JANUARY 1986
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E&MM

ELECTRONICS & MUSIC MAKER
THE MUSIC TECHNOLOGY MAGAZINE

Man of the Moment

Or pretty pop poseur?
Thompson Twins' Tom Bailey interviewed

Quiz of the Decade

Win £1400 worth of gear from Akai, Casio and JMS in our exclusive competition

State of the Art

Up-to-date reports on today's budget samplers and tomorrow's 16-bit computers

Review of the Year

What made 1985 music technology's busiest 12 months ever

Gear of the Month

We take the lid off Roland's latest Juno poly; Peavey's rack-mount sampler; scorewriting software from JMS; Oberheim's budget Matrix 6 synth

A Programmable Tempo Controller That Reads and Generates SMPTE Time Code

SBX-80
SYNC BOX

The SBX-80 – a programmable tempo controller

- Can synchronize electronic musical instruments that use different sync methods.
- Can read & generate SMPTE time code.
- Can generate MIDI, Sync 24, and time signals (the time base can be selected from 1, 2, 3, 4, 12, 24, 48, 96 or 120 clock pulses per quarter note)
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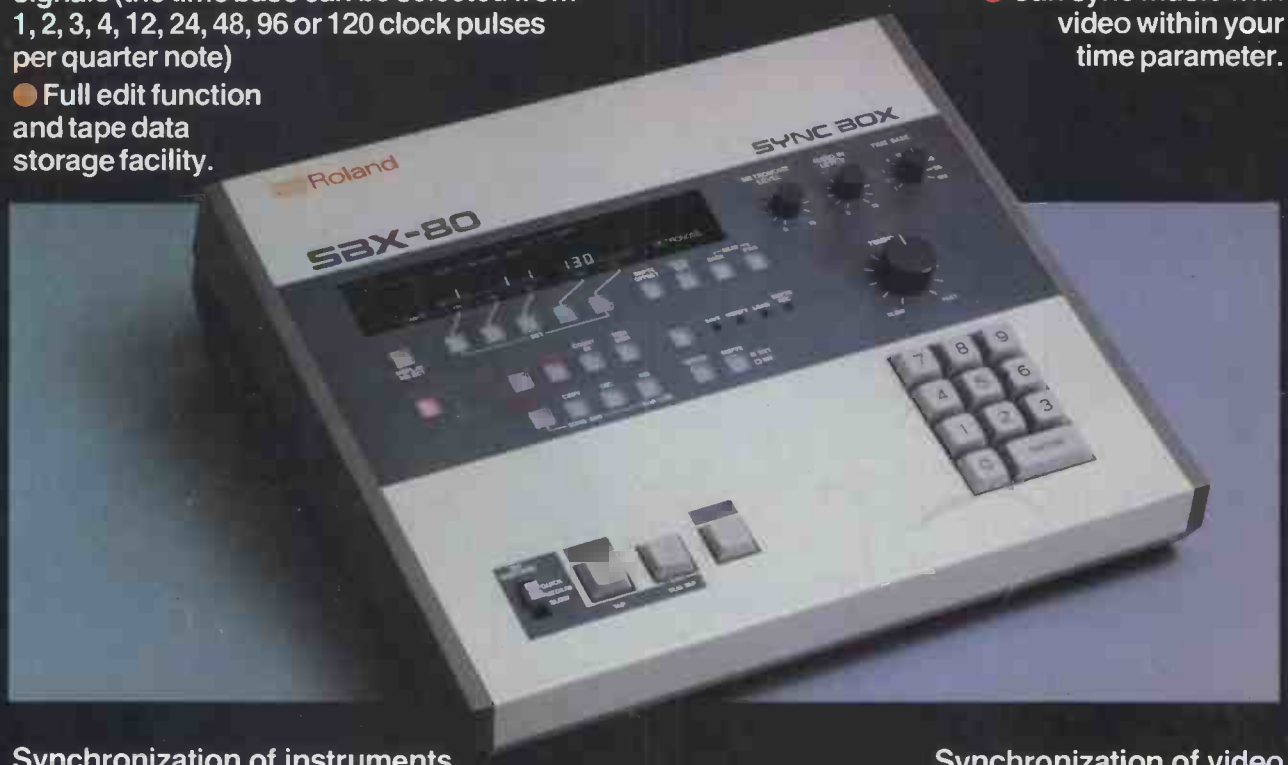
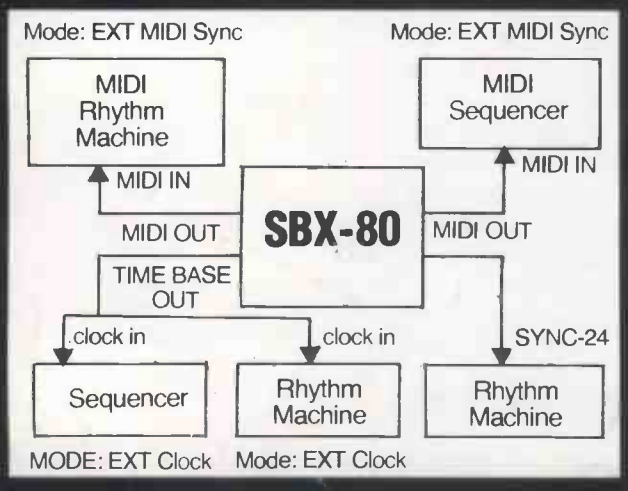
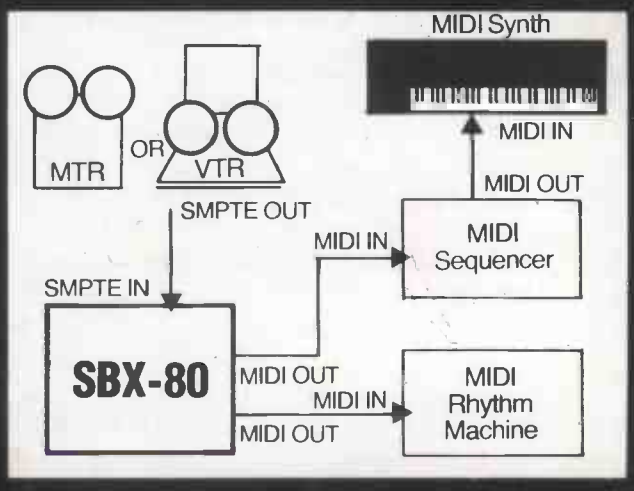
- Can sync slave instruments to tape.
- Can control tempo by tempo knob, numerical pads, tap switch or audio source click
- Can sync music with video within your time parameter.



Synchronization of instruments using different synchronization methods



Synchronization of video picture with music



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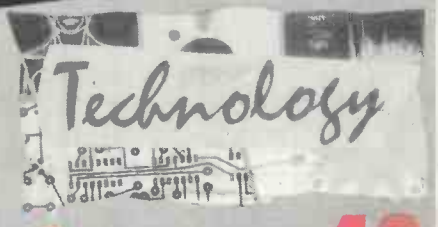

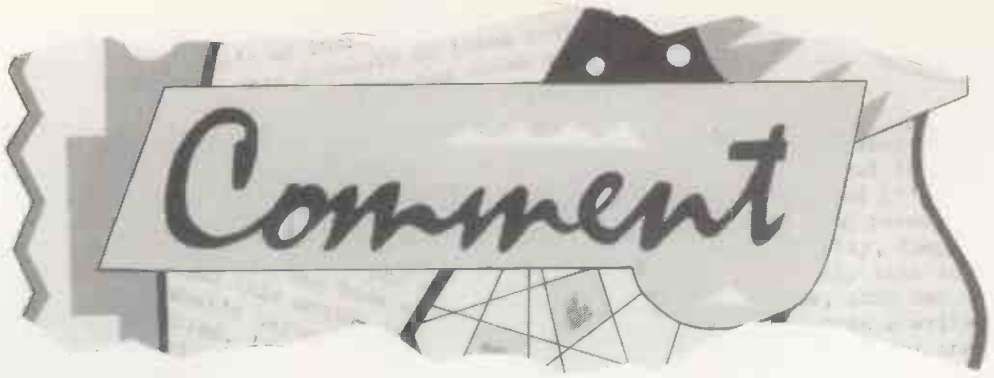

Bargain Basement Buys

In the field of hi-tech musical instruments, as in just about any other area that involves microchip technology, prices are plummeting. Five years ago, Roland were selling a non-programmable, six-voice analogue polyphonic synth for a little under £1000. Five years before that, they were selling a preset, monophonic synth for a similar amount of money. Now, on the threshold of 1986, a thousand of the British coins that have come closest to looking like chocolate money since the old threepenny bit will buy you a digital programmable polyphonic synth, an analogue voice expander for it, and a multitrack polyphonic sequencer to drive both of them.

At first glance, it looks as though there can only be one reaction to this sequence of events: it's good news. It has to be. It means more people than ever, from more walks of life than ever, can start to appreciate the flexibility of electronic music synthesis by gaining first-hand experience of it themselves. There are still, even in Britain, a large number of people who believe all synthesisers are vast, sprawling telephone exchanges, impossible to use, impossible to play, and impossible to pay for. But those people are far fewer in number now than they were only a few years ago, largely because the huge drop in the price of high technology has given us low-cost, professional-sounding gear like that just mentioned.

Thanks to the downward price spiral, young people of both sexes and all backgrounds have come to see the synthesiser as a viable, 'pop' alternative to learning the electric guitar, banging an unwieldy set of drums, or getting throat disorders by trying to sing out of range in front of an over-enthusiastic backing band. Despite the efforts of the rock 'n' roll revivalists, electronics are alive and well and playing a bigger role in the development of popular music than ever before. And they will continue to do that until such time as the technology, for whatever reason, stops being cheap to buy.

But stop and think for a moment. Think back, if you can, to something synth composer Vangelis said when E&MM interviewed him just over a year ago. At the time, he was lamenting the lack of excitement inherent in the design of current synthesisers, and expressed sorrow that nobody had ever taken one specific synthesiser, and given it the same time to develop that people gave the pianoforte two centuries ago.

In one sense, Vangelis' argument doesn't stand up to scrutiny. The synthesiser as a genre, though not one particular model, has been the subject of continuing development in much the same way that *several* different versions of the piano evolved at more or less the same time.

But he has a point. The MiniMoog, that grand old daddy of the 'affordable' (£1200) synthesiser generation, was given a production life of over a decade. The Prophet 5, in its own way just as influential as the Moog, was given five years. Today, a synth is lucky if it lasts a year in production, followed by another three to six months on dealers' shelves, depreciating steadily as its replacement starts to become available.

This is a sad state of affairs for a number of reasons, not the least of which is that it's all too easy to spend £3000 on hi-tech music gear, only to find that a couple of years later, a third of that sum buys something appreciably better. In the world we live in now, hi-tech becomes mid-tech with alarming speed.

So there are two sides to the cost-reduction coin. The first is that it spreads the cause of musical democracy with more pace than any political movement will ever manage, but the second is that buying something at a low price can only ever have short-term benefits. Things aren't genuinely good value unless that value is lasting. Which, these days, isn't very often.

For everybody involved in using hi-tech instruments to make music, the future is never anything other than uncertain – perhaps that's part of the technology's appeal. The only thing we can confidently say about the shape of things to come is that, whatever you buy in 1986, it'll be substantially less than the same money will get you in 1988. ■

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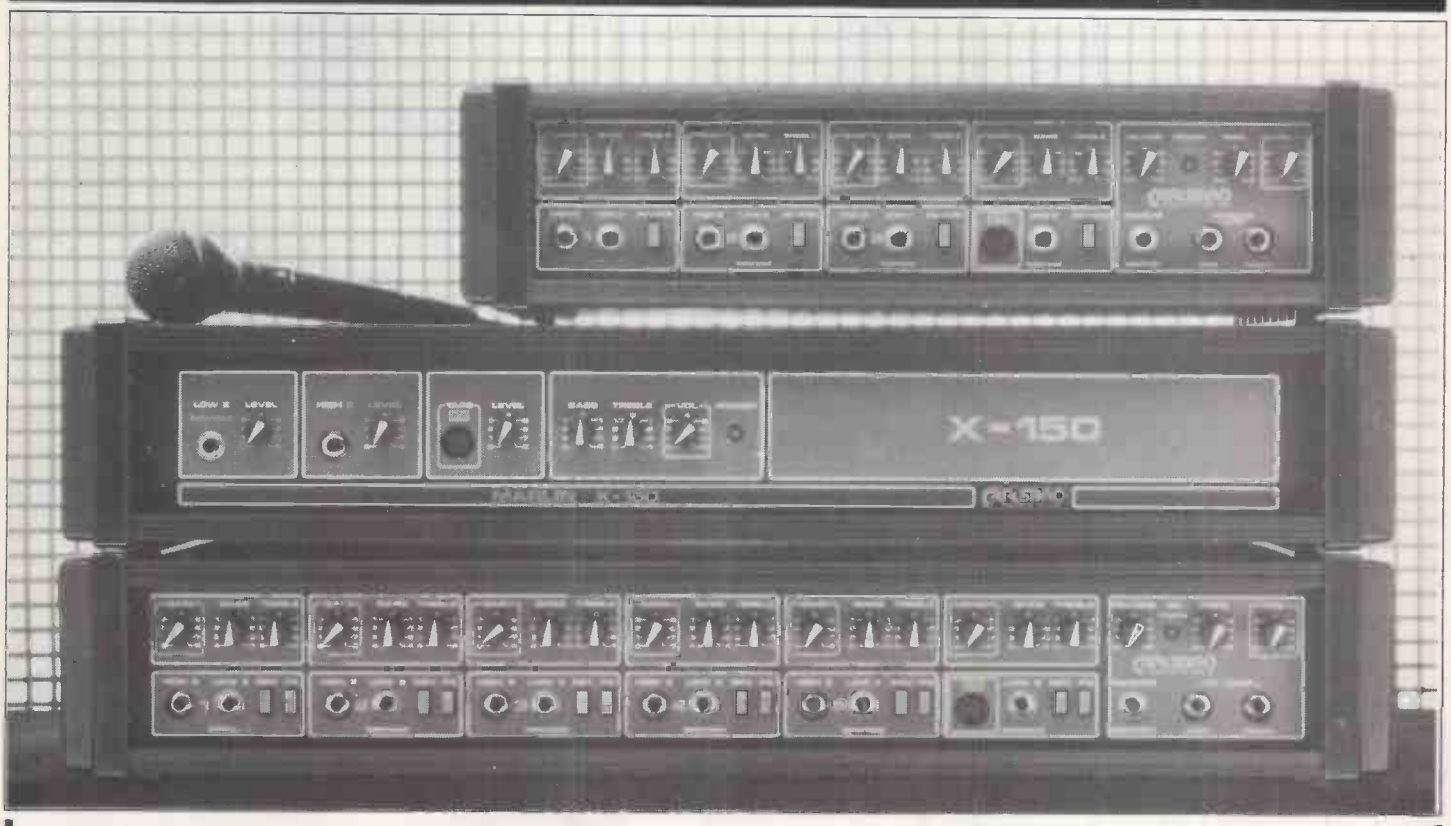
Watt Options!



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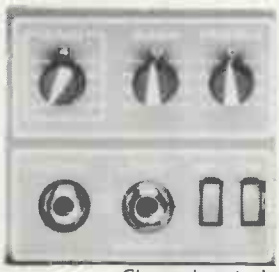

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Side handles

Footswitch

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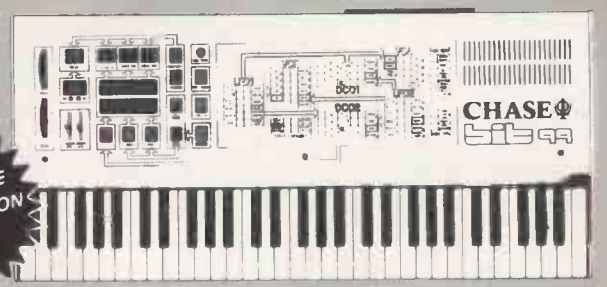

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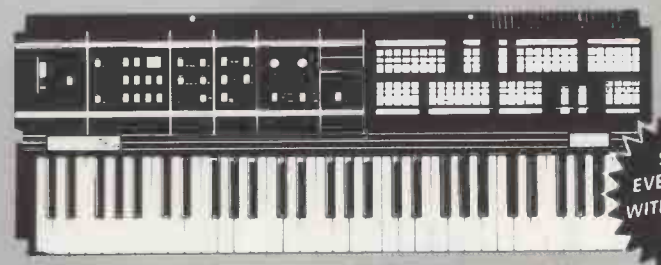

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Newsdesk

Detailed Investigations

OK, so you want to know where you can get hold of the latest MIDI specification. One option (and the most expensive) is to join the International MIDI Association. This costs $55 a year, for which you get a 'free' 1.0 spec, a monthly newsletter with all the latest news, and access to a technical support hotline and a MIDI database. The IMA's address is *11857 Hartsook Street, North Hollywood, California 91607, USA ☎ (0101) 818-505-8964.*

If your requirements are more moderate, MIDI originators Sequential publish the spec along with several of their own implementations. Send £2.50 to *Phil Sutton* at *Sequential, PO Box 16, 3640 AA Mijdrecht, The Netherlands.*

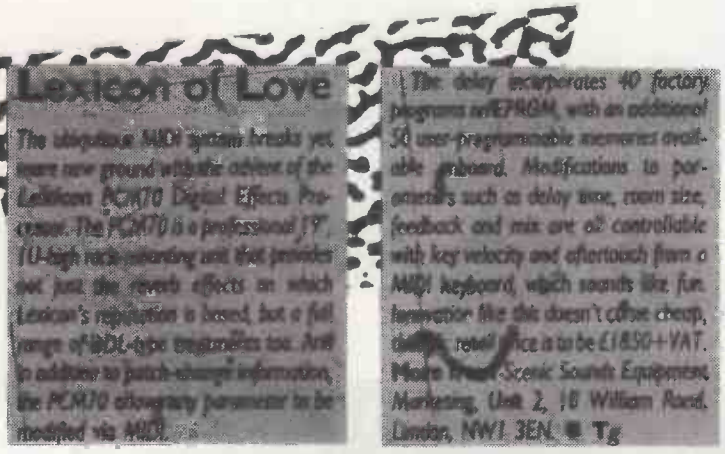
Then there's a book called *Synthesisers and Computers*, compiled by the editors of *Keyboard* magazine in the States. This includes the MIDI spec, along with more general articles on MIDI and some features on digital synthesis techniques. The book costs £6.95 and is available from *International Music Publications, 60-70 Roden Street, Ilford, Essex IG1 2AQ. ☎ 01-514 8181.*

Finally, if it's a detailed description of the spec that you're after, the MIDI 1.0 Detailed Specification Document (as described in *Newsdesk* August) is at last available – though it doesn't come cheap. Originated by the Japanese MIDI Standards Committee in order to clarify some of the grey areas within the MIDI 1.0 spec, it's been translated over the last 10 months by the MMA (MIDI Manufacturers' Association) Technical Standards Board, in collaboration with the JMSC. The Detailed Specification is available exclusively from the International MIDI Association (address above), at a cost of $30 including p&p to IMA members, $35 to non-members.

What do you get for your money? Well, the 50 pages divide into three sections: the 1.0 spec, a detailed explanation of that spec, and instructions on how to create a standard MIDI implementation chart. Topics covered include what's expected of a 'transmitter' and a 'receiver', the efficiency of running status, the four MIDI modes, and System Real Time synchronisation messages.

So now you know. ■ *St*

Lexicon of Love



Korg's New Resolution

Of all the major Japanese synth manufacturers, Korg have probably had the quietest 1985 when it comes to releasing new machines. Which is one reason why the company will be bringing the new year in with a very loud bang.

Among the company's '86 new products is a digital sampling keyboard, the DSS1, which is still in prototype form but which seems to have the most comprehensive set of waveform editing and looping facilities currently available in its price range (under £2000) as well as standard items like built-in disk storage, an LCD for waveform display, and a touch-sensitive, splittable keyboard.

Next up is the SG1, which Korg refer to as a Sampling Grand, but which seems to be a digital electronic piano with a built-in cartridge socket for exchanging ROM sounds. The machine also has a three-band EQ section, a built-in stereo chorus, and of course, an excellent keyboard.

Less conventional, but potentially just as useful, is the DVP1, a rack-mounting digital voice processor with four main functions. Depending on the options you select from its front panel, it can be a vocoder, a harmoniser, a polyphonic human-voice synthesiser, or a pitch-shifter. It's controllable from any MIDI keyboard, has a set of programmable parameters for all its functions except the vocoder, and should weigh in at under a grand when it hits the UK later in January.

Korg aren't neglecting conventional polysynths, though, with a new, currently unmentionable keyboard making its debut in Frankfurt next month, and the development of an ingenious Memory Expander, the MEX8000, which provides 256 programs' worth of RAM for bulk storing from any Korg MIDI keyboard. Loading times should be appreciably less than with cassette or even disk systems, and the MEX shouldn't cost more than about £250 when it arrives on these shores. ■ Dg

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MIDI Goes Acoustic

News has reached us from the sunny West Coast (Los Angeles, not Aberystwyth) of a development which should allow the good ol' joanna to take its rightful place in hi-tech music-making. The Forte MIDImod has been developed by **LA Piano Services**, and allows an acoustic piano to control synthesisers via MIDI. This miraculous feat is achieved by installing a series of 88 touch-sensitive switches underneath the piano keys, and mounting a microprocessor inside the piano with the output box mounted underneath the piano – all very unobtrusive. The installation is said not to affect the piano functioning as a piano in any way, so once MIDImod is installed, you can forget about it – which is just as well, seeing as installation apparently takes 5-8 hours!

Owners of MIDIless Yamaha or Kawai electric grands, or Yamaha PF10 and PF15 electric pianos, will be glad to know that the MIDImod can be applied to their instruments as well.

But what exactly does MIDImod do? Well, the aforementioned switches sense what notes are depressed on the piano keyboard and with what velocity they are depressed, and the microprocessor then converts this information into MIDI data for transmission over the system's MIDI Out, to be read by whatever MIDI synthesiser(s) you care to hook up to it.

Further features and options include transposition of the pitches transmitted over MIDI to your synths, a facility to restrict a certain area of the piano keyboard to the MIDI transmit function, a multisplit keyboard option that effectively assigns your synths to receive certain pitch ranges, and even program selection (from a piano?).

A MIDI In facility is available for the PF MIDImod, where of course you don't need to strike the keys to play a sound. Needless to say, it's a different story where the acoustic piano is concerned. The mechanical gymnastics required might be a bit involved, but it could be done – remember the player piano. The LA people, whose main business has been tuning and reconditioning the old pianos, are probably working on it.

It all sounds very impressive, but we've yet to hear it in action. Mind you, if the company's Newsletter is anything to go by, MIDImod is all the rage in the studios of the Angel City, and various big names such as Chick Corea, George Duke, Dave Grusin and Sergio Mendes have enthusiastically endorsed it.

More from *LA Piano Services, 13257 Moorpark (rear), Sherman Oaks, CA 91423, USA. ☎ (818) 789-1212*

ED's Out

You're not going to believe this, but E&MM's very own BeeBMIDI DX7 voice editing program, first discussed by designer Jay Chapman in these pages back in February '85, is finally available. DX7ED now takes the form of two 16K EPROMs instead of being disk-based, and cost is £46.00, or £41.40 for members of the DX Owners' Club. Prices include VAT and p&p. Cheques/POs payable to Music Maker Publications should be sent to our software division, EmmSoft, at the editorial address. ■ *Tmcg*

All Change for SIEL

Manchester-based hi-tech dealers ***Chase Musicians*** *have just bought out SIEL UK Limited, lock, stock and barrel. An excited Amrik Singh-Luther, MD of Chase, confirmed the news of the takeover to us just before this issue of E&MM went to press, and added that his company had also bought the rights to distribute SIEL products nationwide.*

Thus all current SIEL stock, like the DK80 and EX80 polysynths, the company's growing range of home keyboards, and the comprehensive software selection, have gained a new, potentially more aggressive distributor; the gear won't be sold only in Chase shops, it'll be available throughout the UK.

Chase hope to be reducing the selling prices of much of the SIEL range (especially some of the older keyboards like the Cruise mono/poly synth and the PX series pianos), and by the time you read this, they should also have taken delivery of the first batch of a new polyphonic synth, the DK70. ■ **Dg**

Track Record

Digisound*, those hardy supporters of the electronic music kit, are branching out. Their latest product release, the RK1 Pitch Tracker, is the first of a new range of ready-built, professional-standard (whatever that means) machines 'dedicated to novel electronic music' production', and called the Pro Series.*

The RK1 can receive an input from any source – whistle, saxophone, guitar, human voice, you name it – and use it to drive a pitch control voltage for connection to a synth or expander of the 1V/octave standard. Thus you can blow, sing, or strum a signal into the Pitch Tracker, and use it to control the pitch of your connected keyboard.

There are a number of rather novel features onboard the device, like a 'Resolve' function that approximates the input frequency to the nearest semitone, so that even if you sing out of tune, you'll still generate a perfect chromatic scale. Also included are a glide facility (portamento), an internal modulation LFO for vibrato, and a tuning control with a ten-octave range, all of which affect the final output control voltage.

The only thing the RK1 really lacks is MIDI, but even this can be excused when you realise that its RRP is just £199 plus VAT. And in any case, Digisound are planning to bring out a universal CV/MIDI/CV converter in the near future as part of the Pro Series. Other ideas currently being kicked around in the company's R&D department are a dedicated digital sequencer, a digital voice/processor module featuring real instrument sounds stored on EPROM, and a digital ensemble unit. All will come in Digisound's new standard rack-mounting format and front panel livery, and we don't expect any of them to be terribly expensive.

More from *Digisound, 14/16 Queen Street, Blackpool, Lancs FY1 1PQ. ☎ (0253) 28900* ■ **Dg**

Flying High

You've seen the advert, you've read the book, and the film version is due out soon... But meanwhile, a few words in your ear concerning those Skyslip people. Born of a collaboration between Newcastle's Rock City music store and Martin Russ of the DX Owners' Club, Skyslip are a small firm attempting to put a smile on the faces of DX7 and DX5 owners by providing a set of ROM and RAM cartridges at prices that won't burn a hole in their pockets.

They've come up with a RAM cartridge that offers a 64-voice capacity (by means of a bank switch on the cartridge, as found on Yamaha's ROMs) at a considerable saving on Yamaha's own 32-voice RAM. The Skyslip RAM costs £68 including VAT.

Skyslip have also introduced an original (and very sensible) concept for their ROM cartridge. They've avoided all unnecessary duplication by making the cartridge (ie. the bit that does all the organising and communication with the DX) available separately from the sounds, so you only have to buy the cartridge once, at a cost of £50. The sounds are available on 64-voice EPROMs which plug into the cartridge and are available at the reasonable price of £16. Each EPROM is three-quarters enclosed in a protective casing, and is inserted into the cartridge socket by tightening a small screw. That's not as fiddly as it might sound, but it does mean you can't swap quickly between one EPROM and another as you can with the more familiar ROMs.

We've just tried out the first EPROM in what is intended to be a series of five. Its sounds exhibit an 'across the board' approach, with strings, piano, guitar, bass, organ, synth lead, brass, percussion and effects all present and correct. They range from the ethereal 'Misty Lane' to the evocative seaside organ of 'Blackpool', via some smooth string sounds, warm, percussive electric and acoustic pianos (there's a gorgeous phased electric piano) and funky slapped bass. 'Atmosphere' and 'After...' would go down well in one of those 'Wonders of the Swiss Alps at 31,000 feet' telly programmes – or your latest ambient music epic. For the more eccentric, there's always the singing tap dancer or the dijeridoo (yes, there is life after Rolf Harris). Not every sound is a winner, but there are enough good 'uns to make this collection a good bet for yer average DX7/5 owner's Christmas stocking. If you're quick, you might just make it in time.

More from *Rock City, ☎ (0632) 324175.* ■ **St**

Alesis Not Lost

Two new digital reverb units from American manufacturers Alesis look set to make some impression on the British market. The items in question are the up-market AI and the more modest XT:c unit.

The XT:c is yet another 1U-high rack-mounting unit with four basic programs, each of which has a corresponding user-programmable memory, and a bandwidth of 14kHz.

The more upmarket AI takes a format similar to the Yamaha REV1 in consisting of a rack-mounted processor and a remote controller. Unlike its little brother, the AI is provided with MIDI connections and, presumably, the internal software necessary to facilitate remote patch-changing from a connected MIDI instrument. It also boasts 90 user-programmable memories to complement its ten factory 'seed' programs, a 16kHz bandwidth, and a 35kHz sampling rate. More from *Sound Technology, 6 Letchworth Business Centre, Avenue 1, Letchworth, Hertfordshire SG6 2HR. ☎ (0462) 675675* ■ **Tg**

Burgled!

Yes, even the best people get turned over once in a while. On the morning of November 21, 1985, the staff here at Music Maker Publications wandered into their offices to find that, the night before, intruders had sneaked in and relieved the E&MM offices of about £12,000 of equipment.

A complete list of what was taken is printed below. Anyone who has recently purchased, or been offered, any of these items should contact us immediately on ☎ (0223) 313722. A full refund will be offered to anyone who can return lost items to us. The stolen gear:

Aphex Aural Exciter Type C (SN 1056)
Aries 10:4:8 mixer (without power supply)
BBC B computer with disk drive and built-in Wordwise Plus chip
Casio CZ101 polysynth (no serial number)
Casio CZ3000 polysynth (no serial number, one of only two in the UK)
Chase Bit 99 polysynth (SN MN00013)
Commodore 64 computer with disk drive and black & white TV monitor
Frazer Wyatt KX200 speaker
Joreth Music AL25 MIDI Interface
Roland JX8P polysynth (SN 531182)
Roland MSQ700 sequencer (SN 511497)
Roland TR707 drum machine (SN 553077)
Yamaha CX5M music computer (SN 3921) with full-size YK10 keyboard, cartridge adaptor, and the following software:
- ***DX7 Voicing Program***
- ***FM Voicing Program***
- ***Music Composer***
- ***Music Macro***
- ***DX21 Voicing Program***
- ***RX Editor***
- ***Graphic Artist***
- ***RX15 Rhythm Data Vols 1-3***
- ***Guitar Chord Master***
- ***Keyboard Chord Master***
- ***Keyboard Chord Progression***

Yamaha DX7 polysynth (with cigarette burns on right-hand end-panel)
Yamaha RX21 drum machine ■

Sampling for £180

Last month **Yamaha** announced they were about to start selling a new programmable FM synthesiser – the DX100 – for under £350. This month they've gone one better, by unveiling plans to market a sound-sampling keyboard for just £180 shortly after Christmas.

The instrument in question is the VSS100, and whilst its miniature keyboard, built-in drum machine and instant arpeggio section obviously mean it's aimed primarily at the domestic market, the mere fact that it has a sampling facility onboard is going to make an awful lot of 'serious' musicians sit up and take notice.

You record the sound you want using a dinky-looking but probably dreadful-sounding built-in mic, or the line-in socket on the back. It looks like being a pretty hit and miss affair, but at least there are no adjustable parameters to worry about. Once you've done that, you can play your sample manually over the VSS100's four-octave keyboard, or get the arpeggiator to do it for you, leaving your right hand free to play melody or chords using one of 21 preset FM(!) voices.

Yamaha hope the VSS100 'will help to educate those as yet unfamiliar with the exciting experience of digitally sampling live sounds'. Democracy 8, Musical snobbery 0. ■ **Dg**

At Syco, we're never satisfied. Even after discovering Fairlight we needed to find other musical instruments that would capture a professional musician's imagination.

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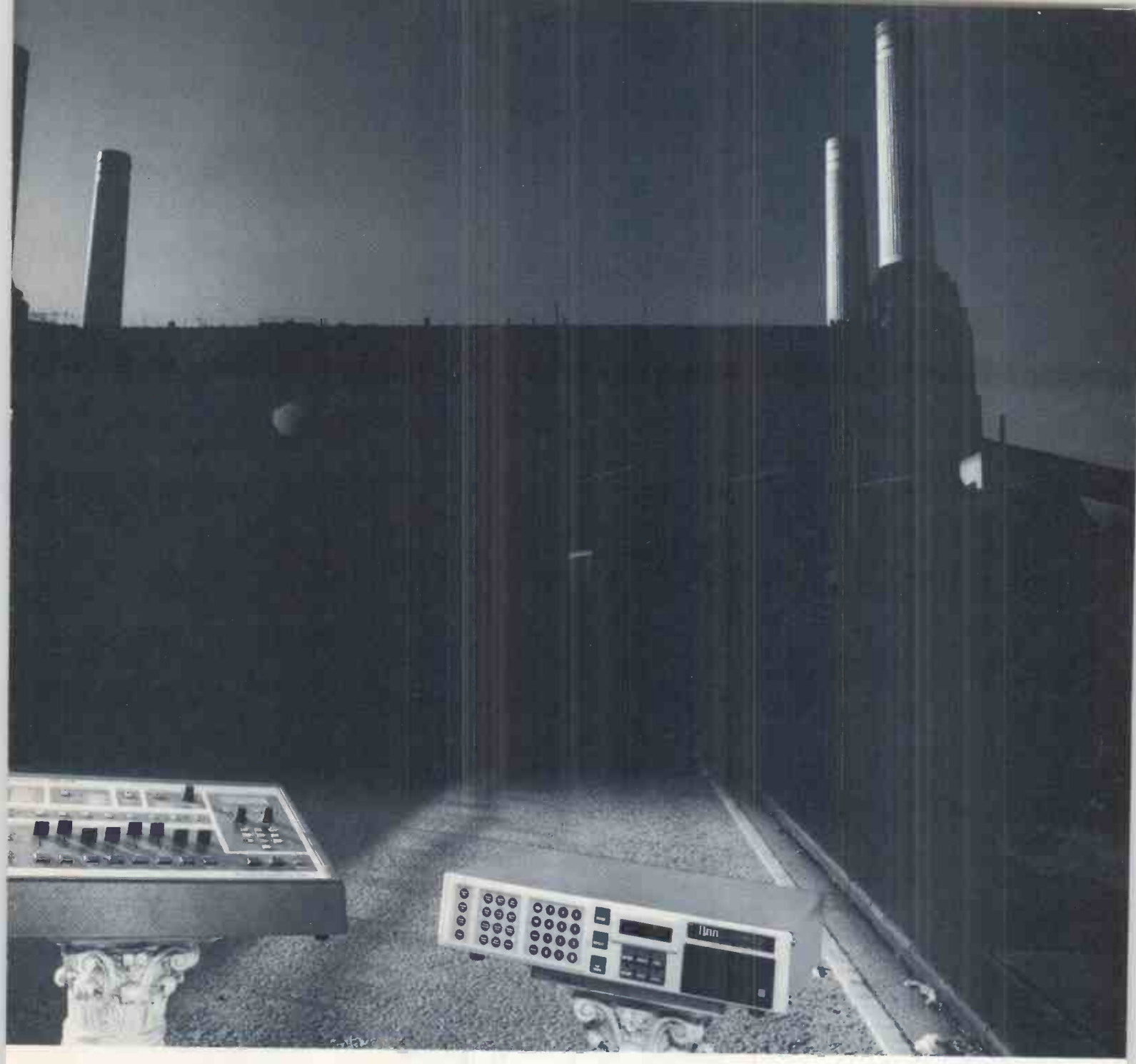
Of the many sequencers available today, few are as musical as the Linn Sequencer. Indeed many destroy ideas rather than capture them. The Linn Sequencer is designed to allow you to compose, record and edit while devoting your undivided attention to your music, to enhance rather than interfere with the creative process. The 32 track MIDI recorder is operated via familiar tape machine-type controls and offers optional SMPTE synchronisation, 3.5" disc and remote control. Other features such as real-time erase, real-time transpose and auto repeat have been included for maximum creativity.

The SP-12 is not the first drum system from E-mu, but certainly represents a considerable leap forward from the last, bringing the power of 12 bit user sampling to the world of the programmable rhythm machine. SMPTE synchronisation is provided and an optional disc may be attached for the storage of rhythm patterns and sounds. Programmable tuning, decay and



mix level, touch-sensitive buttons and a unique multiparameter mode are included amongst many other new features.

The SCR 2 from Friend Chip is the smaller brother to that industry standard the SRC (SMPTE Reading Clock). Intended for a smaller budget and a less complex application the SRC2 offers many of the features that have made the SRC so essential in the electronic music environment. Two independently selectable click outputs, MIDI and Roland clock outputs, programmable cues, tempo changes and start/stop outputs make the SRC2 invaluable in any situation where instruments from different manufacturers are to be synchronised together, and where it is necessary to drop in with rhythm machines and sequencers rather than running the track from the top.

Three excellent new inventions from three established and respected manufacturers. Of course, if you have need of a drum machine, a sequencer and a synchroniser, they will work together.

Syco

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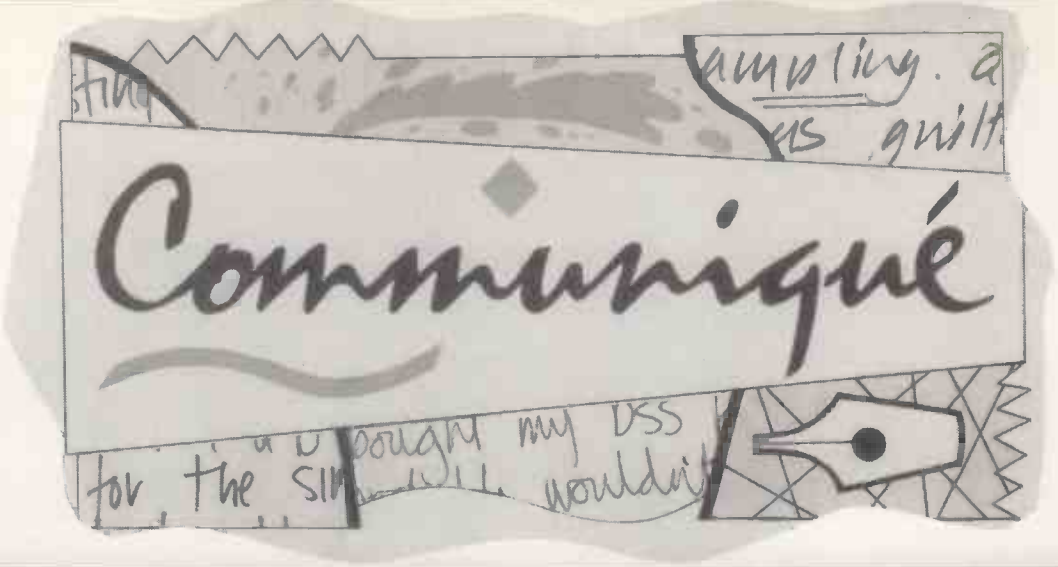

Write to *E&MM, Alexander House, 1 Milton Road, Cambridge CB4 1UY.*

No DX, No Comment

Dear E&MM,

First of all, thank you for publishing my letter in E&MM; it's good to see that critical letters are not simply thrown in the waste paper bin. You did manage to spell my name wrong, though, so I guess nobody's perfect.

My letter was basically concerned with everybody's favourite: the analogue vs FM issue. I fully expected replies which I hoped would contain useful, constructive and interesting comments. I did not expect the sort of uneducated rubbish that Andy Halliwell wrote in his September reply. How can this guy possibly comment on the issues I raised when his only experience of any Yamaha equipment is that he has 'heard a friend's CX5M demo tape', and his analogue synth armoury consists of a Yamaha CS01?

Does he not realise that such a tape has been produced in order to sell the CX5M, and will therefore contain the work of the best CX5M programmer that Yamaha can get their hands on and musicians who are probably concert pianists. The only way anybody can possibly contribute to this discussion is to actually have used both analogue and FM synths – and I don't mean five minutes in the local music shop.

AH also states that 'if you played all the different sounds on the DX7 for one second each, it would take many billions of years longer than the existence of the universe'. This statement is totally irrelevant, though my friends at the local astronomical society would like to know just how long the universe actually has existed – any answers?

In my letter I also said that velocity-sensitive keyboards are a bit of a gimmick. Andy Halliwell asks why all the manufacturers are busy making their synths velocity-sensitive. Maybe I can provide the answer: it's cheap to include, it sounds good in advertisements, it keeps the reviewers happy; and, of course, anything one manufacturer offers, the others want to imitate instantly, quite regardless of whether or not it's a good idea.

He also says that a large variety of differing sounds can be produced by key velocity changes. This is also completely untrue; if AH can alter the harmonic structure of a sound simply by varying the key velocity, then I'll show my rear quarters at the next BMF.

I'll refrain from further comment except to say that Mr Halliwell should start writing tunes on his CS01, instead of letters to E&MM.

Tony Wride saved the day the following month with his excellent reply to my letter. I fully agree with him when he says it should be left to the individual to decide which type of synth and sound best suits his purpose. However, he seemed to shy away from any direct comment regarding the analogue/FM issue. In fact, he says he doesn't want a battle between the respective owners. Well, neither do I, but I think a friendly ongoing debate could open people's eyes to both forms of synthesis.

I don't wish to appear critical of the DX synths, but I am critical of the amount of coverage they receive when there are so many other synths deserving of a little attention. The music industry seems to have been bitten by Yankyitis, a disease that makes people think new ideas are automatically better than old ones.

It ain't necessarily so.

Wayne Blakemore
Manchester

Digital Overkill

Dear E&MM,

As a very satisfied DX7 owner, I find the prospect of the TX816 'DX Rack' awe-

inspiring. But I also find the idea of buying one a bit pointless and not a little disturbing. Whilst I can see the advantages of being able to layer different sounds (or even the same sound) on top of one another, to take things to this extreme seems to me to be nothing more than a ludicrously expensive Waste of Time.

Taking the existence of Yamaha's QX1 into consideration, the idea of a sequencer/synth package of this complexity does sound like an incredibly powerful compositional and performance tool. Yet this isn't, as I see it, what the TX816's primary function ought to be. It's just too costly for that.

