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Music Technology

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of house

THE PRODIGY
the ecstasy of rave

ROLAND
JV80
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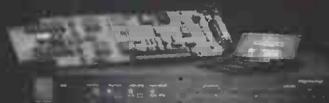
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Trade shows are a vital part of many industries - hi-tech music and recording included - but much has changed regarding the forthcoming UK shows. Tim Goodyer investigates.

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I've got some bad news for you, Sunshine/Pink isn't well, he stayed back at the hotel/and they've sent us along as a surrogate band/we're going to find out where you fans really stand - fleshy Pink Floyd lyric.

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Repackaging a powerful and popular drum machine as a rackmount and adding drum triggers is sure to attract more interest to it. Nigel Lord explores the new Cheetah MD16.

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As the Apple Mac computer falls in price, attention is being focussed on less expensive software - like Audio Trax. Ian Waugh checks out a sequencer/audio recorder which won't break the bank.

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As Mr Fingers and Fingers Inc, Chicago-based Larry Heard was instrumental in creating the house music movement. Simon Trask talks tech with him on the release of his first LP on a major label.

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Roland's latest professional digital synthesiser crosses the frontier between their successful D-series technology and a new generation of Roland synths - without costing a fortune. Simon Trask welcomes the '80.

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The drug culture of the rave scene continues to attract the attention of both the pop charts and the tabloid press. Tim Goodyer talks Ecstasy, agony and technology with one of the genre's heroes.

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Imagine buying a drum machine of good factory preset rhythm programs - instead of the usual collection of cliches. Nigel Lord offers solution to pre-programmed predictability.

FRANKFURT PAYDIRT

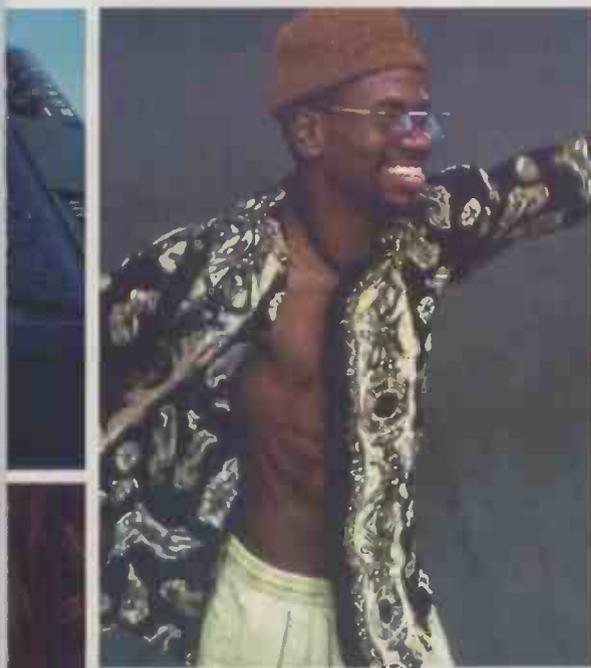
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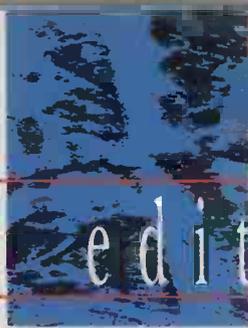
The annual pilgrimage to Europe's largest music fair is over for another year. Vic Lennard brings hot news of the latest hi-tech developments, innovations, launches, lunches...

MIDI: THE NEXT GENERATION

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The long-awaited inclusion of a protocol to allow MIDI control of multitrack tape machines is just one of the recent additions to the MIDI spec. Vic Lennard offers a MIDI update.





SHOWING OFF

THE BMF IS dead, long live the BMF! For those of you who remember the British Music Fair of years gone by, those memories will be of crowded exhibition halls ringing with the noise of guitars and drums, of be-denimed hoardes checking out the rock 'n' roll hardware and hoping to sight one of their heroes (or heroines) doing the same thing. Hopefully you'll also remember the unequalled opportunity of being able to get your own hands on a wide variety of the latest hi-tech music and recording gear without some shop assistant trying to sell you whatever he's got clogging up his stock room.

The BMF as most of you know it is dead - stifled by high prices and a failing economy, the BMF is now a trade-only show. One of the consequences of this is that Joe Public isn't invited. But for those of us who will still be able to attend, I trust it will continue to be a profitable trading ground. So what of the rest of the musical fraternity?

Happily the void left by the BMF has already been filled - and not by one show but by three public music fairs. As of this year the essential London Music Show, as it will be known, is joined by the Scottish Music Show and the Northern Music Show. Obviously this offers one great improvement over the previous BMF: anyone living north of the midlands won't have to travel as far in order to enjoy the same sort of service as that which has been available to City dwellers for years. That's no bad thing for punters and industry alike - and it's long overdue. Additionally, you will be able to buy equipment at these shows and exhibitors will be making the usual kinds of "special show offers" that can make dropping in a positively

profitable exercise. There are also other "invisible" differences between the new shows and the old BMF. For example, they will be less costly to exhibitors so that more of the smaller manufacturers and distributors will be able to attend. In this way they should attract a greater number and variety of musical exhibitors and equipment. Good for you; good for them; good for the business.

Obviously this editorial is intended to help make you aware of the forthcoming shows - partly for your own benefit and partly to help ensure their success. It would be incomplete, therefore, if I failed to point out to you that one of MT's sister companies, Music Maker Exhibitions, is arranging and presenting them. The aim of the shows' organisers is to provide us all with an unmissable opportunity to see an incredible range of hi-tech and recording equipment (as well as the less highly evolved areas of musical instrumentation) under one roof. Tie this in with the chance to pick up a bargain or two and you've got a new kind of show which should become an essential date in any musician's diary. See you there. **Tg**

DATES & VENUES:

Northern Music Show - 16/17th May '92
G-MEX, Manchester.

Scottish Music Show - 19/20th September '92
SECC, Glasgow.

London Music Show - 28/29th November '92
Wembley, London.

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ANOTHER JOURNEY

A sampler gives you endless possibilities. A whole universe of sounds waiting to be captured,

and limited only by your own imagination. And you're resources. And the most precious thing you possess - your time. That's the whole point. You're imagination knows no bounds once you've got the sounds. Inspiration flows fast once you've overcome all the time-consuming technical drudge that always seems to get in the way. You know you're as capable of creating a successful track as the next man, given the resources, and no other sample library has a better reputation than Zero-G for kicking all your creative energies into gear. When a fanatical samplist and dance pioneer spends 7 years painstakingly creating and collecting effective samples - over 10,000 - and carefully selects the best 3000 of them and hands them to you on a plate, of course your creativity leaps into overdrive. Creative inspiration *never came this fast*. Not surprising that the Zero-G professional dance sample library, produced by dance music pioneer Ed Stratton, alias **MAN MACHINE** (Rhythm King), a.k.a. **JACK'N'CHILL**, quickly earned a reputation among the world's top producers and DJ's of being **THE SINGLE MOST ESSENTIAL** collection of raw production material on the market...



THE REVIEWS PUT IT THIS WAY:

"INCREDIBLE! THE GREATEST SAMPLING TOOL EVER RELEASED TO THE PUBLIC!" (Dance Music Report, USA). "UNRESERVEDLY EXCELLENT... MOST COMPREHENSIVE DANCE SAMPLE RESOURCE CURRENTLY IN CIRCULATION... AMMUNITION FROM THE FRONT LINE!... UNBELIEVABLY VALUABLE" (Music Technology, UK). "AS A SOURCE OF SOUNDS AND INSPIRATION, IT REALLY WORKS!" (Home & Studio Rec., UK) "VOCALS SO FIERCE YOU HAVE TO HEAR THEM FOR YOURSELF... SAMPLES I'VE NEVER HEARD ANYWHERE BEFORE... A MUST FOR YOUR SAMPLE COLLECTION" (DMR Dance Music Report, USA). "DOCUMENTATION AND PRESENTATION IS VERY GOOD... AUDIO QUALITY IS EXCELLENT... THE NUMBER OF SAMPLES IS BREATHTAKING" (Home & Studio Recording, UK) "STRATTON KNOWS HIS BUSINESS" (International Musician). "GIVEN ED STRATTON'S EAR FOR WHAT WORKS, A NEAR ESSENTIAL PURCHASE." (Sound-On-Sound, UK)...

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AND THE SEQUEL THAT DIDN'T DISAPPOINT...

ZERO-G DATAFILE TWO ● Over 100 Breaks ● 100's vocal hooks/ad-libs/vocal FX ● Kraftwerk-style electro percussion ● Basses include Juno 106 and SH101 ● Guitar breaks & FX ● Tons of Sci-fi/techno FX ● Roland R8 & Alesis HR16B kits ● Complete "human beatbox" ● Stabs ● Whalesongs / birds / film atmospherics ● Industrial perc / FX ● Italo-house piano ● Automotive FX & horn blasts ● Drop-ins ● etc... too many to list..." THE SAME COMBINATION OF RAWNESS, CHEEKINESS AND HONESTY WHICH MADE DATAFILE ONE SO APPEALING... IT COMPLEMENTS DATAFILE ONE VERY EFFECTIVELY" (Music Technology, UK)

£49.95 each, £89 for 2 CDs, £129 for all 3

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albums, David Bowie's "Let's Dance", Roxy Music's "Avalon", Simple

Minds' "Once Upon a Time" or the Pretenders' "Get Close" (Bob

Clearmountain) CDs: £49.95, both vols: £89. CD-ROMs (FOR

AKAI S1100/S1000, EMULATOR III, OR DIGIDESIGN SAMPLECELL) or

Akai DAT-RAMS: £199, both: £349. 600Mb Opticals (Akai, EIII

or Samplecell): £299, both: £499

SAMPLE MINING

AMG have just introduced the X-Static Goldmine from Polestar Magnetics. The CD is "the world's largest ever sample archive", containing 3023 dance samples in a double CD set. More specifically, the Goldmine offers 512 loops, breaks and rhythms, all specially selected and treated, most with bpm indications. A staggering 1103 drum and percussion samples

is also on offer, in useful sections, including Off D Record (samples lifted from records), From D Archives (the best of drum and percussion samples gathered over the years), and Kling Klang (the best in "Kraftwerk" percussion). The Roland classic drum machines are featured, including Rhythm 33 and 77, CR78 and 8000, DR55, TR606 and 727, and there are multisamples from

the TR808 and 909 too. Completing the picture is a healthy complement of 256 samples from Roland's R8. Polestar have also included 512 "Vicious Vox Samples", in many different styles - house and rap hooks, robot and vocoder vox, film and media snatches, toasting Jamaicans, ethnic singers, Tibetan Monks, Gregorian choirs. . . the list goes on. How about 640 synth, bass, chord and special samples? Or 256 Sound Effects?

In total, the double CD set contains two-and-a-half hours of sample material, well organised into Tracks and Categories. It's available from AMG at £79 fully inclusive, though orders placed before 31st May will benefit from a special introductory price of £69.

More info and ordering from AMG, Hurst Lane, Privett, Near Alton, Hants GU34 3PL. Tel: (0730) 88 383. Fax: (0730) 88 390. **Dp**

STANDING NOVIATION



New British company Novation Electronic Music Systems have announced the launch of a two-

octave, battery-operated keyboard, designed to improve the usability of the Yamaha QY10 workstation.

Successful as the QY10 has been, its small size and lack of a keyboard has meant that data must be input in step time. The Novation MM10 permits programming and performance with dynamic poly-phony, and offers full-sized keys, pitch and modulation wheels and an instant transposition feature for easy access to eight octaves. The MM10 provides a convenient recess for housing the QY10 and a moulded multi-connector cable takes care of its MIDI, DC supply and audio requirements. In response to criticism of the QY10's low output level, the MM10 also

incorporates a dual stereo amplifier suitable for driving headphones or monitors.

The MM10 is the first in a series of items from Novation. Future developments will maintain the company's philosophy of producing "simple, no-nonsense products to make musicians' lives easier".

More information can be obtained from Mark Thompson, Novation Electronic Music Systems Ltd, Peerland House, 40-42 Chapel Street, Marlow, Bucks SL7 1DD. Tel: (0628) 481992. Fax: (0628) 481835. **Dp**

With the growing popularity of the Apple Macintosh as a computer for musical applications in the UK, Zone Distribution are pleased to announce the launch of two new packages designed to provide all you need to make music with your Mac. The MacPack combines Dr T's powerful Beyond Sequencer (99 tracks; 32 sections; 32 MIDI channels; 32 moving sliders; multifinder compatibility; full graphic and tempo editing) with Dr T's X-Or editor/librarian (over 125 profiles free of charge; new profiles coming constantly; control of up to 125 instruments at once; multiple instrument editing in real time; random instrument generation) and Midiman's 1-In, 3-Out Macman MIDI interface. The package is available for £499. The MacPack Pro also includes Beyond and X-Or, but replaces the Macman MIDI interface with Midiman's Macsync, a 2-In, 6-Out MIDI interface with built-in SMPTE reader/writer supporting all SMPTE formats and featuring a SMPTE regenerator for

ZONE'S SOFT OPTIONS

repair of damaged SMPTE stripes. The Pro package retails for £649.

Still on the Mac front, Zone are announcing a new low price on Dr T's Intro +Mac. This package features Beyond v1.6 sequencer, Music Writer (full-featured music notation package), a 1-In, 3-Out MIDI interface, two high-quality MIDI leads and full instruction and tutorial manuals. Previously priced at £279, this package is now reduced to £199, a pretty fair saving, I think you'll agree.

Zone also offer a good range of MIDI interfaces from Midiman, and two new products have been added to the range. The Minimac is a 1-In, 3-Out unit, with high-quality metal case. The unit is powered from the computer, has MIDI activity LEDs to indicate which output/s are being used and a serial thru switch to allow a printer/modem to be connected at the same time as the MIDI interface. Zone's price is just £59 including VAT. The other new

unit, Macsync, offers a multiplicity of features, including three MIDI routing configurations, one MIDI In and Out on the front panel for easy system integration, two switches to select printer and Modem Thru, two MIDI In and two MIDI Out LED activity indicators, SMPTE reading and writing, and full Jam Sync and Flywheeling capability to ensure rock-solid sync. All Midiman products come with a lifetime warranty.

Not to neglect the PC, Zone have one or two tasty bits and pieces to tempt PC users, not least of which is the Midiman MM401 PC MIDI interface, apparently the cheapest interface card on the market at just £69. It's compact (one-third card size), reliable, with the benefit of Midiman's lifetime guarantee, and fully MPU compatible. Currently, all MM401 interfaces being shipped come with utility software (worth over £50) absolutely free. The package includes diagnostic

software, MIDI monitor software and a SysEx librarian. Staying with the PC, we can also bring you tidings of a new real-time scoring package from Dr T's for all PCs and compatibles. Quick Score Deluxe is easy to use, provides real- or step-time MIDI input, auto scrolling with playback, 16 stave/tracks display, full printer support, automatic note beaming, and much more. The program retails for £99.

Finally we should mention that the Band In a Box auto-accompaniment program for ST, PC and Mac is now into its fifth version, with many completely new features. However, its price remains unchanged at £69.

Zone boss Mike Partridge has also just taken delivery of an 8lb 8oz package by the name of Amy. Congratulations to Mike and Suzette!

More information on any of the above (excluding baby) from Zone Distribution, 5 Abbeville Road, London SW4. Tel: 081-766 6564. Fax: 081-766 6656. **Dp**

GOING FOR A SONG

Andover Company Stage One have asked us to let you know about their range of gear and services for musicians. Firstly, there's their MIDI song library, available in a wide range of formats and constantly being added to - Stage One are open to suggestions as to what should be added! Custom programming is also available for any song; prices for this service start at £50. Stage One also offer 700+ drum patterns, grouped by style and including rock,

disco (?), ethnic, jazz, latin and so on. The patterns are mapped in Roland standard layout and are available in several formats: Roland MRC/SMRC format, W30, MV30, Atari Pro24, Cubase, MIDI Files. The drum library is also available for IBM PCs in either 3.5" or 5.25" disk. In addition, the company runs three user groups - for users of the Roland D110; Super MRC software supplied with the MC500II and MC50; and the

Microcomposer Group, which is for all MC300/MC500/MC50 users. On joining, members receive five free MIDI songs of their choice, discounts on further songs and other Stage One items, and the group newsletter, giving hints, tips and information. SMRC and D110 group members receive detailed user manuals and D110 users are also given an exclusive 128 usertones. If you're a buyer of third-party synth sounds, Stage One also have something to interest you - Wave Plus custom patches in

various disk formats. Currently available are patches for the Korg T1/2/3 and M1REx, Roland D50/550 and E-mu Proteus 1. On the way are sounds for Korg M1, Roland D110 and MT32, Kawai K1, Korg DW8000, Yamaha DX7 range and more D50 sounds. Stage One also supply PCs and hard drives in almost any configuration, including 19" rackmounted.

More information from Stage One, Trackings, Dauntsey Lane, Weyhill, Andover, Hants SP11 8ED. Tel: (0256) 50259. **Dp**

PEAVEY'S PLUS

Peavey continue their praiseworthy tradition of synth upgradability with the DPM3SE Plus. The company have "harnessed new technology and memory capacity, enabling this new instrument to offer a further significant increase in performance and facilities". Specifically, the new v3.0 software operating system provides a doubling of sequencer power to 40,000 notes, 100 sequences and 20 songs. Loopable envelopes, enhanced sample editing facilities and extended programming features are just some of the improvements offered by the new

version. The SE Plus comes with a hardware upgrade to 512K RAM wave sample expansion loaded onto a 1Meg board, allowing a further expansion to a full 1Mb. The price of the new version keyboard is £1499 including VAT. Naturally, existing owners of the original DPM3 or DPM3SE can purchase software and/or hardware upgrade kits to bring their instrument up to the latest spec.

More info from Peavey Electronics (UK) Ltd, Hatton House, Hunters Road, Corby, Northants NN17 1JE. Tel: (0536) 205520. Fax: (0536) 69029. **Dp**

RADIO PIRATES

If you're in a band using radio mics, you're very likely to be illegal - so says the DTI's Radio Investigation Service.

Under pressure from manufacturers who have spent much time and money ensuring that their radio equipment meets regulatory standards, the DTI is about to clamp down on the use of non-approved equipment, still being sold in music shops.

Any radio equipment bought must be DTI approved and issued with a Type Approval Number; anyone buying this equipment should check carefully before they part with cash.

Thanks to Sennheiser for pointing out this area of potential hassle for gigging bands. Needless to say, all Sennheiser radio equipment has received DTI Type Approval!

More information on Sennheiser systems: Paul Whiting, Sennheiser UK Ltd, on (0628) 850811. **Dp**

ESSENTIAL SERVICES

If the name of this new company is any indication, we'll all be buying their software imminently. Essential Software's first package is a Librarian/Editor program for all E-mu Proteus modules - including Protologic, the press info is eager to point out. Called Protege 123, the software runs on any Atari ST with a

hi-res monochrome monitor and includes a bank of 64 sounds for its "introductory" asking price of £22.50 (inc p&p). Essential reckon that it's "powerful, yet simple to operate" and have high hopes for its success. You can contact them at 6 Malvern Grove, Cheelow Dene, Bradford BD9 6BU. **Tg**

HOW'S TRIX?

If you're having trouble striking a satisfactory balance between quality, styling and cost in your choice of keyboard stand, you'll be interested in a new line of stands from a British company called CIS. Called Connectrix, the new stands come in a range of styles and sizes intended to cater for a wide variety of applications - and their prices shouldn't break the bank.

A series of three centre-pole stands begins with the GT1, a single-tier, fold-away stand costing £59.95 and goes through the two-tier GT2



(£69.95) to the three-tier GT3 at a modest £84.95. Optional extras include a soft carrying bag and a mic stand which attaches to the top of the centre pole. The GT-H1 is an H-frame stand better suited to larger or heavier keyboards, which weighs in at a pretty friendly £49.95.

CIS also provide a wide range of cables starting with their own brand of Connectrix budget cables and finishing with pro cables commissioned from Klotz.

The Connectrix range currently includes 19 different types of cable and an assortment of adaptors which should cover almost all

musical eventualities and typically cost around four to five pounds. The Klotz range cost a little more but look the biz and have resisted all the MT-devised destruction tests we've so far thrown at them.

CIS also handle proprietary work for Roland in the software field, and are looking to expand their operation to include pro studios and musicians operating a private studio at any level. More information on all these ranges is available from CIS International, CIS House, Mildenhall Business Park, Building No. 2, Leyton Avenue, Mildenhall, Suffolk IP28 7BL. Tel: (0638) 711570. **Tg**

raving...

I wish to remind Andrew Hill (Communique, March '92) and any other music category fascists out there that all music is optional entertainment. While it's tempting to make the sweeping generalisation that the overwhelming majority of popular music is utter rubbish, this fact should not detract from everyone's unalienable right to listen to and enjoy it if they want to.

Fair dos; *The Lamb Lies Down On Broadway* is hardly going to set any dancefloors alight. Genesis "can't dance" but that doesn't matter because their output is intended for an altogether different audience. Nobody is forced to listen to them.

A 120bpm, 4/4 rhythm with a syncopated bassline and a token vocal seems to satisfy the requirements of the dance market. For anybody who wants to sit and be more engaged in the act of listening, however, it's not enough. Other kinds of music are called for. To paraphrase Frank Zappa: "stimulating audio entertainment for those of you who have outgrown the ordinary".

There are those bands of the "boring, aged and flatulent" persuasion who have the unmitigated audacity to play at more than one tempo and in a variety of keys and time signatures - sometimes in the same song. This may or may not constitute your idea of entertainment. If it doesn't, listen to something else.

Andrew asked the rhetorical question "Why do musicians need to know about theory and technique?", and then proceeded to point out that he is managing quite nicely with very little of either. (If somebody will pay for what he plays, good luck to him.) But slagging off skilled musicians is

an old favourite with people who are too lazy or stupid to acquire those skills themselves. I should know, I still can't sight read after 15 years of not really trying. And pardon my senility, but I always thought that guitar solos were (also) a way of making sounds with feeling - check out Jeff Beck or Peter Green.

Attitude is an attribute worth having but it only gets you so far. If you want to stretch your chosen instrument to its limits, you have to put in some hard work. That includes theory and technique. You might even bump into that accursed four-letter word "jazz" along the way.

Whether the extra effort is worthwhile is debatable because the sales of "difficult" music tend to be in inverse proportion to its complexity. But remember, an over-used groove is just another rut. Try doing something original and stop talkin' out yo' ass.

Le Petomain c/o NB Cherry Dyfed

raving...

In Andrew Hill's (March '92) criticism of Martin Howard's (Jan '92) comment on house music, the former should consider the latter's probable introduction to the most abused and polluted musical genre I'm aware of. As Andrew mentions, most house is on small independent labels and the average eight new house 12" records I buy each month are all US imports. I listen to both Kiss FM and Choice-FM but roughly six of my monthly purchases I only hear as contents of mastermix shows, so I rely on friends working in record shops or for importers to supply me and reassure me that my tastes aren't too obscure.

Martin is complaining about recent chart music - how many NY or

Chicago underground tracks have had UK release and how many have been in the Top 40 over the last three years? (Two spring to mind.) How many UK rave acts with music that vaguely resembles skeletal, speeded-up house have charted in that time? (Plenty in comparison.) If these are what Martin knows as house, I sympathise with his comments. It's not a new phenomenon; in the mid-'70s, disco was pumping, uptempo soul from NY and Philadelphia. However, with odd exceptions from the O Jays and the wonderful Trampms, the UK charts presented disco as the Bee Gees and Boney M. It wasn't until the likes of D Train, Rockers Revenge and Colonel Abrams got me interested in electronic music that I actually found out about its roots and the sounds that followed them.

Martin does specify "house music circa 1990/91" and Andrew's fine example of Mr Fingers' 'Can You Feel It' was released on Chicago's Trax label in 1986. Pleasant though 'Chimes' is, I'd hardly consider it to be in the same league - it reminds me of Blancmange instrumentals. I feel that the few UK house tracks that can hold their heads up to US product either pose as US imports (Lifeforce) or start off as US releases (Ubiquity, Joey Negro).

Andrew, I presume your last comment about the Pet Shop Boys was a rather bizarre joke.

Justin Chodzko Middlesex

raving...

What a sad pair Naylor and Hill make. In the red corner we have someone with the gall to suggest that "lack of music theory and technique has been responsible for the bad music in the charts", and in the blue corner we

have the blinkered attitude that declares Bryan Adams and Genesis "nothings".

What a giveaway, Mr Naylor. Any new tracks by established rock acts must be good, must they? You're guilty of blind loyalty based on past glories. No-one's perfect and both Genesis and the Pet Shop Boys have produced some dreadful outpourings - that's just my opinion. I didn't like 'Everything I Do' but it was a well-crafted pop song and it gave a lot of people pleasure. But then I'm also of the opinion that you don't need to like a song to be able to learn from it. House music "a product of musical illiteracy and bad A&R"? Then we should have been listening to house music from the year dot. Did the Rolling Stones take degrees in music theory? I never realised. . .

The Lamb Lies Down on Broadway is utter rubbish is it, Mr Hill? Think again; you're so desperate to denounce technique in favour of feeling that you can't see one for the other. *The Lamb* comes from another era and was a gem in its day. Sure it's dated, but then so will Mr Fingers over the next 20 years.

By the way, I can't dance; neither do I want to. But strangely enough, I appreciate house music. Kind of blows your theory, doesn't it?

All this is just *my* opinion. That's what makes one man's Genesis another man's Orbital. We had all the same arguments during punk and I'm sure we'll have them again - today's Andrew Hill is tomorrow's Martin Naylor, however many names they have. They both cling to their ideals and idols at the expense of seeing anything outside their small sphere of acceptance. I just like to imagine that the rest of MT's readership is a little more enlightened.

Paul Ward Sheffield

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MD16R & MD16RP



PHOTOGRAPHY: JAMES CUMPSTY

No sooner than it had appeared on the market, Cheetah's MD16 had its generous complement of 233 onboard sounds uprated to over 700.

Now it's acquired trigger inputs too.

Review by Nigel Lord.

WITH THE FRANKFURT music fair currently preparing to lure the music biz to Germany with its annual offerings - technical, liquid (and sexual) - we're reminded that it's time once again to make way for a whole slew of new gear and sift it into broad categories of bad, good and *significant*. Of course, the expression, "significant" and its most common adjunct, "new equipment" has become something of a cliché in recent years and is usually pretty difficult to quantify. How significant is significant? And exactly who is it significant for?

The Cheetah MD16 is a case in point.

In the course of his review (see MT, March '91), Simon Trask gave it the general thumbs up and even went so far as to compare it with the Roland R-series Rhythm Composers. My review for MT's sister magazine, *Rhythm*, however, had me reaching for the thesaurus in search of superlatives and claiming it to be - you've guessed it - a significant advance in beatbox technology. Twelve months on, I'd stand by that appraisal, particularly in view of the price, which was (and still is) an unbelievable £299 including VAT. The recent release of two new versions of the machine simply gives me the opportunity to re-state my case.

The MD16R and the MD16RP, as their suffixes might suggest, are rackmounted versions of the original machine with certain changes and additions - and in the case of the RP version, a facility for directly connecting up to eight drum pads. Detailing these differences, however, probably won't mean a great deal if you didn't read Simon's original review and know nothing of the MD16. So, here's a brief (well, as brief as I can make it) outline of the facilities you can expect to find on all three machines.

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“Whatever your choice - MD16, MD16R or MD16RP - these are not machines that will soon be outgrown, either technically or creatively.”

SOUNDS - LOTS OF 'em. Though the original MD16 contained only 41 voices (only?), this was quickly increased to 700 sounds to bring it in line with the rack versions released some time later. It's important, however, to note the use of the word sounds here, since all the machines still have the same complement of 41 onboard voices (samples) to draw on - but make use of some pretty extensive voice editing facilities to produce a number of different versions of these and store them in memory. Obviously, some don't represent too radical a departure from the original voices, but many do and all are extremely useable.

If the time does come when you feel you've exhausted the onboard sonic capabilities of the MD16, you can always opt for one of Cheetah's range of ROM cartridges, each containing over 200 different samples - and, I'm reliably informed, due off the production line any time now. If they're anything like the original sounds, there won't be much to complain about; the range manages to be, in equal measures, articulate and quite bold (if I might borrow a couple of words from the hi-fi press). Included are five kicks, six snares, five toms, four hi-hats, three cymbals, a wide complement of Latin sounds, oddities such as temple block and tablas, and contemporary voices such as 'Acid Flick' and an extremely punchy bass guitar.

All samples are 16-bit (sampled at 48kHz) and whether onboard or accessed via ROM, may be assigned to any of the 16 pads (or switches in the case of the R and RP models), played from within any pattern and subjected to any of the machine's voice editing parameters. They are tuneable from +1 down to -6 octaves in a 1-127 step range, or chromatically (for melodic and tuned voices) over a ± 1 octave range in semitone steps. Sound length is programmable, as is the volume envelope, velocity curve, direction of play (forward or reverse) and output assignment to a stereo mix or any one of eight outputs wired to four stereo jacks on the rear panel.

Pan position can also be programmed and with additional features such as Auto Pan, Roll Pan and Opposite Pan, sounds may be subjected to a range of special effects such as movement to a new pan position within the stereo image for successive notes of an instrument line within a pattern.

As mentioned a moment ago, the 16 touch-sensitive pads on the MD16 are replaced by switches on the R and RP models, but remain velocity controlled via MIDI. The internal architecture of the machines is such that the pads (or switches) have four Levels - each comprising some 16 different sounds. Additionally, you can switch to an auxiliary complement of pad setups (using the Voice function key) which, if my arithmetic is sound, gives you the equivalent of 128 pads to work from at any one time. The first three Levels allow the programming of single sounds, while the fourth is able to support up to three sounds per pad (or switch). This goes a long way to compensate for the frustration of having over 700 internal sounds and only 16 pads (switches) with which to program them.

Using the Chromatic Pad function, you can instantly spread a sound from any pad across the other 15 to provide you with a form of ersatz keyboard with which to

play melodic or tuned percussion sounds. Of the eight pad velocity curves available (via MIDI on the R and RP), four are linear with varying degrees of slope, one is exponential, and three are reverse linear (the harder you hit, the quieter the sound). Similarly, there are eight different Volume Envelopes to choose from and these again offer a wide variety of effects including fade in/fade out and reverse envelopes, as well as more conventional attack/decay programs.

Straddling the sound editing and rhythm editing aspects of the MD16's performance, the "Human" control parameters really help make this a formidable range of machines. Here, you have the ability to soften the attack of a sound or shorten it at lower volumes, detune the pitch at higher volumes or program volume-dependent tunings over a two-octave range. You can also link the start point of a sound to the volume with which it is played or randomise any of these parameters, if you prefer, to introduce an element of chance into your programming.

