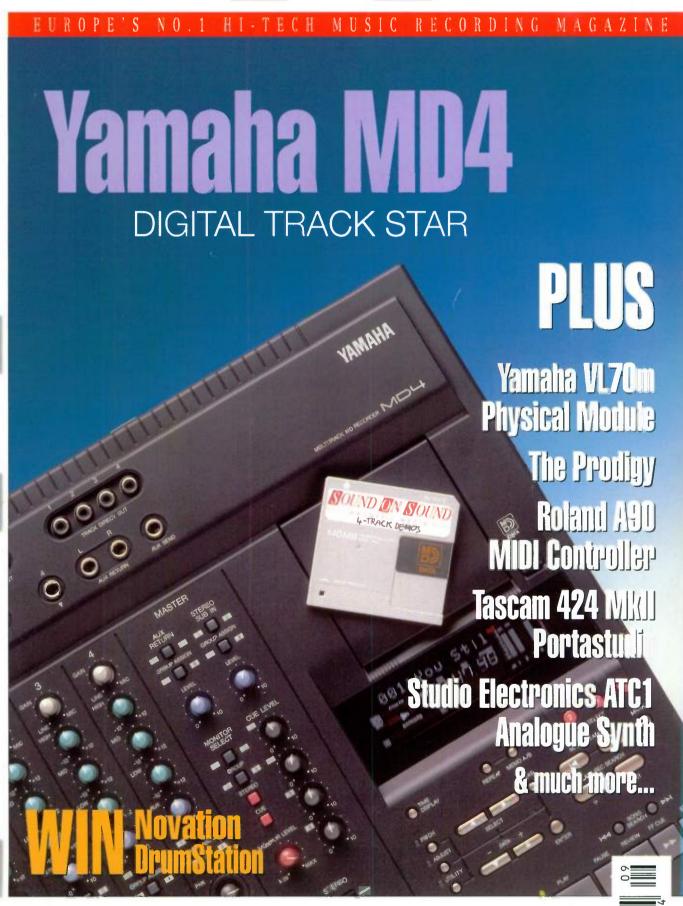
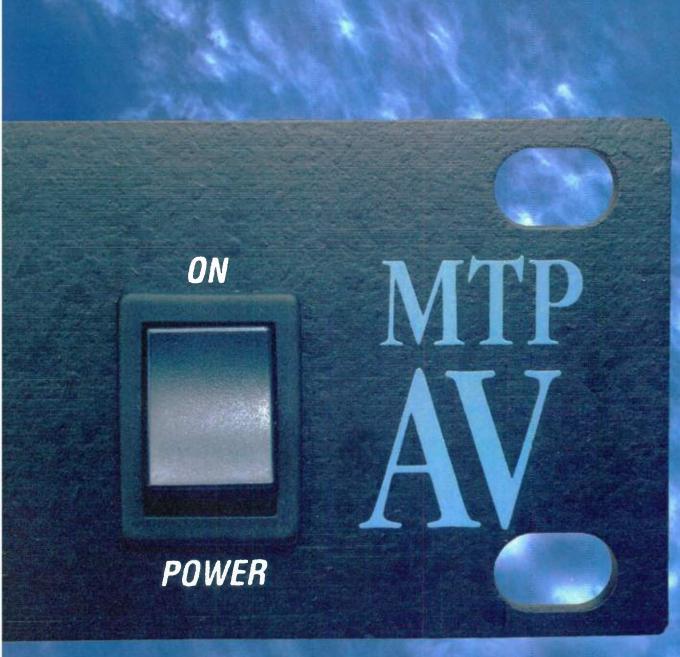
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For Windows and Mac OS



ver the past few columns I've given technology rather a hard time. That's not because I don't like it — if I didn't care about it I wouldn't bother to complain, I'd just do something else. In actuality, I use technology all the time in one form or another, and it's only

when I see things being made unnecessarily difficult for the end user that I get really upset — especially when I'm the end user in question!

Most problems arise from persuading budget computers to do complex audio tasks for which they were never designed, such as multitrack direct-to-disk recording, but fortunately, some manufacturers are coming up with new generations of products that deliver both quality and reliability.

One such is the MiniDisc (MD Data) multitrack recorder (see Yamaha MD4 p.100), and before you recoil at the thought of data compression, just go and listen to it. As a rep acement for cassette tape (which I've always thought rather unsatisfactory), MiniDisc is a big improvement, both in convenience and sound quality. Technically, it isn't up to master quality work, but if you're recording an acoustic album for general release, then you shouldn't be expecting to use a system that costs under a grand anyway. Having said that, I believe you could

expecting to use a system that costs under a grand anyway. Having said that, I believe you could record most pop music (and virtually all dance music), at MiniDisc quality, and once mixed with

SOUND ON SOUND bit linear recording

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The process of the same terms of the same and a process of the same terms of the same and the sa

Copyright 149K Sigure On Securit United Incorporating More Different Magazine & Recording Municial Inspection All Information reverb added, I don't think there are many people on the planet who could tell the difference between that and a 16-bit linear recording. As I see it, the fact that you get four tracks of subjectively pristine audio to which you can lock a sequencer without using up a track for timecode provides a

viable, reliable and archivable alternative to an integrated 'MIDI + Audio' sequencer. While I'm a big fan of

While I'm a big fan of such integrated systems, I'm aware that there are limitations with some budget audio sequencers based around low-cost PC

soundcards or Power Mac audio circuitry. You never really know how many tracks you can use until you try it, and even then the number may change as your drive fills up, or you're subjected to track playback limitations while overdubbing. Even if your system functions perfectly, you still have to decide how to archive your work when the disk drive is full. I'm the first to jump on manufacturers for presenting us with half-finished software, but being realistic, it's unreasonable to expect professional reliability, usability and audio quality from a package that costs less than the VAT on the gear the real pros are using.

One of the many good things about my job is the sense of perspective you obtain from trying lots of different products, and you soon surmise that what you need most is quality and reliability — not gimmicks. To make a good recording, you need an accurate, reliable recording/mixing system, a MIDI sequencer with a few well chosen modules, a really good mic or two, and a first-class reverb unit; everything else is optional. And at the end of the day, it's more productive to have a relatively simple system that works than a complex system that doesn't!

Paul White Editor

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Crosstalk

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Lowering the tone

Regarding the mention of low-level tones in Derek Johnson's Yamaha SY85 letter reply, in Crosstalk back in the February 1996 issue of *Sound On Sound*: I have experienced similar tones on my SY85 and have found this to be due to the metronome volume control on the rear panel being set to maximum. Once the level is reduced, the tones disappear.

Now, a question: I would like to expand the non-volatile memory on my SY85 — do you know if suitable memory cartridges are still available? I would prefer this to SIMMs when playing live to avoid having to reload — after a power failure, for example.

Steve Smith

via the Internet

Derek Johnson replies: Thanks for the pointer about the output noise: I checked my SY85 again, and when the metronome level control is cranked, it does indeed produce the noise described. I hadn't noticed it before because I don't often sequence with the SY85 alone, and when I do, I have the metronome at a low level until the sequence has some shape, at which point I turn it off.

The only way to add non-volatile sample memory (memory that retains its contents on power down) is by using one or two of Yamaha's 0.5Mb SYEMB06 boards, which are still available, priced at £130 each. The other way to up the sample RAM is by adding (volatile) SIMMs; Yamaha originally specified, and could supply, 2Mb of RAM, but apparently it is possible to add higher-capacity SIMMs, providing they are of sufficient speed and quality (low quality SIMMs can cause unwanted noise). About 18 months ago, Yamaha promoted an 8Mb board, available from SIMMs International (0181 870 4020) which can still be obtained for around £105 including VAT.

The obvious problem here is that large sample RAM configurations involve rather a lot of time and work. The blame goes both to MIDI Sample Dump Standard, which is cripplingly slow, and Yamaha, who only saw fit to include a double-density floppy drive and no SCSI options with the SY85. The result, if you have an SY85 full of samples and sequences, is that you'll need to save your work on several disks. This also takes rather a long time — some of my work is split across four floppies — and is not ideal for gigs, especially if you have a crash mid-set. If you've got a stable power supply, and plenty of time to set up beforehand, this could be a solution, though.

One point worth noting about multiple-disk SY85 'All' files: it's not possible to save over such a file once it's been saved. A small software bug means that if you add samples or make changes to sounds and sequences, you'll have to erase your 'All' file, and re-save it. At this stage, Yamaha are unlikely to fix this particular bug, so it's best to be aware of the problem rather than panicking when you first encounter it.

On a sad note, we've just heard that the popular SY85 has finally been discontinued, after an incredible run of nearly four years.

Not the right vintage

Following your review of Akai's SG01v Vintage sound module in the February issue, I began to save my pennies towards the purchase of one. As your review suggested, I was very happy indeed with the range of timbres and the editing facilities offered on the front panel.

However, what your review failed to communicate was that 90% of the instrument can only be edited over MIDI. When you turn the machine on, it defaults to Multi mode — but there's no way of turning off the channels not required from the front panel — very frustrating indeed. In fact, there's no real help at all from the manual on how to implement control unless you have a degree in MIDI — I had to speak to Akai. Ed Morris there was most polite and helpful, although he confirmed my worst expectations, advising me to send in a formatted ST disk as he was in the

the most popular sequencers with the machine.

I would appreciate your comments on the above. John Darsley Suffolk

Paul White replies: My review pointed out quite clearly that the Akai SGOIv was essentially a very simple unit with just a couple of tweakable parameters per preset, but that it could be edited in much greater depth by those willing to use MIDI controller information. Editing via controller information is a lot easier than using only SysEx (as some other units do), and controller faders can be created in sequencer programs such as Cubase or Logic; Ed Morris at Akai has created Cubase mixer maps for Atari and Mac, which he'll be happy to let you have in exchange for a blank floppy wrapped in fan mail (plus a stamped, addressed jiffy



process of compiling *Cubase* mixer maps which weren't quite ready. I thank Ed for his help.

However, I am in the middle of an album (for which I have received an advance), and bought the module to help finish it. I cannot use it multitimbrally, and even when used in Single mode, program changes seem only to be accepted on MIDI Channel 1 — another minor setback!

In the past, I've always regarded your appraisals of equipment as the best and I must say, I was not disappointed with the Akai's sounds. However, I do feel you should have pointed out these shortcomings more clearly, as I bought it on your recommendation (I sold my SH01 to make a place for it, too). I can't help it — I do feel let down. Maybe your power could make Akai improve their system, or at least send a user disk for

bag). Ultimately, the SGO1v is a very cheap unit capable of behaving as a whole rack of analogue polysynths, and bearing in mind the good sounds it provides, I stand very firmly by my view that it offers excellent value.

On the subject of Single and Multi modes, it isn't surprising that you can't switch off unwanted parts in Multi mode using the front panel buttons - there are lots of far more expensive machines that have the same limitation, though you can do the required switching via MIDI using Ed's Cubase map. Anyone making extensive use of multitimbral modules would usually employ a multi-port MIDI interface so that each instrument has its own port, but if you're working with a single MIDI port, I can appreciate your predicament. Having multiple MIDI ports would also get around the restriction you mention, that in Single mode, the unit only accepts program changes on MIDI channel 1. Q

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Crosstalk

Filter Friction

Paul Ward's review of the Waldorf Miniworks 4-Pole analogue filter, in the June isssue of SOS, makes some points which I felt needed addressing.

He calls the user interface "awkward and tedious to programme with". However, Paul Nagle, in his review of the Waldorf Pulse in SOS February 1996, says "overall navigation is both simple and effective" and "fortunately, programming is a breeze". The Pulse uses exactly the same editing system! In fact, the 4-Pole is even more straightforward, with only 22 parameters available, rather than the 55 on the Pulse. Also, as Paul Nagle says, the provision of both 'jump' and 'relative' modes for the knobs is "excellent"! Obviously, you can't please all the people all the time, but I think most people would prefer some hands-on knobs to an LCD cursor increment/decrement system, given the choice.

External power supplies are constantly criticised, as in this review (incidentally, the production version of the 4-Pole comes with a UK-style plug) but how inconvenient do people really find them? Obviously, they're not ideal in a live situation, but the vast majority of these will be used in a permanent studio installation. A straw poll of our sales team revealed that virtually no customers enquire as to whether a unit has an external PSU before purchasing.

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External power supplies make products far cheaper to manufacture, particularly those that will be sold in smaller numbers than the latest Japanese keyboard. If a unit has an internal PSU, several different versions must be made for different parts of the the world, and a lot more must be spent on internal RF shielding. Finally, PSU failure is probably the most common fault on any hi-tech equipment; it is extremely easy to replace an external PSU (even from an ordinary electr.cal retailer in an emergency), whereas a unit will often have to be sent away for repair if there is an internal fault.

Otherwise, thanks very much for a very positive review on the rest of the 4-Pole's features. I'm glad Mr Ward enjoyed the results! Rupert Pfaff

Sales Director, Turnkey

Paul Ward replies: Many thanks to Rupert for his comments. It's always gratifying to get feedback from readers, especially when they have a large part to play in the provision of the equipment we use!

With regard to the 4-Pole's user interface, I have to stick to my original comments in the review. I found the method of programming clumsy and hard work. I cannot comment on the Waldorf Pulse, since I have yet to lay my hands on one. Neither can I pass any judgement on Paul Nagle's review, except to say that if the system works for him, that's fair enough. [While SOS always uses reviewers with the right background for reviewing a given piece of equipment, it's inevitable that individual writers, who are also musicians, will display personal preferences in their reviews — Ed.]

I'd agree that most people would prefer some

hands-on knobs to an LCD screen and a pair of inc/dec buttons — I am amongst those people! But when I reach for a knob on my old analogue synths, I can expect to get the same result each time I turn it, rather than constantly having to check (and potentially re-define) the knob's function before I do so. And a large LCD is arguably preferable to a two-character LED in any case!

As to external PSUs, most people are familiar with the reasons for their existence, and maybe we accept those reasons, but it doesn't mean that we have to like them. They remain a necessary evil. If Rupert would like a user's point of view he can talk to any of the musicians I regularly work with and ask their opinion — at least the answers will be short!

Personally I do ask whether a particular piece of equipment has an external PSU before I buy it. I'd rather pay a little more for an equivalent piece of gear with an internal PSU, but I don't usually have that choice. The PSU may not stop me from buying, but it certainly scores a big minus if I'm comparing closely-priced items. I also accept that external PSUs are less of a problem in a studio environment — but have you ever tried to plug a PSU into a studio's rackmounting mains board? Finally, if external PSUs have so many practical advantages, it remains a mystery as to why they are mostly to be found attached to budget gear.

In closing, I'd confirm that the Waldorf 4-Pole makes some excellent sounds, and the control features are exemplary. If I was in the market for such a device, I'd have to weigh these pluses against the minuses mentioned above. As a reviewer, it's my job to point out both sides of the equation, but in the end it falls to the individual buyer to determine the result.



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via our famous rotating input/output "pod." In minutes you can switch the CR1604-VLZ between ultra-compact 8-rack space configuration with pod to back 1. rackmount jacks-totop or tableton jacks-to-back 1 Optional RotoPod-VLZ bracket places input/ output jacks on same plane as the controls (tabletop 0 or rackmount (3).

MONO OUTPUT (bal./ unbal.) has separate level control.

RCA TAPE inputs and outputs. (unbalanced).

Separate CONTROL ROOM OUTPUT (bal./unbal.).

DIRECT DUTPUTS

(bal./unbal.) channels 1-8.

SUBMASTER **DUTPUTS** (bal./unbal.).

0000000

16 STUDIO-GRADE MIC PREAMPS means the new CR1604-VLZ

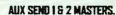
actually costs less than our classic CR-1604 & XLR10 expander combination!

VLZ (Very Low Impedance) CIRCUITRY developed for our 8. Bus consoles, further reduces noise and crosstalk in critical signal path areas.

MCKIE

STEEL main chassis. SEALED rotary controls

SOLIO



Stereo AUX RETURNS 1 & 2 with 20dB gainabove Unity for boosting weak effects.

EFFECTS TO MONITORS controls fold Aux Return 1 & 2 back into Aux Sends 1 & 2 so that on-stage performers can hear effects.

AUX SENO 1 & 2 SOLD switches with LEDs.

Stereo AUX RETURNS 3 & 4.

Aux Return 3 ASSIGN SWITCHES to Main Mix, Subs 1 & 2 or Subs 3 & 4.

> Aux Return 4 ASSIGN to Control Rm/Phones.

CONTROL ROOM/PHONES level control.

TAPE INPUT LEVEL control and TAPE TO MAIN MIX switch.

SWITCHING MATRIX. This fantastic creative feature lets you route any combination of Tape, Subs 1 & 2, Subs 3 & 4 or Main Mix to Control Room/Phones bus. Lets you

create custom headphone or broadcast mixes, monitor 2-track output or route a cue/click track to phones, create a second stereo main output with its own level control & more (covered in the

extensive manual). Global SOLO level control. Global AFL/PFL SOLD switch.

SUB ASSIGN to Left or Right Main Mix.

MAIN FADER. BNC

lamp socket. Global AUX RETURN SOLO with LED.

LED METERS with -30 to +28 range & LEVEL SET LED.

RUDE SOLD LED HEAD-PHONE

output 60mm MASTER log-taper faders

BUILT-IN power supply

PHAN-TOM Power switch

> Pre-fader INSERT on every ch.



9 9

9 0



Mackie Designs Inc. = USA = Represented in the UK by Key Audio Sys<mark>tems Ltd.</mark> ■ Robjohns Road = Chelmsford = CMI 3AG = Essex = **©**01245_344001 = ©01245<mark>_344002</mark>

shape of things to come

MOTU: it's about time(piece)

he ad-spotters amongst you will have noticed that Mark of the Unicorn have started to promote something called the MIDI Time Piece AV. This replacement for the popular MTP II MIDI

interface adds a host of new features to the MTP format while remaining compatible with both the MTPH and the original MTP. Essentially an 8-in/8-out MIDI interface for Macintosh and Windows 3.1x/95 computers, the MTP AV also offers a wide range of synchronisation options. You don't even need to have a computer attached, since the MTP AV will work as a stand-alone unit, and can be programmed from the front panel. Apart from being able to merge or route any MIDI Ins to any MIDI Outs, with comprehensive processing, and convert between a variety of

different sync standards (SMPTE, wordclock, ADAT, Digidesign Superclock and MTC), the MTP AV, like the MTP II before it, can be networked — two units with Windows and up to four with the Mac, with a total of 512 independent MIDI channels in the latter instance. The MTP AV is due imminently and is set to retail at £649 including VAT.

- Musictrack, PO Box 4, Arlesey, Beds SG15 6AA.
- 1 01462 733310.
- F 01462 733390.

caught in the net

FREE WEB SPACE? SOUNDS GOOD!

CD mastering and manufacturing specialists Sounds Good are offering SOS readers a little extra incentive to use their services: anyone who places an order worth more than £500 plus VAT with them (which is about the cost of 300 or more CDs or around 500 cassettes) will qualify for free web space on Sounds Good's website. The space will be maintained for a whole year, and Sounds Good suggest that it could be used as a band 'home' page, with enough room for a picture of a CD or cassette cover, a few words describing the music, and possibly gig dates. A band or artist could then use the site address (which would be www.sounds-good.co.uk/band-name) in their publicity. Note that your order must include printing from Sounds Good to qualify. The company are also enhancing their web site with a complete CD and cassette FAQ (Frequently Asked Questions) section.

- Sounds Good Ltd, 12 Chiltern Enterprise Centre, Station Road, Theale, Berkshire RG7 4AA.
- W www.sounds-good.co.uk

WIZARD WEB SITE

Studio design specialists The Studio Wizard Organisation now have a presence on the Internet. Apart from supplying company information, the site will feature pages devoted to analogue tape machine line-up and recording tips. Studio Wizard can provide a studio design and building package to suit any requirements or budget, as well as offering training and debugging into the bargain.

W http://www.paston.co.uk/ studio.wizard/homepage.html

BLUE ATTACK THE NET

Blue Systems, UK distributors of the Syntecno TeeBee analogue synth module reviewed in SOS's July 1996 issue, have a web site under construction. The site will enable the company, which is also a general audio retailer, to keep in touch with customers and provide on-line tech support, product info and new product news.

W http://www.bluesystems.com

DANCE ON TAP

Tag Records, a "major independent music retailer specialising in dance labels", has just established an electronic mail order service on the Internet, in conjunction with Internet provider Direct Connection. The site also has links to record label pages, artist home pages, and sites giving info on musical equipment.

W http://www.tagrecords.co.uk

TANNOY TUNE UP HOME PAGE

Speaker specialists Tannoy Professional, who have had a presence on the net for some time, have recently completed a major upgrade of their web site. The site contains even more company and product information — the full range is illustrated with text, technical spec and pictures, and if you want hints of future Tannoy products, this is the place to look. Other features include an 'Opportunities with Tannoy' job page, service info, and an enquiry service.

W http://www.tannoy.com

WEB ADS FROM MUSIC NETWORK

Established web site Music Network has launched two new services, Music Network Unsigned and Music Network Classified. Both

services are self-explanatory: the first offers unsigned bands the chance to place audio clips and band info on the net. The service is being "actively promoted" to A&R departments around the world, and costs from £80 for six months. Music Network Classified is a service whereby musicians, singers, producers, DJs — anyone — can post an ad, including text, graphics and audio, from £70 a month. The main Music Network site also contains many links to music-related sites and on-line magazines.

W http://www.music-network.com/unsigned
W http://www.music-network.com/classifieds

RANE WARE ON THE NET

Signal-processing specialists Rane can now be found on the web; point your browser at their web site for full product specifications and 'how to use' sheets for their latest gear. Interestingly, Rane's site was set up by N2K (Need to Know), the new media entertainment company founded by musician/composer Dave Grusin and Larry Rosen.

W http://www.rane.com

SURREY STUDIO GOES GLOBAL

It seems that everyone's going on line, and Surrey Sound Studios, based in Leatherhead, are joining them. The studio, which is celebrating its 25th anniversary this year, has a site equipped with details of its facilities, gear list, and even travel directions for clients. Further enhancements are due in the near future

w http://www.demon.co.uk/studiobase/ studios/surrey

NEW SADIE SITE

Studio Audio & Video Ltd, the Cambridgeshirebased manufacturers of the PC-based SADIE digital editing system, now have an official web SOS can be reached on CompuServe; our email address is 100517,1113.

Our full Internet address is 100517.1113@compuserve.com.

Overture settles the score

pcode's professional notation package, *Overture* (reviewed on its launch in *SOS* December 1994), is being upgraded to version 1.2. New features include:

- Addressing and playback of QuickTime Musical Instruments.
- General MIDI names now accepted.
- Faster operation, with option-dragging for copying chords, crescendos, dynamics, text, etc.
- One-step grace-note transform
- New dynamics palette
- Support for nested tuplets.

Overture is OMS-compatible and offers complete MIDI playback of all dynamics, repeats and endings, while its piano roll editor allows graphic editing of a performance using the Strip Chart, which enables the user to add performance

nuances that a notated score can't show. The program's new features, according to Opcode, make working with large, intricate scores faster and easier, and were beta tested by professionals working on major orchestral scores for films such as *The Rock*.

Overture version 1.2 costs £234 including VAT. The upgrade from version 1.1 is available for £5 to all registered 1.1 users, or for £50 to users of versions below 1.1.

- MCMXCIX, 9 Hatton Street, London NW8 8PR.
- **1** 0171 723 7221.
- 0171 262 8215.

presence. The site offers a discussion forum, product and user news, photos, and links to SADIE HOs around the world.

W http://www.sadie.com

ON-LINE CHAT PROMPTS LONDON LINKUP

Acoustic design and construction company AVD got its latest contract via the Internet. AVD director Mike Thorpe was in a 'chat room', discussing sound design with someone in LA, when Bill Padley of Wise Buddah Productions came on line. Wise Buddah, long-term readers will remember, is the radio production company owned by BBC Radio 1 jock Mark Goodier, Jeff Smith, and Padley (see feature back in SOS December 1994). Thorpe and Padley struck up a conversation, realised they were both in London, and within a



month, were working together. The result is a new, three-studio suite crammed into what is described as "not the biggest place in the world". Wise Buddah now have a multi-purpose studio for radio production, music recording and audio to picture work, a DJ suite and a voice-over room. Who says the Internet isn't good for business?

W http://www.avdco.com



here's lots of news this month on the software plug-in front from Unity Audio. First up is the announcement of Arboretum's *Hyperprism PPC*, a Power Mac native version of the *Hyperprism* real-time

a Power Mac native version of the *Hyperprism* real-time signal-processing tool. *PPC* offers 21 effects, including:

- Reverb
- Pitch-shifting and timestretching
- Modulation
- · Stereo enhancers
- Delay effects
- · Sweepable resonant filters

It supports 11, 22 and 44kHz sample rates and 8- or 16-bit files, and doesn't require additional audio hardware to operate, working instead with the Power Mac's own hardware via Sound Manager. For those who have audio cards such as Digidesign's Audiomedia II and III, Hyperprism PPC is, naturally, compatible with them.

Hyperprism PPC can process sound files from disk, and also offers two new reverb algorithms: mouse movements control reverb time and wet/dry effects mix, for intuitive operation. Other features include

Hyperprism's trademarked Blue Window interface, which offers hands-on, real-time control over parameter changes, and extra online settings with user access to a library of processing presets. Hyperprism PPC costs £265.55 including VAT.

Unity are also announcing the IQ Intelligent Equalizer plug-in for TDM systems. This new software undertakes the amazing task of automatically learning the sonic spectrum of a track, then constructing a complex filter which can match the spectrum of another take to the previously-learned take. Unity suggest that it could be used, for example, to make a new vocal track match the tonal characteristic of an older vocal track. The IQ also has a manual mode, where filter curves can be drawn in by hand, and its filters are not restricted in any way by parametric or shelving limitations. According to Unity Audio, the software is transparent and will not introduce any coloration. It's PCI-compatible and costs a fairly hefty £822.50 including VAT.

GRM have also announced a PCI-compatible GRM Tools Volume 2 (TDM), with effects including Band-pass filters, Multitap Delays, Time Freeze, and Pitch Shift. UK retail is £305.50 including VAT.

Finally, there are also a few upgrades on the way: the entire Antares (formerly Jupiter Systems) range of plug-ins, including the MDT multiband dynamics tool, JVP voice processor and SST spectral shaping tool, is now PCI-compatible; free updates are now available for GRM Tools TDM Volume 1; and a version 1.1.2 upgrade is on offer for the original 1.0.1 Hyperprism. This adds nine new plug-in effects, is compatible with Logic Audio 2.5 and Studio Vision 3.0, and costs £176.25 including VAT.

- A Unity Audio Ltd, Upper Wheeler House, Colliers End, Herts SG11 1ET.
- 01920 822890.
- F 01920 822892.

shape of things to come

Rocky Mountain Traders market a relatively inexpensive CD labelling system (around £95) that produces ssional-looking results. The PressIT system consists of an applicator which applies special circular adhesive labels to the CD. positioned via a central piston so that labels always come out correctly positioned. Also included in the kit are Mac and PC software templates for printing on the labels nd 100 blank labels

0171 631 0707. UK order Freephone 0500 026103.

As of the 1st September, Arbiter Music Technology will be distributing the dbx e of audio products in the UK. 0181 202 1199.

Joemeek, makers of the popular range of Joemeek processors (see review of the Stereo Compressor in the last issue of SOS) and hire oany Studiohire have made a useful new arrangement, whereby Studiohire will be offering a "try before you buy" deal on Joemeek products. Prospective customers can now try out the equipment in their own studio environment and can then either purchase the unit or pay a special discount one-day rental arge if the unit is to be returned. Paul Tattersall 0171 431 0212.

If you read Paul White's review of the Syquest EZ 135Mb removable SCSI hard drive in our July Issue and liked what you read, you'll be extremely pleased to hear that it's now retailing for just £105 plus delivery, rather than the £193 quoted at the time of the review. A bit of a deal, we're sure you'll agree 0131 339 2022.

magic have released v2.6 of Logic Audio for the Macintosh. The major addition to the program is the introduction of the Time Machine II, created in close co-operation with a company called Prosoniq, who have many years of experience in programming high quality DSP algorithms. Added to the familiar pitch-shifting and timestretching functions available with the original Time Machine is formant-shifting, the ability to manipulate the harmonic characteristics of audio material — both mono and stereo. This means that tricks such as changing the apparent sex of a singing voice are now possible from within Logic Audio. The redesigned interface of the Time Machine

Il controls the manipulation of formants on a vertical scale representing Timbre, with gradations ranging from Dark to Bright. The desired values for Timbre, along with those for the Time and Pitch axis, can be entered either numerically or by moving Logic Audio's familiar

'ball in a 3D environment'. There are various algorithms available to shape the timbre of the harmonic shift, including two presets for the treatment of complex material such as a complete mix, and two for the treatment of simpler monophonic material, such as voices.

Emagic have also announced ZAP, a zeroloss audio packer for Macintosh and PC. This stand-alone utility allows users of any digital audio application to archive their work using loss-free compression — depending on the audio material, files can be compressed up to 50%. When the compressed files are expanded, the original audio data are restored with bit accuracy – no distortion, or frequency or phase deviations. Emagic claim that there is currently no application available that can successfully perform this task without coloring and changing the audio in some way. ZAP should be available as you read this, and costs just £99 probably well worth it in terms of hard disk space

A Sound Technology, Letchworth Point, Letchworth, Herts SG6 IND. 01462 480000. 01462 480800. W http://www. soundtech.co.uk

.....

eading PC sequencer line Cakewalk is feeling the benefit of a major new upgrade to version 5.0, across all the packages in the range. Highlights of the new feature set include:

• Multitrack digital audio: Cakewalk Pro Audio can now record and edit unlimited tracks of CD-quality digital audio (hardware dependent), with Cakewalk

Professional/Cakewalk Home Studio offering four tracks of audio and Cakewalk Song Station two. Audio features include VU

meters: variable sampling rates from 11kHz; audio scrubbing and cut/copy/paste: splitting/combining of audio clips; and mixdown of multiple tracks simultaneously. Cakewalk Pro Audio/Professional/Home Studio also feature a 10-band graphic EQ, while more advanced editing features such as groove quantise, audio-to-MIDI/MIDI-toaudio, and remove silence are featured only in Cakewalk Pro Audio.

· Enhanced notation in Pro Audio/Professional/Home Studio, including Plug and Play, the Roland RAP10 (mono) and the Ensoniq Soundscape (Windows 95 only).

- · Multiple Undo/Redo, with retracing of steps up to 128 editing commands.
- · Cakewalk Techniques, tutorial movies with narration and moving screens to help you learn to use the program more easily.
- The Virtual Jukebox, an interactive Windows music player which lets the user create set lists of music to play back automatically.

These are just some of the new v5.0 features - there are too many for us to list them all, so contact Et Cetera for full details. We've just room to print the all-important prices, though: the top-of-the-range Cakewalk Pro Audio Deluxe will set you back £379 including VAT: Pro Audio costs £329: Song Station weighs in at just £69. Pro Audio Deluxe and Song Station are available on CD-ROM only, while the other packages in the range come on CD-ROM and 3.5-inch floppy. are included with all packages.

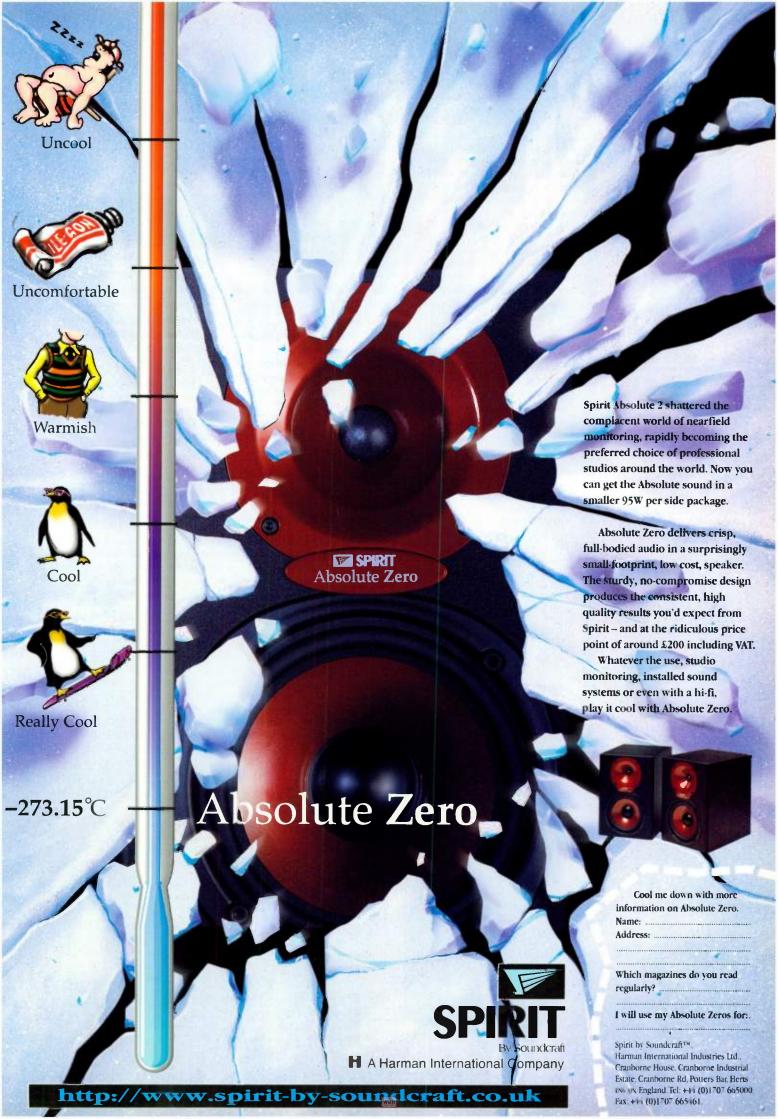
Cakewalk Professional is priced at £199; Home Studio costs £99; and the entry-level Cakewalk Note that both Windows 3.1x and '95 versions

- A Et Cetera Distribution. Unit 15, Hardmans Business Centre, Rawtenstall, rosendale Lancs BB4 6HH.
- 01706 228039.
- 01706 222989.



the ability to insert, edit and print guitar chord grids, hairpins, pedal markings, expression text, and lyrics.

- · An improved Track view which allows more intuitive creation and editing of music clips, plus custom names and colours for MIDI and audio clip display.
- · Expanded hardware support: in addition to Digidesign's Session 8 and DAL's CardD Plus, Cakewalk Pro Audio now adds support for Digidesign's Audiomedia III PCI card and Soundscape's SSHDR1 hard disk recording system, plus the Advanced Gravis



shape of things to come



power tester to their range of Easy Inline audio accessories, distributed by PSP Electronics. This robust and compact unit provides an easy way of identifying problems in mic leads or mixing desk channels. The box simply plugs into an XLR socket and gives an immediate visual indication of the state of the 48V power supply, via three coloured LEDs. If all light, the phantom power is OK; if one or more falls to light, this indicates a fault, the exact source of which can be pinpointed by checking the channel from the mic lead back to the mixing desk. The AEI-PHT-100 costs £34.35 Inc VAT.