No. What the 816's designers want musicians to do with their gift to humanity is wile away endless hours (days? weeks?) adjusting goodness-knows how many FM parameters until they come up with a sound which is not only stunning, but – more importantly – also impossible to program on the DX7 alone. But that, my friends, looks like being a difficult and painstaking task.

Perhaps someone out there, maybe someone who owns one of these monolithic black boxes, can help dispel the impression that the TX816 is nothing more than an attempt to cash in on musicians' latent megalomania. Modern music technology is fraught with enough problems; the opportunism of manufacturers can only add to them.

Disillusioned
Truro

Pointless Proposition

Dear E&MM,

The synth vs sampling debate is pointless. Anything that allows someone to express themselves creatively is valid, and nothing can ever be all things to all men.

I remember the 70s when Queen printed 'No synthesisers!' on their album covers, and I remember thinking: Why not continue with 'No bagpipes, no Tibetan noseflutes, no Telharmoniums ad nauseam'? Why don't orchestras deny the use of electric guitars? Here we are in 1985, and Phil Collins and Neuronium are boasting 'No Fairlight CMI', and I guess it's only a matter of time before we see Fairlight-generated album sleeves bragging about 'No thought-controlled devices'! ▷

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Let's face it. These attitudes are based more on sonic snobbery than anything else. Throughout the history of music, there has always been narrow-minded opposition to new technology. Even the good ol' Joanna was attacked by sceptic and criticised as being a toy. Then it was the turn of the saxophone, the electric guitar, the Mellotron, and the synthesiser. Now computers and samplers are suffering at the hands of conservatives who'd probably have us back up in the trees playing bongos if they could.

We are very, very fortunate to have such an incredible variety of instruments – acoustic, electro-acoustic, electronic analogue and digital – to choose from. But whatever we choose, we should beware of the trap of thinking that the alternatives we've rejected are somehow inferior to our choice. Genuinely open-minded musicians would be prepared to use any means in order to achieve their aims. Because in the end, it ain't what you use, it's the way that you use it.

Nick Reeman
Hants

Voice from the Past

Dear E&MM,

Whatever happened to the vocoder?

Before you recoil in horror with 'Sparky's Magic Piano' in mind, there were one or two outbreaks of quite creative usage of the instrument. I say 'were' because, before vocoders had a chance to reach maturity in their development – a chance most other avenues of musical innovation are afforded – the industry appeared to lose its faith, and discontinue production of almost all vocoders.

Take the classic example of the Roland VP330 Vocoder Plus. Granted, it wasn't particularly pretty, but then neither are a lot of talented musicians, and the possibilities the VP330 offered were inspiring. What has become of them? They've become a highly desirable, rarely obtainable item, that's what. The instant one appears for sale in E&MM's Free Ads, thousands die or are injured in the rush.

The control that a vocoder gave over a sound was (still is) unequalled. Stop thinking about introducing your entire band through one at the end of the set, and start thinking along the lines of articulation. Never mind these silly breath-controllers that everyone says are so good but which nobody (except Dave Bristow) would ever be seen dead using. If you want to actually articulate a sound the way you've previously only been able to describe to a guitarist (who stands one heck of a better chance of achieving it than you anyway), go get yourself a vocoder. If it's string or choral sounds you want, they'll fit a lot more snugly into the mix if you can sing them into the part.

Come on Roland, Yamaha...anyone! There's an enormous gap in the market that contemporary technology is more capable than ever of filling easily and (probably) cheaply. What are you waiting for?

By the way, whatever happened to the Ondes Martenot?

Don Thomas
Bristol

Ethno-Tech

Dear E&MM,

I have a theory, and it goes something like this. The quicker technology advances, the slower music follows suit.

Open up a copy of E&MM at the tail-end of 1985, and the hardware/software on offer is light-years ahead of what musicians could reasonably have expected two years ago, let alone at the time of the magazine's inception in 1981.

Yet comparing the Top 20 'hits' of this December with those of two or even five years ago, it's painfully obvious that most of the 'new' records could easily have been made half a decade earlier.

I don't know about you, but I find that depressing. What's the point of the world's researchers coming up with new ways of designing musical instruments when their designs aren't making one jot of difference to the way people write music?

My own feeling is that only in a couple of musical areas has new technology been put to a use that's truly inventive, rather than imitative. Let's take a quick tour of the currently popular musical styles.

First, Euro-rock. This is a field which, in the early- to mid-70s, was a haven for the technological experimentalist. Unfortunately, it's now over-populated with Tangerine Dream imitators, caught in an irrevocable time warp and chucking out the same old structures, the same old arrangements, and the same old synth sound clichés. The only thing technology has done here is to let the musicians perform live without banks and banks of unwieldy (and unreliable) equipment. It's also saved them time, because with the advent of preset (sorry, programmable) polysynths, nobody has to go all through that tedious mucking about with patch leads in order to go from one sound to another. In Euro-rock, as in many other fields, new music technology is a convenience item, much like fast food and auto-function hi-fi. Its musical versatility has scarcely been exploited at all.

Second, mainstream pop. You have to go back at least 10 years to find a UK singles chart that's as desperately lacking in innovation as the current one. Yes, there's lots of technology being used, but again, its application is more for reasons of convenience than anything else. The string synth patches of Madonna's singles aren't being used to play anything more dramatic than what the string section backing Gladys Knight used to play; a-ha use a drum machine because it's cheaper and easier than having two drummers like the Glitter Band used to use; and if that's a DX7 on the Whitney Houston single (and I suspect it is), it's only there because you're more likely to see a DX in an average US recording studio these days than you are a Fender Rhodes. There's not much difference, soundwise, between the DX's Rhodes patch and the real thing. Only a tiny minority of pop players (whose work isn't properly appreciated by most of its audience anyway) is really stretching today's technology to do things that weren't previously possible. But if it takes a drummer as good as Phil Collins to program an interesting drum machine pattern, I'm damned if I know why we didn't stick to pre-programmed Bossa Nova rhythms when we still had the choice.

Third, heavy rock and AOR. This is a category beyond redemption, and has been for many years. Z Z Top have got a sequencer playing a bass line they'd otherwise be unable to play on their latest single, but there are only four notes in it anyway. Van Halen use the odd synth solo that sounds just like their guitar solos, but without the feel. Bruce Springsteen needs synthesisers as badly as the rest of the world needs Bruce Springsteen – yet he uses them anyway.

Fourth, avant-garde classical music. Now there's a contradiction in terms if ever there was one. This lot are still beeping, sweeping and creeping their way through the colour supplements, writing soundtracks to epic Clangers movies that'll never be made, and calling them the postwar world's answer to Mozart. Technology has made some difference to the ivory tower dwellers in that it's presented them with another load of academic avenues to wander down. But most of the routes the electroacoustic lot have taken so far have turned out to be cul-de-sacs; their music sounds the same as it did 20 years ago.

Fifth and last, the ethno-tech group. This, as I see it, is the one glimmer of hope on the horizon. People like Herbie Hancock, Alex Sadkin, Malcolm McLaren, David Byrne, Holger Czukay, anyone connected with Bill Laswell's Celluloid empire, Laurie

Anderson, Peter Gabriel, David Sylvian and a few others. These are the artists who are actually putting technological advances to proper use, writing and arranging music in a way that hasn't previously been possible; making records that could not have been made in 1965, or 1975, or even 1981. Their fusion of traditional ethnic forms and modern, hi-tech composition/production methods is a joy to behold.

Sadly, this group is pathetically small in the context of the record industry as a whole. Only these artists have the guts to put successful careers on the line by doing something different, striking out in a new direction and flying in the face of musical convention.

I suppose it's simply that, these days, the phrase 'why change a successful formula?' is spoken more loudly by managers, agents, executives and (heaven forbid) artists themselves than it's ever been. I'm not sure why that is, but I'd like to know. Does anybody have any answers?

Paul Hammond
Edinburgh ■

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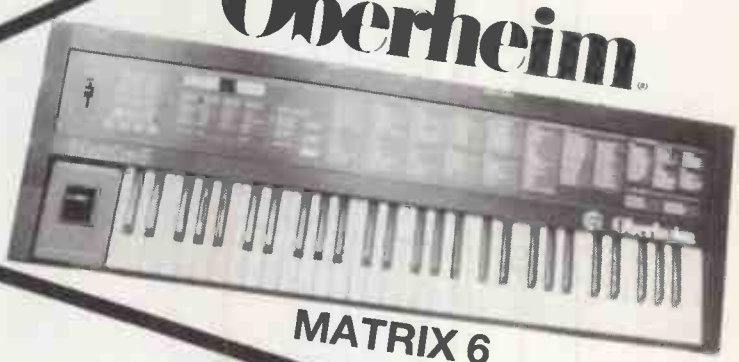

MATRIX 6

Roland

ALPHA JUNO 1

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DX100

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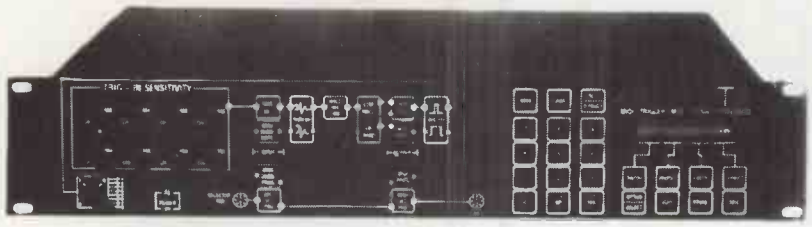

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INTERFACE

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ask THOMPSON

Are the Thompson Twins mere puppets of a pretty-boy pop publicity machine, or sensitive, intelligent and talented musicians with more on their minds than making money? Singer and synth programmer Tom Bailey puts the record straight. Interview *Dan Goldstein*

Whichever way you look at it, 'revolution' is not a word to be taken lightly. My dictionary describes it variously as 'a violent and historically necessary transition from one system of production in a society to the next'; 'a far-reaching and drastic change in ideas and methods'; and 'a cycle of successive events and changes'.

The Thompson Twins' new single is none of these things. Neither is the album, *Here's to Future Days*, from which it is taken. The single is a cover of the Beatles song 'Revolution' and is about as revolutionary by comparison with the original as this week's episode of *Dynasty* will be alongside last week's. It is also flatly, mundanely produced and badly sung.

The album isn't much better, though there are some brighter points to balance things out a little, notably the anti-Heroin dancefloor workout (and recent single), 'Don't Mess With Dr Dream', the Numan-meets-Gabriel chant of 'Future Days', and the curious reggae-tech of 'Emperor's Clothes'. But the main point is that *Here's to Future Days* isn't radically different from anything else the Twins have come up with. A little raunchier than *Quick Step and Side Kick*, a little less obviously commercial than *Into the Gap*, but basically the same formula the threesome of Tom Bailey, Alannah Currie and Joe Leeway have been pursuing since they shed the unwieldiness of the band's previous seven-strong line-up in 1982.

Bailey, the man who writes the music, arranges it, helps produce it, and sings along with it, is sitting in front of an ancient electric fire in a small room under the arches of London Bridge railway station, waiting for an opportunity to answer my criticisms.

Why no Thompson Twins revolution in 1985?

'It's within the nature of pop music for things not to change too much. All we're doing is pop songs, that hasn't changed. We're writing pop songs today the same way we were writing them three years ago.

'We don't want to remain static, though. We've been looking for new flavours sonically. There's a lot of guitar-playing on this album, for example. Why do the same thing twice? Things are exciting to you for as long as they are, well, exciting. There's no explanation for that.'

To shatter one illusion right away, Tom Bailey is more aware, more intelligent, and more coherent than his popular pin-up image suggests. He speaks with quiet confidence, and any pause in his conversation is there for a purpose; it's always followed by a comment worth waiting a few extra seconds to hear. He is proud of the Thompson Twins' achievements (they've sold over 20 million records to an audience that spans the globe), but is respectful of my opinions and has as much humility – a quality rare among the pop elite – as anyone I've ever interviewed. He is a champion of the cause of pop, but his musical background is colourful and varied, full of wide-ranging influences which have, to some extent, made themselves felt in the Twins' output. I put it to Bailey that if the band's influences were more obviously disparate, if the breadth of their background were given the breathing space necessary to make a bigger impact, they'd be more likely to win friends among the musical cognoscenti.

'Well, I think the only way I could do something radically different would be outside the band, and I don't really want to do that right now. There are lots of things to tempt you away from the band, especially offers of production jobs. But I keep saying no because I'm fascinated by the possibilities the Twins still have. It'd be silly to get this far together and then disappear off at a tangent. After a time you need a big change, but that time hasn't come yet.

'Actually I don't listen to pop music much, except by accident because you can't really avoid it, no matter how hard you try. I don't have a record player, and out of choice I'd rather sit in silence a lot of the time. After the brain has been bombarded for so long by music, I'd rather it didn't have to receive any sound.

'You can't just shut yourself away, though. You'd end up just making Top 10 singles which, though there's nothing wrong with them in principle, would all be self-referential; there'd never be any new elements introduced.

'I do have deep connections with rather illogical sources, like Indian music and classical music. But I don't sit there and say "this is a pop song with tablas on it, because I wanna make some statement about India". It's just that I already feel good about lots of different musical things, so at the drop of a hat I can introduce elements of those things.

'Personally I'd like to do something more acoustic, use lots of ▷

grand piano and go back to my classical roots. But a lot of people have made mistakes there. I don't want to go through the "rock star makes album with London Philharmonic" routine. But a lot of my musical experience comes from chamber music, I have that inside me. To a certain extent it's been blasted away by the crudeness of pop music, but it's still there.

'The trouble is that everyone wants 3½-minute pop songs, and if you don't give them that, they get panicky.

'The escape clause from that is film music. If you work with films you can still have the hit singles and work under your own name, but everyone expects a longer form, they expect things to be more complex and more involved; it's quite acceptable.'

As we all know, deciding on a general style or direction is only the first step towards creating a new piece of artistic product. There's another load of details to be filled in before the picture is complete, and if you're a musician, these include things like structure, melody, arrangement, lyrics and so on.

Like everyone else, Tom Bailey has his own method of joining the dots.

'I go into the studio well prepared. The songs are already arranged and mapped out and I know what's going to happen. The structure of the piece is there, but how it ends up sounding, how it eventually *entertains* your eardrums, is the result of a very volatile process that's impossible to predict. Working in the studio can lead to all sorts of surprises happening, the most extreme example of which is the song that you thought was going to be great turning out to be a bore, and the song you thought was average turning out to be a hit.

'The best example of the latter was 'In the Name of Love', the single which kicked us off in America. It was just recorded as a demo for the second album because the band didn't have enough songs; it was a source of embarrassment. It was put together literally in an afternoon, and that was that. But once you've finished recording, you *know* what's going to be a good song. If you're still singing the same chorus the following morning, you know you're onto something worthwhile.

'Not all arrangement is accident, though. I do a lot of arrangements and structures and things before we even go into the studio. I've got a small home studio setup with a Fairlight, a drum machine and an eight-track. I try out the most basic things like seeing if the pace is right. To be honest, I could then just hand the piece over to an engineer and say "see you in two weeks", because that's the time it takes to transfer the demo to a large multitrack format.

'I knew before we went into the studio for this album that we'd avoided guitars for long enough, and that now was the time to use them. It was almost as if I wanted to make something that was more of a rock album and less of an electronic pop one.

'I'm not a rock fan, so I always felt I was treading on thin ice. But I felt justified in changing the direction slightly, because I think people are becoming a little tired of the synth sound that has its roots in early Soft Cell, Human League, and Depeche Mode. That way of making records was really a reaction to traditional rock 'n' roll. Now we've come out of that, and the music isn't really a reaction to the electronics. It's more that we can now look back on what guitar music had to offer and use the best elements of it, and combine those with the best elements of electronics. We said 'no guitars' for two albums – though I sneaked a little bit on *Into the Gap* – because so much of it had been thrust on us.'

OK, so the new album has more guitar-playing on it. Great. But it isn't a rock album. Structurally it remains as before (ie. the usual verse-chorus-verse-chorus-middle-eight-chorus sort of thing), and as far as instrumentation is concerned, the guitars don't really intrude on what is still a very contemporary, hi-tech atmosphere. The pounding drum machine beat, the growling synth bass, and the tingling digital tuned percussion are all very much alive and well and keeping the Thompson Twins in the public ear.

Clearly, Bailey hasn't been able to let technology take a back seat for too long, partly because his Fairlight represents such a crucial stage in the song-creation process.

'I usually get the idea for a song from just daydreaming or mucking about with a sequence on the Fairlight's Page R facility. A lot of the music comes from just doodling around. A painter has a sketch-book, I have my home studio. A casual idea can become a larger work, then a great oil-painting. My music undergoes a similar process.

'You have to be able to sustain a lot of interest in order to keep messing about with ideas, most of which you know are gonna go down the drain. I do reject an awful lot of stuff, and even in the studio, we tend to record maybe 25 or 30 songs, out of which perhaps 15 actually get finished. It's from those that we select the songs that are going to be released on the album.

'That's a difficult decision to take. We take the decision as a band, because although I write the music, Alannah writes the lyrics and Joe always has some input, too. You have to have a breadth of approach. If I come up with a great tune and Alannah writes some really miserable lyrics for it, it may be brilliant but we may not use that song because we don't want an album made up of 10 miserable ballads. If you have three miserable songs, you maybe choose the best of them as the one to use. For us as a band, the overall thrust has got to be a positive one. We like things that are energetic, things that have a sense of life.

'As for sounds, I work on them at whatever stage I'm inspired to. When I first got the Fairlight I set about recording a whole library of samples, sampling everything in sight. As I became more adept at using it, I learnt how to mutate existing samples, which is in some ways more interesting. Then there's the whole MIDI thing which has taken things one stage further; I've had MIDI retrofitted to the Fairlight so that I can combine the sounds of that with the sounds of analogue synthesisers.'

Speaking of synthesisers, Bailey's latest love is the Casio CZ range; he now has a CZ101 and the bigger CZ5000, MIDI-linked to a Yamaha DX7/TX7 combination. That gives him plenty of digital clang, but interestingly, the Twins' more traditional analogue sounds come from a pair of trusty Oberheim OBXas that have been knocking around for the last four years.

Bailey's reply to the obvious question of 'Wot, no new analogue?' is roundabout but reasoned...

'There is, among musicians, a never-ending dialogue concerning the equipment that's being used. You meet someone else who says "Well, I use these", and you try them out for yourself. I am *aware* of that dialogue, but I sometimes meet musicians for whom that dialogue is more important than anything else, and I think that's a pity. It seems obvious to me that a great song is a great song whether it's played on a computer system or whether you just sit at a piano and play it.

'I like the toys, all the new instruments that are appearing, but people will always use what they like because they like what they know. Sometimes when I tell people I'm still using some of the same synths I bought four years ago, they tell me there are newer, more appropriate machines – but so what? *These* are the instruments I know back to front, so I'm going to stick with them.

'Unless I come across things by accident or someone I know raves about something, chances are I won't hear about it. I don't go looking for new gear all the time. I've got better things to do with my time and, in any case, I'm not necessarily all that good at working

with new machines. When things flow well in art, they flow because the relationship between the craftsman and the tool is already well defined. When you hear a sound you want to get close to, you're more likely to get it quickly if you're using something you're familiar with.'

There is a long, telling pause.

'...The reverse can sometimes be true. Sometimes it's good to come up against something totally alien and ask yourself: What does this do? As with a painting, the overall colour scheme should be something you've already worked out, but the occasional element, a small ingredient of conflict and unintended expression, can set the whole thing off magnificently.'

But being constantly open to new ideas and suggestions has its problems. Bailey is acutely aware, for instance, that the open-endedness of computer technology can be as much a burden as it can a blessing.

'You do find yourself wishing things weren't this complicated. I sometimes wish I was a bit more naïve. I'm not a rock musician and I never will be, which means I'll never be in a position where a guitar and a bottle of Jack Daniel's is my idea of the way to make music. It's a very simple and natural process for rock musicians, but I'll never be a part of that. Working with technology, you soon realise that in many ways there are too many choices. When you think you've investigated every alley down which you can go, you suddenly find another town-full.

'I've looked at ways of trying to discard 349 of the 350 options you have at any given time, but it's difficult. Working in an isolated environment is certainly a good start. I learnt that at Compass Point, when we were recording *Quick Step and Side Kick*. People warned me that if I ever needed a spare Lexicon reverb I'd have to wait three days for it to be flown over from Miami, but big deal! Music shouldn't be heldd up because there isn't a Lexicon; you should just get on with it and limit yourself.

'A painter can't decide, halfway through a painting, that his canvas is too small and that he'll have to put a patch in somewhere. He has to work with what he has. He defines the framework within which he's going to work before he starts.

'I think it's great, actually, that our choices *are* limited by the very fact that we're involved in making pop records. That's the other side to what we were saying earlier about being limited musically.'

Bailey's lack of dogmatism, his persistent acknowledgement of another side to every coin that's spun, is certainly refreshing – but being considerate can take its toll. A year ago the Twins moved to Paris to start work on *Here's to Future Days*. A few months later, the band's hectic schedule and Bailey's undying enthusiasm caught up with the man, and he collapsed of exhaustion. It was his period of enforced rest that was largely responsible for the delay in the LP's release, but once back on his feet, Bailey set about completing the recording with renewed fire in New York, where he called upon the assistance of one Nile Rodgers. The Twins had worked with a big-gun producer before (Alex Sadkin), but in '85, the co-producer took an active part in playing, too. Bailey explains.

'I'd always thought, in the past, that having other people playing on our records was a bad idea. It's difficult to get someone's emotional involvement in a situation when it's a case of "Come in Tuesday and Wednesday and do some drumming for us", or whatever. And if you do have an emotional involvement with a song after you've written it, playing everything yourself means you sustain that emotional content all the way through the recording. You keep close to the emotional source of the song. Between the three of us, we sing, play drums and percussion, program keyboards and sequencers, and even play a bit of guitar. If it hadn't been for that range of abilities within the group, I think I'd have learned to work with other people earlier.

'But when there's someone involved in a more consistent and intense way – as Nile was – then I feel really happy about it. His musical contribution was mainly guitar-playing. I've usually done that myself, but Nile's guitar-playing surpasses mine by such a vast degree, that I could never have done what he did.

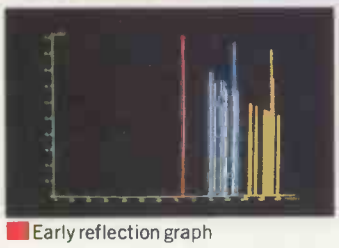
'As far as production is concerned, his contribution was also limited, though still quite significant. It was difficult for him because he came into the project quite late. The songs had all been written and partially arranged, the basic tracks had all been recorded. But he obviously liked what he heard; he must have done because he decided it was worth tackling what he knew would be a tricky job. In the end I'd say he put the icing on the cake. He added another dimension to the recording that we would never have dreamed of adding ourselves.

'We ended up recording the album entirely on digital, but I'm 50-50 about it. It sounds OK...no, it sounds better than OK. But analogue recording has its own sound that I also like a lot, so the next album might be done on analogue.'

So the thoughtful, workaholic Bailey (now reckoned to be one of the pop world's most talented synth programmers) is already thinking hard about what the Twins will do next. They'd like to spend a large part of 1986 playing live, following the collapse of the band's planned UK tour two months ago, and they might have a bash at film music, record company and management permitting. And Bailey's going to make small but significant adjustments to his writing technique, too.

'In the early days, when we were a large group, things were very improvisational, they happened by accident. Over a period of years I've come to adopt a more refined process, where I've known what was going to happen. Things are very *predictable* using something like Page R, even though it offers so many options. But now I'm thinking of coming full circle to include more chance elements, not because one is any better than the other, but simply because I don't want to do the same thing forever.

'I'm already daydreaming and whistling into tape recorders, putting down ideas for the next album. I never dry up – unfortunately.' ■

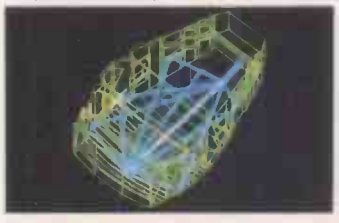


Early reflection graph

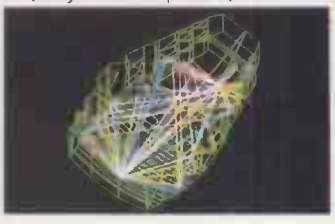
Perceived early reflection characteristics

Early Reflection Simulation Example Based On a Specific Hall Design

Hall simulation (1st reflection)



Hall simulation (early reflection pattern)



REV7

The REV-7 is a highly professional, MIDI compatible, stereo programmable digital reverberation system. It is also an extraordinarily powerful studio effects unit.

Natural reverberation is the most complex of the 'time domain' effects to be replicate with true fidelity. It requires ultra-high speed circuitry capable of processing an immense amount of data very quickly. It also requires the implementation of very sophisticated software based on a thorough understanding of real-world acoustic responses. Thus, in the past, a top-quality digital reverberator has always been very expensive.

By designing their own purpose-built LSI (Large Scale Integration) micro-processors specifically to meet all these stringent requirements, Yamaha have achieved an astonishing cost breakthrough. So that, at the price, no other device even approaches this kind of quality, flexibility and simple musicality.

With 16-bit linear quantisation, a sampling rate of 31.25kHz, a 12kHz bandwidth, a dynamic range of between 78dB and 84dB (depending on effect selected) and 3-band sweepable equalisation, the REV-7 creates astoundingly accurate simulations of a variety of acoustic environments based on exhaustive real-world research. And on top of that, Yamaha engineers have also built in the capabilities of virtually every other time-domain processor you can think of.

Within its memory banks are stored 30 factory preset effects which range from natural-sounding halls of various sizes through chorusing, delays, stereo repeats, flanging, phasing, flanged reverb, gated reverb, reverse gate and more. All these effects can be edited to a fine degree and there are another 60 user-memories in which to store your own creations.

Here are some of the adjustable parameters for a reverb effect:

1st Reflection 1 to 100ms after direct sound, 0 to 100% level) - the time delay between the direct sound and the first reflection.

Initial Delay 1 to 100ms) - the delay between the direct sound and the onset of reverberation.

Reverberation Time (0 to 10 secs) - adjustable over three frequency bands.

Diffusion (0 to 10) - the shape and proportion of a room will determine now spacious, or conversely how directional, its reverberant field is, irrespective of its overall reverb time. With this adjustment then, you are able to actually adjust the apparent shape of the room and definition of the sound source.

REVERBERATION PLUS..!

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Alternatively, if you need the last word in quality, control, programmability and user-friendliness, the REV-1 is the ultimate studio machine for reverb and effects. Offering instant 'one-touch' access to memories and fine control of effect parameters, the REV-1 also provides variable display graphics to aid swift and subtle adjustment, keeping you fully informed at all times.

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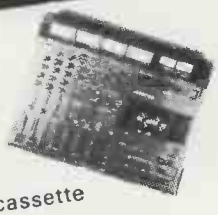

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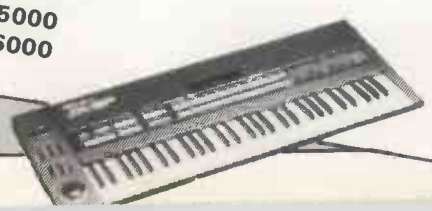

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Appraisal

ALPHABET soup

Roland have repackaged their cheapest analogue polysynth, the Juno 106, and called it the Alpha Juno 1. But will a cosmetic clean-up and the addition of a few clever facilities be enough to stem the digital tide? *Simon Trask*

Over the past decade or two, the Japanese have consistently astounded the world with their ability to produce consumer goods at astonishingly low prices and in astonishingly large quantities. In the world of hi-tech musical instruments, the Nips now rule the roost at every price level save the highest, where American and Australian innovation (plus the fact that costs are virtually irrelevant) keeps the New World ahead.

At more realistic levels, Japanese industry giants like Yamaha and Casio have revolutionised the way people think about digital music technology in little more than a couple of years. Their instruments are the subject of huge, time-consuming investment programmes, but the results are worth it. And the two companies, locked for some years in a battle for supremacy of the domestic portable keyboard market, are now at loggerheads at the professional end of the scale, too; witness Casio's excursions upmarket with the CZ5000 Phase Distortion poly (soon to be joined by a sequencer-less stablemate, the CZ3000), and Yamaha's pre-Christmas launch of the mini-keyboard DX100, the cheapest FM synth yet.

But where does this leave Roland, one-time undisputed leaders of the polysynth market? The Junos 6 and 60, though still valued, are of a past generation. Similarly, the JX3P and Juno 106 are no longer in production – though you'll still find a few 106s in the shops if you're quick. Meanwhile, the year-old JX8P has been left propping up the £1000 sector of the synth market with not a lot beneath it.

Now Roland have come up with the six-voice, four-octave Alpha Juno 1 as their entry in the race to find the ultimate budget polysynth. As with the new DXs, the Alpha provides nothing new in the sound department – it merely repackages already existing technology in a cheaper (to build as well as to buy) and more 'modern' format. Its role in life is simple: to win back for Roland the prestige, and the final success, the first crop of Junos gave them three or four years ago.

For some obscure reason which must ultimately be something to do with design considerations, only Roland's earlier flagship poly – the Jupiter 8 – has featured eight voices. All their other synths, even the JX8P, have been six-voice. When you consider that the CZs *and* Yamaha's new budget DXs are eight-voice, that's a disappointment.

The first consequence of the 'modern' approach is that the Alpha employs membrane switches on its front panel, and follows the pattern of centralised digital access. This contrasts with its predecessor, the Juno 106, which had lots of nice individual-function sliders on its front panel. Still, a 16-character LCD is provided, and – wonder of wonders – it's backlit so you can see it in dark environments like between-song stages and dingy rehearsal rooms. Maybe Roland will start a trend.

Facilities *'Can a Roland be a Roland without a chorus unit? Obviously not; the Alpha's has programmable rate over a range of 0-127.'*

The so-called 'Alpha dial' is by no means a new feature. The Moog Source, the first digital access ▷

▷ synth of all (so *that's* where the finger of blame should be pointed), had something similar, and more recently, Oberheim's Matrix 12 polysynth has featured infinite rotary knobs for parameter-switching.

I have mixed feelings about Roland's dial. You use it, instead of front panel buttons, to select parameters, which means you have to keep swapping between parameter and value functions for the dial; and you have to be able to remember in what order the parameters come as they whirl past you on the LCD. A single-step option (you know, good ol' increment and decrement buttons) would have been handy to have had alongside the dial, because although having an infinite rotary control allows the relationship between physical distance of dial movement and parameter/value adjustment to be set (by Roland) to what is most convenient, it's still all too easy to sweep blindly past the parameter or value you want. When it comes to changing values, you are at least presented with a display that shows you both the unaltered value and any new value that you set.

Overall it's not a bad system, but it's no miracle cure for the ills of digital access, either.

Much neater is the way Roland have provided a shortcut to editing sound patches. Instead of modifying all the voice parameters, you can edit selected *groups* of parameters from one front-panel control. The group parameters are modulation rate, modulation depth, brilliance and envelope time.

Pitchbend and modulation are implemented on a single controller similar to that found on the JX8P, with pitchbend controlled by left-to-right movement and modulation by forward movement of the controller; the two can also be mixed.

The Alpha's four-octave keyboard range can be expanded via MIDI reception to eight octaves, or to put it another way, the synth's sound software and circuitry is capable of responding to pitches over an expanded range. Another plus (and a big one at that) for the Alpha is that it's capable of responding to both attack velocity *and* channel aftertouch over MIDI. All of which helps make the Alpha a good bet as a MIDI slave instrument, in spite of its physical limitations.

From the synth itself it's possible to increase the range of the keyboard in two ways. First, there's an octave transpose up/down feature which, because it's instantaneously accessible via two buttons on the front panel, is an effective means of expanding the Alpha's keyboard range in performance. There's also a key transpose facility (an octave either way) accessible from a dedicated front panel button; you alter the value either by twiddling the Alpha dial or pressing the relevant key on the keyboard. So if you thought you were going to be playing your parts in G and suddenly find that they need to be in C# (ditto with a sequence), this option provides an easy way out.

The Alpha gives you a total of 128 sounds onboard. These are divided into 64 in ROM and 64 in RAM, or 'preset' and 'memory' as Roland call them. Each group is organised into eight banks of eight patches, accessed from the front panel by two rows of eight selectors.

The basic voice structure of the Alpha is single-DCO (Digitally Controlled Oscillator), as on previous Junos, passed through high-pass filter, VCF (low-pass), VCA and chorus, with an LFO acting on the DCO and VCF, and an envelope generator acting on the DCO, VCF and VCA. In other words, a synth section that's about as revolutionary as the Snoopy telephone, but which will at least be familiar ground to most synth players. It's easy for novices to work their way around, too, and that's more than you can say for the average DX.

The Alpha presents you with a selection of three pulse and five sawtooth waveforms held in memory. Pulse and sawtooth waveforms can be combined, and there are also six sub-oscillator waveforms available. Pulse wave 3 and sawtooth wave 3 can be further modified by PWM (Pulse Width Modulation) depth and rate parameters. And of course, there's a noise level control (on a scale of 0-3) which the manual says is 'often used for wind or surf'. Too true.

The high-pass filter has four settings including off (which is more of a non-setting, really) and one that actually emphasises, rather than reduces, the lower frequencies. VCF parameters include resonance, envelope polarity and LFO depth (all, of course, related to filter cutoff frequency). VCA settings are confined to level and envelope mode (a choice of envelope or gate). The Envelope Generator offers a straightforward four-stage envelope which, as I've said, can be applied individually to DCO, VCF and VCA.

The Alpha Juno also has a keyboard-tracking facility, applied to VCF and Envelope Generator on a scale of 0-15. The filter cutoff point increases as you move up the keyboard, and the envelope time becomes shorter. It's possible to set aftertouch sensitivity individually for the DCO, VCF and VCA – controlling vibrato, brightness and volume respectively.

Finally, can a Roland synth be a Roland synth without built-in chorus? Obviously not. The Alpha's is a voice-programmable feature, with a chorus rate adjustable over a scale of 0-127. That's a big improvement on the 106's selection of just two rates, if a little OTT; are you ever actually going to *use* 128 different chorus rate settings? Somehow, I doubt it.

What of the sounds you get on the Alpha? Well, both 64-patch groups offer a healthy selection of voices; you're unlikely to be sorry you're stuck with the preset, ROM-based sounds. The sound 'families' are organised according to the banks, so that bank 1, in both preset and memory groups, consists of brass sounds, bank 2 of strings, bank 3 of piano and guitar imitations, and so on.

Operation ***'Critics will pan the Chord Memory feature for being unprofessional, but why not accept it the same way you would a drum machine or a sequencer?'***

The pianos don't have either the presence or the warmth of well-programmed FM, but there's a nice selection of organ voices, including some stunning pipe organ presets that have much of the fullness and acoustic detail of the real thing being played in a cathedral.

Predictably, the Alpha also comes up with the goods on its string patches. 'Junostrings' are the best of the bunch because, unlike many string synth patches, they're equally at home in both chordal and solo work.

The Alpha woodwind is thin – weedy rather than reedy, and unlikely to make much of an impression in amongst the contents of a ZTT-scale mix. The bass sounds (especially the synth bass ones, which is most of them) are a lot better, punchy and dynamic, and there's also an array of lead synth sounds; the new Juno doesn't have a synth section strong enough to make the solo voices viable Minimoog alternatives, but they're still OK.

Then there are the sound effects. 'Twilite Zone' is eerie enough for you to suddenly not want to be alone at night (even if it's eleven in the morning), and there's also a rather hackneyed line-up of jets helicopters and explosions: somehow they just aren't as much fun now as they were when they had novelty on their side, and they're as musically useless as ever.

Percussion sounds (tuned and untuned) are not the Alpha's forté – the DXs and CZs of this world do a much better job. But there are some wonderfully electronic-sounding timpani which sound like something straight out of the *Doctor Who* theme tune. And you thought you needed a sixties musical telephone exchange to do it...

Needless to say, *all* the Alpha's factory sounds,

even the mediocre ones, benefit from being played from a touch-sensitive keyboard, what with those aftertouch facilities an' all.

And unique to the Alpha among synths in this price range (and a bit higher, too) is a facility for allocating different functions to two of the instrument's three pedals. The pedal switch can control any one of program step-through, portamento on/off and chord memory on/off functions, while the continuous pedal can be set to control volume (swell), dynamics or aftertouch. The aftertouch-on-a-pedal option works surprisingly well; so well, in fact, that I found myself wishing it was more widely adopted on synths that don't have a touch-sensitive keyboard.

Talk of performance controls brings us nicely on to an offbeat feature of the Alpha, namely its Chord Memory. This isn't a chord sequencer, but simply a means of playing a chord from a single pitch. The facility only works if you play a single note on the keyboard (so you can play 'monophonically', if you see what I mean) but it also assumes single-trigger operation, so you can achieve legato chordal effects quite easily. The system works by accepting any notes from the Alpha's keyboard until all notes have been released, so as long as you hold down at least one note, you can take all the time in the world constructing the chord of your dreams, up to a maximum of six notes. Unfortunately, once you've switched the Chord Memory feature on, the keyboard becomes dedicated to it and thus can't be used for anything else at the same time, so this is *not* the road to easy chordal accompaniment unless you've got another synth to hand.

Still, it is an easy way of obtaining effects your playing ability might not otherwise enable you to attain. And the chord effect can be triggered by incoming single notes from MIDI (complete with touch response if the source keyboard is generating it), and transmitted over MIDI Out from the Alpha's keyboard, so you can layer each of the chord's notes, and load auto-chords into a MIDI sequencer.Some critics will doubtless pan the Chord Memory as an unprofessional feature on an otherwise professional instrument, an easy way out that has no right to be where it is, but I'm not so sure. The Alpha is cheap enough to be snapped up by a lot of keyboard newcomers for whom any helping hand in the direction of musical prowess has to be a blessing. So why not accept the Chord Memory as a useful aid to modern music-making the same way you would a sequencer or a drum machine, and forget the Playalongamax home-organ connotations?

Sounds ***'The Alpha has all the sonic strengths and weaknesses of previous Junos, though it does sound better than its predecessor, the 106.'***

More good news comes in the form of the new Juno's MIDI setup, which is at least as good as the one on its bigger brother, the JX8P. It follows the earlier machine in providing a decent set of data filtering controls for individual users to make the most of as they see fit, unlike the newer DXs, which tend to lump everything into two groups. With the Alpha, you can filter out pitchbend, modulation, volume pedal, aftertouch, sustain (hold), program change, portamento and system exclusive information, all individually of each other. And with the obvious exception of aftertouch, these filters work for both transmission and reception of MIDI data.

As well as the obvious MIDI channel selection of 1-16 for transmission and reception over MIDI, the Alpha lets you override individual channel reception by setting Omni on. This means the synth transmits on the set channel but receives on all channels, which is a sort of halfway house to having separate transmit/receive channels. These parameters are storable during power-down (though you have to write them into the backup memory first), but are not programmable for each patch.

Of more potential significance is the fact that the Alpha is the first synth to make use of handshaking communication for patch data transmission/reception over MIDI. 'Handshaking' is the term used to describe what happens when two ends of a communications link (in this instance, two Alphas or an Alpha and a computer running patch-dump software) pass messages to and fro in order to tell one another when to transmit, and when data has been successfully received. Thus the Alpha can tell a receiving unit that it wants to send patch data, can respond to a request for such data, can send an acknowledgement of successful or unsuccessful reception, and can even send a rejection message for real-time discontinuation of transmission or reception. These features are all part of a new protocol agreed by the MMA (MIDI Manufacturers' Association) for transmission and reception of sample data, and so far implemented only on the Prophet 2000 sampler. But this form of communication will probably become a standard on synths as well, so full marks to Roland for putting it on such a low-cost instrument.

Aside from storage over MIDI, there's the inevitable cassette storage but, sadly, no cartridge option. So if no suitable software becomes available, it looks like it's Back To Tape for Alpha Juno owners wanting to store more than 64 of their own sounds. Ah, well.

So, we've discovered that the Alpha Juno 1 is a useful addition to the polysynth market's lower end. As a source of typical 'analogue' synth sounds, it goes down well next to the digital crispness of the cheap DXs and CZs. Only trouble is, there isn't a touch-sensitive keyboard between them. With the Alpha responsive to attack velocity *and* aftertouch over MIDI, it's obviously intended to shine as second fiddle to a touch-sensitive synth – as became apparent when I slaved it to an Oberheim Matrix 6 (see review elsewhere this issue).

The Alpha has all the traditional sonic strengths and weaknesses of Roland analogue polys – though subjectively, it does sound better than the machine it replaces, the Juno 106. The six-voice limitation is still a worry, and no matter from which viewpoint I view the synth's sonic capabilities, I find myself wishing the Alpha's designers had come up with a sound-generation system that was just a bit more *inspiring* than the one the company have been using for the last four years. The Alpha's factory sounds are of a high overall standard, but most of them have been heard before, and not just on machines in higher price brackets.

But Roland have introduced a number of worthwhile refinements such as the backlit LCD, assignable performance controllers, and a flexible MIDI implementation. There's enough on it, and in it, to make the Alpha attractive to the first-time buyer, yet it's really at its best as a second synth. It should do well. ■

DATAFILE

Roland Alpha Juno 1 Polysynth

Keyboard *49-note C-to-C, non-touch-sensitive*
Sound source *DCO, HPF, VCF, VCA and envelope generator*
Voicing *Six-note polyphonic, monotimbral; Chord Memory facility*
Memory *64 ROM and 64 RAM voices onboard, each divided into eight banks of eight voices*
Display *16-character backlit LCD*
Interfacing *Stereo & mono jack audio outs; headphones jack; Hold pedal jack; switch pedal & continuous pedal jacks; MIDI In, Out & Thru; tape load/save jacks*
Dimensions *802(W)×240(D)×79(H)mm*
Weight *5.4kg (11lb 14oz)*
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Are 'exciters' hype?. For years there's been a mystery about what they do, in fact, if they do anything at all.

The fact remains, that just a few years ago, many recording artists were paying over £20 a minute for the privilege of using a version of the effect on their recordings. Now you can buy an 'exciter' outright, for less than 4 minutes worth.