Time randomisation and displacement effects are also well represented; in addition to those features you might expect - such as swing-time programming - you'll also find more esoteric functions such as negative swing, which moves the second note of any pair towards the first rather than away from it. Cycle randomise, as its name suggests, controls the displacement of notes in a cyclic manner. Alternatively, you may opt for completely random control over time shifting, but still maintain overall control of the maximum amount of shift away from the beat which is allowed to occur.

If, by contrast, it's accuracy you're looking for, the MD16 has a quantise function which resolves down to the standard - though no less impressive for that - 1/192 of a note, and this may be applied during recording (Pre-quantisation), which is permanent - or after (Post-quantisation), which isn't.

Moving to the programming system proper, the MD16s can be programmed in both real and step time - with real-time recording carried out either in Tape or Cycle modes. As you've probably gathered, writing a pattern in Tape mode is rather like recording it on a continuous length of tape, where at 120bpm, you have a maximum recording time of just under six minutes. Cycle mode, on the other hand, allows you to cycle round a particular pattern in the conventional way and either add notes to it on each pass or overwrite an existing pattern with new note entries.

A total of 254 patterns may be held onboard and combined into a total of 254 songs of up to 127 steps - each step comprising a pattern or an instruction to repeat a pattern. Additionally, songs may be assembled into chains of 20 for purposes of live performance. Between these, pre-programmed delays may be inserted to provide you with the necessary pause between songs. Alternatively, you can simply use the start/stop key or a footswitch connected via a jack on the rear panel.

Two programmable Echo banks may be assigned to each pad if required and, as these have adjustable repeat rate, decay rate and number of repeats, it's possible to program anything from a brief flam to a full, decaying echo of up to 2.5 seconds (at 120bpm). Link this function to the Pitch programming parameters and you can combine echo repeats with increasing, decreasing or random pitch changes. Using the

Chromatic pad function, you can also extend this to adding tuned echoes to each of the pads which are themselves tuned to different pitches.

Another feature of potentially huge creative importance is that of being able to trigger complete patterns from any of the pads rather than simply individual sounds. It is all carried out within Level three and works by setting a threshold pad level above which any selected pattern will be triggered. Patterns may be programmed to repeat up to eight times for a single pad hit, or play continuously until you select a new pattern or return to the song.

In this mode, patterns change the moment you hit the pad, so you have to watch your timing. But it is also possible to cue up a pattern to automatically follow the one currently playing - provided you hit the pad before it's ended. Thus, with a series of patterns which you know to be rhythmically compatible, you can actually improvise a drum track live.

INTERFACE

IN ADDITION TO SysEx dumps (transmit and receive) the MD16 range is capable of storing and loading its entire memory contents via tape. The miniature jacks used for this may also be pressed into service for generating and reading the MD's internal Tape Sync code. As these things go, this is a fairly intelligent system and remains functional at tape speeds of up to $\pm 50\%$ variance from the original. It is unaffected by noise-reduction circuitry and is virtually impervious to dropouts as it simply reads the next song position and re-syncs itself. Needless to say, MIDI sync is also an option - the MD16 supports song position pointers - and you can also program delays to compensate for lock-up delays on other MIDI devices.

In addition to the Tape jacks and output sockets, connection hardware on the MD16 includes the ROM expansion slot, MIDI In, Out and Thru ports and the supply socket for connection to an external 9V adaptor. There's also a footswitch jack on the MD16 and two on the MD16R and RP models. Far from simply providing you with a means of stopping and starting playback, however, these are programmable switches which may be set to control any of seven different parameters including re-triggering the next pattern, swapping pad assignments and adding accents.

To accommodate the eight extra inputs for the drum pads (and/or piezo bugs), the MD16RP is given the benefit of 2U of rack space rather than one and sensibly, it has the sockets mounted along the front panel. Somewhat less convenient, however, is the fact that no LED indicators have been included to facilitate setting up or make it easier to see at a glance which channel is being triggered each time a drum pad is hit.

It is, of course, possible to set up the gain and threshold levels for each drum pad and its assignment to any of the unit's internal pads (with all the possibilities that entails). The extra parameters this involves are contained within an additional menu accessed by pressing Shift/Tempo buttons on the front panel.

Though it's probably fair to say the RP would be of primary interest to drummers and percussionists, it

could, nevertheless, prove a viable option for all programmers who regularly enter data in real time. No matter what your skills as a rhythmist, playing a set of pads - and the RP is compatible with virtually any - is always going to be easier than tapping switches or rubber buttons.

If the prospect of shelling out for a set of drum pads doesn't appeal, you could always try using cheap piezo bugs taped to any objects that take your fancy. Obviously, more rigid surfaces will not exhibit an ideal playing response, but used simply as a means of entering notes (they can be edited subsequently), the setup should still give worthwhile results for anyone who finds it difficult to relate to rhythm as a button-pushing exercise - and there must be many.

VERDICT

WHATEVER YOUR CHOICE - MD16, MD16R or MD16RP - these are not machines that will soon be outgrown, either technically or creatively. That said, the programming system they share is by no means easy to get to know. On top of this, there's a lot of button-pushing to do and not many buttons to do it with. Rather like the proverbial onion, layer upon layer has to be peeled away before you could be said to know it thoroughly.

But as devices for generating rhythm they have no equal at this price at the present time. The potentially staggering complexity of the patterns it is possible to write is equalled only by how natural each can be made to feel. Entering notes on the correct beat of the bar is only the first step. . .

It's also gratifying to see sound editing given such a high profile on what are, after all, budget machines. As I've so often pointed out in my *On the Beat* series, rhythms often become (or are required to be) instrument specific. And having some means of varying the basic palette of sounds you have at your disposal can only be of help in these circumstances.

My sole reservation regarding the original machine - its rather flimsy case - has proved to be quite groundless. I've been using one for more than 12 months now and it has suffered no ill effects. Still, if durability is a pre-requisite (in a commercial studio or on stage), there is now the option of the rack mounted/steel cased models to choose from.

Finally, I can't think of a rhythmically useful function that could be included on a machine at this price that hasn't been included on the MD16. For once, there is no ideological or financial incompatibility about buying a British hi-tech instrument. ■

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ON THE

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Part 30

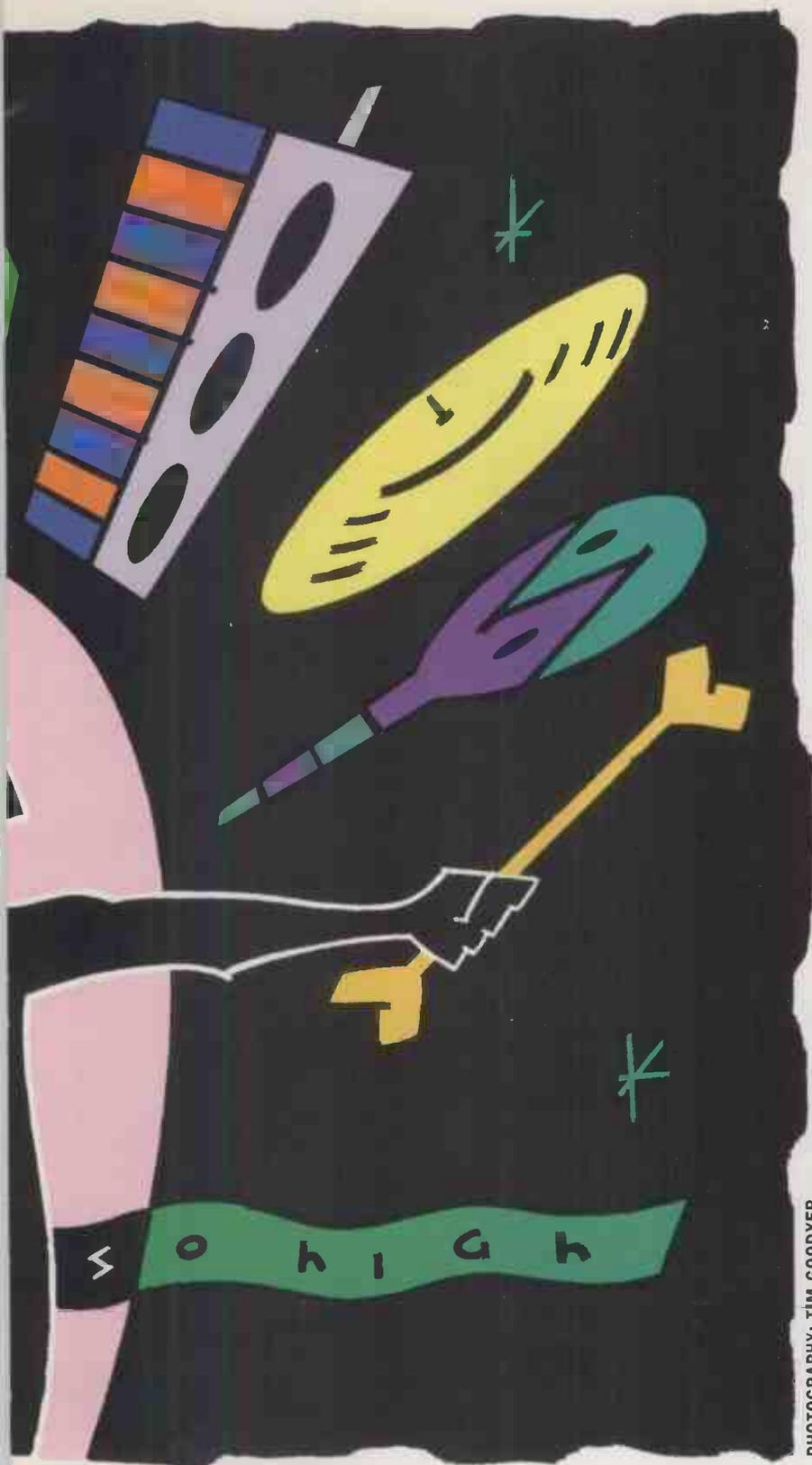
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PATTERNS. TEXT BY NIGEL LORD.**



THE OTHER DAY I found myself considering the reaction of someone buying a new keyboard workstation and discovering it came loaded with 50 "classic" synth songs - or perhaps with a hundred all-time keyboard hits included in an appendix of the instruction manual. Amusement? Amazement? Perhaps antipathy toward the manufacturer for adopting such a lowest common denominator approach and devaluing what might otherwise be an

excellent piece of hardware.

If this is the case, perhaps you'll understand how I feel each time I unpack a new drum machine and find it bristling with dozens of patterns intended to typify the various rhythmic styles currently considered "popular" - together, usually, with quite a few that aren't. Of course, it's important to make the distinction here between this sort of pattern and full-blown demo songs intended to act as a kind of



PHOTOGRAPHY: TIM GOODYER

pre-programmed salesman. By and large these latter examples are excellent and as well as showing the machine in the best possible light, often act as a spur to your imagination in terms of what is achievable with a little time and effort.

No, the patterns I'm concerned about are the kind which had a friend (of a friend) of mine calling me up at some ungodly hour in a state of near apoplexy because he'd accidentally wiped them

from his machine and hadn't got round to making back-up copies. So impressed had he and his recording partner been on hearing his machine's factory preset patterns, they'd decided they couldn't be bettered and had used them as the basis for at least half a dozen of the songs they were currently working on.

Needless to say, I was quite familiar with the erstwhile patterns (as, I suspect, are many thousands of other people all

over the world) and managed to put his mind at rest that they were easily recreatable, and indeed, easier still to improve upon. After listening to the tracks from which they were taken (and resisting the urge to suggest a couple of South American rhythms which might have proved interesting), we soon had a handful of replacements up and running. These he considered better than the originals, since they went some way to reflecting the actual structure of the songs. More importantly, he began to see his machine as an instrument for programming drum tracks rather than an elaborate (and expensive) means of playing preset patterns.

As I rode away into the sunset, I couldn't help reflecting on what a disservice manufacturers were doing to their customers by providing them with this quick-fix alternative to rolling up their sleeves and programming their machines themselves. Neither could I rid myself of the conviction that it's this kind of thing that sustains the rhythmic straitjacket which binds so many otherwise talented musicians. How often, I wondered, has a simple bass/snare/hi-hat guide pattern ended up on the final mix because no-one thought it was worthwhile programming something more interesting?

Realising I still had much work to do, I switched on my computer, and turned my attention to this month's *On The Beat*.

Whilst not particularly complicated from a programming point of view, most of this month's patterns - another mixed bag of rhythmic styles, incidentally - could be described as "involved". Or, preferably, "involving". As you'll see, there's a pretty hefty instrument complement and, though there should be one or more examples of each included on virtually every machine of recent vintage, some time will be required in choosing a suitable combination from the voices you have at your disposal.

Where dual snares or bass drums are called for, I have, in contrast to previous months, gone some way to describing the kind of voices required in the instrument list itself. Obviously, this is still somewhat vague, and results will ultimately depend on what instruments (and to a lesser extent, what effects) you have available. I can only recommend that you try all possible combinations - as I did when writing these patterns.

Of the eight examples, Pattern 3 probably qualifies as the oddest - being programmed in 3/4 triplet time. Though not an everyday groove, it is a compelling one with a nice jazzy feel supported by a >

neat bass drum figure in each bar. Keep an eye on the tempo, however; it really isn't happy going much above 100bpm.

Pattern 4 is the heavyweight of the group, and should have its tom sounds chosen with particular care. Also, though it might seem rather incongruous in such robust company, make sure you leave enough space in the mix for the triangle. This is important in providing top-end interest to maintain a degree of balance in the pattern.

Including Pattern 6 was, I confess, something of a gamble. Programmed using a combination of sounds from an HR16, an HR16B and a Cheetah MD16R, this is a stormer - at my end. Whether it will be at yours it's difficult to predict. With so much going on in the hand clap, snare and bass drum lines, much depends on your choice of instruments, and just as importantly, on their relative tunings. Obviously, including specific information on this

score would be quite meaningless for the majority of people, so you'll just have to put up with yet another entreaty to experiment.

My predilection for rhythmic exotica rears its head again in the last two of this month's patterns. Both are possessed of a vaguely African feel but I make no claims for authenticity in either case. As you'll see, the instrument line-up places none of the demands on your equipment which were evident in examples included when we undertook a more complete (and accurate) examination of rhythmic form from that part of the world. However, these are both beautifully fluid grooves of the type you rarely find in Western rhythm, yet retain a conventional enough structure to make them useful in a wide variety of situations.

In all respects, you should find them a welcome antidote to the bland ubiquity of the factory-programmed patterns. ■

PATTERN: 1a		TEMPO: 95-115BPM	
BEAT:		1	2
Clsd HiHat	◆	◆	◆
Open HiHat	◆	◆	◆
Ride Cymb	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick	◆	◆	◆
Claves	◆	◆	◆
Light Snare	◆	◆	◆
Heavy Snare	◆	◆	◆
Hi Bongo	◆	◆	◆
Lo Bongo	◆	◆	◆
Lo Tom	◆	◆	◆
Bass Drum	◆	◆	◆
TIME SIG: 4/4		BAR: 1	

PATTERN: 1d		TEMPO: 95-115BPM	
BEAT:		1	2
Clsd HiHat	◆	◆	◆
Open HiHat	◆	◆	◆
Ride Cymb	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick	◆	◆	◆
Claves	◆	◆	◆
Light Snare	◆	◆	◆
Heavy Snare	◆	◆	◆
Hi Bongo	◆	◆	◆
Lo Bongo	◆	◆	◆
Lo Tom	◆	◆	◆
Bass Drum	◆	◆	◆
TIME SIG: 4/4		BAR: 4	

PATTERN: 1b		TEMPO: 95-115BPM	
BEAT:		1	2
Clsd HiHat	◆	◆	◆
Open HiHat	◆	◆	◆
Ride Cymb	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick	◆	◆	◆
Claves	◆	◆	◆
Light Snare	◆	◆	◆
Heavy Snare	◆	◆	◆
Hi Bongo	◆	◆	◆
Lo Bongo	◆	◆	◆
Lo Tom	◆	◆	◆
Bass Drum	◆	◆	◆
TIME SIG: 4/4		BAR: 2	

PATTERN: 2a		TEMPO: 100-120BPM	
BEAT:		1	2
Clsd HiHat	◆	◆	◆
Open HiHat	◆	◆	◆
Ride Bell	◆	◆	◆
Crash Cymb	◆	◆	◆
Side Stick	◆	◆	◆
Snare Drum	◆	◆	◆
Hi Tom	◆	◆	◆
Mid Tom	◆	◆	◆
Lo Tom	◆	◆	◆
Bass Drum	◆	◆	◆
TIME SIG: 4/4		BAR: 1	

PATTERN: 1c		TEMPO: 95-115BPM	
BEAT:		1	2
Clsd HiHat	◆	◆	◆
Open HiHat	◆	◆	◆
Ride Cymb	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick	◆	◆	◆
Claves	◆	◆	◆
Light Snare	◆	◆	◆
Heavy Snare	◆	◆	◆
Hi Bongo	◆	◆	◆
Lo Bongo	◆	◆	◆
Lo Tom	◆	◆	◆
Bass Drum	◆	◆	◆
TIME SIG: 4/4		BAR: 3	

PATTERN: 2b		TEMPO: 100-120BPM	
BEAT:		1	2
Clsd HiHat	◆	◆	◆
Open HiHat	◆	◆	◆
Ride Bell	◆	◆	◆
Crash Cymb	◆	◆	◆
Side Stick	◆	◆	◆
Snare Drum	◆	◆	◆
Hi Tom	◆	◆	◆
Mid Tom	◆	◆	◆
Lo Tom	◆	◆	◆
Bass Drum	◆	◆	◆
TIME SIG: 4/4		BAR: 2	

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PATTERN: 2c **TEMPO: 100-120BPM**

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Open HiHat									
Ride Bell	◆	◆	◆	◆	◆	◆	◆	◆	◆
Crash Cymb									
Side Stick									
Snare Drum		◆					◆		
Hi Tom									
Mid Tom									
Lo Tom			◆					◆	
Bass Drum	◆	◆		◆			◆		◆

TIME SIG: 4/4 **BAR 3**

PATTERN: 3c **TEMPO: 85-105 BPM**

BEAT: 1 2 3

Foot HiHat			◆			◆			◆
Ride Cymb	◆	◆	◆		◆	◆		◆	◆
Ride Bell		◆			◆			◆	◆
Side Stick									
Hi Bongo	◆			◆				◆	
Lo Bongo									
Mid Tom	◆			◆			◆		◆
Lo Tom									◆
Bass Drum			◆	◆					

TIME SIG: 3/4T **BAR 3**

PATTERN: 2d **TEMPO: 100-120BPM**

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Open HiHat									
Ride Bell	◆	◆	◆	◆	◆	◆	◆	◆	◆
Crash Cymb									
Side Stick		◆		◆		◆		◆	
Snare Drum				◆	◆	◆		◆	◆
Hi Tom				◆		◆		◆	
Mid Tom									◆
Lo Tom									
Bass Drum	◆	◆		◆					

TIME SIG: 4/4 **BAR 4**

PATTERN: 3d **TEMPO: 85-105 BPM**

BEAT: 1 2 3

Foot HiHat	◆	◆	◆		◆	◆		◆	◆
Ride Bell		◆			◆			◆	◆
Side Stick									
Hi Bongo	◆	◆		◆				◆	
Lo Bongo									
Mid Tom	◆			◆			◆		◆
Lo Tom									◆
Bass Drum			◆	◆					

TIME SIG: 3/4T **BAR 4**

PATTERN: 4a **TEMPO: 105-120BPM**

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Open HiHat									
Triangle		◆							
Cabasa								◆	◆
Side Stick									
Snare Drum		◆			◆			◆	
Hi Tom									◆
Mid Tom								◆	
Lo Tom									◆
Bass Drum	◆	◆		◆				◆	◆

TIME SIG: 4/4 **BAR 1**

PATTERN: 3a **TEMPO: 85-105 BPM**

BEAT: 1 2 3

Foot HiHat			◆			◆			◆
Ride Cymb	◆	◆	◆		◆	◆		◆	◆
Ride Bell		◆			◆			◆	◆
Side Stick									
Hi Bongo	◆			◆				◆	
Lo Bongo									
Mid Tom	◆			◆			◆		◆
Lo Tom									◆
Bass Drum			◆	◆					

TIME SIG: 3/4T **BAR 1**

PATTERN: 4b **TEMPO: 105-120BPM**

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Open HiHat									
Triangle		◆							
Cabasa								◆	◆
Side Stick									
Snare Drum		◆			◆			◆	
Hi Tom									◆
Mid Tom								◆	
Lo Tom									◆
Bass Drum	◆	◆		◆				◆	◆

TIME SIG: 4/4 **BAR 2**

PATTERN: 3b **TEMPO: 85-105 BPM**

BEAT: 1 2 3

Foot HiHat			◆			◆			◆
Ride Cymb	◆	◆	◆		◆	◆		◆	◆
Ride Bell		◆			◆			◆	◆
Side Stick									
Hi Bongo	◆			◆				◆	
Lo Bongo									
Mid Tom	◆			◆			◆		◆
Lo Tom									◆
Bass Drum			◆	◆					

TIME SIG: 3/4T **BAR 2**

PATTERN: 4c **TEMPO: 105-120BPM**

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Open HiHat									
Triangle		◆							
Cabasa								◆	◆
Side Stick									
Snare Drum		◆			◆			◆	
Hi Tom									◆
Mid Tom								◆	
Lo Tom									◆
Bass Drum	◆	◆		◆				◆	◆

TIME SIG: 4/4 **BAR 3**

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PATTERN: 4d TEMPO: 105-120 BPM

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Open HiHat		◆					◆		
Triangle									
Cabasa									
Side Stick	◆		◆		◆	◆	◆	◆	◆
Snare Drum		◆			◆			◆	
Hi Tom					◆	◆	◆	◆	
Mid Tom									
Lo Tom									
Bass Drum	◆		◆		◆	◆	◆	◆	◆

TIME SIG: 4/4 BAR: 4

PATTERN: 6a TEMPO: 100-120 BPM

BEAT: 1 2 3 4

Clsd HiHat		◆		◆		◆		◆	
Open HiHat									
Ride Bell	◆	◆	◆	◆	◆	◆	◆	◆	◆
Triangle	◆	◆	◆	◆	◆	◆	◆	◆	◆
Claves									
Hand Clap	◆	◆	◆	◆	◆	◆	◆	◆	◆
Tight Snare									
Ambient Snare	◆		◆		◆		◆		◆
Tight Bass Drum	◆	◆	◆	◆	◆	◆	◆	◆	◆
Heavy Bass Drum									

TIME SIG: 4/4 BAR: 1

PATTERN: 5a TEMPO: 105-120 BPM

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Ride Bell									
Claves	◆	◆	◆	◆	◆	◆	◆	◆	◆
Side Stick									
Snare Drum		◆			◆			◆	
Bass Drum	◆		◆		◆		◆		◆

TIME SIG: 4/4 BAR: 1

PATTERN: 6b TEMPO: 100-120 BPM

BEAT: 1 2 3 4

Clsd HiHat		◆		◆		◆		◆	
Open HiHat									
Ride Bell									
Triangle	◆	◆	◆	◆	◆	◆	◆	◆	◆
Claves	◆	◆	◆	◆	◆	◆	◆	◆	◆
Hand Clap	◆	◆	◆	◆	◆	◆	◆	◆	◆
Tight Snare									
Ambient Snare	◆		◆		◆		◆		◆
Tight Bass Drum	◆	◆	◆	◆	◆	◆	◆	◆	◆
Heavy Bass Drum									

TIME SIG: 4/4 BAR: 2

PATTERN: 5b TEMPO: 105-120 BPM

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Ride Bell									
Claves	◆								
Side Stick		◆		◆		◆		◆	
Snare Drum									
Bass Drum	◆		◆	◆	◆	◆	◆	◆	◆

TIME SIG: 4/4 BAR: 2

PATTERN: 6c TEMPO: 100-120 BPM

BEAT: 1 2 3 4

Clsd HiHat		◆		◆		◆		◆	
Open HiHat									
Ride Bell	◆	◆	◆	◆	◆	◆	◆	◆	◆
Triangle	◆	◆	◆	◆	◆	◆	◆	◆	◆
Claves									
Hand Clap	◆	◆	◆	◆	◆	◆	◆	◆	◆
Tight Snare									
Ambient Snare	◆		◆		◆		◆		◆
Tight Bass Drum	◆	◆	◆	◆	◆	◆	◆	◆	◆
Heavy Bass Drum									

TIME SIG: 4/4 BAR: 3

PATTERN: 5c TEMPO: 105-120 BPM

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Ride Bell									
Claves	◆	◆	◆	◆	◆	◆	◆	◆	◆
Side Stick									
Snare Drum		◆			◆			◆	
Bass Drum	◆		◆		◆		◆		◆

TIME SIG: 4/4 BAR: 3

PATTERN: 6d TEMPO: 100-120 BPM

BEAT: 1 2 3 4

Clsd HiHat		◆		◆		◆		◆	
Open HiHat									
Ride Bell									
Triangle	◆	◆	◆	◆	◆	◆	◆	◆	◆
Claves	◆	◆	◆	◆	◆	◆	◆	◆	◆
Hand Clap	◆	◆	◆	◆	◆	◆	◆	◆	◆
Tight Snare									
Ambient Snare	◆		◆		◆		◆		◆
Tight Bass Drum	◆	◆	◆	◆	◆	◆	◆	◆	◆
Heavy Bass Drum									

TIME SIG: 4/4 BAR: 4

PATTERN: 5d TEMPO: 105-120 BPM

BEAT: 1 2 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆	◆	◆
Ride Bell									
Claves	◆								
Side Stick		◆		◆		◆		◆	
Snare Drum									
Bass Drum	◆		◆	◆	◆	◆	◆	◆	◆

TIME SIG: 4/4 BAR: 4

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"Ooh...ooh I'm feeling a bit remote"

"You need an A30 as your master, or strap yerself up with an AX1, it's red and it swings the right way."

"You can always trust those

Roland boys to service a need!"

"Looook out for that huge pile..."

"What, of drum machines you mean."

"Yeah, it's like been months with only an Alesis SR16 and a copy of Gardeners Weekly for comfort, and now there's all this lot!"

"Drum boxes-a-mudo"

"At last.....real human feel!"

"But at the end of the day there's nothing that beats a good synth..."

"Like the Yamaha SY35 you mean...just £649."

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....."OH NO!"

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OH NO! Spec de spec, spec!

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OH NO! Spec de spec, spec!

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OH NO! Spec de spec, spec!

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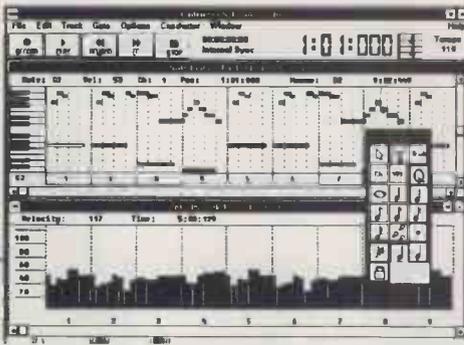
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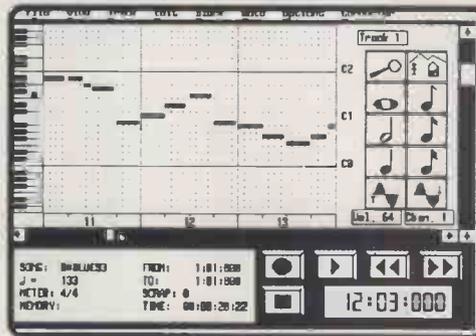
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PATTERN: 7a **TEMPO: 105-120 BPM**

BEAT:	1	2	3	4
Cldd HiHat	◆	◆	◆	◆
Open HiHat		◆		◆
Cowbell			◆	◆
Cabasa	◆	◆	◆	◆
Side Stick			◆	◆
Snare Drum			◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo	◆	◆	◆	◆
Hi Conga		◆	◆	◆
Lo Conga		◆	◆	◆
Bass Drum	◆		◆	

TIME SIG: 4/4 **BAR 1**

PATTERN: 8a **TEMPO: 105-130 BPM**

BEAT:	1	2	3	4
Cldd HiHat	◆	◆	◆	◆
Open HiHat		◆		◆
Side Stick			◆	◆
Snare Drum			◆	◆
Hi Bongo	◆	◆	◆	◆
Lo Bongo		◆	◆	◆
Hi Conga		◆	◆	◆
Lo Conga		◆	◆	◆
Bass Drum	◆		◆	

TIME SIG: 4/4 **BAR 1**

PATTERN: 7b **TEMPO: 105-120 BPM**

BEAT:	1	2	3	4
Cldd HiHat	◆	◆	◆	◆
Open HiHat		◆		◆
Cowbell			◆	◆
Cabasa	◆	◆	◆	◆
Side Stick			◆	◆
Snare Drum			◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo	◆	◆	◆	◆
Hi Conga		◆	◆	◆
Lo Conga		◆	◆	◆
Bass Drum	◆		◆	

TIME SIG: 4/4 **BAR 2**

PATTERN: 8b **TEMPO: 105-130 BPM**

BEAT:	1	2	3	4
Cldd HiHat	◆	◆	◆	◆
Open HiHat		◆		◆
Side Stick		◆		◆
Snare Drum			◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo	◆	◆	◆	◆
Hi Conga		◆	◆	◆
Lo Conga		◆	◆	◆
Bass Drum	◆		◆	

TIME SIG: 4/4 **BAR 2**

PATTERN: 7c **TEMPO: 105-120 BPM**

BEAT:	1	2	3	4
Cldd HiHat	◆	◆	◆	◆
Open HiHat		◆		◆
Cowbell			◆	◆
Cabasa	◆	◆	◆	◆
Side Stick			◆	◆
Snare Drum			◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo	◆	◆	◆	◆
Hi Conga		◆	◆	◆
Lo Conga		◆	◆	◆
Bass Drum	◆		◆	

TIME SIG: 4/4 **BAR 3**

PATTERN: 8c **TEMPO: 105-130 BPM**

BEAT:	1	2	3	4
Cldd HiHat	◆	◆	◆	◆
Open HiHat		◆		◆
Side Stick		◆		◆
Snare Drum			◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo	◆	◆	◆	◆
Hi Conga		◆	◆	◆
Lo Conga		◆	◆	◆
Bass Drum	◆		◆	

TIME SIG: 4/4 **BAR 3**

PATTERN: 7d **TEMPO: 105-120 BPM**

BEAT:	1	2	3	4
Cldd HiHat	◆	◆	◆	◆
Open HiHat		◆		◆
Cowbell			◆	◆
Cabasa	◆	◆	◆	◆
Side Stick			◆	◆
Snare Drum			◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo	◆	◆	◆	◆
Hi Conga		◆	◆	◆
Lo Conga		◆	◆	◆
Bass Drum	◆		◆	

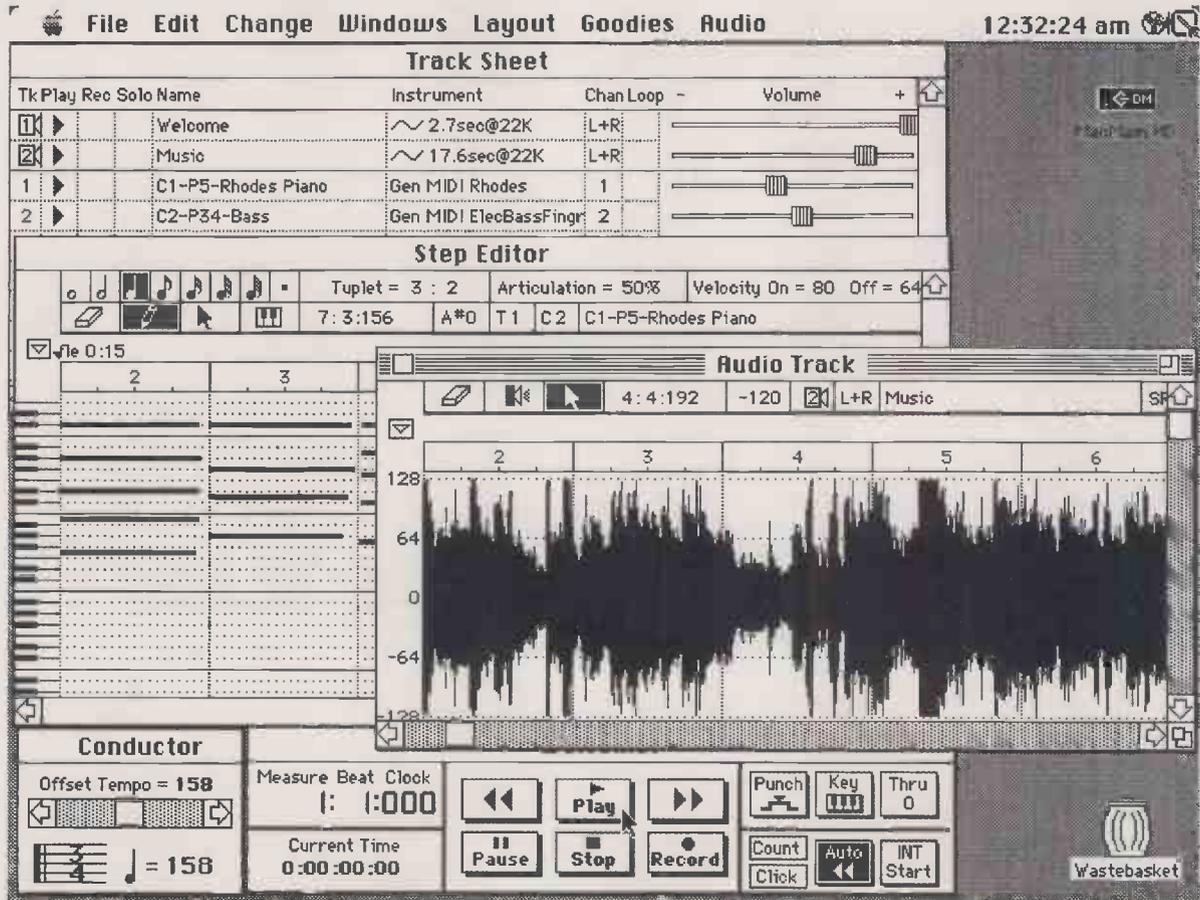
TIME SIG: 4/4 **BAR 4**

PATTERN: 8d **TEMPO: 105-130 BPM**

BEAT:	1	2	3	4
Cldd HiHat	◆	◆	◆	◆
Open HiHat		◆		◆
Side Stick		◆		◆
Snare Drum			◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo	◆	◆	◆	◆
Hi Conga		◆	◆	◆
Lo Conga		◆	◆	◆
Bass Drum	◆		◆	

TIME SIG: 4/4 **BAR 4**

AUDIO TRAX



The integration of sequencing and audio recording looks set to change computer-based recording - and we're not only talking about professional, mega-buck systems. Review by Ian Waugh.