7 PSP Electronics 0181 903 9061.

UK C-Lab representatives Digital Media have a new sales office in Islington, North London. The new office is now the point of contact for dealer sales and all support-related queries - and the previous telephone and fax number should not be used, particularly the 01422 (Halifax) number, which is no longer answered by a company representative. Digital Media also distribute the Terratec Maestro PC soundcard in the UK, and tell us that this autumn will see the launch of a professional PC card with digital I/O and sample RAM from Terratec, There's a MIDI ST card for the PC from C-Lab, makers of the Faicon computer, on the way too.

A Digital Media Ltd,
Adelaide House, 383-385
Liverpool Road, Islington,
London N1 1NP.

0171 607 2727.

SOS can be reached on CompuServe; our e-mail address is 100517,1113.

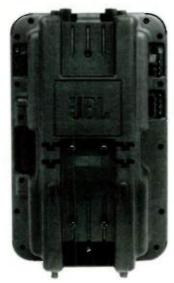
Our full Internet address is 100517.1113@ compuserve.com.

Expanding **Eon**

hen the JBL Eon PA range was launched, it was greeted with enthusiasm by both press and live musicians. Now JBL are expanding the Eon line with a keyboard combo, a smaller and lighter complete PA system, and a three-model series of performance mics.

 The Eon 15PAK system is made specifically for small, keyboardbased combos playing in clubs and lounges. It's a one-enclosure system, with a built-in mixer and a bi-amped 15-inch woofer with HF







horn and driver. The system comes with a JBL E50S mic and all the necessary cables.

- The Eon Power10 is a very small, very lightweight system comprising two powered 10-inch, bi-amped, 2-way speakers, a JBL MusicMix mixer, and two E50S performance mics.
- Finally, the Eon Performance series of dynamic mics consists of

the M50S, M70S, and M90S, with cardioid polar patterns, rugged construction, large pop/wind filter, and rubberised shock ring. Prices have yet to be set for all the additions to the Eon range.

- A Harman Audio,
 Unit 2, Borehamwood
 Industrial Park, Rowley Lane,
 Borehamwood, Herts WD6 5PZ.
- 0181 207 5050.
- **I** 0181 207 4572.

educationcorner

MUSIC'S POPULAR AT NORFOLK CAT

King's Lynn-based Norfolk College of Arts & Technology is establishing a centre for music-based courses in East Anglia. The college is already running a BTEC National Diploma in Popular Music, and will be adding a range of specialist modules, including Music Technology and Recording Techniques, as part time/evening courses from September this year.

- A Coatbridge College, Kildonan Street, Coatbridge ML5 31A.
- T 01553 761144, ext 271.
- F 01553 764902.

ALCHEMEA GOES OVERSEAS

Audio engineering college Alchemea is opening a new college in Milan this September. The new Italian facility will initially have three control rooms (two 16-track and one 24-track), three live recording areas and several MIDI and digital audio workstations. The school will base its course on the pattern set in London: a limited number of students, with a minimum of 40 hours individual practical time per week. Full- and part-time courses will be available.

Back in London, Alchemea's fourth studio is nearing completion; the room has been designed for surround-sound mixing, and will be equipped with a Yamaha 02R with surround panning, 16 tracks of Tascam DA88, TC Electronics M5000, a Spectral Prisma digital audio workstation, timecode DAT, and picture sync facilities. The studio will be used on the college's new post-production course.

- Alchemea London, The Windsor Centre, 2-18 Britannia Row, London N1 8QH.
- 0171 359 4035.
- F 0171 359 4027.
- Alchemea Milan, Via Stendahl 47, Milano, Italy.
- +39 10 362 9404.
- +39 10 585 617
- E 01645.1103@compuserve.com



N-ticing synths from Korg

org are launching a new generation of workstation synths, the N-series. The two models currently in the range, the 76-key N264 and the 61-key N364 (which wacky imagination was let loose on those names?), both feature almost 1000 Al2 sounds and 64-note polyphony, plus:

 Full-featured 16-track, 32,000-event sequencer, supporting Standard MIDI Files and General MIDI.

- Real-time Pattern Play and Record, so you can record and save musical phrases as patterns, asssign them to keys, then play them back with a single keypress.
 Up to 100 such patterns can be stored.
- Arpeggiator with a four-octave range and five patterns (Up, Down, Alternate 1, Alternate 2, and Random).
- Two programmable stereo digital multieffects with 47 effect types.
- Floppy drive for saving sounds and sequences.

The N264 is set to retail at £1499, while the N364 will cost £1299. As ever, stay tuned for SOS reviews.

- Korg UK Ltd, 9 Newmarket Court, Kingston, Milton Keynes MK10 OAU.
- Brochure Line 01908 857150.
- 01908 857199.

MIDLAND MUSIC AT CLARENDON COLLEGE

Students on Clarendon College's BTEC National Diploma in Pop Music have won three paid residencies as a result of the so-called 'Cotgrave Connection' gig, held on June 27. The event, jointly run by Clarendon and Cotgrave Youth Club and featuring five bands, attracted a 400-strong audience. Clarendon's BTEC course has been running for two years, and its success has led the college to introduce a follow-up foundation level course — the one-year Diploma in Popular Music, due to start in September, is designed for students who want a basic grounding in practical and theoretical music skills. It's ideal for musicians with no formal background but who want to improve their performance skills and learn a bit more about the music industry.

- A Clarendon College, Pelham Avenue, Mansfield Road, Nottingham NGS 1AL.
- T 0115 960 7201.
- 0115 960 3382.
- E enquiries@clarendon.ac.uk
- W http://www.clarendon.ac.uk/

SCOTS DIPLOMA DOES THE BUSINESS

Jewel & Esk Valley College in Edinburgh has expanded its range of music courses to include a one-year Advanced Diploma in Music Industry Business, at post-HND level. The new course joins, and complements, the college's HNC/D in Modern Musiciansnip, Advanced Diploma in Film and TV Music, HND in Video and TV, and HND in Interactive Multimedia. Industry figures have been brought in as consultants, including Simple Minds manager Bruce Findlay and Sony Publishing's Blair McDonald, and the course is aimed at people within the industry as well as newcomers; industry folk could take the course on a part-time basis, or select specific modules in order to update qualifications

- ▲ Jewel & Esk Valley College, 24 Milton Road East, Edinburgh EH14 2PP.
- 0131 657 7383.
- F 0131 657 2276.

SAE GOES GREEN WITH FOCUSRITE

The School of Audio Engineering — see feature on SAE's 20th anniversary on page 42 of this issue — continues to ensure that its



students are taught on the latest equipment: the school has recently purchased Focusrite's new Green range of signal processors for its schools in Europe, Australasia and the UK. The range includes the Dual Mic Preamp, Focus EQ, and Voicebox, and has been designed to offer Focusrite's well-known sonic and constructional quality at a more accessible price (see item in SOS's June 1996's news pages for more details).

- School of Audio Engineering, United House, North Road, London N7 9DP.
- 1 0171 609 2653.
- F 0171 609 6944.
- 1 Focusrite 01628 819456.

CROYDON INTRODUCES MULTIMEDIA

Croydon College is starting a part-time introductory evening course in multimedia production techniques this September. Each session will be limited to six students, and comprises three independent terms costing £140 each (no concessions); the goal is a College Certificate.

- ▲ Croydon College, Fairfield, College Road, Croydon CR9 1DX.
- 0181 686 5700.
- F 0181 760 5880.
- E phud@cix.compulink.co.uk

shape of things to come

cardioid, figure of eight, and six

switchable nolar patterns tonini.

positions in between), a 2-position high-pass filter (6db or 12db of cut at 125Hz), and a switchable pad (-10dB/-20dB) the Classic is very flexible. According to distributors HHB, it also exhibits "the smooth, warm sound that only the best highend valve mic designs can deliver". yet at £1174 it's priced within reach of the serious project studio owner, as well as the professional studio. The Classic is cased in hand-crafted solid brass with a nickel finish, and internal shock mounting for the valve and capsule help eliminate lowfrequency rumble and vibration. All mics are supplied in a flightcase with windshield and stand mount. You can bet that editor Paul White will want to get his hands on this ASAP, so watch out for a review very soon!

- HHB Communications Ltd. 73-75 Scrubs Lane, London NW10 6QU.
- 0181 962 5000.
- F 0181 962 5050.
- sales@hhb.co.uk

in the UK in the shape of the Rode Classic valve mic. The amp stage of the Classic is based around the vintage 6072 valve. Though these components have been out of production for more than 15 years, the discovery of a hidden stock

of them has allowed a full production

run of the Classic. With nine

he NT2 condenser mic from

(see review in the June 1995

issue of SOS) now has some company

Australian manufacturer Rode

endezvous '96, the third International Jean-Michel Jarre convention presented by Rendezvous (the JMJ fanzine), is due to take place on Sunday, September 1 at the Guild Hall, Aston University, Birmingham. The day promises an exhibition of specially-selected JMJ merchandise, O&A sessions, a video show with rare concert footage and interviews, an auction of rare records and merchandise (proceeds to UNESCO - JMJ is

a Goodwill Ambassador of this organisation), plus

an exclusive prize draw — everyone attending will be entered.

Tickets are £6 per person, or £20 for a group of people; numbers are limited, however, and are distributed on a first-come, first-served basis. Last year's event had 250 attendees, with fans coming from all over Europe.

- Dave Knight, 76 Etwall Road, Hall Green, Birmingham B28 OLE.
- 0121 693 2477.
- F 0121 693 2477.
- E davef@argonaut.com
- W http://www.netlink.co.uk/users/revmag/

ew company Exclusive Distribution's first catch is the UK distribution of Zoom Corporation effects units, and virtually their first press release to us concerns Zoom's new Studio 1204 multi-effects processor. This appears to be an enhanced, fully-programmable replacement for the 1202. retailing for an identical £199.95, yet offering even more for the money, including:

- 18-bit AD/DA convertors, with 44.1kHz sampling frequency
- 100 user and 512 preset programs.
- · Vocoder, rotary and vocal distortion effects.
- · True stereo operation.
- · Independent dual-effect operation.
- · Full programmability.

More **Zoom** in the studio

You read that correctly: full programmability, dual-channel operation and a vocoder, plus the usual reverbs, delays and choruses, for under £200. The Studio 1204 is available now, with an SOS review extremely

- A Exclusive Distibution, Unit 10, Furmston Court, Icknield Way, Letchworth, Herts SG6 1UJ.
- 01462 481148.
- 01462 481149.

MUSIC by mail

f you find yourself the victim of record stores who play it safe by stocking little more than chart albums and singles, leaving the more adventurous and interesting material in the warehouse, a new venture to be launched by HMV Records could be of interest to you. HMV Direct is a mail order service that is directly linked to HMV's database

THE WORLD'S MOST FAMOUS MUSIC STORE

N YOUR HOME

through your letter box within seven days. Simple. Central to the service is a 216-page, fullcolour, illustrated hardback catalogue that features a 'prime selection' of releases from every genre; it doesn't list everything on the database, but if you're hunting something obscure, give the HMV team a call, and if it's available, ordering it will

be just as easy. The catalogue costs f3. refundable with your first order, and will be issued every six months. Phone lines are manned from 8am to 9pm, with a message service to take enquiries at other times. Coincidentally,

HMV Direct is being launched in the company's 75th anniversary year: the first HMV store opened on July 21, 1921, in London's Oxford Street.

- that's 200,000+ records, domestic and import - and is accessible by phone, fax or post. HMV Direct is definitely not a club: there are no minimum purchases and no albums of the month. You choose the records you want, order them (adding a flat £1.50 postage and packing

fee), and they should drop

MHMVdirect

- A HMV Direct, PO Box 333, South Ruislip, Middlesex HA4 OXA.
- 0990 334578 (national rate call).
- 0181 845 1010.





GET WHAT YOU NEED AND WANT. . . AT AN Altord

In a world of keyboards and sound modules which claim to offer "every instrument sound known to man," Peavey realizes that you probably don't want, or need, all of that! The Peavey Spectrum Series sound modules are each designed to do one thing--offer specific instrument sounds you do want. The Spectrum Organ, Synth, and Bass units offer unique features and capabilities needed to produce the most realistic reproduction of its particular instrument family.

Complementing the Peavey Spectrum Series sound modules are the Spectrum Analog Filter and the PC-1600 MIDI controller--offered to make the Spectrum Series modules even more powerful. The Spectrum Analog Filter will add that fat, classic and true analog sound to whatever you plug into it. And the Peavey PC-1600 MIDI controller allows programming and controlling of any Spectrum module.

Amazing sounds, amazing simplicity, amazing flexibility, and truly amazing prices! The only thing about the Spectrum Series that is not amazing is it's from Peavey...the company dedicated to giving musicians everything they need...and want!

For complete Peavey keyboard information, pick up the latest edition of KEY ISSUES at your local Peavey dealer.







shape of things to come

Mackie making

stab at dominating the costeffective home studio and semi-pro mixer market, Mackie are moving into ancillary technology. Quite apart from the recently mooted development of a hardware user interface for Pro Tools with

power outputs into various loads, in bridged mono or 2-channel mode — from 225W per channel into 8Ω .

up to a whopping 1200W into 2Ω



Digidesign, a strange promo video and what can only politely be referred to as a turkey baster were sent our way recently, the former revealing moves into the power amp and studio monitor market. What the latter implies is anybody's guess.

Mackie's design teams (the company now has separate divisions for analogue, digital and acoustic products) are hard at work on a range of mixer and non-mixer products. The first concrete result is the FR (Fast Recovery) series of power amps. The M-1200 is a flexible amp that offers a range of

bridged mono. The amp also boasts low distortion, quiet output, and cool running, resulting from a novel air circulation design. Fully half of the M-1200's case is given over to an oversize front air intake

And about those monitors... well, they were in the video, so we guess it's not exactly secret, but you'll have to wait a while for details. Watch this space.

- A Key Audio Systems, Robjohns Road, Chelmstord, Essex CM1 3AG.
- 01245 344001.
- 01245 344002.

e're sad to report that Chichester's Institute of Higher Education had a lot of audio equipment

Crimewatch

stolen from their Studio 1 and 2 during the early hours of July 18 this year. Readers in the vicinity, or otherwise, who are offered any of this equipment in dodgy circumstances (50 quid down the pub) should contact the Institute, or Chichester Police. Contact Mike Spice or Mike Houlden at the Institute, or DC Outram at Chichester Police Station (01243 536733); quote Crime Number W11 3819 96. The stolen gear is as follows, with serial numbers where known:

Alesis Midiverb effects unit; Emu ESI32 sampler (089503812); Emu Proteus FX synth module (089506896); Emu Proteus Orchestral module (029414675); Soundcraft Power Station PA mixer (RW5193000615); Technics record deck; two Drawmer LX20 compressor (4795); Tascam DA30 DAT machine (420312); Denon CD player (207450263); Tascam 112 cassette deck (570733); Yamaha SPX90 effects (52326);

Yamaha SPX90 MkII effects (10260): Roland U110 synth module (NNO1995); Roland S330 sampler (Z979690): Azden stereo graphic EO (60720180); Akai MIDI patchbay; Roland MKS20 sampler (742703); Ibanez digital delay (305337).

- A Chichester Institute of Higher Education, College Lane, Chichester PO19 4PE.
- 01243 787911, ext 220. E 01243 536011.

Prosonix are a new company formed to manufacture and distribute a range of "cost-effective, high-quality" audio accessories. Their catalogue is free, and contains a range of products relevant to denizens of the stage or studio. New products include the B48 bantam patchbay, budget dynamic mics, and a ge of quality leads.

- A Prosonix, PO Box 32, Hailsham, East Susses BN27 3XT.
- 01323 848808.
- 01323 441185.
- 101727.213@compuserve.com

Sunrise Electronics, who have supported the Atari/C-Lab Falcon computer platform with products such as the SE600 multiple audio output interface, have released the 'Sunrise Falcon', a complete hard-disk recording system in a rackmountable case with all necessary interfaces included as standard - four separate MIDI outs, S/PDIF digital interface, eight audio ins and outs on quarter-inch lacks, and a headphone socket on the front panel. Expect a price of around £2500

01379 853999.

Futuresonic is a music and technology conference due to take place on September 17 at Backtobasics in Leeds. The event starts in the afternoon with talks, demos and events related to all angles of music, computers and clubbing, and finishes with an evening of interactive environments, sound installations, multimedia performances and live internet events — two ISDN link-ups will be on-line. Confirmed participants include Scanner, Mixmaster Morris, Matt Black (Hex/Coldcut), plus media and label representatives. The full day costs £12 (£8 concessions), and tickets are only available in advance.

01524 382292.

http://www.phreak.co.uk /haywire/futuresonic

Behringer

he fatest addition to Behringer's product line is the Eurorack MX1602 16-input rackmounting mixer. The £229 mixer is comprehensively specified, with features including:

- · Four mic/line channels and four stereo channels.
 - Two additional multi-function stereo line inputs.
 - · Two-track input assignable to mix or monitor/phones.
 - · Balanced mic inputs with 48V phantom power.
 - · EQ and pan on all channels.
 - Two aux sends on all channels, aux 1 switchable pre/post fader.
 - · Solo-In-Place and PFL on all channels and aux sends.
 - · Balanced ins and outs.
 - 60mm Panasonic faders.
 - A Specialised Studio Equipment (UK) Ltd, St Vincent House, 59 Woodbridge Road, Guildford, Surrey GU1 4RF.
 - 1 01483 458877.
 - 01483 458822.
 - 100632.1022@compuserve.com



20

SOUND ON SOUND . September 1996

Paranormal EQ

It's uncanny.

The precision and sheer musicality of Ghost's EQ will take your breath away.

Drawing on 22 years of Soundcraft experience, Ghost's new EQ is perfectly in tune with today's music.

Two fully parametric, overlapping mid bands with shelving high and low filters redefine the classic British EQ.

But there's much more.

Each channel strip benefits from its own dedicated circuit board and supports both the main input plus a mix B path



for tape or other input signals.

Ghost's flexibility

and fidelity are staggering.

The signal path quiet, true and uncompromised.
And the automated mutes, just part of



Ghost's comprehensive machine control and MIDI

implementation,

don't so much cut, as fade very quickly. There are no thumps and no clicks.

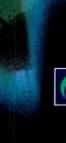
You'll hear nothing untoward from ProMic either, Ghost's microphone preamplifier boasts a better



gain to noise performance than you'd expect on consoles costing many times more.

We could go on, but to appreciate fully the ergonomic and audio integrity of Ghost you need to see and hear one in the flesh.

So call +44 (0)1707 665000 to find out more.



Soundcraft

Ghost

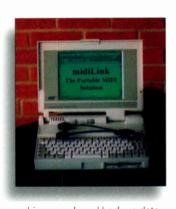
A Harman International Company

HARMAN INTERNATIONAL INDUSTRIES LTD., CRANBORNE HOUSE, CRANBORNE RD., POTTERS BAR, HERTS, ENG 3JN, ENGLAND.TEL: +44 (0) 1707 6655000 FAX: +44 (0) 1707 660482

shape of things to come

New from the

urtle Beach's CD Master II, a 2x record/4x read internal SCSI CD-R kit for PCs, is now available. At £999, the CD Master II package



archive records and back up data Turtle Beach also have a new product at the other end of the price scale. the new midiLink serial port PC MIDI interface, a 1-in, 1-out device for use with any PC running Windows 3.1x or

Windows 95. preferably with a highspeed serial port, is extremely portable, being truly pocket-sized, and is powered directly from

the PC's serial port. It's got a pocket-sized price, too: just £69 including VAT.

- Et Cetera Distribution, Unit 15. Hardmans Business Centre. Rawtenstall, rosendale Lancs BB4 6HH.
- 01706 228039.
- **I** 01706 222989.

CD MASTER IL

includes a CD-R drive, an ISA SCSI buss mastering controller card, Corel CD Creator 32-bit software, four blank CDs and a database search engine, plus installation manuals, all screws and a screwdriver! With this package, you'll be able to create multimedia CDs, audio CDs,

n-ear stage monitoring specialists Garwood Communications have introduced a new, affordable in-ear system. The System 3 consists of a 1U rackmount transmitter unit, a belt-pack receiver, and ear-pieces, and provides stereo transmission on a single UHF frequency. The receiver features on-board noise reduction and a compressor/limiter, and monitoring level is

controllable by whoever is wearing the belt-mounting unit. The transmitter features input level control and volume indicators, and has a local monitoring section so that an engineer can monitor

output from the transmitter. Connections are on XLRs and quarter-inch jacks. Garwood say the System 3 is particularly suited to bands trying in-ear

monitoring for the first time, and at £2055 including VAT, it's little more than half the cost of the acclaimed Garwood Radio Station in-ear system.

- A Garwood Communications Ltd, 136 Cricklewood Lane, London NW2 2DP. 0181 452 4635.
- F 0181 452 6974.

If you want to look at equipment we'll send you some brochures...



If you'd prefer to listen and evaluate a wide range of products by strict A/B comparison there is currently only one

Turnkey's revamped and enlarged demo facilities feature what we believe to be the world's largest digital

comparator systems for pro audio* and the only one of its type

in the U.K.

Over 70 effects processors are available for instantaneous A/B via relay switching, eliminating the repatching time which makes good comparisons so difficult. 16 pairs of studio monitors, 10 power amps, 16 mixing consoles and around 30 sources and recorders from DATs, CDs, HDRs and Multitracks are on the same matrix so you can instantly configure complete systems.

Take 8 bus consoles - hundreds are bought each year on recommendation. Bearing in mind the sums involved it's hard to believe that the opportunity to properly compare the various brands for EQ and noise has not previously been offered.

We've taken the same innovative approach to demonstrating all our products from CD Rom samples to analog synthesizers.

Most dealers will tell you which products best suit your needs. Only one can show you.





Compare 6 mics. by recording simultaneously to ADAT.





Huge range across Mac, PC and Acorn

The DR8 and DR16 recorders utilise Akai's 24-bit internal processing enabling simultaneous 8 track recording, 16 track playback (DR16 only), real-time dynamic digital mix capability and randomaccess editing, a full range of optional cards allow TC, RS422 & Biphase sync. and ADAT optical I/O. Both will record and play back on a range of SCSI devices including MO and Iomega drives.

Now the introduction of the optional graphics board, using technology from the Post Production DD1500, means you can have lightning fast graphics and smooth scrolling, without using a computer! It even adds 5 levels of undo, and track labling etc via a PC keyboard. Our special bundle prices include a rock solid

> Seagate Barracuda hard drive, MIDI board for synchronization, graphics board, colour monitor and QWERTY keyboard!



- 8/16 track record & play
- · 16 ch. programmable mix
- Full sync. facilities
- Fully file compatible with **DDI500**

DIRECT TO DISK -THE PROFESSIONAL WAY











digidesign

New ProTools III software options

ProTools III Package

- 7100/80 8/350 c/w keyboard
- 17" MultiSync Display
- · ProTools Core & 882 Interface
- 2Gbyte Barracuda Hard Disk

PowerMix[™] allows you to use the ProTools software on your PowerPC with no additional hardware or with an AudioMedia II and Session

Supports the full range of DSP plug-ins.



PRICE Roland **Roland** VS880 Digital Workstation It's an 8 track recorder (each with an additional 8 virtual tracks) and a 14ch digital mixer complete with automation. additional fx board can be added for under £350 giving RSS and SE70 type effects. The VS880 supports an internal IDE but we recommend an external SCSI drive for better performance

Audio Media III



I Gbyte AV Hard Disk

A new PCI card giving you 2 channels simultaneous record and 8 tracks of simultaneous playback. Comes with industry standard Sound Designer II software which supports DSP plug-ins.

BUNDLE £3400 Audio Media Package 7100/80 8/350 c/w Kbd. • 14" Performa + Display • Audio Media II +

ProTools Project

7100/80 16/350 dw K

ion 8 Core 4 882

Designed to provide ProTools functionality at an affordable price the Pro Tools software and

Project Audio Card gives 8 record/playback and either analogue or digital i/o.





SyQuest & IOMEGA

Removable disk drives

There was a time when hard disks were a luxury for sampler owners, but with the advent of the ultra cheap lomega Zip and Jaz drives, and the soon to be released Syquest EZ 135 drive, this has become a thing of the past. For under £200 the Zip drive ores 100Mb (94Mb formatted) on each cartridge and the EZ drive 135Mb (124Mb formatted). If you want greater capacity the Jaz's 1Gbyte will suit any large fix library and is ideal for many dedicated hard disk audio systems like the Emu Darwin or Akai DR series



IAZ

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Soundcraft

16 channel Spirit Studio

UNBEATABLE RECORDING PACKAGES!

Soundcrafts Spirit Studio desks revolutionised the project studio market when they were introduced over 5 years ago offering sound quality and features only previously found on desks several times the price. Even then they were great value for money, but because Soundcraft have recouped their R&D costs, and because of our substantial buying power, they are now available at an unbelievable price. No other desks represents such fantastic value for money, just check out the feature list:

respectively for the 16, 24 and 32 channel desks, 4 band EQ with 2 mid sweeps, 6 aux. sends, 8 true subgroups, direct outs on every channel, LED metering, fader reverse - the list is endless!

'In line' layout means 40, 56 and 72 inputs

STUDIO 16 &

STUDIO 16 8

STUDIO 24

2 x ADAT XT

*Add £499 to 24 ch. packages for 32 ch. desk

 Exemplary Build & Audio Quality.

· Spacious & Clear Layout for Easy Operation. • Up to 72 Inputs at Mixdown.

and the same

• Unbeatable Package Prices.



Whether you want to record direct to hard disk with the Fostex D80, or prefer the convenience of tapes with the Alesis ADAT XT, Turnkey has the recording package for you - we are even throwing in the looms and a pair of superb Absolute 2 Monitors!

Yamaha 02R Digital Console



The fully digital 40 input 8 bus console

with total automation and moving

faders. 4 band parametric eq and dynamics for every input and 2 comprehensive on-board fx processors with a range of reverbs, delays and other standard fx. Optional interface cards allow full digital connection of ADAT. T-DIF and AES/EBU formats for integration of MTR and hard disk systems.



DTC790 Dat Machine

We have exclusively secured a small supply of the Sony DTC790 to bring you th cheapest full size DAT machine on the market, but this is not at the expense of features: SPDIF coaxial input and optical in and out, digital and analog recording at all three sampling rates (32 kHz, 44.1 kHz, 48 kHz), as well as all the usual ID functions and a full function infra red remote control

These machines are brand new and boxed with a full twelve month warranty. Another DAT exclusive from Turnkey!





PCM-800



now before stocks are exhausted!

The definitive statement in 8 track digital machines? The Sony PCM800 is based on Tascam's DA88 but has the added advantages of balanced XLR connections and AES/EBU. Buying power makes our offer cheaper than the DA88! Limited quantities only available at this price. Buy

PRO 8 TRACK DIGITAL RECORDER



Turnkey bring you the first stocks of Sony's brand new portable, the TCD-D8.

Sturdily built with a back-lit display, the unit features 48kHz and 44.1 kHz analog and

TCD-D8 digital recording.

No other portable is available under £1499 - initial supplies will be very limited, phone now to reserve yours. The ultimate Walkman!

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- **Lexicon Reverb Quality**
- **Budget Price**
- Full 19" Rack Units
- Reflex Has Extensive Realtime MIDI



THE ULTIMATE REVERBS.

Virtually nobody in the industry would dispute that Lexicon have the best sounding reverb algorithms around - after all, they invented digital reverb! Until recently, their products were beyond the reach of the average home studio, but the Alex and Reflex have changed all that.

Both units feature the famous Lexicon reverb sound, and have a wide range of presets to cover almost any application, gated, reverse and cathedral settings are all there! In addition, there is a liberal sprinkling of delays, choruses and flanging etc. If you need MIDI control, the Reflex not only responds to patch changes, but almost any parameter can be controlled in realtime.

The Lexicon PCM70 is a legendary effects processor, and had a lifespan of over 10 years - unbelievable for hi-tech equipment. The PCM80 has taken all that the 70 was best loved for, and added state of the art audio quality, true stereo processing, amazingly detailed editing including MIDI clock control, and a card slot cards include Dual FX, Pitch FX and the Scott Martin Gershin card.

- Range of extra FX cards
- · Industry standard processor
- Ultra comprehensive editing











Sony's HRM-P5 uses the chipset as their pro studio effects series, costing over £1,000 each - the quality of effects is absolutely superb. A wide range of effects include sparkling reverbs, breathtaking modulations RRP C586 and delays, 2

as well as unique wah/filter type effects. True stereo operation, a huge display and an intuitive operating system make this a highly desirable unit even at the RRP - our exclusive deal makes it irresistable!

EQ sections,

- Top Quality Effects Processors
- Exclusive End of Line Clearance Deals

HR-GP5 **MULTI FX PROCESSOR**



Acclaimed quality multi-effects unit from Sony, brother of the HR-MP5. The same processing split further allows up to 7 effects at once with a fantastic range of reverbs, delays and more "off the wall" effects, plus a superb pre-amp section making it ideal for both studio use and guitarists. It features the same display and operating system as the MP5, so nothing could be easier to use! With our massive discount stocks won't last long, get your order in now!



JOEMEEK

COOK UP YOUR SIGNAL WITH JOEMEEK!

- All Discrete Electronics
- Ultra Fat Sound
- Easy to Set Up
- Bright Green Case!



Legendary sixties producer Joe Meek was often asked the secret of his fantastic vocal sound. It was in fact a custom made 'black box' of electronics, whose contents he would not reveal during his life. Now JOEMEEK bring his designs to life, and with knobs on!

In addition to the compressor and ultra high headroom mic amp, controls like Drive, Enhance and Q make these processors the hottest way to get your signal to tape or disc. All discreet modern components mean that superb sound quality is ensured throughout.

The range currently consists of three models: the entry level Pro Channel, mid range Voice Channel, and topped by the JOEMEEK Compressor, for some of the best compression money can buy. Check one out today!











ADAT XT



Alesis pioneered low cost digital multitrack recording with the introduction of the ADAT, and changed the face of home and professional recording. The new XT version is totally compatible with the old machines, but has numerous improvements.

The design features a die-cast chassis and has a completely redesigned transport, which rewinds and fast-forwards four times as quickly as the old machines. Also BRC style editing can be performed from the front panel with two machines, and an all new display further simplifies operation.

Turnkey are probably the most experienced suppliers of ADAT's, which coupled with our unbeatable pricing makes us the first choice for the new XT.

- Totally compatible with 'black' ADAT's.
- New 4 times speed transport design.
- Absolutely unbeatable price.

SPIRIT Folio RacPac



This excellent member of the Folio range is a sure-fire winner combining superb sound quality with a fantastic list of features: 3 Band EQ with Mid sweep, 6 auxiliary sends, high-pass filters, rackmountable (includes

Soundcraft

high-pass filters, rackmountable (includes swivelling connector field) up to 28 inputs on mixdown, 4 true sub-groups plus separate mix bus, insert points and direct outs on every channel

• 28 Inputs at Mixdown.

• 6 Auxiliary Sends.

• 4 True Subgroups.

• 3 Band EQ with Mid Sweep.



SPIRIT Folio Lite

Soundcraft

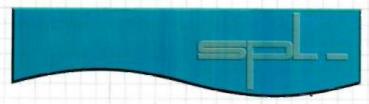
Soundcraft's Spirit Folio must have more features per square inch than any other mixer. Ideal for any small recording setup, it has up to 10 inputs including 4 mono mic/line channels (with phantom power), 4 stereo channels and 2 returns, 2 band EQ and 2 aux. sends - I switchable pre or post fade. If you need to rack it, optional ears are available.

Mego deal only at Turnkey!

- Up to 16 inputs to mix.
- 2 Aux sends, I switchable pre/post
- 4 mic amps with phantom power

EPOA NEW BOXED

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SPL Stereo Vitalizer

THE 'VITAL' PROCESSOR

The SPL Vitalization processor has long been the Rolls-Royce of enhancement effects, but with a price tag to match. The introduction of the Stereo Vitalizer using new manufacturing techniques means it's now within realistic reach of most of us.

> Couple this with Turnkey's incredible discount and there's no need to look at any other enhancer!



- Best Quality Bass & Top End **Enhancement Available.**
- Single Set of Controls Makes Stereo Treatment Simple.
- 'Stereo Enhancer' Control Widens Stereo Image.
- Wide Range of other Processors Available.

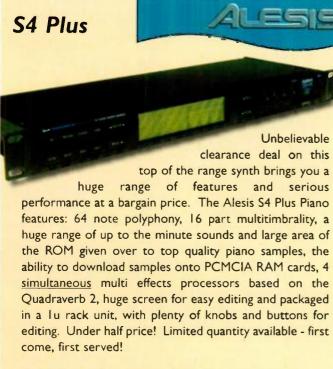
Controls are kept simple, so it's easy to produce great sounding results: The Tune knob selects the centre frequency for enhancement, whilst Harmonics gradually adds rich, musically related harmonics to the signal. The Bass control can give a huge bottom end, variable between Tight for cutting basslines to Soft for a warm fat bass. Process controls the overall effect level, and the unit is rounded off with a stereo expander, which can actually take the stereo image outside your speakers.

Of course, the SPL range doesn't end with the Vitalizer, other quality processors include EQ's, Mic Preamps and even valve units. Check one out at Turnkey today:





RRP £599



- 4 Simultaneous FX Processors
- 64 Note Polyphonic
- Massive LCD Display
- Under Half Price!







The Reno CD ROM drive works with nearly all samplers (please check compatibility when ordering) as well as Mac and PC. Most CD ROM drives can play audio CD's, but require special software on a computer to do so. The Reno though has integral buttons for playback and track search etc, and can even be run off batteries for use as a portable CD player (headphones included). We have managed to secure a quantity of these at a huge discount - order now whilst stocks last!

RRP C429



FX Board

Whereas most MIDI instruments use onboard fx for live performance or to improve their grey sounding presets, the EIV FX hardware option is a high quality 24 bit dual stereo fx card, designed for use in a studio environment. Algorithms include reverb, delay, chorus, flange and other ambient fx. Two fx can be stored with every preset and re-sampled internally for further processing of samples. It's fair to say that the EMU engineers are Lexicon fans! (£329)

EMU EIV - The Ultimate Sampler!

Our superb product knowledge and backup service has meant that Turnkey have been chosen by E-mu as the UK's exclusive dealer for the E-IV. If you are in the market for a sampler, or indeed any kind of sound module, you owe it to yourself to have a serious look at the EIV - it's the choice of professionals worldwide.

Standard features include 128 note polyphony, RAM expandable to 128 meg, supreme ease of use, with an icon based O/S & Proteus style multitimbral operation. Synthesis is unrivalled with over 20 different types of filters (up to 6 poles and with morphing), 100's of modulation routings and details like multiple LFO waveforms, and a huge range of DSP processes such as time stretch and sample rate conversion. There are 8 balanced +4dB analog outputs, AES/EBU & SPDIF digital I/O, dual SCSI ports via which

it reads Akai and Roland libraries transparently (no need for convert load procedures), and a PC QWERTY keyboard port for titling and easier navigation. Impeccable audio performance can be taken for granted with 128x oversampling sigma/delta ADC's, and 18 bit DACS. A huge library of EMU's own sounds is already available on CD-ROM we have the lot at Turnkey!