What is the effect?

The very first impression of sound processed by an 'exciter', is that the signal sounds brighter. At this point, cynics have often claimed that the effect is just a hyped up tone control. Not so.

The added brilliance is not due to 'hotting up the highs'. Treble controls only boost what is already present, and add nothing. What happens in fact, is that a circuit within the 'exciter' generates harmonics from the original signal. At this point 'psychoacoustics', the way the ear interprets sound, come in. In the same way that a saxophone sounds 'richer' than a flute because of its many overtones, adding synthesised, musical harmonics, to the original signal enhances and adds to its natural presence.

This is the basic technique that has been clouded by an effective cloak of commercial mystery. To the extent that patent protection has been granted in several countries for one manufacturer.

Now the Accessit Exciter offers this unique, enhancing effect, at a price within reach of every recordist.

How it works

The signal is split into two paths. One feeds the output directly. The other passes through the harmonics generator, and is then added back to the main signal at a lower level. Unlike the result of using tone control, there is virtually no increase in signal level as the added signal is out of phase, low level, high frequency. However, what you hear is a much brighter, punchier, enhanced sound - which cannot be achieved with any other processor.

Operation

Either microphone (or instruments directly also) or line level signal may be applied to the appropriate input jack. Connection may be directly in line with a signal, patched at an insert or connected to the effects send/return loop of a mixer.

Front panel control matches the input level to the circuits. The second, drive control sets the proper input level to the harmonic generating circuitry. The red LED should flash to show the correct drive level.

Finally, the mix control sets a balance between the direct signal only and the effect.

You can add a minimal amount to subtley brighten a flat sound, or turn to maximum for a hard, raunchy effect.

What it achieves.

Words cannot explain adequately what the effect of the 'exciter' is. However, careful and subtle use achieves dramatic improvement in the overall presence and clarity of any signal.

Multitrack recordings, (particularly ping-ponged tracks) achieve a new transparency and fullness. In fact, the duller your present demos are, the more effective the 'exciter' becomes.

Dubbed tape copies often sound better than the original.

Voices for recording or PA become more distinct, achieve a much greater presence, standing out clearly in any mix. (Politicians use 'exciters' to make their speeches sound better!)

Loudness is increased without changing actual equalisation or gain. The Accessit Exciter works equally well in any PA or disco application. Sound becomes live and penetrating with less risk of feedback.

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In fact, the more you use the effect, the more indispensible it gets.

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Of course this could all be hype. Which is why Accessit have chosen Turnkey to endorse and launch the product with a double offer.

In the first place we invite you to check out the Accessit Exciter for yourself. Test it for a period of two weeks within your recording or PA system. Check it out on solo tracks and instruments and final mixes. Compare it to any other 'exciter'. If after 14 days you are not satisfied that the Accessit Exciter does all we say, return it to us for a prompt and courteous refund.

Secondly, we want you to act quickly, so here's an incentive. As with all Accessit units, the Exciter requires powering from a 20VDC source. Normally the retail is £8.82, but is available free with orders placed before 1st January 1986.

To order your Accessit Exciter, send £79.99 plus £2.00 P&P to the address below. Or call 01-202 4366 and pay by any major credit card. Or call in to the Turnkey Shop if you simply cannot wait.

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The TLX3 GI is rated at 75 watts, employing separate high and low range drivers.

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The first batch

Having auditioned one of the first samples in Britain, we bought up the entire first shipment. We believe that this speaker will bring JBL within reach of home recordists, just as the Stratford achieved for Tannoy.

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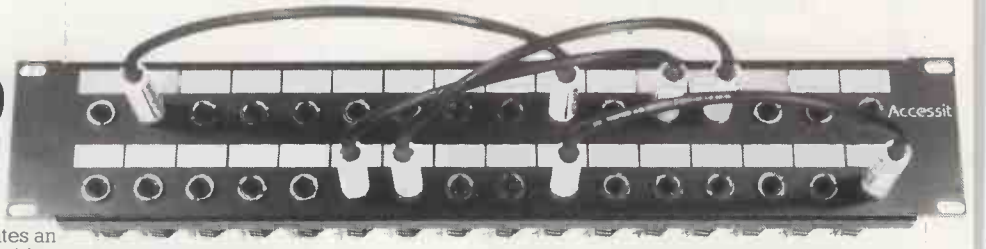

Catchbay

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Pairs are normalised, tip connections are shorted via switching contacts and printed circuit wiring. Links stay made, until you push a jack plug into the front socket.

Plugging in a cord, you bypass, relocate or substitute any component in your system, connect effects into the circuit or take a sniff to other equipment.

Easily expanded

When you add more equipment or upgrade to more tracks, the whole system is easily reconfigured or supplemented at any stage.

It is simply a question of replugging and relabelling. There's no need for messy soldering in the midst of a jungle of cables.

Use could not be clearer. The system lets you spend your time engineering sound instead of playing technician.

The Stinger

The Whirlwind patch cords are called 'Ultrasnakes', they're one foot long. Which means, that at best, they will stretch half way across Modpatch. The good news is, that we supply 6 not 4 'Ultrasnakes' if you order now. Which means you can use a pair to 'hop' across the panel.

However you look at it, whether you patch cleverly or hack them to pieces for the valuable plugs, at £79.35, you should not miss this chance to tidy up your system.

Now you can get all of the very latest product updates at the Turnkey Shop by calling 01-637 0700. You simply wont believe your ears. The Turnkey Shop, 14 Percy Street, LONDON W1P 9FD. Nearest Underground station, Tottenham Court Road. Telephone 01-202 4366

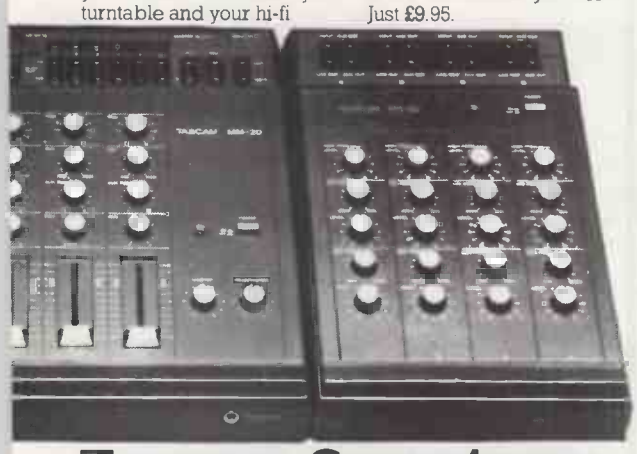
Matchmate

The ultimate, classic overdub device.

Remember sound on sound? The good old days before multitrack when you would record a track on one recorder and then play along with it onto another?. Well we've come up with a device that pre-dates even that!

Matchmate is an ingenious, passive device. Quite simply you connect it between your turntable and your hi-fi amplifier's disc input socket. You then plug one or two instruments into the front panel jacks. Set the front panel balance (between instrument and hi-fi) and play along with your favourite record. Simple as that. No battery, nothing goes wrong.

We found them in the back of the warehouse. Just a few. Just £9.95.



Tascam Sweetener

Take advantage of over-production

A few years back, Tascam came up with a new concept, the 20 mixer series. It was a building block system of basic mixer, extender, equalisers and meter bridge. You bought just as much or as little as you needed.

Successful as it was, the problem with building blocks is that at the end of the product life, you inevitably end up with a stack of one kind of block. In this case, it happened to be the equaliser.

When the clearance stock was offered to us, we saw that there were dozens of uses for this versatile add-on unit other than within the 20 mixer system. Particularly at the ridiculously low price we could offer them at. We bought the lot.

The PE20

It's an extremely useful mains powered equaliser. Four independant channels. Each with doubled up input and output phonos so you can 'tap' into signals or split the feed easily. Each equaliser has a shelving treble control and sweep mid and bass.

Connect in line with the signal, and trim the low, mid and high bands, one at a time. Apply extreme boost or cut and listen to the sound. As you sweep the mid and bass tuning control, you will quickly recognise the exact spot frequency at which the sound needs sweetening. It's uncanny, the way the brain automatically recognises the frequency to stop at. You end up with controlled, tight sound. On a single input or processing an already mixed sound, you have the chance to lift out music fundamentals and harmonics, or to separate out the elements of the mix.

Everything Sweetener.

First and foremost you would think of using it as extra tone control for a mixer or a portastudio. But the price is such that you can afford to plug in and forget, in circuits you would never normally consider sweetening.

- Echo send or return control lets you tune up a 'not so hot' reverb unit or to create special effects. Four channels in one box mean you work in stereo, coming and going.
- Or in your foldback feed. Tune up the sound to the headphones you use - so the musicians hear the sync track more clearly.
- Tune up your monitors or indeed, use the PE20 in preference to a graphic to tune out feedback and equalise a PA system.
- Many other effects such as noise gates, compressors etc have a 'sidechain' patch, usually intended for an equaliser. For ecample, putting treble lift in the sidechain of a compressor makes it more sensitive to high frequencies - you start to simulate a de-esser, helping knock out sibilance.
- Leave it connected as a rhythm box sweetener. Take the individual outputs and process them to arrive at your own distinctive sound.
- Or create new effects.

For example, feed a noise gate with treble boosted signal and feed it's trigger with bass boost. Play guitar and hear what happens!

The PE20 at discount is an opportunity to sweeten every signal path in your system. On sale from the Turnkey Shop only while our stocks last - at well under half the original price, just £49.99. Dont delay.

Studio One

Mixer, multitrack and mixdown package.

There's no better choice than Tascam's Porta-One to get started in multitrack.

If you're serious, you will also want a stereo mixdown recorder to complete your studio setup.

Turnkey has made an exclusive 'bulk buy' from the UK distributor. We're offering Porta-One plus TEAC's outstanding V340 stereo cassette deck - for less than you expect to pay for the portastudio alone.

The 'V' must surely stand for value. Dolby B, metal/chrome tape, LED meters and slide level control.

Porta-One offers dbx four channel recording with full mixer featuring bass treble and pan on each channel.

Putting the two together (leads included) you have a working system that only needs a mike and cans to get you mastering your own demos. There's a host of recommended accessories too, at London's Tascam centre, the Turnkey Shop.

Check out Studio One at the Turnkey Shop now or reserve your package by calling us on 01-202 4366.

At just £429 inclusive, this has to be the studio package deal of the year.

This ready-to-run offer is strictly limited by stocks, so dont wait, act now.

Palm Readings

Take the guesswork out of analysing sound.

Perfect sound could lie in the palm of your hand with the new, affordable Audiosource RTA One analyser. Whether setting up for recording or PA, it is an electronic and acoustic problem solver. You quickly set up an auditorium, tune and equalise equipment and speakers, and produce clear, unmuddied sound.

Better than your ears

You can attempt to use your ears to tune your system. The problem is, personal taste creeps into the result. It's a subjective more than precise setting. Accurate, real time analysis is by far the quickest, easiest and most professional way yo set up a sound system.

The theory

Flat response is equal energy across the audio spectrum. This means that all of the sound reaching the listener through the system keeps the same relative balance as when it entered through the microphone, DI box or line input. When sound pressure is not equal across the the entire spectrum, and when a signal is louder at one frequency than at others, you wont get true response so feedback or 'howl round' can occur. These louder signals or frequency bumps can be caused by a variety of reasons such as room acoustics or system speaker shortcomings. If these are not compensated with your graphic, you wont achieve optimum results.

A real time analyser shows where these variations occur and let you accurately set the graphics you have invested in. The result will be a more natural, less feedback prone, stable system.

How it works

Audiosource RTA One is a hand held analyser with a built in microphone. A level control caters for a wide range of sound intensities. Ten filters analyse the sound into octave spaced bands, and the resulting signals are diplayed as LED columns. There's an on screen range of 20dB, in 2.5dB steps.

You operate in conjunction with a pink noise source, which produces an equal energy display on the analyser when all system settings are correct.

Four steps to setup

1. Plug the noise source into your console.
2. Raise volume to medium high sound level.
3. Set the RTA One to give a reading around mid range on the display.
4. Adjust the graphics until the RTA One analyser displays a flat setting.

A complete system

The RTA One Analyser comes in a vinyl case, with generator, mains adaptor and instructions. Both units use readily available batteries.

Live or recording, you deserve to be heard without acoustic or electronic distortion. Now see how good you are are with the Audiosource realtime analyser. £129.

Call 01-637 0700 for latest Turnkey news you wont believe your ears!

You are welcome to visit the Turnkey Shop any weekday, from 9:30 till 5:30, till 4:30 Saturdays.

Our expert sales staff are musicians too, and will be pleased to advise you on the creative as well as technical aspects of recording.

You will discover the widest range of the latest in recording products, and all the help and friendly advice you need. Visit Britain's foremost showcase of Pro-Audio soon!

the turnkey shop

The Turnkey Shop, 14 Percy Street, LONDON W1P 9FD. Nea Road.
Instant Finance of up to £1000 is available to personal callers

FIVE FOR EIGHTY-FIVE

As another year drew to a close, the people responsible for bringing E&MM to you every month let their hair down at a particularly raucous Christmas party. They were then asked to list their five most important happenings of 1985. This is what they came up with.

Dan Goldstein *Editor*

1 Disappointment of the Year

Twelve months ago, every issue of E&MM was produced by two people with little or no assistance from anyone else, least of all the freelance writers, the typesetters, the advertising people, the art people, or the Publisher. And life was hard. Not long afterwards, said Publisher gave us permission to recruit two new staff members to help ease the burden. I put a small mention halfway through *Comment* one month, and after sifting carefully (well, we thought so) through the hundreds of applications, we came up with that well-known reviewing double act, Goodyer and Trask. They've now been working here for over six months, but my life is no easier than it was before they started.

2 Success of the Year

This accolade must go to August's British Music Fair. Thousands of musicians poured into Olympia 2 to get their hands on the new instruments they thought would make them famous. And in doing so, they taught this country's music industry a lesson: no musicians, no industry. For years, we'd struggled under the weight of trade-only, no-riff-raff exhibitions that had about as much excitement as Queen's Park Rangers playing for a draw. Now we've got a splendid public event that looks set to run and run, for the benefit of almost everybody involved in playing their own music. The 1986 British Music Fair will be at the same place, with punters allowed in on August 1, 2 and 3. Make sure you're not in Ibiza.

3 Acquisition of the Year

Sometime around February, a BBC Micro arrived on my desk with a wordprocessor chip inside it. Within a week, it had transformed my working life. Suddenly, there was no more smudging over my mistakes with Tipp-Ex, no more circling other people's botch-ups in red ink, no more tearing up pieces of paper and sticking them back together again in an effort to get everything in the right order. I shall never look at another typewriter again. Mind you, the advent of the Beeb was almost eclipsed by the appearance of a much more mundane piece of gear: a record player. I'd long since sold my last turntable in the belief that my own music was far more important than anybody else's. But this year I decided the reverse was probably true, so I sold my drum machine and bought a hi-fi off a friend. With its help, I have been able to listen to such black plastic wonders as Sting's 'The Dream of the Blue Turtles'; Princess' 'Say I'm Your Number One', a magnificent two-fingers to the neighbours if ever there was one; the soundtrack to 'Birdy' which Peter Gabriel made such a fine job of remixing from previous recordings, but which director Alan Parker ruined in the transfer to celluloid; and 'Do They Know It's Christmas?', a musical disaster but a welcome publicity boost for charity of all kinds, and in its Live Aid incarnation, a triumph for modern technology, too.

4 Cover of the Year

Few Editors get to be where they are without realising the importance of a magazine's cover. Luckily, E&MM has had some splendid front pages in 1985, the best of which must be December's oil-painting of Brian Eno by Stuart Catterson. Stu takes a lot of stick around here for drawing straight lines crooked, pasting up photographs the wrong way round, and generally making a cock-up of the most elementary tasks. But when it came to painting a portrait (*sans* model) of one of contemporary music's most seminal figures, he was the only man for the job. Other notable covers have featured Les Arnett's extraordinary computer music graphics (September) and a couple of frames from the lens of Features Photographer Matthew Vosburgh. His two most memorable '85 achievements were getting Tears For Fears (January) to stand in front of the camera surrounded by equipment they'd steadfastly refused to be photographed surrounded by, and snapping the most evocative portrait of Keith Emerson (April), country cottage, Yamaha GX1 and all, that I've ever seen published anywhere. Both those issues sold out within days, which says as much for Vosburgh's compositional ability as it does for the infamy of the artists themselves.

5 Disappointment of the Year (2)

What a shame, in a year when so much went right, that I consistently ran out of vital personal necessities at the wrong time and in the wrong place. In September I took a holiday for the first time in a long time, but it was in one of those countries that treats tourists as second-class citizens, unworthy of a ration of loo paper. Imagine my dismay, then, when I discovered that the pages of 'Electronic Soundmaker', 'Music UK', and 'What Keyboard?' were not perforated, and that even if you tried to use them regardless, the ink came off all too easily.

The Famous *as interviewed by E&MM*

1 'Part of the creation is using materials you *think* you understand, to create a result you know you don't understand.'
Brian Eno on Art (December)

2 'I don't think being famous makes you important. I don't think it makes your opinions important and I don't think it necessarily means you know what you're talking about.'
Gary Numan on Fame (December)

3 'It was really weird to see all these ELP clones: they treat all those odd noises as gospel. They don't have ribbon controllers but they waggle about on Poly 800 joysticks making noises they obviously regard as music. I certainly never did.'
Keith Emerson on Japan (April)

4 'I do have people asking me "How do you feel about stealing African music?" But I didn't steal it. It's still there, for Christ's sake!'
Stewart Copeland on Trial (August)

5 'Patrick, have we got anything in common musically?'
'No, not really.'
Bill Bruford and Patrick Moraz on each other (July)

Trish McGrath
Production Editor

The scene: Editor strolls in late after a heavy session the night before, addresses the Production Ed who's been hard at work since 9am (*who writes this crap? – Publisher*).

Ed: "Trish, give me a list of your favourite things from 1985"

"You mean like Michael Brandon?"

"No, I mean things, moments, instruments... You know the sort, impressive front panels, great features, knobs to twiddle..."

"You *do* mean Michael Brandon then?"

"*No*, a list of your five favourite musical instruments from 1985..."

"Oh, you mean the things that have stirred up deep longing and excitement and which I discovered during 1985 – but leaving out Michael Brandon. Oh, OK!"

Paul Wiffen *Consultant*

1 Prophet 2000

Somebody has already complained to E&MM that I had no right to review Sequential's sampling keyboard on the grounds that I'd been demonstrating it. Well, I won't print my reply as its content may well offend younger readers, but I will say this much: working day to day with a keyboard is the *only* way to get to know it properly, and, without wishing to blow my own trumpet, I've probably got to know the new Prophet better than anyone in the UK since it was released three months ago. It wasn't the first past the post with low-cost sampling, but I can't help feeling it'll still be around when much of the current (and future) competition is history. It may not yet have the huge sound library that Wiffen's '84 favourite, the Emulator II, has amassed for itself. It may not even have the factory sounds to compare with the Mirage's splendidly set up strings and rock guitar disks. But for sheer sample quality, you have to spend an awful lot of money (how does a hundred grand for a Synclavier sound?) to better the Prophet 2000.

2 Emulator SP12

The only instrument to emerge in the last 12 months that stops me reciting 'Drumtraks' when somebody asks me what the best digital drum machine is. Unlike the Linn 9000, which has proved unreliable and needs numerous expensive updates to match the SP12's sampling capability, you get everything you need to sample, in both software and hardware, when you buy the machine. The tuning (in standard musical intervals) and dynamic capabilities are enhanced by the Emulator's various programming modes, which make different levels and pitches of the same sound available on different buttons at the same time. And at last, a US company has seen the light and made LCD-aided step-time programming available as standard. My only quibble is that you can still only buy the SP12 from one outlet in central London. Maybe that will change in 1986.

3 Yamaha TX816

With its velocity-sensitivity and superficially accurate sounds, the DX7 seduced scores of purist synthesists (*eh? – Ed*) into submission. Only when they got the machine home did they notice its inability to product fat, traditional synth sounds, its noisy output, and its complete user-hostility in all areas of programming. But the TX816 is a different story. With eight DX7s and a bit of clever detuning, you can get a reasonably warm sound in addition to all the tinkly bits FM does so well, and the 816 makes this possible in a convenient, economical format, playable from either a decent keyboard or a MIDI sequencer. It stores 256 FM sounds and allows 128-note polyphony; it is the definitive statement of the power of FM synthesis. But this musical cul-de-sac should now be left alone.

4 Casio CZ101

Worth the years of putting up with horrible personal keyboards, digital watches, and shop tills. It was clear that as soon as Casio set their sights on the professional keyboard market, they'd make everyone else's prices look very silly – and that's precisely what they've done. Now everyone's scurrying around trying to do something about Casio's stranglehold over the low-end synth market, but none of them can compete with the clarity and programmability of the CZ's Phase Distortion synthesis. Coupled with the SZ1 sequencer, the 101 makes multi-timbral MIDI recording available for about £500 – thanks to the inspired implementation of Mono mode on the synth.

5 Roland SBX80

Roland are to be much praised for taking the SMPTE standard out of the residential multitrack studio and into the homes of average musicians and recording fans. In fact, Roland's design team have done even better by fitting MIDI song pointers to the TR707 drum machine and MSQ700 sequencer. So with the SBX80 and SMPTE, you can record without tape because all the machines will know exactly when to start and stop. For me, it's been a godsend.

1 Yamaha DX5

The synth that had Music Maker staff playing duets, for the simple reason that we had to quicken up the queues that were forming to play it... With the sound capability of two DX7s, and more than a six-octave keyboard (great for those Oscar Peterson impersonations), I suppose it wasn't surprising. When Securicor came to retrieve it, they needed a crowbar to prise my fingers away.

2 Syntech Studio I Software

Another excellent sequencing package for the Commodore 64 that keeps the flag flying for eight-bit micros. Friendly and colourful, it's a pity it isn't as easy to lay your hands on as it is to use. Here's hoping that this range of (apparently excellent) Stateside software packages will begin to invade the UK in '86.

3 Yamaha RX Editor

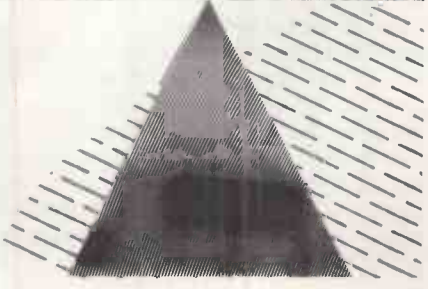
Is this the future of drum machine programming? I for one wouldn't complain if it was. Provided drum machine manufacturers fit MIDI to their instruments as well as Yamaha have to the RX11, programs like the RX Editor should pave the way for better drum patterns, more easily programmed, and more widely used. And there can't be many people who wouldn't see that as a welcome state of affairs.

4 Casio CZ3000

Well, it would have been. But the machine was stolen before I had a chance to plug it in.

5 McGrath CAM1

This astonishing new device (mine is the only one in existence, I'm afraid) enables you to push a Company Director into the river while he acts as helmsman on the Music Maker raft. I've only used it once and there was no direct retribution, but he did get his own back: he gave Tim Goodyer a job.



Paul White
Technical Editor

As is the way with most contemporary studio things, I find myself drifting towards 19" rack-mounting gear when trying to think of 1985's most noteworthy new machines. What's more, two of these are especially close to my heart, as I had a hand in designing them. Which two are they? Ah, well...

1 Vesta Kozo DIG411
It isn't going to win any prizes for design originality or indeed styling, but it does offer just about every facility you could possibly want from a non-programmable digital delay line, at a retail price of only £213. Features include an excellent 16kHz bandwidth at all delay times, and strikingly low-noise operation.

2 Yamaha REV7
Apart from being a superb reverb unit, the REV7 doubles as a delay line and even includes a spring simulation for those who want to retain a bit of low-tech credibility. Every home studio should have one.

3 The Scintillator
At last, a British psycho-acoustic enhancer that really works. Ought to carry a warning against addiction, though, as I started suffering withdrawal symptoms simply on hearing the manufacturers wanted the review sample back. In the end, I just refused to give it back.

4 Zlatna Panega ACS100
Probably the most significant product so far this millenium. This amazing Anticipation Control Sampler was

spotted by E&MM sleuths just under a year ago, and the memory of its implications haunts us still. Really puts Bulgaria on the map as far as music technology is concerned. Pity about their wine, though.

5 Sony PCM501
The people who brought you John Cleese TV ads and the Walkman have now produced their 200,000,000th little black box. This one lets you record stereo sound onto a domestic video recorder in digital form, and the sound quality is all you'd expect. My next buy.

Tim Goodyer *Music Editor*

1 The Arrival of 'Affordable' Sampling
On the equipment front, the most significant event of the year must be the advent of cheaper sampling devices. No money has never meant no talent, but financial considerations are one of modern music's most powerful, least democratic influences – so it's refreshing to see an important musical technique come within the reach of the masses. Those lucky or wealthy enough to have already availed themselves of Fairlights, Synclaviers and their ilk can no longer hide behind the mystique of the sampling process when they should be extracting the best of its musical potential. The heat is on.

2 The Year's Ten Most Enjoyable LPs (alphabetically):
Artists United Against Apartheid – 'Sun City'
Kate Bush – 'Hounds of Love'
Man Jumping – 'Jumpcut'
Hugh Masakela – 'Waiting for the Rain'
Propaganda – 'A Secret Wish'
Simply Red – 'Picture Book'
Sly and Robbie – 'Language Barrier'
Sting – 'The Dream of the Blue Turtles'
Bobby Womack – 'So Many Rivers'
Yello – 'Stella'

And I'm not going to tell you why...

3 The Spread of Compatibility
The progress of MIDI and its implications have been widely discussed, but my feeling is they're still relatively unexplored. There's more to all this than meets the eye, and there are peripheral benefits that *won't* make front-page news but will help a lot of people all the same. To date, my favourite is control over older non-MIDI synths via MIDI. The case in point? A DX7, a MiniMoog and a Jellinghaus CGX Interface. A few years ago, nobody could have imagined the sounds of a MiniMoog under the control of a five-octave, velocity-sensitive keyboard. Now it's a reality. All those effects people dabbled with using the 'left-hand and filter cutoff frequency' technique are suddenly playable and usable.

4 The Artist of '85
Not an easy one, this, but my money goes on Sting. Long recognised as a *talent*, the Police frontman and sometime actor has successfully avoided most of the pitfalls facing him and produced an album of utterly irresistible music that treats the past with the contempt it deserves, and disregards musical barriers without sounding in the least bit contrived. Sting assembled his musicians as meticulously as he crafted his songs, and together, they made 'The Dream of the Blue Turtles' a record full of passion, brimming with experimentation, and overflowing with a sense of great potential admirably fulfilled. In best Peter Gabriel style (and without any of that silly make-up), Sting has acquitted himself splendidly.

5 The Magazine and Me
Less than 12 months ago I called myself a musician. For the uninitiated, I'll explain a little of what that entails. Let's begin with an awful lot of late nights; then there's spending large amounts of time and money fruitlessly walking the streets of London from record company to record company, and wallowing hopelessly in recording studios. Not to mention the gigging, the women, and the drinking... I was happy. But the E&MM lifestyle is an experience in its own right. Let me explain. First of all there are an awful lot of late nights; then there's spending large amounts of time and money fruitlessly walking the streets of London from record company to record company, and wallowing hopelessly in recording studios. Not to mention the gigging (sorry, ligging), the curries, the women, the drinking... I am still happy.

The Not So Famous
as encountered by E&MM

1 'Well, Dan, how's everything on 'Electronics & Vogue Maker' then?'
Tony Horkins ('International Musician') to Dan Goldstein

2 'I'm sorry but Alan Townshend's still in the pub; can I take a message?'
Gail Nunney (Roland receptionist) to countless E&MM staff

3 'Hey, guys! I've just sold another 14 early right-hand red pages, will there be space for all of them?'
Tony Halliday (E&MM ad manager) to the editorial team

4 'It do gall me, it do piss me orf. This is the second time we've been burgled and we haven't caught the first lot yet.'
Terry Day (E&MM publisher) to the 'Cambridge Evening News'

5 'It must be said, mustn't it, Tim, that your hair really is remarkably long.'
Mark Ellen ('Whistle Test') to Tim Goodyer

David Ellis *Consultant*

Editor's note: this has been a hard year for the good Doctor, the magazine's longest-serving contributor. In between working for medical exams, cutting people's livers up, revising for medical exams, writing books, and taking medical exams, he's had to find time to carry on reviewing the odd piece of computer-ish gear for E&MM. He recently collapsed of nervous exhaustion after a particularly strenuous review, but he did arise from his sick bed long enough to dictate his Top Five to us over the phone. The first three are good, the last two not so welcome.

1 Commodore Amiga
For proving that great graphics and great sound beat the Mac-basher's hype any day.

2 Sound Designer EII Software
Great graphics *equals* great sound, if you can afford it.

3 Southworth Total Music
The King Kong of MIDI sequencers, beating its heart out at the top of the software pile. (We hope to be reviewing one soon.)

4 The Sampling Bandwagon
For burying good taste at n-n-n-nineteen to the dozen.

5 Sinclair C5
For the man who invented the solid state wheel, but ended up with a turkey under a Number 21 bus.

Simon Trask *Reviews Editor*

1 Equipment
New instruments I have known and loved: Yamaha DX5, Oberheim Matrix 12, Roland JX8P, UMI 2B sequencing system. I'd like to make it clear that I can afford none of these things, and consequently will revel in that peculiar mixture of pain and pleasure otherwise known as unrequited love. However, one of 1985's most encouraging developments has been the advent of budget instruments that haven't sacrificed professional quality in the quest for a lower price tag. Among these are the Casio CZ synths, the cheaper DXs, the RX21 drum machine, the SZ1 sequencer, and the Roland Alpha Juno 1. Maybe there's hope for me yet.

2 Technology
It just refuses to go away. MIDI – Musician's Immune Deficiency Interrupt. There are still a lot of misconceptions about MIDI, and E&MM will be playing its part in demythologising the subject during the course of 1986. Understanding technology is the key to making effective use of it; if you aren't overwhelmed by something, you're more likely to be able to play an active role in its development. The relationship between music and technology is an uneasy one, full of ambivalence on both sides, as so many of our readers' letters show. And let us not forget one thing: having a technology fetish isn't a particularly healthy state to be in. True, fascination is a valuable catalyst to discovery, but it shouldn't be an end in itself. Still, this *is* a tremendously exciting area, and the opportunity to work in an environment which involves music and technology (with the latter in the service of the former, I hope) has to be one of my favourite 'things' of the year.

3 Music
The old Dansette has been tearing great chunks out of the following records during the last year, and if you want to make an old man happy, then I suggest you all chip together and buy me some replacement discs (or a new record player).

Weather Report – 'Sportin' Life'
Man Jumping – 'Jumpcut'
Sade – 'Promise'
Herbie Hancock & Foday Musa Suso – 'Village Life'
Manu Dibango – 'Electric Africa'
Deadline – 'Down by Law'
Ronald Shannon Jackson & The Decoding Society – 'Decode Yourself'
Cosmetic with Jamaaladeen Tacuma – 'So Tranquilizin'
Sly and Robbie – 'Language Barrier'

4 Non-music
Let me tell you about the staff of E&MM. There's an Editor who's so laid back he prefers to work while he's asleep (and sleep while he's at work), a Production Editor who thinks FM stands for Flowerpot Men, a Music Editor who's engaged in a long-standing love affair with the demon booze, and a Reviews Editor who doesn't know one end of a MIDI cable from another (*they're both the same, bozo – Ed*). Really, it's a wonder they manage to produce the world's most authoritative magazine on Everything In The Universe. Mind you, there's always the Ad Manager to keep things going...

5 Non-sense
Being able to list my five favourite things in E&MM. (Well, at least I'm honest.)

YAMAHA

DX100 FM PRICE BREAKTHROUGH £349

DX100 battery operated FM Synth mini keys 129 voice ROM

DX21 – IN STOCK NOW – £699

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

RX21 IN STOCK NOW!

9 Voices – 56 Programmable & 44 Preset Pattern Memory – MIDI Compatible – Cassette Storage. **£249**

REV-7 IN STOCK NOW!

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

£1199

DX5 IN STOCK NOW £2495

YAMAHA

QX1 MEGA SEQUENCER

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

QX7 DIGITAL SEQUENCE RECORDER

Yamaha continues the fabulous X7 range with an Incredibly cheap poly, MIDI sequencer! 2 track, 16 MIDI channel sequencing in real or step time! MIDI in and out! Storage! Editing! Like a multi track but with digital quality!

NEW LOW PRICE £299

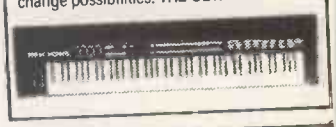
TX7 FM TONE GENERATOR

DX7 half price! Almost! All the functions of the worlds best selling synth in a compact keyboard controlled through MIDI! 6 Operators, 16 note polyphonic 32 memories. LCD display

NEW LOW PRICE £499

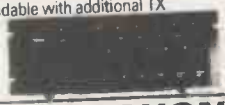
KX88 REMOTE MIDI KEYBOARD

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



TX816/TX812 FM TONE GENERATOR SYSTEM

System of the future now! 8DX7s in a rack creating unbeatable versatility. 32 voices per module individual MIDI channel assign. TX8 12 ideal starter with two modules and rack expandable with additional TX modules!



MT44D 4 TRACK

Yamaha have completely redesigned the popular MT44 system with sharp new looks and many new features, LED Display, 6 input mixer, new patchbay etc.

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FUTURE

YAMAHA

CX5 MUSIC COMPUTER

● Now with new software!! ● RX Editor!! ● Real time recorder!! ● Disc drive!! ● Printer!! ● Play card reader!! ● And much much more!!

Disc Drive £274 **Printer £244** **Playcard £53**

FANTASTIC NEW LOW PRICE ON CX5

LIMITED OFFER WHILE STOCKS LAST

CX5 + YK01 KEYBOARD + 1 PIECE SOFTWARE £299!

CX5 + YK10 KEYBOARD + 1 PIECE SOFTWARE £349!

SOFTWARE

YRM101	ROM - FM Music Composer	£36
YRM102	ROM - FM Voicing Program	£36
YRM103	ROM - DX7 Voicing Program	£36
YRM104	ROM - FM Music Macro	£36
YRM105	ROM - DX9 Voicing Program	£39
YRM301	ROM - 4-track MIDI Recorder DC	£39
YRM302	ROM - RX Editor DC	£39
YRM305	ROM - DX21 Voicing Program DC	£39
YRM501	ROM - FM Music Composer II DC	£39
YRM502	ROM - FM Voicing Program II DC	£39
YRM504	ROM - FM Music Macro II DC	£39
CMW31	ROM - Keyboard Chord Master	£45
CMW32	ROM - Keyboard Chord Progres.	£45
CMW33	ROM - Guitar Chord Master	£45
GAR-01	ROM - Graphic Artist (Mouse Paint)	£49
FVD-01	Cass. - FM Voice Data I - 96 voices	£19
FVD-02	Cass. - FM Voice Data II - 96 voices	£19
RDB-01	Cass. - RX15 Rhythm Data I	£19
RDB-02	Cass. - RX15 Rhythm Data II	£19
RDB-03	Cass. - RX15 Rhythm Data III	£19
UPA-01	Playcard Program Cartridge	£53
CR-01	Playcard Reader	£26
UDC-01	Data Memory Cartridge	£65
CA-01	Cartridge Adaptor	£19

*DC = Disc compatible

YAMAHA

SPECIAL OFFERS

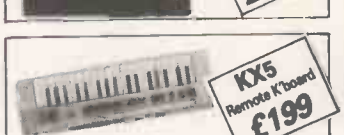
NEW LOW PRICE QX7 £299 TX7 £499

RX11 PCM DRUMS £POA

SE200 GUITAR £115

RX15 PCM DRUMS £399

SG300 GUITAR £659



KX5 Remote K'board £199

SG1300T GUITAR £345

PF10 PIANO £499

SG200 GUITARS £145

R1000 Digital Reverb. £399

SG1000 GUITAR £289

FOSTEX

FOSTEX X15
NEW LOW PRICE! £245

✱ MN15 Compressor/Mixer **£39** ✱
Complete Accssit range in stock.

FOSTEX B16 16 TRACK SYSTEM PACKAGE!!
B16 + SEC 18/8/2

Join the personal multitrack revolution with Future Music 16 track package deals!! The world's most successful 16 track recorder on ½" tape. Call for up to date current deals on the Seck package and 8 other B16 mixer packages!!

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½" recorder

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FOSTEX 250
Multitracker, 4 track cassette recorder

£599

FOSTEX 350 MIXER
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FOSTEX

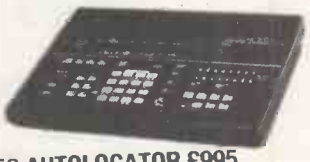
A80 8 TRACK

Look at these incredible new features!!

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

450 MULTITRACK RECORDING MIXER

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



4050 AUTOLOCATOR £995

For use with A80, A20 and B16 models!!! Incredible features!! ● Autoloctor has digital LED display and is totally programmable (minutes, seconds, bars, notes!!) Tempo change in realtime ● SMOTE time code

4030 SYNCHRONISER

● MIDI ● Computer interface synchroniser will lock AVD10 to audio or audio to video! Optional 4035 controller!!

4030 Synchronizer
4035 Controller **£1695**

All new and unbeatable value!

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HOME RECORDING AND PERSONAL MULTITRACK

● TANNOY ● JBL ● QUAD ● ACCESSIT
● DRAWMER ● BEYER ● AKG
● BOSS ● ROLAND

RECORDERS

Fostex Model A80	£1574
Fostex X15	£245
Fostex 250	£720
Fostex AB	£1375
Fostex B16	£4000
Yamaha MT440	£399
Akai MG1212	£4999
Revox B77	£899

MIXERS

Dynamix 16:8:2	£995
RAM RM10	£699
Fostex 3/850	£535
Aces 10:8:2	£399
AHB 16:8:2	£1595
AHB CMC 24	£2750
Fostex 450	£899
Boss BX800	£325
Boss BX600	£125
Boss BX400	£85
Yamaha RM602	£249
Peck 18:8:2	£1493

MONITORS

Tannoy Staffords	£145
Tannoy Oxfords	£225
Yamaha NS10	£199
Yamaha S10X	£69
Yamaha S20X	£110

POWER AMPS

Quad 303	£179
Quad 405	£269
Roland SRA1200	£399
Roland SRA2400	£725
Roland SRA4800	£1450

DIGITAL REVERB

Yamaha R1000	£399
Yamaha Rev 7	£1199
Yamaha Rev 1	£7588
Roland SRV2000	£1375

SPRING REVERB

Gt British Spring	£229
Accessit Stero Rev.	£132
Fostex 3180 Stereo	£340
Boss RX100	£125
Korg GR7	£299

NOISE GATES

Accessit Noise Gate	£52
Drawmer Noise Gate	£335

COMPRESSORS/LIMITERS

Drawmer Compressor Limiter	£395
Fostex 3070 Comp/WM	£249
Yamaha CG2020	£229
Accessit Compressor	£52
Boss Micro Rack Comp/Lim/ Exp/Gate	£115

DIGITAL DELAYS

Roland SDE3000	£795
Roland SDE1000	£395
Roland SDE25000 MIDI	£585
Yamaha D1500 MIDI	£560
Boss DE200	£275
Boss CE300 Chorus	£230
Ibanez HD 1000	£325
Boss Micro Rack DIG Delay	£17

GRAPHIC EQ

Fostex Dual 10 band	£195
Roland SEQ331 31 band	£345
Roland SEQ315 2x15 band	£395
Yamaha Q2031 2x31 band	£399
Yamaha CO1031 31 band	£229
Boss Micro Rack Graphic eq	£115

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Audio Technica
Beyer
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Roland CHU802 Tape sync	£49
Roland SBX80 Sync box	£895
Sync 24 MIDI, SMPTE	

FUTURE MUSIC
SCOOP PURCHASE
FOSTEX A2 STEREO MASTER MACHINE – LIMITED OFFER
£499

FUTURE MUSIC SUPER SALE!