BILLED AS THE cheapest ever direct-to-disk recording system, Audio Trax - a snip at £199 (RRP) - had to warrant closer examination from MT. To preempt your glance at the verdict, let's just say now that it works, it works well, but it has some limitations. Well, of course it would for that price, wouldn't it?

Essentially, this Mac sequencer/recorder is based on Passport's Trax (ST version reviewed MT, December '90) sequencer, to which has been added two audio tracks. Passport's Master Tracks Pro (ST version reviewed MT, September '90) of which Trax is a junior version, is well regarded in the biz, being a powerful and easy-to-use piece of software. One of its pioneering additions to sequencer layout is the Song Editor, which shows the music in bar increments - bar as in musical

measure, not one of the lines on a grid in a piano roll editor - which makes block editing a pretty straightforward business.

Although both previous reviews have concentrated on the ST versions, these are operationally similar to the Mac version, so the finer details of the sequencer will be omitted here.

ALL SYSTEMS GO

LET'S START AT the beginning - system requirements. Audio Trax (review v1.01) requires an SE/30, LC, IIsi or one of the more powerful Macs. It will run on a Classic II but, apparently, only allow you to record one audio track. You also need at least 4Mb of RAM and System v6.0.7 or higher. It is System 7 compatible, which is good news.

You need a hard disk, of course, although it would

be a brave man or woman indeed who tried to use a Mac without one in any case. It uses disk space at the rate of more than 1Mb per minute, per channel at 22kHz. According to the manual, the audio section of a five-minute song would require 12Mb of disk space. You can record at 11kHz and double the megabyte/minute capacity but that's really lo-fi and for voice comments only, I'd suggest.

You also need a MIDI interface (if you want to record MIDI data), plus a sound input device. The LC and IIsi have one built in. Other Mac owners can use MacRecorder (extra, of course) although this can only record at the 22kHz sample rate (Audio Trax' manual hinted that an update may be possible).

Audio Trax disables the Mac's internally-generated "beep", so you should select another warning sound from the Sound section of the Control Panel (I hated the beep, anyway).

SOFT OPTION

THE SOFTWARE ISN'T protected (Passport are rapidly running the risk of being voted my number one user-friendly software house). It uses Apple's MIDI Manager (supplied) which you drop into your System folder. The Manager was designed to allow multitasking MIDI and a cute, hi-tech patchbay lets you route MIDI software to the Mac's MIDI interface and other MIDI Manager compatible programs.

The sequencer itself is very easy to use. The only slightly disconcerting aspect is that you *must* open a file onto disk before you can use it, even just the MIDI sequencer section, so if you want to just boot up, mess about and switch off, remember to erase aberrant files.

Operation revolves around windows, of which there are five - Transport (contains the tape controls), Conductor (sets the tempo), the Track Sheet (lists the tracks), the Song Editor (already mentioned) and the Step Editor (our friend the piano roll editor).

Audio Trax has 64 MIDI tracks with check mark boxes for play, record, solo and MIDI channel. They also have a loop box and a volume slider which is extremely useful.

You can name the tracks and select instruments for them from an Instrument Field menu. This contains a list of 11 devices including the MT32, D110, U220, Kurzweil K1000, Kawai K1 and a GS device. Each contains a list of the instruments' presets so you can select sounds by name.

Sounds can be auditioned on the fly using this method of selection. It's a brilliant idea but you can't edit the device list or read user-programmed sounds into it. There are a couple of generic non-named devices, however.

The Song Editor is useful for both copying and re-ordering song sections (although upbeats can confuse the issue). The Step Editor is the most complex of the editors (and warrants 23 pages in the manual) but it's still fairly easy to use. You can zoom in and out; set markers; cut, copy and paste, and drag the notes around as you would expect in such an editor. It's also used for step-time note entry (where did you think its name came from?). It adopts

one of the more sensible and friendly approaches to step-time entry. You select a duration from a list of note icons and click the required pitch onto the score. Alternatively, you can select a duration and play the note in from a MIDI keyboard - the method I prefer.

SENSITIVE SUBJECT

THE TWO AUDIO tracks sit above the MIDI tracks in the Track Sheet and have the same options as sequencer tracks, except that they can't be looped and clicking on the instrument box calls up an Audio Set Up box instead of a device list. Here you can select the 22kHz or 11kHz sampling rate and the bar, beat and clock on the audio tracks from which recording will begin. An "LED" ladder indicates the volume of incoming audio signals.

The input is quite sensitive using the IIsi's own mic, and the input level indicator responded to quite distant extraneous sounds. An optimum recording level was quite difficult to achieve, especially for sounds with a wide dynamic range.

Even using a less-sensitive microphone, there was still some residual background noise, although at a more acceptable level. Even the act of plugging a cable into the mic socket can generate some noise so you have to be very careful with your cabling and shielding. But perhaps it's telling that even the demos supplied with the program had their share of hiss.

To prevent aliasing, according to Nyquist's theorem, you should limit your audio input to 10kHz, which is just a little below the frequency you would ideally like to hear a good vocal at (just in case you were thinking of setting up a home digital recording studio).

NETT GAIN

THERE ARE A couple of functions to help improve recording quality incorporated in Audio Trax. The Noise Gate, for example, will remove all audio data below a threshold level you select. This works best when the signal you want to keep is fairly high, which, as sod's law dictates, is usually when you'll need to use it least.

Gain lets you increase or decrease the volume of a section, while Normalise increases the level so it is as loud as it can be without clipping. These take any accompanying noise with them, of course, and are to be used with care. What's really needed is a good filter (or even an average filter). The audio data is actually stored as eight-bit AIFF files so if you have a sound editor you could try running your sound files through its filter.

The point is, with this sampling resolution and sample frequency, the quality is going to be limited. In fact, the specs aren't even up to those of some Atari ST sampler programs. Well, now you know. But >

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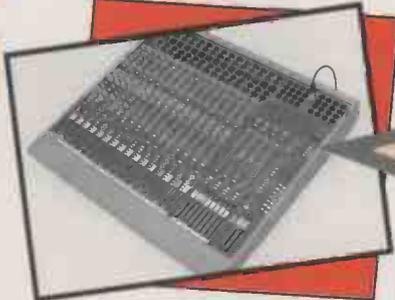
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“After recording, you can see the results in the Audio Window and you can cut, copy and paste sections of it as you can with ST samplers.”

➤ then no ST program has managed to combine MIDI and audio data (although C-Lab flirted with the idea but never really followed through) at such a price.

After recording, you can see the results in the Audio Window and you can cut, copy and paste sections of it as you can with, um, ST samplers. These actions are not reversible, however - whatever you do, you do on your original material (you can back it up, of course). But editing audio data is real power stuff. You can create your own N-N-Nineteen effects (sorry, but it's as good a place to start as any).

The two audio tracks can be routed through left, right or both outputs (most Macs only play the left output through their own speaker). You can't record on both audio tracks simultaneously, however, so true stereo recording is out. Shame, that. However, I suspect most users will be happy with two mono channels and treat them as such.

You can mix the two audio tracks together and even mix them with audio data from another file. While the speed of the MIDI data can be controlled by altering the tempo, the audio data plays back at a fixed rate so if you want the two to sync, you've got to get the MIDI recording right first.

SYNC OR DIN

THERE ARE THREE manuals - an excellent Getting Started manual, a large Reference manual, both with indexes, and a short Applications manual which doesn't really need an index and doesn't have one. It includes hints on how to use Audio Trax with other applications and it describes the principle of "wild sync", which is basically the practice of starting two processes off at the same time and hoping they'll stay together. Audio Trax can't sync directly to MIDI clocks although it does respond to Start, Stop and

Continue messages and Song Position Pointers.

Two HyperCard stacks, which demonstrate the use of synchronised audio and HyperCard demonstrations, are included in the package. However, the processor overhead can still be seen because if you have a few windows open, the sync will drift noticeably.

Data is read to and from the disk on the fly and there seems to be only a minimal buffer, which may account for the reliance on the processor to keep time. Still, close your windows and as well as doing your bit for crime prevention, you can achieve effective synchronised HyperCard demonstrations.

Other hints are given on using Audio Trax with MacroMind Director (two Macs recommended) and recording onto home video. Attractive though these options are, to get the most out of the package, you'll need a fair bit of hard disk space and, unless you're prepared to ditch every recording after completion, some means of backing it up onto floppies.

VERDICT

TRAX IS AN excellent, friendly, budget-priced sequencer (although a true event editor would be useful), which could well suit anyone not requiring all the power of the big boys. Throw in audio recording and it must be a great temptation.

Now, I imagine some of you are wondering whether this could be used to record a demo or even a pressing-ready record (if so, go back and read the review and not just this conclusion).

Well, it's a definite No to the second option - the quality is just not high enough - although that was never Audio Trax's aim. As for the first, well, yes, it could be done but even so the sonic range would be rather limited (remember Mr Nyquist) and likely to be noisy. But if you're careful about how much top you allow the signal and record it well, you could end up with quality which may average out somewhere around tolerable. If that is your aim, do get a demo so you can check the quality for yourself.

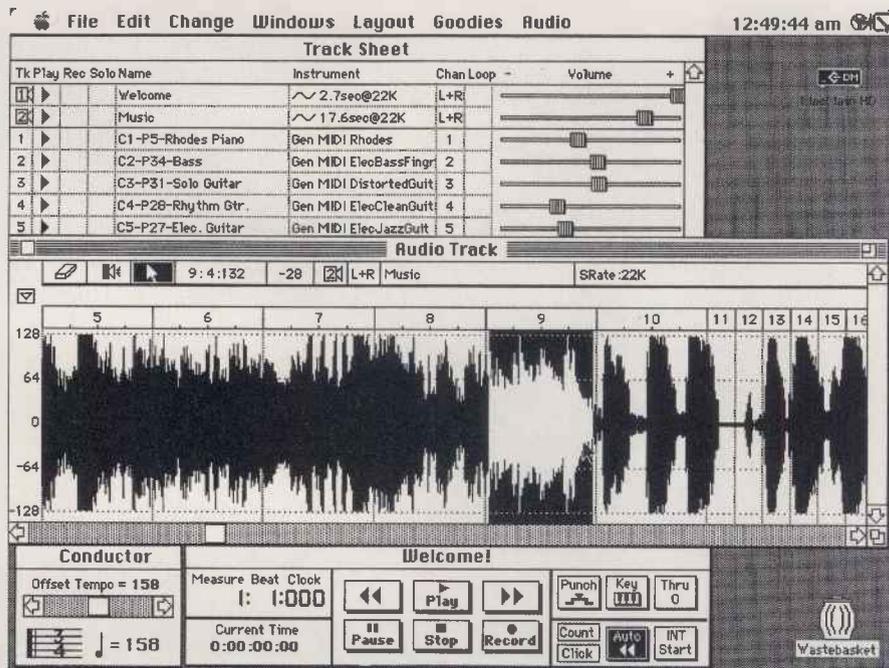
On the plus side, let's not forget the ability to cut and paste the audio to produce some interesting vocal effects which would be impossible using tape. The program does, however, lack the editing facilities you get with pro direct to disk systems - which is only to be expected.

Audio Trax is, perhaps, more suited to MultiMedia work (at last - got last year's buzz word into an article) and presentation work as the Applications manual suggests and I could certainly recommend it as a budget option for adding sound and music to Mac-based demonstrations.

In spite of any shortcomings it may have, Audio Trax is certainly enjoyable to work with. The power of digital recording and editing has to be tried to be believed, and this is surely a taster for the personal multitracker of the future - come to think of it, that can't be too far away.

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LIKE SOME WORKS OUTING, THE ANNUAL FRANKFURT FAIR SEES THE HORDES OF THE MUSIC INDUSTRY PACK THEIR BAGS TO SPEND A FEW DAYS AWAY FROM HOME. HERE'S WHAT WE DID THIS YEAR. . . TEXT BY VIC LENNARD.

THE FRANKFURT MUSIK Messe is currently the world's largest music show, with over 1150 stands from 40 countries including Belgium, Bulgaria, Denmark, Finland, Greece, Sweden, Hungary and Turkey. This augurs well for the impending open European Market and, perhaps, will prove to the American and Japanese manufacturers that life exists off their own shores. To be fair, many of the American companies at this year's NAMM Show were also present at Frankfurt, showing their wares in the European marketplace.

SYNTHS & MIDI

PERHAPS THE LEAST expected new synth in Germany was the **Waldorf Wave**. This is intended to be the ultimate in wave synthesis and in order to accommodate the most demanding synthesist, it's modular. The basic unit offers a 61-note keyboard with 16 voices, but a 76-note version will be available and the number of voices can be expanded to 32 or 48. Impressive doesn't quite describe the features; there's eight-part multi-timbrality with three stereo outputs, two auxiliary outputs, 128 performances and internal sounds, 32 independent MIDI channels and eight keyboard zones for starters. The keyboard is capable of functioning as a master with channel aftertouch, modulation and pitchbend wheels (proper ones, not those sideways jobbies) along with a "freewheel", two playbuttons and three footpedals, one of which functions as a sustain pedal.

Each voice has two oscillators and wavetable generators along with a noise generator, two LFOs, ADSR amplifier envelope, DADSR filter envelope and eight time-level pairs for the wave envelope. The screen is a massive 480 x 64 pixels with eight buttons and faders purely for the display. Additionally, there are 27 sound edit buttons, 53 sound edit knobs and a 12-button numeric pad. Needless to say there's an HD disk drive which can be used to store sounds and performances. Starting at £3000, the synth isn't exactly a budget instrument, but it's certainly a synth against which others are likely to be measured.

Roland had a couple of keyboard tricks

up their sleeve: the DJ70 (£1799) is a sampling workstation which could be considered a cut-down S770 but with added functions aimed at the DJ market. The standard memory of this 37-note keyboard is 2Mb, which can be expanded to 4Mb and is compatible with all disks from S770/750/550/330 and W30. Polyphony is 24 notes and full memory expansion gives 45 seconds at 44.1kHz. As with the rest of the current S-series, sound-shaping facilities include TVA and TVF and a 3.5" HD disk drive. Why call it a DJ? Because Roland have included a 12cm horizontal "scratch dial" which moves the sample around in much the

individual audio outputs and sports a 61-note keyboard with channel aftertouch and release velocity. Price will be around £3000. At the other end of the spectrum is Cheetah's MS800 Sampled Wave Synthesiser, a 15-voice multitimbral expander of half-rack size. Price is £199.99.

Relative newcomers to the keyboard scene they may be, but **Peavey** certainly haven't let that hinder the development of their keyboard range. Their new DPM2si is a 76-note synth using the company's Digital Phase Modulation system. It features 32-voice multitimbrality, 4Meg of internal 16-

seeing the light of technology. In the UK we'll have to wait and see. Pairing up Peavey's DPM C8 MIDI master keyboard and PC1600 MIDI Controller/Universal Editor would give you a pretty comprehensive controller setup - the keyboard has 88 weighted keys, four programmable sliders, pitch wheel, mod wheels, disk drive and so on, while the Controller/Editor has 16 each of programmable sliders and switches, a data wheel, two CV inputs, MIDI filtering, slider grouping. . .

Yamaha added two further 61-note keyboards to their SY range. The SY35 (about £650) is the hi-tech division's keyboard version of the TG33. It offers both AWM and FM synthesis with 64 sounds each in ROM and RAM and a DSP for effects. The SY85 (about £1500) uses AWM2 and offers 30-note polyphony with 6Mb of ROM and 0.5Mb of RAM which can be increased to 3.5Mb by using an expansion board with inexpensive SIMM chips. Also included is a 3.5" DD disk drive for the 20,000 note, nine-track sequencer which can hold up to ten songs, and a real-time control system which allows you to simultaneously alter up to eight parameters via sliders.

To complement their TG100 GM sound module, Yamaha added the TG500, which will take the place of the TG77. This 1U-high rackmount unit offers 64-note polyphony with 384 preset sounds and 192 user memories. Price will be around £1100. A little more unexpected was the addition of a 16-bit percussion sound module in the RM50 (about £700) which has 500 presets, 500 partially editable sounds and 100 user memories. One optional extra is that of a battery backed-up expansion memory board which will hold sample waveforms. Included as standard is an audio-to-MIDI converter and six audio triggers.

Other launches on the synth side included the S2 and S3 from **GEM** - a pair of workstations differing only in their number of keys (61 and 76 respectively). Working with the PCM and wavetable synthesis techniques, they offer 6Mb of ROM and 2Mb of RAM with six, 18-bit DA converters, two DSPs for effects and digital filters. There's an on-board 3.5" HD disk drive which can read MIDI Files from ST and PC disks, and two independent MIDI Out ports to allow for up to 32 MIDI channels for the instrument's 16-part multitimbrality. Unfortunately the polyphony is only 16 voices, and even though the blurb states that it complies with the General MIDI standard program change configuration, it will not play back



Peavey: Consolidating their Keyboards

same way as scratching with a record and turntable. To match their new GS format Sound Canvas-derivatives launched at NAMM, Roland announced the PC200 MkII (£215) and PC150 (£128). These each have 49-note keyboards but differ in that the PC200 MkII has velocity-sensitive keys, pitchbend and modulation levers, and various other controls while the PC150 is lacking them. Further, the PC150 has no socket for an external PSU as it only runs on batteries.

Also added to the Roland range were the A30 (£499) five-octave master keyboard with facilities aimed at their GS synths, and the AX1 (£445) portable controller which you nicely pose with round your neck (why didn't they call it the AX-1S?).

Having made mention of it at previous shows, **Cheetah** unveiled their 24-oscillator analogue synth, the Zeus 24. Aimed at a market various other manufacturers seem to have vacated, the Zeus offers 12 envelopes and LFOs per voice, is multitimbral with eight

bit ROM samples, 200 RAM-based programs (a further 100 are available via ROM card), ten programmable Drum Kit locations, 16-track (80,000 note) sequencing and dual 24-bit digital effects processing. A newly-emerging Peavey line was the Spectrum modules - the Spectrum Synth and Spectrum Bass. These are 1U-high rackmounts boasting 999 presets of 16-bit resolution and 12-voice (24-oscillator) multitimbrality. The Synth module features 16 LFOs, 16 filters and hard sync and pulse-width modulation in pursuit of those old analogue sounds. The Bass module, meanwhile, is intended to be the answer to a programmer's most bass desires.

Peavey's CH8FD keyboard also draws on Digital Phase Modulation but ties it in with an 88-note weighted keyboard, onboard effects, a nine-track sequencer and 100 "of the highest quality Acoustic, Orchestral, Percussion and Synthesized electronic instrument sounds". In the States it's expected to score highly in the huge numbers of churches currently

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Yamaha: Continued support for Vector Synthesis

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Musltronics have added a PCM-EX board for the Yamaha SY range of synths; an additional 8Mb of PCM data is added to the SY/TG77 (at about £300) and 4Mb to the SY/TG55 (for around £300) with 128 new sounds being included as standard; of the sounds I heard, the tuba, Fender bass and tenor sax were rather good.

Quasimidi released three new items: the first was the QM2016 (around £649), a 20-input, 16-output MIDI patchbay. This unit is particularly interesting, as it can handle filtering and merging on the first five Ins but uses the rest as a straightforward patching matrix. Very sensible - as is having the first two MIDI Ins and Outs on the front panel for ease of patching. Next up is the QM Merge which can merge three inputs and also provides a three-way MIDI Thru facility and some basic processing. Finally there was the Style Drive (around £699) which will let you create and impose your own styles on MIDI song data. It also offers MIDI data storage via its 3.5" disk drive and will record MIDI song data direct to disk as well as reading MIDI Files and Roland style cards.

There are one or two MIDI foot controller units on the market, but generally they tend to be rather basic - Ground Control from **Dynamix** is anything but. Each of eight foot-pedals can transmit up to 64 bytes of MIDI data including System Exclusive - for sending parameter changes to synths and the like. For programming, there is a 1U-high rackmount system unit with a 2 x 40-

character screen and a data card slot for saving commands and performance memories. Price is around £500; worth a look.

SOFTWARE & COMPUTERS

CREATING A GREAT deal of interest on the software side was **C-Lab's** move onto the Apple Macintosh platform with the launch of Notator Logic. Part of the name may have been inherited from the ST program but that's about where the similarities end, as it's a brand new sequencing program intended for use with the Mac's System 7 operating system.

Notator Logic is an object-orientated music environment with a practically limitless number of tracks. The resolution is 960ppqn and Notator Logic has a tempo range of between 0.05 and 9999.99 beats per minute. The entire MIDI setup can be shown - and patched - on-screen in a similar manner to Opcode's OMS system. All events are shown in a linear fashion, but multiple tracks can be placed together in "folders" to prevent the visual cluttering of the screen. Cycle points can be altered on the fly and both Event List and Score Editors are available.

The demo was absolutely blinding - one of the best I've ever seen, with a complete song being input by a drummer with pads and a Roland Octapad; drums, bass, strings, brass stabs, piano - the lot. In fact, I had to go back a second time to watch it objectively. Of course, it's impossible to say how Notator Logic will feel when being used in the studio, and the manipulation of data on-screen may

well upset many Mac die-hards in that it doesn't appear to have the feel of a Mac application, but the same could be said of Steinberg's Cubase. In fact, Notator Logic and Cubase are likely to be the two programs that people upgrading to the Mac from an ST will look most closely at. Steinberg may have the slight advantage of having the print-out version of Cubase - Cubase Score - in final beta-test while the initial release version of Notator Logic will not have such a facility. Either way, both of these programs are visually streets ahead of any other sequencer on the Mac.

C-Lab were also showing Mac versions of Aura, the ear training program, and Midia, the graphic display program for MIDI events. Prices will be a little more than the Atari ST versions.

Sample Tools from Italy, known for their Sample Tools editor-librarian for the Roland S550 (now called Unistar) released a further three programs: Polystar (around £400) is an Akai S1000/1100 and Roland S750/770 librarian and editor; Parastar (around £250) is a real-time parameter and wave editor for the Akai S1000/1100, and Wavestar (around £130) is a librarian and editor for all samplers that conform to the MIDI Sample Dump Standard.

Having launched Cubase Windows at the NAMM Show, **Steinberg** followed up with the necessary PC interfaces: PC MIDI 1 is a basic one-input, one-output MIDI card (for around £90) while the SMP11 offers two MIDI Ins and four independent MIDI Outs along with SMPTE and MTC in a 1U-high rack unit (around £550). Also released on the hardware side were two interfaces for the Mac to go with Mac Cubase: Mac MIDI 1 has one MIDI In and three parallel MIDI Outs (about £80) while the Mac MIDI 2S ➤

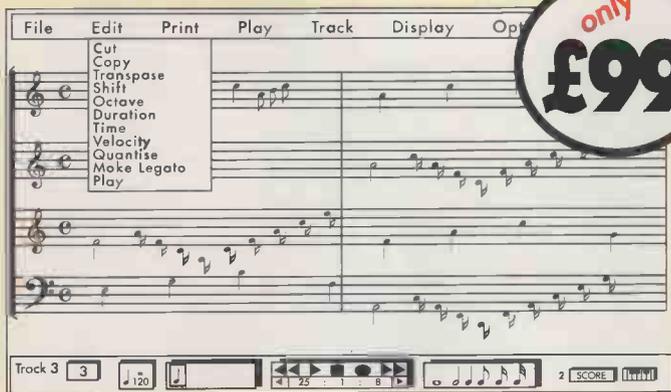
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➤ has two MIDI Ins each with three MIDI Outs along with SMPTE and MTC (around £350). (All prices translated from German DMs.)

On the software side, Steinberg were showing MasterScore II, a desktop music publisher for the Atari ST which retails at £325. Input is via any of the Steinberg sequencing programs or via MIDI File from any other program, in step time from a MIDI keyboard, or ASCII from the computer

mixing desk - which is basically a Spirit Studio with automation. However, this doesn't just handle MIDI muting, but covers fader VCA automation as well. This may be computer-controlled via Cubase's MIDI Manager page (or similar) or you might prefer to use the dedicated program being developed by **Steinberg**. The desk will be available from June 1992.

Both **Fostex** and **Soundtracs** had



Roland: Reviving the remote

keyboard. The musical complexity which the program can accommodate is likely to rival similar programs on the Apple Macintosh.

For the PC, **Twelve Tone Systems** were showing Cakewalk Professional for Windows. PC sequencing programs have come a long way visually, courtesy of the Windows environment. Cakewalk Pro offers 256 tracks, Scoring, Piano Roll and Event List editors, System Exclusive librarian, SMPTE/MTC sync and the ability to create key macros. Unfortunately, no-one distributes it in the UK.

Following on from the K..AT ST remote keyboard controller, **FriendChip** added a version for the Mac (about £110) and the DC K..AT Desktop Controller which includes several sets of remote buttons, a heavy-duty wheel for mouse movement and a series of keys for the mouse buttons. Versions are available for the Mac (around £300) and the ST (around £270).

From **Opcodes** came the Studio 4 (less than £500) which is a MIDI patchbay and SMPTE synchroniser in one for the Apple Mac. With eight independent MIDI Ins and Outs, this is likely to be a contender in a market dominated by Mark of the Unicorn's MIDI Time Piece.

MIXERS & MIDI

SOUNDCRAFT TOOK ADVANTAGE of the Frankfurt show to preview their Spirit Auto

rackmount mixers on display whose settings can be transmitted over MIDI. From Fostex there was the DCM100, which has eight stereo pairs mixed into one stereo pair with high and low EQ and two auxiliary sends. The MixTab control box allows you to change settings and then save them as one of 100 scenes which record the level, pan, EQ settings and aux levels - cost for the pair will be around £700. The MIDI Mixer from Soundtracs has similar functions and also allows you to fade from one scene to the next - price is around £550, although a hardware control box is not included. Many sequencers will be able to control either of these - Fostex had a MIDI Manager page from Cubase set up on the stand.

DIGITAL AUDIO

PLASMEC WERE SHOWING four versions of ADAS, their direct-to-disk recording system. For the Atari ST there was the latest update with resizeable windows and new record and cue list functions while both the Apple Mac and PC Windows versions were up and running on the stand. The fourth version is free-standing with a large LCD and an RGB socket for an external monitor. While the processor is still a 68000, the unit appears to function far more smoothly than on the ST; perhaps this is the advantage of not having to run via the ST's operating system. The front

panel has a scrub wheel, which previously required the use of a mouse and the cost, including a 100Mb hard drive, is around £2500 - this also includes a digital I/O board. Also on display was the new range of Plasmec hard drives; fixed, 88Mb removable and 128Mb opticals.

Not quite ready for the NAMM Show, **Opcodes** released the budget multimedia Macintosh program called Audioshop (£69.95) at Frankfurt. This integrates the use of eight-bit digitised audio with audio uploaded from standard CDs via a CD-ROM player.

One of the biggest surprises was the launch of a two-track record, four-track playback direct-to-disk system from **Yamaha**. High on spec with 16-bit A/D and 18-bit D/A conversion (eight times oversampled), digital I/O (AES/EBU, SPDIF and Yamaha Y2), a DSP for reverb and modulation effects and three-band digital parametric EQ, the most interesting part is its lack of a front end - Yamaha have left this to software companies with expertise in this area. **Mark of the Unicorn**, with Digital Performer on the Mac, and **Steinberg**, with Cubase Audio on the ST, are providing the user interfaces, although other companies are likely to get involved. Price is expected to be under £2000, which includes an external 100Mb hard drive.