As if all that wasn't enough, there are now a whole range of new features and options:

V2 Operating System

New features include: SoundSprint - uses buffering to allow sounds to be loaded and played within I second over SCSI! • 16 track sequencer • Roland library support • 4 new morphing filters • Time correction DSP adjustable by tempo · Steinberg Recycle support · Iomega JAZ drive support • 12dB output boost • Trigger sampling via MIDI note (All this now comes as standard with the EIV and is also available to existing users for £69 including 2 CD-ROMS.)





This hardware option provides an additional 8 balanced outputs bringing the total to an incredible 16! (£799)



DEAL I: E-IV + 32 Meg

DEAL 2: E-IV 64 Meg, 16 outputs, fx board, JAZ

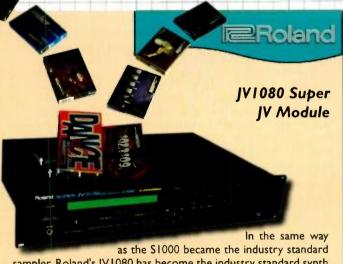
drive, 4x speed CD-ROM drive, QWERTY

keyboard & 16 CD-ROM library

DEAL 3: 'Hire to Buy' on a trial basis.







sampler, Roland's JV 1080 has become the industry standard synth module. It's not hard to see the reason why - straightforward operation combined with top flight sound quality and a huge range of useable sounds.

But expandability of the machine is where it really comes into it's own. There are over 10 different expansion boards which can be fitted (up to 4 at once), each one with as much RRP \$1100 ROM as the original machine, covering sounds from Vintage to Orchestral and Dance to World.



At Turnkey we have the full range in stock, as well as an unbeatable price on the machine itself. Check one out today!







The Orbit is stacked full of classic drum sounds, pulsating basses, ambient pads, as well as a huge variety of hits and effects. The inclusion of the E4's 16 different types of 6 pole filters mean that this module has more powerful filtering than any other synth. Finally the 'BEATS MODE' includes a wide selection of loops and grooves, which can have their pitch changed without tempo change and vice-versa, and even their sounds too!

The Orbit Is already on demo at Turnkey - audition one today !



LOGIC & LOGIC AUDIO NOW AVAILABLE FOR WINDOWS

For some time now, Emagic's innovative approach to the software sequencer has made it the best selling program on the Macintosh platform. Until recently though, development for PC compatibles has lagged behind, but now Emagic have brought the PC version right upto date, with not only full sequencing functionality, but also the long awaited availability of the audio module. Logic is famed for it's timing accurary, and rightly so - it has a resolution of 960

ppqn, and the tempo is adjustable down to to 1/10,000 of a bpm, great for fitting MIDI sequences to sampled loops. The Environment window allows custom development of controllers for any MIDI equipment from a toolbox of user definable faders, knobs, buttons and switches - creating your own editors is a breeze. Of course, descending as it does from the original Notator program, the quality of notation results can be taken for granted.

Finally, with the audio version (separate product on PC, extra module on Mac), you get to use functions like cut and paste editing, groove quantise and the Time Machine on your audio files. Get rid of your tape machine and start recording straight to disc now!

Best selling Mac sequencer now available for PC

00: 00: 47: 24. 22

- 960 ppqn Timing Resolution
- Special introductory price on Audio version
- Top quality notation included

LOGIC

LOGIC

AUDIO

LOGIC AUDIO

Roland

MC303 Groovebox

The enduring popularity of the TB303, MC202 and TR909 has just refused to go away but increasing rarity has meant that secondhand prices have been driven up to ridiculous levels. Roland, the creators of these machines, now bring you the MC303 Groovebox which combines all their classic drum machine sounds, a step time / real time sequencer, 303 'acid' bass sounds complete with front panel filter controls and a whole host of other useable sounds (it's 16 part multi-timbral!). This box is an all in one dance music solution, and believe us, it sounds the business! Initial supplies will be very limited, order now to avoid disappointment!



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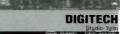
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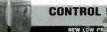












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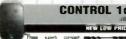


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Audix OM-3xb

Dynamic Microphone

Building on their US reputation, Audix mics are now available in the UK. PAUL WHITE takes a listen.

SA-based Audix have yet to achieve the same brand name awareness as the likes of Shure or AKG, but they nevertheless have a solid international reputation for building tough dynamic mics that deliver on sound quality. I've been

using the Audix OM-3xb model for some months now, and as well as filling all those studio roles where a good dynamic mic is required, it has also become my live vocal mic of choice. This wasn't initially a conscious decision on my part - it's just that after trying out a number of dynamics from my studio locker, the Audix OM-3xb is always the one I end up clipping onto my mic stand, while the rest of the band take their pick from the leftovers. It's something to do with the generally wellbalanced, clear tone of the mic, but having given away most of what is normally reserved for the conclusion of a review, I'll rewind to the beginning and introduce the mic properly.



Supplied with a soft, zip-up pouch and stand-mounting clip, the Audix OM-3xb is a dynamic, hypercardioid mic featuring a reassuringly heavy die-cast zinc alloy body. Its black, non-reflective finish remaining intact despite escorting me on numerous gigs. The balanced XLR output uses gold-plated pins and the incredibly strong, stainless steel wire basket includes an acoustic foam liner, ostensibly to help reduce wind noise, but what they really mean is that it stops singers spitting on the capsule! It's easy enough to remove the liner for cleaning in

mouthwash — you simply unscrew the basket and pull it out.

The pressure gradient capsule is mounted on a surprisingly unyielding rubber shockmount, but the degree of handling noise doesn't seem overtly worse than for any other mic of this type that I've tried. No power switch is fitted, and apart from the maker's name, model number and country of origin screened in white, the surface of the OM-3xb is black and featureless.

PERFORMANCE

Like all pressure-gradient cardioid mics, the Audix OM-3xb exhibits a proximity effect when used close up, so the bass response has been rolled off to partially compensate. Used very close to the mouth, the mic still demonstrates a noticeable bass rise with a response extending below 40Hz, whereas using it at a distance of half a metre or so leads to a degree of bass cut. By changing the mic to source distance, a useful amount of tonal change can be brought about without having to resort to external EQ. Mind you, this is true of virtually all dynamic cardioids and hypercardioids, but it's a point worth making nonetheless.

Being foremost a live vocal mic, the OM-3xb does not have a ruler flat frequency response, delivering instead an exaggerated upper-mid peak which adds presence and aids clear diction. Again, there's nothing unusual in this - Shure's SM58 exhibits a similar characteristic — but no two mic models have exactly the same shape or degree of presence boost; some sound almost flat whereas others can be over-emphasised, making them sound harsh, nasal or both. I think Audix have got the balance about right, because the OM-3xb manages to sound clear and well-defined without any obvious peakiness. The top end response starts to roll off noticeably above 16kHz or so, again quite normal for a dynamic capsule, though there is still some useful response right up to 20kHz and beyond, which is less usual for a dynamic microphone. The sensitivity compares well with other quality dynamics, such as the battered Shure SM58 that also shares my gig bag.

In the studio, the Audix OM-3xb is useful for recording vocalists who need the weight and punch that only a dynamic mics seems to deliver. Those with timid voices

Pros & Cons
AUDIX OM-3XB £119

Pros

Clean, well-balanced sound, with a good high frequency response.

Robust construction with a durable finish.
Realistically priced given its performance.

Cons

It's up against a lot of worthy competition.

Rummary

A good all-round dynamic mic for live or studio vocals, electric guitar or general instrument use.

SOUND ON SOUND

sometimes find capacitor mics make their voice sound too thin, while others find they exaggerate sibilance. Many rock vocalists simply prefer the dynamic sound because it helps cut through a busy mix. In this application, a pop shield is definitely recommended, as indeed it is with any mic. and stand-mounted use is better than handheld, simply because no capsule shockmount ever devised works perfectly.

Additional uses include electric guitar, where the OM-3xb delivers a suitably well-focused sound. The same is true of percussion, including snare drums and toms. The mic would almost certainly work reasonably well with brass and saxophone, where its better than average transient response should help give the instruments an edge.

SUMMARY

On balance, the Audix OM-3xb is a very well-specified, solidly engineered dynamic mic, priced somewhere close to the middle of the range. Providing you don't actually throw it, the OM-3xb seems impervious to the rigours of gigging, and provides a clear, relatively natural tonality that carries well over a busy backing. Feedback susceptibility seems about the same as for the other quality hypercardioids in my dynamic mic locker, and on the cosmetics front, the mic looks sleek and purposeful as well as appearing quite unobtrusive.

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TL Audio C2021

Indigo Tube Compressor

PAUL WHITE checks out the latest addition to TL Audio's new Indigo range.

ollowing on from the two Indigo range tube equalisers reviewed in last month's SOS, TL Audio have now added a dual-channel, soft-knee tube compressor to the Indigo family. Like its siblings, the C2021 combines solid-state and valve circuitry to improve both tone and reliability while keeping the cost acceptably low.

QUICK TOUR

All the Indigo processors run on mains power, rather than external adaptors, and are fitted with both unbalanced jacks and is used as the compressor gain control element, which is how the original tube compressor used to work.

A glance at the front panel reveals that the controls have been simplified by using switched fast and slow attack and release times rather than making them fully variable, but this isn't as limiting as it seems, because some degree of programme dependency has been built in to allow the compressor to adapt automatically to the dynamics of the input signal. Conventional rotary controls are provided for Gain. Threshold, Ratio and Makeup, and each of the two channels has its own Bypass switch. A Stereo Link button gangs the channel for stereo operation, and in this mode, channel A's controls affect both channels. The two bargraph meters may be switched to show and release settings a trifle limiting, but for all routine jobs, they seem to cope fine — presumably due to the programme-dependent element of their operation. There's also plenty of headroom, and I couldn't get the unit to clip audibly until the signal had been driven well off the end of the output level meters.

CONCLUSIONS

At just over £700, this is one of the more cost-effective valve compressors, and although its feature set is fairly basic, the all-important sound compares well with that produced by some of its more esoteric and expensive American competitors. For general applications, such as vocal, instrument or mix compression, the C2021 works very well indeed, and while it doesn't have an overtly valve sound, what it does add is subjectively constructive. In other words, you get a little warmth and thickening, but without your sound turning into some sort of audio soup; and at the





balanced XLRs to facilitate connection to both pro and semi-pro systems. A further pair of front panel instrument jacks accept high-impedance sources such as guitars, and these have switchable high/low sensitivity. All three inputs are active simultaneously, which means you can mix inputs, though there's no independent level control. In this particular circuit, the valve

either gain reduction or output level, and a TRS jack side-chain insert point enables an equaliser to be connected for de-essing.

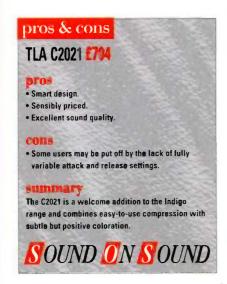
IN USE

In practice, the C2021 can be used to provide very mild compression, or it can be wound up to the point where it functions almost as a limiter with a 30:1 ratio. The inclusion of an input Gain control means that you can bypass the compressor, then use the output level meter to optimise the input gain setting - a good idea - after which the controls are set up in much the same way as for any other compressor. Being a valve compressor, you're probably going to be buying the C2021 for its sound rather than its outright honesty, but what I particularly like about this unit is that the sound doesn't become 'fuzzy' and 'squashed' as it tends to with some of the less well designed valve processors; the magic words 'warmth and clarity' seem apt. In addition to its first-rate performance on vocals. the C2021 also sounds great for DI'ing clean guitar, where it thickens and adds sustain. while at the same time preserving the natural attack of the instrument.

I expected to find the switchable attack

top end, the sound projects well without becoming harsh or aggressive.

On balance, I think that TL Audio's hybrid approach is well engineered, and easily justified by the subjective results. I don't think it's essential to use valves to get a warm, smooth tonality, but the better FETbased designs cost just as much the C2021. which means you might as well go the whole hog and have the real thing. The allimportant styling remains professional with just a dash of panache, and the simple operating system means that you don't get sidetracked into messing with parameters that don't really matter. While the signal processing side of the market is becoming more than a little crowded, I think the Indigo range has enough strong points to put it alongside the top contenders.



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Aphex 109

2/4-Band Valve Parametric EQ

Aphex continue to attack the market with their high quality, value for money processors. PAUL WHITE warms to their latest release.

egular readers will already know that I don't favour the indiscriminate use of EQ, and when I do have to use it, I do so as sparingly as possible. There are, however, occasions when you do need an EQ setting that will grab a sound and shake it by the scruff of its neck. In most of these cases.

ENTER: STAGE LEFT

The 109 is a 4-stage parametric EQ which can be configured either as a mono 4-band unit or a stereo 2-band device. At the heart of the unit is Tubessence, Aphex's low voltage valve-based hybrid circuit that employs an ingenious solid-state feedback system to make the valve behave and sound like a conventional valve circuit being run from around 300 volts. Tubessence has been included in a whole range of products, including the 661 Expressor reviewed last month, and the general consensus is that it really does work.

With balanced ins and outs on TSR jacks, and switchable -10/+4dBu operating

ALIVE AND KICKING

From the previous description, you will appreciate that the 109 is a very straightforward equaliser, but the addition of shelving/band-pass switching adds to its flexibility enormously. In practice, I usually find that a 2-stage parametric EQ is adequate to meet most studio needs, and in the case of the Aphex 109, that means you can treat stereo signals such as whole mixes or subgroups quite effectively. However, you can easily throw all four sections into use to treat any difficult mono signal, when required.

While the controls of the 109 hold few surprises, the tonal quality certainly does—excluding certain top-flight models, the 109 is simply the nicest parametric I've used at anything like the price. On bass signals, you can really pile on the warmth and depth without seeming to upset the tonal balance, while at the top end, you can add so much sizzle that it's hard to believe you haven't got hold of an Exciter. Wherever you tune it, this equaliser is smooth, positive and very polite with none of the honking, phasiness or harshness that some designs seem to inflict on you. In band-pass mode you can lift or cut selected frequency bands with considerable

precision, while shelving mode allows you to make more gentle changes reminiscent of a really good console EQ. And you can combine bandpass responses in one

band with shelving responses in another, whenever you need to, for added flexibility.

PROGNOSIS

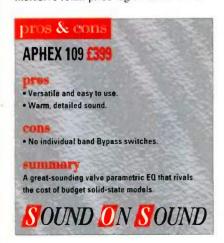
In the 109, Aphex have built a truly musicalsounding equaliser that combines flexibility with simplicity of operation. It sounds silky smooth on vocals, yet you can add enough top end boost to make things really sizzle if you need to, and bass guitars can be given extra depth without them sounding flabby or uncontrolled. Though you can buy better sounding equalisers, you have to pay a lot more than this for them, and in this price range. I can't think of anything to rival the 109. Unlike most low voltage valve circuits, the Aphex hybrid approach doesn't compromise the transient response or sense of top end 'air', yet it's as quiet as a quality solid-state design. If you're in the market for an outboard EO, this is one unit you really have to try.





the type of EQ section you find on a typical mid-priced mixing desk is somewhat underpowered for this task — what's required is a good parametric equaliser. However, cheap parametrics tend to disappoint while the really nice ones leave you with a significant deficit in the arms and legs department. And if you want a good sounding valve parametric, you'll probably have to call in your friends to contribute a few limbs, because prices more or less double when you put valves inside things.

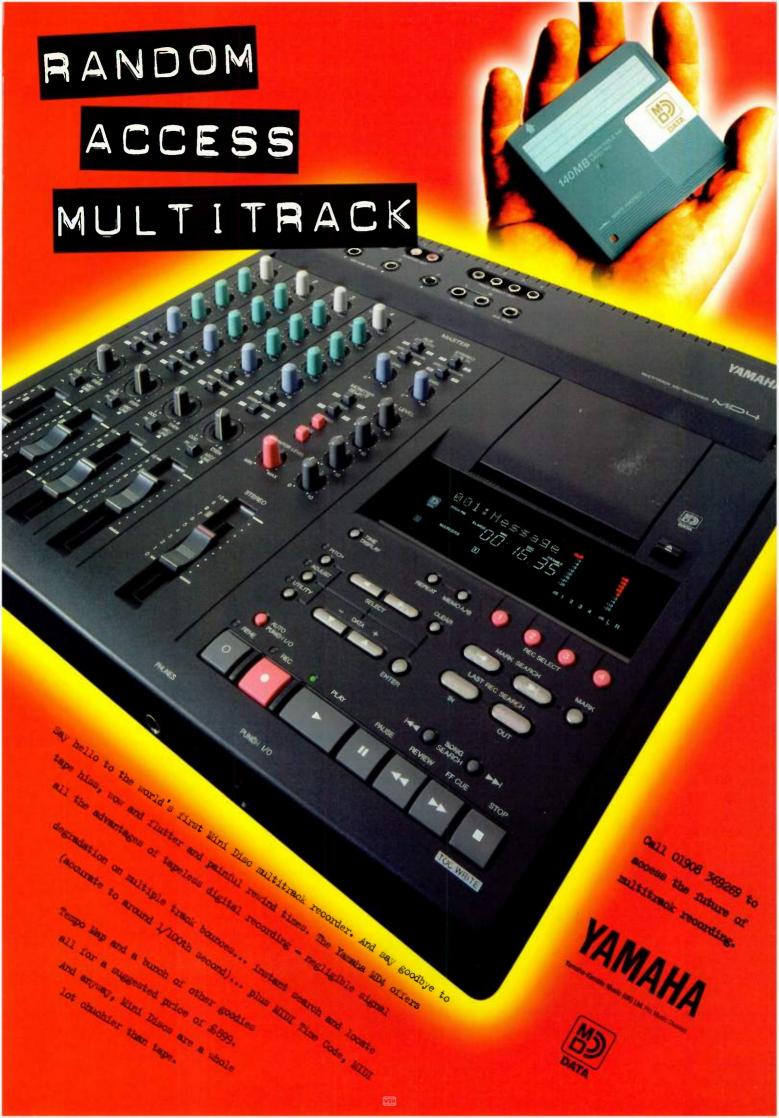
In that light, you can probably understand why I did a double take when I first saw the Aphex 109, with its VAT inclusive retail price tag of under £400.



levels, the 109 occupies a scant 1U of rack space and is powered by one of those irritating external power supplies. I don't really like external PSUs, but at this price I'm prepared to make an exception.

The controls are set out as two identical stereo channels, each with an input gain control and two fully parametric EQ stages. Band 1 is variable from 20Hz to 2kHz and may be switched from the usual band-pass mode to a high-pass shelving filter if required. Band 2 covers 200Hz to 20kHz and may be switched for band-pass or low-pass filter operation. Each section has a gain range of plus or minus 15dB, and a bright red Clip LED lets you know when you're running too hot. This is an intelligent indicator that monitors three discrete points in the signal path and lights up if any one of them comes close to clipping.

In the centre of the box are two buttons: Mode switches from 2-band operation to 4-band (whereby Channel 2's input and Gain control are disabled), while Process acts as a hard bypass switch for the whole unit, routing the inputs directly to the outputs. There are no separate bypass buttons for the individual bands, but the Cut/Boost controls are centre-detented so that the unit can be run flat, allowing Tubessence to work its magic without the signal necessarily being EQ'd.



Studio Electronics

Analogue Tone Chameleon Monosynth

With a front panel resembling a butchered Moog Source, and plug-in filters that claim to give you the sound of various vintage brands inside one instrument, the ATC1 is bound to excite interest. PAUL NAGLE changes his tune...

merican-based company Studio Electronics are best known in this country for the excellent SE1 'Minimoog plus' in a rack — (see review in the January 1994 issue of SOS), but that may change shortly when they release their new ATC1 rackmount synth. As work on the Tone Chameleon was nearing completion, we were offered a sneak preview of the nearly-completed prototype, which should keep you going until we can dissect a production model in true SOS style!

Cosmetically, this strange-looking module is not completely dissimilar to the Moog Source vintage analogue synth, with its coloured membrane front panel and editing

via a single knob. The chameleon nature suggested by its name manifests itself in the form of plug-in filter modules, two of which were supplied with the pre-release model.

WIBBLING RIVALRY

The ATC1's architecture is uncomplicated: two voltage-controlled oscillators; two modulation oscillators (LFOs); three ADSR envelopes; the chameleon filter; and a section which controls response to MIDI controllers, velocity, and so on. A reasonable number of modulation routings means that wild and wibbly noises are at your fingertips as easily as thundering basses and powerful solo voices. Several goodies, such as oscillator sync, cross modulation, an external input to the filter, and the almost obligatory CV and Gate connectors, mean there's plenty of scope for sonic exploration.

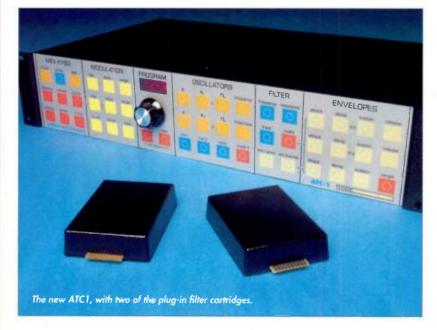
All the ATC1's functions are accessed using the 50 membrane switches on its front panel. With a press (or in some cases, two or three) of one of these switches, your selection becomes live, with its current setting appearing in the three-character LED. The continuous data knob is then used to increase or decrease the currently-displayed value. This means that there is no conflict between parameter settings and knob position. In the final model, I am told that changing parameters like this will generate MIDI controllers, to which the synth will also respond.

An impressive 512 internal patch locations are provided, all of which can be overwritten, and since programming is a piece of cake, you'll soon be filling these with wondrous creations, although with no patch names, you'll have to find some way of keeping track of them. I don't know how many sounds in this model will make it to the final version, but flicking through them revealed a mixed bag, including basses, leads, filter sweeps, and many strange effects. In the brief time I have had to play with the ATC1, dozens have already been consigned to that great patch graveyard in the sky, replaced by my usual assortment of thuds, sync leads, sequencey twangs, and monster squelches. I found it to be particularly good at lead voices and other-worldy wails, whilst the bass end has a warmth and presence that will be felt in any mix.

FILTER SKELTER

I was most intriqued by the plug-in filter cartridges. This is a remarkably open-ended design idea which could be used to copy the characteristics of many a favourite analogue synth. The two cartridges supplied were affixed with sticky labels on which the words 'Moog' and 'Oberheim' had been hurriedly written — and these two filter types certainly represent as good a starting point as any where synth filters are concerned! Physically, the cartridges are larger than I'd expected and, when fitted into a socket at the back, protrude somewhat from the rear of the unit. It's a good thing it's going to be stowed safely in a rack — although you would need to allow access room to change cartridges. I was worried that the precious connectors stuck out unprotected from one end of the cartridge, and I'd have liked a dust cover for the large hole into which it plugs. And perhaps two slots would have been better. to allow switching between different modules without having to keep powering down, Incidentally, the power switch is also positioned at the back of the unit — hardly sensible for a rack device, especially one that requires the power to be switched off in order to make fullest use of its facilities.

To check the sonic characteristics of the two filters, I spent a considerable amount of time swapping cartridges around, then sweeping the cutoff and resonance. I eventually recorded the



ATC1

results to DAT in order to convince myself that there was an audible difference — both sounded excellent but very, very similar. Perhaps the Oberheim was brighter, with the resonance kicking in sooner along the range, but I really am going to have to spend more time with this to be sure I'm not falling for the Emperor's new clothes. With luck, I'll have the production cartridges in time for the full SOS review, as I started to distrust those sticky labels after a while...

Driving the filter into self-oscillation by cranking up the resonance produced some great bloops and squeaks, although the filter stability doesn't compare with, for example, the Waldorf Pulse. This may be a deliberate attempt to recreate the way analogue VCFs used to work but if so, it doesn't quite produce the subtle changes evident in my

"I was most intrigued by the plug-in filter cartridges. This is a remarkably open-ended design idea which could be used to copy the characteristics of many a favourite analogue synth."

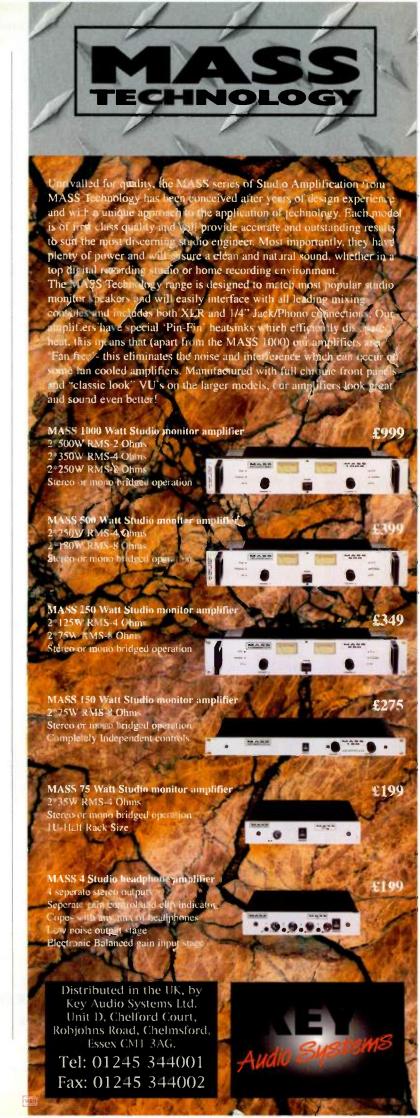
old Minimoog filter, which had an almost organic response to temperature (and probably sun spots as well, for all I know). It occurred to me that you'd need to keep notes about which filter was required to recreate any individual patch — assuming, of course, that you could hear a difference! I'd also love to see other filters, such as an ARP, or even a humble Korg MS20, if Studio Electronics can find a way to incorporate a high-pass filter into the design too.

STAY TUNED...

We'll take a closer look at the ATC1 when the final operating software revisions have been carried out. Hopefully, by then I'll know if the two filters really are different, or if it's time I got my ears syringed out. Who knows — maybe I'll get the updated software with MIDI-sync'd LFOs, MIDI controller generation, and even a manual. From what I've seen and heard so far, I'm looking forward to it.

- E ETBA; expected to be around £1000.
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Yamaha VL70m Virtual Acoustic Tone Generator

MARTIN RUSS sidles up to an innocent-looking phonebox, receives his instructions, and sets to work decoding Yamaha's affordable new Virtual Acoustic synth. This preview will self-destruct in five seconds...

our mission, Martin, is to review Yamaha's new VL70m Virtual Acoustic synth module..." I knew that the task would be difficult when the unit arrived just days before this magazine was due to go to press. Still, I managed to write up just a few of my preliminary impressions — and here they are. For the full story and analysis, you'll need next month's in-depth review.

MODELLING FOR MORTALS

When I looked at the Yamaha VL1

— Yamaha's flagship physical-modelling instrument — just over two years ago (see review in SOS July 1994), the question on everyone's lips was when this form of synthesis would become affordable. Well, that time is now, with the launch of the VL70m

YAMAHA

technology to give synthesists the sort of expressive capability normally associated with real-world acoustic instruments. The VL1 has found wide applications from jazz to techno, and its strength is in its flexibility and astonishingly 'real' sound — even for instruments which don't and can't exist. Strings blown flute-fashion, or flutes played using a brass mouthpiece, as well as many other reality/virtuality hybrids, are possible.

SOUND STUFF

The choice of presets in the VL70m seems to include more instrumental emulations and fewer 'off the wall' or weird sounds than the VL1, which probably results from the two extra years of development by the sound programmers. If you've never heard a VL1, and have a chance to check out the VL70m. listen for the distinctive way that sounds stutter and then lock onto the note as you increase the breath pressure/expression controller, or the way that some sounds can only be pitch bent so far before they jump to another note, or the way that isolated notes sound different to smoothly-flowing runs of notes. The more you play with VA instruments, the more depth of control and expression you discover — these are sounds to perform with.

There are 256 preset (ROM) sounds, of which 137 are intended for use with Yamaha's XG MIDI format, which has been

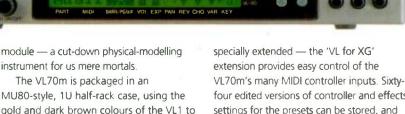
(a WX7 or WX11), as well as a Breath Controller input. Yamaha have reworked the BC2 Breath Controller supplied with the VL1, and the resulting (optional) BC3 has a much sturdier mouth-tube mount (rather like a miniature goose-neck, in fact) and easy-to-tweak controls. For keyboard die-hards, setting a pedal or wheel to control Expression (MIDI Controller number 11) avoids any need to blow at all.

In common with many expander modules these days, the VL70m is also a Mac/IBM PC-compatible MIDI interface although for a monophonic instrument this is an unusual concept. It may be a legacy of the MU80 interface design indeed, the backlit custom LCD has the same bit-mapped graphics area, and a similar organisation to the MU80's display. The user interface is easy to learn, and includes the neat 'double-click to see MIDI messages/SysEx' feature that first appeared in the TG300. Also in common with other MIDI modules is the on-board effects processing, with four distinct types simultaneously available: Reverb, Chorus, Variation (miscellaneous effects like rotary speaker and auto-wah), and Distortion.

THE SAME, ONLY DIFFERENT

If the obvious question when the VL1 was launched was "when will I be able to afford one?", the obvious question on the launch of the VL70m is "so what's missing?" In sonic terms, the effects processing is not as sophisticated as the VL1, but the underlying sounds are very, very similar, if not identical, at least to my ears. There is no disk drive, and only six full user memories, plus the LCD is not the sophisticated CFL type found in the earlier and more expensive models. Which all amounts to this: the VL70M delivers the sound without the extras.

If you've been waiting for physical modelling to become affordable and editable, your dreams may be about to come true.



MU80-style, 1U half-rack case, using the gold and dark brown colours of the VL1 to provide family continuity. In a world still full of black front panels, it looks expensive. But it isn't — at £499, it costs about an eighth of the launch price of its famous predecessor.

For the money, you get a minimal spec, but lots of sound — this is no ordinary synth. It's monophonic, and thus definitely not General MIDI compatible, and uses Yamaha's proprietary Virtual Acoustic

extension provides easy control of the VL70m's many MIDI controller inputs. Sixty-four edited versions of controller and effects settings for the presets can be stored, and there will be free editor software for this type of editing. Six 'Custom' memories hold complete new sounds rather than merely changing effects or controller options. Again, a freeware editor will be available from Yamaha dealers.

A BIT OF A BLOW

The VL70m is the first of the VL series to have a direct input for a WX-series wind controller





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Sound Education

THE SCHOOL OF AUDIO ENGINEERING'S 20TH ANNIVERSARY

The School Of Audio Engineering celebrates its 20th anniversary this year. DEBBIE POYSER & DEREK JOHNSON talk to SAE founder Tom Misner and European General Manager Rudi Grieme about the school's development into a worldwide concern, the courses SAE offer today, and the changing business of teaching music engineering and production.

still have the tape recorder — a Sony
4-track — and I made the console
myself. It was a 12-channel console
— well, 11 actually, because the
12th channel never really worked — with my own
little VU meters. I remember engraving SAE with

Letraset on every VU meter to make it look like an SAE console."

So speaks Tom Misner, founder of the School of Audio Engineering, of the basic studio which hosted his first recording courses 20 years ago in Sydney, Australia. These days SAE, the world's only international recording and music technology school, with 22 colleges in 13 countries, has a multi-million pound annual turnover. Back in 1976, the sum total of its assets were the AS\$400 which was Misner's only capital, and the

charismatic Misner himself. "Everything that I earned had to go back into the school, as it did for the first 10 years." Money was so tight, in fact, that Misner disguised the lack of certain equipment by telling students that the gear was on order, but that his Australian supplier was waiting for shipments from Europe. "Students would say 'Where's the compressor?'. And I would say, 'Well, I've ordered it, but the distributor hasn't got it in yet'. The thing was, he had it — I just didn't have the cash to buy it!"

Fees from new students were re-deployed to



make the putative equipment orders a reality, and slowly the first SAE school grew. Such is SAE's size now that some equipment manufacturers, keen to have future audio professionals trained with their products, offer to provide the school's growing number of studios with equipment. Misner: "The biggest change in the school over the past couple of years is that manufacturers have started to recognise us, and that means that we get equipment given to us. The manufacturers can see the value of people being trained with their equipment".

There are many people being trained with that equipment: in addition to established colleges in Australia, Britain, Germany, Austria, France, Holland, Singapore, Malaysia and Sweden, colleges are planned or in progress for Milan, Bangkok, Dublin, and Barcelona. There are currently 7000 students attending SAE courses worldwide. Isn't there a danger that courses might become slanted towards equipment supplied by sponsors? Misner demurs: "First off, the equipment has to sell me. I don't really care whether it's Digidesign, or SADiE, or whatever it is, it has to sell me. We have to teach the stuff, so it has to convince me that it is a product that has value. And we don't have exclusive sponsorships, because a school that only has one brand of microphones, for example, wouldn't work. There has to be a balance. We can't afford to be one-sided".

SAE are in a position where they can choose which gear they take, and have the resources to purchase the latest equipment. This puts the school at an advantage, contends Misner, compared to small schools and even some universities offering audio training; according to him, universities "often have a budget problem. They may get the studio one year, but they probably won't be able to upgrade it every two years. What I'm finding, as we found in Australia, is that they start to work with us — we'll be the practical trainer and universities will offer the academic side. That's the ideal direction".

HAPPY BIRTHDAY TO YOU

The German city of Munich recently saw a huge gathering of the SAE clans. Three hundred staff of its schools from all over the world, plus other guests, were flown in and accommodated, at Misner's expense, for 20th anniversary celebrations. It's an expansively generous way to mark the school's birthday, reflecting Misner's paternal relationship with his schools. Despite the fact that he owns successful publishing businesses which some might consider more profitable outlets for his talents (in 1979 he launched Australia's first professional audio magazine, Australian Sound & Broadcast) he maintains a close involvement with his favourite child, SAE: "It is my small business. I own a number of magazines in Australia, but I'm not attached to that business like the school. It ended up being my baby, in a way".

The passion for music and recording which resulted in Misner's producing and engineering background (with credits including Creedence Clearwater Revival, The Eagles, Tina Turner, Earth, Wind & Fire, David Bowie and Midnight Oil) drives the expansion of SAE and explains his handson role: he still formulates course syllabi personally,



Rudi Grieme, SAE's General Manager, in the 24-track studio at the London school.

even having written the school's Apple Mac exam compilation system. This allows SAE staff to tailor written tests from a database of over 1400 questions on different audio subjects. And it was Misner's own early interest in multimedia which prompted the popular Multimedia Producer course: "I've wanted to teach multimedia for quite a while — virtually since the early '90s. But it took me two years to decide how to teach it." Until just a few years ago, Misner still taught some courses himself.