ALL ITEMS EX DEMO OR SECONDHAND

ELECTRIC GUITARS

Gibson 1h Les Paul d/tus s/h	£450 C
Gibson Flying V s/h	£499 C
Yamaha G 3000 New!!	£595 A
Ibanez Musician (Active)	£398 C
New Squire Strats New!!	£215 C
New Squire Vintage Tele New!!	£225 C
Fender Bullets	£149 A
Kramer DMZ-2000	£199 C
Ibanez AS-50 s/h	£150 C
Ibanez AR-100 s/h	£199 C
Squier '82 Precision Bass	£189 PS
Kramer Semi-Fretless Bass	£249 C
Aria SB Special II Bass	£245 C
Washburn Force II	£175 C
Washburn Vulture II Bass	£195 C
Fender Schecter Tele s/h	£249 C
Ladd Custom Electric s/h	£439 C
Ovation Steel Strung Acous	£275 C
Yamaha FG-340 Acous	£125 C
Fender Malibu Acous	£135 C
Fender Squier '52 Precision Bass	£185 PS
Fender El Bio Acous	£235 CP
Washburn Spirit I El Acous	£299 S
Fender Jazz Bass	£295 S
Ibanez 750 Bass	£210 S
Ibanez RB 924 Bass	£249 P
Aria Pro II	£115 PS
Westone TH II	£169 S
Westone Session II	£275 SC
Hondo Formula II	£109 S
Fender USA Strat	£299 S
Aria Pro II Zuma	£115 S
Profile 'Strat'	£119 S
S/H Jedson LP Copy	£79 S
S/H Aria LP Copy	£175 S
Ibanez AM50 Semi	£235 S
Quest Atak 2	£98 NEW S
Westone Concord I	£89 NEW S
Westone Session II	£249 NEW S
Vantage Avenger	£99 NEW S
Fender Strat USA	£249 NEW S
Profile Strat Copy	£99 NEW SP
Hondo Formula I	£89 NEW S
Ibanez RS 135	£125 NEW SP
Cimar Strat Copy	£99
Roland G707 Controller	£399 NEW S
Vintage Squier Telecaster	£89 AS NEW S

OUTBOARD EQUIPMENT

Boss DM-300 Chorus/Delay	£155 C
Fostex Digital Delay Ex.Dem	£130 F
Roland RE-201 Space Echo s/h	£195 C
Roland SDE-2000 Digital Delay +	Offers
Roland K/board + Sampler	£495 C
Yamaha R-1000 Reverb	£439 A
Casio AS-10 Speakers	£98 F
Ashly Compressor New!!	£345 F
Ashly Noise Gate New !!	£295 F
Washburn Soiled Acous	£225 C
Yamaha Montana Acous	£85 C

SEQUENCERS

Roland MSQ-100 Ex.Demo	£349 A
Roland JSQ-60 Ex.Demo	£125 A
Roland CSQ-600 New!	£149 C
Roland CSQ-100 s/h	£75 C
Roland MC-202 s/h	£125 C
Simmons SDS-6 Ex Demo	£999 C
Roland MC-48	£395 A
Oberheim DSX New!!	£599 F
Roland Digital Sequencer PR-800	£149 F

KEYBOARDS

Mirage	£1195 NEW A
Rhodes 88 with amp	Offers C
Hohner Clarinet	Offers C
ARP, OMNI Strings etc	Offers C
Korg Micro Preset	£75 C
Korg MS10	£125 C
Oberheim OBX	£899 C
Crumar Piane	Offers C
SH101	£175
Moog Prodigy, used	£175
Yamaha MX100	£239 S
Yamaha P56	£455 S
Roland JSQ6	£99 S
Casio G6000	£439 S
Oberheim Xpander	£2000 C
Technics Digital Piano	£499
Wurlitzer Piano	£299 P
Hammond Xr + CAB	£799 F
Casio MT800	£149 F
Casio MT45	£85 F
Oscar New	£475 S
Roland RE201	£245 S
MTR 6-2	£199 S

Korg MM-25 Micro Monitor ..... £75 S
Custom Sound Cub reverb 30 ..... £79 S
Simmons SDS 5 withsoft pads ex demo ..... £Offers

Korg Lambda ..... £199 USED S
Technics SK240 ..... £349 USED S
Moog Prodigy ..... £175 USED S
Casio CT6000 ..... £495 NEW SP
Yamaha PF15 ..... £799 S/SOILED S
Yamaha PS55 ..... £450 NEW S
Roland JP6 ..... £950 AS NEW S
Korg MPK130 ..... £299 NEW S

COMPUTER MUSIC

BBC + Opus Drive + EMR Software ex demo	£499 A
Commodore 64 + Disc Drive + Music software	£395 C
Roland MC-48	£395 A
Yamaha CX 5 (Japanese version)	£299 A
Roland DG DXY-100 Plotters	£199 A

DRUM MACHINES

MXR Digital Drums RRP £1200 ex demo	£396 C
Drumtraks New!!	£799 F
Roland TR-909	£750 A
Roland CR-800	£225 C
Roland TR-606	£185 C
Korg DDM-220 Percussion	£175 A
Synconics	£75 A
Drumulator	£499 CP
Korg DDM-110 + DDM 220	£425 A
Yamaha RX-15	£399 A
Korg KPR77	£150 S
Korg KR568	£225 NEW
Korg KPR77	£150 USED
Drumulator	£399 NEW

ELECTRONIC KITS

Simmons SDS-5 New!	£750 C
Simmons SDS-8	£545 A
Simmons SDS-6 Sequence	£999 C
Simmons Cym. Mod	£POA C
Ultimate K2K Kit	£695 A
Ted Digisound Modules single	£98 A
Ted Digisound Modules duo	£125 A
Simmons SDS-5 + Softpad New!	£899 S

AMPS

Badger Minuet	£85 C
Badger Downbeat	£65 C
Badger Keyboard	£85 C
Fender 15" Bass Cab	£149 C
Fender Sidekick 30 lead New!	£149 CSP
Fender Bassman Compact New!	£240 S
Fender Sidekick 30 Bass	£125 CS
Fender Sidekick 50 Bass	£149 CSP
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Ohm Tramp Lead	£85 C
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Ohm SA-125 Slave	£89 S
Fender Bassmen Compact	£265 C
Session 1 x 12 New!	£239 A
Yamaha JX50B Bass	£165 NEW S
Y Amp 60w Bass Combo	£89 USED S
H/H Bass Machine 100 amp + cab	£225 EX DEM S
Roland Spirit 30 Bass	£99 EX DEM S
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Ohm YP-404 PA cabs	£349S/SOILED S
Carlsbro ADR1 echo reverb	£250 NEW S
Wem Songbird 300w PA splr	£245 NEW S
MTR 6:8:2 mixer	£198 NEW SP
Korg MM25 Monitors	£75 EACH S

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MIRAGE INCREDIBLE NEW LOW PRICE £1195

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Roland

AT LAST! FANTASTIC DIGITAL DRUMS FROM ROLAND! £1499

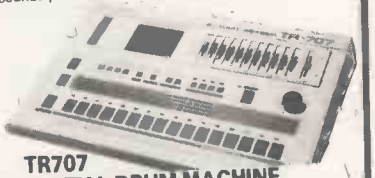
The system consists of the DDR-30 Digital Drums Module and two kinds of drum pads exclusively for the DDR-30 – the PD-10 Bass Drum Pad and PD-20 Snare Drum/Tom Pad. Enter the world of electronic music yet keep your drumming technique nuances – a realistic digital sound source, flexible sound modification, MIDI compatibility and superb playability.

Six drum voices – Bass, Snare and four Toms. Four different PCM digital present sounds provided for each voice. Preset edit over 16 parameters. Up to 8 kinds of modified preset sounds per voice memory store.

PAD-8 OCTOPAD £399

A ROLAND FIRST! TRIGGERS ANY MIDI DRUM MACHINE, SYNTH OR SEQUENCER

Eight touch sensitive pads, each independently assigned to midi note number, can control midi drum machines or synths. Four pad presets in memory plus curve, velocity and gate controls! Six external pads or triggers can also be used.



TR707 DIGITAL DRUM MACHINE

*TR727 DIGITAL PERCUSSION MACHINE

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

*In stock at all branches **BEST DEALS**

ROLAND DRUM MACHINE SPECIALS

DR11 £125 ● CR8000 £325 ● CR5000 £249 ● PC2 £49 ● HC2 £49

Roland

NEW! ALPHA JUNO 1! 6 VOICE POLYSYNTH

£575

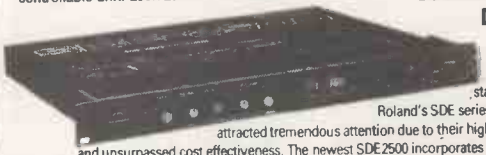
All new cosmetics terrific sounds! Fantastic value! Look at these features: 49 notes, 63 memories, 16 character LCD display
New LSI chip gives complex waveforms! New Dial System! Limited supplies in stock. Call for demo.

ROLAND SRV2000 STEREO DIGITAL REVERB £1199

Incredible Sophistication
Unbelievable Price
MIDI Controllable – Totally Programmable
– 99s Delay! Rolands new SRV2000 Digital Reverb offers an unbeatable new market leader in digital reverberation! With the worlds first MIDI controllable unit. Look at these features and compare the competitors price! 24 memories! Parametric EQ control for room size PRG delay. Gate/Damping, rev time MIDI + 6 integrated display, stereo output of up to 99 seconds!

Many other features! **IN STOCK NOW!**

SDE2500 MIDI-COMPATIBLE DIGITAL DELAY



In recording studios and on stages all over the world, Roland's SDE series of digital delays have attracted tremendous attention due to their high performance, superb features, and unsurpassed cost effectiveness. The newest SDE2500 incorporates the same A/D/A converting system as the renowned SDE3000 – the Digital Compounding PCM System, and can store as many as 64 different kinds of programmable memories which can in turn be recalled using MIDI program change information. The SDE2500 will soon be indispensable in live performance using MIDI instruments and will also satisfy the needs of demanding musicians and engineers in all situations.

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FUTURE

Roland

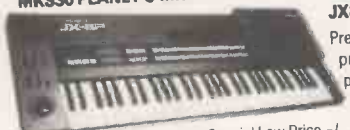
MKB1000/300 MIDI REMOTE KEYBOARDS

Now available at incredible price reductions! And special offers. ie. MKB1000 with free stand and MKS10 Piano module (worth over £1000!) *Only £1199!* Call for many other super deals!!

MKS80 SUPER JUPITER | POA

also available

MKS30 PLANET ● MKS10 PIANO



JX8P TOUCH SENSITIVE SYNTH

Preset programmable, 6 voice poly, 61 keys, 64 preset patches, 32 internal 32 external programmable patches. Edit, touch pad contro 16 digit display, memory cartridge, MIDI. Optional PG800 Programmer.

Super New Special Low Price –
JUNO 106 – £599! while stocks last

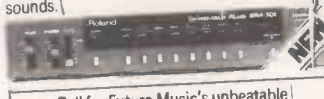
World's best selling analog synth! MIDI – 128 memories! 61 keys. LFO, DCO, HPF, VCF, VCA, ENV and Chorus. 16 MIDI channel select buttons. Connects with any MIDI equipped synth or sequencer. Optional Recorder/Rhythm Composer/Midi Thru Box.

EM-101 SOUND PLUS

Compact, 8-voice polyphonic MIDI sound module specially for use with MIDI-compatibl Piano Plus electronic pianos. EM-101 offers 1 preset sounds – 8 Ensemble and 8 Solo sounds.

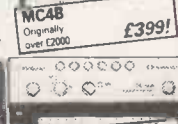
MKS-7 SUPER QUARTET

Consists of 2-voice polyphonic Melody section, a 4-voice polyphonic Chord, a monophonic Bass, and Rhythm. MIDI velocity messages increase or lower sound. Slider control adjusts sensitivity. One hundred preset sounds for Melody section, 100 for Chord, 20 for Bass. 11 PCM digital sounds for Rhythm.



Call for Future Music's unbeatable prices on all Roland Keyboards and MIDI-RACK MODULES!!!

Roland FANTASTIC BARGAINS!



KEYBOARD	
JX8P	POA
JUNO106	POA
SH101 + MGS1	£199
JUNO60	£599
JX3P	£599
JP6	£999
HS60	£795
MKB1000	£798
MKB1000 + MKS10	£1199
MKB300 + MKS30	£1199
EP50	£499
HP100	£575
EP50	£499
AXIS 1	POA
MIDI RACK	
MKS80 Jupiter	POA
MKS30	POA
MKS10	POA
MKS7 Supercrt	POA
SEQUENCERS	
MC4B	£399
MSQ700	£799
MSQ100	£399

CMU800	£99
CMU802	£49
MC202	£175
TB303	£175
	£199
DRUM MACHINES	
TR707	£450
TR727	£450
TR909	£399
TR606	£125
CR8000	£298
CR5000	£249
BOSS RMX100	£49
PAD 8	£399
DDR30 Kit	POA
AMPS	
JC120 Jazz Chorus	£475
JC50	£299
JC77	£239
Cube 60K	£275
Supercube 40 Lead	£199
Supercube 60 Lead	£239
Supercube 100 Lead	£329
Spirit 25A	£139

Cube 40 Chorus	£199
Cube 60 Chorus	£259
PA & EFFECTS	
RV2000 Reverb	POA
SDE2000	£399
SDE1000	£395
SDE3000	£799
Boss DE200	£250
Dimension D	£599
Sulvocoder	£599
PA250 Mixer Amp	£699
SST120 Speakers	£499
SRS80 Speakers	£149
SRS120 Speakers	£299
CPM120	£499
GUITAR SYNTHS	
GR05 + GR300	£695
GR300	£295
G202 + GR300	£595
G707	£650
GR77B	£1600
G77	£800
G707 + GR700	£1599
GR700	£1395

BOSS BARGAINS	
BX400 Mixer	
BX600 Mixer	
BX800 Mixer	
HC2	
NF1 Noise Gate	
PC2	
DM3	
SUPERDEALS! ALL EX-DEMO SECONDHAND	
JP8	
TR808	
CR8000	
JX8P + PG800	
JP6	
MC202	
JUNO106 + Flightcase	
SDE2000 Sampler + Keyboard	
181 System 100 Keyboard	
184 4 voice system 100	
MC4	
JSQ60	
MGS1 Handgrip for SH101	
MD8 Midi to DLB	

ROLAND MICRORACK

MPU101 Midi to CU	£239
MPU102 Fitter Conv.	£199
MPU104 Input Select	£65
MPU105 Output Selct	£79
MPU401 Midi Interface	£170

BOSS BARGAINS

BF2 Flanger	£90
CE2 Chorus	£83
CE3 Stereo Chorus	£92
CS2 Compressor	£72
DD2 Digital Delay	£155
DF2 Distortion Feedback	£65
DM3 Analogue Delay	£99
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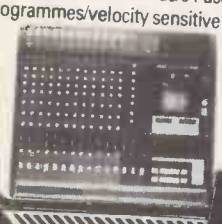

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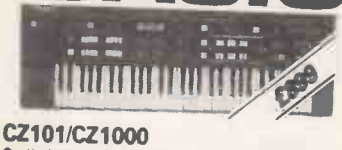

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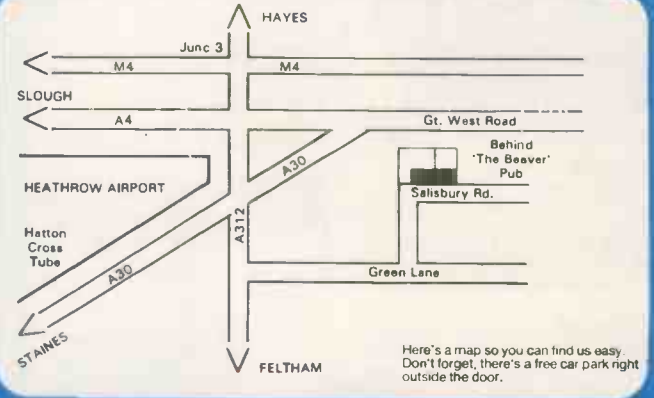

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BEAUTIFUL?

Thanks to some clever software writing, Rebis' new RA226 sampler manages to put an eight-second maximum recording time and a load of other facilities in a very small box indeed. Sometimes, though, being neat and tidy isn't everything. *Paul White*

Most of you have probably already heard of Rebis. You haven't? You should have. Rebis are a British design and manufacturing company, big enough to make their products up-to-date and cost-effective, but small enough to make subtle changes to their designs as and when necessary, without having to bring out a MkII version.

The company specialises in outboard effects for recording studios, and specifically, the kind that rack within standard 19"-width cases to form an interlinked FX system that's as space-efficient as it is versatile.

Rebis' current range includes compressor/limiters, noise gates, delays, noise reduction units, and even an RIAA preamp that lets you plug a turntable/cartridge signal directly into a line-level mixer channel. Now they've introduced a sampler just to round things off. It's called the RA226 and it's...well, it's a bit of a mixed bag. It's well-built, it has an agreeable spec, and its price is fairly low. But it also has a number of curious design omissions that set it at a disadvantage when you start comparing it to some of the competition from musical, rather than studio, companies. Let's not get carried away, though. If all critics wrote their conclusions at the start of their reviews, half of them would be out of a job.

In its standard form, the RA226 will store up to 11 seconds of sound with an 8kHz bandwidth, though you can halve the time and double the bandwidth, or vice versa, if you need to. The stored sound can be played from a CV keyboard (you remember them), and the trigger inputs accept either V- or S-trigger formats, which covers just about everything.

The RA226 functions as a digital delay as well as a sampler, and if you don't have a keyboard or a sequencer with a CV output, you can still trigger ▷

▷ fixed-pitch samples to create percussive sounds and similar effects. Control range over the CV input is two octaves, adequate for most musical purposes, but painfully limited by the standards of the Rebis' MIDI-controlled contemporaries. Theoretically, the long sampling time means that no looping facility is necessary, but we'll come to that later. In the absence of a loop function, you have the option to trim the beginning and end of a sample, and to build up a composite sample from separate slices of sound by joining several short samples together end-to-end.

The memory part of the RA226 is modular, which means that extra memory cards can be fitted to give a maximum storage time of 44 seconds with an 8kHz bandwidth or a staggering 88 seconds with a 4kHz bandwidth.

As we all know, when you play a sample from a keyboard, its pitch is changed either by speeding up or slowing down the speed of sample readout, so the length of the sample also changes. The Rebis way of doing things, however, ensures that when a sound is played back at a higher pitch, the RA226 automatically adjusts its output filters so that an 8kHz sample transposed up by one octave has a full 16kHz bandwidth.

Everything looks quite simple. There are six knobs, six buttons and six LEDs, all squeezed onto the 226's tiny front panel. There are two modes of operation – Sampler and Delay. Let's look at the latter first.

With the Pitch control set to +1 (fully clockwise), maximum delay time is 1.4 seconds with a 16kHz bandwidth. The reason the maximum delay time is far shorter than the maximum sampling time is that not all the memory is available; one area is reserved for sampling only, and anything stored in it is retained even when the unit is being used as a delay. The End control is used to set the exact length of the delay, and Feedback works in the customary way to produce repeat echoes.

You can store a sample simply by pressing the

Facilities ***'Control range from a CV keyboard is two octaves, adequate for most purposes but limited compared to the Rebis' MIDI-controlled rivals.'***

Record button, at which point the LED next to the button flashes. As soon as an input signal appears, the Rebis' automatic trigger circuit starts the recording process and the LED stays on until the recording is complete. The unit plays your sample back once automatically, so you can check its quality (or otherwise) as soon as the recording is finished.

Once you have an agreeable sample, you can replay it manually either forwards or backwards, though sadly, backwards replay *isn't* possible from a keyboard. So that you don't have to hold the relevant buttons down for the whole length of a sample, there's a Latch switch for playing the sample all the way through automatically. If you want to hear the sample loop continuously you press the Loop and Latch buttons simultaneously, while pressing Loop on its own allows you to step through the sample a section at a time.

Two rotary controls are what you use to vary the start and end points of a sample; if their positions overlap, a section in the middle of the sample can be removed and the two ends joined up again. As usual, joining any two sounds is likely to cause an audible glitch, so more often than not, it pays to adjust the edit controls for the least obtrusive join. The same goes for composite samples, which you bring into being by using the edit controls to define which part of the memory a sample is to be recorded into.

During the sampling process, the most important of the Rebis' many small controls is probably the one marked Pitch. A sample recorded with the Pitch control set to zero will be transposable up or down one octave, but a sample recorded with the Pitch control at +1 will only be transposable downwards (upwards for a setting of −1). The recording bandwidth is automatically modified according to the setting of the Pitch control, as is the sampling time.

So now the recording's over, and you want to get one with some music. The most obvious way to do this is by connecting a one-volt-per-octave keyboard to the CV and gate inputs; but things may not be quite that simple. You may find, for instance, that you need to experiment to find out which two octaves on the keyboard operate the sampler, as this varies from synth to synth. You use the Pitch control to fine-tune your sample to the keyboard.

Now, the Rebis is a relatively hi-tech machine, so I thought I'd marry it up with something a bit equally state-of-the-art, an ARP Axxe monosynth. I should have expected problems, and I got them. The Rebis was set to accept control voltages in the 2V-4V range, whilst the ARP gave out 0V-3V. The result? Only the top few notes would work. I rang Rebis, but obviously someone else had already linked up an antique synth, as they were well aware of the problem. Production models would be equipped with a means of matching up the CV input to different types of synth, they said.

Unperturbed by all this, I continued the test using a Roland MC202, which could be set to give a CV output in the right range. From then on, everything was fairly straightforward.

Sampling a sound is made easy by the automatic trigger, though you do have to be careful not to make any unscheduled noises before the sound to be sampled comes around. Still, if you do capture a small amount of unwanted sound, you can remove it by adjusting the Start control until the sample starts exactly where you want it to.

One problem becomes evident quite early on, though. Samples with no natural decay curve tend to sound truncated when the sample runs out, or when the key is released. This is also true if a sample is shortened using the Edit controls; some sort of gentle fade-out, rather than an abrupt cutoff, would be more artistically acceptable. One way round this problem is to feed the output of the sampler back through the external audio input of the synth you're using (if it has one), and set the Latch status to On. That way, you can not only modify the envelope of the sampled sound, but also apply some creative filtering.

Then we come to the subject of noise. Any sampling system introduces some degree of quantisation noise, and whilst a lot of this *can* be masked by the sound of the sample itself, it's often audible at the tail end of samples, or when the sampled sound contains little in the way of high frequencies to block the noise. If anything, I'd say the Rebis' eight-bit resolution made it a little bit noisier than I'd expected; sampling has come a long way since the days of the abortive Movement Mimic, but although the RA226 didn't put out quite that degree of fuzz, the noise levels weren't as low as I would have liked, especially on difficult samples like bass guitar.

Again, though, a large part of this problem can be eliminated by using the filters in your synth. All you

Operation ***'Once you have an agreeable sample, you can replay it manually backwards or forwards, though backwards playback isn't possible from a keyboard.'***

do is tailor the frequency response to suit the sample and arrange the filters to close down as the envelope decays, and lo and behold, the tail-end of your sample is far less noisy, leaving the sample itself more or less intact.

You can *also* get round the problem of not being able to play reversed samples from a keyboard. When I complained to Rebis about it, they said there just wasn't enough room on the RA226 to fit the extra switch needed. They would, however, be detailing a modification in the user manual, so you can attack the sampler with a soldering iron in the knowledge that what you're doing will *probably* result in your being able to play the first line of Cliff Richard's 'Devil Woman' backwards from a single note on the keyboard.

I'm still not convinced about this business of building up sounds by butt-jointing several short samples. The results sound messy, and it's almost impossible to avoid creating clicks where the samples join. Still, the majority of samplers seem to offer this facility so I can only assume that some people use it. And in truth, the Rebis is better than most I've tried, as its internal software joins the samples at zero crossing points.

You've probably already realised that I have mixed feelings about this sampler. As a primarily musical device, its short pitch range, lack of MIDI, and monophonic operation all count heavily against it, but the most serious omission is a looping facility. Long recording times (and the Rebis' maximum is *very* long) are no substitute for looping, because you can't use them to repeat one section of a sample over and over again. For the price of the RA226, its full compliment of memory and a rack to put it in and power it from, you could have an Akai S612 complete with MIDI control, six-voice polyphony, and a disk drive to dump your own samples onto. No contest.

Luckily, the Rebis fairs better in the studio, where a lot of potential buyers will already have a suitable rack. Its long sampling time makes it a viable alternative to spinning-in short sections of music during recording, but even then, it could still be too noisy. ■

Prices ***RA226 basic unit £575; extra memory cards £216 each (up to maximum of three for 44 seconds' at 8kHz); 14 unit frame rack £113 including power supply. All prices include VAT.***
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SIX TO A DOZEN

In the wake of a company takeover, Oberheim have switched their manufacturing base to Japan and come up with a poor man's state-of-the-art analogue polysynth, the Matrix 6. If you need proof that analogue isn't dead, this is it. ***Simon Trask***

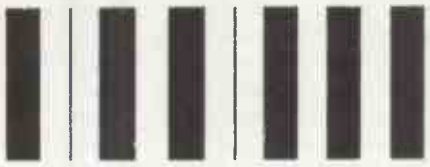
Contradictions being what they are, it seems odd to be able to say, at the tail-end of 1985, that an analogue synthesiser is truly state-of-the-art. That phrase generally implies application of the very latest technology to give what are currently unequalled results, but that isn't true of Oberheim's recent polyphonic synthesisers, the Xpander and Matrix 12. Sure, the results they produced *were* difficult to match, but those results were created using tried and tested technology, not some new wonder-formula that threw the synth world off its orbital axis.

Yet the fact remains that, in an increasingly digital world, the big Oberheims became state-of-the-art musical instruments almost overnight, such was the thoroughness, and originality, with which their slightly quaint design principles had been applied. Trouble is, they were more or less destined for state-of-the-art studios, session players and pop stars: not exactly an unlimited ocean full of potential customers. What happened? Oberheim got themselves into trouble, that's what happened, and six months ago, they became 'a division of the ECC Development Corporation', which is a polite way of saying they were forced to sell out.

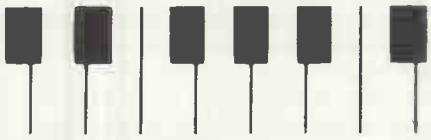
Fortunately, the changeover has left the company substantially unchanged. Even more fortunately, it's allowed them to shift their manufacturing base to Japan, and away from the land of high labour costs and unreliable quality control.

Thus the company's latest synth, the Matrix 6, has appeared at a more affordable price, yet at a seemingly equal level of build quality.

But even allowing for production economies, it's still quite a feat that the 6



'The voice structure of the Matrix 6's predecessors has been retained, but you don't have to look very far to find economies.'



should be half the price of the Xpander, and yet offer the same number of voices (ie. six) *plus* a five-octave keyboard which is touch-sensitive on all three counts, namely attack velocity, channel aftertouch and release velocity.

Retained from the Matrix 12 is the facility for defining different keyboard velocity scales and sensitivities (governing attack and release) to suit your own playing style – a nice feature that should be more commonplace than it is now. Thus you get a choice of three well-conceived options: Linear (striking the keys twice as hard produces twice the output), Expo1 (an exponential response: striking the keys twice as hard produces ten times the output), and Expo2 (also exponential, but with a compressed range). Not quite as flexible as the 12, but still a useful addition.

There *have* been economies made. Most obviously, the size of the 6 has been scaled down to more normal synth proportions (both the Xpander and the Matrix 12 were easily distinguishable by their bulk), though it's still no lightweight. And together with this scaling down comes a re-organised front panel – another obvious area of economy. Gone are the three 40-character fluorescent LED windows which formed such an essential part of the previous instruments' interaction with the outside world. Gone too are the plentiful supplies of knobs and buttons, the things that made programming such a joy next to the wilderness of digital parameter access. Taking their place are a more modest, single 16-character LED window, a membrane-switch numeric keypad, and membrane-switch selectors which operate a matrix-organised Mode Select panel situated underneath the LED window. Nope, not even Oberheim ▷

▷ could escape the digital control disease forever.

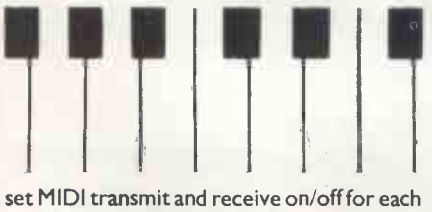
But as we all know, these external economies matter little if an instrument still *sounds* as good as it did in its more expensive form. The Oberheim's sonic capabilities exist on two levels: individual voices and combinations of them. Now, it's in the latter area that the biggest compromises have been made on the Matrix 6, so that's where I'll begin the journey.

The 6's immediate predecessors are capable of assigning a different sound to each of their voices. These voices can then be allocated in any combination and number to what Oberheim term 'zones', which are essentially ranges on the keyboard whose length and position can be defined by the user.

The Matrix 6 allows a maximum of two patches to be assigned to its voices (in any of four fixed-voice assignments), and these are playable as two zones, left and right. This equates roughly with the familiar split-keyboard facility, but there's a bit more to it than that. The Matrix 6 allows you to set an upper note limit for the left zone and a lower note limit for the right one, so you can have zones overlapping across any extent of the keyboard. If you put the old grey matter into gear for a moment, you'll realise that you can create the familiar 'dual' (overlaid) mode by overlapping the two zones over the entire keyboard. But you can also have any degree of overlap in between dual and split, and place this overlap at any position on the keyboard, which is a refreshingly flexible arrangement (though oddly, SIEL have managed something similar at a much lower price level, with the DK80). For transmission and reception over MIDI, the left and right zones are automatically assigned to adjacent MIDI channels.

Oberheim being Oberheim (nobody else would take the job), the Matrix 6 has a few more tricks up its sleeve in the split/dual department – and they're all programmable. Aside from the rather useful ability to name a split, you can determine the volume balance between the two zones, transpose each zone,

'With patch names like 'Sexafoam', 'Hotbodom' and 'Good bed', you do begin to wonder what these Oberheim people get up to down in sunny California.'



set MIDI transmit and receive on/off for each zone, and determine voice allocation for each zone. The latter facility allows you to assign the synth's six voices to the left and right zones in 2+4, 4+2, 6+0 and 0+6 configurations. Why assign no voices to a zone? Well, the idea is that the Matrix 6 becomes something of a controller keyboard, transmitting pitches over MIDI for other instruments to play but not actually making any noise itself. It works better than you might think: you can play, say, a DX7 bass on the left side of a split and Matrix strings on the right side – all from the Oberheim's keyboard. What does seem a rather unfortunate (and unnecessary) omission is that there's no 3+3 option; surely that's the best allocation for dual-mode playing?

The baby Matrix allows you to store 50 split patches onboard, with all of the above parameters except MIDI channel assignment programmable for each one. That's a fairly healthy number, though it's worth pointing out that these memories only hold patch numbers, not the actual patch data – make any change to a patch and that's what you'll get in the split patch as well.

There's no Chain facility, as provided on the other two instruments, whereby you can chain together single- and multi-patches – a tremendously valuable performance feature, especially on a synth which is prime candidate for playing the role of master keyboard.

Well, I can't put it off any longer. I have to admit that at first glance, the Matrix 6's front panel looks *daunting*. But, when you sit down with the instrument and take a closer look, you realise that the heavy dose of printed verbiage is a list of all the parameters available on the synth, and that it's both logically organised and clearly laid out. The Xpander and the 12 both featured huge, sprawling networks of diagrams that looked like preliminary drawings for underground nuclear waste plants. They served a similar purpose, but the new machine's lists work better for being simpler. Now you can *quickly* make sense of all the Oberheim's parameters and how they interrelate. Which is just as well, because there are an awful lot of them: 99 voice parameters, 54 matrix modulation parameters, 56 master edit parameters, and a modest eight split edit parameters. After working my way through that little lot, I can't overemphasise the value of the front-panel list in smoothing the passage through troubled editing waters.

Things get even easier when you realise that Oberheim have fitted something akin to the six-parameters-per-window feature of the 6's predecessors. Here there's a maximum of four parameters, and ordinarily, you can access only one at a time. Essentially, selecting a Page determines what appears in the window display, and selecting a column determines which parameter is altered by the numeric keypad and increment/decrement pads. The system is easier to operate than it sounds, though having to keep swapping to and fro between selecting a parameter and altering its value is a real nuisance. Still, on the patch and split edit pages, you can select a special Quick mode whereby 0-9 on the keypad alter values while the increment/decrement pads step through the parameters; much, much easier.

The voice structure of the Matrix 6's predecessors has been retained, but you don't have to look very far to find economies. The traditional VCOs have been replaced by DCOs (presumably because they're cheaper) and there's been a reduction in the *number* of some voice components: three Envelope Generators instead of five, two LFOs instead of five, two Ramp Generators instead of four. You get the picture. Mind you, there's still plenty in there to keep most programming people occupied for a long time.

Each voice consists of two DCOs, a VCF, two VCAs, three Envelope Generators (five-stage – including initial delay), two LFOs, one FM Modulator and one Tracking Generator, two Ramp Generators and a Portamento controller. Most of these components should be familiar to you; only the Tracking Generator and Ramp Generator evade immediate understanding. The former allows you to re-shape a control source, taking one of the 6's modulation sources and using it in a different way. The reshaping function has five 'points' (each with a 0-63 value range) which go to make up the Generator's curve and thus its output. According to the manual, each of the 20 modulation sources (see later) can be tailored in 1,073,744,824 ways. Is this a printing error? Search me. I didn't even *start* trying to find out.

The Ramp Generators each produce a type of modulation best described as a smooth, linear transition resembling the attack portion of an envelope. A rate can be set for each of

'There are some lovely, rich string sounds on which the Oberheim's touch-sensitivity really comes to the fore.'

the two ramps, and the trigger signal can be defined as single, multiple, external single or gated external single trigger.

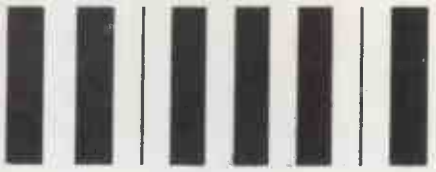
A common use for the Ramp Generators is to delay a vibrato effect by modulating the LFOs, but they can also be used to modulate almost any sound component on the synth.

The above should give you some idea of the power and flexibility that lie behind the new Oberheim's voices. And in keeping with that flexibility, the new synth also features Oberheim's Matrix Modulation system. On the 6's version of this, there are 20 sources and 32 destinations. These are clearly listed on the front panel, so there's no excuse for not creating the weirdest and most wonderful modulations you can think of, not to mention quite a few you can't.

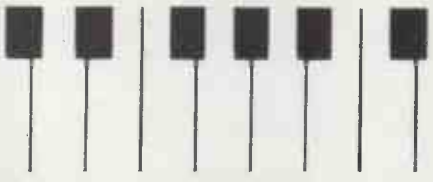
Here are some examples of what can be done with Matrix Modulation, just to give you an idea: you can have envelope 2 modulating DCO2 pulse width, LFO1 modulating VCF resonance, pressure (aftertouch) modulating VCA1 volume, portamento modulating LFO2 amplitude, lever 1 modulating the DCO1-DCO2 mix, and so on up to a total of 640

individual possibilities. Oberheim have themselves selected 18 mods from the source/destination list and included them in the Patch Edit page as 'hard-wired' parameters; thus you get, for instance, LFO1 modulating DCO1 frequency as an instantly selectable parameter.

There are 10 locations provided for storing your own source/destination combinations, a



'Matrix Modulation mimics in software what used to be achieved by mounds of Spaghetti Junction wiring on older patchable synths.'



capacity I found a bit limiting after a while, even though it's not a drastic problem.

Altogether, then, you have a total of 28 possible modulations for each patch. Of course you can have one source (say, attack velocity or lever 2) modulating several destinations, or several sources modulating one destination. This is where the effects allotted to the keyboard, pedals and levers are set up, and the possibilities are plentiful.

In essence, Matrix Modulation mimics in software what used to be achieved by mounds of Spaghetti Junction wiring on older patchable synths. And that really is quite a feat for Oberheim's software writers, bearing in mind the complexities involved. In fact, the manual takes great delight in the number of possibilities the system affords. And well it might. The actual number of possibilities is apparently 2.96×10^{21}, which Oberheim have worked out to be just under three billion trillion combinations – and that's not taking into account the different value amounts. Including *all* possible values works out at 1.2×10^{42}, the resultant value of which the manual declines to give. I'd let you know but I've got a review to write.

Pondering on how many of these combinations would actually throw up something musically useful, it's about time to look at the 100 sounds Oberheim provide the Matrix 6 user with. Sadly, many of these presets just don't do the instrument justice, either because the basic sound just isn't that good or because the chosen modulation options and values don't come across as being very musical.

There are some lovely, rich string sounds on which the Oberheim's touch-sensitivity, complete with release velocity, really comes to the fore. The sounds are warm and vibrant, and have none of the brittleness so characteristic of digital versions. Also blissfully free of digital grit are the excellent, ethereal choral sounds, some gentle 'acoustic' and electric piano impressions, and a bright, snappy bass, together with some typically American-sounding brass patches. Mind you, with patch names like 'Xtasy', 'Sexafoam', 'Hotbodom' and 'Good bed', you do begin to wonder what these Oberheim people get up to down in sunny California.

On the whole, though, the presets' alright-but-nothing-special nature means that if you want to have a whole set of *killer* Oberheim voices, you're going to have to get in there and do some of your own programming. Yes, it's daunting, but the manual does take you through constructing a strings patch to get you started, and the manual as a whole is clearly laid-out and well written. That, together with the helpful front panel, ensure that creating your own sounds from scratch isn't really that bad after all.

It's only through spending some time editing the existing sounds that you can appreciate the sheer flexibility of the Matrix 6. Now, that's alright if you've got the opportunity and the time to do these things, but it doesn't do anything to increase the chances of the Matrix being shown to its best advantage in a store demo.

Once you've done some careful setting-up of modulations with attack velocity, pressure and release velocity, the touch-responsiveness is very impressive. Which makes it all the sadder that the keyboard Oberheim have fitted simply doesn't match up in terms of feel. It's certainly not the most pleasant keyboard I've ever played.

External storage of sounds (aside from MIDI) is strictly cassette-only, which does seem just a touch ridiculous on a synth of this stature. In the absence of anything better (which ought to be disk rather than cartridge, considering the amount of data involved), all you can do is make sure you've got all the sounds you need already in the Matrix before embarking on a gig or a session.

Having moved surreptitiously to the rear of the Matrix 6, we might as well stay there for a bit. You may remember that when they released the Xpander just under two years ago, Oberheim had one foot firmly planted in the CV/gate camp and the other in the MIDI camp. This was hardly surprising, given the number of their products that was non-MIDI; but it was also expensive. The Matrix 6 takes big leaps in the exclusively-MIDI direction by removing not only the CV/gate connections (something the Matrix 12 also did) but also the dedicated Trigger In jack for Oberheim's non-MIDI sequencers and drum machines. Now the second pedal jack can act as a Trigger In instead. I guess most people will want to use pedal 2 in its MIDI controller role, but the option's there.

The Xpander also included six individual audio outs, allowing each of its voices (which, remember, could each play a different patch) to be treated separately – a real boon for recording work. The Matrix 6 has only stereo outs (or stereo and mono), but with reasonable justification – as we've seen, it can play only a maximum of two patches at once.

I've been concentrating on what the Matrix 6 doesn't have. What it does have are the inevitable MIDI In, Out and Thru trio, a memory protect on/off switch (not recessed – just watch it snap off) and two pedal sockets. The first of these can accept a continuous pedal, while the second connects to a footswitch. The assignability of these pedals, both internally and over MIDI, follows the Xpander and Matrix 12, but it's rare outside the world of Oberheim.

As far as performance controls go, Oberheim are still using their two-lever system instead of the more familiar wheels – to good effect, too. They're just as easy for people to become fluent in using.

The 6's flexible MIDI implementation follows on from that of its predecessors. For MIDI purposes, the Matrix 6 is considered to have eight controllers: two pedals, three levers, attack velocity, aftertouch and release velocity, and the range of assignment options you're given for these is unrivalled this side of a Yamaha KX88, which costs a little less than the Oberheim but doesn't make any sound at all.

The Matrix 6 really scores in having MIDI control features normally associated with – you guessed it – controller keyboards like the KX88. It even has facilities for complete disabling of MIDI reception and some degree of patch-change data selectability.

Some people might be sold on the idea of owning an Oberheim per se; just think of the pandemonium Aston Martin would create by bringing out a cheap car. But what of the alternatives to owning a Matrix 6, apart from being able to pay the rent/mortgage/alimony? The new Oberheim occupies a price territory currently dominated by keyboard samplers (like the Prophet 2000 and Mirage, with a whole load more to come from the Japanese in a couple of months). Synths, on the other hand, now come either more expensive (Yamaha's DX5, the PPG Wave 2.3 and Oberheim's own Matrix 12) or cheaper (DX7, JX8P and DW8000 on down).

So the Matrix 6 is in something of a class of its own. Despite the economies that have been made by comparison with the Xpander and Matrix 12, the extent of its circuitry and the splendid detail of its control software make it more versatile than any other analogue poly currently available under three grand. Its range of keyboard response (though not the keyboard itself) is way ahead of anything else in this price bracket. The factory sounds are disappointing, though, so what with its lack of cartridge or disk storage, the Matrix is never going to be a preset-lover's synth.

But if you get the chance, try a spot of basic sound-editing before you buy. Then you'll see what state-of-the-art *really* means. ■

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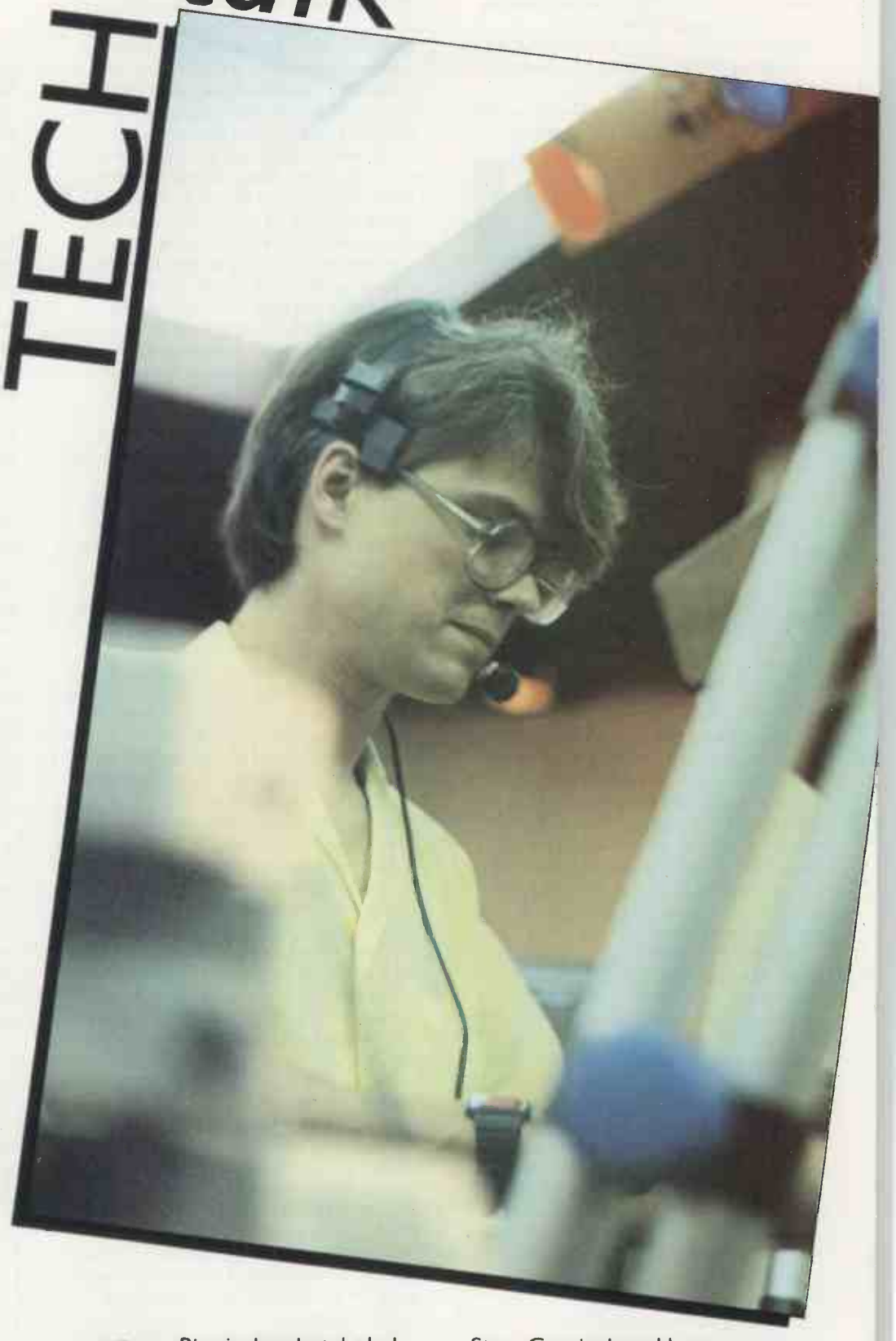

In which Steve Cunningham, an American session keyboardsman with more than a passing interest in product development, discusses the future of a subject close to UK hearts: MIDI.