Akai also announced a budget direct-to-disk system in the HDR100, a four-track system which allows four units to be linked to provide 16-track recording. Price will be about £1399. Also mentioned was the LR900 (about £249), which is an automatic looping recorder with up to eight seconds of delay time available, aimed at guitarists and DJs. On display was the v2.0 software for the S1100, which adds the feature of direct-to-disk recording for £349.

Vapourware - a lovely Americanism, of which the epitome was an offering from **Anatek**. The Radar is a 24-track direct-to-disk system which was shown as a box with level meters painted on and a remote which had the numbers being rubbed off the display due to handling. Cost is intended to be around \$15,000 at the end of the year. Could the fact that Anatek (currently without UK distribution) have recently been bought out by a company specialising in the manufacture of hard drives have anything to do with this?

If I were to choose one absolute oddball from the show, it would have to be the two German guys who have put together a two-input, two-output merging MIDI interface for the Atari Portfolio palmtop computer (the one that runs MS.DOS) and have also written sequencing and MIDI monitoring software for it. I know that people climb mountains "because they are there", but this is ridiculous. ■

REASONS TO BE CHEERFUL

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Everyone knows that AMG have the very highest quality and widest range of sample CDs and synth sounds - whether you choose one of our sample CDs, sound cards or software you can be sure that you'll be able to produce better music faster than you ever thought possible!

2

In addition to the old favourites, AMG are this month introducing a host of new products that maintain our reputation for bringing you quality. Examine these ground-breaking new products and, if you wish, pull out these pages and keep them for future reference.

3

We have now introduced a freephone order hot-line to ensure your order is processed promptly. Next Day delivery is usually available on any order made before 2pm. Any enquiries should be made on our usual 073088 383 number, **orders only** can be placed on 0800 252936.

NEW! Now that's what I call Sampling! Volume One

Featuring new samples from all existing and future Producer Series artists including:

Pascal Gabriel - Coldcut - Danny Cummings & Miles Bould - Dave Ruffy

And previews from:

Norman Cook - Beats International. Remixes for FYC, James Brown, etc.

Pete Gleadall - Pet Shop Boys' and George Michael's sounds man.

JJ Jeczalik - JJ virtually invented sampling with The Art of Noise!

Ian Curnow - One of the driving forces behind the phenomenal PWL success story!

Neil Conti - Very high quality dance drum loops. Works with Prefab Sprout and David Bowie.

FEATURING

ALL-NEW samples from all existing and future Producer Series artists*:

A wide selection of loops, drums, FX, percussion, vocals, synths, and much more. Excerpts and new samples from HitSound's Pure Gold Synth, Old Gold Synth & Guitar CDs.

The Highest Quality & Best Range on 1 CD. Superb value at just £49!

* tbc - new contents being constantly added - Due for release mid-march.

NEW! The X-Static Goldmine - Over 3000 Fresh HOT Dance Samples for £69

The perfect tool for making dance music. 3023 Samples!! Quality and Quantity. Audio Alchemy for the Connoisseur.

512 Loops, Breaks & Rhythms

Hardcore Techno, Clonky Housebeats, Funky Raregrooves, Hustling Hip-Hop, Ethnic Percussion Loops, Kraftwerk-style Loops, CR78 Loops plus much more. All loops specially selected & treated, most with BPMs.

1103 Snappy Drum & Percussion Samples

A huge collection of the best ever - including Kraftwerk-style hits, plus the whole Roland classic beatbox family including multisamples from the TR808 and TR909 to give their full, rich spectrum.

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House & Rap hooks, Robot & Vocoder vox, Film & Media snatches, Toasting Jamaicans, Ethnic Singers, Tibetan Monks, Gregorian Choirs, Comedy & Horror, Moans & Groans. All you need and more.

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Ambient Swirls - Drones, Tones & Fluffy Frequencies.

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SPECIAL INTRO OFFER 'TIL 31/5/92
JUST £69

SAM-1 - Sample Expander for Korg M1, M3R, T-Series & WaveStation

Do you feel frustrated by the small selection of PCM cards available for Korg synths? Do you crave the opportunity to load S1000 samples into your keyboards and then process them to your heart's content? Just imagine all the possibilities. But why imagine? At last it's here! Double Dutch's SAM-1 is Korg's best friend. If you want your Korg Synthesizer to stand out from the crowd, you'd better meet SAM too. Call for full details.

NEW THIS MONTH!

Synths - Pro-Rec Cards - Valhala JD800/D70 Cards

SAM-1 - MKS70 & T-Series Disks from the **SoundFoundation**

Samples - Rhythm of Life - Sampling Collection 900

Software - D70 Editor - SY22/TG33 Editor

And COMING SOON! - SCP - Synclavier Strings on CD!

PCM.EX's for Yamaha SY/TG77 and SY/TG55.

SPECIAL OFFERS

X-STATIC GOLDMINE - Introductory Price of £69

SONIC IMAGES Sample CDs - All reduced from £35 to £25!

MUSITRONICS D50 Power Pack - See last page!

MASTERBITS Dat-RAM - Two volumes now available, another one on the way. Over 300 Meg to load directly into your S1000

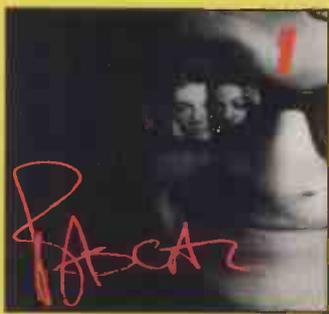
- New Low Price: £199 per volume. Call for full details.

PULL-OUT AND KEEP!

AMG: THE SOUND OF THE FUTURE

The HitSound Producer Series - By Creative People, For Creative People

We could have done our own CDs. They would have been OK, other people have done them and they've been OK. But we wanted something better. We went straight to the top. Everyone we've worked with have been involved in International smash hit records - including many Number 1's! These CDs offer you the ammunition to make next year's hit records - not a collection of duds from last year. If you're still after 'Funky Drummer' look elsewhere. You can't make music without sounds, the best sounds will help you make the best music - Using these sounds will allow you to set the trends, not force you to follow them. After all who wears DEELEY BOPPERS these days?

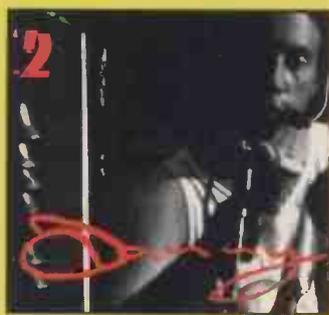


Pascal Gabriel's Dance Samples - Over 1000 Samples, 72:23 minutes

Pascal Gabriel is one of the leading lights on the current dance scene. He has worked with such well-known names as **Bomb The Bass**, **S-Express**, **Coldcut**, **Jimmy Somerville**, **Erasure**, **EMF**, and many more. This CD is different to any other available. It is **NOT A COMPILATION** of sounds from last year's records, but a reservoir of new sounds to help you make the **HIT RECORDS OF NEXT YEAR**. People are describing it as 'fabulous', 'fresh', and 'superb value'. In the past a library like this would take years to build-up and a huge amount of work and skill to achieve. Now it can be yours in days for only **£49**. Why wait! **MT, Dec '91**. "...off-beat, quite distinctive, and highly usable. Better still you almost certainly won't have heard them before...useful and memorable...a revelation...uniformly excellent...the basis for many a hit - **SOS, Jan, '91**. Used by **Pet Shop Boys**, **Propaganda**, and **Technotronic** ("Fooding unbelievable!")

↓ FEATURING ↓

- Loads of Drum & Percussion
- Loops & Breaks
- Guitar Hooks and FX
- Vocal Riffs & Effects
- Hits, Scratches & Drop-Ins
- Countless Snares and Kicks
- Synth FX & Bases
- Brass & String Hits, FX and Runs!
- Film & Media Snatches
- Orchestral Effects
- And Much, Much, Much More!



Danny Cummings' & Miles Bould's Rhythm of Life

If your shrink fires the word 'Percussion' at you, and you know your onions, then you're likely to respond - 'Danny Cummings'. Currently on tour with **Dire Straits**, the man's got a well-earned reputation the size of an overweight elephant. Here he is joined by the emerging talent of **Miles Bould** with devastating results. This CD shows why **George Michael**, **Pet Shop Boys**, **Tina Turner**, **Julia Fordham**, **John Martyn**, **ABC**, and many more have chosen these guys to give them the groove! We presented them with 8 backing tracks and recorded their performances to multi-track. After extensive editing and remixing, in some cases incorporating Roland's RSS processing, we have compressed these sessions onto one CD. Now you can give your productions the ultimate groove. Get this CD and get a taste of the best in percussion. There's nothing else in it's class.

↓ FEATURING ↓

- Around 55 minutes of percussion grooves in 8 styles.
- Unparalleled performance and recording quality.
- RSS Samples plus Mixes
- PLUS an extremely comprehensive collection of single hits
- And Much More!
- Superb value at Just £49!
- Instant Inspiration!



Dancin' Dave Ruff's Drum Samples

There are a number of drum sample CDs on the market. Their quality varies, we felt they were all somewhat out of touch with current trends in drum sounds. This CD is the result of exhaustive recording sessions with top session drummer **David Ruff** and features modern acoustic drum sounds. Dave's worked with some of the best in the biz - **Sinead O'Connor**, **Mica Paris**, **Yazz**, **Neneh Cherry**, **Prefab Sprout**, **Aztec Camera**, and **World Party** to name but a few. Not only does this CD feature what we believe to be the finest and most modern set of drum samples - but also some brand new loops that are really far too good to make so widely available. If you've a sampler and you ever use drums - you need this CD!

Over 263 hits and 140 loops, 70:53 minutes

↓ FEATURING ↓

- Snares, Kicks, Hats, Toms, and Cymbals
- Performance Velocities - 4 or more!
- Miking Variations
- Modern Usable Drum Sounds
- RSS Samples
- PLUS over 140 brand new hot drums loops - too good to sell!
- Live & Sequenced Loops!
- And Much More!
- Superb value at Just £49!



Coldcut's Kleptomania! Volume One

Coldcut are regarded by many as the UK's most innovative dance artists/remixers. Aside from their own successful recording career and **Kiss FM** radio show, many will know them for launching the careers of both **Lisa Stansfield** and **Yazz** - now established as international stars. Apart from one or two classics this CD once again conforms to our policy of placing originality as our top priority. If you're serious about making dance music you're sure to be on the look out for hot new samples to make 'The Music of Now', not a rehash of the past. As with our **Pascal Gabriel** CD - If you want inspiration, originality and the freshest sounds around. Look no further.

Over 1165 Samples, Over 73 minutes

NON-STOP ZANY ACTION - £49 fully inclusive

↓ FEATURING ↓

- The finest selection of ultra-rare loops ever compiled - over 400 unbelievable loops!
- Male & Female Spoken & Sung Vocals
- Coldcut's Exclusive - Hed & HPN Samples
- Superb range of mega scratches!
- Media snatches, FX, Robot Vox
- Full selection of drum & perc samples
- Hits, Stops, Breaks, Synth & Bass samples
- BEYOND DESCRIPTION - HIGHLY USABLE! - Superb value at Just £49!
- "Say Kids! What time is it?"



Forthcoming PRODUCER SERIES SAMPLING CDs:

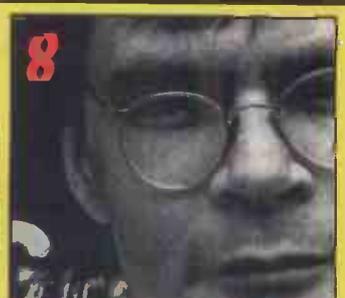
Volume 5 - Samplography by Pete Gleadall

Pete Gleadall is one of the UK's most accomplished programmers. Best known for his work with **Pet Shop Boys** and **George Michael**.

Volume 6 - Skip to my Loops By Norman Cook

Volume 7 - Neil Conti's Funky Drums from Hell

Volume 8 - The Art of Sampling by JJ Jeczalik



HitSound CDs: 1 - Pure Gold Synth 2 - Old Gold Synth 3 - Guitar

3 Superb CDs - £35 each or £90 for the set of three.

Volume One - Pure Gold Synth - "...assorted pad and atmosphere sounds include some stunning textures, and these are complemented by a superb range of bass sounds, and some quite surprising, quirky sounds dotted around... All in all, a good mix of high-class bread and butter sounds with a hefty dose of sonic icing on top." - **SOS, Sept 1991**.
 490 of the best samples in Valhalla's International Gold Series from **WaveStation**, **T-Series**, **D70**, **M1**, **VFX**, **SY77**, **SY55**, **D50** and More!
Volume Two - Old Gold Synth - "This volume is a (Gold)mine of glorious sounds that, whilst certainly biased towards dance music, should be useful to anyone with a sampler and a little imagination." - **SOS, Sept 1991**.
 A huge collection of classic synths - **ARP2600**, **Moogs**, **MC202**, **Octave Cat**, **MKS70**, **Xpander** and many more! Superb synths, superb sounds all on one £35 CD ready to sample! 721 Samples, 63:44 minutes
Volume Three - Guitar - "...instantly useable... perfect for creating a basic 'instant rock guitarist' on your sampler... Things get even better... It's really just like having a good selection of records from which to sample useful snatches of guitar, but without all the other music happening on top." - **SOS, Sept 1991**. "...devastating results... Handle with care: highly recommended." - **Music Technology, Oct 1991**.
 Chords, Bends, Solos, Licks and Effects from **Electric**, **Wah Wah**, **Acoustic** and **12 String Guitars** - Clean and dirty versions! 605+ Samples, 63:18 minutes - Just £35.
 "Altogether or individually, the HitSound CDs offer good value for money...an excellent start in bringing a great selection of expensive-sounding and highly usable instrument sounds to anyone with access to a sampler." - **SOS, Sept 1991**.



VALHALA ROM & RAM Cards

Here's what the Press have to say:

"...if you want to be inspired to greater heights of musical ecstasy, look no further!...The amazing thing about these Valhala cards is that they sound completely different...all the voices here really do sound new...I am now assured that trying to do my own programming is a complete waste of time. To create anything like what we have here would take days and days of work...Well of course if you are at all serious then you'll buy all three!...don't take my word for it - try them out yourself! - *M1 Card Review, SOS, Dec '91.*

"The last time you heard sounds of this quality emanating from a single keyboard you were probably listening to an Emulator or a Fairlight...these sounds will tempt you to make an M1 the major keyboard in your rig. If they don't I honestly don't know what will." - *M1 Card Review, MT Aug 1990.*

"...there's no company currently making a better name for itself than Valhala...I admit it, I'm impressed...a number of absolute gems - the overall impression is one that firmly lives up to Valhala's excellent reputation for quality...quality plus value - what more do you want?" - *D50 Card Review, MT Nov 1990.*

The Valhala International Gold Series - The UK's favourite sounds

KORG - M1/M1R: 4 International Gold Cards plus Top 40, Rock, New Age, Orchestral - £50 each

M3R: 4 International Gold Cards plus Top 40, Rock, New Age, Orchestral - £50 each.

T-Series: One International Gold Disk plus Top 40, Rock, New Age, Orchestral - £45 each.

WaveStation: 1 International Gold Card - £50.

KAWAI - K1/K4: 2 International Gold Cards plus Top 40, Orchestral. K1 - £45 each. K4/K4r - £55 each.

YAMAHA - SY22: 1 International Gold Card plus Top 40, Rock, New Age, Orchestral - £60 each. **SY55:** 2 International Gold Cards plus Top 40, Rock, New Age, Orchestral - £60 each. **SY77:** 1 International Gold Card plus Top 40, Rock, New Age, Orchestral - £65/45 disk each.

ENSONIQ - VFX: 2 sd disks - £40 each, 2 cartridges - £50 each.

ROLAND - D50, D10/5/20/110: 2 International Gold Cards plus Top 40, Orch, New Age, PCM, Analog, Digital, and Effects - £45 each. **D70 -** Top 40, New Age - £50 each. **JD800 -** Top 40, New Age - £50 each.



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A new range of cards packed full of superb Organ sounds. All cards are £45 each.

Screamin' B3 - Superb imitation Hammond sounds - D50/5/10/20

Wurlitzer/Theatre Organ - The Mighty Wurlitzer - D50/5/10/20.

Classical 1 & 2 - Two volumes of classical organ sounds, only available for the D50/550.

B3 & More - Coming Soon for the Korg M1!

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M256 - £55 MCR03 - £65

K1 - £35 K4 - £45

MCD32 - £59 MCD64 - £79

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M1 - D50 - K1 - K5 - K1000 - MiniMoog - TR808 - HR16 - Linn 9000 - Plus!

Sampling Collection 600

MicroWave - T1 - Proteus - K4 - VFXsd - VS - Xpander - Plus!

Sampling Collection 700

WaveStation - SY77 - SY22 - TR909 - TR606 - Prophet V - Elka Synthax - Plus!

Sampling Collection 800

VFX - PX1000 - HX1000 - R8 - Matrix 1000 - MKS70 - Plus!

Sampling Collection 900 - Just Released!

Emu Percussion - JD800 - SY99 - 01/W - Plus loads more!

Sampling Collection 1000 - Coming Soon

Kurzweil K2000 - Extended JD800 - Plus!

Each volume costs £29. Buy the set of five for just £125.

MasterBits Climax Collection

Climax Collection Volume One - Just Vocals

664 Samples - A range of vocalists and styles featured - from Motown to Opera! Sustained, Percussive & Freestyle Vocals.

Climax Collection Volume Two - Classic

551 Samples - Orchestral samples recorded with the Gothenburg Symphony Orchestra. Typically 3 performance styles from every instrument in the Orchestra, full range of pitches at intervals of a minor third.

Climax Collection Volume Three - Guitar - New

A wide range of guitar samples including HM and Soul. Single notes plus highly processed licks.

Climax Collection Volume Four - Grooves - Coming Soon!

RY30 Grooves, full details as we get them!

Each volume costs £45. Buy all three for just £120.

MEGAMIDI DANCE SERIES 1 by Megamidi

Features:

17 'Song Kits' featuring 200 riffs

75 Loops from acid house to live funk!

170 drum and 120 percussion samples!

Guitar licks & Orch Hits!

Scratching, Sci-Fi FX!

Over 110 vocoder, robot and computer noises!

Loads of hooks and vocal samples!

All on one brand new CD from France. Just £55 fully

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Volume One - Guitar samples from hard rock to funk - Synths - Samplers - Mellotron - Holophonic effects and much more! - 787 samples.

Volume Two - Drums - Holophonic samples - percussion - FX - Synths - 921 samples.

Each volume costs £45 or buy both for just £80.

MasterBits Special Edition 1 - Klaus Schultze Sampling CD

Numbered Limited Edition featuring countless rare synths plus RSS samples - Call for full details! - £75.

MasterBits Special Edition 2 - Peter Siedlaczek's Orchestra Library - Soon!

MASTERBITS SOUND SHOW DEMO CD - £10 (refundable)

Features demo songs for MasterBits, HIRSound & Uberschall CDs

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Superb Editing Software for the Atari ST from EMC - Einstein Music Software

The most up-to-date range of synth editors on the market today, also offering superb value for money. Synths supported include - SY55, U20/220, D10 Series, K4, M1, M3R, Proteus 1/2, D70, JX1, D50, K1, VFX, OB8, LXP5, PCM70, etc. with programs being added all the time!

"Impressive...it's a competent, comprehensive program which can be highly recommended to anyone...it could well be selling for two to three times the amount - it really represents excellent value for money. Buy it before they read this and put the price up." - *Music Technology SY/TG55 Review, May 91.*

SY/TG55 Editor/Manager - £55

K4 Editor/Manager - £55

SY22/TG33 Editor/Manager - AVAILABLE NOW - £55

U20/220 Editor/Manager - £55

LXP1/5 Editor/Manager - £55

D10/20/5/110 Series Editor/Manager - £55

D70 Editor/Manager - £89

M1/M3R Manager/Combi Editor - £55

Proteus 1/2 Editor/Manager - £75

Please call for full details and prices!

All programs run under MROS and SoftLink and require a hi-res mono monitors and at least 1 Meg (except the K1 Manager) of RAM.

CM AUTOMation MX816 MIDI Mix/Mute Automation - Just £37 inc. VAT per channel

CM AUTOMation's new MX816 is a breakthrough in terms of **affordability simplicity and quality**. It brings MIDI controlled mixing & muting into everyone's reach for the first time. It's unique memory features allow it to be used in the **studio or live** with equal success. The MX816 can be programmed and controlled by any MIDI device and then used independently if desired.

- High quality dbx VCA system
- 8 or 16 channel versions, easily upgradable
- Compatible with any MIDI sequencer
- No need for expensive custom wiring
- Mute & Max buttons for easy manual control
- 100 internal memories to store and recall snapshots
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- Noise level better than -95 dB
- All outputs in phase with inputs

Pro-Rec Synth Sounds - **NEW THIS MONTH!**

Korg 01/W - Super Dance, ColorBrush, 01 Dance, Heaven Synth, Urban Sound - £59 each ROM, £40 each on fd disk.
Korg WaveStation - Super WaveDance, UltraTexture, SoundBrush, SuperWaveKeys, Power WaveSynth - £59 each ROM.
Roland JD800 - UltraDance, WonderSynth, SuperSound, Wonder Mix - £59 each ROM.
Roland D70 - Power Dance, Natural, SuperSynth, SoundScape - £55 each ROM.
Yamaha SY/TG77 - Wonder Dance, Ultrasound, Power Synth, 77 Heaven - £65 on ROM, £40 on SY disk.
Roland Sound Canvas - Super Dance, Pop Collection, Ultrabrush, WonderCanvas - £30 disk.
Korg T-Series - Coming Soon. **Kurzweil K2000** - Coming Soon.
Roland JV80 - Coming Soon. **Korg M1** - Coming Soon.
Yamaha SY99 - Coming Soon.

NEW! Musitronics Expansions

Yamaha SY/TG77 and SY/TG55 PCM Expansions

Double the internal PCM memory of your Yamaha synths. Takes the SY/TG55 up to 4 Meg and SY/TG77 up to an amazing 8 Meg. Prices and availability to be confirmed - Please call for more details!

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Make your D50 8-part multi-timbral! Plus enhanced MIDI features!

With dual RAM banks - £245 Without RAM banks - £199

D50/550 Speed System - £45 Add 50 new PCMs including piano & drums with the ability to add unlimited new PCMs.

D50 PCM.EX PCM Expansion - £245 Speed up your D50 by over 40%!

D50 POWER PACK - £399 Ltd. Offer!

M.EX with RAM, PCM.EX & Speed System at this special price!

SCP Sample Card Programmer for Roland PCM Cards - Coming Soon! (Please)

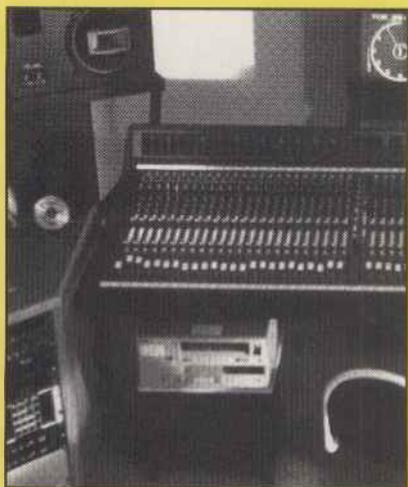
NEW! Uni-Man Universal Editor Librarian for the Atari ST

Truly universal software from Zadok for just about every synth on the market. Configurable to work with any MIDI equipment you may own. Please call for more information and a demo disk.

TranTracks MIDI Sequences

Please call for a catalogue featuring 100's of titles.
Superbly programmed with excellent documentation.

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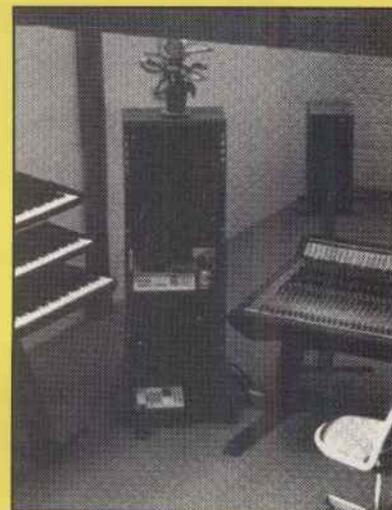
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MIDI

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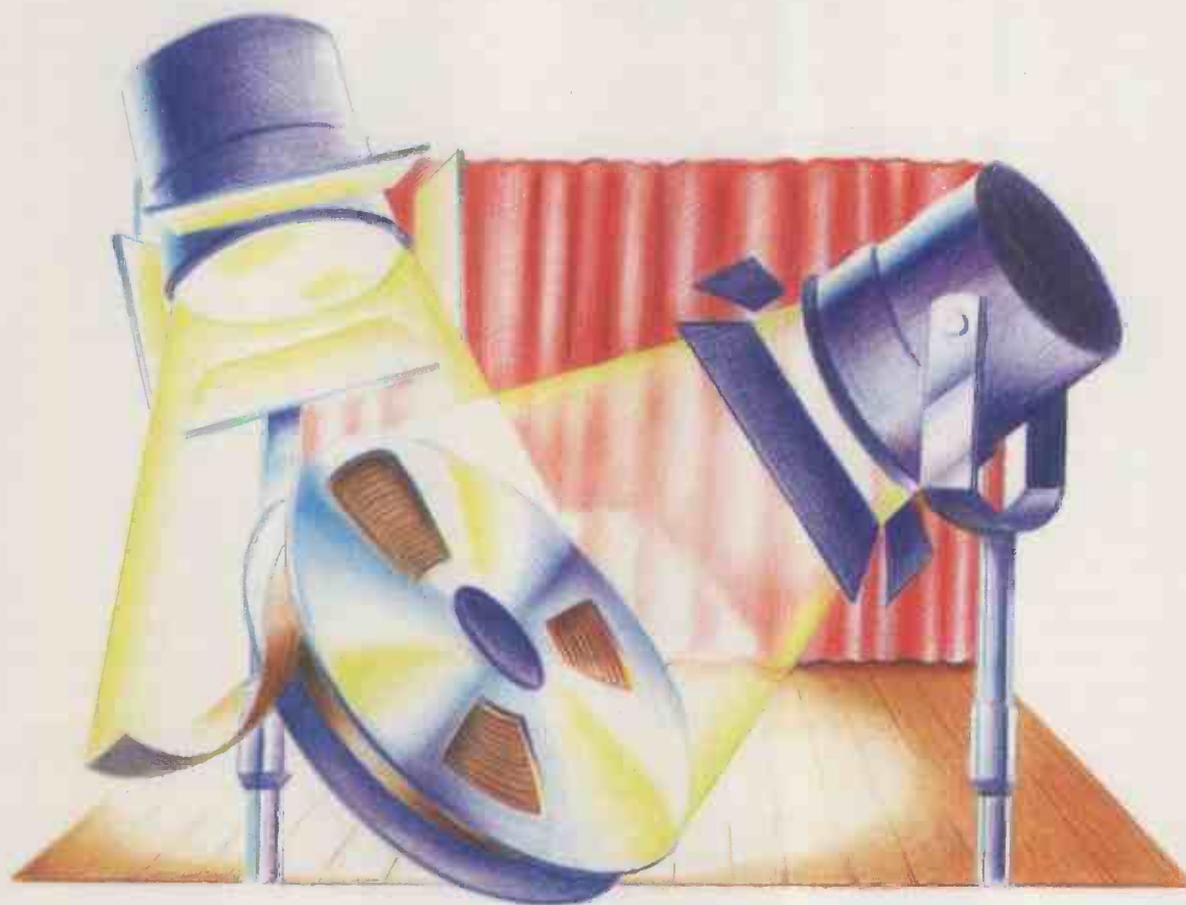


ILLUSTRATION: TOBY GOODYER

NOW JUST OVER TEN YEARS OLD, MIDI HAS MATURED FROM BEING A HI-TECH NOVELTY INTO AN ESSENTIAL PART OF MODERN MUSIC MAKING. AND IT'S STILL GROWING. TEXT BY VIC LENNARD.

WHEN YOU LOOK over the very first MIDI Specification, it's clear that the MIDI pioneers knew what they were talking about. Very little has been changed from that original spec, although there have been various developments. Sample Dump Standard and MIDI Time Code are obvious additions, although lesser functions such as the Reset All Controllers command have also been periodically added. Standard MIDI Files (SMF), instigated by the MIDI Manufacturers Association (MMA) in 1988, was not agreed to by the Japanese MIDI Standards Committee (JMSC) until 1991. This accounts for

why it is only the present range of synths by Roland, Yamaha and Korg which have added the ability to read and write SMFs with the onboard sequencer.

Due to a re-organisation of the JMSC and a new-found understanding between the MMA and JMSC, there have been various additions to the MIDI specification as recently as the last 12 months. These fall into two categories; Approved Protocols (AP) and Recommended Practices (RP). An Approved Protocol is part of the Detailed MIDI 1.0 Specification and is used when previously undefined messages within the Specification are classified. A Recommended Practice is a new application within MIDI, the use of which is not necessarily binding to the manufacturer members of the MMA and JMSC. An example of this is SMFs; many manufacturers have their own proprietary methods for saving sequence information.

This article is intended to give an overview of the APs and RPs which have come into existence since the middle of 1991. It's fair to say that movements within MIDI prior to that point had been few and far between; the last addition was that of Bank Select and the

defining of certain Effects Controllers (see MT, October '90).

The immediate problem with any MIDI developments is that of making them retrospective; if a MIDI device is hardware-based, there's little likelihood of it being updated to include new features. If it's software-based, then it comes down to whether new functions can be uploaded from disk or whether a new EPROM is needed. If the latter is the case, it's often an expensive exercise; fitting of replacement ROMs is often a job for a qualified engineer.

CONTROLLERS

CONTROL CHANGE MESSAGES are used for altering voices by the use of MIDI Controllers. The most common of these are Modulation (#1), MIDI Volume (#7) and Sustain Pedal (#64). All MIDI Controllers can take up to 128 values, which is fine for controllers which require a smooth change of values such as modulation, but is less than perfect for switch-type controls such as sustain pedal. In this case, values of 63 and lower signify "off" >

➤ while values greater than 64 signify "on".

All **Sound Off** was introduced at the end of May. This is MIDI Controller #120, which effectively includes it in the area reserved for special mode messages such as All Notes Off and Reset All Controllers. This controller is intended to silence all notes currently sounding on the received MIDI channel, but is not to substitute for the correct manner of using MIDI Notes On and Off. The point of this controller is to support a "panic" button; many keyboards allow you to program MIDI Controllers to buttons or faders.

Legato Footswitch (MIDI Controller #68) was added to the spec at the end of December and switches the receiving synth into Mono mode. Any note received before the Note Off of the currently-sounding note gives a change of pitch without a new attack. On de-activation of the parameter, the receiver returns to its previous operation mode. Legato footswitch is intended to be purely a performance control; MIDI Mono mode 4 is supposed to be used when true monophonic status is sought.

