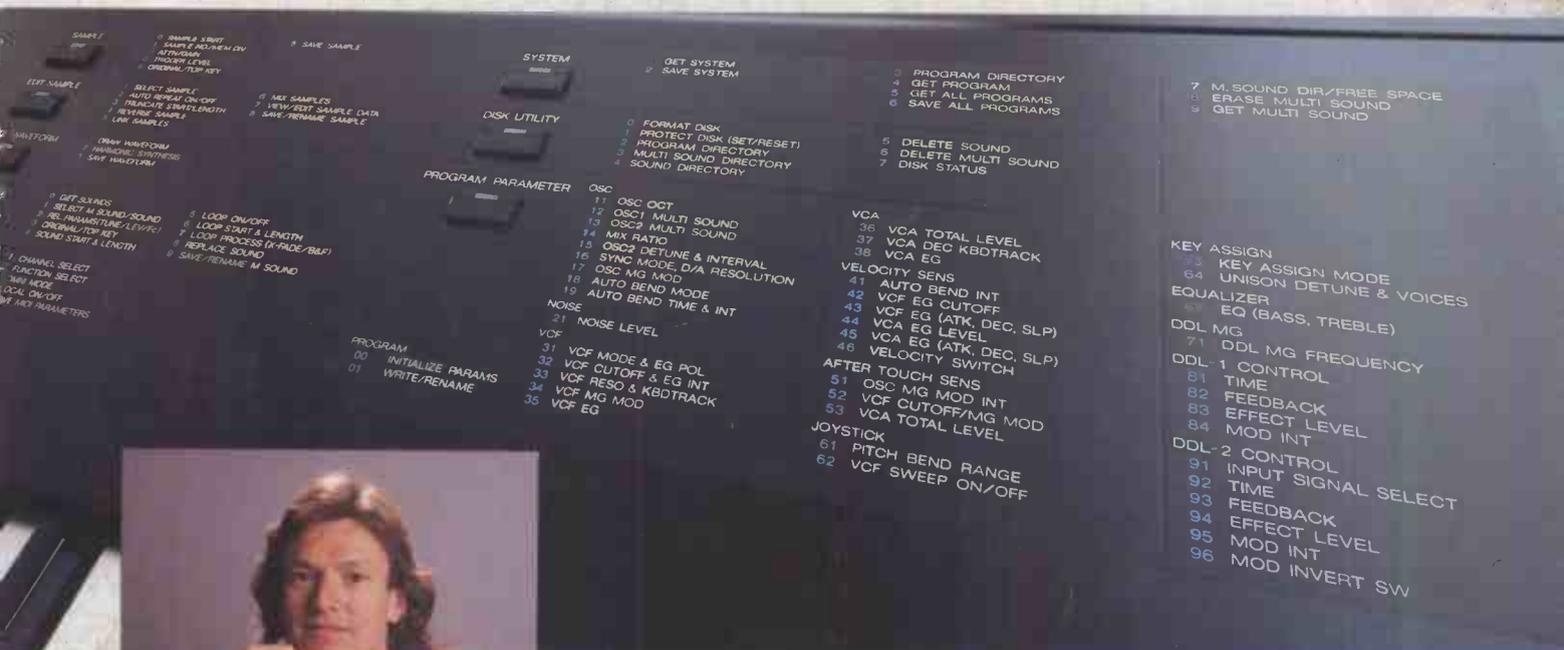
Sequencer

8 polyphonic tracks
Auto-correct, auto-locate, step edit
Internal storage—2400 notes
Expandable to 10,000 notes

MIDI

Poly, omni, multi and mono modes
MIDI Overflow Mode for staving units
8 simultaneous polyphonic channels
MIDI remote programming
MIDI guitar controller compatible

Why combine a sampler and a synthesiser?



I need to get to my sounds quickly and also create new patches when I'm on tour. The DSS-1 gives me that flexibility. It's a very responsive instrument.

*Steve Winwood
Multi-Instrumentalist, Vocalist, Composer*

Korg combines the realism of sampling with the flexible control of synthesis to create a new kind of keyboard with unlimited possibilities for musical experimentation: the DSS-1 Digital Sampling Synthesizer. The DSS-1 recreates sounds with digital precision. But it also shapes the complexity and variety of sampled sources into new dimensions of sound.

Exceptional Range The DSS-1's extraordinary potential for creating new sounds begins with three sound generation methods. Digital oscillators sample any sound with 12 bit resolution. Two sophisticated waveform creation methods — Harmonic Synthesis and Waveform Draw-

ing — let you control the oscillators directly. Use each technique independently, or combine them in richly textured multi-samples and wavetables. You edit samples and waveforms with powerful functions like Truncate, Mix, Link and Reverse, plus auto, back and forth or crossfade looping modes. Then apply a full set of synthesis parameters, including two-pole or four-pole filters and Korg's six-stage envelopes.

Exact Control Choose from four sampling rates between 16 and 48 KHz, with up to 16 seconds of sampling time. Configure the keyboard with 16 splits assignable over the full 127 note MIDI range. Layer or detune the two oscillators on each of eight voices. Then process your sounds with a complete synthesizer architecture and two programmable DDLs.

The DSS-1's power is easy to use, so you can work with sound and music, not programming manuals. The backlit 40 character LCD display takes you through the total sound generation process with options and instructions at every step. Software that talks your language and a logical front panel menu help you go beyond synthesis, beyond sampling — without dictating your direction.

Expression The DSS-1's five octave keyboard is velocity- and pressure-sensitive,

for precise touch control of Autobend, VCF, VCA, envelope rates and other parameters. Velocity Switch lets you play completely different sounds as you change your attack.

Unlike other samplers, the DSS-1 lets you access 128 sounds without changing a disk. Each disk stores four Systems of 32 sounds. Within each System, your programs combine up to 16 sample groups and/or waveforms with complete sets of synthesis parameters and keyboard setups. In effect, the DSS-1 becomes a new instrument every time you call up a System. The library of easily available 3½" disks is already substantial and growing fast. Four disks — each with 128 sounds — are supplied with the DSS-1 to start your comprehensive Korg sampling library.

By combining the best of digital sampling with familiar and flexible control of synthesis, the DSS-1 allows the modern synthesist to experiment with new sounds never before available.

Start exploring the fusion of sampling and synthesis now, at your authorized Korg Sampling Products dealer.

KORG® Sampling Products Division

SAMPLING IS ONLY THE BEGINNING

For further details on all Korg products contact KORG VK, 32 Gordon House Road, London NW1 1NE

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