Tim Goodyer

A Birmingham hotel, plush enough to boast an upright piano in the Gents, recently played host to a promotional clinic held by American manufacturers TOA to publicise their amplification and electronic products. Not an earth-shattering event in itself, I admit, even though the equipment on display *was* pretty impressive.

But the demonstration had been designed primarily with the keyboard player in mind, and the musical honours left to American sessionist Steve Cunningham. Here was a man with considerable Stateside recording experience, more than a passing familiarity with MIDI and its associated problems, and blessed with a most un-American modesty. His past recording associations include the likes of Stevie Wonder and Toto – though Cunningham dismisses those associations as coming about primarily through opportunism.

'I came into the good work through the back door', he explains. 'The guy I worked for became the US ▷

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distributor for PPG, so whenever we sold a system I had to go out and demonstrate it. That was how I got to work with Stevie Wonder, Steve Lukather of Toto, Robbie Buchanan (Laura Brannigan's producer) and a few others.'

Cunningham still likes to keep the session work coming through and, surprisingly enough, doesn't believe the secret of being in demand necessarily lies with up-to-the-minute sounds and state-of-the-art technology. It's an attitude that's borne out by the list of favoured equipment he's only too eager to reel off.

'There's the Synergy GDS, a Wave 2.2, an Akai S612 sampler, and the old Prophet 5. Apart from that I have a LinnDrum and a bizarre collection of old synths: I still have an ARP 2600, two MiniMoogs, two Oberheim Xpander modules and two analogue Oberheim mini-sequencers, remember those? Now that's hip!'

But what use can a man with access to today's hi-tech wizardry find for yesterday's heroes?

'Most of the work I do in the States now I do with the GDS, which of course is a dead machine. I'm a big GDS fan – it's a wonderful box. But part of that allows me to have an edge. I can still walk into a studio and do things that the guy with the TX rack can't do. To make money you first of all have to have something to say – and you have to find a way of saying it that's different from all the other guys out there – then you have to be able to produce something that's unique.'

Now, not all this equipment finds its way around the world to help promote TOA, but there's an impressive array of gear that does. On the UK tour, Cunningham used a system that dropped him firmly into the MIDI compatibility mire. There's a DX7, the Wave 2.2, a JX8P, a Mirage, a Korg EX800, a CZ101 (put through a Rockman for trendy Jan Hammer guitar patches) and a CZ1000, plus two Drumulators – one of which has an alternative set of Latin chips, while the other has triggers for an SDS9 – and a DMX which provides the master clock. And Cunningham is one of a growing number of US players to make use of an Apple Macintosh-based software package for all his sequencing tasks.

'This setup is a typical example of the kind of compatibility problems you can encounter', says Cunningham. 'For example, there are a lot of people with clock-based instruments that now find they need to use the MIDI sync – and they're going to have to buy a box to do that for them.'

The TOA link was made a couple of years ago, and involved Cunningham moving his base of operations from LA to San Francisco. Although this meant being further from the heart of the musical action – an experience Cunningham likens to leaving London for Birmingham – it brought with it considerable contact with the behind-the-scenes world of MIDI.

'I don't see MIDI being superceded in the near future; manufacturers have spent a lot of money to get it where it is today.'

'I've seen a lot of what really goes on regarding MIDI compatibility and implementation between the various manufacturers. The average individual has a tendency to think that if he buys two MIDI synthesisers, he's going to be able to hook them up together and do most anything he wants to with them. The fact of the matter is that it's not always the case.'

Few musicians would beg to differ with that. Equally universal is the subject of money. For as Cunningham reveals, MIDI isn't the purely musical world we might like to believe it to be; commercial considerations have also had an impact on the system's development.

'From the manufacturers' point of view MIDI involves an incredible amount of time and money in R&D and writing software. It's very difficult, especially for the smaller manufacturers, to get together on some of the basic issues, simply because of the money factor.

'What's happened in the US is that the manufacturers have taken their cue from the Japanese, who've got their MIDI situation together in spite of the fact that not all of their instruments will work together. Their JMSC (Japan MIDI Standards Committee) has fairly detailed and comprehensive guidelines for manufacturers as to how various system functions should be implemented, and they have testing procedures to ensure that they work correctly. The American MMA (MIDI Manufacturers' Association) has been taking its cue from the Japanese because their system works.

'It also has something to do with the fact that the Japanese have so much weight to throw around, though. I think at the last count there were 110,000 DX7s out there – that's some serious numbers! You're not going to buck those guys. And it leaves some of the smaller companies in a bad way, manufacturers like Octave Plateau, who're still alive and kicking, thank you. They came out with MIDI on a canon connector on the Voyetra 8. At one of the first MMA meetings they said: "This five-pin DIN is a cheap connector; what the Hell are we doing putting this 39-cent connector on a $6000 synthesiser?" Eventually they were overruled, but that's typical of what happens.

'Up until the last MMA meeting the software companies had been very quiet. At one point last year, not only was there a great deal of paranoia between the individual companies about getting together and sharing the MIDI implementation, which is equivalent to giving out trade secrets, but there was almost open hostility between the hardware manufacturers and some of the software people. A number of people at the software end were making noises about MIDI being too slow and not being adequate for the things that would need to be done in the second half of the 80s. They were talking about MIDI 2, and the last rumour I heard at Digicon in August was that Yamaha were supposedly preparing a 'SuperMIDI' standard that was going to utilise the two unused pins on the five-pin DIN jack, but not even be compatible with the current standard! That has pretty much turned out to be an ugly rumour, but there are still an incredible number of misconceptions concerning the speed of MIDI.'

Whilst it remains within the realms of daydreams for some even to *own* enough equipment to run into cumulative MIDI delays and their ilk, there *are* artists having problems with the limitations placed upon them by MIDI. But Cunningham is none too impressed by their arguments.

'I heard Michael Boddicker get up at Digicon in front of 300 electronic music academic types, and talk about a SuperMIDI spec. Granted, individuals in his capacity are very demanding of the MIDI standard; they can hear delays of 2mS, and for them it's a big deal. But it was pointed out that the Oberheim OB8 takes 8-15mS to scan its own keyboard internally – which has nothing to do with MIDI – so to pin those sorts of problems onto MIDI is misleading.'

Which brings us back to the original question: *is* MIDI fast enough, or is it just a matter of time before E&MM's free ads pages are filled with out-of-date synths fitted with the current 1.0 standard?

'I think MIDI really is fast enough as it stands. It's only in about the last year that MIDI has been implemented on ROM as a real and active part of the operating system within the synthesiser, rather than as a bunch of subroutines that were tacked on later which caused the processor to stop what it was doing performance-wise and go out of its way to listen to something or send something. It's only now that MIDI is really being integrated into the operating system so that the whole thing flows smoothly; and it's only as that continues, and the processors get faster and the code gets tighter, that I think we'll find that it's fast enough for 95% of what needs to be done musically. There'll always be the Michael Boddickers of this world that have to play it manually because they can't deal with the delays. But that's a special case.'

'Most of the work I do in the US now I do with the GDS. It's a dead machine, but it's still a wonderful box.'

Realistically, MIDI as it currently exists must have a limited useful lifespan. How long does Cunningham see it surviving, and what does he see as the next step along the road we call innovation?

'I don't see MIDI being superceded in the near future. The manufacturers have spent a lot of money to get it where it is today; to ask them to turn around and invest more hundreds of thousands of dollars to come up with a MIDI 2 spec is unreasonable because, if they had to do that, the costs would be passed on to the end user, and in the marketplace that's death. Just imagine it. Suddenly the Mirage isn't a bargain any more because the company has had to spend another two million bucks in R&D and the price goes up...

'Maybe in five years we may see the MIDI 2.0 spec, or 16-bit MIDI. It's going to be a while both in terms of money and compatibility. Manufacturers aren't just out to make a fast buck – they want their customers to be happy with them. That's a normal, rational part of business. It's going to be a son of a bitch for them to design a better, faster system that is compatible with the existing one. Just look at personal computers: the Mac is a fabulous machine, but it's compatible with nothing. That's a problem.'

But the future holds more in the way of encouraging things than problems. What's the next stop on the MIDI Magical Mystery Tour?

'At TOA we're working on a MIDI mixing console. We know we're not the only ones, but we are trying to do it within a reasonable price range for the average guy. It's all uncharted water as yet – the MMA hasn't dealt with any equipment other than synths. So there are a whole load of questions that need to be answered. *How* do you make a mixer compatible with a DX7? *What* do you make compatible with the DX7?'

Answers on a postcard to... ■

HARD *facts*
soft OPTIONS

Spearheaded by front-runners like the Commodore Amiga and Atari's ST, the new generation of home micros aims to tempt more musicians into taking the computerised route. Do the machines have what it takes to succeed?

Amiga preview *Chris Jenkins & Simon Trask*

Atari update *Simon Trask*

Computer Music is a difficult phrase. Does it imply Stockhausenesque warblings, without recognisable rhythm or harmony? Does it conjure up images of the beeping and whooshing of home computers, their internal sound chips pressed into musical service when their original purpose in life was to make sound effects for games? Or does it bring to mind Mr Horn and his ZTT collaborators, turning computers into musicians and musicians into nothing more than faces for the front covers of teeny-bopper magazines?

Whatever your view of it, you can't *ignore* computer music. You can't ignore, either, the rapid technological developments that are making the computers cheaper and their musical capabilities much, much more wide-ranging.

Of the current crop of new 16-bit home computers, the Commodore Amiga has been the one to generate the most fuss. Which is odd, because it's also the machine about which least is known. There's still an awful lot of mystery surrounding the Amiga, and on this side of the Atlantic, at least, that mystery is unlikely to be solved until the machine comes to this country in the new year.

The new Commodore has a long and chequered history, but once it is finally launched, its synthesis, sampling and control capabilities, combined with unheard-of graphics power, will make it a mouth-watering prospect for musicians of all inclinations.

The Amiga was born as a project of the Amiga Corporation, a company bought out by home computer giants Commodore International in order to gain control of the unique chip designs the smaller firm had developed. The resulting machine, the Commodore Amiga, uses the same 68000 main processor as the Apple Macintosh and Sinclair QL (not to mention upmarket musical instruments like the Kurzweil 250 and Series III Fairlight), but is in all important respects a completely different machine.

What makes the Amiga unique is its three custom chips, codenamed Agnus, Daphne and Portia, which control graphics, sound and data handling, leaving the main 68000 to operate at an unusually high speed without interruption.

But the Amiga is far from being a music-only (or even music-biased) device. It's a general-purpose business and creativity machine with some astonishing capabilities in all departments, so to give you a wider idea of the Amiga's overall potential, let's take a quick look at them before we get on to the music applications.

The standard machine has 256K of memory, expandable to 512K. There's an 89-key keyboard with numeric keypad, cursor and special function keys, a 4096-shade colour display with up to 640×400 pixel resolution, parallel and serial ports, a built-in 3.5-inch 880K floppy disk drive, an expansion port for extra drives, two joystick ports, built-in speech synthesis, optional IBM-compatibility, a video interface, an optional MIDI interface and keyboard, a window/icon/mouse operating system, and four-channel sound synthesis built in.

That's just for starters. The Amiga also features a disk operating system so fast it makes the IBM PC look like a ZX81, an advanced form of the BASIC programming language, and the all-important multi-tasking, the facility by which computers can work on more than one job at a time without having to drop one task altogether in order to accommodate a new one. In other words, the Amiga does everything better than any other computer on the market in its price range, it does it faster, and it does it all at the same time.

As a music machine, the Amiga is supplied with most of the hardware you'll find in multi-thousand pound systems like the Fairlight – QWERTY keyboard, optional music keyboard, disk storage, video display and so on. Internally, things aren't exactly up to state-of-the-art standards, but they're not far off. The Amiga's sound chip (Portia) uses digital techniques to synthesise waveforms. As in the Yamaha DX series synths, these waves can be combined to form complex sounds. There are four sound channels, each of which can be programmed independently, either through BASIC or through some powerful software packages which, we're told, will be available soon after the machine's official release. Each memory channel contains an eight-bit digital-to-analogue converter driven by a direct memory access (DMA) channel. The audio DMA can retrieve two data samples during each horizontal video scan line, so the Amiga can play complex music whilst still creating stunning graphics.

The waveform used by each sound channel can be defined in BASIC by entering data describing the shape of one cycle. When defining waveforms, you have to remember that, as with looping sampled sounds, it's important that the start and end values are similar if you want to create a smooth looping effect. Sound data is organised as a set of eight-bit data items, and sample values can range from −128 to +127.

Once you've stored the waveshape data, and told the system where to locate it, the volume is set in the six-bit volume register (values 0 to 64). This register can be controlled dynamically to create complex envelopes.

To specify the pitch, you have to set the frequency value, between 124 and 65535. The Amiga manual explains how these quantities correspond to musical scales.

When the DMA is enabled, the sound plays until disabled. For intricate and/or off-the-wall effects, you can splice different waveforms together, or modulate the frequency or volume of one channel with another. A low-pass filter is included to cut down aliasing distortion, but worryingly, rumours of these filters cutting off everything above 7.5kHz are as rife as ever. If they're accurate, the Amiga's bandwidth is going to be too limited for it to be competitive with what dedicated sampling machines, for instance, can currently offer.

Simple, yes? Well, maybe not – but this is where the forthcoming commercial software comes into the picture. With luck, it'll take all the difficult programming tasks off your hands.

Cherry Lane Technologies have already begun marketing three packages in the US. 'Harmony' takes an audio input – say a saxophone, as used at the Amiga's New York launch – and uses artificial intelligence techniques to create an auto-accompaniment section which actually plays along with your music, changing tempo to match yours, changing pitch, and controlling MIDI instruments.

'Scorewriter' is more prosaic but potentially more useful to professional musicians. As its ▷

name suggests, it's a high-level music transcription and sound-generation program ideally aimed at composers and music students. This is the sort of thing the Amiga's graphics facilities should make mincemeat of, so it'll certainly be worth checking out.

'Texture' is a 'musical word processor' developed originally for the IBM PC. It allows sequences to be created, filed, combined, edited and played, with full graphic accompaniment, and up to 16 musical voices playing simultaneously.

Another company, Everyware, has developed a synthesis program called 'Musicraft', which effectively turns the Amiga into a four-voice synthesiser and sequencer. It allows you to play the QWERTY keyboard the way you would a piano, using various preset voices or new sounds created by altering the waveform, harmonics, the eight-stage envelope, portamento, LFO, filtering and phasing.

What everyone is waiting for, of course, are the two developments which will make the Amiga a genuine computer musical instrument. First, although a MIDI interface is available, no full-spec MIDI software has yet been developed to enable the Amiga to control synthesisers. Second, although sound-sampling demonstrations have impressed computer journalists, there's no news on the official release date of the sampling hardware and software.

Tantalised by the sound of saxophones, guitar chords, banjos, explosions, Boeing 747s and tom-toms issuing from demo machines at the *Personal Computer World* show this summer, some of us put down a deposit on an Amiga immediately. It might be wise, though, to put the rumour that the Amiga is 'Fairlight data compatible' into perspective. True, Fairlight were originally responsible for the sound samples that currently reside in the Amiga's memory, so the two data formats *must* have been sufficiently compatible for the sample data to be transferred (presumably from a 16-bit Fairlight Series III) to the Commodore. But there's no indication that Fairlight sample disks and auxiliary data will be directly interchangeable with those of the Amiga – though who knows what the future holds?

At around £1500, the Amiga represents a system which could *theoretically* make most electronic musical instruments obsolete. It won't, of course, because too many musicians are scared off by the idea of having to become computer-literate in order to make music. That's a process that isn't necessary these days because, to a large extent, if you can operate a Yamaha QX1, you can operate a home micro. Nonetheless, for as long as people prefer their machines to say 'musical instrument' on the front panel rather than 'home computer', products like the Amiga will have a limited impact on the music world.

The enlightened minority, meanwhile, will shortly be able to avail themselves of a machine that can synthesise complex polyphonic sounds; sample real sounds; control external instruments through MIDI and be controlled via the same route; store huge amounts of sound and control data; manipulate real video images through its 'genlock' system; superimpose high-resolution computer graphics, animations and digitised pictures; and do your accounts into the bargain.

As for Commodore themselves, they could soon have a monster on their hands. Apart from marketing the Amiga as a business micro, a Computer-Aided Design workstation and a mind-blowing games machine, demand from forward-thinking musicians could force the company to go into the music business, too. ■

DATAFILE

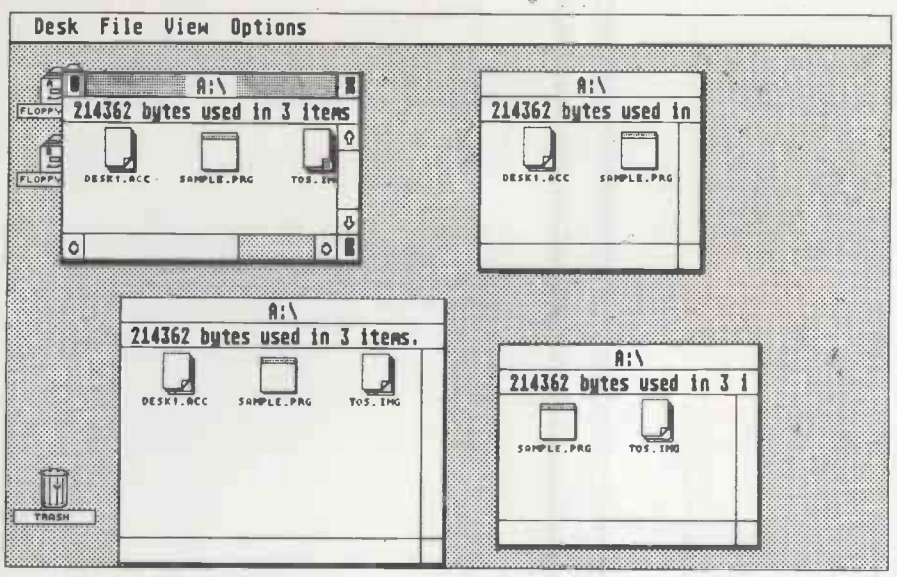
Commodore Amiga Personal Computer

Processors *68000 plus three proprietary designs, Agnus, Daphne and Portia*
Memory *256K, expandable to 512K*
Hardware *Built-in 3.5-inch floppy, mouse, QWERTY keyboard; optional extra 3.5- or 5.25-inch floppies or hard disk; modem, printers, music keyboard, MIDI interface, video genlock, IBM emulator hardware*
Interfacing *Serial & parallel ports, stereo audio, joystick (2), 68000 expansion, extra drive port*
Graphics *Up to 4096 colours, up to 640×400 resolution*
Sound *Four-channel Portia sound chip with user-defined waveforms, filtering, envelopes, pitch and modulation; sampling option, details unconfirmed; stereo outputs*
Price *£1500 for basic system, subject to dollar fluctuation, available January*
More from *Commodore Business Machines, 1 Hunter's Road, Weldon North Industrial Estate, Corby, Northants. ☎ (0753) 205555*

Once upon a time, when computers were the sole preserve of academics, hobbyists and the business community, writing 'user-friendly' programs wasn't exactly high on the software designer's list of priorities. Digital Research's CP/M, the eight-bit operating system standard, was notorious for its terse screen messages. Those whose job it is to devise and write software have always had their own special ways of communicating with the beast – just as everyone has a particular 'language' in their own line of work.

But there were other factors which contributed to the spartan approach. 'User-friendliness' generally requires more memory and extra processing power than most present-day home micros can afford to provide, and that's where the new generation of machines comes in. Strangely enough, their advent coincides with the computer makers' realisation that if micros are to increase their market penetration, both among the business community and with the public at large (and that includes musicians), they must be truly user-friendly. The computer must be bent to the will of the user, not vice versa.

The most immediate way that bending can be achieved is by making a computer's output easy to understand. And the point at which that output appears first – the monitor screen – is where a lot of attention has been recently directed. Following on from Apple's window-and-icons screen display environment (introduced on the company's Lisa and Macintosh micros), a number of other firms have come up with similar approaches to making the monitor's message clearer and more easily comprehensible to the computer novice. Digital Research have given us GEM (Graphics Environment Manager), IBM have developed Top View, Microsoft have introduced Windows, and Commodore/Amiga have a version called Intuition. And if you've been following the antics of the good Professor on *those* TV ads, you'll know that those dreadful Epson people have their own variant as well, called Taxi. We're even seeing the basic concepts of the environment (which now carries the unfortunate abbreviation WIMP), if not the details, appearing in programs for



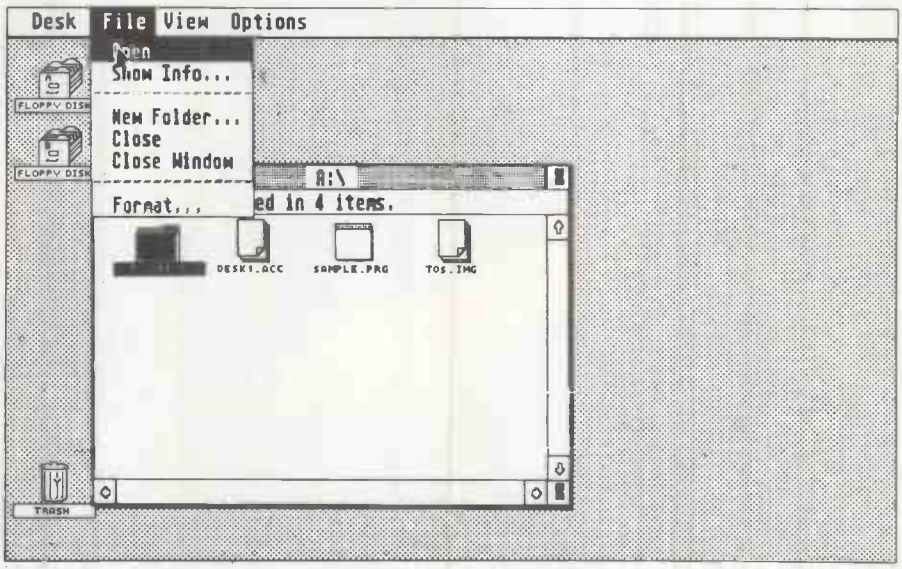
Atari ST graphics windows ***are part of GEM operating system, subject to change now that Apple and Digital Research have come to agreement about display details. Friendly messages should ensure system doesn't alienate even the most tech-wary novice***

eight-bit micros like the Spectrum and Commodore 64.

Since we previewed Atari's new 16-bit home computer, the 520ST, in E&MM July, the machine has actually made it into the shops in limited quantities, though the system software is *still* on disk (the ROM version is imminent, apparently) and music software has yet to materialise. We recently had a 520ST in the office for inspection, and overall, we were greatly impressed with its user-friendliness. Everybody in the Music Maker empire (from the Editor of this esteemed organ right down to the cleaner, and down even further to the Publisher) who had a go on the ST took to it very quickly, regardless of previous computer (in)experience. So it seemed about time to look at how the Atari's version of the WIMP environment presents its options.

But first, a look at the computer world's most notorious rodent, the mouse. This is a small, smoothly-shaped lump of plastic which fits nicely into the average grubby human paw, and plugs into one of the joystick ports via a cable some 3ft long. On the upper side of the mouse are two buttons for selecting options, while the underside houses a roller ball whose movements are converted into screen positions for the on-screen arrow pointer.

Accommodating these rodent manoeuvres doesn't pose too many problems, as the amount of space round which the mouse has to be free to move in order for its graphic representation to span the entire screen is a modest 9"×7"—less than an A4 sheet of paper. Use of the left-hand button seems to be commonest among mouse-employing manufacturers; the one on the right is there for software developers to utilise as they wish, but the left-hand button is



intended to have a standardised function. When you've selected (or 'clicked') an icon for attention on-screen, its image is reversed just to confirm your selection. To select an icon *and* a further action related to that icon, you have to 'double-click' the left-hand button. You can even tailor the required response rate on double-clicking to suit your own requirements.

If you want to remain keyboard-bound, however, there are QWERTY keyboard equivalents of mouse actions which don't involve too much in the way of convoluted button-pushing. But once you've got used to the mouse (and it doesn't take long) you'll probably want to leave the keyboard well alone.

Let's be realistic about what the mouse will and won't allow you to do, though. It's essentially a quick method of selection, and won't prove any substitute for extended alphanumeric keyboard input, even if its potential is still enormous.

You know there's something different about the ST (as opposed to previous-generation home micros) when you're presented with a message like 'Put the Systems disk into your Disk Drive. After you've done that, move the pointer to the OK box (with your mouse) and click the button'. This sort of friendly, down-to-earth talk would have been unheard of in the days of CP/M.

Once the system software has loaded (which takes 35 seconds), you're presented with the GEM Desktop. This is simply three icons—floppy disk drives A and B (the ST system allows two drives to be daisy-chained) and the ubiquitous trash can—and a menu bar with the four default pull-down menu headers. Everything else is actuated from this basic screen.

One of the first surprises is that you can actually move each of the icons to any position on the screen. This is achieved by moving the on-screen pointer to ▷

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

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

STUDIOMASTER

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▷ one of the icons, clicking on the icon and then moving the pointer to any position on the screen whilst keeping the left button held down. The icon follows the arrow to its new position, a process which is termed 'dragging' (well, there's nothing like down-to-earth terminology to break the ice).

Menus are accessed simply by moving the pointer over the relevant header, whereupon the menu automatically drops down. As you move the pointer down the list of options, each one is highlighted in turn. Not all options are available at all times (for instance, you can't list a directory if the disk drive hasn't been installed first), so accessible options are printed in bold and non-accessible options in light. You select an option by clicking on the mouse, after which, in most instances, an icon springs up in response.

The ST allows up to four windows to be open on the screen at the same time, though only one can be active at a time (this contrasts with the multi-tasking capability of the Amiga, see above). But there are still a variety of ways in which you can manipulate a window and its contents. These can be summarised as moving, sizing, scrolling and closing, and all are activated by clicking on a relevant symbol around the border of the window. You can move a window to any position on (or even off) the screen by positioning the pointer on the Move Bar across the top of the window and dragging its outline around the screen as you would an icon.

Sizing a window is achieved in one of two ways. The first is by clicking on a small box labelled 'Full' in the top right-hand corner of the window, which expands the window to full screen size. The second, more flexible method is to click on the small Size box in the window's lower right-hand corner. By keeping the left button held down and moving the pointer, you can expand or contract the window in any direction. Moving and sizing are obviously invaluable for avoiding window clashes and leaving selected bits of background visible. And significantly, sizing doesn't reduce the *contents* of a window – it effectively creates a window on a window, so you then have to scroll the contents by clicking on the relevant direction arrows around the window border.

In addition to windows, the new Atari also confronts you with Dialog boxes (don't ya just *love* these American spellings?) and Alert Message boxes.

Dialog boxes are fairly self-explanatory. They spring up whenever the ST wants you to give it information in response to something it's presented to you. The standard method of exit from a Dialog box is to click on either an OK or a Cancel box.

The purpose of an Alert Message is to inform you that an action you're attempting to initiate is not, strictly speaking, allowed. At last, the good old

error message is presented in understandable and informative English. Here are two examples. 'The GEM Desktop has no more windows; before you open a disk, close a window that you're not using...' is one and 'You can drag the trash can to another location on the Desktop, but you cannot place it on top of another icon...' is another. And you can't get much clearer than that.

I mentioned the four menu headers earlier. In fact, the only menu that's standardised is Desk, with the options VT52 Emulator (send data via modem), Control Panel (set up key and double-click response, bell on/off, colour palette), Set RS232 Config and Install Printer (define printer type, quality and other features). A further option allows information about the current program to be displayed. Beyond this, each program can be given its own menus tailored to its particular requirements, something that offers tremendous potential to software developers.

Of the other 'default' menus, Files allows you to display a file directory, show information on files, set up a new folder (see later), close a file, close a window, and format a disk. The View menu allows you to display files on disk either as icons or text, and to sort them by name, date, size and file-type. Text Display allows date and time of creation for each file to be displayed as well, while the Options menu allows you to install a disk drive, install an application (ie. define the relationship between programs and datafiles), set preferences (ie. tell the computer whether or not you want warning messages to appear), save the desktop and print the current screen. Each menu option generates an appropriate window or 'dialog' box for further action.

File management using the ST's system is almost ludicrously easy. There are three types of file icons: programs, datafiles and folders. A folder is a means of 'subsuming' several files under a single icon, and has been adopted as a means of simplifying the appearance of a directory when lots of files are saved on a disk together. Folders are created via the above-mentioned option on the Files menu, and a file is placed in a folder by dragging it into the folder icon; a new copy of the file is created in the process. The contents of a folder can be displayed by double-clicking on the relevant icon, and files of all types can be deleted by dragging them to the trash can (which, as the manual points out, is really more akin to an incinerator – you can't retrieve anything from it once you've lobbed it in). A copy of a file can easily be created by dragging the relevant file icon to a different position in the window, and you can copy a file to another disk by dragging it across to the relevant disk icon.

That's about it for the Atari ST and its GEM graphics implementation. The only question-mark hanging over the system as it stands is that a recent agreement between Apple and Digital Research has caused the latter to revise the GEM Desktop. Apple felt the original GEM screen designs were a little bit too close to their own Macintosh displays, so DR have agreed to modify their system. The new Desktop (Version 2.0) will presumably be incorporated into all STs from January '86, as this is the date the system becomes available to manufacturers like Atari. Version 2.0 is said to run at twice the speed of the present one, but the only direct visual changes will be an increase in size for some icons and the odd alteration in menu terminology.

Whatever the outcome of those changes, my impression of the way the Atari ST presents its options to the user remains the same: all the claims about its extreme ease and speed of use are true. And bearing in mind that all these display facilities can be utilised by software developers in their own programs, and tailored to the particular requirements of each program, it's easy to see that the potential is tremendous.

Now all we can do is wait for the music software that'll put the Atari's graphics system in touch with MIDI musical instruments. I hope the wait isn't a long one. ■

SAMPLING stories

Living with today's low-cost sampling machines on a day-to-day basis tells you far more about their characters – and their usefulness – than a first-impressions appraisal ever can.

Ensoniq Mirage User Report *Annabel Scott*

Akai S612 User Report *Tim Goodyer*

A funny thing happened on the way to the typesetters. The Ensoniq Mirage, the subject of this month's User Report, plunged in price from £1695 to £1295 including Advanced Sampling and user-formatting (previously £49 and unobtainable, respectively).

This put a whole new light on a machine that had already set new standards in budget polyphonic sampling. It also did nothing to charm the people who'd forked out £1695 plus £14 a time for pre-formatted disks, this writer included. But we'll try to keep past history out of this, and concentrate on what the Mirage has to offer at its new price, and with the new facilities included.

As you should know by now, the Mirage is the first product of the Ensoniq Corporation of America, a company set up by three ex-Commodore employees to apply computer technology to the music business. They spotted the growth of sound-sampling as a musical technique and, detecting the lack of a decent budget system, took a rather novel approach to making good the omission.

Spending around a million dollars on the development of a new dedicated sampling chip (the 'Q-chip') may seem an odd way to produce a budget machine, but once in the bag, the Q-chip allowed Ensoniq to turn out the Mirage fairly cheaply, and thus go for the sort of volume sales capable of paying back their investment. In fact, US production of Mirages has never been able to keep up with demand, so a factory has been set up in Italy to produce the European models.

European, American and Japanese Mirages are all slightly different from one another. The European ones use a better disk drive than the American models, and can therefore load sounds in six seconds rather than 12. The Japanese models abandon push-switches in favour of a membrane pad, and add a very handy disk rack to the instrument's top surface.

Otherwise, all Mirages are pretty similar. All of them offer eight-note polyphony, up to eight-way multisplits with floating polyphony, two seconds of sampling at 16kHz, velocity-sensitivity, and advanced sample editing functions using the Advanced Sampling Guide.

Let's look at the Mirage from the potential purchaser's point of view by running through what happened when I got one home. First, there's a standard Europlug mains socket and single jack output to be hooked up. Second, it helps if there's a disk in the left-hand drive when the power's switched on, because if there is, the Mirage loads its operating system from the disk automatically.

Having the operating system on every disk seems an odd move (the original Emulator had a special Systems disk for use at the start of each session), but it does mean they're harder to pirate. The unusual formatting also slowed the hackers down (MPS Software did manage to produce formatted disks without the operating system and sell them for £10 each), but now that you can format your own disks, any computer store should be able to supply blanks at less than fifty quid for a box of ten.

After loading the operating system, the Mirage loads the first pair of sounds on the disk. On each disk, there are three upper and three lower sounds, each one of which can exist in four versions with differing degrees of modification by the Mirage's synthesiser facilities. Loading a new basic sound (upper or lower) takes six seconds, but loading a new synthesised version of the same sound takes no time at all (you just press 0/3, say, for the third version of the sound you're using).

'The Ensoniq doesn't have the quietest output in the world; some gentle equalisation, even noise-gating, comes in useful.'

To confuse matters further, some of the Ensoniq factory disks have some of the synthesised sounds replaced by further samples. This is achieved by manipulating wavetable positions using the Advanced Sampling Guide, but I'll discuss that properly later.

Any sample can be multisplit across the Mirage keyboard, and will always load as a multisplit. Some multisplits, such as the excellent Piano, Piano + 1 (one octave higher) and Electric Piano (Fender Rhodes) voices in the factory set, combine to form one sound. Other splits are more outrageous: try Saturday Matinée, which has a few notes each of dogs, sheep, horses, fire, machine guns, screams, cats and ricochets. Or Mouth Organ, which has a complete set of mouth-generated percussion noises.

It seems Ensoniq have a particular soft spot for percussion multisplits, perhaps overly so; it means there isn't even room for a string section on the two factory disks supplied, for instance. A lot of the bumps and thumps are going to be of questionable value to musicians who already have a digital drum machine, but even those who have could still find themselves using parts of the Orchestral Percussion section (gongs, timpani, shakers and the like) or the Electronic Percussion set (lotsa Simmons noises). Although none of the percussion sounds lasts very long, their bandwidth is necessarily restricted to get them into the multisplit; some are pretty dull-sounding, but most are perfectly usable.

If you think you're going to miss those strings, there are a couple of very impressive string samples available that are worth looking at before you resort to sticking a microphone in front of your kid brother's school orchestra. One of these has velocity-sensitive cellos on the lower half of the keyboard (the ability to alter the attack time with your playing technique is very handy) and a velocity-sensitive violin section on the upper bit.

A lot of the factory samples are distinctly ordinary, though. There are some truly crappy clavinets, organs and synth sounds, some of which are sampled from DX7s with considerable loss of quality, and most of which could be turned out by the world's cheapest analogue synthesiser.

There are also a few novelty numbers, such as a short bass/drums loop called Rock 'n' Roll which sounds as if it's been taken from something by Emerson Lake and Palmer. But it's only any use if you play everything in E, since it occupies just one key (the bottom C) of a multisplit.

Anyway, if you're less than happy with the samples provided by Ensoniq, the best thing to do is to make some yourself. Before we describe how to do this, it's worth pointing out that the Ensoniq doesn't have the quietest output in the world; some gentle equalisation, or even noise-gating, is useful to get the most out of your carefully-taken samples.

The subject of sampling technique takes up about three lines in the Musician's Manual and about 90 pages in the Advanced Sampling Guide. Basically, you stick a mic or line input into the Mirage's rear panel jack and select the level using one of the many functions accessed from its keypad. Go into Sample Mode and the two-

digit LED display begins to act as a very simple VU meter – bars across the bottom for no level, the middle for some level, and the top for peak. Assuming you want a straight sample, you choose your keyboard half and present your sound to the Mirage, which samples as soon as it gets a decent level.

The sound can be played back immediately, and always comes out at its original pitch on Key 17(E) for the lower half or Key 46(A) for the upper half. You can correct the tuning in whole octaves (Coarse) or gradually (Fine), but inexplicably, Ensoniq haven't managed to tune their own factory samples correctly: they're all over the place.

If you want to make a multisample, there are many more parameters to be set. Switch on Multisampling (Parameter 77), select the Initial Wavesample (Parameter 27 – usually set at 1), select the Wavesample Number (remember you can take up to eight wavesamples on an eight-way multisplit), set the Sample Start Point (usually 0), set the Sample End Point (in hexadecimal – you can look this up on a chart and find that it's 7F for two wavesamples), set the Top Key (30 keys per keyboard half), press Sample Upper or Sample Lower, then Enter/Start before playing the sound. All rather involved, I'm afraid. An eight-way multisplit implies a lot of hexadecimal looking-up and even more key-pushing. The main advantage of using the Prophet 2000 over the Mirage is that you're selecting parameters individually (even though there's still only one Data Entry control) rather than punching out a parameter's number every time, which does become tedious. Remember, though, that the Mirage's keypad access system is one of its major cost-savers.

Once you're happy with a sample you can leave it alone or modify it with the synth parameters, which again have to be called up one at a time. The most obvious one to use is the Filter (Low Pass only with variable Resonance), which can remove a lot of unpleasant hiss and aliasing effects, but you might also like to change the Attack, Peak, Decay, Sustain and Release of the VCA or Filter, or even chop up the sample itself.

Changing the sample start or end points is easy enough: just select the relevant parameter and use the data entry buttons to rid yourself forever of unwanted clicks or hisses. But looping a sound for an indefinite sustain effect is much more difficult.

Maybe the Visual Editing System running on the Apple IIe would help here, but I must admit to having had very little success without it. The looping process isn't difficult to use – it's just that it doesn't seem to work too well. All you have to do is switch Looping on and choose start and end points, with the latter having both Coarse and Fine values.

The start and end points are expressed as memory segments, while the End Fine Adjust parameter looks at individual samples within the final segment. Ideally, you should choose start and end points so that the loop is approximately correct, not changing in tone too much or producing major glitches. You'll usually get a click as the sample value at the end of the loop changes, though, so the Fine Adjust is intended to allow you to match values for a completely silent loop.

In practice, it's not so simple. I've searched through page after page of sample values at the end of a simple voice sound without finding a click-free loop, and the handbook's best advice is a) choose a new start point, b) sample again, or c) buy the Visual Editing System. Not very satisfactory, though to be fair to Ensoniq, it must be possible to create good loops, because the factory Piano, for instance, is utterly click-free.

If you do manage to achieve a good loop, you can investigate the more esoteric possibilities offered by the Advanced Sampling Guide. You can set an artificial fade in or out (as on the factory Piano) which effectively gives you much longer release times since the sound is looping as it fades, and you can reverse sounds and splice them together. With the Guide come two disks offering setup parameters for two-way, four-way and eight-way keyboard splits, and loading one of these is a good deal faster than setting up all the parameters yourself. A rip-off at £49, but a bargain now that you can get it for nothing.

The Mirage's other main points of interest are its sequencer, MIDI facilities and other interfaces. The Poly Mode MIDI implementation is fine, and the Out port is switchable to a Thru function with optional transmission and reception of ▷

'Since user-formatting, you can't complain the Mirage is expensive to feed; but some would willingly dump the sequencer and use its disk space for more sounds.'

▷ pitchbend and modulation data. MIDI clocks are sent and received by the onboard sequencer, note information is stored on disk with the samples, and you can create polyphonic real-time sequences 333 notes long (1333 with the Sequencer Expansion cartridge) with little fuss.

The Mirage has a single footswitch socket which doubles as a piano-type Sustain pedal (which, as we all know, really means Release) and as a start/stop for the sequencer. The Sequencer Expansion cartridge fits into a rear panel multiway port that's also used for the Apple II interface.

Sample quality varies enormously, from factory samples that range from the stunning to the mediocre, to whatever you can achieve yourself with or without Advanced Sampling. Multisplits are great providing you don't expect massive frequency response – and introducing modified versions of sounds using key velocity or the modulation wheel can be highly expressive.

With user-formatting supplied, you can't complain that the Mirage is expensive to feed, but some people would willingly dump the sequencer and use its disk space for more sounds if they could. A Jap-style disk rack would be nice, too.

'The Mirage is a great piano, sound effects machine, choir and string section – particularly if you can swap decent disks with other people.'

Currently available Apple software is confined to the Visual Editing System, but other packages are being developed (by other sources) for MIDI connection to other computers. Unlike the Prophet 2000, however, the Mirage doesn't transmit sample data over MIDI, so you can't use a computer as a bulk sample store.

Time for a few conclusions. The Mirage itself is pleasant to play – the keyboard is crisp and responsive, the modulation and sprung pitchbend wheels are fine, the velocity-sensitivity is good, the loading times are acceptable.