There is a finite number of MIDI Controllers; excluding the mode messages there are 119 in total. Of these, #0-31 are partnered up with #32-63 to provide 14-bit resolution when needed. The fact that very few devices have ever used this second set should be a cause for concern - very few sequencers chase controller values when you start in the middle of a song. Consequently it was decided that before MIDI Controllers followed the Dodo, ten should be put aside to be used specifically as **Sound Controllers** - a December addition to the spec. Controllers #70-79 are to be used to control sound qualities such as Harmonic Content (#71), Attack Time (#73) and Brightness (#74) in a synth, but all names are simply defaults; manufacturers can assign them as they wish as long as they detail the specifics in their manuals. For multi-fx units, these ten controllers default to being used to switch on or off the various effects. These include Reverb (#75), Compressor (#71) and Pitch Transposer (#77). However, they could be used for effects depths, intensity or type; again, manufacturers are expected to clearly outline their uses. This shows one area in which MIDI has moved with the times; MIDI Controllers #64-95 were originally defined to be for switch-type controllers, but this was too severe a limitation of their use. Consequently, Sound Controllers allows the ten reserved controllers to be used either as switches or continuous controllers.

SYSTEM MESSAGES

SYSTEM EXCLUSIVE (SYSEX) messages are usually both manufacturer- and device-specific; for instance, bulk dumps or parameter changes for a Korg M1 will not work with a Roland JD800. However, there

are times when messages need to be sent to all MIDI devices in a system, each of which either recognise and act on a message or ignore it. Such messages are known as Universal SysEx, and have the first three bytes of:

\$F0 - SysEx start.

\$7E/\$7F - Non-Real Time/Real Time - Device number

Non-Real Time messages are used when information doesn't need to be instantly acted upon; MIDI Sample Dump is one example. Real Time messages are intended for immediate digestion; MIDI Time Code Full Messages (which transfer the current SMPTE time in one message) are a good example of this.

To differentiate between the different messages within one group or the other, two sub-IDs are used. The first of these gives the application type while the second gives the type of message within the application. Up until May '91, the only members of these groups were Sample Dump and MIDI Time Code messages for the Non-Real Time group and MIDI Time Code Full Message and User Bits for the Real Time group. However, there were many changes in '91.

Standard MIDI Files have a message to handle changes to Time Signature (meta-event \$FF \$58) and a message of this type was duplicated in the Universal SysEx Real Time group. **Notation Information** took a sub-ID #1 of 03 in June which introduced three variations: **Time Signature Immediate** (which works in the same way as the SMF variety), **Time Signature Delayed** and **Bar Marker**. Bar Marker is intended to provide a new high level of synchronisation, and all messages within the Notation Information section will depend on the application of this. In use, there are slight differences dependent upon whether MIDI Clock or MIDI Time Code is being used as the sync source. Time Signature Immediate is effective instantly and so doesn't require the sequencer or drum machine to wait until the beginning of the next bar (indicated by the next Bar Marker). Time Signature Delayed is effective on the next received Bar Marker.

The **User Bits** message for **MIDI Time Code** is intended to be used for eventualities like time-stamping or numbering a reel of tape - the kind of thing done only once per session. However, it was decided that the existing message was out of step with SMPTE and so it was re-defined to align it and added in May.

MIDI Time Code cueing messages have been available in the Non-Real Time section since the inception of MTC, and allow cue lists to be programmed remotely. Punch in/out points, Event start/stop points and Event Names are three examples of messages catered for here. In October, most of these messages were

duplicated in the Real Time part with the addition of **Real Time MTC Cueing**. Some messages, such as Delete Event Start/Stop points, have been excluded as such messages wouldn't need to be sent in real time.

Manufacturers working towards General MIDI realised special messages were required to fully realise the possibilities of GM, among other future MIDI applications. **Device Control Messages** took a sub-ID #1 of 04 in June and commenced with two members to its clan; **Master Volume** and **Master Balance**. These effectively play the same part as the hardware controls on the front of a stereo amplifier and allow 14-bit resolution.

December was a busy month with another two additions to the Universal SysEx section. The first of these, **File Dump**, is one of the most interesting. Anyone who has tried to transfer MIDI Files between different computers will be aware of how fraught with difficulties this is. Disk format incompatibility is the principal problem; for instance, Atari were supposed to have adhered quite closely to the IBM PC format (MS.DOS) and yet few PCs would read ST disks prior to the introduction of the Atari STE, when the writing of the boot sector on the disk was changed. Apple Macs with the "superdrive" use a utility called the Apple File Exchange to read MS.DOS disks, and yet still won't recognise disks formatted on the Atari STE. And what of other computers such as the Commodore Amiga? Again, a conversion program is required; all in all, it's not ideal.

File Dump is intended to allow you to transmit MIDI Files (or any other files) down a MIDI cable - after all, computers working with music need a MIDI interface. This immediately removes the conversion problems between computers. File Dump is within the Universal SysEx Non-Real Time group (sub-ID #1 = 07) and has three message types; Header, Data Packet and Request.

In operation, File Dump is quite similar to Sample Dump except that various different file formats are accommodated. Handshaking is available for closed-loop operation, which generally gives more accurate transfer, and an extra message has been added to the handshaking messages of Wait, Cancel, ACK (acknowledge) and NAK (not acknowledge) - End of File. Filenames are sent with a file so that multiple files can be transmitted one after the other. Of interest to those involved in file transfer protocols is that eight-bit messages can be used within a file; data is encoded by using eight bytes (each with seven data bits) to send seven bytes of actual data (in eight-bit format).

The final additions to the Universal SysEx squad are **MIDI Tuning Standard** and **Single Note Retuning**. Many cultures use tuning other than Western 12-tone equal temperament, and alternative tunings are also finding favour with "serious" composers. Until now, most ➤

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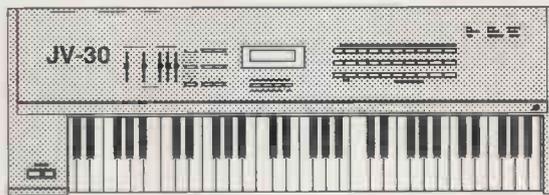
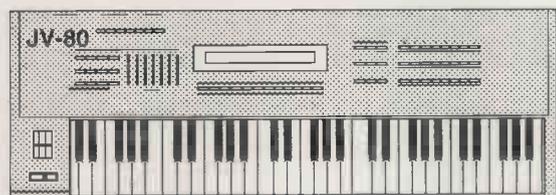
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MUSICAL EXCHANGES

ACCESS - VISA - AMEX

➤ microtonal tunings were carried out in a proprietary manner under a manufacturer's own SysEx ID, but MIDI Tuning Standard will make tuning more generic in nature. It consists of two primary messages; Bulk Tuning Dump Request and Bulk Tuning Dump. Both are in the domain of Universal SysEx Non-Real Time, with the sub-ID #1 of 08 being assigned to MIDI Tuning Standard, and incorporate the tuning name in up to 16 ASCII characters.

The frequency data format has three bytes assigned to it; the lowest note is \$00 \$00 \$00 which represents 8.1758Hz (MIDI Key #0) while the highest note is \$7F \$7F \$7E, representing 13,289.73Hz, above MIDI Key #127 which has a frequency of 12,543.88Hz. The format uses an exponential tuning resolution and allows for a fraction of a semitone to be encoded into 14 bits. Consequently, the effective resolution is 0.0061 cents (100 cents is a semitone).

As this is likely to cause multiple tunings to be stored within a MIDI device, messages are also required to provide access to different tuning programs and banks. **Change Tuning Program** is Registered Parameter Number 00 03 while **Change Tuning Bank** is Registered Parameter Number 00 04. Each of these are used with data increment, decrement or entry to allow movement between different tunings and to select which tuning program is required in a bulk dump request.

Single Note Retuning is a Universal SysEx Real Time message intended for real-time performance. One (or a number of) note(s) can have their frequency altered in real time. However, 12 bytes are necessary to change the frequency of a single note, and an additional four bytes are needed for each extra note within a single message, so care must

be taken to avoid audible timing glitches.

GM LEVEL 1

I WROTE AN article for MT (*Raising the Standard*, June '91) detailing the ideas behind General MIDI. This sets out a minimum configuration for any MIDI synth conforming to GM and includes a Sound Set of 128 sounds mapped to specific MIDI patch change numbers so that a song which plays back on a GM sound module from one manufacturer will play back on a GM module from any other. Roland, Korg and Yamaha all have synths purporting to conform to GM. There is also a GM Percussion Map for MIDI channel 10 which details the specific drum sounds for each MIDI note number, certain MIDI Controllers included within the Specification and 24 fully dynamically-allocated voices available.

The main question asked about GM is whether the different sound modules actually sound the same. This is a reasonable concern; I recently heard four synths playing the same tracks; three of these were GM devices while the fourth was a standard synth set up with a GM Sound Set and

Percussion mapping. Without going into too much detail, they were certainly different, but appeared to be different productions of the same song. This would tend to justify the existence of multi-manufacturer General MIDI sound modules, although it must be accepted that you get what you pay for. If a GM module retails at £1000, the sound quality is likely to be better than one retailing for £400.

The main problem with GM has been in the misunderstanding of the term "voice", where GM is intended to require 24 voices. If it's taken to be synonymous with oscillator, it's possible to require more than one oscillator (or digital equivalent) to create certain sounds and thus reduce playing polyphony. However, most people understand voice to represent "note" and so expect 24 notes to be available. Roland devices based upon the Sound Canvas (and carrying the proprietary Roland GS logo), have 24 partials - which are analogous to oscillators. Consequently, if any of the 31 sounds requiring two partials are used within a song, the polyphony falls below 24 notes. However, there is a disparity of opinion between GM song authors. Some claim that it's difficult to hear voice-stealing occurring within Sound Canvas while others are particularly aware of it. With at least six new Sound Canvas-derived synths due in 1992, all of which displayed the GM logo at their Winter NAMM Show launch in January, this stone is likely to continue to roll before finishing its moss-gathering.

SHOW CONTROL

JULY SAW THE introduction of MIDI Show Control to the MIDI spec. This was created for use in multi-media, audio-visual and live performance work and is a Universal SysEx Real-Time Recommended Practice - so it's an optional protocol. Manufacturers can continue to work with their proprietary systems if they wish; however, it seems that many lighting companies are willing to incorporate MSC.

Much of MIDI Show Control is based around the fact that most devices in this field use a cue-list system. A computer running MSC slaves can deal with the most simple cases of controlling events within the individual slave cue lists by using Stop, Go and Resume commands. In this situation, a slave effectively retains control of its internal timing characteristics. The alternative is to have the MSC master provide timing information by outputting MIDI Time Code to the slaves. Many major shows world-wide are already using MSC to control live performance.

MACHINE CONTROL

THE LATEST APPLICATION gives a clear way forward for MIDI. **MIDI Machine Control** (MMC) has been under development for over two years and was finally ratified in January. Anyone who has seen the Fostex

system in action cannot fail to have been impressed by the manner in which an Atari ST has been able to control their 8-, 16- and 24-track recorders. By using a software driver (which each software manufacturer has to create), Steinberg's Cubase has been able to transmit the relevant commands to Fostex' MTC1 interface for the R8 recorder (or the 8330 card for the G16/G24) such that the recorder fast-forwards or rewinds to the required position and enters its play mode. The recorder's MIDI interface then transmits MIDI Time Code to synchronise Cubase. Fostex have had a great deal of success with their system, but failed to persuade many other software manufacturers to implement a driver.

MIDI Machine Control, a Universal SysEx Real Time application, will make such a system available to all manufacturers involved in software or transport-based machines. As it is a Recommended Practice, it's likely to receive almost universal support from software writers and hardware manufacturers alike. Fostex have already implemented it with a chip update to their MIDI interfaces, while Tascam have released the MMC100 stand-alone unit. This accepts MMC messages from a computer and translates them into the necessary commands for all Tascam tape recorders which have a serial port.

WHERE NEXT?

AS DIRECTOR OF the United Kingdom MIDI Association (UKMA), it's been my privilege to watch many of these additions evolve through 1991. With MSC, MMC and General MIDI, there is a basis for the movement of MIDI into areas which would have appeared inconceivable a year ago - the pro-audio and consumer markets. MIDI came into being through the necessity to standardise equipment built by different manufacturers; File Dump and MIDI Tuning Standard continue to take this ideal further.

The first CD+MIDI disk was released at the Winter NAMM Show of '92 by Warner New Media. This provides standard CD audio playback on any conventional CD player, but will also output MIDI data from CD+MIDI players such as Commodore's CDTV. Given a year or so, CD players with a MIDI Out socket could well be selling for around the £200 mark. Used with Interactive CD (CDI) to provide graphics as well, the potential is endless. ■

Further information about membership of the UKMA can be obtained from Vic Lennard at 26 Brunswick Park Gardens, New Southgate, London N11 1EJ. Tel: 081-368 2245. Fax: 081-368 7918.

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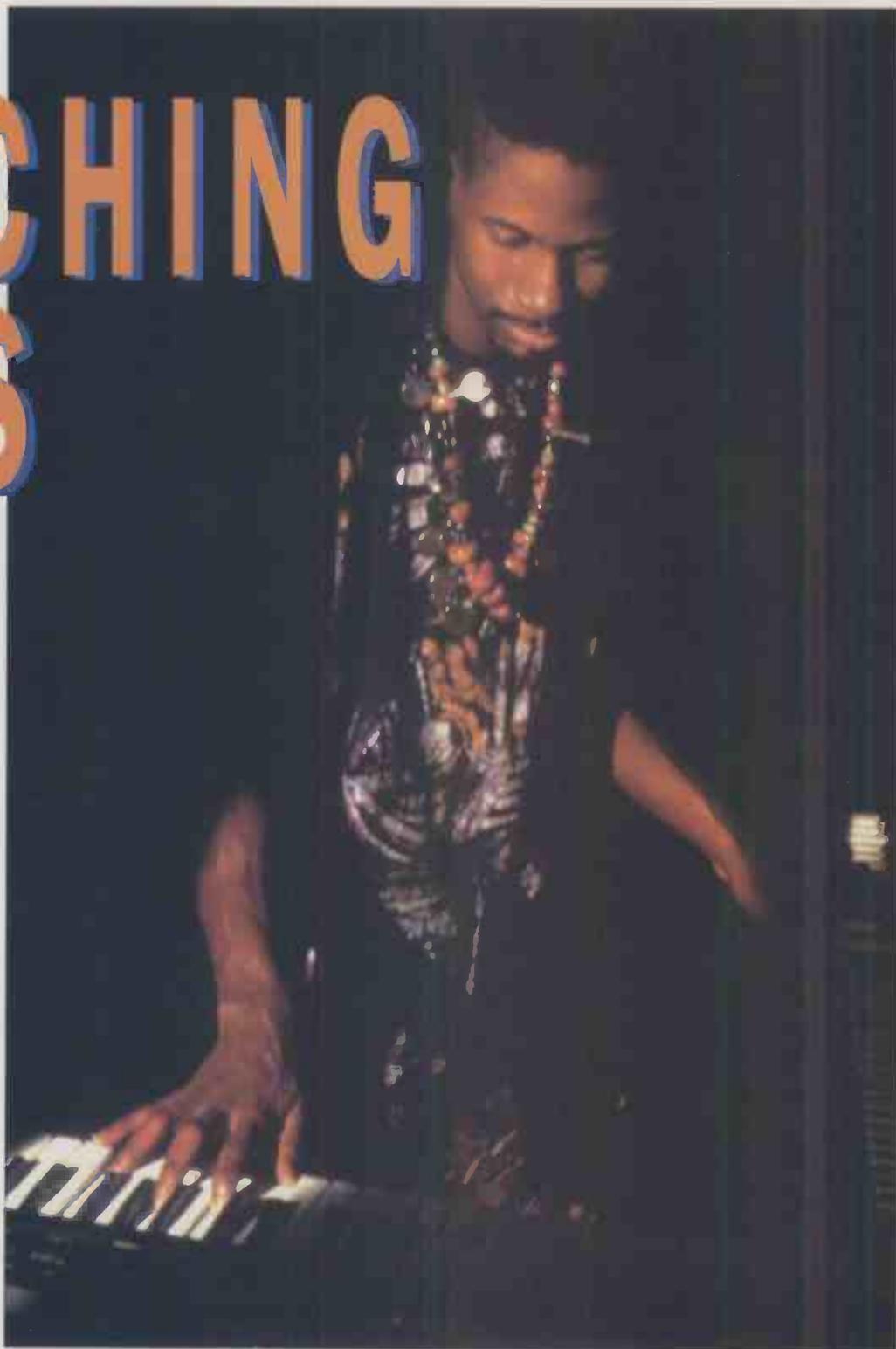
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TOUCHING BASS

Larry Heard's involvement with house music has made him a legend, yet it's only recently that he's actually signed to a major record label. Interview by Simon Trask.



INTRODUCTION SEEMS A STRANGE TITLE for an album by someone with the musical pedigree of Larry Heard. That's Larry Heard aka Mr Fingers, pioneer of Chicago house music who, in addition to his own solo work, is well known for his collaboration with Robert Owens and Ron Wilson as Fingers Inc and with Harry Dennis as The It. There again, this new Mr Fingers album will be an introduction to his music for many people. For the first time, Heard has the backing and, it seems, the support of a major record label - MCA. But this was no hurried relationship; he signed on the dotted line with MCA in May of last year, following six months of talks and negotiation with the company.

"At first I wasn't really sure if it was the way I

wanted to go, or if MCA were going to try to change what I do", he explains, speaking on the phone from his home in Chicago. "Fingers Inc got approached by several different majors, at one time, but they were saying 'Well, if you do this kind of thing and that kind of thing. . .'. They all wanted to come in and change things around, but in my opinion if a record company knows what they want that much, if they know exactly what they want, how it should sound, they should do it themselves."

So what did MCA have to say for themselves?

"They said 'No, we don't want to change what you do, we want to help you sell it.' It's been OK so far, I've really had no problem. They're into what I'm doing, and they didn't step in in any form or fashion >



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when I was recording the album. They step in when they're supposed to, which is when the time to sell the album comes."

Heard goes on to reveal that, although he got "a decent deal" financially with MCA, he was more interested in "getting terms in the contract where if things didn't really work out I could get out of it."

There speaks someone who knows what's important and what's not. But then Heard has been on the wrong end of too many raw deals during the past six or seven years to have anything but a soberly realistic outlook on the music business.

HEARD COMES FROM A MUSICAL FAMILY. His mother and father both played piano, and his four brothers all played guitar.

"My mother always played for our amusement", he recalls. "She was always playing gospel music on the piano, or old show tunes, so we'd go and find the sheet music for 'One Nation Under a Groove' or something, and ask her to play it. Somehow it never sounded the same!"

After brief flirtations with the guitar and the bass guitar, Heard decided that what he really wanted to do was play the drums.

"I was more bluffing with the drums, actually", he admits with a chuckle. "It looked really easy, so I was

tapping on them in between rehearsals. I didn't know how to play them, but I wanted to fiddle around on them."

From 1982 until early '84, Heard played drums in a group called Infinity who, from time to time, included another star-to-be of the early Chicago house scene, Adonis, on bass. However, he eventually quit the group out of sheer frustration, as he explains: "I always had ideas for songs but they would never really hear my ideas. They just wanted me to play the drums. I left the group because I was not getting to do what I wanted to do, which was create music."

So was his motivation for getting involved with technology in part a reaction to this frustration?

"Yeah, definitely", he replies. "I think I had a lot of suppressed ideas within me that just started coming out. During that period right after I left the group, I thought I was going to take a break from music, 'cos I'd been playing since I was 17, in and out of different bands and what have you."

Instead he ended up buying a Roland Juno 6 synth and TR707 drum machine in late '84 and recorded 'Mysteries of Love', his first track under the name Mr Fingers. Another early Mr Fingers track, 'Washing Machine', was the prototype for acid house. Although the track came out on the influential 'Can You Feel It' EP (on Trax, 1986), Heard had actually created it around the same time as 'Mysteries of Love', and it was circulating on tape in the clubs in Chicago for about a year before it made it onto vinyl.

Heard explains the genesis of the track: "This is an endorsement for Roland, I guess. I had the clock out, I think, from the Roland 707 and hooked the wire into the arpeggiator clock in on the Juno 6, and it just happened. I just hit a chord with two hands on the keyboard and the Juno 6 arpeggiated it. I never could recreate that, it was just something that happened in the midst of me experimenting, and I got it on tape.

"The sound was one I programmed, and while it was playing I was messing with the envelope and the frequency and resonance, to get that kind of effect where it was sweeping and what have you. I was just fooling around with the knobs. All those knobs are so tempting, like on that Roland keyboard, the JD800, you've just got to play with them!"

Heard added another Roland keyboard, a Jupiter 6, to his setup in late '85. It was this synth which he used for all the instrumental parts on 'Can You Feel It' and 'Beyond The Clouds'.

Coming from a background of live playing, Heard preferred to record all his keyboard parts live to tape in the early days.

"I'm no McCoy Tyner but. . . I can do it good enough to get my point across", he says. "And I'm working at it. I practice every day with records and running scales, that kind of thing.

"I remember one time I got a really strange look from Frankie Knuckles in the studio, when we were recording 'Distant Planet', 'cos I recorded it all the way through, all the chords and everything. All the stuff that went in the song, I played it by hand. We laugh at it now but I was really stubborn about not using a sequencer at that time. But then I started noticing I would have an idea and then I'd forget it.

***"I was really into that kind of thing in
1977 - Genesis, Rush, Yes,
Billy Cobham, Bill Bruford. . ."***

saying I could play the drums, even though I didn't have any. Then I got my father to co-sign for the credit so I could buy this big set of drums - a three or four thousand dollar Rogers drum set. It was one of the double bass-drum setups, with ten toms going around and rototoms and octobans and things like that. 'Cos I loved Neil Peart's setup, I was really into that kind of thing in 1977 - Genesis, Rush, Yes, Billy Cobham, anything that had Bill Bruford on it, Narada Michael Walden, Mahavishnu Orchestra. . . I was really into that heavy drum stuff. A lot of Frank Zappa, too - anybody that had a good drummer, I was into the group. Out of wanting to hear more complex drum patterns, I discovered Lenny White and with that came Stanley Clarke, Chick Corea and Al DiMeola. They all sort of tied in at that time. I was just looking for drummers but I was getting to notice all the keyboard players, and good guitar players and bassists that were there. Prior to then I didn't know who was good and who wasn't."

At the same time, his own playing activities were bringing Heard into direct contact with keyboard players and the technology of the day.

"I was in and out of local bands, and I was seeing these keyboard players coming across with different synthesisers - Moog Minimoogs and ARP Odysseys and stuff like that", he recalls. "I was intrigued by the sounds that these synthesisers made, and I was always

The sequencer's helped me with that, 'cos I can put it on a disk and come back to it, instead of forgetting it."

Heard originally used a Kawai Q80, but for the past 18 months C-Lab's Notator running on an Atari Mega2 has been his sequencer of choice. But what originally prompted him to change from hardware sequencing?

"I think it was one of the things I was somewhat forced into", he replies, "'cos I started doing some remixes here and there, and every time a remix would come in it would be done on Notator or Creator. So I thought that, to keep up with what's going on, I should have this Notator or Creator. Here in the States a lot of people use Macintoshes, so I'm sort of going against the grain, but that's not a problem for me."

Has the sequencer brought about any changes in the way Heard works?

"I think it helps speed things up, actually", he replies. "I can access stuff quicker than on my Q80, and I can put more information in it, also. I think Notator makes things simpler for me. Maybe it's just my imagination but I feel like I get more done than I did working with the Q80. I think that sometimes the way I arrange things on Notator is a lot quicker. I used to find myself doing a lot of cutting and pasting with the Q80, which was a tedious process. It's a lot quicker on the Atari."

Notator has also brought about a change in Heard's approach to track muting, as he explains: "In the past when I've done stuff in the studio, I've just run it all the way through and then done my mutes on the desk when I was mixing it. But now I use Notator's Arrange mode to arrange where I want certain things to come in and out on the computer. It gives me the flexibility to do that, and it saves me time 'cos sometimes I may forget that I wanted something to be muted at a certain point, so now I just do it within the Arrange mode."

WITH SO MUCH ATTENTION FOCUSSED ON the rhythmic aspects of his music, I wondered how much Heard felt his background as a drummer had influenced his approach to programming drum machines.

"I don't know, 'cos I don't really take a whole lot of time when it comes to the drum machine parts.", he replies. "I'll just do something that feels right and that's it. It's not like I'm getting into complex drum rolls and things like that 'cos I don't think they really fit with what I'm doing at this stage. Maybe it's something that comes naturally and I don't really think about it. But then other people come back and say 'Well, how did you do that?'. I guess I just did it by feel. For the most part I'm satisfied with whatever I come up with first 'cos I notice that with the stuff that I keep changing and changing and changing, I end up finding out that I like it the first way. Anyway, there's no perfect song so you can't really try to achieve that. I try to achieve a feeling instead, which I think is very important. But I keep getting accused of being sad. I guess maybe deep down inside I am sad but I like to combine some other emotions in there, too. I think I have a good sense of humour. Maybe I could put some

humour in sometimes, instead of being sad."

Does Heard have any particular favourite among his instruments?

"My favourite? Hmm. . . It's between the two Oberheims, the Matrix 1000 and the 6R. I have editors for both of them, and I do a lot of tweaking and coming up with weird things."

And where does Heard stand in the eternal "analogue versus digital" debate?

"I'm sort of split, half and half, because I really like the old fat analogue sounds and those pad sounds that I'm known for using. But then I like those fresh digital sounds too. I like a little of both, really. I think that's one of my reasons for wanting the Microwave, so I can get a lot of good PPG sounds that I can incorporate into what I'm doing."

The sounds which Heard uses always seem to be an integral part of the music. How much influence do they have in practice on his composing?

"A lot, a lot", he replies. "A lot of programs are my own sounds. Sounds are the basis of what I do; sounds are the most important part. Sounds inspire me, put me in a different mood, tell me what the subject matter may be with the song."

Let's talk some more about sounds, then. What does Heard use mainly for bass sounds?

"I end up using my D110 a lot, and my two Oberheims. I'm always saying that I want to get back into my Pro One, so I'm gonna eventually get that together, and maybe create sounds on it and sample them into one of the samplers, use it that way."

"I like the D110 a lot. When I first got it I found some good bass sounds that I used. I wasn't ever really crazy about the Rhodes sounds and things like that in it, and I never really used the Drum Set sounds, either, 'cos they were pretty typical. I usually try to stay away from things that other people are using a whole lot. I purposefully try to do that."

"Now that I have an editor for the D110 I can get more involved with programming it. I've done a few sounds, but I've been doing the bulk of my programming on the two Oberheims and the TG55."

For acoustic piano sounds, Heard has been turning to his Korg P3 piano module for a while, but now feels it's time for a change.

"When I first got it, it really really sounded good, but the more I hear it the more it seems like it doesn't sound like piano. So I want to find something else, even if it's something in one of the samplers, if I end up getting a Roland or an Akai. Maybe they'll have some good grand piano sounds."

Heard creates his very characteristic electric piano sounds by MIDIing together his DX7 and D550, or the DX7 and an M3R.

"I have a really good Rhodes-like sound that I've done in the M3R, and I'll layer it with the DX7 to make one sound. They just have two different characteristics that give the impression of one keyboard playing."

Are there any modules that Heard would like to add to his collection? "Well, the main thing that I really want at the moment is a Waldorf Microwave", he replies. "I heard it once and I just fell in love with it. I also want a Voce DMI64 organ module and a Cheetah

"Sounds are the basis of what I do - sounds are the most important part, sounds inspire me. . ."

➤ MS6 module, and maybe some kind of a rack sampler so I don't have to lug the Emax around any more. An S1000 or an S1100, maybe. So those things are on my wish list right now."

Are there any keyboard synths which interest Heard?

"I really always have liked the M1, but I just never took the plunge into getting one. It's the same with the Wavestation. A friend of mine has one, and I like it, I like it a lot although I don't fully understand the principle of it, but I like the sounds that I hear him getting from it.

"I've been concentrating so much on writing material recently that I haven't been to the music stores to try anything out. Sometimes I'm not really motivated to go out and research things, 'cos I don't really have the money to get anything so I'm only going to frustrate myself. When you don't have any money, you see everything you want, but when you do have some money there's nothing you want, nothing is right for you. Also, you're always scared that you're buying something that's not going to work for you in the long run, so it's kind of a catch 22 situation. That's my biggest fear - that I'm going to get something that's not going to work for me, like the Akai MG1214. I'm not totally dissatisfied with it, I just think the tape section could have been better and I didn't know I was going to end up with so many instruments - that was my fault, not Akai's!

"For the most part I don't run everything together. But I may want to switch to another sound to see how it works, and then I have to go through wiring changes. You remember those big old synthesisers where you patch things together? I used to see those and think they were so hilarious but now I end up doing that same thing. I'm like a telephone operator, here. It's too many wires! I went to Adamski's house and had dinner with him when I was in London, and his setup was so nice and neat and it was on a glass table. Mine just looks like a junkyard. I don't know how he does it."

In fact, Heard is coming to the conclusion that a significant investment in a mixing console and a multitrack open-reel recorder is what is required. At present, his home setup is essentially a pre-production studio; for the final recording he goes to SeaGrape or River North, two professional recording studios in Chicago.

"I need a whole recording setup at home now", he says, "cos I've got quite a lot of rack gear and I'm not quite made up like Arnold Schwarzenegger to be carrying those things around all the time."

With *Introduction* hitting the shops in April, this is make or break time for Heard - a time when his music breaks through to the wider audience it deserves or else falls on deaf ears. Heard says he "might just decide to retire" if nothing comes of his latest pact with a record company.

"I have felt like giving up but I always think 'Well, I'll try it one more time and see what happens'. Basically, the deal with MCA, getting involved with a major label, was the last thing I could really do. I've done the independent label nightmares, I've done my own label and everything that comes along with that, so it's the only alternative, really."

Fingers crossed it does well. ■



EQUIPMENT LIST

INSTRUMENTS

Alesis SR16 Drum Machine
Alesis D4 Drum Module
Casio VZ10M Synth Module
E-mu Systems Emax Sampler
E-mu Systems Pro/cussion Drum Module
E-mu Systems Proteus/1 Sample Replay Module
E-mu Systems Proteus/2 Sample Replay Module
E-mu Systems SP1200 Sampling Drum Machine
Ensoniq SQR Synth Module
Kawai K1R Synth Module
Kawai R100 Drum Machine
Korg M3R Synth Module
Korg P3 Piano Module
Kurzweil 1000HX Horn Expander
Oberheim Matrix 6R Synth Module
Oberheim Matrix 1000 Synth Module
Roland D110 Synth Module
Roland D550 Synth Module
Roland Juno 6 Synth
Roland Jupiter 6 Synth
Roland MKS50 Synth Module
Roland R8 Drum Machine
Roland TR606 Drum Machine
Roland TR707 Drum Machine
Roland TR909 Drum Machine
Sequential Circuits Pro One Monosynth
Yamaha DX7 Synth
Yamaha TG55 Desktop Synth Module

RECORDING

Akai MG1214 Multitrack Tape Machine
Atari Mega2 ST Computer
C-Lab Notator Sequencing/Notation Software
Digitech DSP128 Effects Processor
Digitech IPS33B Effects Processor
Panasonic SV3700 DAT Machine
Sony DTC750 DAT Machine

X18 MULTITRACKER

Combining ease of use and affordability, Fostex' latest multitracker is an entry-level machine in the tradition of the X15. Is there still a place for the humble four-track in today's hi-tech recording setup? Review by Simon Trask.