Course content has been refined continuously over the years, from fairly hit-and-miss beginnings: "The interesting thing about the first

WHAT'S ON THE MENU: COURSES & COSTS

SAE London will offer five courses after its expansion, when the Multimedia Producer course will be added (see the 'Multimedia Story' box). The four current courses are:

• Sound Studio Certificate (Basic): covering topics suitable for studio assistants, home studio owners, audio salespeople, music teachers and musicians. It lasts for six months part-time, and costs £1175.

• Audio Engineer Diploma

 Audio Engineer Diploma (intermediate): an intensive program giving grounding in all aspects of studio work and an understanding of the music business. This lasts nine months full-time or 18 months part-time and costs £4570-£5000

Advanced Music Production
Course (Advanced): this is
designed as an extension to the
Diploma course and is
recommended for Diploma
graduates wishing to become
producers. It also introduces
Pro Tools, music/picture sync
and management skills, lasts
three months part-time, and
costs £780.

• DJ Certificate: this lasts 12 weeks part-time, and offers 60 hours of intensive tuition in the

creative operation of DJ equipment, plus coverage of copyright, management, and gigging issues. It costs £695. These courses are not eligible for mandatory LEA (Local **Education Authority) grants.** which means that finance has to come from elsewhere. Rudi Grieme: "The part-time courses are especially for those who work, which means they work while they attend courses, and pay in instalments. The full-time courses are filled by people who either get a Career Development Loan (CDL) or come from overseas and get funding from there, or from their

20 Years Of SAE

be course was that I was an engineer, and I knew how to do albums. Nobody taught me how to teach, but I thought, 'if I know it, I can teach it'. I used to sit at home and think 'next week we'll teach recording drums.' The following week I'd decide to teach how compressors and gates worked. Everything was fine, except that after 16 or 17 weeks, I had taught everything I knew. Then I realised that I had to put some structure in, which took four or five years. And that structure has

I realised that I had to put some structure in, which took four or five years. And that structure has the tape

Before graduating to a studio environment, new students are introduced to recording technology in training areas like the one above.

stayed the same, other than that we threw out subjects. We used to cover disc mastering, disc cutting, and so on, and that's all gone now. Every year I update all the subjects".

So, Misner still has a major input into the formulation of SAE's courses, which are similar from country to country. He estimates that 80% is the same in different countries, though there is a 20% variation for local preferences. The DJ course, for example (of which more in a moment), is limited to London, Singapore and Sydney, because there's no significant demand elsewhere. Video synchronising courses are offered in Germany and will be offered in France, but there's no appeal for this course at all in England, as it produces staff for dubbing of foreign (often

English language) movies into German and French. In addition, the German courses are more technical, as the German industry demands more technical knowledge than, for example, the UK.

What characterises all the courses, however, is their attention to practical, hands-on experience. Misner: "At the end of a course, you will be expected to walk into a job and they will say, 'here's the console, here's the tape machine, align the tape machine and mix this' — you have to be

able to operate the equipment properly. If you can't do that, it doesn't matter if you've been to one of my schools, John Smith's school, or Oxford University. When a student finishes SAE, he or she has to be able to operate a multitrack studio. do digital editing, MIDI sequencing, live sound mixing, all these kind of things".

NO GUARANTEES

SAE courses are far from being an easy time for people who think audio training will be less rigorous than traditional higher education. For a start, there's a selection procedure — SAE don't take everyone who applies. "If we find the person has no aptitude at interview, we don't take them. We also ask questions about equipment and brand names. And as soon as somebody says 'well I'm

here to learn that, I don't know what an SSL is', that shows you that they have no real interest. I'm interested in cars, so I know all about brands of cars. If somebody pretends to have this great interest in audio engineering, they must know equipment, brand names, terms that you pick up from magazines. If you're not reading any of the magazines before doing the course, it doesn't show great interest."

Once on the course, students are in an educational atmosphere, with seminars and lectures conducted in classrooms, as well as sessions of hands-on studio time. Misner: "We first teach the theory — of how compression works, say. Then a student has to go to a unit that has compressors, gates and expanders, and a CD player, where they learn how to use these processors. They go from that very basic box to 8-track mixing, then a 16-track studio, then a larger 16-track, then to MIDI, with hard disk and so on. We have an arrangement with Digidesign, and we have Pro Tools systems in most schools — at least three or four systems in each".

Students are not simply allowed to record whatever they like, either: they're expected to engineer and produce different types of material, in keeping with what they'll encounter in the real world when they land a job. Though students are permitted to record their own bands for their final exam project, they're also obliged to turn their hands to a brass band or orchestral ensemble, say, and non-musical recording, such as voice-over work, is also covered. As Rudi Grieme, European

MULTI(MEDIA) STORY

When asked what has changed most about SAE's curriculum, Tom Misner's response is unhesitating: "Multimedia. It's about 20% of our intake at the moment, but it's growing. We teach how to get a career in multimedia. For example, some of our students have done multimedia CDs for hotels and resorts, which show pictures of the hotel, with music, what the hotel has in terms of features, and so on — and they want to actually be able to do that kind of job, where they are self-employed. The Vienna, Cologne, Sydney, and Singapore schools are set up for multimedia — which means a room with 25 Macintosh workstations. There's a daytime class and an evening class. Somebody works on the computer all day, five days a week if

they want to, and the other person works all night. That makes it a very hands-on course. At the end, they produce a project CD.

"I call the course Multimedia Producer. Each person has to co-ordinate a multimedia project and work with an authoring program. Then there are modules — Sound, Video, Graphics, Presentation — which we teach 'on the surface'. We don't pretend to make a graphic designer; we teach enough to get by. The difference between the European Industry and the American Industry is that in America one guy sits there, totally into it, and does everything. The Europeans say, 'I'll get someone good at sound, someone good at video, someone good at graphics, and co-ordinate them'. We teach the core subject, and then enough about the others."

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20 Years Of SAE

▶ General Manager, explains, the final exams are pretty demanding too: in addition to a constantly-changing written test, covering everything from microphones to live sound, students are put into a pro studio situation where they must act as 'engineer' to a tutor's 'producer'. They're judged not only on the quality of the final recording, but on how they handle the situation as a whole.

Neither is acceptance on an SAE course a guarantee of a final qualification, though Grieme admits that sometimes students assume that payment of course fees entitles them to an exam pass. Misner: "Unfortunately, quite a few will fail our exams. If you were to take 100 of our students,

50 will fail the exam, because our exams are quite hard. If they fail, they have an option to repeat the exam, which consists of theory and practical, once. I would challenge almost every one of the experts working to actually pass. It's a serious exam."

"I predicted there would be less people looking for audio training, but in fact there are more and more."

OPPORTUNITY KNOCKS

For those who do pass, an SAE qualification can be helpful in establishing a career — although Misner makes no bones about the fact that even this can't promise employment. "Out of those 50 students [of each 100] who pass the exam, 25 are actually employable, and the other 25 are not — which is little to do with their education or what they know, it's just what they expect from the music business: you have to expect to start from nothing and work your way to something.

and a lot of them expect too much." However, for those with the right outlook, Misner says the employment prospects are good. Multimedia, especially, is a growth area: "That's what many students are now studying, because there aren't the jobs in recording studios. It would be mad to train 7000 people a year for recording studios when the jobs are not there". However, despite the dearth of pure recording jobs, SAE's audio-only courses are still in demand: "I predicted there would be less people looking for audio training, but in fact there are more and more. There are lots of people who are

PRODUCERS' CHOICE

Some SAE audio students undoubtedly intend to apply for work in professional studios. Yet there are producers who avoid using people who've been on such courses. Tom Misner is familiar with the situation: "A producer is very much to do with ego. I work as one, so I ought to know! It's also the old-school attitude — 'I made coffee, so he should make coffee too.' What they forget is this: when I started I was making coffee, but reverb was two buttons that said plus and minus. How much did you have to learn to know that plus is more and minus is less? Now reverb is digital; you have to really know what you're doing before you can operate the thing. These producers are from the old school, but they will die out eventually. If my students have passed the exam, they have the knowledge".

not really doing the course for a job. They have a home studio and they want to know what to do."

For those willing to look outside the confines of traditional studios, jobs are available: "There are television and radio stations opening up, and shortages of people. We've just trained 80 operators for Radio Free Europe, and Club Med. the French holiday chain, take over 100 audio engineers from us. There are avenues which you might not even think of. The good students will always end up in a job."

To help students identify job opportunities, SAE began publishing a trilingual newsletter in 1991; it now has a circulation of 100,000 copies worldwide.

LONDON CALLING

SAE's London school, established in 1985, was Misner's first foray into Europe, following his 1984 visit to the capital on a fact-finding mission. "I didn't come to London to open a school at all! I had five schools in Australia and I came to London to see how the big schools did it — what their brochures looked like, how they handled their students, what the studios were like. But then I turned up and there was just one place, called Gateway [see feature in SOS June 1995]. That's what started London."

Misner is not prepared to see SAE's position eroded by the recent increase in UK courses, and this, coupled with the fact that London is still regarded by overseas students as a desirable location in which to learn, has prompted ambitious expansion plans for the London school. "It will be larger than anything else we have, with seven studios and 40 workstations, plus a full multimedia programme."

The current London school has well-equipped studios, from 8- to 24-track, plus training areas for novices, and Pro Tools workstations. General Manager Rudi Grieme is our guide for a tour of the premises, which are usually inhabited by around 250 students, at different times. Rudi himself was trained by SAE: "I took the diploma course, 10 years ago. Then I moved on to Australia and did

EDUCATION EXPLOSION

As SOS's own Education Corner news column shows, there's been an explosion in audio training in the UK over the last few years. A recent SAE ad campaign pointed out that 50% of new courses were started by ex-SAE students: Tom Misner: "I feel quite good about it. That means we're teaching them the right thing." We won't name

names, but Misner does reveal that not all these students actually passed the SAE exam, and, in common with other long-standing audio trainers, he's concerned at the lack of standards in the audio training area, which SAE would like to see regulated: "I had words years ago with the APRS in England about this. They should

have taken control, because this kind of business really lends itself to people being ripped off. Some studio that's not doing too well opens a course, they have 20 students, then they get a big studio booking, and out go the students. I've seen it in the past, and the students then tend to think all audio education is bad because they've had a bad experience."



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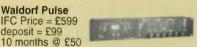
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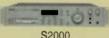
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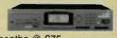
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20 Years Of SAE

■ a Tonmeister course, for another year." While studying, he also worked in the industry proper. "I started with live sound in Switzerland, and while I did the Tonmeister course in Australia. I worked in different studios, including EMI Studios. That's actually where I met Tom Misner. Then I became involved in the school's operation in Vienna, working part-time there and in various studios." Some SAE staff are ex-students, although, as Rudi comments, "we force them to do something outside also. Usually, we take staff part-time, and they have to do something outside too". This helps to ensure that staff teach with an eye to what's required in the real world.

the part-time option: "I've learnt a lot, but it's hard work — I didn't expect the theory to be so mathematical". To finance the course. Bruce has a part-time job with a PA company, and hopes to own his own studio eventually, though he knows he needs commercial studio experience first. Bruce feels he's relatively unusual in that he has some studio gear at home already, and plans to get more, while many of his colleagues seem more interested in working exclusively for commercial studios: "A lot of the people on the course are looking to go into the engineering side." He's already an SOS fan: "Last week I met Keanu Reeves when we did the PA for him; now I can tell people I'm

going to be in Sound On Sound too!".

As previously mentioned, the London SAE is one of only three which offer a DJ course. According to Rudi Grieme, it's going very well, though sceptics might wonder how on earth you could teach something like DJing, or even whether there's any point. But the student response so far has been good. Rudi: "We have good contacts - we work with the Leisure Lounge and the DJs there give lectures here -DJ Kofi, for example. We also work with Choice FM, and different manufacturers and suppliers. We put one or two advertisements in DJ magazines, and the response was massive. The curriculum was worked out with professional DJs. In the beginning, they cover audio matters, to give a basic idea about wiring, connectors, troubleshooting, and sound systems. Later on, the course goes into detail about beat mixing and other specialised techniques. We have a two-part exam. For one

part, students submit a recording of themselves which is time-restricted, and goes through different styles of music. They are given the styles and the beats per minute they have to keep to. Then the final exam is in the Leisure Lounge, in front of the public and judges". No 'cheating', by way of editing, is allowed in the making of the exam recording: students have "three turntables, a CD player, a mixer—a typical DJ setup", with which they have to mix a live recording to tape.

THE RIGHT STUFF

SAE's come a long way: in addition to the schools currently being set up, Tom Misner plans three new facilities, or expansions of existing ones, per year, and is looking to Japan as his next frontier. With 20 years of training experience, plus much professional engineering and production behind him, he's in a good position to know what makes for success in professional audio. So, what's the most important thing for someone wanting a career in the audio industry to have?

"The right attitude. Forget what you know. Attitude is the key factor to success. And then comes what you know. If you have a bad attitude, people won't even ask you what you know. You also need the technical skills, the demands of being a good engineer. With technical skills and the ears, you have a producer. But attitude is ahead of it all."



Diploma student Bruce Pearce mixes a personal project on the Neve VR Legend desk at the London SAE.

Gear is industry-standard stuff, including Yamaha ProMix 01 mixers, Alesis ADAT XTs. Apple Macs, Akai samplers, Tascam 688 8-track MIDIStudios, and Korg and Emu sound modules neatly racked with CD and cassette decks and patchbays, for the training areas. Equipment for the 24-track studio moves up a few notches, with pride of place going to the Neve VR Legend 32-channel desk. Rudi: "We had our problems in the beginning with the Neve, when we thought it was a step too far ahead - it's like learning to drive in a Porsche — but it has huge advantages too. If a student is really looking after himself, and he wants to gain something out of it, when he goes out into the industry, he won't find any function in the mixer which he hasn't seen before". Outboard racks feature Drawmer compressors, and Lexicon. TC Electronic, Yamaha, Ensoniq, and Digitech effects, plus extras such as Opcode Mac MIDI interfaces and Francinstien stereo enhancers. Monitoring is taken care of by JBL main and nearfield monitors.

Diploma student Bruce Pearce, who's working in the 24-track studio while we check it out, seems happy to talk to the SOS posse, despite the fact that our photo session is eating into his prized studio time, and as we chat, he reveals that he's just weeks away from his final exam. He's positive about the course, which he chose partly because of

SOS: RECOMMENDED READING

Do you think magazines like Sound On Sound, which have an educational content, are useful?

Tom Misner: "Oh yes.

Sound On Sound is one of the magazines we recommend for students. I don't believe in books that much, because books date very quickly. We have our own little book which we publish, which is just really basic sound — physics doesn't change. But a lot of books will tend to say they explain audio techniques, and two years later they're out of date. Magazines are a better source of Information for students."





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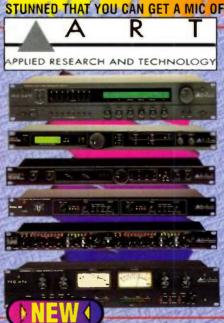
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BIAS PEAK DIGITAL AUDIO EDITING SOFTWARE FOR THE MAC

hat the Macintosh world needs is a good. new sound-editing program. "Why's that?" you say. "What's wrong with the dozens of hard-disk recording systems, multimedia sound editors, and sample editors already out there?" What's wrong is that they're either too unsophisticated for professional work, like Opcode's Audioshop or Macromedia's Sound Edit16, or they're too old to take advantage of today's computers and samplers. The best of them, Digidesign's Sound Designer II and Passport Designs' Alchemy, are based around technologies that are approaching their 10th birthdays. Besides, Sound Designer II (which long ago dropped sampler support, and is therefore of no use to those of us who still depend on those beasts) may soon be history, according to the manufacturer, while Alchemy, whose manufacturer has been playing a 'now-you-can-get-it-now-you-can't' game with it for several years, has never got past (and apparently will never get past) the significant limitations on file size imposed by a RAM-only program.

No — what's needed now is a program that is flexible enough to work comfortably in all sorts of environments — not just samplers, but also workstations, mastering, and multimedia; that recognises that hard-disk space is no longer a rare commodity; that works reliably with other hardware and other programs; that has expansion capabilities, which preferably can be addressed by third parties, perhaps using the popular plug-in convention; and that takes advantage of the blazing speed of the current line of Power PC Macs.

Such a thoroughly modern program is Peak, from Berkley Integrated Audio Software (BIAS), whose company name comes neither from the famed music school in Boston nor the notorious college town by San Francisco Bay, but from the name of the author, Steve Berkley.

Peak is not without its problems, but even in its

maiden version it brings a wealth of welcome features to the sound editing game. It works with any 68030, 68040, or Power PC Mac running System 7.1 or later. On the Power PC machines, it takes full advantage of their built-in, 16-bit 44.1kHz audio circuits. It also works with Numedia or Digidesign Nubus audio cards, although with Pro Tools III hardware you cannot yet record files, only play them back (that should change soon). It's file-compatible — using AIFF and Sound Designer II formats in mono or stereo - with most other Macintosh audio programs, and it speaks SMDI (SCSI Musical Digital Interface), the high-speed interface for transferring files to and from MIDI samplers.

THIS EDIT WILL NOT SELF-DESTRUCT

Like Alchemy and Pro Tools, and unlike Sound Designer, all of Peak's actions are non-destructive: the file on disk isn't changed until you save it, and if you do a 'Save As...' and rename the file, the original version stays intact. The program uses a combination of RAM- and disk-based functions. Where possible, pointers are used to move around the file, just like in Pro Tools, so that a simple cut-and-paste operation merely involves rearranging the order in which sections of the file play, without actually writing anything to disk. In more complex operations, the altered data is placed on a 'scratch disk'. You can tell the program where this scratch disk is, or it will simply locate the disk on your SCSI chain which has the most empty space, and use that.

Thanks to this non-destructive approach, the program allows unlimited Undos: keep hitting command-Z, and you'll work your way back through all the things you've done, right back to the original file, if you want. You can also Redo (command-Y) your way back up to the current edit again, if you like. If you want to jump back to an earlier point in your session, all the operations you've done are maintained in an 'Edits' window: choose the point at which things started to go wrong, jump back to it, and pick up your work from there. Once you change an edit in this window, of course, all the edits you did subsequently are voided.

Another welcome feature is the 'Blending' function: when you edit two pieces of a file together, you don't have to go in with a microscope to make sure they fit together without glitching — you can merely invoke this feature, which performs a crossfade between the two regions. You can specify the length of this crossfade, and even the in and out envelopes. Different lengths and envelopes can be created for each edit. However, you have to specify the parameters for an edit before you actually make it, which is a bit unwieldy. The envelopes you create can be saved as disk files and recalled at will, and the program comes with a small library of envelopes to get you started.

In general, Peak is very fast, using RAM when it can and disk swaps when it must. During most time-consuming functions in Peak, a 'time remaining' window appears to let you know how much time you have for coffee. In many cases, you'll be pleasantly surprised at how little time that is.

GETTING AROUND

The program makes excellent use of markers they are easy to drop in and edit, and can be

pros & cons BIAS PEAK #399

- pros
 Fast, non-destructive editing.
- · File size limited only by disk space.
- Excellent SMDI implementation
- 16-bit audio with Power PC Macs. • Uses Adobe Premiere plug-ins.

- Limited number of processing tools.
- . Some processing tools not great quality.
- . Doesn't (yet) support .WAV or QuickTime
- Uses Adobe Premiere plug-ins.

summary
A long-overdue addition to the Mac sound designer's arsenal, Peak is a fast, fullfeatured audio editor, combining the best features of disk-based and non-destructive editing. Excellent use of markers and loops, and smooth SMDI transfer capabilities make it a great sample editor. Plug-in modules are promising, but currently present some problems



anchored to a particular sample, so that when a section of a file is moved around, the marker goes with it. It's also easy to select a region between two markers: command-click in the region, and you've got it — no guessing about whether you're right on it or not. When you move a marker, pressing the Shift key restricts your movements, so that the marker can only land on a zero-crossing, which helps to make glitch-free edits.

Markers can double as loop-in or -out points, and a crossfade looping function with user-definable length and envelope is included. *Peak* only supports one loop per file, so if your sampler uses multiple or decay loops, you can't create them here. Loop points can be locked to each other, so you can move a loop around without changing its length. A feature called 'Loop Surfer' lets you specify a tempo and number of beats, and automatically creates a correctly-timed loop from the current cursor position. You'll probably still have to trim and crossfade it to make it just right, but it's a big time saver nonetheless.

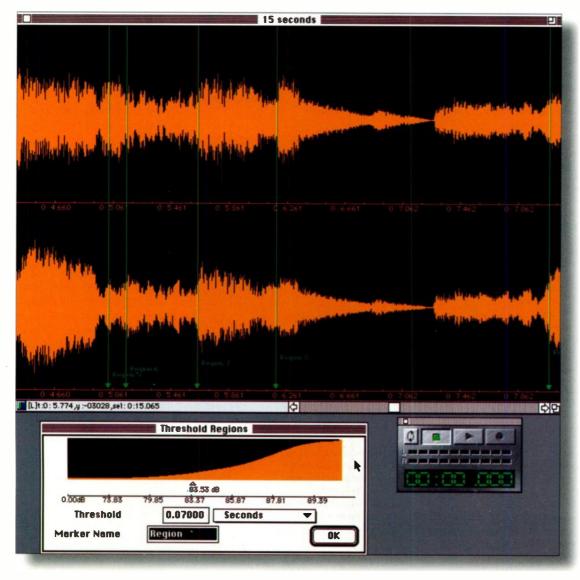
There's a very cool scrubbing feature which hasn't been seen in audio editing programs before, although I personally have spent several years begging other companies to implement it. Conventional scrubbing emulates the rocking of tape-recorder reels, so that as you move the mouse back and forth on the screen the sound comes out at a variable, but usually very low pitch, either

forwards or backwards. In Peak's 'dynamic scrubbing', as you move the mouse, little chunks of the file are played, in the correct direction and at the correct pitch. The size of the chunks is adjustable from 10ms to 600ms (shorter chunks mean greater accuracy, but are harder to hear), and the feature can be used in either of two ways — a positionbased 'jog' mode and a mouse-speed-based 'shuttle' mode — which can be toggled, as you scrub, with the Option key. Although it sounds a little strange when you're doing it, the feature lets you find the precise beginnings or ends of sounds. or changes within them, really quickly. To my mind, this is infinitely preferable to the the old-fashioned tape-emulation method, though BIAS say traditional 'tape-style' scrubbing will also be included in an upcoming version.

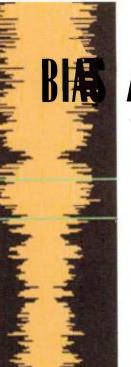
Editing functions are as you would expect: cut, copy, paste, insert, silence, insert silence, and crop (remove everything except what's selected). You can zoom in through many levels using command keys, and there are some helpful 'instant' display functions: with various key combinations you can go right to the sample level, or view the whole file, or select a region and have it fill the screen. You can choose, with the 'Show Edits' option, to display any parts of the file that you have edited with a 'marquee' of diagonal lines around them.

The screen can display the waveforms in four different drawing modes. Except at extreme

"Although they're a small company, Berkley Integrated Audio Software have come out with a big, big product."



Peak's main screen.



Peak

magnification, each screen pixel represents a group of samples, and you can tell the program to either show the peak value or the average value of each group. You can also choose whether to show the group's polarity sign: with this turned on, the display is a single continuous line, while when it is turned off. the display is more envelope-like. You also get seven different drawing speeds: the faster speeds use more CPU time and thus give you less ability to play or edit in the background. Frankly, I find all these options tend towards overkill, but someone may like them.

INS AND OUTS

File formats supported are currently somewhat limited: Sound Designer II, AIFF, and Red Book audio for CD mastering. These are sufficient if you're just working in a Mac music environment, but for

multimedia work you also need the QuickTime Movie format, and if you plan to use your files with other computer platforms you need .WAV. The company promises that these formats will be supported in the near future. You can save files in 8-bit AIFF format for multimedia use, but the program simply truncates the file, without any dithering or level-changing, and so the results will often be less than optimal. Fortunately, you can use the plug-in version of Waves' L1, which I'll talk about shortly.

The program lets you import tracks on an audio CD directly from a CD-ROM player (assuming that the player supports what's called 'SCSI-to-audiotransfer' or 'audio extraction', and unfortunately, a lot of popular third-party drives don't). This is actually a feature of Apple's QuickTime, but in most applications that take advantage of it, the file that

> results is a QuickTime movie, which then has to be converted into the application's native format. Peak conveniently imports it directly as AIFF, so you can start working on it right away. The feature lets you select a CD track, listen to it, and designate in and out points for the conversion.

> Like many office software products, Peak remembers the last few files you've opened, in the current session or previous ones, and lets you access them instantaneously from the File menu. You can have multiple files open and play them one at a time using the Mac number keys, the numbers corresponding to the order in which you opened the files.

CYBERSOUND FX 🖎 *Peak* Plug ins Save Rs.

The Multitap Delay from the Cybersound FX plug-in set

The Waves AudioTrack plug-in combines dynamic processing with filtering for all-purpose DSP.

region is longer than three seconds, you'll only hear the beginning - which makes it quite difficult to set parameters intelligently, especially if the sound changes over time. So using something like L1 to work on an entire song for mastering, which is such a joy in Sound Designer, is a really tedious exercise here. The problem is built into the system; you can throw more RAM into Peak (which would help some other sound-design programs) but it won't change anything. BIAS say they are trying to figure out a way around the limitation.

There are currently two sets of plug-ins available for Peak: the Cybersound FX set from Cybersound, makers of the VS virtual synthesizer sound set for playing MIDI files with the Mac's internal sound chip; and a set from the remarkable Israeli company Waves, who have become famous for their superb plug-ins for Digidesign Sound Designer and TDM systems, which they have ported over to the Premiere format.

The Cybersound set includes echoes, delays, reverbs, flangers, EQs, and a fairly simple dynamics processor. They are useful, but their programmability and flexibility are limited, and the sound quality ranges from pretty good to pretty awful. For those used to playing with TDM plug-ins, which, regardless of manufacturer, are universally high quality, they will be disappointing. They're also guite slow - it may take several iterations of the Preview function (which I'll get to in a moment) before the effect kicks in, and it also takes a while for any parameter changes to be audible.

The Waves plug-ins, on the other hand, which consist currently of the L1 Ultramaximizer, the Q10 parametric EQ, and a 'Swiss Army knife' combination of dynamic processing and filtering called AudioTrack, are exactly the same as therefore quite equal in usability and quality to their Pro Tools counterparts. The controls themselves are sluggish, but parameter changes are heard in real time. Waves has recently started using a dongle on the ADB (mouse and keyboard) cable as an authorisation key for its plug-ins. It's probably much easier to administrate, and undoubtedly causes fewer system conflicts than disk-based copy protection, but personally I'm uneasy about loading down my ADB line (which in my case has two keyboards, a mouse, a trackball, a fax modem, and a Steinberg dongle) with more junk.

There is a serious drawback to the Adobe Premiere plug-in architecture, however, which Peak cannot escape from. To listen to a plug-in's action you select a region, open the plug-in's window, and press the 'Preview' button. The selected region plays, over and over, while you adjust the plug-in's parameters. Unfortunately, only three seconds of sound can be heard this way - if your selected

PROCESSING

DSP functions are accessed through sub-menus under the Action menu. Their organisation is a bit confusing. Some are found in what BIAS calls 'Accessory Paks', which are software add-ons that reside in the program itself. Accessory Paks were originally supposed to be optional extras, but the company recently decided to simply include all of them with the software. so perhaps the concept will eventually be disposed of. Other DSP functions are plug-ins from third-party manufacturers, and these live in a special folder. The plug-ins that Peak

can access are those designed to be used by Adobe's Premiere: this is a whole new family of tools whose format is being adopted by a number of companies' products (such as Macromedia's Deck), and is becoming a viable, and much less expensive, alternative to Digidesign's TDM plug-ins.

The DSP functions in the Accessory Paks include sample-rate conversion; phase inversion; normalisation; click repair (which automatically and very nicely — smooths over spikes); gain change; reverse; reverse boomerang (which turns the signal around and mixes it back with the



It records 8 tracks simultaneously, at CD-quality, it does this without compression, ...and there's not a tape in sight!



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The D-80 can be slave or master to other D-80's / DMT-8's and the outside world via its standard in-built MTC, and is sample accurate with Word Clock (optical S/P-DIF).

inally, someone has developed an expandable IDE-based digital removable hard disk system which offers up to 40 minutes* of true multitrack recording, non-destructive cut, copy, move & paste' editing, instant locate & search, five 'virtual reels', digital and analogue inputs/outputs along with a full function auto locating remote control. And all in a package which is as easy to use as your tape machine and costs no more than £1,499 inc VAT. Naturally, that someone is Fostex.





Exclusively distributed by SCV London

Peak

original); fade in and out; and 'rappify', which the documentation says "rhythmically applies an extreme dynamic filter" to the file, but doesn't do a lot for me. There's also a Duration Change function, which lets you change the tempo of a file without changing pitch, but despite its comprehensive selection of sub-parameters, it does a poor job — complex sounds take on an ugly

low-frequency modulation. The feature's 'Speed' parameter is labelled wrongly: as you increase the speed over 100%, the duration gets longer, not shorter. Let's hope they fix this soon. There's also a phase vocoder feature, whose function is not entirely clear, as it isn't documented. It does, however, seem to do a cleaner job of changing duration than the Duration Change function does.

More successful is the Threshold function, which is a tool for automatically breaking up a file into regions, similar to the Strip Silence function in Opcode's Studio Vision. When you invoke this, it analyses

the amplitude of the file over time, inserts a marker whenever the level crosses a certain user-definable threshold and stays there for a certain (also userdefinable) period of time. A very slick graphic window is used to set the threshold level, letting you see exactly where and how many markers will be created as you change the level up and down. Each marker can then define a region, and you can use these regions to, for example, break up a drum loop into individual hits or separate a voice track into syllables. Once the markers are set up, the individual regions can be automatically exported into windows of their own, and even saved to disk. Very cool. One drawback, however, is that if you have a whole lot of regions (in my experiments, more than about 15), and you export them to individual windows, the program apparently runs out of gas and the computer freezes. But in the program's favour, this was the only time I was able to get it to crash.

There are three DSP functions that work through the clipboard — that is, they involve two sounds simultaneously: one the current selection, and the other a selection cut or copied from somewhere else. 'Mix' simply merges the contents of the clipboard into the current selection, and 'Modulate' creates a ring-modulation effect, in which the two sounds are multiplied. The amount of the effect is adjustable. 'Convolve' is a weird function that, according to the manual, imposes the spectral character of one sound onto the other. It certainly can create unusual sounds, but exactly what's going on is not clear, and there are no user parameters.

BUT THERE'S MORE...

Also included in Peak's Accessory Paks is Apple Events support, which means that you can have Peak play audio files from within any other application that works with Apple Events. This includes many word-processing and database programs, so that you can use these programs to organise and audition large collections of audio files. Peak's Apple Events implementation includes a simplified document path description, so that you don't have to type out huge lines of colonfilled code to locate files that are deep within a complex folder structure.

Finally, the Accessory Paks include support for MIDI samplers. The normal method Peak uses for transferring samples is SMDI, the protocol developed by Peavey and now also used by Kurzweil and Emu in their most recent models. In addition, support is provided for some Ensoniq samplers using a proprietary, also SCSI-based, protocol. The company says that support for some Roland and Akai samplers is on the way, as is support for MIDI Sample Dump Standard, which will at least make the program backwards-compatible with a host of older devices. I tried the SMDI transfer with a Kurzweil K2000, and it worked nearly flawlessly in both directions. There was no setup needed: the program knew what I had hooked up, what its SCSI ID was, and what, if anything, was already in the slot I was aiming at. It also found the first empty RAM slot, which happened to be 200. In a guick test, I found Peak's SMDI transfer wasn't quite as fast as Alchemy's: a 15-second, stereo 44.1kHz sample took Peak 76 seconds to transfer, while Alchemy sent the same file in 61 seconds. There was also one slight hitch: when Peak told me it had sent to slot number 200, the K2000 disagreed and said it had received number 201.

CONCLUSION

There is actually a lot more that could be said about this powerful, fast, and very thorough program. Although they're a small company, Berkley Integrated Audio Software have come out with a big, big product. Peak does more than simply clear away the cobwebs that have accumulated in the Macintosh sound-editing world from several years of neglect: it's an exciting, innovative, thoroughly upto-date program that will (assuming Apple doesn't blow it completely) greatly help the Mac in its struggle to maintain its long-standing, but endangered, superiority as a creative tool. Like any infant, Peak has teething troubles — it needs better DSP and memory management, and should work with a wider range of file formats — but I have the utmost faith that it will grow out of them. If you're serious about sound editing, whether for composition, effects design, multimedia, or MIDI samplers, you will want Peak. 505

£399 including VAT. Natural Audio Ltd, Suite 6, The Kinetic Centre, Theobald Street, Borehamwood WD6 4SE. 0181 207 1717. F 0181 207 2727.



Reverse Boomerana is one of the DSP functions available in Peak's Accessory Paks.

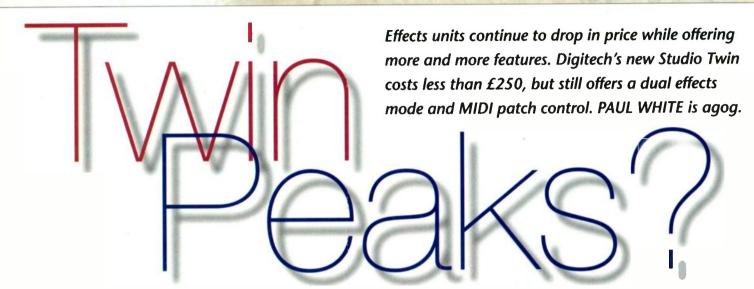
DOCUMENTATION & HELP

Learning to use Peak is easy: the program itself is relatively intuitive, and the manual is trim and wellorganised. Two things I would like to see are more tutorials using the waveforms included with the program, and a keyboard command chart. The latter is available on the company's web site (www.bias-inc.com), but having it on paper would help. The Accessory Paks structure creates some awkwardness in the documentation: the Paks' features are described in a separate manual. and are organised according to what Pak they belong in, not what they do or where they end up on the menus. And, as I mentioned, some features are not documented at all. Hopefully the Accessory Paks idea will be abandoned, and the documentation straightened out.

There's also plenty of on-line help, in two forms: the program has its own Help menus, which though brief, are useful and well-organised, and the web site is excellent.







DIGITECH STUDIO TWIN DIGITAL MULTI-EFFECTS UNIT

ittle over a decade ago, I recall being totally entranced by the whole idea of digital reverberation — the hardware cost an absolute fortune, but it didn't seem to matter — the magic was worth it. When prices started to fall, it was a dream come true; in my opinion, the availability of affordable quality studio reverb stands alongside MIDI as one of the main enabling technologies that made serious home recording a reality.