Advanced Sampling is a big joke. Hexadecimal lookup tables, wavesample rotation, Nyquist sample rates, sampling at 256 times the frequency of the sound source for page-long short loops – how many working musicians have time for all that gumpf? It takes about a month to get into, and the catch is that the Mac-style manual looks eminently readable, but is in fact about as comprehensible as a German-language PPG handbook on LSD. You don't get any of this nonsense with the Prophet 2000 – you just tell it how much memory you want to use and where to put it, then whack your sound in.

At £1695, plus Advanced Sampling, plus user-formatting if you could get it, plus a sequencer expander, plus visual editing, plus an input sampling filter for higher frequency responses, the Mirage didn't look too healthy up against the Prophet 2000, though demand has been high enough to ensure healthy sales for both machines. However, at £1295 with Advanced Sampling for those with patience and user-formatting for those into cheaper eating, the Mirage is looking well again. Soon we'll see its keyboardless Expander version (around £800) and no doubt a whole family of other Ensoniq products, too.

Now it's just a matter of what you want the machine to do for you. It's a great piano, a great sound effects machine, and a great choir and string section – particularly if you can swap decent disks with other people (there is an Ensoniq Hackers' Club already in existence).

If you want to take it further yourself, make sure you're well stocked up with patience before you set off. Finding the best of the Mirage involves a long trek through barren, thirst-inducing desert. But then again, you could find it's an interesting journey. ■

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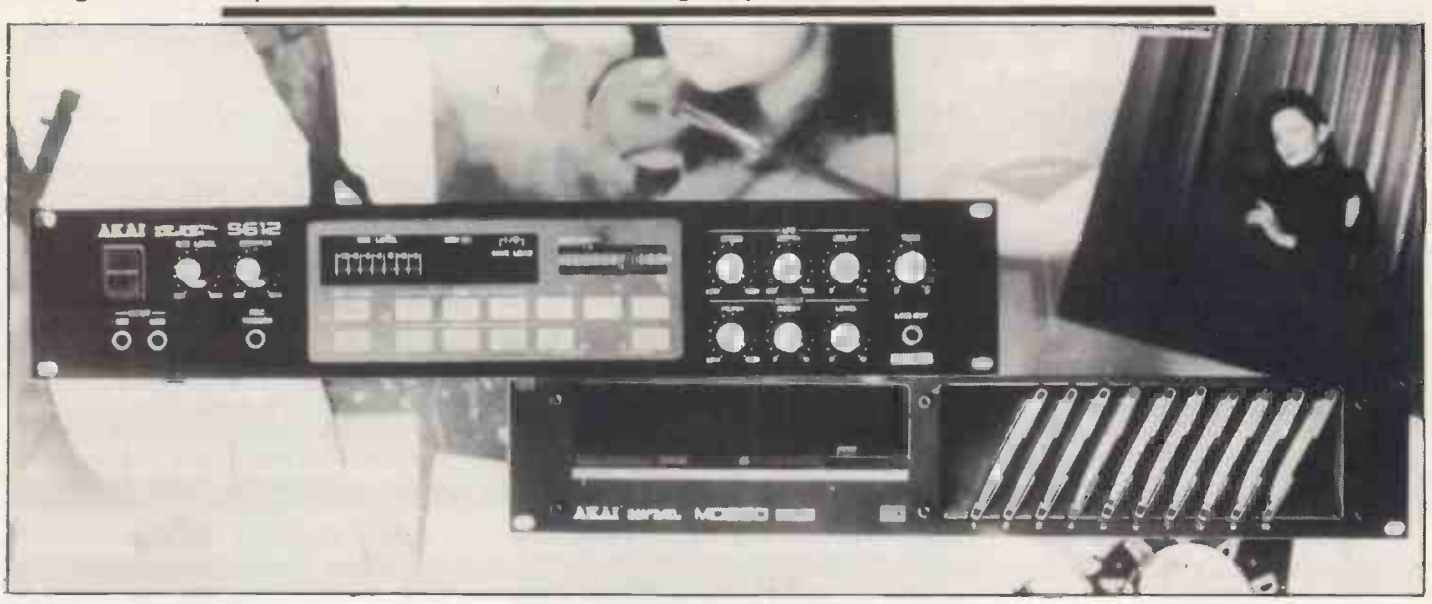

The Akai pre-production prototype was a mysterious beast. When we got our hands on it a month or so before the S612's official release in the summer, it had back panel legends scribbled on masking tape. There was no sign of the dedicated disk drive with which its designers intended it to be used, and as for an owner's manual...be reasonable.

There was no mystery about the way the sampler sounded, though. It performed so well that we only sent it back to Akai under threat of being forced to watch 16 consecutive episodes of *Howards' Way*.

Since then we've got another one out of them, though this is a full production model rather than a handbuilt, half-baked prototype.

The basic specification is unchanged. The S612 is still a 19" rack-mount sampling module designed to be used in conjunction with any MIDI-equipped keyboard, as it's currently unique in being devoid of one of its own (though February's Frankfurt show could see the arrival of a couple of other keyboardless modules from rival companies). What it does have – now – is the company of the MD280 Sampler Disk Drive for storage and retrieval of your own samples, or Akai's library of pre-recorded sounds. More on these in due course.

The S612 is a six-voice, velocity-sensitive device. Sampling is 12-bit, and maximum recording time varies, depending on the sampling frequency you choose to apply, between one and eight seconds. On the pre-production unit, there was no clue as to exactly *what* determined the sampling frequency, but it turns out to be the last key pressed prior to entering recording mode. Quite simple and eminently flexible.

Overdubbing is quite straightforward, too, and is not ▷

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▷ restricted to the sampling frequency chosen for the original recording; that parameter can be re-defined before each overdub. But, as the manual points out, it's advisable to save the sample to disk after each recording/overdub, as overdubbing is an irreversible process: once you've done it, you're stuck with it. Each successive overdub is attenuated (by -6dB, so we're told) so you need to exercise some care if your final balance of sounds is to be as you intend it. The saving-to-disk business can save a lot of heartache here as well, but in any case, the overdubbing procedure is easily mastered with a minimum of perseverance.

stage which, in turn, is determined by the Decay control.

This is simple enough in theory, but in practice it's a delicate operation that requires either a lot of patience or a lot of luck to be executed properly. It's not an area you can shortcut, either, as a sample that involves a loop is only as good as the loop itself. A more precise method of defining these points would have made the task a little less frustrating, no doubt about it. Still, the Akai system does work reasonably well, and provides adequate control over the sample.

Anyway, having dilligently devoted hours to the recording and

'The Akai disk drive takes eight seconds to complete each of its Save, Load and Verify functions; and that is not quick.'

On with the story. Once safely ensconced within the machine, your sample is at the mercy of the S612's considerable manipulation facilities.

First of all, it's presently only possible to play back the sample from a keyboard, there being no playback triggering facilities on the unit itself. You're offered all the usual options: One Shot, Looping, and less commonly, Alternating. The first two should be self-explanatory, while the third involves reading the looped section of the sample both forwards and backwards before reaching the starting point again. This is a useful technique and is employed to good effect on Akai's library disks, as we shall see.

Apart from the masking tape and sockets for the disk drive, the rear panel of the prototype also hosted a couple of switches of uncertain purpose, alongside the pre-requisite MIDI In, Out, and Thru DINs and the line out jack. These controls have now shed their cloak of mystery, migrated to the front panel, and declared themselves to be Key Transpose and Manual Splice function controls.

Simplest first: key transposition is made by poking the relevant button (twice if you change your mind and want to cancel the command) and pressing the key you want to hear as middle C. A nice touch here is that the transposed key can be saved to disk along with the rest of the sample information.

Less straightforward is the splicing side of things. When either of the looping modes are selected, the splicing points are chosen automatically by the S612 itself, unless, of course, you want to butt in and take control of the operation yourself. No prizes for guessing that this is what the Manual Splice button is for. When the switch is activated, the slider normally used to determine the start point of sample replay also sets the start point of the loop. The sample loops between this point and that defined by the End slider until key release, when it enters the decay

reworking of your samples, it would be a shame if they were lost each time you switched off the machine, wouldn't it? Luckily, Akai have realised this, and have designed the MD280 Disk Drive to provide a more permanent means of preserving your work for posterity.

The MD280 is the same size as the S612 itself, being a 19"-wide, 2U-high unit. The front panel is divided roughly in half, with the left-hand side housing the disk drive itself, and the right acting as storage space for up to ten disks. The rear panel is dull in the extreme and has just two permanently attached leads, one each for power and data transfer, connected to the appropriate sockets on the S612. The device has very little in the way of controls, either, as all the relevant ones reside on the front panel of the S612. The only control the MD280 has managed to retain is an Eject button for getting the disks in and out.

There are three disk controls: Save, Verify and Load. There are only two things to be said about these functions. The first is that they do what they're supposed two, the second is that they each take eight seconds to do it, which is *not quick*.

Let's move swiftly on to the disks themselves. The disks are of the 2.8" variety and hold one sample per side. In case you're reading this after a heavy night, that's two samples per disk. To pre-empt the obvious question, blank disks are currently available through Akai at an RRP of £2.90, and are also used by Sharp and by Korg for their SQD1 sequencer. Akai UK have assured us that, after a brief spell of the disks being out of stock, no supply problems are anticipated for the foreseeable future.

Which brings us very conveniently to the Akai library disks. These are divided into groups of 20 sounds (so there are 10 disks in each group) as follows:

SL201 – Orchestral Sounds
SL202 – Percussive Sounds
SL203 – Choruses (Human voices)
SL204 – Rhythm Sounds
SL205 – Special Effects
SL206 – Sounds of Japan
SL207 – LA Studio 20

The sets vary in price, with SL202 and SL206 costing £59.90, and all the rest £49.90. It's a fair guess that dealers will be only too happy to split these sets up so that you can buy only the disks you want/can afford out of a particular set, making the RRP of a single, pre-recorded disk £5 or £6. Not so bad.

Most of the sound groups require no further explanation except, perhaps, the Rhythm sounds which include slapped basses, congas, tambourines and so on; the Special Effects which cover doors slamming, thunder and rifles; and the new LA Studio sounds. This last group covers a variety of samples from grand pianos to Fairlight presets.

Going through the contents of the review set (made up of a selection from various disk groups), we find: Piano/Piano B, Synth Clav/Vibes, Bass 1/Bass 2, Flute/Double Bass, Girls Chorus/Violins & Violas, JB/Tenor Sax, Acoustic Guitar/Rock Guitar and, finally, Fairlight/Girls; what more could you ask from a disk?

You want subjective impressions? You got 'em. Only problem is, this is where we run slap bang into the prototype syndrome again, for some of the disks Akai gave us had pre-production samples (oh dear) recorded on them. Subjectively, this unfinished state manifested itself in the form of various audible problems, most of them concerning looping.

'One Akai disk has a group of people grunting in a sexual, rhythmic way; an amusing demonstration piece, but you'd be hard-pushed to find another use for it.'

On with the sounds, though. The pianos get better the more you play them, though the first had a terrifically buzzy loop at its end. The second piano is claimed to be a Yamaha Grand, and while it's not the same as the real McCoy (remember you haven't got all those mechanics attached to each note of the keyboard to make the sound more interesting), it's not far off. Both samples are wonderful reversed, so they should find use as effects as well as straight pianos.

The Vibes are one of Akai's strongest suits – clean and irritatingly playable. This time there's no loop on the disk, but it's easily done if desired (and if Akai haven't done it themselves by the time you hear it).

The Synth Clav sounds fine, albeit a little thin when it reaches its looped stage. It's a realistic solo synth voice, ▷

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▷ though; I found myself being tempted to reach for a filter cutoff frequency control from time to time. Still, it's a bit of a mystery to me why Akai have gone for a synth patch when they could have gone for a real Clavinet sample or, alternatively, gone for a non-imitative synth patch instead.

Both the basses are of the electric variety, the first being a currently fashionable slap sample. Great sequencer fodder, this; Trevor will have to find a new trick now. The second bass is softer and works well where the percussive attack of the first is a hinderance rather than a help.

Another excellent sample is the flute, which comes into its own when soloing with a slow repeat echo and has a wonderfully natural feel to it in a classical context. The only things to beware of are the sharp (pre-production) cutoff at the end of the sample and the unnatural tremolo that arrives as soon as you take things too far from the original sampled pitch. Lingering on the subject of pitch for a moment, I can't work out why this sample should be a semitone sharp of concert pitch – remember the key transpose?

The Double Bass is sadly rather unremarkable. It works well enough in isolation, but once in amongst other sounds it becomes anonymous and, well, unremarkable.

Girls Chorus is a fascinating vocal sample. There's a bad glitch in the loop on this one and I couldn't do a lot better when left to my own devices, but, played within their useful duration, the girls are just dandy. For some reason best known to Akai, this one doesn't seem to be greatly different from the Girls sample on the back of the Fairlight disk, so I'll skip that one.

Novelty time now with JB, the meaning of which I know not (Jail Bait? James Bond? Jones Brothers? Answers on a postcard please). Whatever it stands for, it *sounds* like a group of people grunting in a vaguely sexual, definitely rhythmic way. It's certainly an amusing demonstration piece, but you'd be hard-pushed to find another use for it. I wonder what actually *was* going on...

The Tenor Sax is another casualty, you'll be disappointed to learn. Definitely not suitable for solo or melody work, it's OK for a few stab chords. That's really a great shame, because the sound of the real instrument is so evocative, and the looping here is almost perfect.

'Akai's version of Orch 4 tells you there's an abortionate loop at the end of the Fairlight sample that everybody misses. Interesting.'

Another failure is the Acoustic Guitar, which sounds more like a bad piano to me. Moving quickly on we get to the Rock Guitar, but before you bury your head in your hands (as I did on hearing of it), you'll be relieved to learn that it has its uses, and effective ones at that. The sample is a good one (direct-injected into the sampler by none other than Jeff 'Skunk' Baxter, or so I'm told), and as such, it lends itself to most of the inflexions available to a guitarist – pitchbending, manic vibrato and all. I was surprised when it stopped short of feeding back, but I still managed to perfect the 'budding Richie Blackmore practising in the front room' routine. The neighbours were impressed.

And so, finally, to the one you've been waiting for. Yes, the Fairlight sample *does* sound like a recording of the Orch 4 preset, and yes, it *does* sound just the same as it does whenever anyone else uses the real(?) thing. Sampling samples seems to me a fairly ludicrous exercise, but if the demand is there for a down-market version of what has been a fairly exclusive voice, there's no reason why manufacturers shouldn't seek to cater to it. And what the Akai version does tell you is that there's an abortionate loop at the end of the Fairlight sample that everybody avoids. Interesting.

As an instrument in its own right, the Akai S612 is no more likely to put Fairlight out of business than Henry Ford was likely to make Messrs Rolls and Royce reach for the sleeping pills. But, along with its contemporaries, it's certain to have a far-reaching effect on musical trends. The samples I had are worthwhile, and the sounds should get better before the library becomes freely available.

If you already have a MIDI keyboard, the Akai's new low price makes it almost irresistible value for money. It stumbles a little, though, over its inability to store more than one sample at a time, its lengthy disk-changing time (it'd be a pig to use live; no wonder the Akai demonstrators use so many 612s linked together), and the fact that, in the current absence of an external single trigger, you can't actually sample anything without having a keyboard around unless you don't mind not hearing your recording till after you've dumped it to disk.

Akai's new sampling machine, the S900, is a better thought-out, more comprehensively-specified device, but is likely to cost in the region of two grand. The S612, meanwhile, has few enough compromises to allow it to please most of the people, most of the time. ■

Prices *S612 £799; MD280 £199; disk sets £50 and £60 (see text)*

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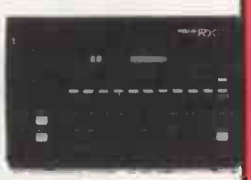

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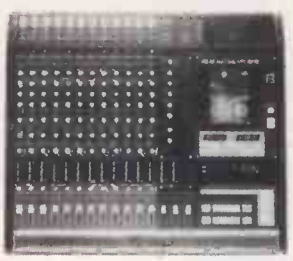

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SIMMONS **NEED WE SAY MORE**

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The drumming side of modern music technology has had a fairly quiet last three months – thus we haven't had to make too many changes to this issue's CHECK-LIST, the buyer's guide that pulls no punches. For once, the product details have remained as stable as the list's basic formula: a full rundown of all the relevant instruments currently available, with price and spec information, plus the comments of our reviewing team where possible.

If anything, this month's instalment shows a slight drop in the number of drum machines and electronic drum kits listed. We've said goodbye to, amongst others, the MXR 185 drum computer, the Simmons Clap Trap, the Roland TR909 and, sadly, the Anvil Percussion Synthesiser, a drum machine of phenomenal power that we previewed back in June '85, but which is now a victim of spiralling research and production costs.

On a brighter note, quite a few instruments have been subject to price drops. Most notable of these is the LinnDrum, which now looks much better value at its new price of £1395 + VAT. And we've maintained our policy of erring on the side of pessimism when it comes to typical retail prices; so don't be surprised if your nearest music shop offers you a piece of gear at a price significantly lower than that listed below.

The Spring of '85 looks like being a busy year for the programmable drum machine, even if manually played electronic drums aren't going to proliferate the way they have done over the last couple of years. We already have advance details of new machines from most of the big names: Yamaha have an RX21 with Latin Percussion voices, Roland are to introduce the TR505 as a direct (and long-overdue) replacement for the Drumatix, and Casio are to introduce their first-ever stand-alone drum box. It will cost about £350, and it will have a user-sampling facility onboard. We also have news of a new machine from French company RSF (remember the Kobol synths?), which features a huge range of preset voices and a flexible programming system at little more than RX15/TR707 money.

But perhaps most significant of all will be Roland's PAD8 Octapad, a pad-to-MIDI converter that lets you play just about any MIDI instrument from its own array of touch-sensitive pads. It could be in some shops before Christmas, and we'll be publishing an in-depth appraisal of it – plus further news on the other, less advanced, new products – as soon as time and excess Christmas food and drink will allow.

DRUM MACHINE

AHB

Inpulse One – £1095 Eight-voice digital drum machine. Eight pads for live performance, 99 programmable patterns, 15 songs, trigger inputs, individual voice outputs; 16-voice basic sound library includes bass drum, snare, handclaps, timpani, gunshot, conga, claves, hi-hat. + *Build quality, ease of use, promise of expanding voice library;* − *some sonic disappointments, difficult to get hold of;* = *a fine machine that combines editing facilities with real-time playability, sadly underrated.*

BOHM

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

BOSS

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

E-MU SYSTEMS

Drumulator – £985 12-voice digital drum machine. 36 programmable patterns, 8 songs, cassette storage of programs, sync (24, 48, 96 ppqn); basic sounds include bass drum, snare, clave, cowbell, handclaps, rimshot, open & closed hi-hat, 3 toms, cymbal – alternative sound chips also available. + *Digital voices still sound good next to Japanese competition, excellent range of additional ROM-based voices;* − *falling behind in both price and composing facilities;* = *low High Street prices make this a decent bet despite its age, though it's now overshadowed by Emulator SP12.*

Emulator SP12 – £2999 24-voice (16 preset, 8 user-sampled) digital drum machine. 100 segments chainable into 100 songs (minimum capacity 5000 notes), MIDI (In, Out, Thru) and SMPTE equipped; bass, snare, electronic snare, rimshot, 4 toms, 4 electronic toms, hi-hat, crash & ride cymbals, claps, cowbell. = *Wonderful digital sound quality thanks to 12-bit resolution, user-sampling equally impressive, easy to use, first US drum machine to offer genuine step-time programming;* − *high demand means limited availability;* = *probably the best drum machine available anywhere, completely without rival (at least for the time being) and easily upgradable through hardware/software updates.*

HAMMOND

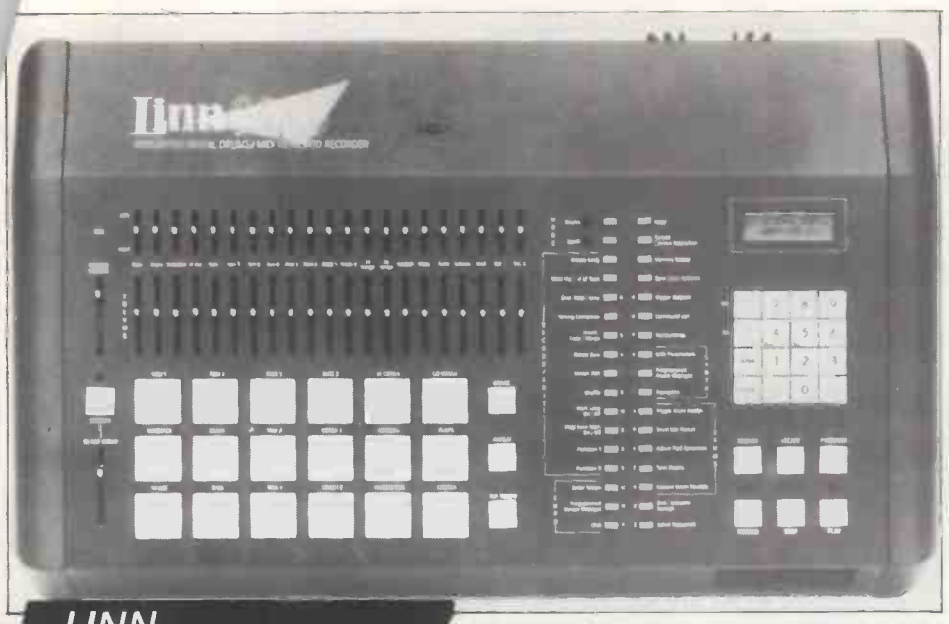
DPM48 – £499 23-voice (15 programmable) digital drum machine. Seven programmable patterns, MIDI (In, Out, Thru) equipped; 4 toms, 3 bass drums, 3 hi-hats, 3 snares, 3 cymbals, 2 cabasas, clap, 2 agogos, rimshot. + *Sounds good despite home organ origins, MIDI retrofit makes interfacing facilities complete;*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

KORG

DDM110 – £225 Nine-voice digital drum machine. 32 programmable patterns, LED display, real- and step-time programming, programmable trigger out, stereo output, sync (48ppqn); bass drum, snare, rimshot, 2 toms, open & closed hi-hat, cymbal, handclaps. + *Cheapest digital drum machine on the UK market, links neatly to MIDI (and tape) with optional KMS30 interface;* − *you don't get impeccable sound quality for this money, so some sounds bettered by analogue equivalents;* = *another justifiably popular machine, even with (unavoidable) digital noise problems.*

DDM220 – £225 Latin Percussion version of DDM110, spec as above except for voicing; 2 congas, timbale, wood block, cowbell, agogos, cabasa, tambourine. + *Marvellously realistic approximations of Latin drums that really do sound different;* − *nothing at this price, except non-Roland standard sync;* = *the first drum machine to offer more than the usual rock percussion set-up, and they're not charging the earth for it.*

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



LINN

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

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

MFB

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

MPC

Music Percussion Computer – £299 Nine-voice analogue/digital hybrid drum machine. 26 programmable bars, 25 programmable sequences, eight pads for live playing, real- and step-time programming, individual and mix outputs, tape sync facility, ZX81 interface; bass drum, snare, open and closed hi-hat, 4 toms, handclap, cymbal. + *A marvellous idea (like a cheap Inpulse One, though the MPC came first) backed up with some presentable sounds;* – *no MIDI, Sinclair software not very friendly;* – *a pioneer coming to the end of its useful commercial life, though it's still a worthwhile machine, and new MPC pricing policy makes it something of a bargain (it's reduced by a further £100 over Christmas only).*

OBERHEIM

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

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

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

ROLAND

TR707 – £550 12-voice digital drum machine. 64 programmable patterns, liquid crystal display, real- and step-time programming, individual and stereo audio outputs, MIDI (In, Out) and Sync 24 equipped, cartridge and cassette storage of programs; 2 bass drums, 2 snares, 3 toms, rimshot, cowbell, handclap, tambourine, open & closed hi-hat, 2 cymbals. + *Marvellous sounds, DR110-like display makes programming a piece of cake once you're suitably acclimatised, cartridge storage is great relief after tape, useful set of separate outputs;* – *not nearly as well-built as Roland's old TR808 analogue flagship, idiosyncratic programming technique, no individual voice tuning;* – *despite its limitations, the best middle-market drum box available – if you like Roland's programming system, being augmented by smaller TR505 in 1986.*

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

SEQUENTIAL

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

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

TECHNICS

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

YAMAHA

RX21 – £249 Nine-voice version of RX11 and RX15. 56 programmable and 44 preset patterns, real- and step-time programming, built-in LCD, stereo outputs, MIDI (In, Out), cassette storage of programs; bass drum, snare, 3 toms, open & closed hi-hat, crash cymbal, handclaps. + *Same strong sounds as its more expensive RX brethren, disarmingly cheap.* – *same programming difficulties as RX15/11, stereo outputs are restricting,*

suspect build quality in places; – *excellent value for money if stereo outputs aren't an insurmountable problem, spells big trouble for the rest of the big drum machine guns, new RX21L (with Latin sounds) arriving shortly.*

RX15 – £499 15-voice version of RX11; spec as below except: stereo only outputs, cassette only storage, bass drum, 2 snares, rimshot, 3 hi-hats, 3 toms, 2 cymbals, handclaps, cowbell, shaker.

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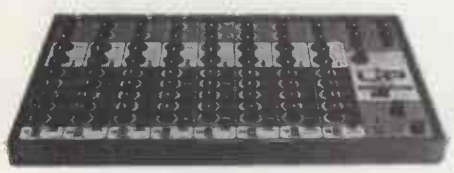

The K2-X is a versatile eight drum percussion synthesiser with built-in stereo mixing. Each channel has a manual/factory preset setting and is self pulsing to aid sound 'set up'. There is an 'on board' micro-sequencer with speed control which will produce six basic rock patterns and there's a headphone facility for monitoring or practising. The K2-X electronics unit is available with five drum pads (as shown) at around £850.00.

"Give this kit a good try out before you spend any money... it has a lot to offer" — Paul White, Technical Editor, E.&M.M./Rhythm Magazine.

The Up-Five is a five drum kit with eight instantly selectable kit sounds and is ideal for live use. It has level controls for each drum, master level control, mono/stereo output to amp or headphones and comes complete with the five drum pads shown. All for around £499.00.

"I am impressed with the Up-Five's capability to create good 'studio sound' drums... you really must hear it to believe it." — Bob Saydlowski Jnr., Modern Drummer Magazine.

Ultimate drum pads are designed to be used with both the K2-X and the Up-Five. They offer what is undoubtedly the most comfortable and natural playing surface available today, with the added advantage of being virtually indestructible. Constructed on steel frames, U.P. drum pads feature high impact, high gloss shells with substantially chromed steel rims for an attractive, professional appearance. The universal U.P. drum pads are available for around £59.00 each while the bass drum pads including spurs cost around £118.00.

"Arguably the best engineered electronic drum pads." — Paul White, Technical Editor, E.&M.M./Rhythm Magazine.

The One-Up is a battery powered, self contained drum synthesiser which, like the K2-X and Up-Five, responds naturally to 'human' dynamics and is designed primarily as an 'add on' for the acoustic drummer. Because the One-Up is fully controllable a wide variety of drum sounds and 'effects' can be produced. The One-Up is built to the same high standards as the U.P. regular drum pads and has a suggested retail price of only £125.00.

"The dynamic response is excellent, easily the most convincingly natural of any electronic drum." — Andy Duncan/One-Two Testing Magazine.

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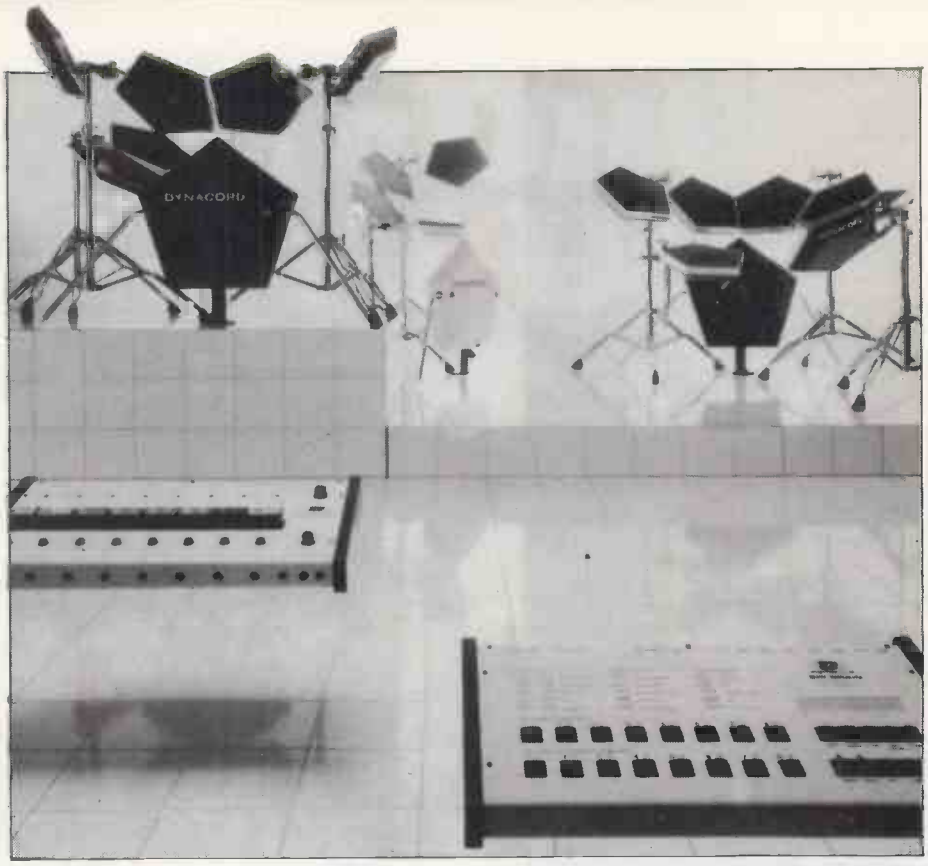
▷ ➕ *Fine sounds, good range of editing facilities, informative (if limited) LCD;* ➖ *not the easiest machine to use, lacks individual voice tuning;* ➖ *Yamaha's first venture into programmable drum machines is a real success, especially in the context of an X-series MIDI system.*

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

ELECTRONIC DRUM



CLAVIA

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

ddrum Rack System – £2025 Five-channel, rack-mounted digital electronic drum kit comprising ddrum electronics and set of Remo heads, expandable to eight channels, individual outputs, now being handled in the UK by Nomis Complex. *To be reviewed.*

DYNACORD

Percuter – £550 Eight-channel digital electronic drum kit. Interchangeable digital modules, individual and stereo outputs.

Big Brain – £795 16-channel drum sequencer. 50 programmable songs, 100 user-programmable patterns (50 optional preset or program-

mable), cassette storage of programs, MIDI (In, Out, Thru), Sync In & Out.
Boomer – £725 Digital percussion sound-sampler. Trigger in from pad or sequencer, editing facilities. *All Dynacord electronic percussion machines to be reviewed.*

HOHNER

CDX9 – £TBA Eight-voice, seven-pad, digitally-sampled electronic drum kit. 2U rack-mounted voice unit, overall tuning facility, individual and stereo outputs.
CDX11 – £TBA As above, but with five voices and rimshot.
CLX1 – £TBA LFO unit for CLX2.
CLX2 – £TBA Individual drum voice module. Pad/MIDI triggering.
CQX3 – £TBA Real-time drum sequencer. MIDI (In, Out, Thru), external input from pads. *All Hohner electronic percussion machines to be reviewed.*

KLONE

MultiKlone – £399, individual modules – £195 Five-channel analogue drum kit. 5 identical sound channels, 5 Trigger Ins, 5 Audio Outs, auto flam facility. + *Flexible budget electronic drum kit, useful as either an add-on to an acoustic kit or in its own right;* − *only one preset and one user-programmed sound simultaneously available for each channel;* = *remarkably good sounds for very little money, deserves to rule the budget roost for quite a while.*
Dual Percussion Synthesiser – £195 Two-channel analogue electronic drum add-on. Basic spec as Kit 2. + *Again, it looks good and it sounds OK, plenty of scope for 'weird' sound effects in addition to conventional percussion voices;* − *drum sounds lack bottom, feel;* = *useful addition to either a MultiKlone or (better) an acoustic set-up.*

MPC

DSM1 – £80 Non-programmable electronic drum module. Sensitivity, decay, pitchbend, pitch, noise and click controls. Can be triggered by MPC Standard or Super Pads.
DSM2 – £90 Spec as for two DSM1 modules in one unit but without onboard power supply.
DSM8 – £130 Auto-tom unit producing tom roll from single pad strike or sequencer trigger, incorporates voicing circuitry and sequencing electronics. + *Certainly very clever, and pretty cheap for what you get;* − *has to be powered from MPC drum module, built-in tom sounds are hardly revolutionary;* = *decent budget sequencing machine for the lazy and/or incompetent.*
DSM32 – £200 128-memory analogue electronic drum module. Spec as for DSM1 plus modulation control. + *Excellent analogue sounds, mod control widens sonic vocabulary to include FM-like synth timbres, programmability well worth having;* − *dynamics not programmable, single decay control;* = *a very neat analogue kit, especially when triggered by same company's Super Pads (£299 for five with stands).*
Programmer 8 – £150 Eight-channel drum sequencing software for ZX81, Spectrum or Commodore 64 computers. + *Superb graphics display similar to Roland TR707/Yamaha RX software, hardware can be triggered by just about any electronic percussion device;* − *Sinclair models lack sync facility, have software stored on tape;* = *well-considered package that makes drum programming a cinch and is capable of remembering an entire set's worth of rhythm patterns. All MPC products susceptible to price reductions following company's decision to deal with customers direct on mail order basis.*

PEARL

Drum X – £TBA New electronic drum system with redesigned pads and voicing circuitry, replaces DRX1 previously listed. *To be reviewed.*

ROLAND

PAD8 – £TBA Eight-pad MIDI drum controller, features user-assignable channel numbers and touch-sensitive pads. *To be reviewed.*
DDR30 – £999 Digital electronic drum kit. Six-voice rack-mounted sound module, eight memories per voice, 32 kit memories, MIDI In and Out, individual and stereo outputs, links with standard PD10 (£85) and PD20 bass (£175) drum pads. + *Looks fantastic, high sound quality, typical Roland dependability and sturdy construction, easy to use;* − *not as versatile as some of its competition, all-digital voicing means old-fashioned analogue electronic sounds are out;* = *at its reduced price, a serious and worthwhile Simmons alternative you can buy bit by bit if the wallet is looking thin.*

SIMMONS

SDS1 – £170 Single pad digital module/pad. Derives sound from EPROM, battery power, external trigger.
SDS6 – £1435 Eight-channel programmable drum sequencer. Programmable dynamics, 250 patterns per sequence, MIDI-equipped. + *Marvellous (and much-copied) LED pattern display, new-found MIDI compatibility;* − *a little bit expensive, all things considered;* = *a custom sequencer that makes an awful lot of sense for existing Simmons owners, but now sadly out of production.*
SDS7 – £2155 Five-channel analogue/digital ▷

▷ hybrid electronic drum kit. Expandable to 12 channels, each channel has individually-controllable analogue, digital and noise sound sources, 100 different 'kit' programs. + *Unrivalled sonic flexibility thanks to variety of sound sources, handy 'pad' program selector, impeccable pad design;* − *if you can afford it, nothing;* = *rapidly becoming to the electronic drum world what the LinnDrum is to the drum machine market, and deservedly so: MIDI coming soon.*

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

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

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

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

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

TAMA

Techstar TS500 – £1174 Five-pad, six-channel analogue electronic drum kit. One preset and one user-programmable voice per channel, trigger inputs, individual and stereo outputs. + *Generally good (if derivative) sounds, excellent pads, neat rimshot facility;* − *like so many imitators, it lacks character;* = *serviceable Simmons alternative from the first acoustic company to go hi-tech – with more products on the way in the near future.*

Techstar TS600 – £1061 Six-channel analogue percussion synth. Four toms, synth and hand-claps, details as TS500.

TED

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

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

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

ULTIMATE PERC

1UP – £125 Single analogue electronic drum module. *To be reviewed.*

UP5 – £499 Five-pad analogue electronic drum kit. Eight preset kit voicings, individual and stereo outputs. + *Fine analogue sounds, follows Simmons philosophy of deliberately restricting range of sounds available;* − *nothing, though these days, you may not want an all-analogue kit;* = *so long as you don't want access to a wide variety of drum sounds, the best way of getting*

into electronic drums, even more sensible now that £50 has been lopped off the price.

K2X – £855 Analogue electronic drum kit. *To be reviewed.*

WERSI

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

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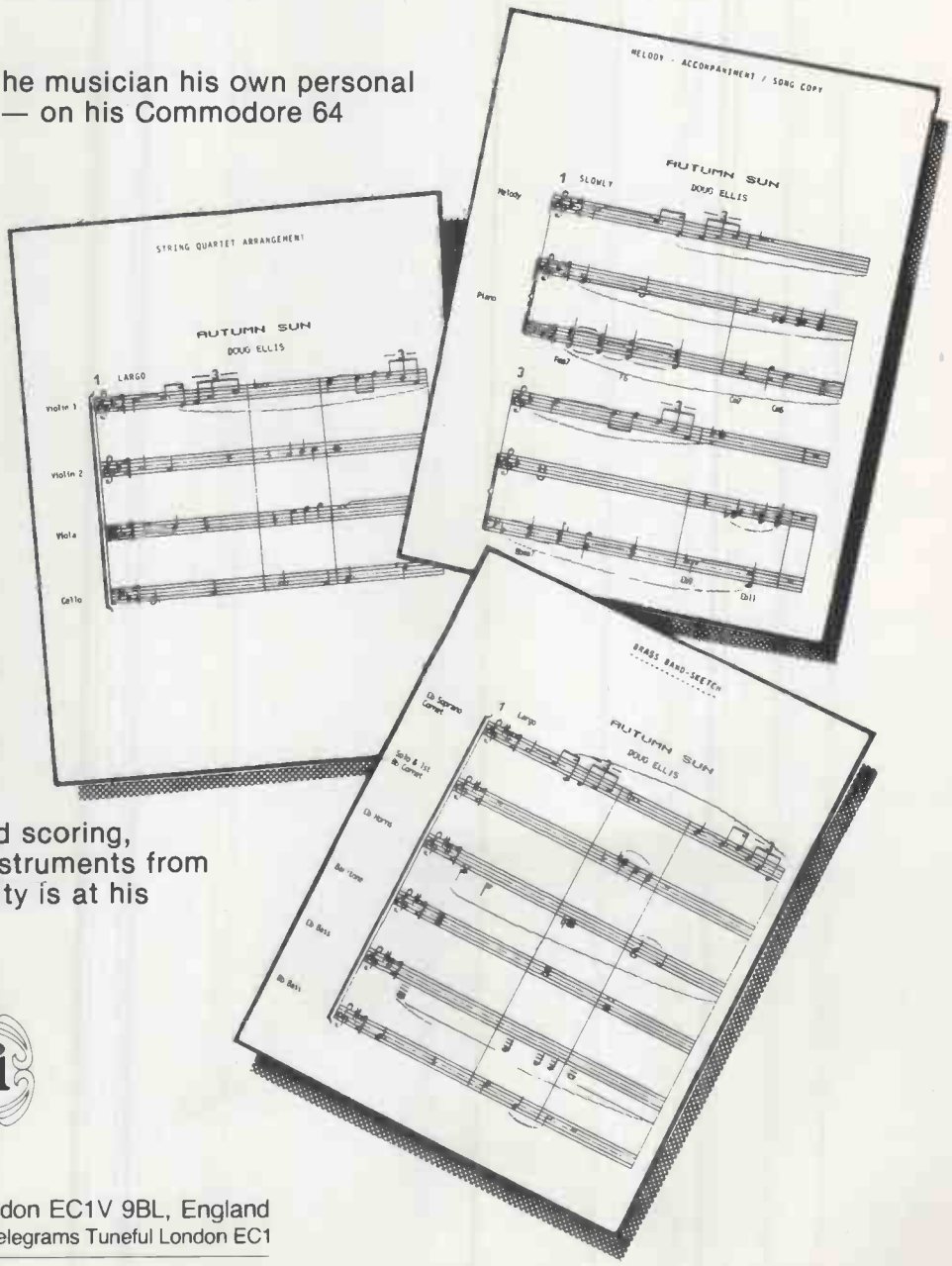

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CAFÉ *society*

Simon Jeffes, musical chameleon and founder member of the Penguin Café Orchestra, talks about making serious music with a commercial face.

Words *Paul Tingen*
Photographs *Matthew Vosburgh*

'I know this might sound awfully corny', says Simon Jeffes in a tone of voice entirely bereft of corn, 'but it all stems from when I went to Japan in 1972. It's as if I discovered myself there and became more confident, musically and personally. It all happened quite spontaneously. I was living a rather regular life here in London, working a lot with Rupert Hine on his solo albums and on some advertisement music, when something suddenly grabbed me at the side and said: "OK, now go off to Japan".'

The storyteller smiles and offers us a cup of tea. The place is a small studio in the Holland Park region of West London – just one big room, of cubic proportions, intersected with mathematical precision by a balcony halfway up the wall. On the ground floor lies a host of instruments ranging from piano to ukelele. On the balcony is a small kitchen, with a Trident Fleximix mixing desk, a TEAC 80-8 eight-track machine, a Great British Spring reverb, and an old Revox A77.

Simon Jeffes is the musical and philosophical brains behind an unfashionable hybrid of musical styles called the Penquin Café Orchestra. Jeffes is a tall man in his mid-thirties, much given to gesticulating vividly as he speaks.

He displays the intriguing combination of an almost childlike openness and a clear impression that he knows *exactly* what he's talking about. Maybe it's got something to do with his Japanese experience. After all, isn't there an ancient Oriental saying that advises people 'to know nothing and to observe like a child'? But observing like a child doesn't mean being a fool, as Jeffes' story shows...