WHEN FOSTEX BROUGHT out the X15, their original budget four-track, back in 1983, multitrack tape reigned supreme as the recording medium for music.

Nowadays multitrack tape machines take their place alongside multitrack MIDI sequencers in the modern hi-tech recording setup - if they're needed at all. What's more, the master-slave relationship between tape machine and sequencer, which has traditionally seen the latter slaved off the former, is shifting in favour of the sequencer as master - an indication, if one were needed, of which way the proverbial wind is blowing. Fostex can take the credit for having pioneered this new relationship by collaborating with Steinberg to produce the innovative R8/MTC1/Cubase system. However, now that an official MIDI Machine Control protocol has been ratified by the MMA and the JMCS, it looks as if we can expect a fairly decisive shift towards the sequencer as central controller of the modern hi-tech recording setup (although, of course, it will still require timecode to be recorded on tape). As an indication of the current state of play, Steinberg, C-Lab and Dr T's have all hooked up with Fostex to support sequencer control of the latter's R8, G16 and G24S multitrack tape machines via MIDI Machine Control from within their software.

But if traditional multitrack analogue tape machines are adapting to meet the challenge of MIDI by getting on first-name terms with it, there are other challenges which may well be less easy to counter. As any MIDlot knows, MIDI sequencers don't record audio. But multitrack digital tape machines do, and Alesis' much-hyped ADAT with its use of S-VHS video cassettes as a recording medium looks set to make waves in the tape-machine market. At the same time, a new generation of disk-based digital audio recording systems is knocking on the studio door. Ranging from Passport's impressively cheap Audiotrax software for

the Mac to Korg's stand-alone SoundLink system (which is simply impressive) via the likes of Opcode's StudioVision, Digidesign's Pro Tools and Roland's DM80, this new generation has the integration of digital audio recording and MIDI sequencing as a common theme running through it - which is hardly surprising when you consider that the companies involved have backgrounds in MIDI software and/or hardware. What's more, these systems are bringing the cost of disk-based digital audio recording - traditionally confined to somewhat rarified financial heights - down to new levels of affordability. Which isn't to say that they're sounding the death knell for tape, but tape-machine manufacturers would do well to keep one ear to the ground and another to the heavens so they can listen out for ominous rumblings and tolling bells.

For the moment, though, as a mature recording medium, multitrack analogue tape in its various formats has many advantages over the digital pretenders to its throne, not least in the areas of affordability and availability. And the most readily affordable and most widely available format of them all is the blank audio cassette tape. Equally, if you're looking for an affordable entry into multitrack audio recording, it doesn't come more affordable than cassette four-track. What's more, MIDI sequencing's rise to prominence in the recording process has, if anything, given four-track machines a new appeal, by shouldering a significant part of the recording burden. For the recording musician working primarily with a MIDI sequencer and electronic sound sources, a vocal part or a guitar part may be all that needs to go to tape - aside, of course, from the sync code needed to lock sequencer and tape machine together (which requires a track to itself, leaving you with three tracks for musical parts).

There again, if your MIDI setup doesn't provide you with enough polyphony, parts and/or effects to let you run all your electronic parts live off the sequencer, you may want to offload some parts to tape in order to free up your MIDI instruments for other parts. Depending on how you approach this, four (or should I say three?) tracks may not be enough. To an extent, track bouncing can help you out, albeit at a loss of some flexibility and quality. It's also worth bearing in mind that, for the difference in price between a budget four-track and a budget eight-track, you may be able to add another synth module or an old synth or two to your MIDI setup - assuming you've got enough spare inputs on your mixer to handle them. Life can be so complicated.

SOUNDING OUT

FOSTEX' LATEST ENTRY-LEVEL cassette multitracker keeps things simple, yet it's also a pleasantly versatile machine for its price. The recording quality doesn't scream "budget machine" at you, either; in fact, it's rather good: crisp, clear and well-detailed, with a pleasing vitality to it. The X18 is designed for use with IEC Type II High Bias tapes bearing the 70usec EQ designation (Maxell UD-XLII, TDK SA); although you might save a bit of money buying lower-quality tapes, the resulting increase in background noise on your recordings will soon have you hunting for the right type.

Tapes on the X18 run at the standard speed of 4.75 cm/sec (1 $\frac{1}{2}$ ips). Noise reduction is Dolby B, as you'd expect on a Fostex machine at this price level, so don't expect a complete absence of background noise; at the same time, don't expect anything offputting - unless you're recording sparse, delicate acoustic music, perhaps. The machine's technical spec quotes the signal-to-noise ratio at 58dB or greater and the frequency response of the recorder section at 40Hz-12.5kHz (the mixer section, on the other hand, is quoted at 20Hz-20kHz - relevant if you're routing some parts straight from input to output while others are coming off tape). Sensible recording practice should help you to optimise the quality of your recordings.

SIZING UP

IF COMPACTNESS AND portability are what you desire in your equipment, you should find the X18 very satisfying (er, perhaps I could have phrased that better). Measuring a modest 11.75" by 6.75" by 2.5" and weighing just under 3lbs (excluding AC adaptor and batteries), it's yet another testimony to the miniaturisation skills of Japanese engineers. If only they could figure out a way to miniaturise the power supply - the external AC adaptor (supplied) weighs almost half as much again!

To take full advantage of the X18's portability, you can run it off batteries - to be precise, off 10 (as in 10) Type A alkali dry cells. And what running time do you get for your investment in battery technology? According to the manual, approximately two hours "under normal operating conditions"; presumably, abnormal operating conditions would include the sub-zero temperatures you'd encounter when scaling the north face of the Eiger on a mission to sample the abominable snowman. In fact, if you're looking for a good machine to take out on sample-collecting excursions, a Sony Professional Walkman is even more compact than the X18, runs for longer on fewer batteries, can record on both sides of a cassette, and gives you a choice of Dolby B or Dolby C noise reduction; however, as a multitrack recording machine it makes a good paperweight.

Although a four-track machine has to have four tracks whether it costs £300 or £600, there are plenty of areas in which savings can be made in order to produce a cheaper machine. As the cheapest of the Fostex four-track pack (which includes the X26 at around £300 and the X28 at £385 - see MT, February

'92 for a review of the latter), the X18, not surprisingly, has its share of economies: four input channels compared to the X26's six and the X28's eight, simultaneous two-track record compared to the X28's simultaneous four-track record, mechanical rather than logic-controlled transport functions, no return-to-zero feature, no master fader, no individual tape outs, and, perhaps most significantly, no EQ. But there are features to applaud on a machine costing around £250: simultaneous four-channel record, effects send/return routing on mixdown, and dedicated Sync In and Sync Out sockets. Fostex have designated track four as the sync code track (though you can use it as an ordinary audio track if you have no need of a sync code), provided a direct line between it and the Sync sockets in order to isolate the sync code from the musical parts as much as possible, and fixed the record level (at 0dB) so you haven't got to worry about finding the optimum level yourself. In practice, syncing on the X18 proves to be easy to implement and trouble-free to operate. Although the Dolby B noise reduction isn't switchable, this presented no problems - and nor did recording a punchy drum track with some serious transients in it onto the adjacent track. But then, the amount of crosstalk on the X18 has been kept to a creditably low level. I did notice the sync code I'd recorded to track four (from a Korg KMS30) at the Line L/R outputs (though not the Monmix output), even with all output levels zeroed. It was faint enough not to be a serious problem, but in quiet musical passages it was noticeable as background noise.

Although you wouldn't expect a budget machine like the X18 to offer anything new, Fostex have come up with one novel feature: the Teach Buss. Signals appearing at the Teach Buss input on the X18's rear panel are routed directly to the machine's headphone circuit. Therefore a teacher monitoring the recording efforts of a classroom full of students in a language lab-type situation could use the Teach Buss to talk to the students individually or as a group via their headphones - which is presumably the sort of application Fostex had in mind. In fact, boosting educational sales of the X18 appears to be the Teach Buss's sole *raison d'être* - I can't see its inclusion being of any advantage to the individual user.

A little over half of the X18's front panel is taken up with the cassette tape housing, LED bar-graph level metering, the tape counter and accompanying reset button, and the transport controls, leaving the mixer section looking a bit cramped in the remainder of the space. In practice it feels less cramped than it looks, but not all that much. A certain amount of "finger collision" is inevitable on the knobs if you do much twiddling, while the short travel of the switches lends them a fiddly feel which is accentuated in the case of the four three-position switches (two Rec Select and two Input Level) by the minimal distance between positions. If you're not careful, you may find that you're recording (over) a track when a casual glance at the Rec Select switches gave you the impression you'd disabled recording for that track.

The pleasingly smooth travel and long throw (as long as you could reasonably expect on a machine of

"MIDI sequencing's rise to prominence in the recording process has, if anything, given four-track machines a new appeal."



PHOTOGRAPHY: JAMES CUMPOSTY

“This is a mature, stylish machine which packs in a healthy amount of quality and flexibility for such an affordable price.”

the X18's dimensions) of the four channel faders, on the other hand, contrive to give the front panel a less constricted feel. Hi/Mid/Low input level selection on channels one and two allows the X18 to handle a variety of input sources, from electronic instruments (which tend to have a high output level) to electric guitars to low-output mics; input channels three and four are best suited to electronic instrument levels.

Located on the front, below the tape transport controls, are the four input channel sockets, a punch in/out socket for footswitch-controlled drop-ins and drop-outs, and a stereo headphone socket - all quarter-inch jacks. To the left of these sockets is a pitch-control dial which allows you to adjust the tape speed (and therefore the overall pitch) within a $\pm 10\%$ range. A useful feature it may be, but unfortunately the dial itself is not one of the X18's design strong points. It's awkward to adjust unless the machine is raised up from the surrounding surface, and the centre detent which is supposed to help you reset the machine to normal running speed could do with being more assertive - instead, it's all too easy to set the dial slightly off centre (and the tape therefore slightly off pitch) and not realise it.

In addition to the Sync In, Sync Out and Teach Buss sockets, the X18's rear panel provides Monmix, Line Left and Right (main stereo mix out), and Aux Return Left and Right connections - all RCA phonos. In case you're wondering what happened to the Aux Send socket, the Monmix output takes on this function when the X18 is in Play/mixdown mode - but more on this later.

TEST DRIVING

ALTHOUGH IT HAS four inputs and can record and play back up to four tape tracks, the X18 is only able to record onto two tracks at a time. The reason for this

is that it has two busses, Left and Right, which are routed to the Line Left and Line Right outs, with a feed off each buss going to the tape section. Signals appearing on the Left buss are routed to either track one or track three when you're in Record mode, depending on the setting of the relevant Rec Select switch; similarly, signals appearing on the Right buss are routed to either track two or track four, again depending on the setting of the relevant Rec Switch. Whether an input channel is routed to the Left or the Right buss depends on whether its Pan knob is turned hard left or hard right. For example, to record all four channel inputs onto track one you would pan them all hard left and set the relevant Rec Select switch to track one. If you wanted to record the two halves of a stereo signal being routed into, say, inputs three and four, you could pan input three hard left and input four hard right, then choose two tracks to record to using the two Rec Select switches; one would have to be track one or three, the other track two or four.

While recording, you're effectively limited to monitoring via headphones or a powered speaker plugged into the X18's Monmix output - and either way you get only a mono mix. The overall output level at the headphone jack can be adjusted using the Phones knob, while the playback level of each individual recorded track at both the headphone jack and the Monmix socket can be adjusted independently using the four Monmix knobs.

You're "effectively limited" because, although the Line L/R outputs deliver a stereo signal, due to the X18's method of assigning channels to tracks via the two record busses, the signal(s) you're recording will be panned hard left and/or hard right - only at the playback/mixdown stage can you pan the recorded parts to the positions you want. More importantly, perhaps, if you monitor from the stereo outs while

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“The X18 shows that a budget price tag doesn't have to mean cheap, and that entry-level doesn't have to mean simplistic.”

➤ recording, you can't monitor recorded tracks and record new parts via the corresponding mixer channels at the same time - whereas monitoring on headphones or via the Monmix output *does* allow you to do this. Reference to the signal flow diagram included in the X18's manual clarifies what's going on. Signals coming from the machine's tape section are sent out in two directions: to the Monmix output via the Monmix 1-4 level controls (with a feed going to the headphone jack) and to the four input channels of the mixer section. Let's say you've recorded onto tracks one, two and three and you want to record onto track four from inputs one, two and three. So you pan the three inputs hard right and set the relevant Rec Select switch to track four. Then, when you start recording, the Monmix monitor section picks up not only the output from tracks one, two and three but also the three input signals which are being routed to track four in the tape section via the Left and Right busses. However, when you plug a lead into one of the inputs so you can record from an external source, you break the connection which routes the corresponding tape track through the mixer section and onto the Left and/or Right busses - and so, in the recording example just given, the Line L/R outputs get the three external inputs but not the three tape tracks. This either/or situation also stops you from adding further parts when you mix down the recorded tracks - unless you use the Aux Returns to bring in a stereo signal, in which case you can't add effects processing on mixdown.

When you're monitoring on headphones during playback, the Monmix section only gives you what's on tape, not what's appearing at the channel inputs - which isn't a lot of good if you want to rehearse a part before recording it. All you need do, however, is set the Phones switch on the X18's front panel to L/R+M rather than M. The headphone circuit then draws feeds from both the Monmix section and the Left and Right busses.

This setting also allows you to monitor a proper stereo mix of up to four tracks on the headphones; all you have to do is zero all the Monmix level controls (so that you don't have a mono mix competing with the stereo mix) and pull out all the leads from the channel inputs (so that the tape tracks can be routed via the mixer section - where you can balance and pan them - to the stereo buss and the headphone feed). However, if you decide that you want to add effects processing on mixdown, forget the headphones option - unless you're happy to have a stereo mix and a mono effects send mix in the headphones together.

Track bouncing is a time-honoured way of getting more than four tracks on a four-track machine, albeit at a loss of some mixing flexibility. On the X18 it's simply a matter of routing up to three recorded tracks via the mixer section (where you can balance their levels) onto the Left or Right buss as appropriate, and recording the mix onto a spare track. The inputs matching the tracks to be bounced down must be left unplugged, but the other one or two inputs can be used to record further parts while you're bouncing down. You can also use the Left or Right Aux Return input (depending on which track you're recording onto)

if you want to add in a further instrument.

The X18 doesn't evince any great build-up of noise or loss of clarity on first-generation bounces; in fact, even second-generation bouncing produces very useable results. But one of the advantages of using tape in parallel with MIDI sequencing is that less demand needs to be placed on the tape machine. How you actually combine tape machine and MIDI sequencer is an interesting question. You could, for instance, mix any stereo signal, ranging from the output of a single drum machine or synth to a stereo submix of an entire MIDI sequence, into the X18's stereo buss via its L/R Aux Return inputs, and adjust the signal's level using the Aux Return Level knob (at the expense of adding effects processing to the tape tracks on mixdown, of course).

Alternatively, you could turn this arrangement on its head by routing the X18's Line L/R stereo outputs into a couple of spare inputs on your desk - assuming you have a couple of spare inputs - rather than routing the output of your desk into the X18; this would leave the machine's send/return loop free for adding effects processing to the tape tracks. Taking this approach to its logical conclusion, you could route three of the X18's four tracks to separate channels on your desk by panning one track hard left (to the Line L output) and another hard right (Line R output) and routing the third via the Monmix output, with the Monmix output levels of the first two tracks and the channel fader level of the third zeroed so that each track only goes to its intended output. The very significant advantage of this routing scheme is that each of the three tracks can be independently EQ'd and effected on the desk (so the lack of EQ on the X18 itself is no longer a problem). If you're running tape and MIDI in parallel, the fourth track will of course be devoted to sync code, and consequently routed via its own output (the X18's Sync Out socket) to your synchroniser.

VERDICT

DON'T LET THE X18's junior status in the Fostex family of cassette multitrackers fool you. This is a mature, stylish machine which packs in a healthy amount of quality and flexibility for such an affordable price. Of course, there are a number of ways in which it has been scaled down to fit its price level (fewer inputs, only two record busses, no EQ, no master fader, no separate track outs), but at the same time such features as four-channel recording, effects send/return routing on mixdown, and special handling of sync code aren't exactly signs of a stripped-down, lowest common denominator machine. The X18 shows that a budget price tag doesn't have to mean cheap, and that entry-level doesn't have to mean simplistic. All in all it's a well-designed, well-balanced and well-judged machine which you shouldn't overlook if you're intending to buy at the budget end of the cassette multitracker market. ■

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JV80 SYNTH



PHOTOGRAPHY: MATT JOHNSON

It's not always
stunning
innovations that
make stunning
synths - Roland's
new JV80
represents a
stunning
refinement of
proven synth
technology. Review
by Simon Trask.

MOST SYNTHS REPRESENT an evolutionary rather than a revolutionary advance on what has gone before. Roland's new pro synth, representing the latest stage in a line of development which began with the trail-blazing D50 back in 1987, falls into the evolutionary category. However, notice that Roland haven't called it the D80. Instead, they consider the JV80 and its cheaper companion, the JV30, the first of a new generation of Roland synthesisers. Yet in many ways the JV80 is the ultimate D-series synth, the one which succeeds in synthesising (pardon the pun) all the best elements of D-series design as it has evolved over the years.

NEW HORIZONS

THERE ARE TWO particular developments on the JV80 which automatically win it major brownie points from this reviewer: at last, Roland have produced a synth which can sustain sounds over patch changes and which doesn't cut dead any active notes whenever you move between Play and Edit modes.

Other significant developments include the optional SR-JV80 8Mb wave data expansion board, which has to be fitted inside the synth, and Roland's use of a proprietary data-compression technology to effectively double the storage capacity of the JV80's

standard 4Mb wave data ROM, the 8Mb board and the 2Mb wave data cards to a grand total of 28Mb! What this seems to mean in practice is not that you get double the number of samples but that the existing samples are longer and/or there are more multisamples per Wave. Many of these multisampled sounds have been newly recorded for the JV80. A general overhauling of the sound source includes the use of enhanced RS-PCM and DI "synthesis techniques"; as usual, Roland deign to explain sod all in the manual about what this actually means, though I presume DI stands for Differential Interpolation, which is Roland's way of playing back samples at a constant rate regardless of their playback pitch (as introduced on their S770 sampler). As the JV80's samples are blessed with the same degree of clarity and cleanliness across a wide pitch range, this would seem to be the case. Another advance comes at the synth's audio output stage, which has been given 18-bit D/A signal conversion for high S/N ratio and wide dynamic range - and it shows in the quality and vitality of the JV80's output signal. Talking of dynamics, the JV80's 61-note keyboard, while being of the synth persuasion, has a modest amount of body to it, and is sensitive to both attack and release velocity as well as channel aftertouch. The JV80 has a number of parameters dedicated to getting velocity (and therefore dynamic performance) to control musically meaningful parameters.

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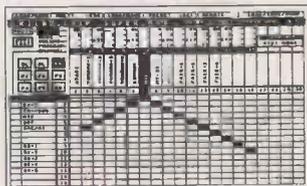
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➤ fitted with contains 129 16-bit linear PCM Waves, 14 of which are actually playback-reversed versions of other Waves in the ROM. Roland will initially be making available a choice of two SR-JV80 boards: Contemporary (more samples along the lines of those already available in the standard Wave ROM - basses, organs, guitars, brass, pianos, ethnic instruments and plenty of modern drum and percussion samples) and Orchestral (shades of Proteus, methinks). The first two PCM Wave cards for the JV80 are apparently going to be, respectively, U20 acoustic piano and others, and sax and trombones. According to Roland, JD800 Wave cards will work in the JV80 and vice versa, though as JD800 cards are only available in two-card sets with corresponding patch data cards (which aren't compatible with the JV80), I can't see that many JV80 owners taking advantage of the JD800 option.

ORGANISATION

THE JV80 CAN be played in either one of two operational modes: Patch and Performance. In Patch mode you can call a single Patch onto the keyboard using the Bank and Number buttons to select any one of 64 Patches, and the User/Preset and Int/Card/A/B buttons to select one of four sets of 64 Patches (User Internal or Card, and Preset A or B). A Patch consists of up to four Tones, each one of which in turn consists of a Wave Generator, a Time Variant Filter and a Time Variant Amplifier, along with associated pitch, filter and amplitude envelopes and two freely-assignable LFOs. The JV80's chorus and reverb processing is programmable per Patch.

In Patch mode the JV80 transmits on a single MIDI channel (1-16, Rx Channel, Off) and receives on a single MIDI channel (1-16), both of which are set globally in System mode - where you can also set Local keyboard routing on or off and define MIDI transmit on/off and MIDI receive on/off settings for various types of MIDI data globally. However, when you select Performance mode the JV80 becomes eight-Part multitimbral, with Parts 1-7 each having a Patch assigned to them and Part 8 being reserved for one of the synth's four Rhythm

Sets (drumkits). Each Part can, of course, be given its own MIDI receive channel assignment. The JV80's 28-note polyphony is allocated dynamically across the Parts, but you can also reserve a number of voices for individual Parts.

In Performance mode you get four sets of 16 Performances; as with the Patches, two of these are factory preset, a third is internally programmable and a fourth is card programmable. As you might guess, the JV80's chorus and reverb effects are programmable per Performance; routing of Patches to effects is determined by the settings of the Part chorus and reverb switch parameters.

There's a lot more to the JV80's Performance

mode than just MIDI multitimbral reception, though. You can also program up to eight Internal Zones and eight (MIDI) Transmit Zones per Performance, allowing you to create all manner of internal and/or MIDI splits, layers and overlaps on the JV80's keyboard. So, you could have Parts 5-8 being played from four tracks on a sequencer on, say, MIDI channels 13-16 while you play a multi split and overlap texture on the synth's keyboard which features a mixture of internal and MIDI'd sounds. Other parameters allow you to define pan, volume and patch change values to be transmitted on the relevant Transmit Zone channels when the Performance is selected, decide whether or not each Part will respond to MIDI patch change, volume and sustain-pedal data, and set Patch number, volume level, pan, coarse tune amount and fine tune amount for each Part.

Performances can be selected remotely via MIDI patch changes. All you have to do is assign a MIDI channel to the JV80's global Control Channel parameter and the synth will respond to any MIDI patch changes received on that channel by selecting the relevant Performance.

FRONTING IT

ROLAND'S NEW SYNTH adopts the Edit Palette concept of reassignable sliders which the company introduced on the D70. The Edit Palette is essentially a halfway house between having no sliders at all and having a front panel full of 'em. As it is, the Palette takes up about a third of the synth's front panel, to the left of the LCD window. The eight Assign buttons to the left of the Parameter sliders take on different functions in Patch and Performance Play modes. In Patch Play mode you get a choice of eight parameters: Level, Pan, Coarse Tune, Fine Tune, Filter Cutoff Point, Resonance, Attack Time and Release Time. In Performance Play mode these become Level, Pan, Coarse Tune, Fine Tune, Transmit Volume, Transmit Pan, Transmit Transposition and Internal Transposition. For example, in Patch Play mode, if you press the Level button, Parameter sliders 1-4 allow you to adjust the levels of the four Tones assigned to the current Patch; select Filter Cutoff Point and you can control, yes, the filter cutoff points of the four Tones. One more button-press and you're controlling resonance, or perhaps attack time, from the sliders.

In Performance Play mode, you can use the sliders to, say, adjust the level, pan, coarse tune and fine tune of each Part independently. If you press the Assign button labelled Tx Volume, you can control the volume balance of external MIDI instruments from the sliders; select Tx Pan and you can pan external MIDI instruments across the stereo spectrum. Many other parameters can be controlled independently for each Part from the sliders, the assignment being determined by which software page is selected. For example, with the Chorus Switch page selected you can turn the Chorus effect on/off for each Part. In Patch and Performance Edit modes, the Parameter

“Roland's proprietary data-compression technology effectively gives the JV80 a grand total of 28Mb!”

➤ sliders edit whatever parameters are in the currently-selected window. Any edits you make in any of the four modes can be Written to a Patch or Performance, as relevant.

The four buttons located above the Assign buttons govern chorus on/off, reverb on/off, transpose on/off and Rhythm Set edit select. The first three are all global settings, so if you turn off the JV80's internal reverb processing, it will stay off, regardless of what Patch or Performance you select, until you



turn it on again using the same button. Transpose affects keyboard performance in the same way, though the transpose amount (over a range of ± 36 in semitone steps) is set on the System Tune page.

The front-panel centrepiece is the 2 x 40-character backlit LCD and the eight buttons beneath it. When the JV80 is in Patch mode, buttons 1-4 act as on/off switches for the four Tones which make up a Patch, while buttons 5-8 allow you to select Tone(s) for editing. In multitimbral Performance mode, the

buttons act as Part Switches, with one for each of the eight Parts; the actual functions of the buttons differ depending on context.

When you're in Performance Play mode, the buttons function as MIDI receive on/off, MIDI transmit on/off or MIDI transmit and receive on/off switches, depending on which one of the eight Assign buttons is selected. In Performance Edit mode, the

functions of the Part Switches are dependent on which Function button (Common, Effect, Transmit Zone, Internal Zone and Part) and in some cases which LCD page is selected. For instance, with Common selected, the Switches turn MIDI data reception on and off per Part, while with Effect selected they function as Part-specific on/off switches for the chorus effect when you're on the Perform Chorus page and for the reverb effect when you're on the Perform Reverb page. With Internal

Zone selected, they turn the Local parameter (which governs whether or not the JV80's keyboard is routed to its internal sounds) on/off per Part.

The next grouping of buttons contains Performance Play and Edit and Patch Play and Edit mode select buttons, together with LCD page select and cursor buttons, Inc/Dec buttons and Enter and Exit buttons. To the right of these, the two lower rows of buttons govern Patch and Performance selection while the upper row governs selection of the various function areas in the System, Patch Edit and Performance Edit modes. While the Access buttons allow you to edit selected parameters in the Patch and Performance Play modes, the Function buttons give you access to all the relevant parameters (such as all the TVF parameters rather than just filter cutoff point and resonance).

On the synth's rear panel are a stereo headphones socket, L(Mono)/R stereo outs, MIDI In, Out and Thru sockets, a sustain pedal input, two programmable footpedal inputs, a PCM sample card slot and a Data card slot, plus of course the power on/off switch and AC power cord input.

SOUND & STRUCTURE

THE 129 ROM Waveforms with which the JV80 comes fitted provide a familiar general-purpose Roland spread of instrument sounds, attack samples and waveforms, with a generous selection of drum and percussion sounds providing the single most prominent category - and the sort of modernist collection of sounds we've come to expect from Roland. Keyboard sounds include acoustic piano, two Rhodes pianos, electric piano and jazz and pipe organs. Basses provide synth, pick, electric, fretless, upright and slapped varieties, while guitars include nylon, six-string, mute and harmonics. Strings, vocals and bell-like pad sounds are also represented, as is the odd trumpet, sax and horn. Digital chimes, steel drums, metal wind, white noise and various waveforms such as sawtooth, pulse and sine round off the picture. You can expect the usual combination of clarity, sharpness, and in some cases thinness from the sounds.

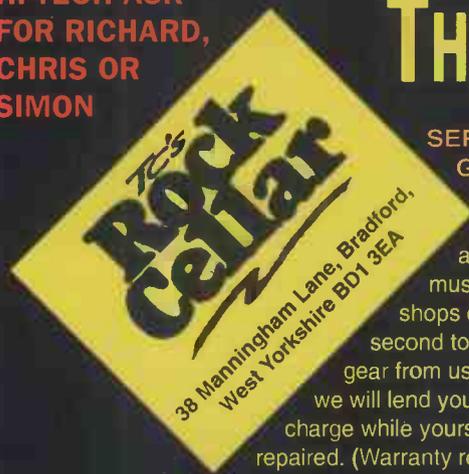
If this mixture offers no particular surprises, there is a way of "playing around" with the sounds to create a much wider range of timbres. The trendy practice in synth design currently seems to entail adding waveform modification functions to the oscillator stage. Roland perhaps started this off with Differential Loop Modulation on the D70, then Korg came along with Waveshaping on the O1/W, and now Roland have implemented a new/old feature on the JV80: Frequency Cross-Modulation, or FXM to give it its snappy title. This can be set for each Tone in a Patch, and has just two parameters: on/off switch and depth (1-16). The manual tells you virtually nothing about what the JV80 is getting up to here - you won't, for instance, discover what the modulating waveform is. According to Roland UK, it's a sine wave, nothing more, nothing less. The general effect seems to be to make things

“What 1/f modulation does is introduce non-periodic fluctuations of pitch which can certainly add to the character of a sound.”

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➤ sound more metallic in varying degrees, an effect which works better with some sounds than others - certainly a worthwhile inclusion, but not earth-shatteringly exciting. A choice of modulating waveforms could perhaps have made FXM more versatile. As it is, the Waveshaping feature on Korg's O1/W synth has more to offer. Still, FXM is very accessible operationally, only requiring a couple of slider movements to implement.

Another feature which is presented in a very straightforward way is Analog Feel. Some of you may recall that this was introduced on the D70 in an attempt to emulate the tuning instability of analogue oscillators in an extremely stable digital world. Yet it only did it in a fixed way. The JV80 adds something called 1/f modulation, although you still only set one parameter (depth) which apparently includes special types of modulation such as the murmur of a little stream and the rustling sound of a gentle breeze. Very poetic. What 1/f modulation does is introduce subtle non-periodic fluctuations of pitch (or much less subtle ones if you whack the depth right up) which can certainly add to the character of a sound. Indeed, an improvement on the D70's implementation.

Pitch variations of another kind are to be found in the Fine-tune section, which includes a useful feature called Random Pitch which literally randomly shifts the pitch of a Tone within a selected pitch range in response to each received note on. The smallest range is 1/20th semitone, the biggest is an octave.

LFO parameters allow you to set waveform (triangle/sine/sawtooth/square wave and random 1 and 2), phase synchronisation (with the note on) on/off, rate and offset, delay time, fade mode and fade time, together with modulation depth settings for LFO1 and LFO2 for each envelope.

The Filter section implements low-pass and high-pass types (but not band-pass), and of course Roland's excellent resonance; there's also a Resonance Mode parameter which allows you to select either hard or soft response. Other filter parameters include TVF Envelope Depth, TVF Envelope Velocity, TVF LFO1 and LFO2 Depth and Cutoff Frequency Key Follow, plus, of course, TVF envelope parameters. Dynamic modulation of filter cutoff and envelope settings is provided; Roland want you to take full advantage of that extra dynamic range.