Back in the mid-'80s, any form of digital reverb under a grand was a bargain. Since then, prices have continued to fall, while the quality of the hardware itself has improved significantly; but now there are so many models to choose from that it's difficult to know which way to look. Walk into any serious music shop and you'll find shelves of effects units from a number of manufacturers, ranging in price from less than a couple of hundred pounds to upwards of a couple of thousand.

ENTER THE TWIN

The 1U Digitech Studio Twin sits close to the bottom end of the price scale, and in common with most budget effects boxes, it offers very limited user control. Even so, the effects engine is based on the same S-DISC processing chip used in top-end Digitech units, which means not only lots of processing power, but also a respectable audio bandwidth and a healthy signal-to-noise figure. In fact, the Studio Twin has a full 20Hz to 20kHz bandwidth with 18-bit oversampling analogue-to-digital and 20-bit digital-to-analogue converters, the latter running at the rather odd sampling frequency of 46.875kHz. This yields a signal-to-noise figure in excess of 90dB, which in

practical terms means that the Studio Twin shouldn't disgrace even digital recording setups. What's more, the unit is mains-powered — there's no fiddly power supply to worry about.

Whereas the technology is leading-edge stuff, the user interface has been pared down to a bare minimum; all the patches are based on presets which can be edited in a limited way by the user. A nice touch for a unit of this price is the adoption of discrete knobs as a means of parameter control, rather than the less friendly buttons; the Studio Twin utilises three knobs which can be switched to address either three of the key effects parameters or to act as a single-band, parametric EQ. What the key effects parameters are depends on the type of effect or combination you're editing.

Each of the 99 factory patches can be customised by changing the available effects and EQ parameters, then storing the modified version into the correspondingly numbered user memory. You can't store edited patches into different numbered memory locations, and there's no facility to create a patch assignment table, but you can use MIDI Program Changes 0 to 99 to select user patches remotely via the solitary MIDI In socket. Patch 00 operates as a bypass, but there's no discrete Bypass switch or footswitch option.

EDITING

The input can be either mono or stereo, and is monitored by twin, peak-reading, 4-section LED ladder meters. The output is also stereo, but one of the biggest surprises is that both the ins and outs are balanced at a nominal +4dBu. Patches can only be selected by number, not by name, but there is a list of the effects groups and their



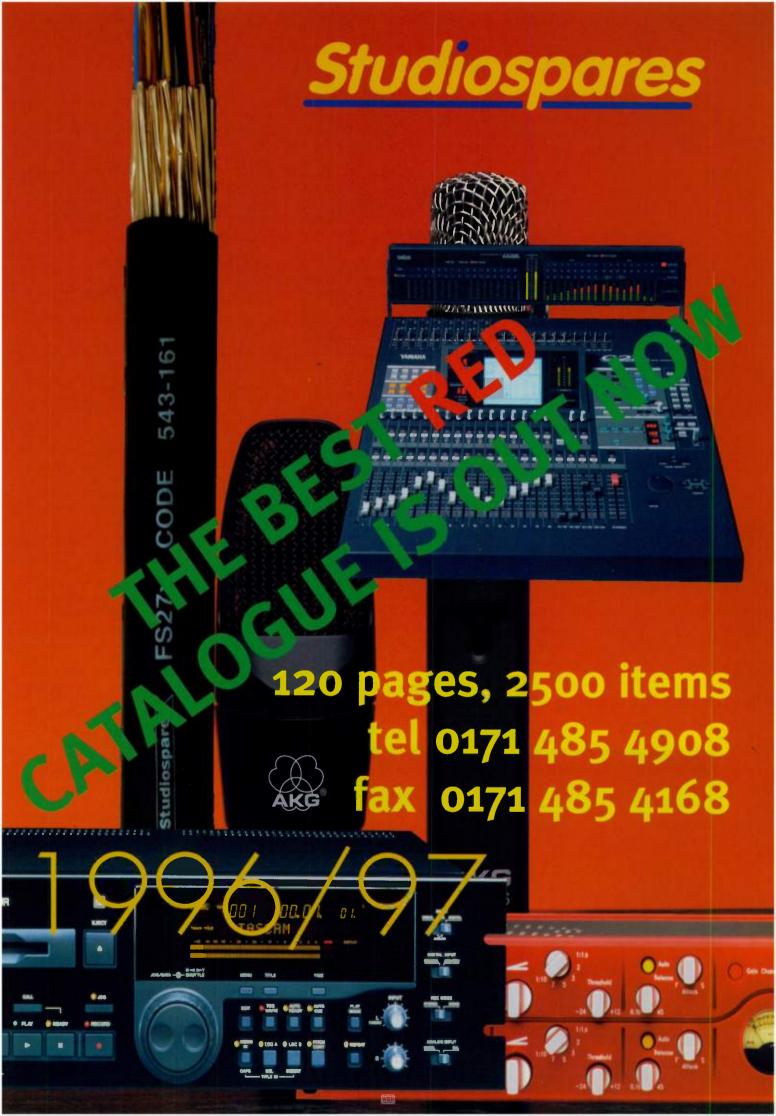
Despite its inevitable limitations, the Studio

Twin is a professional-sounding effects unit able to provide all the usual bread-and-

butter studio effects to a very high standard,

SOUND ON SOUND

and with the minimum of effort on behalf of



DIGITECH STUDIO TWIN

 corresponding patch numbers printed to the right of the numeric window. All three of the parameter knobs, Pre-delay, Decay and Level are conventional pots (not continuous shaft-encoders of the type normally used for data entry wheels), and each has an associated LED which comes on only when you move the knob through the position of the previously stored value. Until the LED comes on, turning the knob has no effect.

To select patches, it's only necessary to turn the large program wheel — there's no Load button and if you press Store, any edits made will be stored to the user patch of the same number; a small dot comes on in the display to show that you're in the user bank. To exit the user bank, you have to use the program wheel to spin back into factory preset land, but this takes virtually no time at all. Two further program wheel settings take you into MIDI channel setting territory, and also allow you to adjust the threshold of an internal noise gate. In both cases, the Level Parameter knob LED lights up to remind you that it's the one you need to turn to make your changes. Whenever a parameter is changed, its numeric value is shown in the window for a few seconds before the display automatically reverts back to the current patch number.

Pressing the EQ button switches the parameter knobs to their secondary function: controlling the Frequency, Bandwidth and Gain of the singleband parametric EQ. When you're dealing with what are essentially presets, this provides quite a lot of scope for rounding out a half sound, or putting a little edge on a plate reverb. That leaves only the Mix knob, which sets the relative balance of the dry and effected sound, and the Input Level knob, which is used in conjunction with the meters to optimise the input signal level.

VERDICT

Despite the restrictions placed on patch editing, the Studio Twin actually sounds very classy, and the reverbs in particular are very smooth and wellbehaved (see the 'Effects' box for more on the different types offered by the Twin). My own view is that just a little more control over the modulation effects would have been helpful, and I still feel that units like the Alesis Midiverb 4 and the Lexicon LXP15 provide the best compromise in terms of user interface between ease of use and adequate control — but when you consider the

"The Studio Twin offers stupendously good value. Ten years ago, you'd have paid £1200 for something this good."

price of the Studio Twin, it offers stupendously good value. Ten years ago you'd have paid £1200 for something this good, and you'd still think you'd got a bargain. Perhaps more of a limitation than the simplified controls is that you can only store effects back to the same number user memory, which precludes you making 20 slightly different versions of your favourite patch and then storing them elsewhere. In effect, you can only create one alternative to each patch, but as the operating system is so simple, I'd probably edit patches as and when I needed them anyway.

The Studio Twin isn't without competition, and its obvious rivals are the Lexicon Alex and the Alesis Microverb IV, but I think it puts in a good showing against both these rivals, and for a unit under £250, the inclusion of a true dual effects mode is great news for the home studio owner who can only afford one effects box. Conversely, the high technical spec plus the use of balanced, +4dBu audio connections mean that even the relatively advanced user could benefit from using a Studio Twin as a second reverb unit. What's more, you get MIDI patch selection, which is normally omitted on such low-cost units.

Digitech have always created fine-sounding effects boxes, but there have been occasions when I've felt they haven't made the operating system straightforward enough; and that's a criticism that certainly can't be levelled at the Studio Twin. I have a feeling that this could rapidly become one of Digitech's best sellers. 505

presets, the quality and musical

THE EFFECTS

sability is impressive; there's a ill selection of Hall, Cathedral, Plate, Chamber, Room and Gate reverb types to choose from, and in subjective terms, they stand up well alongside most of the better mid-price reverb units. Decay, pre-delay and level can be adjusted for all the reverb programs using the rotary controls, and the noise

Though the Studio Twin's

The delay menu provides for with continuously variable delay time (640ms max), and

feedback (using the Pre-delay and Decay knobs), after which we move into a whole range of combination effects. Only two effects are available at a time but these are offered in both series (where the output of one next) and parallel combinati where each input is treated with a different effect. For example, Dual Delay & Reverb has the left input feeding the delay while the right input feeds the reverb. Dual Mod/Reverb and Mod/Delay options work the same way. The series dulation with delay or reverb, and the modulation effects

include chorus, flanging and tremolo. As you can imagine, this provides quite a lot of scope, and if the Studio Twin is your only effects unit, you can feed it from two aux sends to double your firepower using the

The three parameter knobs ift function depending on the ects type you call up, but in all cases, you get access to the most important parameters. To give an example; in Mod/Reverb mode, you get to ed, the reverb decay and the mix between the two effects. In all cases, the EQ processes just the effects, not the dry signal, and its settings are stored whenever a patch is edited.



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NOW THAT'S WHAT I CALL EFFECTS



SONY DPSV77 MULTI-EFFECTS PROCESSOR

Sony's DPSV77 is like a 'best of' compilation of all the company's dedicated single effects units, with the addition of a simplified user interface and a digital I/O. Is it a smash success or a one-hit wonder? NICK MAGNUS goes for gold...

aving made a name for themselves in the world of music technology with the acclaimed D7, R7, M7 and F7 single-effect units, Sony are making another foray into the world of studio outboard gear with the DPSV77 multi-effects processor. The R7 and D7 were dedicated to reverb and delay respectively, the M7 dealt primarily with modulation effects, and the F7 majored in digital filters and EQ. The V77 is a distillation of all these units in a new, accessible package.

Digital recording is becoming more and more prevalent, and Sony provide for this: in common with processors such as the Alesis Quadraverb 2 and the Kawai RV4, the V77 offers the choice of digital and analogue inputs/outputs, including the option to run both simultaneously, thus allowing the user to mix and merge different digital and analogue sources into one digital (or analogue) result.

THE PHYSICAL THING

The front panel layout is standard for present-day units, with centre stage being occupied by a highresolution liquid crystal display. A lot of information can be shown here, and navigation of this information is facilitated by six soft keys beneath the display labelled A-F. In addition to the LCD, there's a 2-digit LED readout showing the current patch number. Other controls include: a dual-concentric knob for the analogue inputs, with level meters for left and right signals (this is a true stereo unit); an output control; a 10-key pad for inputting values directly; dedicated buttons for system setup and patch saving; and a few dual-function buttons to edit/change page, mute/bypass, shift/exit, and bank select/compare. At the right of the unit is a data dial with a springloaded outer collar for accelerating the scrolling rate of parameter values.

On the rear panel, both XLR connectors and balanced/unbalanced jack sockets are catered for, so there's no need to scorch your cardie soldering up new leads before the V77 can be put to use. The inputs and outputs can be switched individually between +4 and -20dB levels, and the digital VO is Sony's 8-pin mini connector, as found on their portable DATs (oops, mind that cardie!). Two assignable pedal jacks, MIDI In and Out/Thru, and an IEC mains socket complete the picture.

BASIC STRUCTURE

The V77 has 198 preset patches, plus 198 userprogrammable memories — a fairly respectable number. These are divided into two banks each of

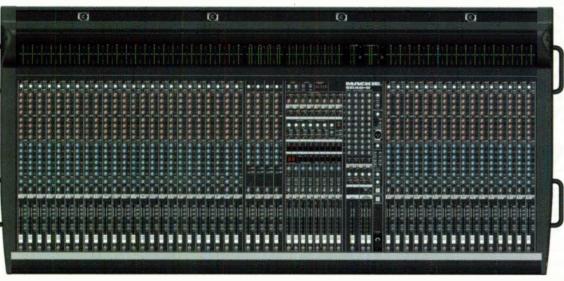
preset and user memories. Many of the presets come with a certain amount of dry signal mixed in (for straight-through applications) so if you're using the V77 on a mixer's aux send, you'll want to set the unit to globally remove any dry signal (more on this later). This is done in the Setup menu, and it is here that you can set various useful defaults (including a clock,







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- 8 Submix section bus strips each feature 100mm log-taper faders, "Air" EQ controls, tenter & L-R assign switches, pan controls, nute & solo switches with LEDs

MACKIE DESIGNS' SR40+8 DESIGN PATENT PENDING.

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- power pan control, mute switch + LED, Submix 1-8 assign switches, L/R /center assign switches, 100mm log-taper fader, solo switch + LFD indicators
- 4 extra stereo line channel strips for aux returns, which include: 4-band equalization with 12kHz Hi shelving EQ, 3.5kHz Hi Mid EQ, 800Hz Lo Mid EQ and 80Hz shelving EQ, plus 150Hz fixed Low Cut (high pass) filter at 18dB/octave, Low Cut In/Out switch, other features same as mono channels
- Flip switch for stage monitor applications: Exchanges the master control of any selected aux send with the corresponding subgroup fader routing the aux send to the sub insert jacks, slide master fader, air EQ, and balanced output connectors
- UltraMute section has 99 mute groups and 99 snapshot capablility, mute select switch + LED indicators, Store/Preview/ Snapshot/Clear/Enable switches + LEDs, 10unit snapshot indicator, group indicator, Mode/Up/Down switches
- Talkback section includes talkback mic input (phantom powered), assign switches for Matrices A-B-C-D/Aux 1-4/Aux 5-8/Ext./L-R. talkback level control, solo level control, program level control, talk button, recessed phones jack (there's one on the rear panel too) 400 Hz/pink noise source with separate level control (uses talkback routing switches)

- The non-optional Meter bridge includes individual 12 segment bargraph displays for each channel, dual bargraphs for the stereo channels, eight additional bargraphs for the subgroups, and three more for Left/Right/ Center outputs. The input meters may be globally swiched to read prefader or postfader, and so may the output meters. The meters are dimmable
- Rear panel includes RS232 data port & MIDI In and Out jacks, L&R outputs, L&R monitor outputs (engineer's wedge), L/R/ center XLR outputs, talkback output, XLR Matrix A-B-C-D & sub outputs, Aux Return B inputs (4 stereo pairs), Tape A & B inputs & outputs, main L & R inserts, Center insert, subgroup inserts, Clear-Com input, & main power supply input
- Each channel has rear panel XLR mic & TRS line in jacks, insert with separate send & return (balanced), & direct out
- Built-in Clear-Com" interface: ties the SR40-8 into any Clear-Com party-line intercom system, with ground isolation, ignore switch, call button + LED, and a trick or two that even Clear-Com doesn't have
- External 400-watt power supply with redundant power capability
- 4-pin XLR lamp sockets and dimmer



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*What's this I hear about a 56 channel SR56•8?

SONY DPSV77



to time/date stamp your patch creations) which customise the V77 to your own way of working.

Being a stereo device, the V77 is structured as two separate effect blocks. Each block contains a single or combination effect (you choose from the huge list) and each block has its own EQ section which can be placed pre or post the effect block (to EQ the effect, or to effect the EQ). The effect blocks can also be run in series, parallel, or

"Large, cheery icons pop out of the screen at every opportunity, pointing the way through the editing process."

dual configurations (ie. block A feeds block B (and vice versa): block A is summed with block B; or A & B become two distinct effects applied to left and right outputs independently). Not content with this, the V77 has one other structural trick up its silicon sleeve: morphing. More accurately described as crossfading, this allows seamless changes from one patch to another, with a morphing time which can be set, in tenth-of-asecond increments, anywhere between 0 and 10 seconds. The trade-off is that the 'morphed' patches can only use one effect block at a time, since one block is crossfaded with the other.

Given the huge variety of effects available to a block, this is unlikely to upset anyone other than psychotic sonic mutilators (see 'Effect Algorithms' box). The V77 can be configured in true stereo, where the left and right inputs and effect blocks are independent, or more conventionally, so that any signal arriving at the left or right jacks is fed equally to the two effect blocks.

GETTING TO GRIPS

If there was any criticism to make of the previous Sony effect units, it was that they were almost too complicated. Sony have responded to this by making the V77's displays as friendly as possible. Large, cheery icons pop out of the screen at every opportunity, pointing the way through the editing process. All that's missing is a kettle icon to remind you to take a break! Ease of use is further aided by the 'Active Parameters' on the Play page. Whenever a patch is selected, the six most oftenused edit parameters appear on the screen above the six soft keys, allowing you to change them without having to go into edit mode. Simply press the relevant soft key, and turn the dial. Better yet, you can decide for yourself what those parameters should be, thus customising the V77 to your own tastes. If you always want to have access to the HF rolloff of a reverb, for example, you just assign it to one of the soft keys - nice.

Additional live manipulation is available via real-time control. Parameter access via MIDI is now *de rigeur* on all but the most budget units, and the V77 is no exception. For each patch, up to six MIDI control sources can be assigned to affect the parameters of your choosing. This includes MIDI Clock as an option, so delays and modulated effects can be slaved to the tempo of your track (see 'MIDI Control Sources' box).

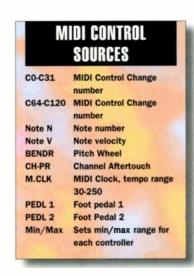
With the sheer amount of editing potential on board, one could easily become fairly bewildered at the choices on offer. Fortunately, the two manuals are very clearly presented. The first explains the operational basics and architecture of the V77, whilst the second explains every parameter in detail, usually explaining what they do, how they do it, and in many cases why you would want to do it. Why can't all manuals be as helpful? Good on you, Sony! However, missing from the production version of the manual is a full list of all patches, an explanation of what each one is doing, and a suggested suitable application for each. This is a shame, as it was included with the preliminary version which I originally received with the unit. Nevertheless, there are plenty of suggestions for experimentation (here, try this...!) the end result being that you don't feel you've been abandoned in charge of some horrific, unfathomable megalith that's relentlessly fuelling a growing inadequacy complex.

PATCH ORGANISATION

To assist in the process of assembling the patches you've created, the V77 is capable of copying, moving, erasing and swapping patches around in its user memory. To make the purpose of patches clear, the main Play page accompanies the patch name with an appropriate cute icon (a tiny drum kit, a man or a woman singing, and so on) which can be selected from a list that covers practically any situation. There's even a 'hairy muso' icon! Patch organisation needs to be taken into account in the case of morphing patches, unless you're changing patches by MIDI Program Change messages, or directly typing in the relevant patch number on the keypad. Otherwise, patches for morphing would have to live next door to each other in memory for the effect to take place.

IN USE

The V77 offers a vast range of effects, from gorgeous, shimmering ambiences and delays, all the way through to some of the wackiest noises I've heard coming from a box that wasn't a synth. The zanier sounds are rather more likely to have uses contrived for them than being the 'ideal' effect you've been seeking for ages (and there's nothing wrong with that), but the regular effects



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SONY DPSV77

EFFECT ALGORITHMS CHORUS Parametric Stereo Cutoff • Band Shelving • Deca • Stereo REVERBS Ensemble • Hall FLANGER • Room • Plate • Stereo Gating Band • Step Ducking Spacious Triggered Ambience PHASER DELAYS • Stereo • Stereo Triggered • Double Multitap PANNING Tempo Stereo · Long • Haas • Mono Triggered · Modulating · Ping-Pong • Hold Stereo Shifter Panpot Tap Multi Shifter Dimension Intelligent Shifter DYNAMICS • Reverse Shifter • Limiter SOUND FX Compressor • DAL1000 Doppler Limiter Ring Modulator • Driver Vocoder • Pitch Breaker **FILTERS** • Pitch Roller Multiple PEO • Dynamic OTHER Exciter Rotary Speaker Voice Canceller • Wah Dynamic Filter Freeze Amp Simulator Vibrato/Tremolo • Sub-Harmonic COMBINATIONS Generator • Bottom • Delay + Reverb **Ambiencer** • Chorus + Delay · Chorus +

▶ are fine examples of their type. The reverb algorithms all have distinctly different characteristics, and are extremely clear and precise. The plate algorithm, in particular, has a very musical tonality, whilst adding a real sense of size, and in common with the other reverb algorithms, doesn't sound detached from the original sound, as can be the case with some units. Worthy of special mention is the Spacious Ambience algorithm, whose function is to simulate distance placement of a sound within a room. As well as left/right placement, you can also set the near/far position, together with the reflection/absorption nature of the virtual walls. Splendid for 'miking up' those DI'd samples.

In fact, on that note, I conducted a small experiment: whilst laying down some tracks of sampled percussion to my Akai DR8 for subsequent mixing elsewhere, I sent them through the Spacious Ambience program, and took the signal from only one V77 output to a track on the DR8. Unlike the other reverb devices in my rack, which somehow sound 'incomplete' from just one output, the V77 sounded uncannily real. There was just sufficient effect applied to simulate a distance between a mic and the sound source, such that when it was removed, you really felt something was missing. I tried this with other sounds, including an upright bass sample, with great success.

Even the overdrive programs aquitted themselves well, turning an average Stratocaster sample into a steaming multi-stacked monster! Various amp simulations and mic positions are provided, allowing for an enormous range of tone colours from one original sound.

Striking, too, were the Haas Panner (like auto-panning but with a much greater sense of space), Deca Chorus (up to 10 choruses — chori? — going at

once), Pitch Breaker (applies pitch-shift only to the mid band, to create unusual chorus or ring mod effects), and a quite respectable Leslie/overdrive simulation. To go through the list would take up the rest of this issue, so you'll have to take it from me that there's plenty to interest everyone.

Niggles do exist amongst the eulogies, and as hinted in an earlier paragraph, the first is to do with dry signal levels. Even if you set the dry signal to 'off' globally, certain programs still have a wet/dry balance, and dry signal is still to be heard. Maybe it's plain pilot error on my part, but I'd have thought it would be removed. The problem with this (when using aux sends — the most likely scenario) is that any dry signal coming from the V77 is slightly delayed from the dry desk signal, creating a flammy, out-of-phase sound. You have to make sure the effect balance within a patch is always set to fully 'wet' to avoid this.

Niggle number two concerns the overall stereo balance — the unit I had was heavily biased to one channel, requiring a hefty pan offset on the desk's

aux return — presumably an aberration on the demo model?

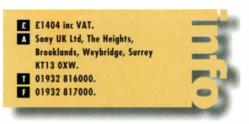
My last whinge concerns the input and output level matching switches. Using a -10dB desk, the -20dB input setting was a little over-sensitive, and distortion did occur from time to time. Running at +4dB meant I had to chuck a hell of a lot at the V77 to get the meters high enough. In the case of the output level, it had to be run in the +4dB position if anything was to be heard at all. This wouldn't be an issue using the digital I/O, but many people would be using this with analogue signals on -10dB equipment. None of my other switchable gear suffers this problem.

VERDICT

As I may have opined in the past, effects are a personal taste. Different brands have their own sound and their own devotees, and some devices may be considered better at certain jobs than others. Pricewise, at around £1400 the V77 falls into the same bracket as the venerable Lexicon PCM70. One of the covetable features of the PCM70 and its kin is its ability to make the reverb applied to a sound seem a natural part of it, without any sense of detachment. As mentioned above, I felt the V77 also has this characteristic,

"The reverb algorithms all have distinctly different characteristics, and are extremely clear and precise."

together with a sparkling transparency. My overriding impression of the DPSV77 is that whatever it's doing, it's doing it well. And it does a considerable amount into the bargain. There's enough tweaking potential and algorithms to keep you happy for quite some time — and its basic level of operation shouldn't intimidate anybody. It's perhaps understandable that many people would go straight for the PCM70 at around this price, but for the quality and range of effects, the V77 is definitely worth a listen. If you can, get down to a decent studio supplier and check one out on some good monitors.



GATES

Gate
 Slow Attacker

Reverb

• Pitch + Delay

• Pitch + Chorus

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pros & cons

VISCOUNT EFX10 249

- Effects fully editable.
- True stereo, with Dual capability.
- . Sensible MIDI spec.
- · Easy to use, with a nice sound
- Excellent value for money.

cons

- · Modulation effects could be more exciting.
- No decent EQ.
- Unhelpful manual

SURDINARY
A flexible, versatile stereo unit, with way more facilities than you'd expect for the money, and a pleasing sound. There's little else to touch it for price vs. performance



VISCOUNT EFX 10 MULTI-EFFECTS PROCESSOR

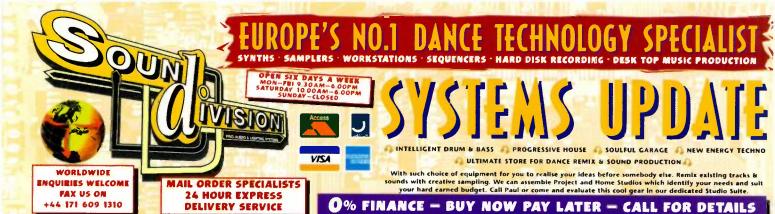
Despite having a name that most British people associate with small, round chocolate biscuits, Viscount are gaining a reputation for affordable MIDI hardware — and the EFX10 could be their best value effects processor to date. DEREK JOHNSON & DEBBIE POYSER develop a taste for it.

hen Italian manufacturer Viscount burst onto the UK hi-tech scene in 1993 with two multi-effects processors, the budget EFX1 and the super-budget EFX2, the press and public reception was favourable. For the price, the £239 EFX1 was a good deal, though it was criticised for a poor MIDI implementation, a tendency to input overloading, a limited number of effects algorithms. and a hissy output. Three years on. Viscount seem to have addressed all the criticisms levelled at the EFX1, in the new EFX10. And despite having benefited from considerable improvements over the earlier model, the EFX10 has a retail

price of just £10 more, at £249.

OUTSIDE IN

Physically, the EFX10 takes its cue from Boss's now-discontinued SE70, packaged in a similar half-rack box with an almost identical array of









































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Viscount EFX10

▶ front panel controls: from the left, there's an input level rotary knob; a 2-line x 16 character backlit LCD; a large data dial used for scrolling through effects Programs and parameters; six small buttons used in Program selection and editing; a power switch; and a headphone socket. The unit can be racked with an optional adaptor.

The rear panel hosts a standard selection of connectors: Left and Right inputs with accompanying switch to select between -20dBm (for guitar or mic input, for example) and +4dBm (for mixer effects send or keyboard) operation; Left and Right outputs; two footswitch sockets, one for stepping through effects Programs, and one which is user-

"The Rotary treatment deserves special mention for its 'in your face' quality and edgy grittiness." definable (this could function as a Bypass switch, as a Hold switch for delay effects, or to select between slow and fast speeds when using the Rotary effect); MIDI In, Out/Thru sockets; and a power supply socket. The latter item is furnished with a small plastic cleat, around which you wrap the power supply cord to prevent it from accidentally detaching — just like on the Boss SE70! In all, it's a lightweight but perfectly sturdy and well-appointed package.

Inside the box is a true stereo processor offering a comprehensive range of standard studio and guitar effects (see box for listing of algorithms), arranged in single and Multi configurations. Although Viscount state a maximum of six simultaneous effects, plus a Noise Suppressor, this number is only found in the Guitar Multi. Other Multis are made up from between two and five effects each. Unsurprisingly at this price, you can't chain your own effects together or dictate their order in a Multi. You can, however, turn off individual effects within a Multi, giving a certain amount of user control. There is also a good amount of editability of individual effects: for example, the Large and Medium Hall reverbs offer no less than 12 user-modifiable parameters each, including Size; Reverb Time (0.1s to 20s, in 100ms steps); Pre-Delay (up to 500ms, in 1ms steps); Reverb Tone (which, according to the manual "equalises the reverberation colour with various shadings". In practice, this amounts to a very subtle rolling-off of the top-end at its highest setting); Early Reflection (0-500ms, in 1ms steps); Early Reflection Tone (Flat, Low, Mid or High); H/F Gate (like high-frequency damping, to cut off high frequencies over a preset time); and Reverb Attack. It's difficult to know what the latter parameter actually does, as there's nothing in the manual to explain it, but at higher settings it adds a perceptible 'bite' to the reverb. Note also that the Size parameter has a range of 1-8, but there's no way of knowing how these numbers relate to the real world, except for the common-sense assumption that '1' would indicate the smallest hall and '8' the largest!

SPECIFICATION

A/D & D/A Conversion: Sampling Frequency: Frequency Response: Nominal Input Level: Input Impedance: Output Impedance: Connectors:

18-bit ilinear
44.1kHz
10Hz-20kHz
-20/+4dBm
20 kOhm
600 kOhm
L&R Inputs: L&R outputs

(jacks); MIDI In, Out,Thru; Programmable & Program Advance Footswitch sockets

Power Supply:

External, 10.5V

As mentioned earlier, the EFX10 is a true stereo processor, which enables it to offer a very useful Dual effect capability. Three Dual algorithms (Reverb + Chorus, Reverb + Delay, and Chorus + Delay) allow you to independently process two separate signals. With the Reverb + Chorus algorithm, for example, you could process a vocal with reverb and a guitar with chorus. This also means that you could use the EFX10 with two aux sends on your mixer. By the way, if you treat a single source with a Dual effect, it will be processed by both parts of the algorithm.

EDITING & UTILITIES

The six buttons on the EFX10's front panel enable you to navigate the unit's operating modes, choose Programs, parameters and their values, save edited Programs, and Bypass the unit's effects. Let's take a closer look at what these buttons do:

- PROGRAM: the EFX10 powers up in this mode, where you'll spend most of your time, selecting between the 128 on-board effect Programs with the large rotary data encoder.
- PARAMETER: pressing this button takes you into Edit mode; using the data encoder then scrolls you through the available editing parameters for the currently selected effect.
- VALUE: press this button when you want to edit
 a parameter. In this mode, the data encoder
 changes the value of the currently selected
 parameter. To select a different parameter, you
 simply press the Parameter button again.
- WRITE: when you've finished customising your effect Program, press this button and a cursor flashes under the Program number on the LCD display. Use the data wheel to choose a memory location for your edited Program, then press Write one more time and it's saved.
- UTILITY: this button accesses a variety of global functions, including the MIDI Program Change map, MIDI bulk dumping and loading, altering footswitch settings, changing display contrast, and naming your custom Programs. It's a bit of a pain that Program naming is hidden in the Utility mode, since this means that you have to exit Program mode and enter Utility mode before you can name your edit.
- BYPASS: simply mutes the current effect.
 The EFX10's user interface is perfectly

EFFECT ALGORITHMS

• REVERBS
Large Hall
Medium Hall
Large Room
Medium Room
Small Room
Early Reflection
Gated

• DUAL EFFECTS
Reverb + Chorus
Reverb + Delay
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Stereo Phaser
Rotary

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Viscount EFX10

comprehensible; anyone familiar with the Boss SE50 or SE70 will be flying around it in no time, and even newcomers shouldn't need more than a couple of hours to become familiar with how it works.

MAINLY MIDI

MIDI functions on the EFX10 are comprehensive without being over the top. Two parameters per effect can be controlled over MIDI, using Pitch Bend or a handful of Control Change messages, and you can choose which two parameters you want to control. This is a big improvement over Viscount's EFX1 (reviewed *SOS* November 1993), which only allowed MIDI control of one parameter per effect, and even that was pre-selected for you. The EFX10 offers a full SysEx implementation, and a chart in the back of the manual gives all the information you would need to set up a MIDI

EFX10 FEATURES

- · Half-rack module format (rack adaptor available).
- Up to seven simultaneous effects (Including Noise Suppressor).
- True stereo operation.
- . Dual processing facility.
- MIDI patch changing and parameter control.
- 22 ROM Presets/106 user memories.
- · 2-line x 16-character backlit LCD.

coming through if you're using the EFX10 with a mixer's effect sends.

As a provider of staple studio effects, the EFX10 performs well. The reverbs, while not especially smooth, have a pleasant character and seem to sit well in a mix. The good range of tweakable parameters helps ensure that you can tailor a reverb sound to fit your track exactly. Delays offer

lengthy maximum delay times (up to a

generous three seconds), and choruses are OK, if not quite as exciting or sparkly as they could be. Flanges, too, could be rather more extreme, though naturally you can edit them to your own taste. The Rotary treatment deserves special mention for its 'in your face' quality and edgy grittiness. It can dramatically change the character of synth pads — not just organs — and is surprisingly quirky and effective on guitar. The two studio processors, the Hum Canceller and

the Vocal Canceller, are not 100% effective as they stand, but have potential. The Hum Canceller certainly cuts out hum completely, and since it also includes a noise gate, really does silence noisy gaps on tape. However, if you want to leave it switched in during a whole track, careful adjustment is required to avoid level 'pumping'. The Vocal Canceller, again, certainly cuts the vocal in a track, leaving it a shadow of its former self, but it also has an adverse effect on the frequency content of the rest of the track. Some tweaking is required to achieve a compromise between completely nuking the vocal and completely nuking the backing track. You could easily use the Vocal Canceller as a creative effect in its own right.

One final feature worthy of mention concerns algorithms which contain delays — the programmable footswitch input allows you to create real-time loops: play a riff, press an attached (normally open) footswitch, and the EFX10 captures the performance and loops it. Accurate capture takes practice, however, and the audio signal fades after several loops rather than looping infinitely, but it is still a fun feature to have.

At normal listening levels, the EFX10 doesn't seem any noisier in use than any other low- to mid-priced effects unit. If you plug it into a mixer's aux return and really crank up the level, you do hear digital grunge, but it's fair to say that this isn't really detectable during normal operation.



editor in a sequencer program like *Cubase*. Usefully, you can dump the EFX10's whole memory (or just parts of it) to a suitable storage device or computer over MIDI; bulk dumping is initiated in Utility mode.

THE FULL EFFECT

All 128 of the EFX10's memories have factory Programs saved in them; the first 27 contain the ROM algorithms and are non-erasable, but the remainder can be overwritten with your own edits. The manual actually states that the EFX10 is primarily intended for guitar use, and more than half of the factory settings are guitar-orientated (but strangely, there's no front panel guitar input, as you might expect). There are lots of serviceable distortion presets, of various types, including a 'User' distortion, which can be very comprehensively customised. The Guitar Multi Program can also be flexibly tweaked to provide a variety of nice guitar treatments. The manual does concede that the EFX10 is ideal for studio use, but when you're using it with the effects sends of a mixer, you'll soon notice that the Direct (dry signal) level of all the factory Programs is turned up to maximum — as would be appropriate for use with a guitar. Therefore, you'll need to go in and turn all the Direct levels down and re-save the Programs, as you won't want any dry signal at all

MANUALE OPERATIVO

The EFX10's slim manual is divided into Italian and English sections, making the English section even slimmer! The information is pretty basic, though the straightforward nature of the EFX10 means that this shouldn't be too much of a problem. Where it really falls down is in explaining what the various user-editable parameters actually do - for example, in Keyboard Multi 2, the Phaser Step parameter apparently "makes the modulation discontinuous, generating interesting effects of sub-sampling of the modulant." Er... right. There's also regular and rather endearing use of the word "concatenation" whenever the translator means "combination". Oh well...