'Being in Japan was an experience of opening up. There was one incident which struck me in particular. It was when I visited a shakuhachi (a kind of bamboo flute) player in his house. We entered this small room which was typically Japanese, with small mats on the floor, paper doors and nothing else except a kettle and a little stove. We sat on the floor and he played. Just before he started to play, he put the kettle on the stove to make some tea. As you know, the Japanese do everything in a very deliberate way. So he started to play the shakuhachi, which gives a stunningly clear and purposeful sound. While he was playing, the kettle started to hiss a bit as it got hotter.

'I then suddenly had this sense of clearness and space between everything. Space between the notes, space around the notes, space between the music and the sound of the kettle. It was a feeling of lucidity where I felt I could sense the *shape* of the notes he was playing. The funny thing was that the sound of the kettle didn't interfere, it didn't get in the way. There was no battle between the flute and the kettle. They were both there in that empty room.

'That trip to Japan was a very formative experience which I expressed in writing. That's how the Penguin Café was conceived. Really it's a state of mind, but I started writing about this place where you would feel at home and just be yourself. You could meet other people and some kind of home music would be played by an orchestra or a band. The Penguin Café Orchestra is now playing that music.

'When I came back to England, a series of coincidences took place and a group of us came together and started to play. It all seemed very...inevitably right.'

Years before Japan, kettles and penguins entered his life, Jeffes started his musical career at the Royal College of Music in London, studying classical guitar and composition. He soon dropped out, though, to join the Omega Players, an avant-garde, 10-piece classical guitar and percussion group. In 1970 he became involved in commercial music when he started to work with Rupert Hine.

After his trip to Japan, Jeffes' musical work extended to arranging for, amongst others, Yvonne Elliman, Caravan, Camel, Murray Head and, most recently, David Sylvian (though his string arrangement for Sylvian's forthcoming album hasn't made it to the final master). He's also worked in collaboration with Ryuichi Sakamoto, a close personal friend. As for the best-known moment in what has been, thus far, a fairly obscure musical career, that's probably a highly immemorable string arrangement for Sid Vicious' version of 'My Way'.

'We need to define categories of music because they help us to organise and communicate, but if we truly believe them, we've made a mistake.'

The main focus of the man's musical work, however, is his own compositions, as played by the Penquin Café Orchestra.

The ensemble's music represents an unlikely mixture if ever there was one. Caribbean and African rhythms, European folk tunes, and odd bits of avant-garde, classical and rock music all find their way into the Café's musical vocabulary. The occasional LinnDrum and electric guitar surfaces from time to time, but strings, percussion and classical guitar dominate the Orchestra's sound, alongside such curiosities as milk bottles, a soloban, a Suzuki Omnichord and a cuatro.

'The funny thing is that my trip to Japan didn't change my music that much', Jeffes continues. 'It mainly changed my attitude, it taught me to listen to music in a different way. Now I can find music in just one note. I no longer find music in wilfully-imposed contractions, which you find in so much modern avant-garde music. They're too complex for me to understand and they don't make me feel good, so I had to decide to start again.

'What I do now is take one note and just start from there. I listen to where it wants to go, for what should come next. The answer is within that one note. From it comes the next and the next, and so on. It grows out of it like a flower.

'I've got a connected musical philosophy that's based on harmonic series and proportions. Basically it's concerned with the harmonics that are in every note. If you look at them closely, like under a microscope, you discover a tremendous order inherent in them. It's a mathematical order, but it's also a natural one. Compare it with a tree, for example. You can see a principle involved, you can see it as a series of numbers if you want, yet it doesn't really *look* like a principle.

'The patterns and order which I see in the harmonics somehow give me a model for putting music together, which won't be exactly the same as the things I find in the harmonics, but which *do* give me a clue, a suggestion which I apply in an intuitive way while I'm composing.

'From the note C, for example, you find the natural overtones of G, C and E. Going up, the notes start to get a bit strange. There's an F sharp, a B flat, a D and even more. The higher you go, the weirder the harmonics get, and that's important. It's not particularly nice or tidy, but what I do is to start shoving things around in order to make them fit.

'It's not a limiting structure, though. My music does obey rules and laws, not because I'm imposing them, but because that's the way it feels like it should be. I'm working within certain parameters, which are a sort of natural confine of constructing harmonics, rather than getting into unnatural ones.'

Jeffes has a similar approach to rhythm, too. 'My ideas on that are based on Pythagorean thinking, on simple proportions, number combinations and polyrhythms. Some of the rhythms I use might sound Latin or African, but in fact

▷ they're not. They're derived from the same *source* as Latin rhythms, that's the point. It's just a basic human response to breaking time into patterns.

'By deriving rhythms from pitch relationships, which is quite an involved intellectual process, you get results which sound surprisingly like African or South American music.'

So are Jeffes' compositions as intricately structured and difficult to grasp as the contemporary avant-garde music he dislikes?

'Well, from a purely technical point of view my music is very simple. There's no mystery about technique in it. It's deceptive, though, something Bob Loveday, a violinist and the most recent new member, ran into when I auditioned him. He came here and we talked a bit and then he got out his violin. You know, it's always a bit embarrassing somehow, when you have to play something and show what you can do. So to begin with, while he was just limbering up, he played one note. And I said: "Fine, it's great, that one note, it's beautiful, you're on". That note was worthy of a late Beethoven string quartet, it had that kind of depth to it. So before he'd really played anything, he'd already showed me what he could do.

'Simplicity is what attracts me to African and Latin American music. In the West there are these kinds of music which are supposed to be the catagories available – avant-garde, classical, rock, jazz – but to me they're all a bit unsatisfying.

'In 1972, shortly after my Japan experience, I heard some music from Africa. What happened was that it immediately made me feel good, it was just lovely. So I thought: "Oh, that's what music is about, that simple, direct feeling which makes you feel good". Then somebody gave me a record from South America and it had the same impact on me. Another day I heard something from Madagascar and realised: "Ah, there it is again, that's got it".'

'Rock happens to be the most open-minded field of music; my music is simple, the classical world likes complexity.'

With a range of musical influences as wide as this, it isn't surprising that Jeffes isn't too fond of giving his music a label. The media's obsessive pigeon-holing of musical styles leaves him with a bad taste in the mouth, primarily because he'd like to leave the process of categorisation to the individual.

'To me, there are only two categories in music: music that's got it and music that hasn't got it. Again, it's the Japanese influence on my thinking. When I was there, all the limitations on my thinking vanished. I was in a truly foreign culture. In that room with the shakuhachi player, there was no force being used to make things this way or that way. I was just dealing with sound. Music is music, and it's just one thing. Classical music isn't that different from rock music, for instance. They're just games that we play. We need these conventions in order to communicate and organise things, but if we truly believe them, then we've made a mistake.▷

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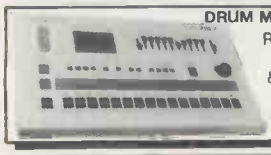

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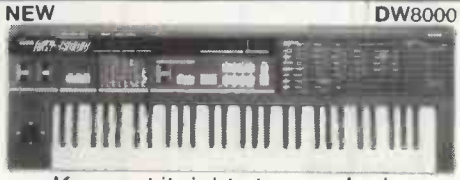

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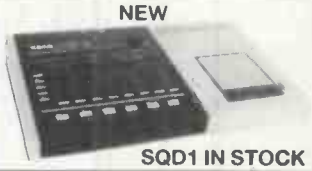

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▷ 'I suppose that's one of the reasons why rock music is the area where I have my toe in the door. It could have been anywhere, but it just happens to be the most open-minded field in the music world. My music is simple; the classical world likes complexity. They listen with their minds. In rock music, people aren't too keen on complexity. They might do complicated things, but it's different because there, feeling is more important than intellectualising.

'So I see rock music as the place where I've found myself a temporary shelter. That's not to say that I feel totally comfortable in the rock area, though. To me it generally lacks the kind of internal ecstasy and depth which, for example, Bartok might have.

'Around 1977 a lot of music felt negative, because it was angry, thrashing and bawling, like a petulant child really. Everybody knows there are problems in the world, but if you sing a song about those problems that has an ugly sound, you just make another problem.

'Nowadays we get this mechanical electronic music. It's powerful because it has a certain basis and certain fundamental rhythms that affect people. But the bulk of music that uses drum computers and synthesisers sounds fairly dead to me. However, through working with Ryuichi Sakamoto and David Sylvian, and through listening to *Tin Drum*, a lovely album which Steve (Nye, Penguin Café Orchestra founder member and pianist) produced, and some of the Yellow Magic Orchestra pieces, I've found some music which in a strange way *does* move me. I don't feel love or compassion or direct human warmth coming from it, but it does have a kind of aching beauty.

'So I can't sit here and say synths and drum machines are rubbish – some of my best friends use them and use them very well.'

Does that mean the Penguin Café will be embracing more high technology in the near future?

'On our last album I actually used a Linn on the song 'Music by Numbers'. I hired one for the day. I filled the memories in no time with all kinds of knick-knack rhythms, and then a friend came round for tea and asked me how it worked. Mindlessly, I demonstrated it to him by programming something which turned out to be quite interesting. From that rhythm I built up the piece on the record in the same way that I normally find a melody in sound. Everything comes from the drum pattern.

'I'm also probably going to use a synthesiser in a small way on the new PCO album, which I hope to have released about halfway into 1986. Most likely it'll be a Prophet 5, because I like synthesisers that sound like synthesisers. I prefer the sound of a real violin to a synthetic or sampled one.

'Apart from that, sampling is terribly expensive. You can make a tape loop of any sound for 10p on a tape recorder, which might cost £300. But some of these sampling machines cost thousands of pounds, so how are you ever gonna make that money back? Right from the moment you start using it, you start thinking: "I've got to make this money back, so this music I'm making has got to be appealing, it's got to sell". And that stands in the way of your natural ability to create. It kills it a bit because you're trying to make things acceptable. You listen to what's selling, even though what's selling is already dead. So things get worse and worse because people start imitating imitations, forgetting what music really is.'

Jeffes is equally wary of technological complexity for its own sake...

'There are these huge productions which are so fashionable at the moment. But I think the PCO albums might in ten years' time sound less dated than the stuff that's being produced these days, because our records haven't got obvious signs on them like: "This is a DX7". A violin is a violin, and it's never going to sound old-fashioned. But maybe when they hear a Linn in ten years' time they'll say: "Oh, that's a very crude drum machine".

'Of course I do use modern technology whilst producing and recording, if only in a small way. I record here in my studio and usually go to a commercial studio to mix and add some bits and pieces. On the last album I used a Lexicon reverb because that's all they had in that studio. I can't say I liked it. It has too many choices. A Lexicon is a nightmare for someone who doesn't work with them all the time. First of all it says: What sort of room do you want? Big? Small? Round? Square? Then when you've made that choice, it says: OK, how round, how big, how small? Do you want the room to be a bit shorter, maybe? And when you've made that decision it says: Right, now, the high frequencies, do you want to make them a bit longer or a bit shorter? It's just a jungle of decisions to make in order to get a very simple thing, which is a bit of reverb you want on a track to give it a bit of space.

'Basically, recording is just a tape recorder. Quite honestly, you can make an album on a Walkman with a hand-held microphone. There's nothing wrong with that, as long as you can hear what's going on.

'Machines don't kill music, though. The people who use machines might, because they might think that the mixing desk and the tape recorder are what you make the music on. If they think that, then it can't go right. What makes music music is the humanity of it.

'I *do* go out of my way to record music well. I don't make sounds that are deliberately crude. But when there happens to be a piece which has the right feel to it and was recorded on a Walkman, and if I can't get it right re-recording it on eight-track, then I'll put the original on the record. In fact, the last piece,

'Now Nothing', off our last album *Broadcasting From Home* was recorded like that.

'My singing is a bit out of tune and the sound of the piano is disgusting by studio standards, but the feeling that comes from that piece is quite sweet, I think.'

The fact remains, though, that the Penguin Café Orchestra have not sold a record into 50% of British homes. They appeared once, by chance, on *Wogan*, but that's about it. For most of this country's record-buying population, the PCO are just another name on a shelf, if indeed they're known at all. So does Jeffes have any commercial ambitions, now that so many of his artistic ones have been fulfilled?

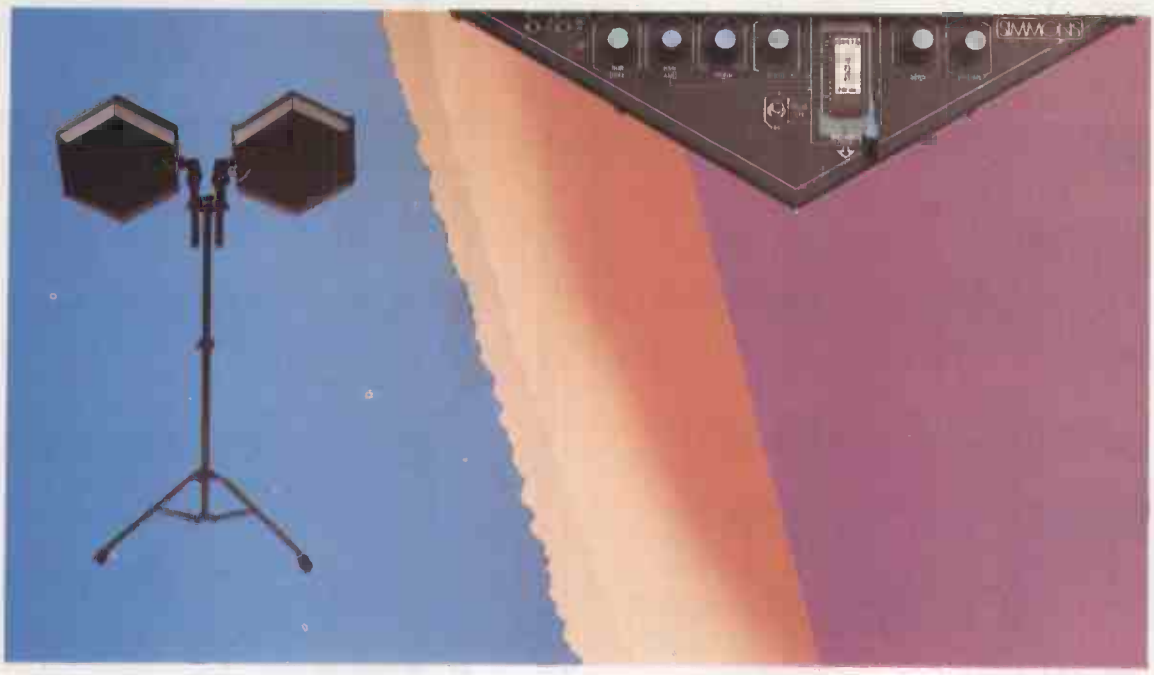
'You know, I really love this music, and I think the part of me that loves it is a very ordinary person, just like everybody else. Lots of people *could* buy it. That's why it's quite natural to me that there is a record company (Editions EG) that puts it on vinyl and takes it to the shops so people can buy it.

'I don't want to be obscure, though I wouldn't want to sell millions of records either. If what I write makes me feel good and makes somebody else feel good, then that's great – but it's not why I do it. I don't write this music to make the world a better place. Yet it's carried on because people like it: I couldn't write in a vacuum all my life.'

Ladies and gentlemen, a composer that writes for people, not composers. ■

'Everyone knows there are problems in the world, but if you make a protest song that has an ugly sound, you just make another problem.'

s d s 1



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S·C·O·R·I·N·G P·O·I·N·T·S

Instant music transcription takes another step forward with the introduction of the JMS Scorewriter package for Commodore 64. If you like the company's sequencing software, you'll love this.

Ian Waugh

Every musician, composer and arranger has a dream. Musicians traditionally dream about fame and fortune, birds and booze. Composers dream about conducting the LPO (the PLO if you're suicidal, 'Phil and his Harmonica' if you're a Falkland Islander) at a performance of their latest work. Arrangers dream about all sorts of things, but not very often – they're too busy chasing deadlines. The same goes for journalists, too, but that's another story.

But what they *all* have in common is a desire to communicate using musical ideas. 'Wouldn't it be great', you hear them say, 'if everything we play could be turned into printed music automatically as we play/compose/arrange it?' A generalisation, I know, but you know the sort of thing I mean.

Computer software is theoretically an excellent medium in which to create such a scorewriting system, but thus far, music transcription packages for home computers haven't been exactly thick on the ground. The main reason for this, I suspect, is that it's *incredibly* difficult to write such a program, far trickier than most people would ever think. These computers might be awfully clever, but they can only do what you tell them to do; yes, you've heard it before and you're hearing it again. As far as music transcription goes, the hard bit is lining up, spacing the notes and joining the stems together so that the score looks like a proper piece of music, not the hybrid offspring of a Stockhausen score and a Rorschach test. (Well, those and a few dozen other niceties.)

But here we are at the beginning of 1986 (or very nearly), and a few scorewriting programs are starting to appear for computers that regular musicians, composers and arrangers (though probably not journalists) can afford. From Worcestershire comes the Joreth music system, Commodore-based but with a music notation section that enjoys only afterthought status, while two months back I looked at a more comprehensive (but step-time only) Stateside package for the same computer, currently being marketed by Passport Designs. Now the Germans at Jellinghaus Music Systems have come up with something similarly thorough, this time based around the real-time recording principle. It's called the Scorewriter, and it comes as part of a hardware interface card that also houses two other JMS programs, the 12-track Recording Studio and the Sequence Chain.

Basically, the Scorewriter takes files recorded with the Recording Studio and turns them into printed music. You can't use the Writer without the Studio, so it's just as well that JMS have decided to incorporate all three MIDI programs into one package, all of them burned into EPROMs. The main advantage of the EPROM (as opposed to disk, cassette, cartridge and the rest) is instant access to all the programs at switch-on – for Commodore owners, this means no more waiting for the wretched 1541 disk drive to wake up. The disadvantage lies only in a higher price, as in this case, you pay for the plug-in board and its additional chips as well.

The EPROMs are neatly mounted on a board and covered with perspex. This plugs into the cartridge port and the JMS MIDI interface, in turn, plugs into the back of this. It reminds me a little of ancient US sci-fi horror shows like *The Outer Limits* which, in their more daring episodes, contained close-up shots of brains floating around in glass tanks. More practically, the exposed ends of the casing aren't going to do anything to protect the circuitry inside, so you could find yourself with a load of rusty chips after someone's spilt coffee over your gear. But at least this way you can see the JMS module has no moving parts.

Before looking at the Scorewriter in detail, let's take a quick look at the other two programs. The Recording Studio was reviewed in E&MM December '84; see the Back Issues page if you missed it. Only two things to add to that review: a photocopied insert testifies that a non-MIDI drum machine (using the 24ppqn sync code format) can be plugged into the system through the Control In socket, thus alleviating many a syncing frustration. And strange though it may seem, only 6813 events are free when you enter the program – the disk-based software gave 7677 events. Odd, but I don't suppose it'll make any difference at all to the majority of users.

The Sequence Chain program is used to link sequences (well, what did you expect?) that have been recorded on the Recording Studio program. You can build up quite complex pieces in this way, using a program that works a little like the Linker module in The Music System (reviewed E&MM October '85). The program allows you to transpose the sequences, alter key velocity and tempo. You can effect voice changes, too, which is rather nice. However, if you already have the Recording Studio, you can purchase Sequence Chain as a separate program; it costs around £45. If you buy the Scorewriter, however, it comes as part of the deal.

But back to the Scorewriter. The software writers have obviously realised that producing a good score is no easy task. It's not simply a question of pushing a few buttons and watching your score roll off the presses – there are far too many variables for that. What the program does do is to set a list of default values which can successfully print out *some* of your pieces. We'll look at the options in the order you're likely to encounter them.

The first screen presents the main menu from which you can: Transform a Sequence, Display/Print a Score, Display Directory, Issue Disk Command and View/Change Presets; all options are selected with the C64's function keys. At the top of the menu page you're prompted for the Sequence name and Score name, the Sequence being a file you have already saved to disk with the Recording Studio program. The Score name defaults to the same name as the Sequence, but you can alter it if you wish. The transformation of a sequence takes place without further trouble, the Score file being written to disk. Although the files have the same name, they're saved with different suffixes so you won't overwrite a file.

After a sequence has been transformed into a score, the second option scrolls the score up the screen and, if the printer option is set to on, prints it out. Before the system actually gets around to printing the score, the drive whirs away for a few minutes while the computer does its sums. After the whirring, the screen clears and the score scrolls. If it's printing out as well, a page of music would take approximately (actually *very* approximately, as it depends on the number of staves per page etc) 10 minutes to print. At least, that's how long it took in the Waugh household, using an Epson printer with a Commodore-emulator interface, which I assume was printing fairly quickly.

There are three secondary menu screens: Control Parameters, Quantization Parameters and Layout Parameters. Once set, all three pages of variables can be saved as a file, which means you can quickly load the settings you use most for your printer and the type of music you are printing out.

The Control Parameters are fairly straightforward. You can select which bars are to be printed and whether output is to the screen, printer, or both. The program supports the MPS801 and Epson FX80 printers, and you can alter the device number and secondary address to tailor the output to ▷

▷ suit you and your printer. A little more information about this in the manual would not have gone amiss; all you get with the present booklet is a signpost to your printer's handbook (there aren't any secondary addresses in the Epson manual). More serious is the fact that, in order to view the results of new settings, you have to wait about four minutes. If output is sent to the screen only, the score appears quicker, but headings are not printed.

Plodding on, you can set the key signature of your piece and tell the program whether you want the bar and the page numbering on or off. There's also a mysterious option unhelpfully labelled 'Special Symbol F. Time Sign', which defaults to a '—' value and can be changed to a 'C'. Set to 'C', the program inserts the Common Time Signature instead of ¼ or ¾. I wonder what titles JMS *rejected* before plumping for 'Special Symbol F. Time Sign'...

The Quantization Parameters screen is divided into two sections. The left side sets Tolerances and helps correct any timing inaccuracies you may have made during recording (who, me? never!). First item here is SIM (for Simultaneous Tolerance) which corrects the way chords have been played. You know how it is. Just occasionally you don't manage to hit all the notes in a chord at exactly the same time, so the thing sounds a bit ragged; SIM helps pull the notes together, and its resolution can be varied from 0 to 9 MIDI clock pulses.

TIM (for Timing Tolerance) ranges from 1 to 47 MIDI clock pulses, and is similar to the quantisation settings of the Recording Studio in that it pulls notes backwards or forwards onto the nearest beat.

OVR (for Overlap Tolerance) ranges from 0 to 9 MIDI clock pulses. This determines to how great an extent notes which have been played legato will overlap in the printed score. With a setting of 0 there is no tolerance, and any overlapped notes are written out.

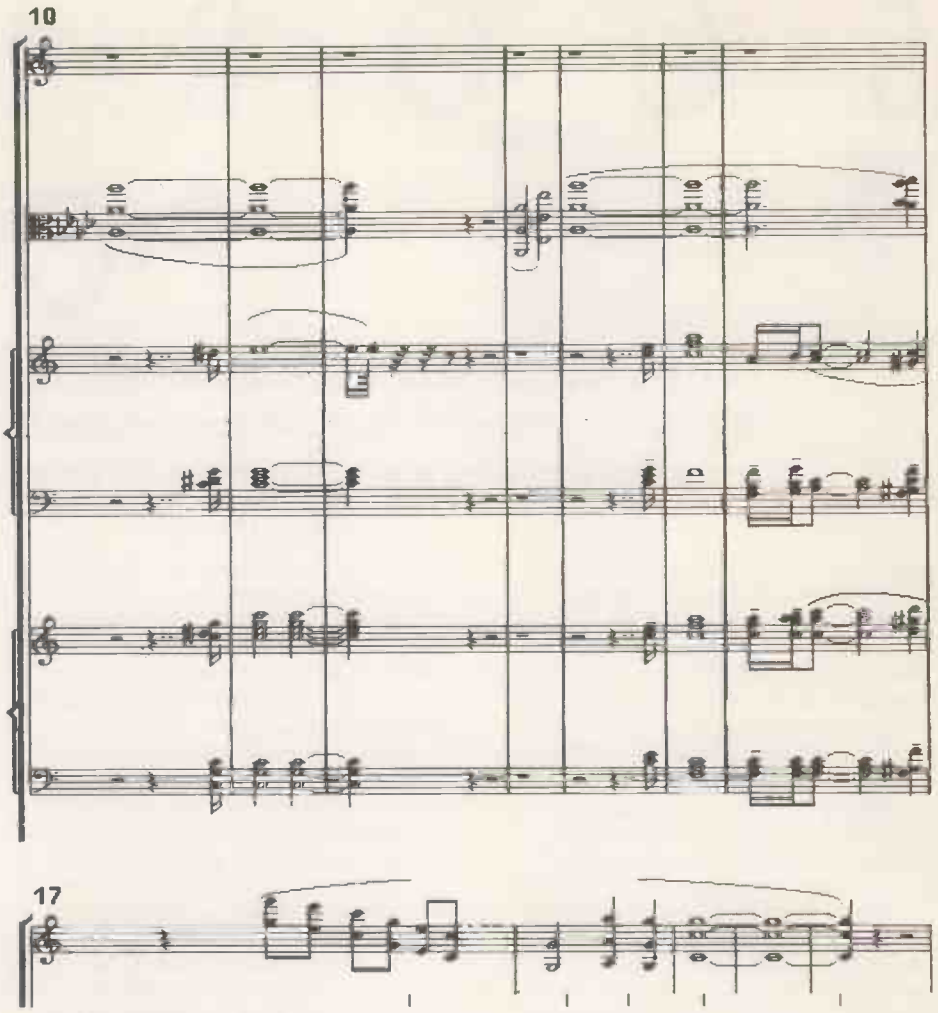
REL is the Release Time, ranging again from 0 to 9. This is used to extend the length of a note whose 'on' time (ie. the time between your pressing a key and releasing it) is shorter than the actual sound produced, something that can easily happen when you're using a synth sound that has a long-ish release time.

Lastly on the left side, the Split option selects the pitch at which a track is divided when assigned to a two-part score. Split can be switched off, of course, but when it's on, it divides a track into two parts. If you try to be clever and set the split too high or low, the program, being clever in return, takes to using octave signs.

The right-hand side of the Quantization Parameters screen determines which stave parts 1 and 2 of the track will be written on. As many as six staves can be used, and any track part can be assigned to any stave. This is done under the SY (for System) column, while ST (for Stems) sets the turnaround point for note stems.

The final screen controls the Layout Parameters. Here you can give your magnum opus a title and a subtitle, and control both note-spacing and the size of the left and right margins. You can also set the number of staves you want printed on each page.

The lower half of this screen determines how those staves will be printed. They can be in two lines (as in a piano part) or in orchestral format with a continuous line down the left-hand side. And quite excellent they look, too.



As an added bonus, there's a transposition function called TRS, which is incredibly useful for scoring transposing instruments, or for just showing friends how clever you are by playing a piece in C and printing it out in D#.

Each stave can be assigned one of three clefs – treble, alto or bass – and the spacing between staves can be adjusted so you can insert lyrics, music instructions or both. You can also adjust the amount of music that appears above and below the middle line of a stave – this affects the printing of ledger lines.

All in all, making proper use of these controls requires a little thought and more than a little care. But these are damn clever, these computer programs. This one was sharp enough to spot one of my feeble attempts to get it to foul up by printing two staves on top of each other; it gently altered my instruction and printed a copy as near to my request as possible – *without* fouling up.

Now, all this may seem like a lot of bother just to get a printout. To a certain extent that's true: it *can* take a while to sort out the myriad options that appear on the screen in front of you. But so long as you remember that they're all there to help you organise the printout the way you want it, you should be OK. Unfortunately, loading a file and printing it out using the default parameters isn't a guarantee of decent results: you need to spend a little time setting some values first.

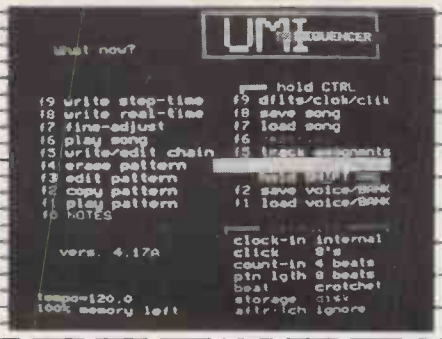
Mind you, working your way round the Scorewriter's parameters isn't made much easier by the manual, which, on the review sample, was 24 photocopied sheets of A4 paper. It didn't say 'Temporary Manual' anywhere, but there were spaces for non-existent diagrams, and I'd like to think JMS could come up with something a bit more substantial in exchange for your £340. A little more information would help the novice no end, and why not work through a few examples to how adjusting each parameter affects a score? Actually, compared with some, the Scorewriter manual isn't too bad (though the Recording Studio 'leaflet' still deserves to have perforations put into it) but manuals are every bit as important as the product they describe. I rest my case.

As for the printout itself, the examples speak for themselves (assuming E&MM's printers haven't messed things up again). The notes are aligned perfectly, and I just *love* the way the stems are joined together. Clefs and staves look terribly professional and the program prints legato slurs and ties. Dynamics, if you want to see them, have to be added manually, but that's no great hardship. The Scorewriter will handle up to 20 voices and approximately 50 bar lines can be shown on each page printout of the score.

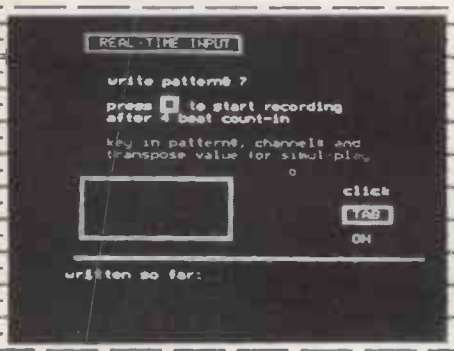
As a package, the Recording Studio, Sequence Chain and Scorewriter programs should arouse serious attention from programmers, arrangers and composers, so long as they don't mind playing their music in real-time; step-time writing involves going into the Recording Studio's editing section and manipulating MIDI note values, which is No Fun.

I doubt the Scorewriter is everyone's dream come true, but it's a piece of software that makes music transcription less of a nightmare.

More useful than a brain in a glass tank. *Much* more. ■



Main menu.



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OUTTAKES

Recent events in the record, concert and video arenas, as seen through the eyes – and heard through the ears – of E&MM's reviewing team.

VINYLTAKES

Arcadia
So Red The Rose (EMI)

When pop musicians try to do something other than pop, they end up sounding like Japan. In some ways that's a good thing: Japan were a great band but they aren't playing together any more, so there's a space to be filled by anyone with ambitions to usurp their crown in their absence. But it's also a sad reflection on just how short a distance we've come in the three or four years since Sylvian & Co made their last studio recording.

So Red The Rose is a case in point. To begin with, Le Bon, Taylor and Rhodes prove they don't really need the Power Station part of the Taylor family at all (neither does anybody else); 'Election Day', 'Goodbye is Forever' and 'The Flame' could all be any Duran single of the last three years, so Arcadia have no worries there.

The rest of the album – the 'experimental' bit – is an infuriating mixture of occasionally brilliant instrumentation and dowdy, lacklustre songs. 'El Diablo' has a wonderful flute/synth arrangement playing someone else's riff, 'Missing' has a slow, majestic vocal melody sung with all the dynamism of a walrus on grass, and 'Lady Ice' is coated with an appealing melange of tuned percussion, woodwind and fretless bass (sounds familiar, doesn't it?), but has a central core that groans under the burden of Duran non-writing at its worst.

This album has enough sparkle and ingenuity to show that while John and Andy may strum their way into an early glam-rock grave, the Arcadia trio could yet rekindle the dazzling Duran fire of old. But the record ultimately fails because the lyrics are pretentious drivel of the most discouraging kind, because a host of celebrity guest appearances have amounted to sweet nothing, and because it lacks the inspiration Japan's true descendants will have to show before they are crowned king. ■ **Dg**

Artists United Against Apartheid
Sun City (Manhattan)

You know what it's like these days. You champion a cause, rally round a few of your rock star friends, and suddenly the world has another charity record on its hands. Steve Van Zandt – who once played second fiddle to Springsteen's vacuous rock 'n' roll rebellion posing – is the man responsible for the latest of these, the Artists United Against Apartheid project. 'Sun City', the hit single, has quickly become quite an elaborate venture, and blossomed into a seven-track album of the same name.

The songs span a huge range of musical styles and influences, but that isn't surprising when you realise the list of featured artists includes Peter Gabriel, Miles Davis, Afrika Bambaataa, Bono, Bobby Womack and Grandmaster Melle Mel. Not quite as showbiz as the Live Aid line-up, but probably more street-credible, and definitely more likely to come up with something interesting. It's a sad fact that so many recent charity discs haven't been as musically exciting as might have been hoped, but *Sun City* is one that is.

The variations are far more than mere remixes of the original single, and cover styles that range from Gabriel's inimitable rendition (with musical as well as vocal additions), through Melle Mel's rap to an excellent jazz piece from Davis, Herbie Hancock and Stanley Jordan. If the cause suits you, fine. But don't dare underrate the music. ■ **Tg**

Tangerine Dream
Dream Sequence (Virgin)

As if in direct response to Graham High's critical letter in last month's *Communiqué*, the Tangs strike back with nothing less than a triple album.

Quite apart from believing that I'd seen the last of those in 1976, and before you get too excited, I must point out that *Dream Sequence* is nothing more than a glorified 'best of' compilation, a none-too-subtle attempt by Virgin to cash in on their back-catalogue of TD material in the light of the band's defection to the Jive label. ■ **Tg**

New Order
Subculture

Well, well, well. Six months ago Manchester's reluctant stars were wallowing in the half-success of a fairly average album, *Low-life*, a record that marked no great change of direction from their recent work, but which also saw them fail to build on the great foundation laid by the likes of 'Blue Monday' and 'Confusion'.

Now they've had 'Subculture' – *Low-life*'s strongest song – remixed by John Robie, and their sound has been transformed. The new version has female backing singers, an upfront drum machine beat just like Blue Monday's, and a synth arrangement that allows several interweaving parts to breathe easily away from one another. Lyrically the song is as enigmatic as we've come to expect, but there's no mystery surrounding the rest of the track; this is as forceful an invitation to dance as you're likely to receive for the rest of 1986, but it works just as well at low levels in the living room.

'Subculture' is already a miss with style rather than an overnight chart success, but if it signals a return to form for Britain's best bass-drum-and-strings outfit, few will complain. ■ Dg

VIDEOTAKES

Philip Glass
A Film by Peter Greenaway (Transatlantic)

First shown on Channel 4 as part of Greenaway's 'Four American Composers' series, this video treats the music of its subject as sympathetically as any visual biography you're likely to see.

In this case, there's a strange correlation between the work of composer and director. Glass' music is unnervingly repetitive, thrusting simple four- and five-note arpeggios down the listener's ears in the pursuance of arithmetical formulae, then launching dramatic changes in key or instrumentation, sudden, unannounced, but meticulously calculated. Greenaway's films have displayed a similar fascination for the mathematical and the symmetrical, and like Glass' music, they've succeeded in being both arcane in method and accessible in result.

Greenaway's film portrait of Glass and his ensemble mixes footage of a 1982 Sadler's Wells performance (with camera leaving the confines of the audience to close in on singers' mouths, keyboardists' fingers, and Glass' animal head movements) with short snippets of interviews, held at various venues by several different interviewers, and shot in a variety of different ways.

With Greenaway's help, we can appreciate the dexterity of Glass' ensemble in minutiae, and gain some understanding of how the composer sees his own work.

But there is more than mere empathy here. Much of Glass' music sacrifices listenability at the altar of avant-garde bravado: passages of intense, ethereal beauty are too often swamped in monolithic melodrama, exposed to the world with all the subtlety of a Page 3 print, but harder to ignore because it lasts for so long. Yet Greenaway's images do much to distract the viewer's attention from this. Glass is a quiet, thoughtful and immensely intelligent man who can say as much in 30 seconds of conversation as he can in 30 minutes of orchestration, and more than that, there is something intensely human about the performances of his colleagues, who are almost in tears as the performance draws to a close, and who confess to omitting huge tracts of Glass' score because it is simply too demanding.

Above all, this is an engaging piece of film-making that never lets the humanity of its subject become subservient to the mathematical obsessions of its creators. Buy it now, or, better still, get someone to buy it for you for Christmas. ■ Dg

LIVETAKES

Simply Red
Powerhouse, Birmingham

Bravely breaking with tradition by opening downtempo with only vocalist Mick Hucknall and lively keyboardsman Fritz McIntire on stage, Simply Red turn in one of the most honest, most enjoyable gigs I've witnessed in a Very Long Time.

They rely solely on the quality of their songs and their joint musical talents, but they took Birmingham's Powerhouse by storm. By the second number, the beautiful 'Granma's Hands', the duo are warmed up and Hucknall demonstrates a powerful and emotive voice, versatile enough to slip from the angry plea to the anguished whisper with unnerving ease. Hucknall holds the centre of the stage with a modest but distinctive presence; above all, he's a *performer*, and that's not so common in 1985.

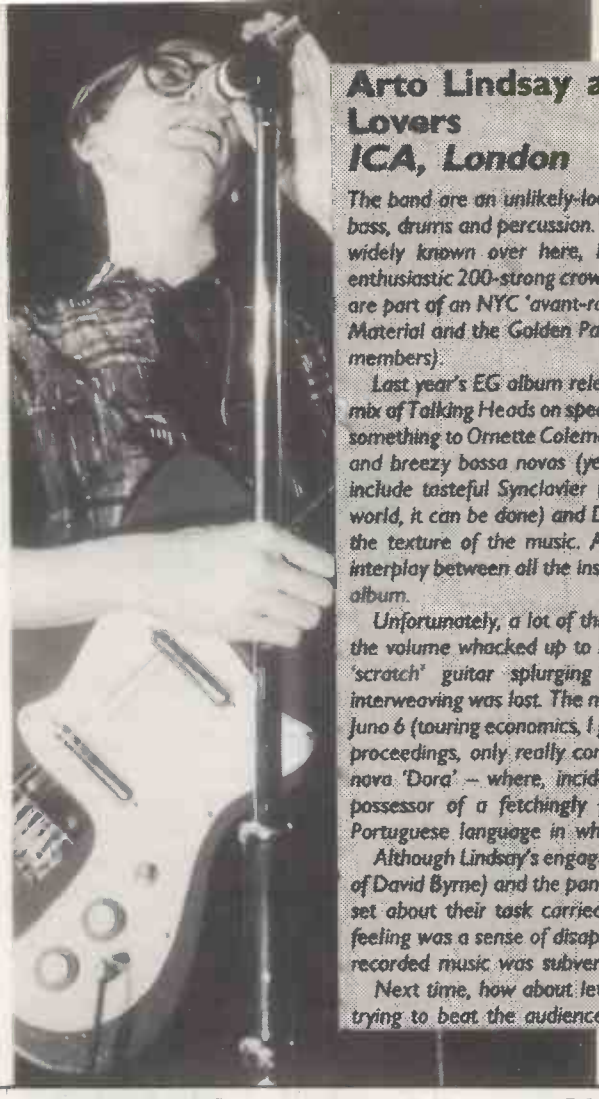
The rest of the band take to the stage for 'Open Up the Red Box' and the sound acquires an extra dimension. Normally only a six-piece, the band fits tightly around Hucknall but is augmented on this occasion by an additional sax player and by vocalist Doreen Edwards. Together they possess a combined identity that gives the songs a live character even more entrancing than that of their recorded output. The band are a cross between what JoBoxers and Roman Holiday tried to be, coupled with what Feargal Sharkey's voice *should* have been. They play raucous but sensitive soul, and they play it with a commanding confidence and commitment. The songs are strong but conventional, the arrangements well considered but, likewise, decidedly traditional. The keyboard presence is mainly piano work, with some admirable strings and brass sounds thanks to a DX7/MKS30 combination under the expressive control of a Yamaha KX88 master keyboard.

The set gains momentum, working up to the pacey 'Look At You Now', which showcases guitarist Sylvan in a full-frontal solo that gives no quarter. But having ▷

▷ toiled so hard to work their way up from cold, the band take another risk and slow right down again with 'Sad Old Red'. They succeed and take their followers with them – this is audience communication at its best. And just to prove it's no fluke, the formula is repeated. This time the subject of the climax is 'No Direction' and the follow-on 'Jericho', a piece the band overrate slightly as it later reappears amid the encores, to the detriment of countless stronger songs.

The finalé takes the form of that successful début single, the Valentine Brothers' 'Money's Too Tight To Mention'; here we're treated to a reinforced snare sound that threatens to slay the audience where they stand (or more accurately, move).

An encore isn't just an inevitability, it's a necessity. And so Simply Red proceed to do it again – casually relinquishing the fervour they'd induced with 'Money' to play another quiet number, 'Holding Back The Years', full of thoughtful beauty and due to be the next single release. Credit here to Tim Kellett for an excellent muted trumpet solo; It makes you think again about the validity of samples as a replacement for the real thing. 'Jericho' follows (again) and the band's first failing comes to light – in spite of the inclusion of four songs not on the album, they appear to have run out of material. This is further confirmed by the choice of final song being thrown over to the audience. The result? Why, strike me down if it isn't 'Money's Too Tight To Mention' all over again. ■ **Tg**



Arto Lindsay and the Ambitious Lovers
ICA, London

The band are an unlikely-looking five-piece of vocal/guitar, keyboards, bass, drums and percussion. They come from New York and they're not widely known over here, but they recently played to a generally enthusiastic 200-strong crowd as part of the ICA's Rock Week. The band are part of an NYC 'avant-rock' scene that encompasses such bands as Material and the Golden Palominos (which includes Lindsay among its members).

Last year's EG album release, 'Envy', offered an appealingly eclectic mix of Talking Heads on speed, all-out sonic thrashes which seem to owe something to Ornette Coleman's harmolodics approach to improvisation, and breezy bossa novas (yes, you did read that correctly). Keyboards include tasteful Synclavier (because despite the Trevor Horns of this world, it can be done) and DX7, and play an important role in shaping the texture of the music. And there's a strong, carefully constructed interplay between all the instruments on what is a very clearly recorded album.