Drum and percussion samples and keyboard "drumkits" have seemingly become an essential part of the modern synth, and the JV80 happily obliges with its Rhythm Sets. These are made far more than simple "sample playback" kits by the fact that each sound assigned to the keyboard can be routed through its own synthesis settings (although FXM and the LFOs are, frustratingly, not included).

By taking advantage of the TVF you can create completely new sounds out of existing ones. What's more, any of the JV80's Waveforms can be included in a Rhythm Set. Each sound in a kit can have its own dry, chorus and reverb send level settings, while, if you have some sounds that you want to use to cut short others, the Mute Group parameter provides you with 31 groups. Something I would like to see is Roland providing more programmable Rhythm Sets - perhaps a bank of 16, something like that. Particularly when there's so much scope for individual sound creation within the Rhythm Sets, it seems a shame to restrict people.

In contrast to just about every other manufacturer, Roland seem to deliberately keep their effects processing stripped to the basic requirements and this can actually work quite well, especially in a Performance. The JV80 provides eight reverb types: Rooms 1 and 2, Stage 1 and 2, Hall 1 and 2, Delay and Pan-Delay together with level, time and feedback settings. For the Chorus effect there are three types of chorus, providing successively stronger effects; other parameters are chorus level, rate, depth and feedback, together with a parameter which lets you determine where the chorussed signal will be routed to.

VERDICT

THE JV80 IS a synth which brings a lot of good things together in a very satisfying way. I found it to be a friendly, accessible instrument; I could find my way around it sans manual without any great difficulty. The implementation of Performance mode is impressively well thought out and versatile, and in both Patch and Performance modes a lot of parameters are made readily accessible thanks to the buttons and Parameter sliders. What's more, interesting live applications suggest themselves for the sliders and Tone/Part switches. The Patches and Performances which come with the synth are a well-programmed bunch which show off an impressive sonic versatility.

The JV80 has the different sound ranges well covered, from powerful, speaker-flapping basses to full, rich string ensembles to cutting electric pianos to sparkling bell sounds to "epic" pad sounds. There's even a rave-y blockbuster chord Performance (Movie Stab). I also found that it was a synth I enjoyed programming - not just because of its accessibility, but because of what I was able to get from it. As to sound quality, if vitality, presence, clarity and brightness seem like appealing qualities to you, you may well find the JV80 a fatally attractive synth. ■

Prices JV80, £1245; EB-JV80 ROM expansion board, £210; WC-JV80 Wave Cards, £53 each. All prices include VAT.

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THE LONE RAVER

Trading the aggression of hip hop for the good times of rave, The Prodigy have established themselves as masters of this hard-edged, electronic dance music.

Interview by Tim Goodyer.

LOVE IT OR HATE IT, RAVES, RAVERS AND raving are now a part of our musical culture. While the illegal all-night parties which began the movement have been tamed by armies of police with dogs, the directive to dance lives on and is steadily becoming more mainstream. But all is not well - while *Top of the Pops* has accepted the genre as part of its family-friendly

interpretation of popular music, the associations with drug culture are strong. The tabloid press in particular continues to wage war on raves and their organisers as a major corrupting influence on the nation's youth. Yet, historically speaking, isn't this - in part, at least - what rock 'n' roll is all about?

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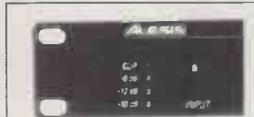
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house. But where house has tempered its rhythmic obsession by incorporating the temporarily-neglected forms of melody and harmony, rave has pursued rhythm to new extremes. Armed with the technology which freed house from the rock 'n' roll line-up of guitars and drums, rave musicians have made no compromises where speed or subtlety are concerned. The hard-edged sound of digital technology has availed the musicians of the extremes of energy more usually associated with speed metal; a night spent at a rave is not for the old, tired or faint of heart.

For all its aggressive associations, however, rave culture is essentially benign. Take the case of one of the movement's currently successful groups, The Prodigy. Of its four members (including an MC and two dancers) just one - Liam Howlett - is concerned with the music itself, having been driven away from hip hop by its violence and negative energy.

"I got into hip hop music and break dancing when I was about 13", he explains. "I was into the whole thing, graffiti and all that. I was in a hip hop group called Cut to Kill who had a record deal with Tam Tam but the whole scene got too violent. Come about 1988 white people were finding it very difficult to get respect for what they were doing, so I decided that I'd had enough of it.

"I was working in London and was close to the hip hop scene but then I came back here and went to a local club, the Braintree Barn - it's quite a well-known place, Mr C, the DJ from the Shamen used to DJ there. From there I started going out every week and really got into the rave scene and house music. I found that instead of the blacks and whites and *attitude* of the hip hop scene, the rave scene had this really happy vibe. It was so nice to go to a place where everyone was trying to be friendly."

Howlett, an enthusiastic 20-year old, is speaking from the kitchen of his family home in Braintree. Although it's not his own home at the moment, it does

house his studio - in what used to be his bedroom. He's been playing the piano since he was five ("My dad made me go to classical piano lessons - he reckons it's paid off now") and has well-defined ideas about rave music and his aspirations for it. He's also quite definite in his views on drugs.

"The trouble with England", he asserts, "is that as soon as you've got something that people enjoy, somebody else wants to bring it down. It's a big issue with Ecstasy and clubs at the moment but if people want to go out and take

Ecstasy or Acid and do whatever, it should be down to them. That's my opinion. It is drug-related music we're talking about, there's no doubt about it. The reason the rave scene is so popular and so 'buzzy' is the Ecstasy and the Acid; that's all there is to it - it's no good saying you don't need drugs to dance because people like to go out and do something that's 'naughty'. It's *because* they're told not to do it, they'll go out and do it.

"It's sad that in some places it's got out of control - people believe that they have to do it to enjoy the music which is rubbish. But drugs have always been part of music. You can talk about any kind of music - go to a rock concert and you'll find drugs there. It's just a bit sad that people are bringing rave music down because of drugs. There are loads of people out there who *don't* take drugs and can still have a good time and appreciate the music."

The government's control of raves amounts to having brought them "overground" - where the early events were secretive affairs where thousands of people would be given phone numbers to call or would meet at service stations on London's M25 orbital in order to find out where that night's party was being held, they're now advertised in local papers along with folk evenings and antiques fairs.

"You don't really get any illegal raves like you used to in '89 and '88", confirms Howlett. "There's nothing like the old M25 parties any more. You see, the government have got control of that and they think that it means they can take control of the drug thing as well. Originally there were people who were into the music and the excitement of going to an illegal party where there are 10,000 people in a field. That's what it was about to me. It's still good, but you know there will never be anything like that again. So you've just got to grin and bear it, and have a rave in a school centre, you know?"

His interest in house music confirmed, Howlett invested in a Roland W30 which gave him sequencing, sampling and synthesis capabilities in a single keyboard. With just this one instrument he put together a ten-track demo tape which he hawked around the record companies. One company - a hardcore dance subsidiary of Beggars Banquet - were immediately interested.

"It was about October '89 when I started giving record companies tapes", he recalls. "I gave XL a tape with ten tracks on and they liked it straight away and signed me up then. The first record was called 'What Evil Lurks' and was released in January '91."

A steady string of EPs followed, accompanied by relentless gigging around the country's raves, each gaining The Prodigy greater recognition. Finally, with a track featuring samples of the children's cartoon character Charly the cat, the inevitable happened and The Prodigy were in the charts.

"I was quite surprised really", Howlett comments. "It wasn't meant to be a novelty record, it was meant to be an underground record because it was such a mad idea. But people started buying it not because they were into the rave scene but because they remembered the TV series. We never wanted to be a 'pop' group as such because it is difficult to keep the respect of your underground following if you've got a record in the pop charts."

Invitations to appear in pop TV shows and magazines followed. The Prodigy emphatically weren't interested.

"We could have been in *Smash Hits* but we're not about that. What the group's about is getting up on stage and creating a buzz - giving the people what we think they want. That's what it's all about."

So The Prodigy were turning down the sort of

"I found that instead of the blacks and whites and attitude of the hip hop scene, the rave scene had this really happy vibe."

public exposure that costs other artists serious amounts of money to buy. Charged with being either arrogant or foolish, Howlett offers his explanation: "We've got this far without any TV exposure - we've had two hits in the charts and no other rave act has managed to get a position two or three in the charts like us. I'm not saying I'm really proud of chart positions though, because I really believe in the music I'm writing and I'm putting it where I want it to go, which is into the underground scene. It's just that this past year we've seen loads of good underground records get into the charts, because the whole scene has got really big.

"Personally I hope it'll go back underground", he comments. "At the moment it's at the height of its publicity. If you look through so many magazines you'll find articles about kids going out at the weekends raving and doing Ecstasy. I think it's at a point where we've got to decide whether it becomes out-and-out pop music or whether it gets pushed back underground. And I hope it goes back underground, even if it means selling less records. There are kids out there who are buying Prodigy records because they think it's pop music. Well it isn't pop music; it's music for our scene and it's music that we're into."

HOWLETT'S W30 TOOK THE PLACE OF THE Technics turntables he'd been using in Cut to Kill and saw The Prodigy through two EPs and countless nights' raving.

"I used to run one W30 while the other loaded, then swap over", he explains. "That's how we first did it live - mixing and playing bits over the top of the sequences. As far as the studio went, the second EP was done using two W30s and sampling off turntables. It was easy stuff because I didn't really understand too much about studio technology. The only way I found to learn was to go down to the studio where we mixed the first two EPs and sit with the engineer and let him tell me what he was doing."

As the formula proved itself successful, the W30s were joined by more gear: "I bought a sound module - a Roland U220 - and a Roland 909 drum machine. That was how the third EP came about: I wrote a track just to try out the sounds on the U220, it wasn't meant to be a *track*, it was just meant to be a demo to see how the U220 went. That turned out to be 'G Force' and went on the b-side of the third EP. It's actually one of the strongest tracks.

"Then I started buying old analogue synths. I bought an SH101, a Juno 106 and an Alpha Juno 2, which is quite a good synth. I'm a bit of a sucker for keyboards because I like coming out with original sounds. But I love buying old keyboards and I'll keep buying them and buying them. I'll carry on buying them as long as I can. Recently I got a JD800 but I don't like it. I bought it because it was in the shop and I had a play with it and thought it would be really good, but I've had it about six months and I just can't get into it. I prefer using the old 'real' analogue synths.

"I've had the Bassline about two months. It's quite an old machine - I was quite into the acid stuff in '88 but the sound is really good and heavy so I bought that and the Kenton MIDI box. I've written about two

songs with it so far for the album."

One notable omission from Howlett's current setup is the ubiquitous Atari ST.

"One of the reasons I don't use an Atari is that if something is hand-made, it comes out better. With the W30 I can tap in exactly what I want - I never use copy mode, never. I think with an Atari it's just too easy to tap in a bassline, repeat it for 30 bars and so on. Instead of having the same cymbals all the way through I tap them in and change them as I go. And I think that helps give me 'my' sound. I talked to another local group, Shades of Rhythm, about it and they couldn't believe it. I was going to buy an Atari but there's no point.

"I like to keep sequences really, really simple. Like I may take a really simple bassline and build the track around that. As soon as I've got a good hook I'll build around that. The ideas can come from anywhere - I was listening to a Deep Purple record the other day and there was a bit of drumming in there that I really liked so I took that and built the whole track around that because there was so much excitement in it. It's hard to say that I've got a formula because I may start with just a piano riff and build it up around that. But if you listen to a couple of my tracks I think you could tell they were both written by me because they have this similar construction."

But where the W30 has won against the technical superiority of software sequencing, it's lost out to that of an Akai S1100 sampler.

"Basically I'm using the W30 as a sequencer", he says, "because I'm using an Akai sampler now and the sampling on the W30 isn't as good. It's a different sound to the Akai, it's closer and more raw whereas the Akai is more pure.

"The W30 did have a lot to do with the sound of The Prodigy to start with, because everybody else was using an Akai. The W30 is kind of 'my sound'. Now I've the Akai and I'm happy with that."

A recording studio of any sort would hardly be a studio without a mixing desk. In Howlett's case this turns out to be one of the Mackie 16-channel desks which, although very popular in America, has only recently become available in Britain.

"It was actually the first one to come over", claims Howlett. "It does the job well - I can get a good sound up here. But this isn't really a studio, it's more a place where I can get my ideas together and get a rough mix up on the mixer. Then I can take all the equipment I use down to CWS Studio down the road and mix it all down. Hopefully in the next couple of months I will have some kind of decent setup here - a proper studio."

It would be fair to say that, while rave music majors on rhythms and counter rhythms, a great knowledge of music theory isn't an essential qualification for making it. If this is the case, does Howlett consider his piano training to be an asset?

"I like to think it matters quite a lot", comes the confident reply. "It is easy to write the sort of music >

***"I bought an SH101,
a Juno 106 and an
Alpha Juno 2, which
is quite a good synth
- I'm a bit of a sucker
for keyboards."***

EQUIPMENT LIST

Akai S1100 Sampler
Alesis Quadraverb Multi-fx Unit
Mackie 16-channel Mixer
Roland Alpha Juno 2 Polysynth
Roland SH101 Monosynth
Roland JD800 Polysynth
Roland Juno 106 Polysynth
Roland W30 (x 2)
Roland TB303 Bassline with Kenton
MIDI Interface
Roland TR909 Rhythm Composer
Roland U220 Sample Reader
Sony DTC 750ES DAT Recorder
Technics SL1200 Turntables (x 2)

> we're doing, but I like to think that I can put a little bit extra into it because of what I've learnt over the last ten years. I believe that I give it more musical input than you'll find in a basic hardcore rave track. I'm definitely into seeing the whole scene become a lot more 'musical' - and I think it will, given a bit more time.

"At the moment it's going through a bit of a strange period, people are finding the maddest noises they can and putting them on a record with a really kicking beat underneath and there you have it, it's a hit. But if you dig a bit deeper I think you can come up with stuff that's much more musical and interesting."

UNLIKE CERTAIN OTHER CONTEMPORARY musical forms, rave music doesn't rely heavily on the use of samples taken from other musical sources. They do have a part to play, however, and The Prodigy's 'Charly' used samples of Charly the cat lifted from a road safety advert. Had it brought Howlett copyright problems?

"At the time of the release there were people saying 'you can't do that, they'll sue you', but we turned it around by saying it was a message to kids not to go off with strangers. I think the guy whose voice it was phoned Virgin and tried to get some money for it but they said 'No way' and he said 'Fair enough, I like the record anyway'. That was the guy who spoke the words for the advert, and that was the end of it.

"I'm working on one tune with a Led Zeppelin sample in that I don't know if we're going to get

clearance on. If we don't I'll just put it out as a white label because it's a good tune."

The suggestion of substituting another sound or sample for an uncleared sample is not well received.

"If you've got something that's working well, it would be a mistake to re-do the sample yourself. If I got to the stage where I couldn't get clearance so I had to re-do it myself, I don't think I'd do it at all. I think that if something works, you should just stick with it. If you don't get clearance on a sample then I'd be inclined to forget the whole thing.

"I'm digging deep for my samples. I've borrowed all my manager's old rock records - Ted Nugent and Deep Purple and people like that. A lot of live albums too. I'm getting some really good samples out of records that haven't been used before because they're too obscure.

"I'm against taking someone else's hard work and putting that into your songs, but to take a noise and change it to suit your own music, I think is definitely good."

Back in February, the video for their single 'Everybody in the Place' got itself an airing on *Top of the Pops* as a result of the single's placing in the national charts and The Prodigy's reluctance to play at being pop stars. But the serious talk now is of a forthcoming album.

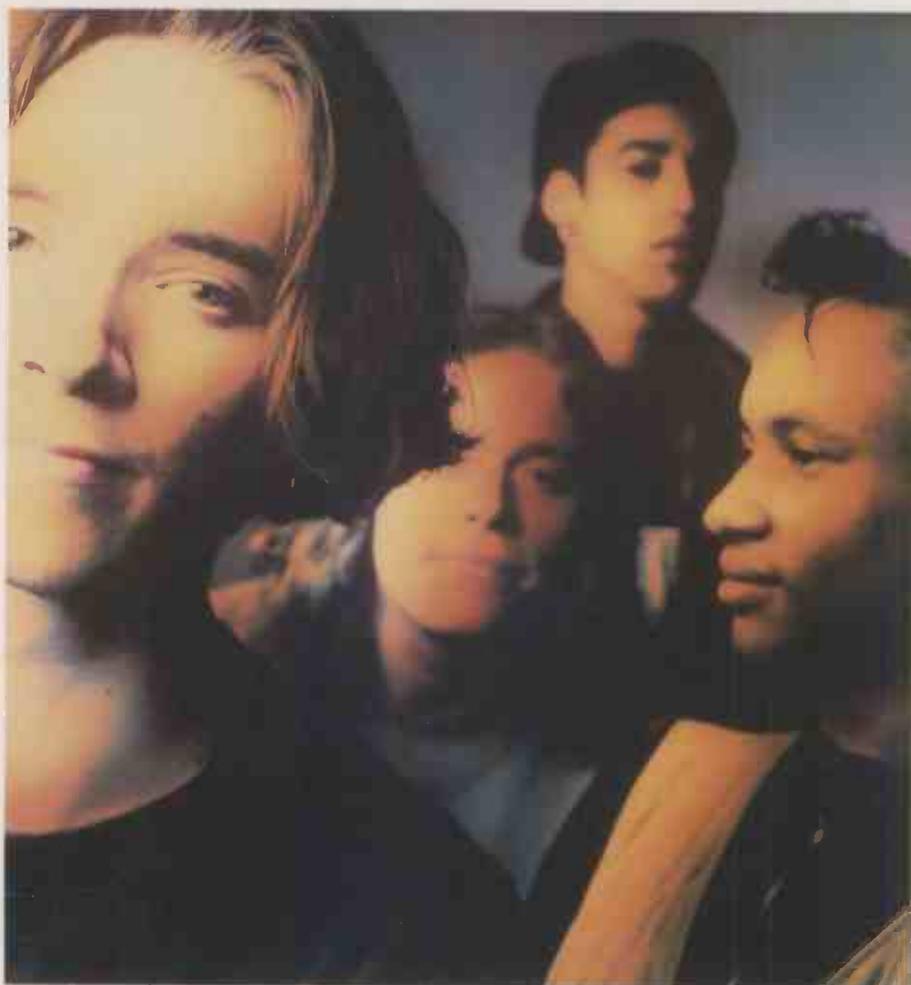
"I want it to be so different", enthuses Howlett. "I want it to be like a concept rave album. It's going to be like going to a rave and hearing a DJ play a set complete with all its highs and lows. Through the whole album it's going to be one mix flowing from one track into the next, taking my inspiration off the old Pink Floyd albums. There's going to be a lot of different styles of music in there: reggae, rock. . .

If you're still inclined to think that rave is a momentary aberration within popular music, perhaps just the result of a few kids having too good a time for a few months of their lives, consider this: The Prodigy are responsible for the opening cut of the album *The Art of Noise - The FON Mixes*. Other artists who have been invited to contribute to this series of remixed Art of Noise classics include 808 State's Graham Massey, Rhythmic's Mark Gamble, LFO and Youth - and members of the FON team.

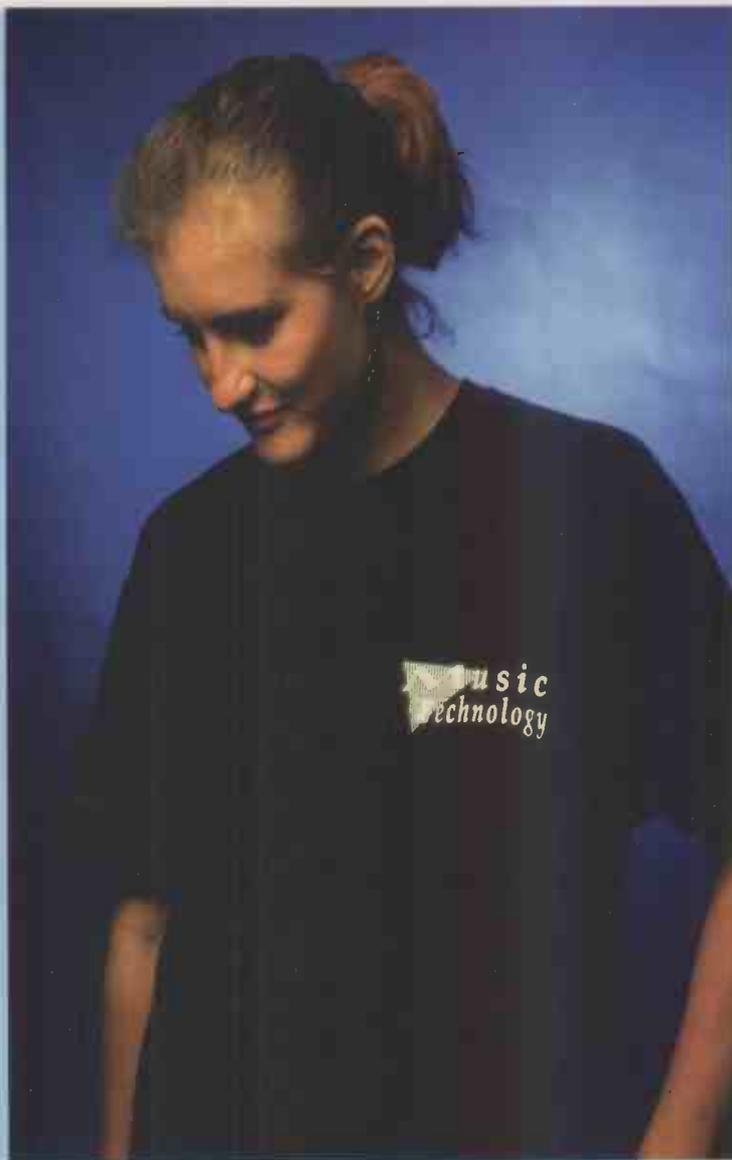
If that's still not enough then consider the success of The Prodigy's recent live outings visits to Germany, and Italy and their current circuit of California, Florida and Texas.

"There are so many different roads off the basic house scene", Howlett observes, "you've got the techno thing that's happening at the moment, you've got the hardcore scene, you've got the reggae-influenced songs that are happening. At the moment I think the reggae thing is probably the strongest. Certainly the relationship between old dub reggae and the house scene is really strong. Most of the tracks that are coming out at the moment have really heavy, heavy basslines on. There's a really close relationship between the two styles of music and I'd like to see it come through.

"We're in the position now - or so XL tell me - where we could probably change the whole way the music's going." ■



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MOOG ROGUE, w/Vesta MDI1 MIDI-to-CV unit, classic twin VCO analogue sounds for your MIDI

keybd/sequencer, S trigger + CV gate cables, immac, £185 ovno. Ian, Tel: (0308) 25819.

MOOG ROGUE, manual, service notes, perfect, boxed, £125. Tel: (0843) 32357.

ROLAND ALPHA JUNO 2, exc cond, boxed, manual, £295 ono. Jonathan, Tel: (0846) 677752, eves only.

ROLAND CM32L sound module, £125 ono or will swap for MC202 + MIDI sync. Malcolm, Tel: (0733) 53864.

ROLAND D5, as new, home use only, boxed, £310 ono. Chris, Tel: (0621) 891267.

ROLAND D10, £450; Boss DR550, £120; Yamaha QX5, £150. All perfect cond. Mark, Tel: (0747) 54406.

ROLAND D10, hardly used, boxed, manuals, 14 mnths old, never gigged, £375; Yamaha DX7S, manual, ROM cartridge jammed w/edited sounds, home use only, bargain at £375. Darren, Tel: (0268) 726507.

ROLAND D10, 2 sound cards, exc cond, boxed, manual, £400. Anthony, Tel: (0707) 328105.

ROLAND D10, boxed, manuals, as new cond, £495. James, Tel: (0494) 727634.

ROLAND D110 linear arithmetic

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synth, 8-part multitimbral, £275.

Calum, Tel: (0324) 612990.

ROLAND D110, 8-part multitimbral rackmount LA synth, w/Roland PC200 keybd controller, both boxed + as new, £425 the pair, or will split. Simon, Tel: (0904) 470995, 24 hrs.

ROLAND D20 workstation, 2 ROM cards, £600. Mark, Tel: 051-355 2148.

ROLAND D20, boxed, manuals, £650. Chris, Tel: 081-855 7180.

ROLAND D50, card, home use only, as new, £550. John, Tel: (0656) 842645, eves.

ROLAND D50 keybd, 5 sound cards, X-stand, boxed, manuals, home use only, exc cond, £550 ono. Andy, Tel: Luton (0582) 487003.

ROLAND D50, full f/case, 5 Roland ROMs, boxed, manuals, spotless, mint, £650. Don, Tel: 031-441 3948, 6pm-11pm.

ROLAND D50, vgc, extra sounds on card, editor. Steve, Tel: Stratford (0789) 490423.

ROLAND D70 Super LA megasynth, full f/case, boxed, manuals, guaranteed, mint, £1100, car forces reluctant sale. Don, Tel: 031-441 3948, between 6pm-11pm.

ROLAND GR50/GK2 guitar synth, £625; Roland U220, £400; Alesis HR16 drum m/c, £160. Tel: (0248) 713763.

ROLAND GR50/GK2, absolutely mint, £525; Yamaha MDF1, 40 disks, £135. Ron, Tel: (0206) 576664.

ROLAND JUNO 106, the classic analogue polysynth, £320 or swap for Roland TR909 drum m/c. Jay, Tel: (0532) 434585.

ROLAND JUNO 106, f/case, £300 ono; Ensoniq Mirage sampling keybd, MASOS disks, formatting disk, library, soft case, £400 ono; Yamaha CS5 monosynth, double oscillator, £60 ono. All exc cond. Michael, Tel: Brighton (0273) 205048.

ROLAND JX3P synth, PG200 programmer, manual, £250; Midiman universal synth editor, Atari, boxed, manuals, receipt, £60. Tel: 081-675 8696/071-223 7673.

ROLAND JX3P, w/programmer, vgc, £270 or exchange for Boss SE50 or Akai S700. Andy, Tel: 061-998 0271.

ROLAND JX8P MIDI/velocity-sens keyboard, £300; Yamaha DX7S, mint cond complete with cartridge, £450, available with mint flight case if required. Tel: (0977) 649100, before 7pm.

ROLAND JX10 polysynth, 76 keys,

exc cond, £599; full aluminium f/case for JX10, £50. Dave, Tel: (0274) 616107.

ROLAND/KORG SOUND CARDS:

Roland D10/20/110 LA synth Voice Crystal 3 (128-voice RAM), inc voices, Roland R8 Sound Effects, Roland U110/220 Electric Guitar + Electric Clavinet, MKS70 Acoustic 1, Synth 1 + Sound Effects, Korg Wavestation RAM card. Jerry, Tel: (0442) 234747.

ROLAND KR88 MIDI electronic piano, w/strings, choir, acoustic + electronic piano sounds, combine 2 sounds to create a new texture, £500 ono. Tel: (0222) 464192.

ROLAND MKS70, 2 ROMs, 1 RAM, £530; PG programmer for MKS70, £60; Roland TR505, £100. Tel: (0836) 317900, days/(0672) 870473, eves.

ROLAND MT32, multitimbral synth module, w/drums, psu, manual, Atari editor, £220 ono; Roland SH101 monosynth, psu, £100 ono. Both home use only. Roth, Tel: (0224) 314274.

ROLAND MT32, £190 ono. Kevin, Tel: 081-942 1140.

ROLAND MT32 sound module, manuals, £200 ono. Paul, Tel: (0483) 505314.

ROLAND MT100 multitimbral sound module + sequencer, boxed, manuals, application books + disks, £350. Paul, Tel: (0536) 761014.

ROLAND MT100 multitimbral sound module + sequencer, £380. Jason, Tel: 061-788 0883.

ROLAND P330 piano module, probably the best digital piano sound around, exc cond, semi-collectable, manual, £360 ono. Paul, Tel: Birmingham 021-551 8998, anytime.

ROLAND RA90 realtime arranger, 4 mnths old, £640 ono. Tel: Reading (0734) 882079.

ROLAND RA90 realtime arranger, 128 E70 sounds, 56 music styles, £600; Roland MSL15 Super Card (15 cards), 60 additional music styles, £150. Tel: (0932) 843068.

ROLAND RD250S piano, £650; Roland U110, £275; Roland U220, £375. Richard, Tel: (0243) 586072.

ROLAND RD300S piano, 88 weighted keys, MIDI, f/case, £800 ono; ART Multiverb LT fx, £130 ono; Boss NA12 monitors, pair, £60 ono. All manuals, box. Keith, Tel: 061-747 5372.

ROLAND SH101, exc cond, f/case, £120. Tel: 091-263 5135.

ROLAND U20 RS.PCM multitimbral keybd, as new, boxed, £600. Tel:

Brighton (0273) 410909.

ROLAND U20, exc cond, 6 mnths old, hardly used, incs all manuals, bargain at £650 ono. John, Tel: (0634) 243013.

ROLAND U20, exc cond, Ethnic + Latin sound cards (each worth £40), EMC Einstein editing s/w (worth £55), bargain at £680. Tel: 081-670 3061.

SEQUENTIAL PROPHET V, f/case, manual, footswitch, v3.3, £500 ono. Chris, Tel: Brighton (0273) 541087.

SEQUENTIAL PROPHET VS, vgc, ultimate analogue synth, 4 osc per voice, boxed, manuals. A Prentice, Tel: 031-440 1797, 8.30am-4.30pm.

SWAP MY MOOG ROGUE for any MIDI analogue acid bass synth, to use w/my QX21 sequencer. Danny, Tel: Sheffield (0742) 648432.

SWAP MY TX802, manuals, 4000 sounds, editor for either Rhodes Chroma w/MIDI or Ensoniq SQR. Write: Barry Dillon, Thomond Rd, Lisdoonvarna, Co Clare, Ireland.

TECHNICS KN600, exc cond, £460 ono. Tel: Reading (0734) 882079.

TECHNICS PX6, as new, home use only, 6 sounds, MIDI compatible, c/w stand, cover + instruction manual, £500. Jamie, Tel: (0785) 850050.

YAMAHA CLAVINOVA CLP300 electric piano, exc cond, £800 ono; Roland MT32, Roland PR100 sequencer, 2 floppy disks, leads, exc cond, home use only, £250. Willing to deliver, as long as reasonable distance away. Mr Brazier, Tel: (0705) 520429.

YAMAHA DSR2000, good cond, manuals, hardly used, £160. Richard, Tel: (0438) 716388.

YAMAHA DX7, exc cond, inc literally 1000s of extra sounds on Atari self-load s/w + Martin Russ easy editing Atari s/w, £375. Dominic, Tel: 081-670 3061.

YAMAHA DX7, mint, 2 RAMs, 9 ROMs, Atari editor, disk sounds, f/case, £450 ono. Tel: Burton-on-Trent (0283) 216435, eves.

YAMAHA DX11, exc cond, multitimbral, over 1000 extra sounds, boxed, £350; Casio CZ5000, £200; Yamaha QX5FD sequencer, built-in 3.5" disk drive, sync-to-tape, boxed, disks, £350. Dave, Tel: 021-353 4732.