Viscount appear to have cured their processors of the tendency to input overloading exhibited by the earlier EFX1: the new EFX10's input is actually very forgiving.

ITALIANATE MASTERPIECE?

When we first encountered the EFX10, we had a wild, unreasonable hope that its physical and operating system resemblances to the Boss SE50 and SE70 (still our favourite effects processors), might betoken more fundamental similarities. An SE70 for £249? Too much to hope for, surely... Not surprisingly, it was. After all, the SE70 is a highly sophisticated processor offering such exotica as vocoding, ring modulation, pitchtracking bass and guitar synths, plus top-quality reverb, delay and modulation effects. It also cost £650 on its release over two years ago. It's much fairer to compare the Viscount EFX10 to preset units like the Zoom 1202 or the ART FXR, which are non-editable and cost very little less. This comparison serves to highlight what excellent value for money the EFX10 represents, with its true stereo operation, useful Dual effects for processing two sources independently, good range of effect-editing parameters, sensible MIDI spec, and pleasing sound quality.

Nothing made by man is perfect, however, and there are one or two features which would have

been nice to have on the EFX10. Firstly, there's no decent EQ in any of the EFX10's Multi effects algorithms, which can be so useful for tailoring off-the-wall treatments. Some kind of tap delay

tempo setting via a footswitch would have been welcome, and would have allowed the user to take full advantage of that on-the-fly looping ability mentioned earlier; ideally, delays would have been MIDI-clockable. Lastly, it's strange that there's no amp or speaker simulation available when Viscount are pitching the EFX10 as the ideal guitar effects processor.

"As a provider of staple studio effects, the EFX10 performs well."

Notwithstanding these gripes, however, we'd still have no hesitation in recommending the EFX10 as an ideal general-purpose effects processor for anyone on a budget, or indeed for anyone who doesn't see why they should pay more than absolutely necessary for decent multi-effects.









PAUL WHITE reveals a few of the less well-trodden paths hidden within your mixer's routing system.

ixing consoles are invariably fitted with both pre-fade and post-fade Aux sends, ostensibly with the intention of allowing the user to set up foldback mixes or add effects from external effects units. These are the typical applications described in most mixer manuals and textbooks, but

described in most mixer manuals and textbooks, but by applying just a little lateral thinking, you can find numerous novel uses for the Aux busses that are rarely documented. This article outlines the more conventional uses of the Aux busses, followed by some useful and less obvious tricks.



When overdubbing, a cue or foldback mix is generally needed so that the performers can hear any tracks already recorded. This is set up using a pre-fade send control, a knob found in the mixer's channel strip which feeds some of the channel signal onto a mono mix buss running the length of the mixer and out via an Aux master level control. The output from Aux 1, for example, feeds onto the Aux 1 buss and then to the Aux 1 output socket, via the Aux 1 master output level control. Foldback or cue signals are referred to as 'prefade' because they are picked up *before* they reach the channel fader. The significance of this is that, once set, the level of the Aux 1 signal doesn't change if the channel fader setting is varied.

It follows that an independent mono mix of all your channels can be set up using the Aux 1 controls, and this will appear at the Aux 1 output where it may be fed to a headphone amplifier or other monitoring system. If your mixer has more than one pre-fade send, you can set up a number of different monitor mixes to satisfy the requirements of each musician, providing you have access to a multi-channel headphone amplifier system. A typical situation is where the backing vocalists want a lot of lead vocal in the cans, whereas the drummer and bass player want to hear primarily each other.

Many of you will already be intimately familiar with this conventional use of pre-fade sends, but later in this article I will be exploring a few alternative uses for this versatile control.



POST-FADE CONVENTIONS

Post-fade Aux send controls pick up their signal feed after the channel fader, so any change to the channel fader position will also affect the Aux send level. This is exactly what we need if the Aux send is being used to feed an effects device, such as a reverb or echo — as the channel fader setting is modified during the course of a mix, the amount of effect needs to change by the same amount to maintain the correct proportion of effect to dry signal. By using different settings of the post-fade send control on each mixer channel, it is possible to send different amounts of each channel's signal to the same effects unit.

Utilising the Aux send system has the advantage that different amounts of the same effect can be added to different instruments in a mix. A typical example might be where one reverb unit is used to provide a rich reverberation treatment for the vocals, less reverb for the drums, and little or none for the guitars and bass.

It is important to remember that any effects unit used in conjunction with a channel Aux send should be set up so that it produces only the effected sound and none of the original (dry) source. This is usually achieved using the unit's mix control, which is either in the form of a physical knob or a mix parameter accessed via the effects unit's editing software. In either case, the mix should be set to 100% effect, 0% dry. This ensures that the amount of effect added to any channel signal is determined solely by the setting of the pre-fade Aux send control.

The output of the effects unit may be fed back

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▶ into the mixing desk via spare input channels or via dedicated effects return inputs, often known as Aux returns. These Aux returns are electrically similar to the input channels but usually offer far fewer facilities (limited EQ, for instance). If a spare input channel (or channels) is used for an effects return, ensure that the Aux send control on those channels is turned fully down to prevent feedback. To keep the effect in stereo, the two Aux returns or channels must be panned hard left and right.

Also note that although most stereo reverb units have two input jacks, the reverb itself is generated from a sum of the left and right input signals, so you only need to tie up one Aux send. Usually, one of the effect input sockets will be labelled 'Mono', indicating that you should send the input to that jack for mono in/stereo out operation.

EFFECTS & INSERT POINTS

An Insert point is simply a connector that allows the normal signal path to be interrupted and re-routed through an external device. Insert points usually take the form of stereo jack sockets wired to carry both



Typical rear panel of a mixing desk showing Aux returns and channel Insert points.

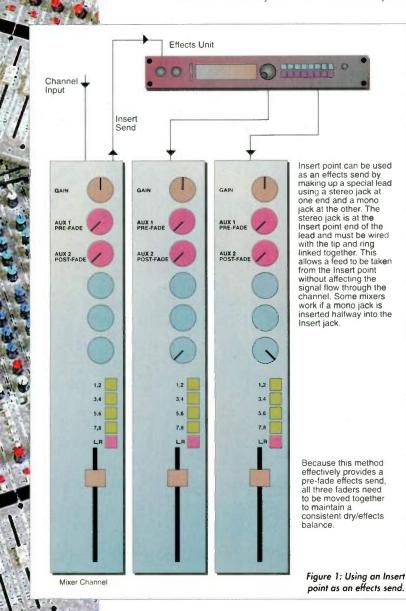
the send and return signal, and if you don't have a patchbay, you'll need a 'Y' splitter lead with a stereo jack plug on one end and two mono jacks on the other. Inserts are normally fitted to all mixer channels that have mic inputs, and often to the group outputs and main stereo outputs too. If soldering up Y-leads is not your forte (though you'll save a lot of money if you learn), you can buy stereo to dual mono jack adaptors or ready-made Y-leads [see Hosa cables info in the SOS Mail Order pages of this magazine].

You can connect either an effects unit (eg. a delay or reverb) or a signal processor (eg. compressor or gate) to a mixer via an insert point, and in situations where an effect is required only on a single mixer channel, then connecting it via the insert point will provide a cleaner signal path than going via the Aux sends. That's because you will avoid picking up mix buss noise from all the other channels that are also connected to the Aux send buss. It will also avoid tying up Aux sends unnecessarily. Note that when an effects device is connected in this way, via an insert, then the dry/effect balance must be set on the effects unit itself.

INSERTS AS AUX SENDS

Stereo effects can be fed from an insert send and the effect outputs brought back into a pair of spare channels or a stereo effect return as normal. The effects mix should be set at 100% wet (effect) in this case and the effects return channel controls used to set the effect level. Note that since the insert point comes before the channel fader, the effect level will remain constant even if the channel fader is moved. If there is ever a need to adjust the channel fader during the mix, it helps to return the effects to two adjacent channels so that all three faders can be moved together. If you don't have your mixer insert points wired to a patchbay, you may have to make up a special lead to allow you to take a feed from the insert point without interrupting the signal flow through the channel. Some mixers, such as Mackie models, allow you to take a direct feed from the insert point by using a mono jack and only pushing it half-way into the socket.

You can also use this method for providing a direct channel feed to a multitrack recorder input. In this case, turn the channel fader right down, and/or ensure that all routing buttons are in their 'off' position, then use the input gain Trim control on the channel strip to set the recording level going to tape. Figure 1 shows how this is connected.

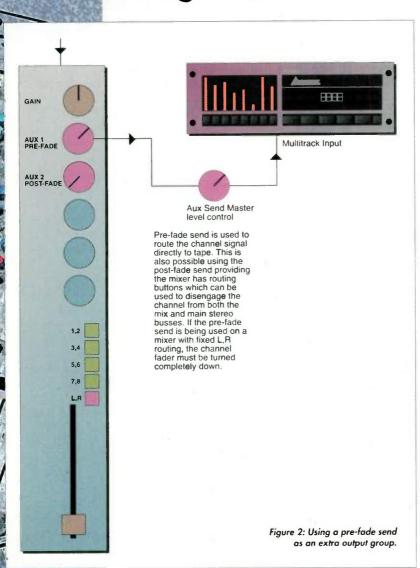




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"The labels associated with mixer inputs and outputs relate to their most common use, but that's not to say you have to use them solely for that purpose."

signal going anywhere else other than to the Aux sends, so it's important to ensure that any group and L/R routing buttons are turned off. If you have the facility to do this, then using the post-fade sends instead of the pre-fade sends means you can use the channel faders to adjust the signal level going to tape, which may be far more convenient.

SENDS & PROCESSORS

Conventional wisdom tells us not to connect signal processors via the Aux sends, but what if you have a mixer or cassette multitracker with no

EFFECTS PATCHING

Before you can work out the best place to patch in your outboard equipment you need to know what counts as an 'effect' and what does not. I tend to define the various bits of outboard equipment as either effects or processors, according to what they do and how they do it. The main reason for this is that there are certain restrictions on how processors can be connected, while effects enjoy a little more flexibility. (I've covered this before in SOS, so if you're already happy with the distinction, feel free to skip back to the main text.)

Processors are boxes that modify a signal, whereas an effect is a device that leaves the original signal intact and adds something else to it. Processors Include EO, compressor/limiters, expander/gates, panners and single-ended noise reduction units. If you have a box that modifies either the gain of a sound or filters it in some way, it's a reasonably safe bet that it is a signal processor. Echo units, delay lines, reverbs, chorus/flangers, pitch-shifters, phasers and suchlike are effects, and all effects should have some means of balancing the original (dry) and effected (wet) signal. Effects may be connected either via mixing desk Insert points or via the Aux sends, but processors can normally only be used at Insert points or connected between two pieces of equipment. However, there are exceptions. hence the need for this article

SENDS AS TAPE OUTS

A pre-fade send is simply an independent mono mix based on the channel pre-fade send control settings, so even if the main channel faders are turned down you can still create a pre-fade mix. This is potentially useful in a mixer that has fewer output groups than you might like, because you can use any pre-fade send output to feed a multitrack recorder input. In other words, you're using the pre-fade send as an additional output group. You have to control levels using knobs rather than faders, but in all other respects the result is exactly the same. For example, if you have a couple of microphones on mixer channels 1 and 2 that you want to mix together and record on tape track 6, all you have to do is turn the faders on channels 1 and 2 right down, turn the prefade sends up, and route the corresponding prefade send output to tape input 6. The send master level control may then be used to set the correct signal level to tape, as shown in Figure 2.

Post-fade sends may also be used as tape outputs, providing your mixer has routing buttons. This is vital, because you don't want the channel

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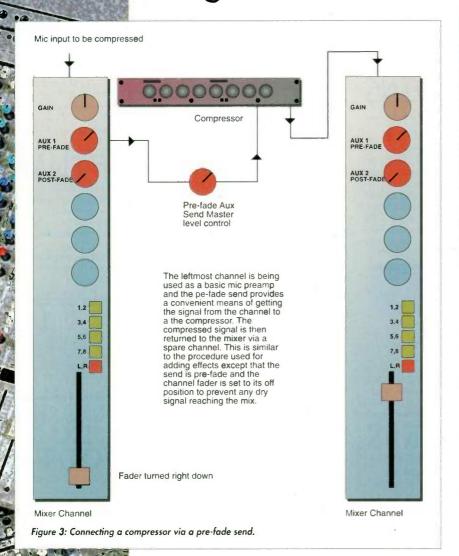
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insert points? In this case the pre-fade Aux sends can provide a solution, and the required patching for a compressor is shown in Figure 3. Here, the channel to be compressed is channel 1 and the channel fader must be set fully down. The pre-fade send, on that channel only, is then turned up and the compressor connected to the pre-fade send output as shown. The output from the compressor can then be fed into a spare mixer

channel and the signal routed normally. If you study this patch, you'll see that because the fader is down on channel 1, the dry signal isn't routed anywhere; the only signal you use is the output from the compressor. In essence, channel 1 has been used as a mic preamp with the signal being tapped off via the pre-fade send for convenience.

SUMMARY

When I was first introduced to mixers, I found pre-fade and post-fade sends quite confusing, and it was only after studying the block diagram of the mixer that I realised how simple they

- MAN

POST-FADE SENDS & SUBGROUPS

When you come to mix down, you might create subgroups for things like drums, backing vocals or keyboards, so as to reduce the number of mixer faders you have to worry about during the mix. However, if your effects returns come back straight into the main stereo mix, they'll stubbornly refuse to change in level, no matter how far you move the group faders.

The answer is to route the effects used within the subgroup back to the same numbered groups, so that when the group fader is turned down the effect level goes down with it. The only time a problem arises is when the same effect is used in two different subgroups or in both a subgroup and in channels routed directly to the stereo mix. There's no easy solution to this, and in extreme cases you might have to patch in a second effects unit to get around the problem.

really were. Once you grasp that the Aux send busses are much like the main group busses, you can use them in any way you wish. Both pre- and post-fade sends may be used to create new tape feeds, and with a 4-buss mixer this can make all the difference between 4-track and 8-track recording. Cassette multitracker owners can use pre-fade sends to patch in compressors or equalisers where there are no insert points, and on more than one occasion I have used the pre-fade foldback sends on a cassette multitracker to create additional tape outs for remixing. It's often useful to remix a 4-track cassette via a more serious mixer, but on cheaper machines you don't have separate tape outputs. In such instances, I've used the left and right outputs to carry a mix of three of the tracks and a pre-fade send to carry the remaining track, and though three sources may not seem like a lot, it's often enough to make a big difference to the final mix. On a machine with two pre-fade sends, you can separate out all four tracks — which is the ideal situation.

I haven't even mentioned the PFL (Pre-Fade Listen) buss in the course of this article, but that can provide yet another way out of the mix — if you PFL solo one channel while its fader is down, its signal will appear at the headphone and monitor outputs while the remaining channels will be routed to the main and output groups as normal. With just a little imagination, a 12:2 mixer can be used to handle 4-track recording, a 16:4 PA mixer can function well for serious 8-track recording, and the limitations you thought your cassette multitracker had can be turned on their head.

What I have written has by no means exhausted the less obvious uses of pre- and post-fade sends, but I hope that by pointing out some of the possibilities, it'll help you think of your own ways to use and abuse your equipment to get the most out of it. The labels associated with mixer inputs and outputs relate to their most common use, but that's not to say you have to use them solely for that purpose. Quite often, the only way around a sticky problem is to use your mixer in an unorthodox way, and the more you think about it, the more ways there are.

SOUND ON SOUND . September 1996



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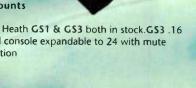
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long outgrown their pure rave beginnings, 'Firestarter' points the **PAUL NAGLE tackles** some burning topics group's aural architect

ith album sales at over the two million mark, The Prodigy (Liam Howlett, Maxim Reality, Keith Flint, and Leeroy Thornhill) have reached heights unscaled by many other artists making out-and-out '90s dance music. Remarkably, the group has achieved its success

Essex dance outfit

The Prodigy have

and their recent

number one single,

way to a new, even

of modern music-

making with the

Liam Howlett...

harder sound.

without becoming enmeshed in the trappings of stardom, or having to devise an image suitable for the teenage music press. Despite their increasingly uncompromising take on dance music, the band continue to enjoy both critical acclaim and popular success - and all without losing the respect of their hardcore underground following, too. I tracked down The Prodigy's musical mastermind, Liam Howlett, at his home studio in darkest Essex to see how the band create their music, and to discuss their new musical style, which is continuing to develop as Liam works on the forthcoming, asyet-untitled Prodigy album.

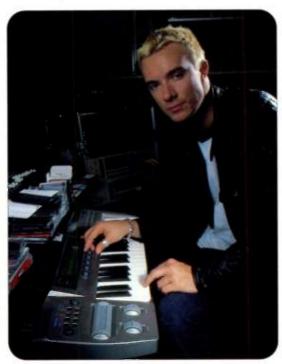
ESSEX LIVES OF THE RICH AND FAMOUS

Liam Howlett's Earthbound Studios is an impressive sight. The initial impression is of a Mayan temple populated with hi-tech keyboards and samplers - and then you notice some of the other, somewhat incongruous decor: the spiral staircase, the enormous TV, and the full-sized Dalek, seemingly awaiting revenge on the evil Americans who reduced Doctor Who to a bit player in a soap...

Once I had got used to my surroundings. I resisted an urge to start the interview with questions about The Prodigy's 1991 hit 'Charly' - after all, times have changed considerably since The Prodigy were seen as the head of a brief musical fad by the name of 'cartoon techno' for sampling phrases from a British 1970s child awareness cartoon and layering them over a techno backing. When the band's single 'Firestarter' hit the number one spot recently, with its stark video and hard sound, it seemed that a very different chapter was beginning in The Prodigy's career.

I began by asking Liam to elaborate on the reasons for the group's progression from their early. commercial-sounding techno style to something altogether grittier: "When I started on Music For The Jilted Generation [The Prodigy's 1994 album - Ed], I found a new vibe with the alternative dance scene. Alternative music as a whole, really. incorporating rock, hip-hop, and the more dirty side of dance music - not clean stuff. We started as a rave act, because that's what we were into then, but as time passed, the rave scene went under, and we got bored with the whole thing. It became a bit of a joke to us, and then, one night in Scotland, on

LIAM HOWLETT • THE PRODIGY



Liam Howlett with his Korg Prophecy: "There are so many different things you can do with it".

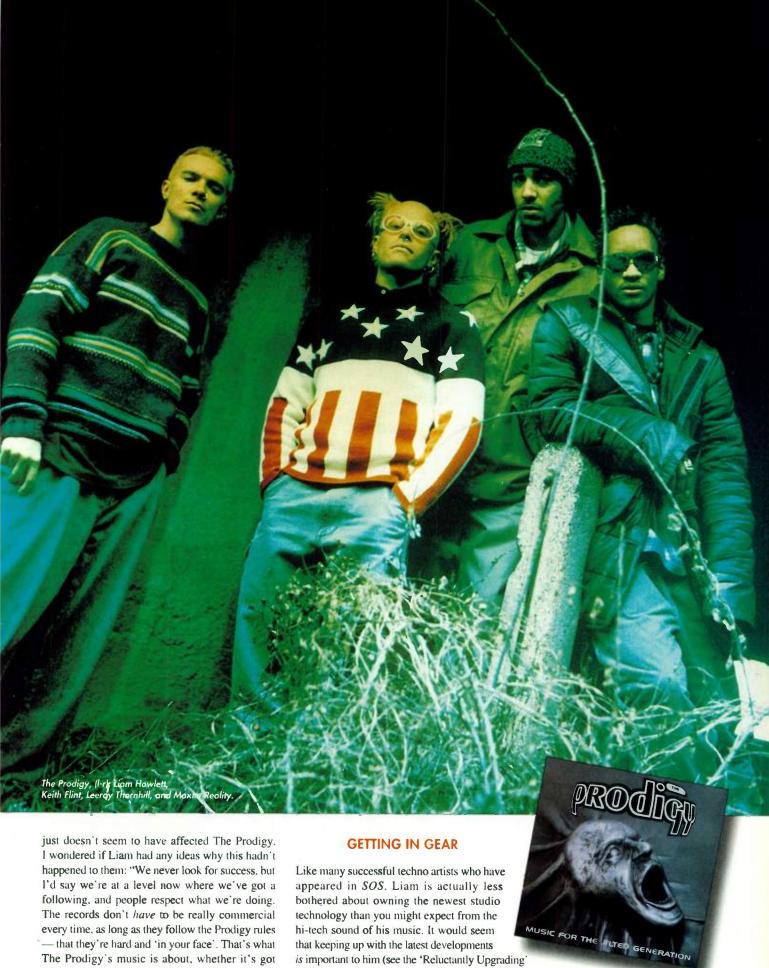
stage, in front of about six thousand lunatics with white gloves on, I found myself thinking, 'What am I doing here? I'm not into this'.

"I hoped that people would accept Jilted Generation, as half of it was quite safe, but the other side, the unsafe part, was the better side: 'Poison'; 'Their Law'; the really dirty stuff. After I'd finished writing Jilted, I basically reassessed the whole thing, and thought 'yeah, that's the more credible side' and ditched the corny rave thing. The new direction is a whole mixture of good street alternative dance music."

Given that The Prodigy's new material is, by Liam's own admission, less overtly commercial than their first offerings. I wondered if he and the band had been surprised by the runaway success of 'Firestarter'?

"I was very surprised, but I was more surprised that more people didn't comment on how we'd gone away from what we were doing before. A lot of people thought it was the best thing we've done, especially people at Radio One, who did support it quite a lot - maybe to show that they were more in touch with youth culture.".

Of course, many bands progress musically, only to find with dismay that their changing style alienates their original fans. However, this problem



every time, as long as they follow the Prodigy rules - that they're hard and 'in your face'. That's what The Prodigy's music is about, whether it's got guitars on it. or whether it's industrial, techno, or whatever. For an album, I guess, you might have the odd track where it's a bit more soundtrack-based, a bit more string-orientated, or more ambient, but with singles, it's pretty in-your-face stuff."

hi-tech sound of his music. It would seem that keeping up with the latest developments is important to him (see the 'Reluctantly Upgrading' box), but so is keeping everything in perspective, remembering just what all the gear is for, and who's in charge of it. "I've never got too much into the technology. I try and keep the studio quite basic, you know. I was scared of going too much into

LIAM HOWLETT + THE PRODIGY

'FIRESTARTER': NOW WITH ADDED VOCALS...

Although Prodigy tracks have included vocals before, the 'Firestarter' single featured lyrics written by Liam and Keith, which Keith then added to Liam's backing track. Liam: "With 'Firestarter', me and Keith wrote the lyrics together. I'd done the track and played it to him, and he said he'd really like to get some lyrics on it. I was quite surprised, because he's never done it before.



"He came round a few days later, sat down and we eventually got over the embarassing situation where everything you say with the lyrics sounds terrible. Once it's on record, it doesn't matter what you say [laughs]. On other tracks, I come up with lyrics, then I might get Maxim to come over. Maxim writes a lot of his own lyrics as well — like the new single 'Minefield' — he did the vocals on that."

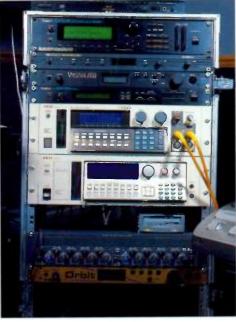
hard disk recording and editing, and all that. Mind you, Maxim tried to sell me his ADAT the other day, because he's just bought a Roland VS880, which he says is really cool. I might think about getting one of those..."

Despite Liam's slight reluctance to deal with hard disk recording, sampling plays a crucial role in the creation of The Prodigy's music; sharp-eared listeners will already have spotted the Art Of Noise and Breeders samples that feature in the 'Firestarter' single, to take just one example. In fact, Liam's favourite kind of studio gear becomes very clear during the interview: "The samplers. They are the most important thing to me — I'm really creative

with them. My modules are more just for filling in after I've already got something going on the samplers, to thicken things up and so on; I never go to a module to start a song off. I try and get some loops in the sampler first, get something strange

happening, and build up a track from that. I can pull samples out of any records and twist them round to make them fit into my music; at the moment, I've got this thing about '70s rare groove and funk for drum and bass guitar loops. I just love the natural feeling. On the new album, there's loads of things like that which are not obvious funk, just loops in the background that give it a natural feel. I'm not into the heavily-programmed, typical techno sound, with bass drum and clean hi-hat; it's got to be slightly screwed up for me, really...".

Although he uses many common synths and sound modules, Liam always strives to broaden his sonic palette by applying heavy effects processing to the basic sounds he uses, in keeping with the 'screwed-up' approach: "That's the key. I love my Boss SE70s. I did have an Yamaha SPX1000, an ART Multiverb and an Alesis Quadraverb, but because you can get awesome distortion sounds from the SE70. I sold all the others. The SPX1000 is just a crap industry-standard thing, with no special effects whatsoever, so I got rid of that. A grand for just a reverb unit and delay is a bit of a waste of money really... So, I've got four SE70s, and I programme the hell out of them. I've really gone mad with them"



A rack at Liam's Earthbound Studios containing several synths and samplers, including (top-bottom): the Roland JD990, Emu Proteus 3 World and Vintage Keys, Roland U220, and Akai S1100 (on loan only) and S3200XL samplers. There is also a SyQuest EZ135 hard drive, a TL Audio valve EQ, the newly-added Emu Orbit (at the bottom), and a Philips CD player (right at the top)

KICK OUT THE SYNTHS

Liam also declares himself a cautious fan of analogue synths, but not to an obsessive level. Furthermore, he did not hold them in particularly high regard until recently, with irritating consequences, as he explains: "I'm not a real 'analogue head', but I know now that there is no substitute for analogue sounds. I did something really silly about a year ago - I had loads of analogue gear: Roland Jupiter 8 and 6s. and a Minimoog... and I got rid of them all! The Jupiter 8 had been superb, but it started to break down. I played a JD800 in a shop, and thought it was pretty cool; it seemed to have the analogue feel. So I thought I could get all the analogue sounds on other equipment - and the old stuff did seem to be sitting there not being used a lot. As soon as it went out of the door. I wanted it back again; when I got the JD800 home, I knew within a week I wasn't happy

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- JVC hi-fi amplifier
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- . Sony DTC1000 DAT
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Sampling

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LIAM HOWLETT . THE PRODIGY

with it. I'm definitely getting the Minimoog back!". To complete the changes to his musical gear, Liam ejected the unsatisfactory JD800 shortly afterwards

as well, although a year later, he did fall for the JD990 (see the 'Liam On Selected Equipment' box).

As for the direction in which technology is taking music, Liam doesn't necessarily see every new development as being a step forward: "I definitely think it's getting too easy to write music these days. Take this new thing, the Quasimidi Raven. I tried it and just couldn't believe it - I thought it was a stupid machine, personally. Some of the sounds were good, but in about 30 seconds. I'd written a Euro song. I just couldn't believe that you can have a complete song in such a short time. I'd never buy anything like that; I'm a sampler man, and that's where the interest is for me, not in these pieces of equipment. The more gear that comes out like that, the easier it becomes to write music - but the more difficult it becomes to write good music. There are even modules where you don't need to process any of the drums; they're all there and ready to go. That does annoy me slightly, because it devalues a lot of the work that you put into it. For me.

to move slightly away from that sound is better: I'll try to find another sound, by going deeper into

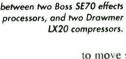
the dirty side of it, so that people can't just buy equipment and have our sounds ready to go".

WORKING FROM HOME?

I asked Liam if there was any need to go to other, larger studios, or if it was possible to create tracks entirely at Earthbound that were suitable for commercial release. "Each track differs really. With 'Firestarter', for example, I did the entire mix of the backing track here, but without the vocals (see the 'Now With Added Vocals' box for more on the genesis of the 'Firestarter' vocals) - I couldn't get a good result with the vocals here. So, I ended up taking my DAT into the Strongroom [London-based studiol, where I work with a guy called Neil Mclennan - he's the only person I can work with as far as mixing goes, because he really understands what I'm on about, and he's got some wild ideas himself. So we put the vocal down, and maybe only needed to EO the DAT very slightly. We recorded the vocal there, and added the mad backward sound effects, and then we just EO'd the track a bit more in the cutting room". Liam goes on to explain that some of the material for the new Prodigy album has been done in its entirety at Earthbound. "We've just done a hip-hop track with full vocals on. It's up on the desk at the moment - it sounds finished, and I've done it all here. Sometimes you can get a good sound here, sometimes you can't."

LIVE FIRE

The Prodigy have remained committed to live playing over the years, and have established a reputation second to none for high-energy action. Liam has no illusions about the value of performing:



The recording rack, including:

Roland E660 digital EQ, Sony

DTC1000 DAT, a Tascam DA20 DAT sandwiched

LIAM ON SELECTED EQUIPMENT

. KORG PROPHECY

"The Prophecy is one of the few things that produces big distortion as far as a ready-to-run synth goes. It's at its best on stage, though I've used it on just about every track on the new album so far. The programming is so open, It's great for resonant sweeps, and the ribbon is quite handy. You can also record filter changes over MIDI onto the Mac. There are so many different things you can do with It. It's not the type of keyboard I'd go to to start a song with— It's better for distortion and feedback sounds. It's a shame it's only monophonic — it's got some good string sounds."

. EMU ORBIT

"I've only had this about three days... I must admit the drums are good — with most sound modules you never get good drums, do you? I haven't really got into programming it yet though."

• ROLAND U220

96

"I've had that years. That's one of my all-time favourites for strings; the strings on there are a Prodigy trademark! If anyone puts a bit of chorus on those strings, you get the sound from "Out Of Space" straight away."

. EMU VINTAGE KEYS

"I'm not that impressed with this, really. I went through a stage of going into my local music shop, and every time they had a new bit of equipment, I convinced myself I needed it. I had to get out of that. I've used this a couple of times — on Jilted Generation I used it on about three tracks — but I'd sell it any day."

. ROLAND JD990

"A year after selling my JD800, I did buy the JD990, which I think is really good. I've got all the expansion boards for it, but I don't use many of the analogue sounds off the vintage board — It's mainly used for textures and strings. It's got a good distorted guitar, too."

• ROLAND VP330 VOCODER PLUS

"I've got this upstairs — I borrowed it from a friend to record some stuff for the new album. I think it's one of those things you can use a couple of times, and then throw in a cupboard. It's got some nice strings on it, but you can't get many sounds from the vocoder. The typical '80s electro voice, but not much else."

. EMU SP1200 DRUM MACHINE

"The original hip-hop drum machine. That is fat! I'm really into the hip-hop scene, and did a lot of research into the equipment they used to get that real heavy sound. A guy from our record company went to New York and got this for me for my birthday; it was a really good present. It's so nice, just for single drum hits."



The Prodigy's keyboard arsenal (top-bottom): a Roland Juno 106, Clavia Nord Lead, Roland W30 sampling workstation, and the Korg Prophecy.

The DIOCESS of elimination.



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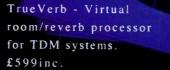
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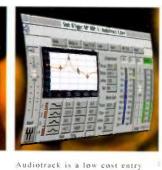
A new upgrade for WaveConvert (Macintosh PowerMac 1.6, Windows 1.2) is now available. New features for the Macintosh include: audio conversion from within Quicktime, pre-processing for Real Audio encoding, custom Creator ID's, improved dithering, preservation of all regions, markers and loops in conversion (SDIL AIFF), and more. New features for Windows include: AIFF support, unlimited number of files, quantisation noise gate, arbitrary sample conversion rates, special dither for speech files, improved file naming conventions. Maximiser and audio quality. WaveConvert was used to prepare Real Audio files for the Metallica website (www.metelub.com) and by the band Nine Inch Nails for converting all the music and sound for the new video game Quake (the successor to Doom from ID software)

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LIAM HOWLETT + THE PRODIGY

RELUCTANTLY **UPGRADING: SAMPLING, SEQUENCING AND COMPUTERS**

After many years using a Roland W30 workstation for all his sampling, Liam has recently obtained an Akai \$3200 and CD3000. "I've had the W30 for three and a half years or so, but I still use it. The sampling has a nice raw quality about It - the Akais are sometimes a bit too clean. I've got an \$1100 on loan at the moment, as my CD3000 Is in for repair."

The W30 also used to perform all of Liam's sequencing duties, but here, too, the Roland has yielded to newer technology, namely Cubase on an Apple Power Mac: "I did Jilted Generation with the W30 sequencer. but afterwards, I thought I could do with getting a few more tracks. Cubase has helped my writing quite a bit. I was so stuck with the W30 I never really thought I'd need more than 16 tracks. Also, I was worried I'd change the way I wrote. Now, I try and write the same way I used to on the W30; for example, I try not to copy too many things. I might write something and do an 8-bar section instead of one bar repeated, which is what most people in dance music do. The worst thing is getting stuck in an 8-bar loop - you stick Cycle on, come up with something good, and it goes round and round. Then you get stuck into a groove, and it takes you ages to actually write the song. I try not to use Cycle too much - just until I get a few ideas, then I turn it off."

For Liam, the choice of Cubase and the Mac was refreshingly uncomplicated: "Cubase was the obvious choice - just because it's the most widely-used program. It wasn't out of any need to try and be clever - I don't think it's the program you use that counts, it's what you've got in your head. Leeroy bought the colour version, but I'm not really into that - although maybe I just didn't like the look of it because he's got a smaller monitor".

Liam's choice of computer platform was made in a similarly simple way, although he did have strong opinions on the Atari ST: "I didn't want an Atari - it's crap! I did buy an Atari, plugged it in once and thought it was just too slow and dated. A friend suggested the Mac; I got that and thought it was much better. The art packages on the Mac are great, too, I haven't got any yet, but I plan to work on my own sleeves eventually."

"Next to the studio, it's the most important thing. Our music is music to perform live to; when I'm writing, that's what I'm thinking about every time. When people think of the band The Prodigy, they don't think of me in the studio, they think of the whole thing on stage. The live side has been especially important over the last three years; I think we've really developed into a better live act than we were. As far as doing shows in America is concerned, if you're a band, you have to play live if you want to sell records".

Liam reveals that producing the Prodigy sound live presents interesting challenges. As with much of his studio work, he relies on his samplers — he has both an Akai and his Roland W30 on stage. "Some of the tracks are very complicated, and you couldn't have all the equipment on stage to run them live - so when I've finished a full mix of the song. I strip down elements — for example, in 'Firestarter', I take the guitar out, because we've got a live guitarist who plays off the backing. I've got all the other samples on the keyboard, and Keith is doing the vocals. 'Poison' is done in a completely different way: I've sampled about 10 different 8-bar sections from the record, then I literally play it in live. I don't know anyone else who does that. It's probably a crude way of doing it, but it's so cool, because you can change things really quickly, and it's how good I am at playing it that makes it work. A couple of times my fingers have slipped off the keys — that's all part of the fun of being live!