Unfortunately, a lot of this went out of the window at the ICA. With the volume whacked up to Motorhead level and Lindsay's razor-sharp 'scratch' guitar splurging over everything, much of that subtle interweaving was lost. The much-reduced keyboards setup of DX21 and Juno 6 (touring economics, I guess) played almost an auxiliary part in the proceedings, only really coming into their own on the beautiful bossa nova 'Dora' – where, incidentally, Lindsay showed himself to be the possessor of a fetchingly plaintive voice, well suited to the lilting Portuguese language in which he was singing.

Although Lindsay's engagingly manic stage presence (somewhere left of David Byrne) and the panache with which he and the rest of the band set about their task carried the set through well enough, my overall feeling was a sense of disappointment that much of the impact of their recorded music was subverted into a wash of noise.

Next time, how about letting the music speak for itself, rather than trying to beat the audience into submission? ■ **St**

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Quiz of the Decade

It's just possible we might run another competition, just as good as this one, sometime later on in 1986. Then again, we might not. We might not even manage to publish anything similar for the next ten years, because this month, for the first time in E&MM's history, we're giving away a whole selection of hi-tech music goodies in one go, from a programmable digital synthesiser to a book that tells you how to buy one. Total retail value of all the prizes put together is just under £1500.

The Quiz is in three parts, each with a separate title and each with its own individual entry form. If you want to enter all three parts (and therefore be in with a chance, albeit a fairly slight one, of winning everything), all you have to do is send off all three forms. We're even accepting photocopies (one only per household!) this time around, so there's no need to cut up your valuable copy of E&MM.

Because the prizes we're giving away are so worthwhile, you may find you have to do a little bit of brain-searching before you look likely to win anything. But let's face it: Christmas and New Year holidays are all very well until Uncle George digs out the 'Sunday Times' and proceeds to bore the family to death with obscure questions from the annual Christmas general knowledge test. So instead of charging up the grey matter in an effort to remember what the capital of Madagascar is, or which of Ibsen's plays has a joke in it, we suggest you redirect some mental energy towards the Quiz now in front of you. That way, you can wile away the hours puzzling over some specifically musical problems, and actually stand a chance of winning something really useful, as opposed to a holiday for two in yet another part of remote rural France that the tourists haven't yet discovered. Bonne chance!

1: The Akai MIDI-compatible Wordsearch

You too can be the proud owner of the complete range of Akai MIDI Effects (as reviewed in E&MM November '85) simply by finding a few words in the alphabet grid printed here, and putting a ring round them. What could be simpler?

This part of Quiz of the Decade was compiled by the Editor, which means that (a) it is extremely easy, and (b) the word 'Editor' appears in it twice. There's vanity for you. All the other words are connected in some way to the Akai devices you can win. Just to jog your memory, these are the ME10D MIDI Digital Delay, the ME15F MIDI Dynamics Controller, and the ME20A MIDI Arpeggiator. In the shops, you can pick them up for £99 each. Find all the words listed here, and you could end up getting them for nothing.

- AKAI
- ARPEGGIO
- DATA
- DELAY
- EDITOR (2)
- FILTER
- KEYBOARD
- MIDI
- NOTE
- QWERTY
- RACK
- SEQUENCER
- SYNC

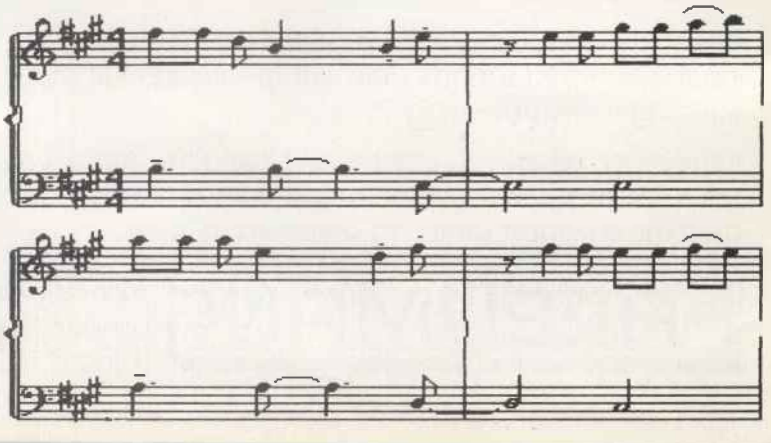
A	R	P	E	G	G	L	I	O	R	Y	D
S	I	A	U	D	E	R	I	I	S	A	R
T	E	M	Q	R	E	O	K	G	D	L	A
I	L	Q	E	S	D	T	A	G	R	E	C
C	S	W	U	R	A	I	K	E	A	D	K
T	I	E	R	E	T	D	U	P	O	I	I
Y	M	R	S	O	N	E	Q	R	B	D	M
N	E	T	E	R	O	C	Y	A	Y	E	D
T	S	Y	N	C	I	N	E	I	E	A	I
E	O	S	F	I	L	T	E	R	K	S	M
Y	E	D	I	T	O	R	T	A	U	Q	I
D	A	T	A	N	I	D	I	M	O	R	D

Dear Editor,
I think I've cracked your pathetic wordsearch
My name is IAN DAVIES
My address is 215 WINCHESTER ROAD, CHANDLERS FORD, EASTLEIGH, HAMPSHIRE
Postcode SO5 2DX *Daytime ☎* (04215) 3234

2: The JMS Name That Tune Competition

If you thought the wordsearch was easy, this one really is a cinch. Compiled by Ian Waugh – whose review of the JMS Scorewriter appears elsewhere this issue – this part of Quiz of the Decade consists simply of a piece of music printed out using Jellinghaus' miracle-working software. All you have to do to be in with a chance of winning that software is to tell us who wrote the piece of music from which this excerpt comes, and what it's called. If you can't read music, find someone who can and they'll sing the piece to you; it should be instantly recognisable.

Dear Mr Waugh,
The music printed out on this page by the JMS Scorewriter is...
.....
It was written by.....
My name is IAN DAVIES
My address is 215 WINCHESTER ROAD
CHANDLERS FORD, HAMPSHIRE
Postcode SO5 2DX *Daytime ☎* (04215) 3234



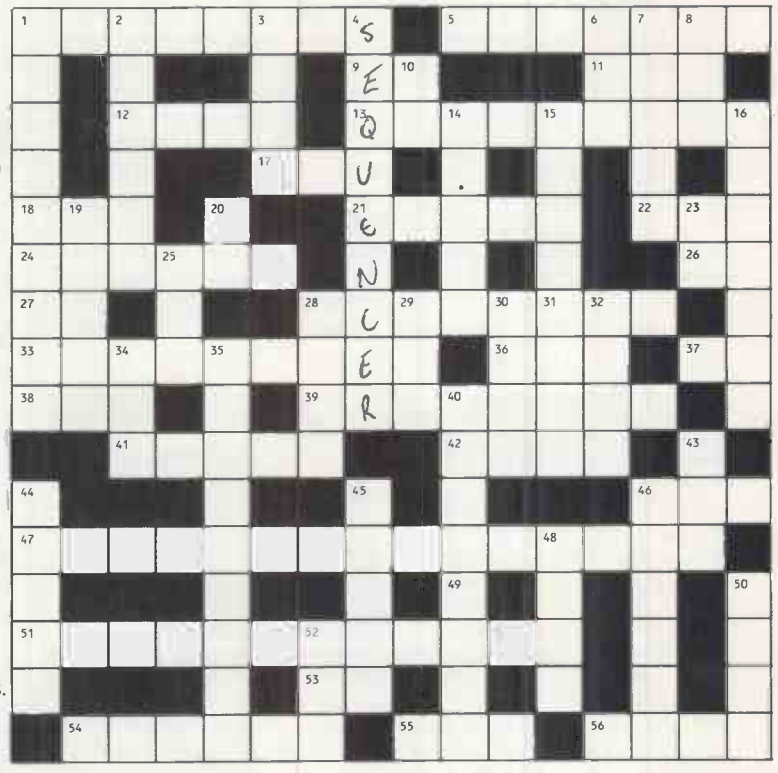
3: The Casio/Keyfax New Year Crossword

Now, here comes the tricky one. Not that tricky, we admit, but compared with the other two, the last competition in Quiz of the Decade is more mind-taxing and more involved. But we felt that since the first prize for this one is a Casio CZ101 polysynth ***plus*** *an SZ1 polyphonic MIDI sequencer from the same company (that's a combined retail value of about £700), we might as well find some way of dividing the wheat from the chaff in our competition entry basket.*

The crossword was devised by none other than Julian 'Scoop' Colbeck, well-known 'Sounds' technical scribe and recently the author of 'Keyfax', a splendid book that tells you something (in many cases, quite a lot) about almost every electronic keyboard that's ever been on sale in the UK, from the mid-70s right up to the present day. And we're happy to say that, through the good offices of Virgin Books, we're giving away 15 copies of 'Keyfax' as runners-up prizes for this part of the Quiz. So even if you don't get the multi-timbral MIDI recording package that's our top prize, you could still win a book that'll advise you on what to buy instead.

DOWN

1 Otherwise uncommunicative instruments meet at the Niter Cafe. (9)
2 Franglais test recording. (2,4)
3 Synth company's Marjorie Proops. What a dear! (4)
4 You can really step in time with this chain of events. (9)
6 Not even harmonics will help you produce a good square wave. (3)
7 You can have it in pink or white. (5)
8 Lots of 23 down. (3)
10 See 9 across.
14 What you're left with if 1 down can't see. (5)
15 Bob Moog is their Chief Scientist. (8)
16 See 41 across.
19 Bet you couldn't spell all the letters before Syntauri. (5)
20 7, 10, 11, 20, 25, 30, 35, 70B, 80... (2)
23 You can visualise this fundamental synth component. (2)
25 Sit outside this for a Crumar monosynth. (3)
29 Take 1000Hz off a Poly 800 for an abbreviated preset. (3)
30 Would a second MIDI be this fast? (4)
32 Latin for UMI's latest version. (4)
34 Homer's favourite instrument maker? (3)
35 Food for John Book? Sounds like a right old mess! (1,4,4)
40 Their shows always have it taped. (4)
43 (with 54 across) Oddball US synth designer; the 400 is his latest unavailable creation. (3,6)
44 Visual society's code of conduct. (5)
45 Musicians who are still worried about synths. (5)
48 Step or real. (4)
49 A lot of people were instrumental in this French noon rendez-vous. (4)
50 This network is a lot faster than some old daisy chain. (4)
52 It means my muddled MIDI association. (3)



ACROSS

1 The Beilfuss was born in this state. (8)
5 US company who made a real impression in 1985. (7)
9 (with 10 down) Rod Hull's favourite instrument? (3)
11 In time with a diminutive medic. (3)
12 FM synth with the key to the door. (4)
13 Speedy storage medium. (9)
17 Making waves more expandable in 1983. (3)
18 Sheepish memory. (3)
21 Press this after program selection on a SIEL DK80. (5)
22 A solitary PPG. (3)
24 The answer to this disk isn't hard. (6)
26 The 20 and 25 were forerunners of the DX7. (2)
27 US designer's two initials, though he used the third one too when it came to naming instruments. (2)
28 The seed from which the BBC grew. (5)
31 Before the DDL, we had to make do with these copycats. (3)
33 Plenty of personality on a display screen. (9)
36 Organisation for engineers, at whose 1971 show the MiniMoog was announced. (3)
37 The DK80 is this type of timbric. (2)
38 ---CAM; where highbrow French music goes on, we hear! (3)
39 The sort of player that loves a Korg CX3. (8)
41 (with 16 down) Light resolver that never saw the light of day. (5,7)
42 Two or four types of East European infiltration. (4)
46 You can only read my memory. (3)
47 The Pinky & Perky side-effects of limited sampling. (15)
51 Giant early American synth. (12)
53 Not out, or even thru. (2)
54 See 43 down.
55 It's not just MIDI that uses this racket. (3)
56 Parameters commonly found in a stationary factory. (4)

Dear Scoop,
I've finally solved your crossword. Now all I want is the gear. Thanks.

My name is.....

My address is.....

.....

.....

Postcode..... *Daytime ☎*.....

Closing date for all three competitions is Friday, January 31, 1986

The draw for each competition will take place separately, on or just after the closing date. Winners will be notified by post or telephone shortly after the draw has taken place. Employees of Akai, Casio, Rosetti, Alexander PR, and Music Maker Publications, and their relatives, are ineligible to enter. The judges' decision is final, and no correspondence regarding competition results will be entered into.

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

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

1984

JANUARY

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

FEBRUARY *Sold Out*

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

MARCH *Sold Out*

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

APRIL *Sold Out*

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

MAY

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

JUNE *Sold Out*

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

JULY *Sold Out*

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

AUGUST

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

SEPTEMBER

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

OCTOBER *Sold Out*

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

NOVEMBER *Sold Out*

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

DECEMBER *Sold Out*

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

1985

JANUARY *Sold Out*

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

FEBRUARY

Music *Laurie Anderson, Jean-Michel Jarre, Ars Electronica & ICMC* **Appraisal** *Roland JX8P, MPC Programmer 8, Roland SBX-80, Korg KMS30, Roland MSQ100, SIEL 16-track Sequencer, EMR MIDItrack Performer* **Technology** *Digisound Voice Card, Back to Basics (VCOs)* **Studio** *Newcastle College of Art & Technology, Everything but the Kitchen...(syncing with timecodes)*

MARCH

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

APRIL

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

MAY

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

JUNE

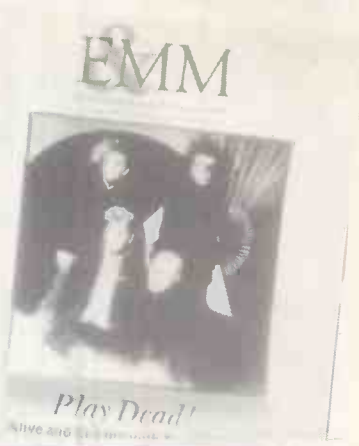
Music *Mick Roberts (King), Loose Ends, Ian Boddy* **Appraisal** *Casio CZ5000 Poly, Oberheim Matrix 12, The Anvil (drum machine preview), Keyboard Stand Roundup, MIDI FX (JMS MIDI Master Synchroniser, Quark MIDI Link 999, JMS CGX Interface, Bokse US8 Universal Synchroniser), Microsound CBM64 Sampling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

JULY

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

AUGUST

Music *Tim Lever (Dead or Alive), Sting, Stewart Copeland* **Appraisal** *Yamaha DX21, Roland TR727, Simmons SDS9, PolyMIDI 1 Sequencer, SIEL DK80 Graphic Editor & MIDI Data Base software (CBM64), Roland MIDI FX, Micro Musical ML50 Pedalboard* **Technology** *Minimoog retrospective* **Studio** *Eric van Tijn & Jochum Fluitsma (Mai Tai), APRS findings, Logitech sampler*



SEPTEMBER *Sold Out*

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

OCTOBER *Sold Out*

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

NOVEMBER

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

DECEMBER

Music *Brian Eno, Stockhausen, Gary Numan* **Appraisal** *Prophet 2000, Roland Electronic Drums, Gibson Explorer Synth, Sound Designer Software (Mac), RAP Software (Spectrum/CBM64), Yamaha CX5M software: DMS Real-Time Sequencer, DX21 Editor, RX Editor* **Studio** *CTS Studio 4*

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For the price of a postage stamp, you'll reach a bigger audience of electronic music players than any competing publication can offer. If you'd like your ad to appear for a second month, simply send in the order form again – and we'll oblige. (But please, no phone calls or cryptic messages.) Note though that this service is available only to private individuals: companies must use the standard classified page overleaf. And we regret that we cannot deal with any queries regarding free ads.

The ads we carry are placed under appropriate classifications and arranged in alphabetical order, so they're easier to read through. If you've several items for sale and would like them included under different headings, simply copy the form and we'll comply with your instructions. We've also extended our field of operations to cover personnel and miscellaneous adverts, and like the musical instrument ads, these are printed completely free, gratis, and for nothing.

Keyboards

BLOODY AMAZING DEAL! Moog Rogue (for that fat bass sound), plus ZX81-16K + software + Phonosonics synth-computer kit. £130. ☎ (097081) 541.

CASIO CT6000 four months old, mint, MIDI, touch-sensitive, £450. ☎ Derby (0332) 514425.

CASIO CT7000 keyboard, 20 presets, 3-track polyphonic sequencer, autochords, arpeggiator, 16 rhythms, mint condition, flightcase, £275. ☎ (0253) 44646.

CASIO CZ101 compact digital synth, boxed, hardly used, £230 ono or swap for simlar valued guitar. ☎ Wargrave (073 522) 2945.

CASIO MT68 mint, boxed, polyphonic, realistic presets, modulation, other effects, 768 combinations, chord, bass, arpeggio, connecting wires. £90. Peter ☎ (02974) 3979.

CLEF STRING ENSEMBLE £150 ono. Wanted – MC202 with power supply. Swap? Rich ☎ (0904) 24724 evenings.

CRUMAR COLORSOUND compact electric piano, 5 octaves plus sustain pedal, stand. Excellent condition, £150 ono. ☎ Alsager (093 63) 6988.

CRUMAR DP50 dynamic piano £150 ono. Roland CSQ600 sequencer, vgc, £85 ono. ARP Axxe monosynth £85 ono. ☎ Luton (0582) 599947 after 7pm.

CRUMAR Havern organ, 2 manuals, pedals, rhythm, Leslie, vgc, home use only. Sensible offers welcome. Ian ☎ Stevenage (0438) 352612 anytime.

CRUMAR ROADRUNNER piano including stand, case, sustain pedal etc. £90. ☎ (0256) 87294.

CRUMAR STRATUS dual VCO polysynth with four-drawbar organ. Only £200, or swap for TR909/X15/MC202. ☎ Shaw (0706) 881669 after 4pm.

CRUMAR TRILOGY layered polysynth with string section and organ, £299. ☎ Doncaster (0302) 700404.

CUSTOM MOOG mono, £50. Movement MR57 £30. Tama dual drum synth £20. ☎ (04203) 8682 after 6pm for details.

DIGISOUND ALPHADAC with five-octave keyboard, four voice cards in cabinet. Fully working £400. Offers? Swaps? Bill ☎ Knowle (05645) 78488.

EMS VCS3 and KS, ex-Hans Zimmer £350. Teisco SX400 programmable polysynth, £400. Moog Prodigy CV/Gate £120. Ultimate Support 3-tier stand £125. ☎ 01-265 1899.

EXCHANGE CASIO CZ101 with manuals, patch book, mains unit; for Juno 6, Polysix, etc. Cash adjustment. ☎ Southampton (0703) 444078.

FENDER RHODES 73 Mk II, suitcase, piano, immaculate as new condition, home use, £425 ono. Might take p/x. ☎ Malvern (06845) 65848.

FENDER RHODES £250 or swap poly or mono synth, mixer, tape machine. Make me an offer! Stephen ☎ Norwich (0603) 504461.

HELPINSTILL ROADMASTER 88-note flight-cased electric-acoustic piano, ideal for recording, £725. Rhodes Stage 73 piano, nice action, £250. ☎ Edinburgh 031-447 1149.

KORG DW6000 polysynth, mint, only five months old, still guaranteed, £550 ono. Derek ☎ Fareham (0329) 231090.

KORG MS20 synth £120. Also SCI Model 64 sequencer £110. Each item excellent condition and value. Steve ☎ 01-341 5760.

KORG MS20 home use only, leads, manual, £175 ono. Clef Master Rhythm £60. ☎ (0525) 370514 (Beds).

KORG POLYSIX vgc, £500. Also sound engineer/driver/roadie required for 'Dagaband', expenses paid. Nick ☎ 01-540 6133.

KORG POLY 800 immaculate, £350 or BF28,000. Huygens, 40 Rue de Fingig, L-4966 Clemency, Luxembourg. ☎ (00352) 502978.

KORG POLY 800 MIDI synth with sequencer, vgc, home use only, hard case, power supply, leads etc, £345. ☎ Basildon (0268) 411890.

KORG POLY 800 excellent condition, still boxed, £310. Casio MT65 as new, boxed, power supply, headphones, £70. ☎ (0926) 612225.

KORG POLY 800 MIDI polysynth, £350. Home use only. Paul ☎ 01-722 7777 after 6pm.

KORG POLY 800 £350. Roland Drumatix £100 ono. Dave ☎ Liverpool 051-727 1737.

KORG PSS50 drums, bass, chords all in one. Mint £220. Tony ☎ Doncaster (0302) 770420 evenings.

MINIMOOG 1980 model (one of last made), newer oscillator board, superb condition, flightcased, offers. ☎ (0803) 553155.

MINIMOOG MODEL D with case and owner's manual. Could deliver, depending on location. Offers around £500 ono. ☎ (0271) 62485.

MOOG OPUS 3 in excellent condition, home use only, £290. ☎ Walton-on-Thames (0932) 231617.

OBERHEIM XPANDER home use only, absolutely immaculate, house purchase forces sale, £1950 ono. Martin ☎ Hatfield 62300 X8499 (daytime).

OSCAR programmable duo synth, good condition, home use only, £325. ☎ (08832) 5967 after 6pm.

OSCAR MIDI, programmable duo synth, maintained by designer, £425. Deliver 100 miles of Nottingham. ☎ (0602) 229784.

ROLAND 100M studio synthesiser, 10 modules, 2 racks plus 4 voice keyboard controller, Roland MC4B. All mint. Offers. Ian ☎ 01-519 0972.

ROLAND JP4 vgc, will swap for Casio CZ1000 or sell £300. ☎ 01-740 4399.

ROLAND JUNO 6 £295. Jupiter 4 £350. SH101 with adaptor £150. SH09 £100. Also TB303 Bassline £95. Chris or Eugene ☎ 01-299 1684.

ROLAND JUNO 6 perfect working order, hard case, £300. Steve ☎ Durham (0385) 782377 evenings.

ROLAND JUNO 6 hardly used, still boxed in fact, swap or p/x for OSCar or maybe something interesting or £350. ☎ Leics (0533) 415955.

ROLAND JX3P excellent condition, home use only, offers please or p/x for Yamaha DX7. ☎ 01-423 1351.

ROLAND JX3P synth, as new £450. Boss DR110 drum machine £50. Rina ☎ 01-546 5933.

ROLAND JX8P brand new, must sell, £875. Paul ☎ (0322) 74003 office hours.

ROLAND MC202 perfect, boxed, £100. JHS DDL 1sec full bandwidth, excellent, 19" rack, £200. Phil ☎ 01-876 0599.

ROLAND MC4B modified Moog Source, plus two Moog Sources, Yamaha CS40M, MS02 interface etc. Fully working £2300. Martin ☎ 01-903 4611/(03744) 65674.

ROLAND SH101 monosynth with sequencer, adaptor plus manual, free patches, excellent condition, home use only, £160. ☎ Southend (0702) 67389 pm.

ROLAND JX3P plus PG200. 6 months old, as new, boxed, £525. ☎ Dorking (0306) 885968 eves/weekends.

ROLAND PLAYBUS headphone/mic, boxed £100. Handclapper £30. Percussion synth £20. SH101, handgrip, case £190. TR707 drum box £420. ☎ (091) 273 3351 evenings.

ROLAND SH09 excellent condition, what little use it has had at home, £160. Drew ☎ Sutton 01-642 7449.

ROLAND SH101 with MGSI £145. Boss DR110 drum machine £75. Together £210 ono. Mark ☎ Norwich (0603) 743311.

ROLAND SH101 home use only, inc case, £180 ono. Andy ☎ Rushden (0933) 314774.

ROLAND SH101 excellent condition, £120. Casio MT40 with 22 nice sounds, rhythm, bass etc. Beginners bargain, £30. John ☎ 01-699 4979.

ROLAND SH2 monosynth, excellent condition, boxed with manual £180 ono. Wanted TR808 swap or p/x? Rich ☎ (0904) 24724 evenings.

ROLAND SH2000 preset monosynth, including case, £170. H/H K100 amp, top, keyboard/guitar, reverb, sustain, tremolo, £90. ☎ Lincoln (0522) 752458.

SCI MULTITRAK 5-octave, touch-sensitive, onboard sequencer, as new, £500 ono or would swap for amp. ☎ Durham (0385) 62499.

SCI PRO ONE excellent condition, £200 ono. Also 2-tier keyboard stand. ☎ 051-644 9915 after 6pm.

SCI PRO ONE immaculate condition £180 ono. Copycat £40 or swap both plus cash for drum mahine. ☎ Newcastle 091-281 6774.

SCI PROPHET 5 Rev 2, with Anvil flight case, programmable LFO and spring pitch wheel. £900 ono. ☎ 01-724 4955.

SCI SIXTRAK MIDI polysynth, 12 months old, boxed £450 ono. Kev ☎ Greenbank 021-355 4459.

TECHNICS SX-K200 stereo polyphonic preset keyboard, PCM rhythm, programmable accompaniment, 'Fullband Setting Computer', two memory packs, excellent condition. £265. ☎ 021-445 2744.

TEISCO 60F monophonic synth, £100. Nick ☎ Norwich (0603) 56099.

TEISCO SX400 polyphonic synth, touch-sensitive keyboard, stereo ensemble, stereo outputs, memories, sub-oscillators, PWM, excellent condition, £300. ☎ (0952) 501355.

TRANSCENDENT 2000 mono synth, vgc, a bargain at £70. Simon ☎ Reading (0734) 508592 evenings.

VOX CONTINENTAL 300 organ, 2 manual, plus stand, excellent condition. Offers. ☎ Alsager (093 63) 6988.

WERSI COMET W10S organ, with fantastic CX2 rhythm unit, immaculate, £1995 ono. ☎ Tyneside 091-487 9900.

WERSI HELIOS W2T organ, all options fitted, full synthesiser, digital reverb, 64 programmable presets, tapes available, £2600. ☎ Plymouth (0752) 42786.

WERSI HELIOS transportable organ, full synth, 64 presets, all programmable digital reverb, Wersi hard tapes available, £2400 ono. ☎ Plymouth (0752) 42786.

YAMAHA CP30 dual channel electric piano, 76 touch-sensitive weighted keys. Perfect condition, home use only, £450. ☎ (0628) 34151.

YAMAHA CS70M £600. CS60 £350. Paul Todd ☎ (0723) 370540/2.

YAMAHA DX7 sustain pedal, immaculate condition, £850. Accessit stereo reverb plus four-way power supply £75. Cal ☎ (0324) 482348.

YAMAHA DX7 accessories and flightcase, all immaculate, occasional home use only, £995 ono for quick sale. ☎ Byfleet (093 23) 43179.

YAMAHA DX7 £990. Roland JX3P £450. Both flightcased, Carlsbro Cobra 90 keyboard amp £100. Artiste 100W cab £100. ☎ Sheffield (0742) 334818.

YAMAHA DX7 £950 perfect working order. Mark ☎ (0308) 862592 anytime.

YAMAHA DX9 perfect condition including manuals, tapes, £530. Fostex 250 recorder, manual with box £450. Chris ☎ Leeds (0532) 826965.

YAMAHA DX9 excellent condition, digital programming, over 120 presets, £580. ☎ Bonnybridge (0324) 813594 evenings.

YAMAHA DX21 and Yamaha SK20 polyphonic synths. £950 for the pair. ☎ Camberley (0276) 31880.

YAMAHA PS55 electronic keyboard, 3-track recorder, 32 mixable sounds, 13 rhythms, auto accompaniment, arpeggio, mint, £350 ono. ☎ 01-249 8010.

YAMAHA SK20 polysynth. Offers? Or swap for good quality half-track reel-to-reel. Steve ☎ (0782) 262286.

Drums

AMAZING BARGAIN MPC computer drum machine, s/outs, tape sync, ZX80 plus Spectrum interfaces, software, flightcase, as new, £225. ☎ 01-491 8001.

BÖHM DIGITAL DRUMS (the ultimate), cost over £1000, as new £500. ☎ Chester (0244) 674258.

BOSS DR110 mint £100 ono, Boss PC2 percussion synth £35 ono. Both £120. Jon ☎ 01-734 4257/8 daytime 01-603 4907 evenings.
BOSS DR110 drum m/c, 3 months old, as new with manual. £80. ☎ 01-607 5057.
CLEF BAND BOX programmable backing group, complete with master rhythm, instant transpose to any key, £150 ono. ☎ Upminster (04022) 26512.
CLEF MASTER RHYTHM drum machine £40 ono. Music Master bass amp £80 ono. Nick ☎ Reading (0734) 29631.
ROLAND TR606 Drumatix, perfect, boxed plus case, manual, £85. Also Moog Rogue, £130. ☎ 097081) 541.
ROLAND TR606 £100. Ian Boddy (0207) 544439.
ROLAND TR606 Including case, manuals, immaculate £100 ono, or swap for TB303. Also Casio CT1000P, £140 ono. ☎ Romford (04023) 42997.
ROLAND TR606 separate outputs, carrying case, £75. Korg SDD1000 digital delay, guarantee £280 or swap for TR909. ☎ 01-631 0472.
ROLAND TR909 swap for Korg DDM110. ☎ Middlesbro' (0642) 226977.
ROLAND TR909 analogue/digital drum machine, tuning, individual outputs, MIDI and sync £360. Trevor ☎ Basildon (0268) 43815 after 7pm.
ROLAND TR909 as new, £280. ☎ Leeds (0532) 759014.
SIMMONS SDS8 8 months old, home use only, still boxed with cymbals, stands, snare, plus many extras, £510 ono. Bob ☎ (0908) 679728.
SIMMONS SDS9 black, one month old, immaculate, £1100 ono. ☎ 051-632 3505.
SOUNDMASTER SR88 drum machine, clock and trigger outputs. 16 programmable patterns £50 ono. ☎ Andover (0264) 50942.
YAMAHA MR10 modified, with 5 Ultimate Percussion pads £80. Modified Soundmaster SR88, memory rhythm, separate trigger outputs, £40. ☎ 01-837 5910.

Sequencers

CLEF BAND BOX programmable bass line, home use only £250 ono. J Williamson, 49 Netherhall Road, Leicester LE5 1DP.
ROLAND BASSLINE £75, MC202 £85, Korg DDM110 digital drums £130, mint. Write to Mr Knaggs, Lenton hall, University Park, Nottingham.
ROLAND BASSLINE £60. ☎ 01-894 0145.
ROLAND JSQ60 sequencer £60 ono. Roland PR800 digital MIDI keyboard recorder £50. Amdek CMU800 microcomposer with Sharp software £50. ☎ 01-385 0022.
ROLAND MC202 as new £125. ☎ Darlington (0325) 466826.
ROLAND MC202 & SH101 complete, perfect condition, £245 the pair! TEAC 2×10-band graphic equaliser, £135. ☎ Ashtead (03722) 75293.
ROLAND TB303 Bassline, three months old, £60 ono. UPS analogue drum unit minus pads, £75 ono. ☎ 01-582 8548.

Computing

ACORN MUSIC 500 boxed as new, filed program printouts, extra demo programs, leads, £150 ono. Dougie ☎ Motherwell, Scotland (0698) 63959.
ACORN MUSIC 500 synth, brand new, boxed, manual, software – mind-blowing at only £125. ☎ (097081) 541.
ACORN MUSIC 500 with ATPL keyboard and software, mint, £240. ☎ (0502) 741238.
BBC B OS 1.2 DFS (no drive), Music 500 with synchronisation software, accessories, vgc. £400 or swap for MIDI OSCar. ☎ Sheffield (0742) 745709.
BBC DISC INTERFACE double density, £65. TEAC slimline disk drive, single-sided, 40-track, £65. Vincent ☎ Manchester 061-969 2710.
DMS REALTIME SEQUENCING software for Yamaha CX5M computer, highly versatile package wth extra preset voices, £45. ☎ 031-664 7639.
DX7 SOFTWARE for Spectrum, + MIDI sequencers, composers wanted. Write to Peter Namur, 22 Qual Saint Leonard, 4000 Liege, Belgium.
FIVE UNUSED CPUS Z80A, Calculator, Synth, Video Game, Master Mind, Space Invaders, only £8. Joel ☎ 01-699 5354.
JMS MIDI INTERFACE (Spectrum/Commodore), £45. JMS 8-Track Composer/Live Recorder software (Spectrum) £20, together £55. ☎ E Sussex (0424) 218711
MICON MIDI INTERFACE and software for Sinclair Spectrum £75. ☎ 01-658 7251.

Recording

AKAI 4000DS reel-to-reel, two-speed, sound on sound tape deck, £75. Vincent ☎ Manchester 061-969 2710
BOSS DD2 digital delay pedal, new, boxed £100 ono. Amdek tuning amp, built £10. Nigel ☎ 01-902 0093 evenings/weekends.
IBANEZ DM1000 digital delay, unused £220. Aiwa ADF350 cassette deck, unused £100. Steve, 20 Castle Irwell, Salford M6 6DB. ☎ 061-764 0753 w/ends.
REVOX A77 7½/15ips, swap for Korg EX800 expander or Korg Poly 800. Alan ☎ Kettering (0536) 725885.
ROLAND SDE1000 digital delay, £250. ☎ 01-385 0022.
SWAP YAMAHA polyphonic SK20 synth for Portastudio (approx value £400). ☎ Camberley (0276) 31880.
TASCAM 244 Portastudio £475. Roland TR707 drum machine £395. Roland MC202 £125. All boxed as new. ☎ Ashbourne (0335) 70216 evenings.
TASCAM 34 DX4D, remote, vgc, plus MM 61:8:2 mixer, £1000 ono. ☎ Leeds (0943) 72783.
TEAC A3440 ex-demo, very little use, boxed, £500. Also A3440, ex-studio use, £450. Both mint condition. ☎ (0203) 349075.
TORQUE REVERB UNIT as new, exchange for sequencer, JSQ60 if possible. R Thomson ☎ Callander, Perthshire (0877) 30528.
12:2 STEREO MIXER £130. Dave ☎ Liverpool 051-727 1737.
YAMAHA MT44D 3 months old, £310 ono or swap plus cash for Teac A3340. Forced sale. Mark ☎ 061-437 2712 evenings.
YAMAHA MT44 4-track cassette £240. Accessit Compressor £35. Sansui stereo amp, £25. ☎ Darlington (0325) 466826.

Amps

CARLSBRO 150W lead combo, £190. H/H 6-input 100W keyboard combo, £110. Traynor Horns £30. Chris 01-299 1684.
HH BASS COMBO 60W, 15" speaker, excellent condition, with comp. and parametric EQ, £155. Terry ☎ Brentwood (0277) 214153 evenings.
LANEY 100W valve amp, £60. WEM speaker 100W bass 2×15, £60. Hipower speaker 100W 4×12 £50. Nick ☎ Norwich (0603) 56099.
MARSHALL MV50 TOP £125. Casio MT65 £75. 2×12 cab Goodman speakers £35. ☎ Tonbridge (0732) 366223.
PEAVEY SESSION 500 combo, 300 watts, phase and distortion sections. Mint condition, £425. ☎ Leamington Spa (0926) 37804.

Misc

ARIA SB600 fretless bass with case, £130. Nick ☎ Norwich (0603) 56099.
BOSS KM400 keyboard mixer, £40. 9-band graphic equaliser pedal £30. Both boxed as new. ☎ Chester (0244) 674258.
CASIO CZ OWNERS! Library of sounds now available on pre-programmed RAM cartridge. SAE to £Viscount', East St, Farnham, Surrey GU9 7SX.
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CASIO OWNERS! 20-page synthesis book, make permanent copies of your programs, includes 24 new sounds and cassette. ☎ (0543) 251660 for details.
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ROLAND JUPITER 6 £900. Carlsbro Cobra K90 amp+cab, £200. Ibanez DM1000 DDL £200. Drumatix £90. ☎ Manchester 061-256 1964.
RADIO PROGRAMME dedicated to electronic and new age music. Send music+ biog to Musique du Nouvel Age, B.P.1370, Succ. des Jardins, Montreal, Quebec, Canada H5B 1H3.
ROLAND MPU101 MIDI-to-CV interface, £150. ☎ (02214) 4887 or 68970.
STUDIO WORK part or full time required for dedicated, hard-working, young male. Greater Manchester area. Clive ☎ 4965978.
TX London's monthly pirate radio guide. 90p from B F Johnston, PO Box 539, Blackpool, Lancs, FY1 4RE.
VINTAGE RADIO JUNK 200 valves, valve tester, signal generator, Wien Bridge oscillator, only £15. Joel ☎ 01-699 5354.
WESTONE THUNDER 1A active bass, with hard case £120. Also Korg MS10 £100. Both mint. ☎ Notts (0602) 830382.

Personnel

SONGWRITER seeks home studio owner for the dubious pleasure of recording some demos. Alisdair ☎ 01-987 2803 (home), 01-432 5845 (work).

Wanted

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AMANDA LEAR SINGLES payment according to condition of record/sleeve. No postal deals. Jon ☎ 01-734 4257/8 days, 01-603 4907 evenings.
CASIO CZ101 OAP has cash limit £200. If in good working order, please ☎ Welling, Kent 01-301 2424.
E&MM BEEBMIDI interface for BBC B, plus software DX7. RAM Pack for DX7. ☎ Lincoln (0522) 752458 eves/weekends.
FOSTEX X15 also TR909. Crumar Stratus for sale, £225 ono, or swap for MC202 plus synth/cash. ☎ (0706) 881669.
ROLAND PG200 for JX3P). Will swap Akai reel-to-reel or Roland SH101. Paul ☎ (077478) 4335 at unusual hours.
ROLAND TR707 Yamaha RX15/RX21. Cash waiting, can collect London or Leicester areas. ☎ (0533) 302402 daytime only.
SCI PROPHET 5 or **T8**, any condition. Full cash or p/x for Korg Mono/Poly plus cash difference. ☎ (0454) 260223.
SWAP REVOX B77 MkII, very little home use, in box, for Arp Solus synth or Simmons electronic drum kit. ☎ 061-860 5464.
TRANSCENDENT DPX any information, circuit diagrams and design data. Write to Phil, Stollery House, 58 Cromwell Road, Salford M6 6DB.
XRI MICON MIDI system controller for Spectrum. Contact Ole H: Overli, Hatleberg A-417 5035, BG-S, Norway. ■

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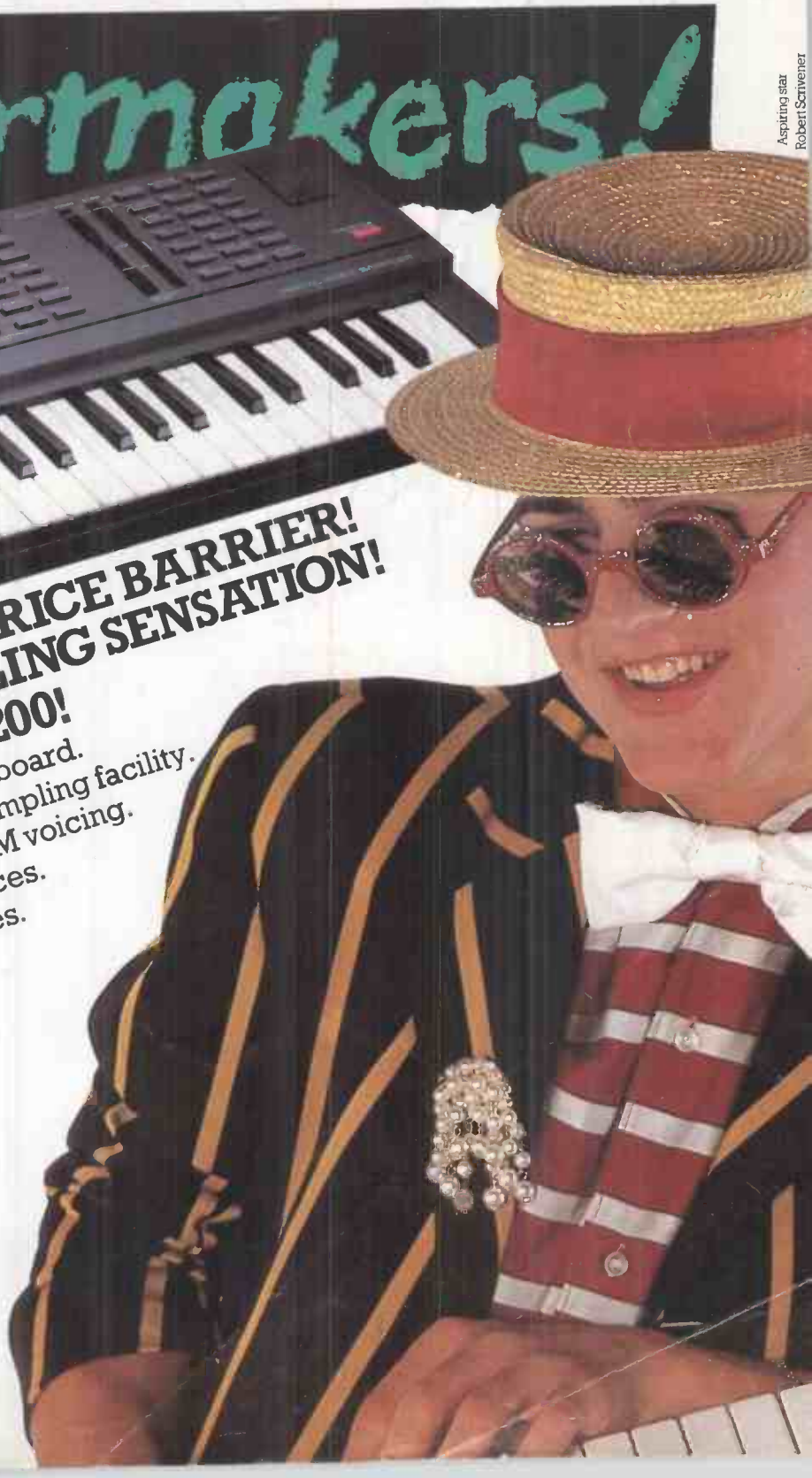

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