YAMAHA DX21, good cond, £150. Kevin, Tel: (0270) 872558.

YAMAHA DX21, £160; Peavey KB15s, £50 each; volume pedal, £20; Hohner electric, £110; Ross Fane 50W amp, £50; home-made

bass guitar, £35. Jamie, Tel: (0327) 860526.

YAMAHA DX100, classic shoulder synth, great FM, bass + piano sounds, exc cond, cassette, books, £75. Henry, Tel: Brighton (0273) 726768.

YAMAHA KX5 remote keybd, f/case, £250 ono. Tony, Tel: Coventry (0203) 673051.

YAMAHA PF15 + Korg DP80 electronic pianos, stands + pedals, exc cond, £275 + £160. Tel: Leicester 375312.

YAMAHA PSS790, new, manual, box, RX17 drum box, manual, £200, won't split. Brian, Tel: (0865) 776466.

YAMAHA SY22, card, as new, perfect cond, still under guarantee, £460. Adrian, Tel: 021-458 6934, after 6pm.

YAMAHA SY22, £425 ono; Alesis SR16, £225 ono; Akai S950, full memory expansion, f/case, disks, leads etc, £1000 ovo; Boss SE50 fx, £245 ono; Audio Technica headset mic, £70. All boxed, as new, 6 mnths old. The lot: £1950. Will split, possibly deliver. Steve, Tel: (0453) 842854, after 6pm.

YAMAHA SY77, £1200. Alan, Tel: North East (0325) 351433.

YAMAHA TG33, as new, £400. David, Tel: (0296) 631405.

SAMPLING

AKAI S612 sampler, disk drive, 30 disks, vgc, £275 ono. Russell, Tel: 081-500 5287, eves only.

AKAI S700, £350; Korg EX800 expander, £100; Yamaha DX21, £190; Yamaha TQ5 workstation, £140; Roland TR626, £60; Korg SQD1 sequencer, £100; Jen SX1000 synth, £50. Tel: 021-384 5264.

AKAI S900 sampler, £750; Roland D110, £275; Roland DEP5, £295; Yamaha TX81Z, £195; Casio VZ8M, £150; ultimate support stand, £75. All as new. Jerry, Tel: (0234) 870129.

AKAI S900/950, Valley Studios drums + basses disk collection, 34 disks. Jerry, Tel: (0442) 234747.

AKAI S950, 2.5Meg expansion, f/case, £1000 ovo; Yamaha SY22 keybd, £425 ono; Alesis SR16 drum m/c, £225 ono; Boss SE50 fx processor, £245 ono. All less than 6 mnths old, mint, boxed, manuals, stands, leads. The lot: £1900, reluctant sale. Steve, Tel: (0453) 842854, after 6pm.

AKAI S1000, 8Meg, PLI removable hard disk drive, as new, library,

£1950 ono. Alan, Tel: (0246) 204291.

AKAI S1000 keybd (2Meg), for sale or swap for S1000 rack unit. Loz, Tel: (0359) 31800.

AKAI X7000, w/memory expansion, separate outs, 30 disks, £375; Yamaha R100 digital reverb echo, £70. John, Tel: Brighton (0273) 605182.

AKAI X7000, memory expansion, loads of disks, £450 ono. Paul, Tel: (0483) 505314.

CASIO FZ10M 16-bit sampler, 2 mins sample time, as new, £850 or p/x Roland S550; MC50 sequencer, as new, no manual or psu, hence price, £300. Alvin, Tel: Coventry (0203) 632524.

CHEETAH SX16 16-bit stereo, boxed, only 2 mnths old, giveaway at £600 ono; Yamaha DR100 reverb, w/EQ controls, £60 ono. Wayne, Tel: (0222) 792302.

DESPERATE TO SELL Emax SE 12-bit sampler, w/sound library + Steinberg editor, I'll give you Digital Muse's Virtuoso Atari sequencing program free, any price considered. Mr Singh, Tel: 021-356 1344, after 7pm.

E-MU EMAX sampling keybd, 30 disks, £750 ono. Carl, Tel: (0243) 826832.

ENSONIQ EPS, 2x memory expansion, over 100 disks, £950. Pete, Tel: (0527) 543452.

ENSONIQ EPS, library, case, £800 or swap for Roland D20, Ensoniq Mirage w/library + I'll make cash adjustment. Mike, Tel: (0449) 771954, after 5pm.

ENSONIQ EPS, x4 memory expansion, 10 disks, £850 ono; Alesis SR16, boxed, manual, as new, £200; Studio Research 6:2 mixer, £100; Midiverb III, £160; EVS1, slightly damaged but works OK, £75; Oberheim Strummer, £70. Chris, Tel: (0483) 714746.

ENSONIQ EPS16+ rack sampler, absolutely brand new, never gigged, w/full sound library, warranty card + packaging, any offer considered. Mr Singh, Tel: 021-356 1344, after 7pm.

ENSONIQ EPS16+ sampling workstation, boxed, as new, extra disks, £1200. Alan, Tel: (0983) 612537.

ROLAND S10, £400; Yamaha QX5, £150; Yamaha RX17, £100; TX81Z, £150; Tascam Porta 05, £200. All boxed, manuals, £900 the lot. Tel: Holbeach (0406) 24627.

ROLAND S50, w/library + sequencing s/w, £400. Dave, Tel:

(0293) 521648.

ROLAND S330 Director-S sequencing s/w, key, £55. David, Tel: 081-960 8913, after 9pm.

ROLAND S330 sampler, green monitor + custom library, boxed, as new, £600. Mark, Tel: (0202) 315330.

ROLAND W30 music workstation, good cond, £1099. Paul, Tel: (0302) 538304.

ROLAND W30, sound library, exc cond, £920 ono. Anthony, Tel: (0707) 328105.

SYQUEST 45MEG removable hard disk drive for Akai S1100/S1000, rackmounted, SCSI thru port, 8 cartridges, some w/Akai sounds, immac, £900. Tel: (0553) 617497.

YAMAHA MIDI DATA RECORDER, ideal for dumps from synths, sequencers etc, disks, £199. David, Tel: 081-960 8913, after 9pm.

YAMAHA VSS100, 8 sec sample, 4 split, condenser mic, line in, mini keys, £850. Tel: 081-440 6006.

SEQUENCERS

ALESIS MMT8 sequencer, power supply, manual, £130. Peter, Tel: 081-968 9265.

ALESIS MMT8, power supply, boxed, manual, £150. Tel: 051-339 3838.

FIRSTMAN SQ01, pre-MIDI synth/sequencer, all connections + great analogue sound. Jerry, Tel: (0442) 234747.

KORG SQ8, real- + step-time, 8-track sequencer, 6500-note capacity, boxed, manual, psu, £50. Tel: 081-440 6006.

KORG SQD1, disks, £100. Steve, Tel: (0387) 720133.

ROLAND MC50 sequencer, immac, disks, £400. Tel: Brighton (0273) 410909.

ROLAND MC202, boxed, full manuals, plus datadisk, swap for TB303 w/MIDI or offers. Tel: (0787) 78106.

ROLAND MC500II, £400. Alan, Tel: (0246) 204291.

ROLAND MV30, boxed, as new, £850 ono. Paul, Tel: (0793) 853372.

ROLAND TB303 bassline, boxed, manual, immac, £180. Graham, Tel: 051-493 1309.

SWAP 2 OPCODE MIDI interfaces + latest version Dr T's Beyond (Mac), for your Kawai Q80. Tel: (0727) 838144.

YAMAHA QX3 digital sequence recorder, massive memory, £350. Calum, Tel: (0324) 612990.

YAMAHA QX5FD, 8-track, 32 macro

track, digital MIDI sequencer, built-in 3.5" floppy disk drive, vast editing facilities, sync to tape etc, as new, f/cased, boxed, £300 ono. Tel: (0384) 410853.

DRUMS

AKAI MPC60 sampling drum m/c, brand new cond, boxed, manuals, £1200 ono; Yamaha SY77 synth, £1200 ono. Adrian, Tel: 021-433 3584, anytime.

AKAI MPC60 sampling sequencing drum m/c, 16-note poly sampling, SMPTE reader/generator, everything, £1100; Prophet VS keybd, w/ROM + RAM, £1050; Orla Stage 76 weighted keybd, cased, £400. Tel: 071-733 0204.

AKAI RX10 16-bit pro drum m/c, 64 rhythm presets, programmable, 8-voice, 20 songs, fully assignable fx send, MIDI in/out, 99 additional rhythm patterns, a pattern w/maximum 4 measures, good cond, manual, £200. Paul, Tel: 041-774 5659, after 6pm.

AKAI XR10 drum m/c, vgc, £150 ono. Steve, Tel: Bradford (0274) 642286.

ALESIS HR16 drum m/c, £120; Cheetah MQ8 sequencer, £90; R8 sound cards: Ethnic, Electronic, Jazz, £20 each. Adrian, Tel: (0928) 560047.

ALESIS SR16 drum m/c, vgc, still boxed, £190 ono. Mark, Tel: (0329) 281137.

ALESIS SR16 drum m/c, as new, £180; JL Cooper PSS100 tape sync unit, as new, £90. Tel: 081-954 5275.

BOSS DR550 digital drum m/c, 48 hardcore electronic sounds, as sampled by Subterranean Pulse, £120 ono. Nick, Tel: (0603) 713754, eves.

BOSS DR550, as new, w/rhythm chart, £100; Yamaha DD10, £50. Richard, Tel: (0438) 716388.

ROLAND CR1000, boxed, manual, £100. Tel: 051-339 3838.

ROLAND R8 ROMs. Brian, Tel: (0970) 615735.

ROLAND R8, exc cond, boxed, manuals, £390. Dave, Tel: (0293) 521648.

ROLAND TR626, hardly used, immac, still boxed, c/w instructions, £165 ono. Mike, Tel: 081-647 1708.

ROLAND TR707, exc drum m/c, separate outputs, good cond, £220. Rick, Tel: (0234) 346844.

ROLAND TR707, £80; Sequential Circuits Drumtraks, £80. Paul, Tel: (0926) 490708.

ROLAND TR707 drum m/c, 2 memory cartridges, £150; Roland TB303, £150. Both: £250. Barry, Tel: (0873) 859517.

ROLAND TR808 drum m/c, vgc, £250. Jim, Tel: Surrey (0932) 221019.

SIMMONS SDS7, digital analogue, mono output not working, rest OK, no pads, £120 ono; Simmons SDS8 electronic drums, individual outputs, sequencer input, £100. Thomas, Tel: (0981) 240314.

SIMMONS SDS1000M electronic drum brain, MIDI, 5 individual inputs + outputs, w/stereo mix, fully programmable sounds, £250. Tel: 081-783 0537.

SIMMONS SDX 10-pad electronic drum kit, 8Meg memory, over £1000-worth spare pads, cost £8000 new, sell £4750 ono. Tel: (0444) 871818.

SWAP MY ROLAND R8 for your Roland TR909, must be exc cond, boxed, manuals. Tel: 091-428 0536.

SWAP MY SIMMONS SDS1000, 5 black pads, 19" rackmount brain, unfortunately no rack, for your Roland TR909 drum m/c, any offers? Matt, Tel: (0242) 232740.

YAMAHA DDD5 MIDI drum m/c, mint, boxed, sticks, manual. Henry, Tel: Brighton (0273) 726768.

YAMAHA RX16, boxed, £75. Andy, Tel: (0933) 224439.

COMPUTING

ATARI 520STFM, double-sided disk drive, mouse, sampler, Quartet, Steinberg Pro12, over £250 worth games, joystick, magazines, still boxed, £300. Dan, Tel: Tyneside 091-267 1339.

ATARI 520STFM, double-sided drive, £180; FB01, £100; PSS680, £60; DH100, £50. Leads, s/w + power supplies. Mackenzie, Tel: Preston (0772) 716593.

ATARI 1040ST, Pro24 v3, Band In A Box, £250 ono. John, Tel: (0532) 576289.

ATARI 1040ST, SM124 monitor, exc cond, £250 ono. Bill, Tel: (0705) 268618.

ATARI SM124 mono monitor, brand new, any price considered. Mr Singh, Tel: 021-356 1344, after 7pm.

ATARI STFM, music studio + PSS s/w, £200. Mr Hollie, Tel: (0453) 758722.

BBC.B MUSIC SYSTEM, inc Music 5000, UNI3S sequencer, dual floppy plinth, green monitor, sideways RAM, joysticks, s/w, books, £295. Tel: (0438) 350471.

C-LAB CREATOR, dongle, manual, £150. Tel: (0908) 670164.

C-LAB CREATOR v1.2, £120; **C-Lab Creator v2.2**, £160; Steinberg Avalon, £160; Steinberg Cubeat v1, £60. Tel: 091-263 5135.

MICROILLUSIONS MUSIC-X

sequencing s/w, manual, MIDI interface, Amiga 500, £80; Casio MIDI Horn, manual, £50. Danny, Tel: Nottingham (0602) 259869.

OPCODE EZ MUSIC starter kit, Mac, no MIDI translator because we're using that(!), but s/w never used, book of MIDI, offers around £75. Richard, Tel: (0427) 873116.

STEINBERG CASIO FZ sample editor, £80. Tel: Merseyside (0744) 35567.

STEINBERG CUBASE, was £500, only £380. Matt, Tel: (0623) 751528, anytime.

STEINBERG PRO24, v3, £60; Steinberg Synthworks for Roland D-series synth + MT32, w/500 free sounds, £85. Kevin, Tel: 081-942 1140.

STEINBERG PRO24, v3, £60; EZ Score Plus, £60. Mr Hollie, Tel: (0453) 758722.

YAMAHA CX5MII, w/keyboard, printer, Philips RGM colour monitor, £150, will split. Steve, Tel: (0278) 455464 X264/Andy/Martin, X278.

RECORDING

AKAI GX4000D quarter-inch reel-to-reel tape recorder, 2-speed, sound on sound. Jerry, Tel: (0442) 234747.

AKAI MPX820 programmable 8-channel MIDI mixer, exc cond, £399. Dave, Tel: (0274) 616107.

ALLEN & HEATH 18:2:1 mixer, £650 ono; Teac 6:4 2-way audio mixer, £110 ono; Yamaha MSS1 sync, £110 ono. Jason, Tel: (0323) 641074.

BOSS RBF10 flanger, manual, box, mint, £50. Tel: (0843) 32357.

BOSS RSD10 sampling delay box, manual, vgc, £150. Tel: (0843) 32357.

FOSTEX 160, hardly used, £260; JL Cooper PPS100 tape sync, £90; Yamaha R100 digital reverb, £100. Tel: 081-954 5275, after 5.30pm.

FOSTEX 454 mixer, good companion for 8-track recording, £325 ono. Lee, Tel: (0895) 637591.

FOSTEX B16 multitrack recorder, home use since new, immac, £1750. Mike, Tel: Durham (0740) 657112.

FOSTEX M80 8-track, exc cond, £750. Tel: (0272) 354858.

FOSTEX M80, little use, well maintained, exc cond, boxed, c/w

instructions, offers around £765; Revox A77 high speed, exc cond, highly sought-after m/c, offers in the region of £475, or the pair for £1150. Mike, Tel: 081-647 1708.

FOSTEX X30 4-track, MN15 mixer compressor, both as new, £140 ono, poss swap + cash for 8-track mixer. Tel: Derby (0332) 780355.

LEXICON PCM70, £1000 or swap for Yamaha DMP11 mixer or Fostex R8. Loz, Tel: (0359) 31800.

NOMAD AXEMAN guitar processor, £125; AKG SLM50 cube monitors, £50; AKG Egg Bass drum mic, £70. Pete, Tel: 081-367 1720.

NOMAD REDDIMIX 8:2, power supply, w/32 patchbay, £150. Tel: 051-339 3838.

PEAVEY UNIVERB, 128 reverbs + fx, vgc, boxed, £170. A Prentice, Tel: 031-440 1797, 8.30am-4.30pm.

REEL-TO-REEL TAPE, a quantity of 7" spools, majority used once, £1 each. Douglas, Tel: 081-807 5483.

SECK 12:8:2 control desk, good cond, Alesis Microverb II, £450 complete. Mr Brice, Tel: 031-552 3685.

SECK 12:8:2 mixer, £550 ono. Tel: Merseyside (0744) 35567.

SIMMONS 8:2 programmable mixer, MIDI, £150 ono. Mark, Tel: (0905) 611415, eves + weekends.

SONY TC250 2-speed, half-track stereo + Truvox 3-speed half/quarter-track stereo, variable spooling, playback only, set up as a pair for bouncing, also 50+ 7" spools of pro tape, £60. Tel: Mansfield (0623) 822468.

SONY TC377 reel-to-reel tape deck, overhauled, exc cond, mixing, 3 heads, SOS dust cover, metal reels, manual, ideal for mastering, £50. Henry, Tel: Brighton (0273) 726768.

STUDIOMASTER PROLINE 16:8:16:2, w/MIDI muting, £1050. Tel: (0453) 826129.

STUDIOMASTER STUDIO 4, classic 4-track portastudio, £295. Tel: (0438) 350471.

2 ACCESSIT NOISE GATES, auto panner, compressor, dual sweep EQ, power supply, all boxed, £100. Tel: 051-339 3838.

2" AMPEX 456 GRANDMASTER audio tape, 10" reels, brand new, few only, £35 each. Tel: (0252) 516433.

TASCAM 38 reel-to-reel, 8-track m/c, regularly serviced, £800. Tel: (0782) 642579.

TASCAM 38, mint, £790. Lee, Tel: (0895) 637591.

TASCAM 488 8-track recorder, boxed, manuals, exc cond, £775. Tel:

081-989 9287.

TASCAM 644 Midistudio, £500; Korg S3, dance card, £300; Boss CL50, £70. All mint, guarantees, boxed etc. Kevlin, Tel: (0273) 624331.

TASCAM DA30, £825 ono; Fostex 4050 B16 remote, £335 ono; Sansui WSX1, £650 ono; Tascam 246 portastudio, £375 ono; Steinberg Pro24, £60 ono; XRI XR300, £160 ono; C-Lab Notator, incorporating Unitor, v3.1, £575 ono; Yamaha MT3X portastudio, £330 ono; Mackie 164 mixer, £635 ono; Roland RE301, £250 ono. Tel: 081-462 6261.

TASCAM PORTA 02 portastudio, never been used, mint, boxed, manual, £250 ono. John, Tel: (0753) 886308.

TASCAM TSR8, half-inch, 8-track, as new, hardly ever used, £1400. Tel: (0453) 826129.

TEAC 2A mixer, £80; Ibanez DM1000 delay, £90; Vesta Fire RV2 stereo reverb, £70. Paul, Tel: (0926) 490708.

TEAC A3340 reel-to-reel, 4-track recorder, exc cond, tape, £295. Tel: (0272) 421926.

TEAC A3340S 4-track, good working order, £225; Oberheim DPX1 sample player, w/disks, £450; Sequential Drumtrax, separate outputs, exc cond, £125. Write: Mr Beale, 37 School Street, Wolston, Coventry.

XRI XR300 SMPTE, £110; Roland DEP5 multi-fx, £275; Roland CF10 MIDI mixer, £75; scissor stands, £5 each. Jerry, Tel: (0234) 870129.

YAMAHA AM602 mixer, 6-channel, 2 aux sends, exc cond, £150. David, Tel: 081-960 8913, after 9pm.

YAMAHA E1010 analogue delays, lovely warm-sounding old analogue delays, £75 each; f/case, 12U, highest quality, castors, £100. Tel: 061-799 6154.

YAMAHA FX500 multi-fx processor, immac, boxed, as new, £220 ono. Richard, Tel: 081-348 3307.

YAMAHA GEP50 multi-fx unit, 19" rackmount, £150; Roland GS6 multi-fx unit, 19" rackmount, £165. Both boxed, as new, manuals. Colin, Tel: 081-878 0512.

YAMAHA RCM1 remote for MT120 portastudio, as new, yours for £25. Pete, Tel: (0203) 345958, leave message.

AMPS

CARLSBRO HORNET 45W keybd amp, immac, £35. David, Tel: 081-960 8913, after 9pm.

CARLSBRO PMX8 8-channel power

mixer amp, 300W per side, brand new, never gigged, £600 ono. Tel: Ipswich (0473) 626605.

HIGH WATT LEAD 50 valve head, £150. Tel: 051-339 3838.

MARSHALL KEYBD 12 combos, 6 mnths old, home use only, £75 each or £130 the pair. Simon, Tel: (0604) 602523.

MUSICAL FIDELITY P170, rackmounted amp, 2U, boxed, exc cond, was £750 new, £250 for immediate sale (hence price).

Simon, Tel: 071-537 7168.

PEAVEY BANDIT 65W combo amp, exc cond, £150; Sanyo 50W hi-fi amp, £35. Pete, Tel: 081-367 1720.

YAMAHA 250W spk amp combo system, bass, mid range + horn, on casters, powerful, w/wide frequency range, exc cond, £450 ono. Nigel, Tel: (0233) 633483.

YAMAHA PD2500 power amp, very powerful, yet light + compact at the same time, up to 1000W, £500. Stephen, Tel: (0932) 253693, after 7pm.

PERSONNEL

BASS PLAYER WANTED, preferably w/vocals, for none-commercial band. Influences: Pink Floyd, Camel, Barclay James Harvest, early Genesis. Harrogate/Ilkley based. Tel: Harrogate (0423) 711662.

ELECTRONIC BAND, with record company interest seek synth operator, in or around Cambridge area. Into: Depeche Mode + Nine Inch Nails. Graham, Tel: (0223) 860348.

GREAT SONGS seek great lyricists. Write: Andrew Kazury 8/25 Warsaw, Poland. Fax: 010 4826 284580.

GUITARIST/SINGER + writer of superb songs seeks male or female keybd/programming person for engine room + ultimately Madison Square Garden. You are presently wasting your time in a naff band or a bedroom + need a new challenge. Preferably Ipswich, Colchester/Chelmsford area. No beginners please. Patrick, Tel: (0473) 214615.

HEMEL HEMPSTEAD-BASED songwriter, w/talent, experience + gear seeks tuned-in keybd player to form production unit. Jerry, Tel: (0442) 234747.

KEYBD PLAYER + DRUMMER require vocalist + keybd player to complete electronic lineup. Andy, Tel: 021-421 2450.

KEYBD PLAYER/PROGRAMMER + funk guitarist seek female vocalist/songwriter for club/house/funk tracks. I have a small

MIDI setup + lots of Ideas. No time wasters pls. Northants area. Adam, Tel: (0604) 830628.

MANCHESTER, (preferably south area), home music enthusiasts who wish to turn their ideas into presentable songs required. Singers, poets, technicians etc welcome. I have a keybd, synth, sequencer, guitar + own compositions waiting for you. Ian, Tel: 061-980 2869.

MUSICIAN would like to meet other musicians in Birmingham area. Some interest in programming keybds. Duncan, Tel: 021-444 2681.

SINGER WANTED for techno band w/own studio + record deal. Nottingham based. Permanent or sessions. Matt, Tel: (0623) 751528, anytime.

SONGWRITER looking to collaborate w/female singer w/strong, soulful voice. Influences: dance, house etc. North London area only. Kesh, Tel: (0923) 825219.

SYNTHESIST, 25 in Merseyside area, seeks keybd player to form duo. Influences: Tangerine Dream, Howard Jones, Gary Numan etc. Steve, Tel: 051-521 2405.

YOUNG TALENTED KEYBOARD PLAYER seeks an established band to join. Haven't got much gigging experience. I've got no equipment or keybds, but am very devoted + hard working. Into: Erasure, Guns & Roses, mostly digital music. Write: Shane Porter, 121 Dearhurst Crescent, Poolsgroove, Portsmouth, Hampshire PO6 4EJ.

MISC

ARIA PRO2 semi-acoustic guitar + Squier 15 amp, hardly used, £300 ono. Bill, Tel: 051-521 2405.

ARION HOTWATT, £50; MXR Phase 100, £30; Casio DG20 digital guitar, boxed, manual, £75; Westone Paduak 1 active guitar, £100; Nomad Axxeman, footswitch, £100.

Tel: 051-339 3838.

GROOVE ELECTRONICS MIDI-to-CV unit, 2 CV channels (for 2 monosynths), DIN sync (for syncing old Roland drum m/cs or sequencers), manual etc, immac, £100; Creator v3.1, dongle, manual etc, £150. Andy, Tel: Leeds (0532) 430177.

HH PRO200 bass cab, 2x12 + bullet, good cond, HH S130 amp, £150 ono the pair. Paddy, Tel: Huddersfield (0484) 648275.

IBANEZ MUSICIAN bass guitar, model MC924, mahogany, £320 ono. Ian, Tel: (0702) 373327, days/460285, eves.

JBL CONTROL 5 monitors, brand new, still boxed, £199. Dave, Tel: (0494) 436426.

KAHLER HUMAN CLOCK, produces MIDI clock from a live drummer or taped drums, £250. Tel: 071-281 1918.

MORLEY Rotating Sound Powerwah volume pedal, £55 ono; MXR mains flanger, last version, mlnt, boxed, £35 ono. John, Tel: Guildford (0483) 32802.

MUSIC VIDEOS (VHS), huge private collection, '80s/'90s chart music (synths etc). Send SAE for full list: Donovan, 19 Railway St, Beverley, N Humberside HE17 0DX.

OVATION APPLAUSE semi-acoustic, roundback guitar, £250 ono; Ibanez Roadster fretless bass, hard case, active circuitry, £225 ono. Lee, Tel: (0895) 637591.

QUANTITY OF FUJI 1" tape on NAB spools in individual hard plastic carry cases, used once only, £25 each. Would consider swapping individually for rackmounted patchbay + MIDI patchbay. Mike, Tel: 081-647 1708.

ROLAND MM4 MIDI thru box, power supply. Jerry, Tel: (0442) 234747.

ROLAND VOCODER SVC350, exc cond, manual, £350 ono. Keith, Tel: (0450) 76131, eves.

SLAPBACK SCINTILLATOR aural exciter, as new, £100. Piers, Tel: (0603) 633139.

YAMAHA MCS2 MIDI control station, £75 ono or swap reasonable drum m/c. Tel: Andover 357134, early eves.

WANTED

AKAI X7000 sample keybd, either manual, handbook or photocopy, wanted urgently, willing to pay. Tony, Tel: 081-883 8753, anytime.

BINSON MANUAL OR PHOTOCOPY + patch data cassette, will pay, pls help. Mark, Tel: (0905) 611415, eves + weekends.

CASIO FZ1 sampling keybd or Korg DSS1 sampling keybd, or similar, can pay up to £600, depending on cond, looks unimportant; also Roland SH101, preferably w/modulation grip, can pay £125 maximum. Bill, Tel: (0892) 723897, anytime.

CASIO FZ1 sampler, will pay £650 cash. Tom, Tel: (0293) 543861.

DENON DTR2000 or Kenwood DX7030 DAT recorders. Paul, Tel: (0302) 538304.

DESPERATELY WANTED: MPG80 programmer for MKS80 synth. A Prentice, Tel: 031-440 1797, 8.30am-4.30pm.

EMS VCS3 + ARP 2600, willing to pay. Write: Fredrik Nielsen, Sommarogatan 2, 63226 Eskilstuna, Sweden. Tel: 016/113843.

FOSTEX M80, Seck 18:8:2 + SPX90, will pay cash + collect. Tel: 061-483 8551.

IBANEZ AS9 auto filter, pay £20-25 + postage, also fuzz, wah + swell, pay £25-30 + postage. Rob, Tel: (0273) 682131.

KORG M1, good cond, w/any extras. Julian, Tel: (0239) 831312.

KURZWEIL K1000. Tel: 071-733 0204.

MANUAL OR COPY for Cubase v2. Bill, Tel: (0635) 869967/869933.

POWERTRAN SP2200 amp, circuit diagram + build instructions urgently needed, £5 for photocopy. Tel: (0926) 842741.

PSU for Yamaha CX5 music computer, I'll pay £20 cash. Martin, Tel: 081-398 7349.

ROLAND ALPHA JUNO 1 or Alpha Juno 2, also Roland TR909 drum m/c, cash or exchange either for Roland Juno 106. Jay, Tel: (0532) 434585.

ROLAND PG800 programmer, cash waiting. Steve, Tel: (0207) 70759, after 7pm.

ROLAND PG1000 programmer for D50 + modular synth of some sort. Steven, Tel: (0726) 66715.

ROLAND S50, must be good cond, w/manual, willing to pay up to £400, but no more. Shane, Tel: (0705) 210461.

ROLAND S50 sampling keybd, w/disks + monitor, £750 waiting, can collect. Dave, Tel: (0924) 265742, most eves.

ROLAND SUPER JX10, good cond, w/manuals, only £300 to spend. Shane, Tel: (0705) 210461.

ROLAND TB303 bassline m/c. Stephen, Tel: 081-874 3918.

SECOND-HAND Roland D10, will pay no more than £300, must be as new, w/owners manual + box, preferably still under guarantee, must deliver as well. Shane, Tel: (0705) 210461, after 6pm.

SOUNDS for Ensoniq ESQ1 or SQ80 on disk or cartridge, also Roland M64C memory cartridge for my TR909. Tel: (0908) 669648.

WANT TO SWAP 88-note weighted keybd, I have Juno 2, Kawai R100, pedals, Roland keybd amp, Cube 60 etc. Bill, Tel: (0635) 869967/869933.

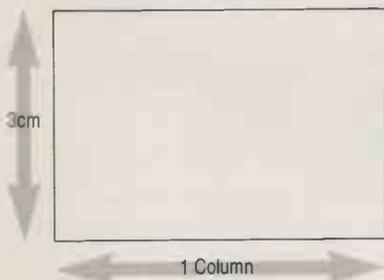
WALKABOUT KEYBD, w/full-size keys, strap + MIDI. Paul, Tel: (0929) 424097.

YAMAHA TX81Z or Roland D110. Chris, Tel: 051-638 5907.

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01/W ProX The most evolved 01/W. Features an 88-note weighted action keyboard that makes the ProX an ideal Master MIDI Controller. And you get the full complement of the 01/W Pro's sounds, sequencing power and storage capability.



01R/W A perfect MIDI module. All the sounds and features that

have made the 01/W the leader in music workstations. Plus a 7,000 note, 16-track sequencer with sophisticated editing control. Receives on 16 independent MIDI channels. MIDI overflow. Four polyphonic outputs. The ultimate open-ended system in a compact two rack space.



03R/W The affordable and compact MIDI module for fast, easy access to many of the great 01/W sounds. 32 voices, 128 General MIDI ROM programs, plus 100 user-programmable Programs and Combinations. Program and PCM card slots that use 2 Meg PCM cards. Compatible with Korg's RE-1 Remote Editor.



Receives on 16 individual MIDI channels. A comprehensive, open-ended system in one rack space.

Go to your Korg dealer and audition the 0 Series. See how much music workstations have evolved. And while you're at it, discover the growing library of Korg 0 Series sound cards.

KORG® 01/W SERIES