"Some bands' music is fairly simple — Orbital, for example. They probably think as they're writing, 'here's our equipment, and we've got to do all this live' - so maybe they're slightly limited. For me, the main thing is just to get out there and do a good show, not to worry about, say, doing a certain bass drum live. That's not the important thing.

"I could never mime to a DAT, though we've turned shows down where you're not allowed to run up a whole live section, and you've just got to stand there. We have to feel like we're actually producing music there and then on stage. so it can be different every time."

LOOKING TO THE FUTURE

At only 24, Liam has accomplished much, with no sign of letting up yet. Work is progressing on the untitled new album, with five or six tracks pretty much finished, and work on the others underway. I asked about the future, and if Liam has many unfulfilled ambitions. "Once the band finishes. I've always said I'd like to get into soundtracks. I'm starting to make my way in there now. One of my friends, who edits our videos, is doing a film, which Keith's going to be in too, so it should be quite cool." As my tape wound perilously close to the end, I asked if Liam had any useful advice for struggling musicians out there. After a moment's pause, he grinned. "Keith always says: 'You can never have too many SE70s'. That's a good final quote."

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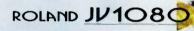






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hen we think of the great musical technology landmarks of modern times, the humble analogue cassette multitracker is something of an unsung hero, given the ease with which the format has become an integral part of musical life. Over the years the multitrack cassette format has been continually refined, such that today's models are capable of producing truly excellent results. But with that slightly 'squashed' sound, and the limited number of bounces possible before tape hiss becomes a real problem, the cassette was always going to struggle against the new breed of digital formats.

MD DATA

It was therefore only a matter of time before manufacturers found a way to deliver digital sound in a 'cassette multitracker' package. Fostex's DMT8 and Roland's VS880 chose the integral hard disk



route, while Yamaha's new MD4 and Tascam's 564 have both adopted a new digital multitrack format that records onto low-cost removable MD Data disks.

The MD4 manual takes pains to point out that an 'MD Data disk' is *not* the same as a 'MiniDisc'. Currently, the former is primarily used for computer data storage applications, whereas MiniDiscs are used for 'home' music systems. Although the MD4 will happily play back material recorded on a MiniDisc, it cannot record on it. Both disk types come in playback-only and recordable versions, although it should go without saying that you will need recordable MD Data disks to produce any home-grown results from your MD4.

FAMILIAR PACKAGE

Anyone reasonably familiar with any cassette multitracker should quickly feel comfortable with the layout of the MD4. To the left of the control surface are four mixer channels, switchable between the mic/line inputs and track playback. The Mic/Line input sockets are of the standard quarter-inch jack type, as are the footswitch input and the headphone output located on the front edge of the casing. Each channel control layout follows a fairly usual pattern — Gain at the top, followed by the EQ section, the Group Assign switches, the Pan control, the Mic/Line switch and, finally, the channel fader. I might have hoped for a Mute switch, but then these didn't find their way onto many cassette multitrackers either!

The MD4's EQ is typically basic, with 12dB of cut or boost from the shelving 'High' (12kHz) and 'Low' (80Hz) controls, and the peak 'Mid' (1kHz). A sweepable Mid would have made for a more satisfying range of control, but as it stands, the character of the EQ as a whole seems to work well for subtle tonal balancing.

One auxiliary send is provided, operating post-EQ and post-fader, and emerging from the MD4 via another quarter-inch jack socket. I would like to have seen a second auxiliary send, but the added flexibility of the separate track outputs mitigates this to a large extent (see later).

The pair of Group Assign switches follow familiar principles. These allow the source input to be routed to either the track 1/2 buss or the track

Using MD Data disks to deliver superb quality digital sound in a familiar package, does Yamaha's digital 4-track finally sound the death knell for the humble cassette multitracker? PAUL WARD spins the wheel of fortune...

The Sub input is ostensibly designated for the connection of an external submixer, although there is no reason why it should not also serve as an extra pair of EQ-less, line-level inputs. If we include the four Tape Cue controls, this brings the possible total of simultaneous audio signals to 12, which is not at all bad for such an unassuming device.

The monitor selector is friendly and flexible. enabling signals from the main stereo buss, both of the two stereo group busses and the cue buss. all to be switched in at once — if required. A dedicated control adjusts overall monitoring levels and the ganged stereo master fader completes the Master section.

ACTION STATION

To the right of the control surface things require a little more thought for those used to cassette-format recorders. Towards the back is the door, with attendant Eject button, wherein the MD Data disk is slotted before pushing the door back down. Beneath the large, clear LED screen (how pleasant to type those words...) are the main controls. Some are familiar enough; nearest the front edge are the transport keys (although the Fast-Forward and Rewind controls need a little explanation — more later), and it's easy to make out the Track Record Select buttons. With little more than this level of understanding it would be perfectly possible to bluff your way through a basic recording session on the MD4 — and, indeed, I managed to do just that.

To record a take, merely set the channel Group routing, press one of the four Track Select buttons. press Record, adjust the recording level, and finally press Play. Before entering record mode, the MD4 display shows a red flashing ring around the track to warn that the track is armed, changing to a steady red ring as recording commences. Nothing too scary there...

Punch-ins may be made by setting the desired Track Select button, pressing Play, and then hitting the Record button at the appropriate moment. Alternatively, the Record button may be pressed first (which begins playback), followed by a Track Select button. For the player whose hands are busy

pros & cons YAMAHA MD4 6899

- · Excellent sound quality.
- · Highly flexible, instant search and locate functions.
- · Auto punch-in with rehearse and pre/post-roll.
- Separate track outputs
- · Very clear LED display.
- Cue List system.

- · No 'bounce forward' of tracks.
- No digital output.
 No MIDI Machine Control.
- Annoying TOC update system.

summary

A very appealing machine capable of results that belie its size and price. Excellent search and locate features and the powerful Cue Play system make the MD4 a very serious recording tool, while the separate track outputs enable the MD4 to fit into a larger system with ease. Smaller studio owners looking for a painless upgrade from cassette multitrackers will find the learning curve very gentle, whilst reaping the benefits of vastly superior sound quality and slicker operation.

SOUND ON SOUND



AHA MD4 DIGITAI MUITITRACKFR

3/4 buss, with the Pan control positioning the signal to odd (pan left) or even (pan right) tracks as required. At mixdown, the Pan control takes on its conventional role of positioning sounds across the master stereo left/right outputs.

The MD4 is generous in its provision of signal inputs. Over in the Master section, we find a level control and grouping switches for both the stereo auxiliary input and a stereo 'Sub' in. The auxiliary returns are again in the form of quarter-inch jacks, whilst the Sub inputs employ phono connectors.

with other things, a footswitch (not supplied) will start playback at the first press, drop in at the second, drop out at the third press, and go into pause mode on the fourth. When in normal playback mode, the footswitch toggles between playback and pause — a useful facility for the control of backing tracks during a live preformance.

INSTANT SEARCH & LOCATE

The first culture shock comes when pressing those 'FF Cue' and 'Review' buttons. It is so easy to



YAMAHA MD4

believe you are working with a cassette-based system that, at first, it is tempting to hit the Rewind button to go back to the start of a recording. What these buttons do, in fact, is to cue through your recording at x2 (single press) or x4 (second press) speed. To get to the top of the section just recorded, you simply press the 'Last Rec In' button. No waiting for the tape to wind, no clunks or clicks as the transport does its stuff, and no tape slippage to mess up those cue points. Superb!

TIME PITCH CLEAR MARK SEARCH ADJUST SELECT DATA + AUTO PUNCH I/O PLINCH 1/0

> Locating specific points in a song is an important part of the multitracking process and it is here that digital recording can really score, with its fast, accurate cueing. Yamaha have obviously understood this advantage and endowed the MD4 with several search functions to make the recordist's life easier.

The start of individual songs is located by the Song Search buttons (Forward or Backward). When recording a new song, the Song Search Forward button is pressed to position the MD4 at the next available area of blank disk space. annotated in the display as 'Blank Top'. The Song Search Backward button may be pressed at any time during playback to locate to the beginning of the current song.

The aforementioned Last Rec In/Out buttons simply set the current position to the start or end of the last recorded take. These locate points are automatically updated and stored by the MD4 when any recording is made, but are unfortunately lost once a disk is ejected or the MD4 is powered down.

Up to eight markers may be set within a song, during playback or recording, simply by pressing the Mark button, and a pair of Mark Search buttons allow you to move forwards or backwards through these markers — all performed in an instant. The display always shows the markers used so far, and the nearest marker prior to the current song position flashes — a nice touch.

The Last Rec In/Out and the eight marker points

are adjustable in single frame steps up to five seconds either side of the mark point. When making such adjustments the MD4 plays back 1.5 seconds of audio before and after the mark point. Usefully, the volume of the two sections before and after the mark differ, and the user can select whether the pre-mark or post-mark signal is the louder. This is especially helpful when compiling markers to act as Cue List points (more later). When the ideal marker point is found, a press of the Enter button stores its new position. Markers are cleared by pressing — surprise, surprise the Clear button.

Within minutes the technicalities of the search functions ceased to be of any real concern, and I found myself zipping around my recording with little regard for anything but the music I was making — which is certainly the way it should be.

More esoteric functions include the ability to repeat a song, repeat all songs, or repeat between mark-able A/B position pointers. The Program Play function allows you to compile a list of song numbers on disk for playback, with up to 32 steps. Although these features may have more in common with typical hi-fi components than typical pro audio - given the MD4's ability to replay pre-recorded MiniDiscs — they are welcome all the same.

Auto punch-in/out and rehearse features are made all the better for the accuracy of digital location. Punch-in/out points may be set on the fly or tied to the current time position. Once set, the drop-in may be rehearsed as many times as necessary, before committing a recording to disk, with the MD4 muting the record track at the correct point. I was a little bemused by having to set the punch-in point by way of the Rehearse

> "The subjective sound quality is leagues ahead of any analogue cassette recording..."

button, whilst the punch-out point is set by the Play button! Wouldn't it have been much less confusing to use the Rehearse button in a similar way to the A/B repeat? Auto punch-in may also be initiated from a footswitch, with up to nine seconds of pre- and post-roll time available.

Track bounces are rehearsed in much the same way as punch-ins, with the usual facility to add extra live tracks via the mixer channels. Although the MD4 is a digital recorder, all bounces are passed through analogue circuitry, so the number is not infinite. I managed to bounce five or six times before I noticed the sound becoming

THAT SYNC'ING **FEELING**

KAD ON SOUND

4-TRACK TENES

On the rear of the unit, an Intriguing 8-pin DIN MIDI Out socket (do Yamaha have plans for those other pins, [wonder?) carries MIDI Time Code for synchronisation to an external sequencer. No loss of a track to timecode here. Unusually, the MD4 transmits timecode at a fixed rate of 30 frames per second. This is a little inflexible, but most modern sequencers should be able to handle it - I'd suggest you check before you buy.

Equally puzzling is the fact that there is no MIDI input - indeed there is no capability to accept any kind of sync signal from an external device. I would really have liked to see the MD4 respond to MIDI Machine Control signals at least. Although the review machine did not feature It. Yamaha assure us that MIDI Clock and Song Position Pointers will be Implemented on production models, with the ability to define your own tempo maps.

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for guitar. You won't find it in the trendiest stomp box. But you can't miss it in the Alesis QuadraVerb 2". The Q2 gives you up to eight separate effects blocks of studio-quality reverb, delay, chorus, flange, overdrive, pitch shifting and much more. Plus, the power of its advanced 24-bit signal processing engine can be dedicated to a single block or spread out for intense multieffects.

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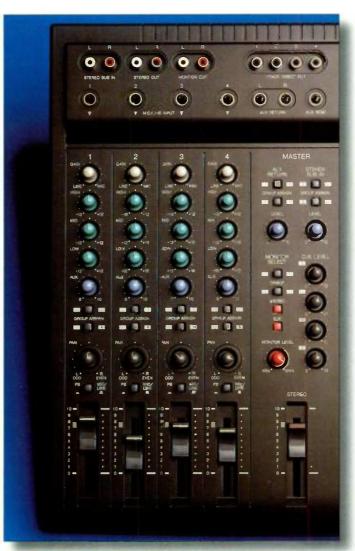


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ALESIS

TOTAD ON SOCA 4-TRACK PART

YAMAHA MD4



brittle', but in comparison with analogue cassette recordings the results were still excellent, with little or no discernible hiss being added for each pass.

One feature that I am particularly pleased to see is the Cue List. This allows the user to compile a list of edit points to create a new song, using the markers previously specified. I was quite unprepared for such an advanced digital editing feature on the MD4. Admittedly, there is a maximum of nine steps of up to nine repeats each, and Yamaha suggest that in rare circumstances

playback may not be continuous, but in my brief time with the machine it performed flawlessly. Once you are happy with your Cue List, it's a simple matter to copy the newly created song elsewhere on the MD Data disk (assuming you have free space) to save the fruits of your labours.

Both the disk and individual songs may be given titles which will appear in the display when loading up a disk or selecting a new song. I entered over 100 characters before I got bored — so maybe this could be the place to note down your lyrics! When first selecting a song, your complete title will scroll from right to left before settling on the first eight characters as a steady display. Talking of which, the time display is switchable between the time elapsed from the top of the song, time remaining for the current song, or the total elapsed time from the top of the disk.

Varispeed fans will be glad to learn that the pitch can either be fixed or is variable between -6.15% and +6.13% in roughly 0.15% steps.

QUALITY TIME

There is still controversy about the compressed digital data formats utilised in DCC and MiniDisc machines. The MD4 uses ATRAC (Adaptive Transform Acoustic Coding) compression, which basically compresses audio data to one fifth of its original size, using psychoacoustic masking principles to determine those areas of the audio spectrum that are least likely to be missed by the human ear. ATRAC permits an MD Data disk to hold up to 37 minutes of 4-track audio, rising to 74 minutes of stereo and 148 minutes of mono. The recording mode is set in the Utilities menu and recordings in any of these modes may share the same disk. I tried some stereo recordings of my CDs and, to be fair, I could hear a subtle difference when listening very closely — especially on some of the low-level reverb tails, but I certainly wouldn't get worried about it for multitrack work. The subjective sound quality is leagues ahead of any analogue cassette recording and the unwanted side-effects of dbx or Dolby noise reduction are much worse than anything I could detect from the ATRAC system used here.

There is one aspect of the MD4's operation that I take particular exception to — TOC updates. 'TOC' refers to the Table Of Contents area held on the MD Data disk. The TOC contains information about what is recorded on the disk, the disk title, song titles and so on. The TOC Edit indicator lights up when the TOC needs to be updated, usually after a new recording or edit. But it is left up to the user to update the TOC before ejecting a disk or powering down the MD4. Failure to do this can lead to lost data. Fortunately, the procedure for making the TOC updates is little more than pressing the Stop button while the machine is in a stopped state, but I find it a little galling to have to take care of such mundanities. To be fair, the MD4 refuses to eject a disk until the TOC update is made — but why can't it just make the update itself before ejecting the disk? Only once did I

UTILITY FUNCTIONS

A press of the Utility button yields a menu of options and functions that are accessed by the Select left/right buttons and edited by the Data, Enter and Clear buttons. Here are the main ones:

 Individual tracks may be copied in the digital domain using the Off-line Punch function. The section to be copied is determined by the Last Rec in and out points. Sadly, there's no way to copy with a time offset, which would otherwise have permitted the repetition of chorus vocals down a track, for Instance.

- Whole songs or individual tracks may be erased and songs can be divided or combined, perhaps to enable discrete sections of a song to be worked on in isolation (this would effectively increase the number of marker points available for a single 'song').
- Whole songs can be copied to new song positions to allow a chain of backups, before bouncing or overdubs are performed.
- Sadly it's not possible to 'bounce forward' to a new song copy — this would have the huge advantage of freeling up tracks each time.

forget to update the TOC before switching off the power — and I won't be in a hurry to do that again!

There is no digital output on the MD4 and also no facility to make copies of songs other than to the same disk, though I doubt this will concern most potential users. However, the four separate track outputs are a delight to behold. By making use of these direct outputs and treating the MD4's mixer inputs as direct track inputs, the MD4 will integrate into a larger system as easily as it will function as a stand-alone mini-studio. For the MIDI musician who merely wants to add a few audio tracks to his compositions, this machine will do the job admirably (notwithstanding the fact that MIDI Machine Control would have made for better integration into a typical MIDI sequencing system).

"Although the MD4 is a digital recorder, all bounces are passed through analogue circuitry, so the number is not infinite."

Although first off the mark with the MD4, Yamaha will soon be up against some stiff competition with the imminent release of Tascam's 564 MiniDisc Portastudio [previewed last month; SOS August 96]. This machine purports to include a digital output, bounce-forward, undo and MMC amongst its armoury, although it appears to lack some of the MD4's appealing instant search and locate functions. At the time of writing, however, Yamaha's recorder does seem to have the edge on price.

CONCLUSION

The MD4 has a lot going for it. The sound quality is obviously a big step up from analogue cassette, and the ease with which locate points and drop-ins can be manipulated is something of a revelation — and don't underestimate the advantages of a display that can be viewed from the opposite side of a room! It really is only a very short time before operation of the MD4 becomes second-nature and a return to the drudgery of tape-wind controls seems like trying to swim with lead flippers. The auto-punch and rehearse features make life about as easy as current technology will allow for the sole bedroom musician. Make no mistakes, though — the MD4 is perfectly capable of producing audio of commercially releasable quality, and will undoubtedly go on to do so.

Anyone currently contemplating a high-end, cassette-based 4-track machine would do themselves a serious disservice if they didn't at least consider the MD4. The extra outlay might just make the difference between producing rough demos or polished, edited masters. Aah, the wonders of progress...

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GOLD PIGENS MARSHALL JFX1 DIGITAL EFFECTS UNIT



devotees may be surprised to learn that Marshall released this littleknown digital effects processor last year. PAUL WHITE gets in his annual half-hour's guitar practice, and finds an overlooked unit worthy of some consideration...

> arshall took their time getting into the digital effects market, but it's nevertheless a brave move considering that, to the best of my knowledge, no other British company has succeeded in building digital effects for the MI and project studio markets. A first glimpse at the JFX1 might lead you to believe that it is a rather tame affair — it offers reverb, chorus, delay, or a multi-effects combination of all three, but no pitch-shifting, Leslie effects, autopanning, enhancement, or any of the other esoterica that we've come to expect from the latest generation of studio effects units. Even so, to dismiss the JFX1 as being too little, too late would be to completely miss the point. The JFX1 is primarily designed to sound good and be easy to use - an important point if you happen to be a guitarist whose only previous experience has been with effects pedals. The included effects have been carefully chosen to work well with the guitar, although they are equally applicable to general studio use; for the more adventurous, up to four parameters per patch can be assigned to MIDI control.

> Guitarists tend to be very fussy creatures, and the problem with most guitar amps is that the effects loop works more like an insert point, meaning that both your clean and effected signals go through the external unit. It would be unthinkable to send the dry part of a carefully-nurtured analogue guitar sound through a set of digital converters for no good reason, so Marshall have taken the wise step of keeping the dry signal path analogue and using a high-quality VCA to

changes. The 'dry signal path' problem doesn't usually arise in the studio, where you're using aux sends, because the dry sound is invariably turned off, but if you have to use the same effects box both on the road and in the studio, this could be an important consideration.

A BIT OF BACKGROUND

The JFX1 is a mono-in, stereo-out processor using a 16-bit, 64 times oversampling conversion system in conjunction with 24-bit internal processing. This translates to a 20Hz to 20kHz frequency response with a dynamic range of 94dB, which compares favourably with the better studio units around. There's a total of 127 patches to choose from, and the first 50 are preprogrammed with factory settings. These may be overwritten, but there is a routine that allows them to be restored without affecting

"Considering that Marshall set out to build a great-sounding, accessible effects box specifically intended for the guitar market, I can only conclude that they succeeded."

the remaining user patches. One particularly useful feature as far as guitar players are concerned is the Remote jack, which can be used to channel-switch a conventional guitar amp; furthermore, the Remote status may be programmed as part of a patch.

The styling of this 1U processor is unmistakably Marshall, with traditional gold anodising and

pros & cons

MARSHALL JFX1 £399

pros

- Clean, musical effects.
- Extremely easy to use.
- Good at recreating vintage tape delay effects.

cons

- Competing units offer more flexibility for the same price or less.
- No reverse or gated reverb algorithms.

summarv

A good choice for the musician who both gigs and records, especially the guitar player. More difficult to justify the cost for studio use only, unless you really need the vintage tape delay sounds.



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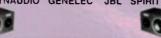
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SOLUTION





Morshall JFX1

▶ distinctive logo, though I'm afraid they have succumbed to the temptation to use an external power supply. Unusually for a digital processor, the JFX1 has almost as many knobs as buttons — and from a simplicity point of view, there are refreshingly few of either. A 2-line, 16-character LCD window shows both patch names and edit data, and by pressing the nearby toggle switch, you can get a numerical display of the dry and

effect output levels to quickly set up your dry/effect balance. The input level is set using a single rotary control, and a lone Peak LED flashes to tell you not to turn up any further! Three data knobs are used to interact with the displayed parameters, and in Meter mode, two of these are assigned to the direct and effect output levels. In Patch Edit mode, these three knobs allow the direct adjustment of three displayed parameters, but in normal Performance mode, they are disengaged.

No multi-effects unit would be complete without Up/Down buttons, but these are provided merely to help you scroll through the patches in Play mode, or to navigate various parameter

options in Edit mode. The actual parameter tweaking is done using familiar knobs. To edit a patch, you simply hit Edit, and to get back to the patch you originally left, you push Quit. Where there's more than one page of parameters, pressing Edit again will step you through them.

The System key gives you access to the system parameters, such as the various MIDI options, remote jack operation, and so on, while Store allows you store an edited patch to a selected location. There's little more to the operation than that, and for anyone who has used any form of digital effects unit before, the JFX1 will hold no mysteries.

THE EFFECTS

The effects on offer are Chorus/Flange, Delay, and Reverb, or Multi-Effects. The last of these allows you to combine the previous three effects, albeit with fewer options.

CHORUS/FLANGE

This actually comprises five different modes, which give mono or stereo chorus or flanging, plus a rich 6-voice chorus which works using six slightly different delay times. Subjectively, the chorus and flange effects work very well, and manage to remain rich and musical rather than simply overpowering you.

DELAY

Multi-Tap mode combines a 6-point multi-tapped delay with chorus, and here you can adjust each delay tap individually up to a maximum of 730ms, then set how much chorus you'd like applied to each tap. You can also alter the stereo pan position of each tap, and there's separate control of overall feedback from the left and right outputs

back to the input, to create decaying repeats. This is probably the most time-consuming effect to set up, but you can get some very warm and dynamic sounds out of it.

The more basic delay effects offer the familiar mono, stereo and ping-pong modes, where the maximum delay time is 1660ms in mono or 830ms in either of the stereo configurations. Setting these up is fairly simple, and really only involves choosing a delay type, dialling in a delay time and then setting up the necessary amount of feedback to give the right number of decaying repeats.

REVERB

Here, the traditional categories of Plate, Room, Hall and Large Hall are combined with the terms Dark, Warm, Standard and Bright to provide a good range of starting points. Once selected, you can alter the reverb decay and the HF decay characteristics, but there's no pre-delay, or any of the other fancy parameters you often find in modern studio reverb units. In spite of its apparent simplicity, the reverb section sounds very good, and works especially well with guitars.

MULTI-EFFECTS

Good though the individual effects are, the most fun to be had is with the Multi-Effects, where chorus, reverb and delay are combined in parallel and summed to a stereo output. In this mode, the delay is also followed by a ducker circuit, which is very effective if you want the delay level to swell only during breaks in your playing. There are four ducker settings to choose from.

Some of the effects in this mode are pared down a little to share out the processing power and memory, but you still get a choice of four chorus types, the most complex of which has four taps rather than the six available in the main Chorus mode. The maximum delay time is now 739ms (still sufficiently long for most tasks), and you get to choose from three basic delay characters: Clean, Warm or Dark, which apply to both mono and stereo delays. Clean is basically a straight delay, while Warm includes some HF damping. Dark offers more damping to really soften the sound of the delays, but an unexpected bonus is that you can also select from four types of compression, which squeeze the delayed signal in a way that makes it sound very much like a vintage tape echo. Now, why aren't these options available in the main Delay algorithm?

The Reverb section suffers the most simplification in Multi-Effect mode, leaving you only with control over the decay time. What the maximum reverb decay time is isn't entirely clear, but it is adjustable up to several seconds. The relative levels of the chorus, reverb and delay contributions can be adjusted independently, and a finished patch can be given a name up to 12 characters in length.

MARSHALLING THE THOUGHTS

Admittedly, the effects options available on the JFX1 aren't as comprehensive as you'd find on a

"The combination effects can get very close to an idealised tape echo, complete with spring reverb and analogue chorus..."

MIDI & PATCHES

Patches may be called up using MIDI Program Change messages, and as seems to be standard practice, you can create an assignment table to map specific patches to specific Program Change numbers if you need to. Though the MIDI side of the operation is fairly simple, you can still opt to work on any MIDI channel or in Omni mode, and up to four parameters per patch can be selected from a list to be assigned to real-time MIDI control. Any MIDI Controller number between 0 and 121 can be assigned to these parameters, and the setup can be different for each patch.

Patches may be dumped or loaded via SysEx, and one sensible feature is that the Utility pages allow you to monitor the condition of the internal battery, which is necessary to retain the patch information when the unit is switched off.

typical studio processor (even one costing less) but despite this, the quality of the effects provided is surprisingly good, both artistically and technically. The main advantage of this unit is that it's very quick and easy to programme, largely because all irrelevant parameters have been omitted, and those remaining have been rationalised where possible. Perhaps the most successful effects are the multitapped chorus and the combination effects that can get very close to sounding like an idealised tape echo, complete with spring reverb and analogue chorus — but even the basic 'bread and butter' effects are clean, vice-free, and very musical. The inclusion of both a ducker and optional compression in the Multi-Effect delay algorithm is a big bonus in recreating classic sounds easily, and for guitarists using dual-channel amps, the ability to include channel switching as part of a patch is only to be welcomed.

No unit is perfect, and I can't help wondering why the ducker, delay filtering and compression aren't available in the delay-only mode; and when it comes to reverb, why no pre-delay or reverse/gated algorithms? I would also have liked to see better input metering, and knowing what kind of peak signals guitars can generate when pushed hard, some kind of analogue limiter on the input stage might also have been a good idea.

Having made that point, the JFX1 seems less prone to overload than many of the digital effects units I've tried — so maybe they've slipped something in and just not told us about it!

In the studio, the JFX1 is perfectly competent, but offers less scope in terms of the range of effects it can create than something like the Alesis Midiverb 4. Because of this, I wouldn't recommend the JFX1 as a first choice for exclusive studio use. but if you're a guitar player who wants something to use on gigs that's also up to scratch for studio use in terms of sound quality, the JFX1 starts to look like a much better proposition, and its supreme ease of use means that even total novices won't be intimidated by it. Considering that Marshall set out to build a great-sounding, accessible effects box specifically intended for the guitar market, I can only conclude that they succeeded. 505





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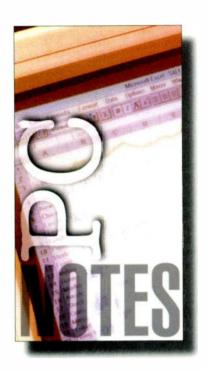
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The ability to make your own audio or data CDs with your PC can be enormously useful and is becoming cheaper all the time. But what exactly do you need to buy?

BRIAN HEYWOOD finds out.

ithout trying to blow my own trumpet too loudly, the burgeoning of CD Recordable (CD-R) technology has been predicted by this column over the last couple of years. However, the revolution isn't over yet; this technology is so mind-bogglingly useful that I imagine that loads of new ways of using the ability to create your own CD-ROMs (and CDs) have yet to surface. For instance, I've heard that a device driver provided with the JVC ROMmaker system allows you to write to a CD-ROM as if it was a hard disk, allowing any PC application to create files on a CD-R — just think how useful this would be for backing up your data.

The road to CD-R heaven isn't entirely without its pitfalls, though: for instance, there's currently a worldwide shortage of CD-R blanks, which is pushing up prices at the moment. However, production problems like this tend to be short-lived, and no doubt another CD-R plant will come online and the prices will drop again. There are also potential problems with CD-R drives. I've been using Yamaha drives (the CDE100 and 102) which give excellent results with a wide variety of prands of gold disc blanks, but I've heard of other folk having problems with some of the cheap and cheerful drives now hitting the market. It seems that some drives are optimised for certain brands of CD-R blank. So sticking to well-regarded

brands of drive — like the Yamaha ones — can reduce the potential for media problems.

How can the PC musician take advantage of this developing technology? The most obvious application is creating a one-off audio CD for your demos, or delivering a finished product to your client or CD mastering plant. When mastering CDs, you can save money, since you

"Attaching a CD-R drive to your PC is by far the cheapest way of obtaining the facility to create audio CDs."

can bypass the requirement for PQ encoding of your digital master and go straight to the glass mastering stage. Gold discs aren't the preferred format for CD mastering plants, since many have experienced quality problems with CD-R disc masters. But this 'unreliability' of the gold disc format can be reduced quite easily by being careful, both with quality of the blanks and with handling discs.

The quality of the gold disc blank is a very important factor in the reliability of the master.

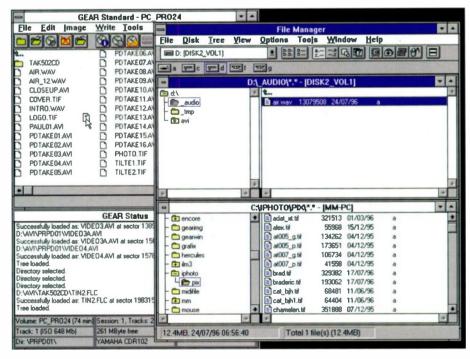
THE GOLD STANDARD: RECORDABLE CDS

A CD-R drive uses special blank CD-ROMs that have a gold appearance, and are thus called gold discs. These discs are actually a sandwich of a gold film, an organic dye, and a clear protective lacquer. The CD-R drive's laser causes the dye to change its reflective properties, giving a similar effect to the microscopic 'pits' found on a mass-produced (silver) CD. The upshot of this is that a CD-R gold disc can be read by a standard CD-ROM drive or domestic CD player, making it an ideal medium for archiving, distributing large amounts of data, or creating one-off audio CDs.

Some gold discs are almost transparent, which means that the sensitive reader used in the CD plant for the mastering process picks up interference from the printing on the top surface of the CD. Another important factor affecting quality and reliability is the care taken in handling the finished gold disc. The mastering process involves reading the raw audio data off the master CD, and any dust or fingerprints will cause errors that will be transferred to the glass master. If too many errors are present, the plant will need to re-master the disc — and charge you for it, of course.

GETTING INTO GEAR

If you'd like to start creating discs on your PC, CD-ROMs are simple enough, since this is the most usual use for CD-R on a PC, and there are a number of low-cost CD-ROM mastering packages available for Windows. Creating audio or mixed mode (data + audio) CDs is a different matter, and you usually have to go



Gear lets you drag and drop both data and audio files onto your CD-R contents list, making it easy to create CD-ROMs, audio CDs, or a combination of both.

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Guitar Player Magazine

Cistening on a variety of loudspeakers – JBL, KRK, Meyer, Tannoy, Yamaha and a few lesser-known names – I discovered that the BBE Process provided a nice punch to older recordings without being brittle or shrill. The LF contour emphasized the bottom end, without undue boominess."

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 upmarket somewhat to get this facility. One exception to the rule is an application called Gear, from the Dutch company Electroson. This is a pretty comprehensive package which has versions for most operating systems — Windows 3.1, Windows NT, Windows 95, and Mac OS — not bad for a budget package.

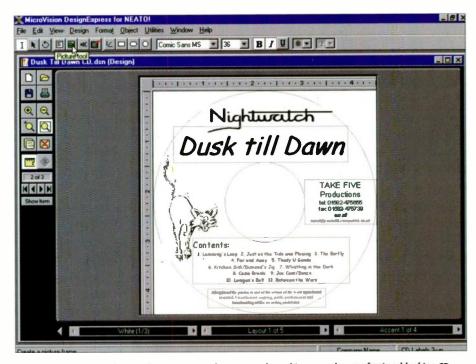
Under Windows 3.1, Gear works in conjunction with the File Manager, allowing you to select files by 'dragging and dropping' them into its main window. As you can drag entire directories, you can very quickly create an image of your hard disk ready for copying to CD. Using Gear, you can create multiple tracks, which you specify as being data (first track only) or audio. To define the contents of an audio track, you simply drag a CD-quality WAV file (16-bit stereo, 44.1kHz) into the appropriate track window. The audio side is pretty basic, and you need to have enough disk space to hold the WAV files — allow 10.5Mb for each minute of audio — but Gear offers quite a simple way of making audio CDs.

Of course, there are other ways to create one-off CDs: more and more professional PCbased non-linear editors (hard disk recorders), like SADiE, and Creamware's TripleDAT, have added this facility, along with full PQ encoding and subcode. There are also stand-alone units, like the Marantz CDR-620/615, which allow you to 'record' a CD in rather the same way that you make a tape. However, attaching a CD-R drive to your PC is by far the cheapest way of obtaining the facility to create audio CDs. To get the Gear, you need £99, and it's available from CD Revolution (01932 562000).

CD LABELLING

Once you've created your CD, you'll need to label it. One of the slightly disappointing aspects of creating a gold disc is that you can only label it with a soft felt-tip pen - you





NeatO's label-design software allows you to combine text and graphics to produce professional-looking CD labels on your laser or inkjet printer.

can't normally stick printed labels on a disc. Using standard labels can give you problems, both by upsetting the balance of the spinning CD, and because the glues used for selfadhesive labels can attack the gold film backing on the recordable CD, eventually making it unusable.

One labelling system I've recently come across is the rather bizarrely named NeatO from MicroPatent UK — one of the world's leading publishers of information on CD. Apparently, they developed the system so that they could produce short runs of CDs for their own clients. The package comes in three sections: a set of pre-cut, self-adhesive labels suitable for laser printing, a plastic contraption for applying the labels to the CD, and a label-design software package. The labels cover the entire surface of the CD, so there's no danger of the disc becoming unbalanced, and the adhesive has been undergoing accelerated life testing to check that it doesn't attack the plastic of the CD. The Windows-based label-creation software is pretty nifty, and allows you to place text and graphics anywhere on the label, with curved lettering effects, and so on. You can also define templates for labels you produce on a regular basis, with automatically updated date fields.

"A CD-R gold disc can be read by a standard CD-ROM drive or domestic CD player, making it ideal for archiving, distributing large amounts of data, or creating oneoff audio CDs."

affix the label without touching the business side of the CD and ensures that the printed label is applied evenly to the top, without wrinkles or bubbles. You have to be a bit careful to get the best results, but in all this is a very useful little product that can be used with any type of blank CD. The kit - software, applicator hardware and 99 labels — costs just under £65 and is available from MicroPatent on 0181 932 0540 505

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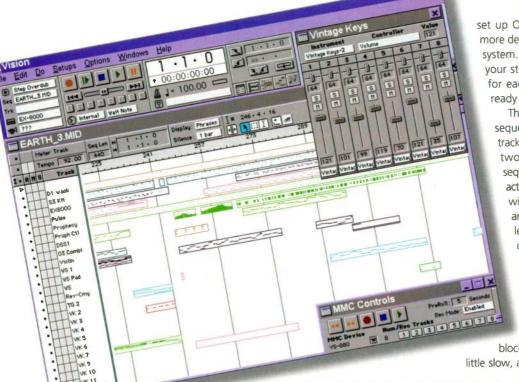
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set up OMS — see 'OMS & the PC' box for more details on this MIDI studio configuration system. Once you've mapped out and tested your studio connections, and selected icons for each item in your studio setup, you're ready to run Vision for the first time. The highest working level within Vision is a

sequence, which may contain either MIDI tracks, other sequences, or a mixture of the two. The sequences window lists each sequence by name, and selecting each one activates its own track view. This, in keeping with current fashion, is a Cubase-style arrange window with track details on the left, and musical parts represented as discrete chunks of coloured data (the colours being propagated from the instrument definitions). A number of view options are available, ranging from discrete musical patterns, to regular blocks or entire tracks with miniature representations of the MIDI data. In

block view, I found busy screen redraws a little slow, and more zoom options wouldn't have

One of the Mac world's sequencing front-runners, Vision has been ported to the PC, where it faces some stiff competition from the established packages. PAUL NAGLE goes all visionary...

OPCODE VISION 2.5 FOR WINDOWS

he world of MIDI has perhaps been slow to realise it, but there's an awful lot of PCs out there (there's a lot of awful PCs too, but that's another story entirely!). Enter Apple Mac dudes Opcode, sensing the flow of serious money, and following in the wake of Cakewalk, Steinberg, Emagic, and MOTU. Have they allowed the competition to get too far ahead? Does Vision have anything fresh to offer when compared to products such as Cubase and Logic, which are now well bedded in? At first glance, the answer to the latter question seems to be 'no'. Vision isn't Windows 95 native, it doesn't have any audio capabilities or flashy MIDI delay lines/arpeggiators, and its management of patches will probably necessitate quite a bit of typing. But don't write it off yet — Vision has quite a few appealing aspects, not least its simplicity and understandability, plus one or two tricks up its sleeve

VISION VIEWS

Vision is supplied on just two 3.5-inch, 1.4Mb disks, and its installation routine provides you with both the Vision sequencer and OMS — more about the latter in a moment. Thankfully, the program is not protected, so there are no dongles or cranky software keys to worry about. Neither are there any flashy demo or tutorial songs instead, you're invited to follow the 'Getting Started' manual and actually record something yourself. Before doing that, though, you need to

gone amiss, as the track names weren't always clear to my ageing eyes.

Unlike most of its contemporaries, Vision works equally well with pattern-based or the more conventional linear method of arrangement. Individual sequences can be created and edited, then assembled later into a new composite sequence. Since sequences can be triggered from the keyboard, you can play them manually, even down to recording the results into a new sequence when you're happy. This brought back fond memories of Dr T's KCS program on the Atari ST and, for me, is still the fastest and easiest way to work, although I'd like to be able to drag-copy parts between different sequences. And the fun's not over yet, because you can generate new sequences based on material you've already recorded. Vision takes elements of note timing, duration, order, and so on, and creates new tracks based on a series of dialogues. The final results vary with the source material, but I found this to be surprisingly useful for shifting the perspective of a riff or bassline, whilst maintaining elements of the performance. Tracks can be looped individually, regardless of length, and entire sequences can also be looped — if triggered from the keyboard, they can even run at their own tempo — something to make smaller PCs sweat with the effort, I'm sure.

Vision has extensive online help, consisting of a series of black and white boxes of small text, which

pros & cons

OPCODE VISION £234

- A program with no wasted features.
- . Option of working in a pattern-based way is a welcome change.
- · Powerful input mapper.

cons

- · A little expensive for what's on offer
- · No audio facility.
- No drum grid editor
- On-screen sliders inflexible.

summary

A sequencer that's a delight to work with. Unlike its competitors, you'll probably use all Vision's features at some time, and it has several unique aspects that are truly inspiring. The inclusion of the Open MIDI System predicts happier days for Windows users, although we're not there yet.

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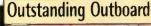
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OPCODE VISION FOR PC

► look decidedly un-Windows-like. If you didn't know this program was ported from the Mac, these panels and most of the dialogue boxes should give you the hint (quite a broad hint in the case of help for the MIDI Keys function, as it states that you can "generate any Macintosh keystroke..."). Contextsensitive help is available with the messy key combination control-alt-shift-mouse click for input fields, and control-alt-shift-choose for menu items. as opposed to the more normal F1. (That said, the help is invaluable and means you're not constantly leafing through the manual.) The Windows menu isn't exactly as you might expect, either, having no tile or cascade options; instead there is a list of all the main windows which you can open. You can set default locations for many of these, which is handy, because you can very easily fill your screen with the little blighters.

TRANSPORT OPTIONS

Vision's large control bar is the central point for most routine operations:

- The Record Mode box lets you set whether you
 wish to overdub or replace existing data, in
 either real or step time. Being able to step-time
 record directly from a track window is a neat
 way of creating backing patterns and rhythms
 without having to enter an editor.
- The Current Sequence box displays or selects a sequence for recording. Pick one from the popup menu and its corresponding track view becomes active.
- The Current Track pop-up shows the record track within the sequence. I did find it strange at first that selecting a track didn't automatically make it the record track, but I soon got used to it. Only one track can be selected for recording at once, but as a track can handle multiple MIDI

channels, this doesn't present any real problems.

- The Thru Instrument box shows the instrument currently assigned to the record track, and features an additional set of trigger and transpose modes, which define the way that sequences can be triggered from keystrokes.
- The Current Patch box completes the track/sequence controls and is a handy shortcut to the patch list for the instrument you're working with.

Next are the fam liar transport controls, with two play buttons (one to play from the start, the other to play from the current position), record, pause, stop, and so on. Nipping smartly around your blossoming composition is facilitated by eight counter locations, or by the Previous and Next marker controls, which advance through the markers set in the Markers pop-up. Finally, the shuttle bar moves the counter at variable speeds according to mouse position, either when stopped or during playback, functioning as an effective forward/backward audio scrub.

A quick short-cut to the Sync menu reveals all the expected controls, including internal, external, SMPTE, MMC (MIDI Machine Control — for which there is a separate transport window) and Remote (where *Vision* waits for another OMS-compatible application to tell it to start). Recording can be set after a count-in, or with the 'wait for note' option favoured by those of us who resent a machine telling us when to start playing. Incidentally, there are extensive options provided for re-clocking performances made independently

"I found Vision to be one of the easiest programs of its kind to use, yet with enough power to accomplish any task with the minimum of fuss."

VISIONS OF THE FUTURE: OMS & THE PC

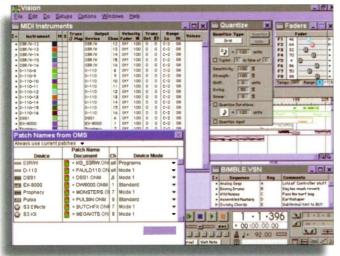
Opcode's Open MIDI System was devised on the Mac as a central point for all MIDI-related interface and device information, and now Opcode have made a deal with Microsoft to incorporate

OMS Setup _ | | | | | | | Eile Edit × MYSTUDIO.OSS Korg Wavestation A/D, ID 1, Chs. 1-8 2 - 9 8E-50 MIDI Device Info Manuf: Korg Device ID: Model: Wavestation A/D Name: Wavestation A/D 1 Prophecy □ is controller MIDI Time Code MIDI Time Code
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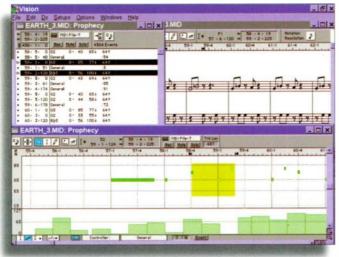
OMS into a future release of Windows 9x. Certainly, this should be an improvement on Windows 95's half-baked way of handling audio and MIDI, though such facilities will only be really beneficial if everyone joins in. OMS 2.0, as supplied with the PC version of Vision, is a basic affair: it sniffs out all installed MIDI interfaces and represents them graphically. From its main screen, you define which synths, controllers, drum machines, and so on, are connected to each port, specifying their channels and transmit/receive requirements. A warning message tells you if you add instruments whose channels overlap. Opcode provide a (far from exhaustive) list of instruments, but thankfully there is provision for adding unknowns. Those that are known are supplied with an initial bank of factory patch names, which can be edited if required. This is an area which has great potential, since any OMS-aware application will have common access to the studio file, so that patch-bank updates made in editors and librarians will be reflected in the current studio settings which, in turn, will be known throughout the system. I wouldn't like to speculate on how long this may take to become established, though, as there is currently no release information for a Windows version of Galaxy (Opcode's own universal librarian). With Microsoft's backing. things look hopeful. Eventually.

OMS Setup screen — turn your studio into dinky little icons with OMS.

OPCODE VISION FOR PC



The Instrument/Patch definition windows, with Quantise box (top right) and Sequence list (bottom right) also visible.



Vision's List editor (top left), Graphic editor (bottom), and Notation editor (top right) screens.

SYSTEM REQUIREMENTS

- IBM (or compatible) PC, 486/66Mhz or faster.
- Windows 3.1 or Windows 95.
- 12Mb RAM (16Mb recommended).
- 8Mb free hard disk space.
- Windows-compatible MIDI interface.

vision in *sos*

The Mac version of Vision has been reviewed several times in SOS:

- Vision (original version): October 1989.
- · Studio Vision: February 1991.
- Vision 1.4: January 1993.
- Studio Vision Pro 3.0: part of four audio sequencers overview, December 1995; full review in March 1996.

of the metronome, and with a combination of re-clocking and 'scale time' facilities, you can align rubato performances with Vision's bar divisions, for score printing or quantising. Tempo is normally set in a dedicated tempo track, but can be overriden on the control bar, and timing resolution is a healthy 480ppqn (pulses per quarter note). Punch in and out settings work as you'd expect, and these are used in loop mode to select the area which will cycle, either in record or playback; you can loop record in replace or overdub modes. Hitting 'Enter' as you record confirms that you wish to keep everything recorded up to that point, and 'Delete' erases all the notes that have been recorded either from the start or the previous Enter. Although you can use Control-up/down arrow to move to the next track, there is no auto track increment facility to allow you to keep many individual takes of, for example, a solo part.

Finally, five icons allow quick access to the Sequence, Tracks, List Edit, Graphic Edit or Notation Edit windows. A comprehensive set of keyboard equivalents exist for most functions, and you can define practically any MIDI event or combination of events to trigger *Vision* keyboard

commands, or even sequence playback. A small black dot, which flashes during recording, is the only visual indication that MIDI is being received. I'd like to see this improved, as a decent MIDI In/Out indicator is invaluable when you're scratching your head and wondering where the sound went.

INPUT MAPPER

Now, this is cool. By setting up an input map to respond to different incoming channels, it is possible to route the outputs of two or more keyboards to different modules, complete with keyboard splits, if required. The serious stuff starts when you trigger sequences from incoming events. resulting in instant Wavestation-type patterns. Since you aren't constrained by the type of data in a sequence, you can trigger not only notes, but MIDI controllers too. The number of applications for this feature are legion — it could perhaps be utilised to recreate vector synthesis by producing volume fades to blend a number of instruments at each keystroke, or to trigger special phrases, or even synth patch edits. Different triggering options allow you to re-start the sequence each time a note is played or wait until it finishes before starting again. In gated mode, the sequence plays only while a note is held down. Simultaneously-played notes start and transpose separate copies of the sequence, and since you can record the results into a track, you can create a layered cacophony of looping mayhem, recalling the power (if not the bulk) of sync'ed-up analogue sequencers.

Custom layered instruments, featuring favourite combinations and/or transpositions, can be created. In overflow mode, a number of synths can be used together, by specifying the number of voices each can produce — you can create complex multi-instrument chords or reduce a polyphonic synth to a single note in this way. Patch details are retrieved from OMS, but can be edited using the Name editor. While this is pretty good, it's no substitute for an integrated process that discovers your patch names and stores them along with the SysEx data needed to recreate them — as does Steinberg's *Cubase* Studio Module.

Quantise is well implemented, with strength, sensitivity, smear, shift, and swing settings mapped against either a grid or groove. Notes can also be quantised on input or on playback.

Faders (vertical sliders) and Consoles (horizontal sliders) are graphical mixer representations which can be configured to send out MIDI controllers to the instrument(s) of your choice. A great *Vision* feature allows you to automatically build a Console from currently-selected tracks. With up to 32 Faders, and four Consoles of up to 24 channels each, basic mixing applications are unlikely to pose a problem, but I felt restricted by not being allowed to perform simple tasks such as label sliders, create a custom layout, or send SysEx strings to tweak my synths. Maybe this could be added in a future release? Each slider can be remotely controlled, and with tempo as an option, recording *accelerandos* and *ritardandos*

with, say, a mod wheel, becomes far easier than dragging a mouse or using the keyboard.

EDITORS

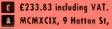
Notes may be edited in the usual ways: there's the List editor, which shows individual events in text format; a Graphic piano-roll editor, which you use to move notes around, paint in new notes, and so on; and a Notation editor, which does its job well enough without threatening the dedicated scoring packages. For most uses, this editor functions very well, and I found its printed output more than adequate for my own needs.

Multiple instruments can be edited at once, and a handy selection box allows you to decide which ones to work on at any time. The Notation and Graphic editors have a strip controller window at the bottom, where you can draw or edit a wide variety of MIDI data, including note duration and velocity, tempo, and data generated by the Faders and Console windows. This is superb for graphically tweaking a mix without having to go back to the sliders and re-record it. The only omission is a drum grid editor, although the piano roll will handle this job at a pinch.

Individual notes may be selected using sophisticated filters; duplicates or near duplicates can be found and removed, and events may be processed according to their position within the bar or relative to other events. In most cases, you can enter note values directly by clicking on a field and hitting a note on your MIDI keyboard. Controller data can be reduced by a user-defined percentage, or increased (to smooth out a stepped curve, for example). In Exact mode, all changes performed graphically bring up a dialogue box, so you can fine-tune your edits using numbers. Transpose is a very musical affair, as it includes modal (major, minor, melodic minor, harmonic minor, Dorian, Lydian) operations, as well as the more familiar semitone shifts. Transpose Maps allow any MIDI note to be translated to any other and as with many Vision options (faders, input maps, MIDI keys, sequences, and so on), these can be saved and loaded separately.

CONCLUSION

Vision appears to have no frivolous or superfluous features; no dark corners for you to explore on a rainy day. I felt the Faders and Consoles were a little basic, and I missed an automatic way to grab patch names, although when OMS becomes widely established this should be less of an irritation. If you like to assemble music in small snapshots, or to experiment with looping patterns of unequal lengths, Vision looks very attractive. With audio being included in most other Windows sequencers, perhaps a lower price would have reflected this omission, but nevertheless, I found Vision to be one of the easiest programs of its kind to use, yet with enough power to accomplish any task with the minimum of fuss. In fact, by concentrating on only the most important facilities, you can better see the wood for the trees, and the extra frills that are provided are well chosen. Naturally, I managed to crash it hideously several times (saying a not very fond farewell to Windows 95 in the process), but setting this and the ugly dialogue boxes aside, Vision is a very creditable first attempt at a Windows program. If you haven't decided on what's best for you, and don't need the audio facilities offered by the competitors, take a long hard look at Vision.



MCMXCIX, 9 Hatton St, London NW8 8PL.

0171 723 7221.

F 0172 723 8150.

www.mcm.co.uk/opcode. Opcode also have a web site at: www.opcode.com and FTP site at: ftp.opcode.com.







MARTIN RUSS brings you the latest news direct from an Apple R&D gathering, and takes a set of Allen keys to some expensive digital audio hardware...

n a hot and sticky evening earlier in the summer, Apple held the Broadcast Solutions Event at BAFTA in London. A team of evangelists from the Apple R&D laboratories were on hand to answer questions from an invited audience of TV, news, broadcast and media people — and me — and there was a demonstration of how to put a broadcast-quality video together, from script to screen, in about 20 minutes.

I spoke to Jonathan Knowles, the Senior Product Manager for QuickTime, and he showed me QuickTime 2.5, which he claimed would be out by the time you read this. This is the version with the proper QuickTime Music Architecture built in, which means:

- OMS support is now included;
- You can now Drag & Drop AIFF soundfiles

(and other formats) to provide sampled and synthesized musical instruments;

- 44.1kHz/16-bit sounds are now available (if your hardware can cope);
- Yamaha, Korg, InVision and other sound sets will be available (these can contain synthesized and sampled instruments);
- The QuickTime musical instrument editor has been greatly improved.

With this release of QuickTime, the MacOS (Macintosh Operating System) and Windows versions are finally synchronised, so developers can now provide moving pictures, audio and music across computer platforms.

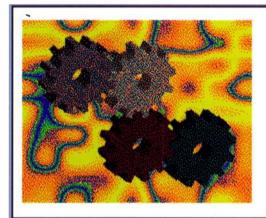
I've been asked why I frequently mention QuickTime in this column. The answer would have been very apparent if you had been at the Broadcast Solutions gathering. Here was an event targeted at people who work in TV (not hi-tech music) — and the major focus was to discuss the progress towards a universal digital media format — as well as try and push Applebased systems as a neat way to edit video. Acronyms and abbreviations were much in

This brings me to the answer. I mention QuickTime because it shows the way that audio, video and music are becoming ever more convergent. When I learn that the BBC have over 70 Digidesign Pro Tools systems, and the demonstator for the Media 100 video editor happily edited his video material and his soundtrack simultaneously using the same program, then anyone using a MIDI sequencer with a few audio tracks who is also sync'ing to video players should be aware of it. MacOS musicians need to keep aware of what is happening out there, because the future is wider than just CDs — the future is CDs, videos, on-line magazines, TV programmes that look like magazines...

Having mentioned the BBC, their new multimedia site is worth a visit; it uses a host of Macs and QuickTime VR. Check out the web site given in this month's 'On The Net' box.

HOW IT WORKS: TDM

Using a Digidesign Pro Tools system for a month or so (as I have done in order to write



Digidesign Audio Engine™

Version 2.96

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Digidesign's Digital Audio Engine Splash screen.

evidence: QT 2.5, QT3D, QTVR, QTTV, RAVE, 3DMF, AVI, OMF and more. With demonstrations of 'best of breed' ways of non-linear editing audio and video from MediaSpec and the Tyrell Corporation, it was serious stuff.

this month's *Digital Performer* review for *SOS* — see page 124), you come to appreciate how daunting Digidesign's products can appear from the outside. I've always aspired to buying one, but I've never quite got around to it, and so I had only a sketchy grasp of how it all fitted together. On the assumption that I'm not the only one, here's a brief guide to some of Digidesign's wonderful MacOS computer

expansion goodies.

Digidesign's Audiomedia cards are straightforward in concept — they provide basic audio I/O capability with EQ as the only audio effect. But a Pro Tools system contains rather more. The underlying enabler is the Digidesign Audio Engine (DAE), which runs in the background — you can bring it to the front, but it has only a splash screen and a simple 'File' menu. This provides a standard interface between the Digidesign hardware, Audio I/O and DSP processing, and the software that runs

APPLE NEWS IN BRIEF

• SHARE & ENJOY — NOT!

Don't bother looking up Apple's share price. At the time of writing, the price was the lowest for many years, and this year's ongoing descent shows no sign of slowing. Repeated warnings that the recovery was going to be tough and would not happen immediately appear to have been correct. But don't write off this column just yet!

THE WAY OF THE FUTURE? (PART 629)
Roland's PMA5 music pad is yet another MIDI device with a serial interface, so it can be connected directly to the two major brands of personal computer. But

the combination of a touchscreen user interface, an 8-track sequencer and a MIDI interface is something more unusual — and might indicate the future direction of hi-tech electronics: purpose-designed gadgets for specific market sectors. When the next version has 32 tracks, audio tracks and waveform editing, your Mac can start worrying!

. BMW & APPLE

Apple and BMW may not seem the likeliest of partners, but check out this web site: http://www.bmwusa.com

It shows how the two companies have joined forces to reinforce the links between two high-quality, wellengineered products by utilising the Internet.

	ON THE NET	
Gromit's/Home	http://www.bbcnc.org.uk/the_centre/brochurewelcome2.html http://www.digidesign.com	The Beeb
\ Page \ P. P.	http://www.mission.apple.com	Digidesign Tom Cruise & the IMFI
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Pix Prograph Alberts and	http://www.aardman.com	Wallace & Gromit!
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The world's best-loved man/dog combination window-cleaning team surf the Net as well, you know...

on the MacOS computer. The DAE has the advantage that lots of third-party software uses it, not just the stuff from Digidesign.

The other important piece of underlying technology is TDM (Time Division Multiplexing). This allows several different sets of audio information to be conveyed along a simple piece of ribbon cable by sending them at different times. Digidesign call this the Trans-system Digital Matrix buss, or TDM buss for short. Physically, it looks like a short piece of blue ribbon cable with some IDC connectors pressed onto it, but in conjunction with the TDM software, it actually allows up to 256 channels of 24-bit digital audio to be transferred between your computer and plug-in cards.

TDM is also the key to providing software plug-ins that work like outboard effects units, but which use the hardware DSP chips inside the computer. There are a huge and expanding range of plug-ins, from the dynamics, delays

MISSION: IMPOSSIBLE

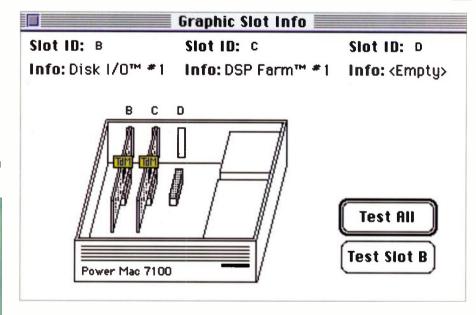
Also heavily featured by Apple at the Broadcast Solutions event was the TV advert for the Power Book — even though the *Impossible* film itself has a Mac with the least Mac-like user interface I've ever seen! But to immerse yourself in even more *Impossible* material, you could try the web address shown in this month's 'On The Net' box.

and EQ that you might expect, through to some very complex and sophisticated specialist tools (for an overview of some of these, see Mike Collins' article 'Plugging

Into Pro Tools', which ran in the February and March issues of *SOS* this year). Non-TDM hardware, like the Audiomedia cards, or the basic Pro Tools, still provide EQ.

TDM-based systems come with some useful software accessories. I used the *DigiTest* application to check the exact hardware lurking in the Power Mac 7100/80AV that I used for my *Digital Performer* review. The

screen shot shown is a composite, because you actually need to click on each of the card slots to get the text report shown at the top of the screen — but DigiTest still detects the model of MacOS computer, the number of slots, and the cards in the slots. In this case, there were two cards: the Disk I/O card provides a specially dedicated SCSI2 interface, which is for the hard disk that will be used for the audio files. Having a separate SCSI buss keeps the audio data separate from the computer's own SCSI buss. The Disk I/O card also has the socket for the 882 or 888 Audio I/O boxes. The DSP Farm is just a card full of Digital Signal Processing hardware — and is used to provide the effects processing for TDM plug-ins.



The inside of the Power Mac 7100/80AV used for the Digital Performer review.

INSIDE THE DIGIDESIGN 882

Since I had a captive Digidesign system for the purposes of writing this month's *Digital Performer* review, I took the opportunity to have a closer look at it. I always open up hardware boxes, and the Digidesign's 882 Audio I/O box was no exception, even though I needed to find some Imperial Allen Keys to get inside!

The inside of an 882 is more or less filled with a large double-sided PCB. The design and construction is of a very high quality — there were no visible corrections or modifications, and the audio/digital areas were clearly defined by the ground planes used

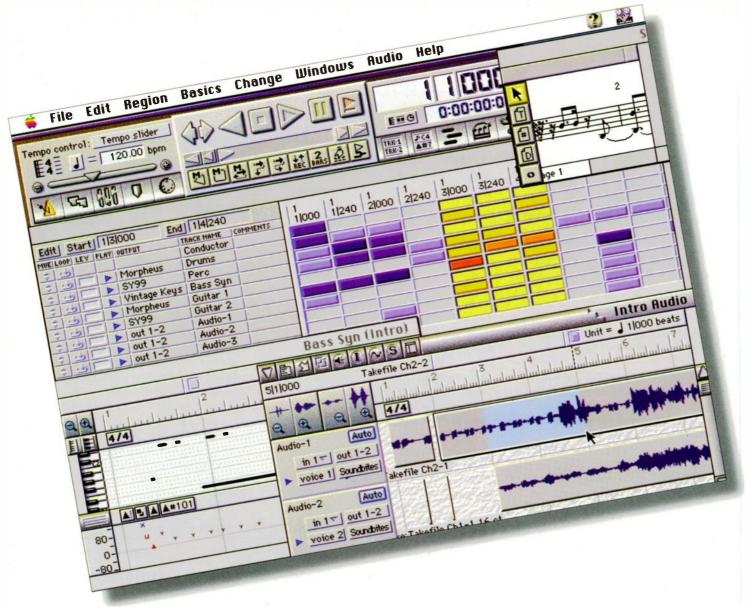
for the audio sections. The majority of the board components were surface-mounted, with just a few through-hole components. The BNCs for the clock I/O were hand-soldered.

The main Analogue-to-Digital Converters (ADCs) were eight Philips SAA7360Ps, with PMI Op-amps buffering and filtering the audio inputs. On the output side, eight AK4318 Asahi Kasei Digital-to-Analogue Converters (DACs) were used, with PMI SSM2142 VCA, and an Analogue Devices ADG412BR DAC was used to control output level. An Actel gate array

forms the bulk of the control logic; the remainder was made up of small gate-count DIL packages.

The umbilical cable that connects the 882 to the host computer is buffered using standard 26LS31 and 26LS32 line drivers, whilst the power cable to the external power supply unit has RF filters plus 2 large chokes and several 220µF electrolytic capacitors around the 5V regulator.

Overall, this is a very nicely constructed and designed unit. Having the audio inputs and outputs remote from the computer enables a much more flexible placement of the computer, and provides high-quality audio conversion.



Audio Magic

Mark Of The Unicorn's recent demo CD for Digital Performer caught everyone's attention — so how does the real thing compare?

MARTIN RUSS takes another plunge into the wild waters of digital audio on the MacOS platform.

MARK OF THE UNICORN DIGITAL PERFORMER v1.7

last reviewed Mark Of The Unicorn's (commonly abbreviated to MOTU) Performer MIDI sequencer way back in the November 1986 issue of Sound On Sound. The intervening 10 years involved a long relationship with Atari, but I'm now back with my first love, the Apple Macintosh. Performer, meanwhile, has continued to develop from a very basic but capable sequencer into one of the leading generation of 'MIDI+Audio' programs: Digital Performer. And so we meet again...

DIGITAL DIMENSIONS

These days, the MIDI sequencer is fast becoming little more than a cut-down, lower-priced version of the digital music production tools that are now the flagships of the music software companies. The integration of audio tracks with MIDI tracks is changing the way that music is made, and the way that people think about sequencers. Instead

of being the cheat's method of producing music with MIDI, utilising a computer to edit both MIDI and audio data has become accepted as a viable alternative to working with tape.

I've already commented at length about the way that my MIDI-focused, audio-free way of working was turned on its head by Opcode's Studio Vision Pro (see SOS March 1996), but despite changing my thinking about how you can use MIDI and audio in an integrated environment, I've yet to get around to investing personally in the requisite hardware for digital audio. Perhaps with this in mind, Mark Of The Unicorn approached me and offered the chance of a detailed look at Version 1.7 of Digital Performer. As a result, I've spent the last month working with a second example of a stateof-the-art combined MIDI and digital audio sequencer - and so what follows is part review, part comparison with Studio Vision Pro, and partly a 'try this!' exploration of what it can do.

MIDI

There are several ways of interfacing a Macintosh to MIDI: the simplest being the standard hardware interface, with Apple's MIDI Manager being the oldest and most basic software. But at the leading edge there are two options: Opcode's Open MIDI System (OMS) software and their 'Studio' series of hardware interfaces; and MOTU's FreeMIDI software and 'Time Piece' range of hardware interfaces. In the past I've always used OMS, so this was a chance to see how FreeMIDI behaved in practice.

As it happens, installing FreeMIDI was very smooth — the automatic configuration detected the standard MIDI interface hardware that I was using. The current FreeMIDI (version 1.2.4) will only read pre-OMS 2.0 studio setup files, and so it couldn't read my present settings, but configuring a simple test setup with a few MIDI devices took only a few clicks of the mouse. The MOTU manuals are very detailed about the options available for installing the MIDI software and hardware, and having both FreeMIDI and OMS present in my computer's System caused no problems. Overall, getting the MIDI working was much easier than I expected.

AUDIO HARDWARE

MOTU have taken a conscious decision to support the higher end of the direct-to-disk/digital audio market, and so Digital Performer v1.7 does not support the rather limited audio facilities (and nasty connectors!) offered by Apple's Sound Manager 3.0 and upwards, nor does it support the Yamaha CBX hardware that the special version 1.41Y did. Instead, MOTU now concentrate exclusively on Digidesign hardware, from the simple plug-in cards of Audiomedia II (NuBus) and III (PCI), via what was once Session 8 and is now called Pro Tools Project, through to the fully professional and comprehensibly expandable Pro Tools III systems. Supporting just one manufacturer's equipment pays dividends in consistency and simplicity, and makes setting up much easier for the end user.

The review setup was based upon a low-end Pro Tools system, giving 4-voice polyphony and eight audio inputs/outputs. (There is more information on Digidesign systems in this month's Apple Notes column; see pages 122/3.)

CHUNKS

Digital Performer builds music out of one or more phrases or Sequences. A Sequence can hold multiple tracks of MIDI and/or audio, and the basic window is called the Tracks window, where you can control the track settings (Instrument, Patch, Record, Play etc) and see an overview of the contents of each track — blocks appear in boxes which represent beats, bars or sets of bars, and the darkness of the block reflects the density of the MIDI data. This lets you quickly see where the music is on each track. For more detailed editing, event or piano-roll style graphic windows can be opened, when desired.

The Chunks window contains all of the bits of music (the Songs, Sub-songs and Sequences) that have been created in step time or recorded in real time. Sequences can be dragged from the Chunks window to a Song window, so four separate 1-bar

Sequences might be used to produce a 'chorus' Sub-song, and then this Sub-song could be dragged into another Song window which deals with the 'verse/chorus' structure of the final piece of music. The Song windows show the Sequences and Songs as graphic blocks, and this makes the structure of the song very clear — probably one of the clearest ways of showing how a song is put together (and sadly missing in *Studio Vision Pro!*).

Personally, one of the most important aspects of any sequencer is how visible it makes the structure of the contents of the song. I tend to work with short sequences of between one and four bars, using them to build up my song in short sections before chaining these together into the final completed piece of music. *Digital Performer* makes this process very easy, and the hierarchical way that Sub-songs can be embedded within other Songs is superb.

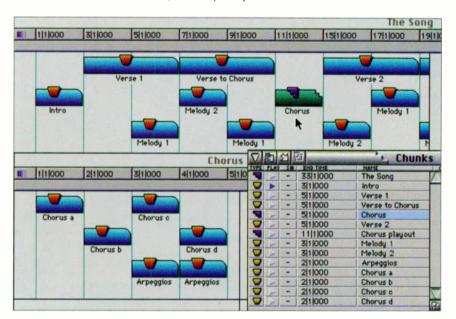
WINDOW CHANGES

MOTU have always used the graphics capabilities of the MacOS to the full. The user interface has evolved considerably over the years into a sophisticated, rich environment which is optimised for music sequencing. The most fundamental change to my eyes is that the familiar striped bar at the top of a window has gone. Instead there is what looks like a curved metallic bar with a cluster of icons at the left-hand end, and a set of steps leading to the name of the window on the right-hand side.

The icons have the usual 'close' box for putting a window away, except that it now has a triangle in it. The next icon provides a pop-up menu whose contents are specific to that type of window — this saves having to move back up to the top of the screen for common functions, and is especially

pros & cons DIGITAL PERFORMER V1.7 £599 • The PureDSP pitch-shifting and time scaling functions are superb Spectral Effects offer some novel changes to vocals and other instruments • The DSP processing is well suited to a hard disk recording environment Audio processing occurs in background. • The PureDSP transposition is best for monophonic audio Apple Sound Manager not supported. . No Audio-to-MIDI or MIDI-to-Audio summary For the sophisticated user who wants an audio software workstation for editing music, speech or sound effects, Digital Performer on a Power Mac will not disappoint.

SOUND ON SOUND



useful with larger screens. The 'move to back' icon is an arrow, and this moves the window behind all the other windows on the screen — to the bottom of the pile! The minimise/maximise box is the final icon in this group of four which are common to all the windows, and although this location is not where you expect to find this useful tool (it is normally at the top right of the window), it makes a lot of sense where you have lots of

Digital Performer allows you to drag chunks of a song into a window to assemble the music in a graphical form. In The Song', the Chorus consists of the four chorus bars called 'Chorus a' to 'Chorus d', plus two repetitions of the 'Arpeggios' bar.

Imagine...

Imagine starting with the synth so powerful "It's dragged the high-tech music industry into the future".*

Then consider the possibilities of physically modelling Real Acoustic instruments and Classic synths of the past, playing back your favourite Samples of instruments and loops then recording several Tracks of Vocals and Guitar, Mastering

Digitally using a built-in Mixer

and then *Interfacing* everything to your Computer and other Digital equipment.

You have just imagined your options with the Korg Trinity.

^{*} As predicted by Sound on Sound Magazine, Jan. 1996.





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200 24 300 X4 4 41

The 'PureDSP' processing of Digital

Performer v1.7 has many uses. Here

made whilst I was exploring the less

are a few of the discoveries that I

obvious corners of the program.

• Because the pitch transposing

thankfully avoids the normal

'munchkinisation' effect, large

wouldn't attempt. Transposing

remarkable 'Australian' twang.

amounts of transpose can be useful

for processing things you normally

speech up by an octave produces a

Shifting just the formants up by 12

half-steps produces 'cartoon duck'

speech, whilst taking the formants

and the pitch down by 12 half-steps

gives a wonderful 'Second World War

MOTU Digital Performer v1.7

differently sized windows on the screen. Because these four icons are always on the left-hand side, making a window fill the screen is easy because you do not have to find the right-hand side, you just find the much larger block of icons. Any additional icons after these first four are windowspecific, and allow the setting of audio playback or soloing of a track.

In the same way, having the name of the window on the far right also makes things easier,

because the name acts like a tag, and it is much easier to look along the top right-hand

radio' sound. Although the audio quality suffers slightly for these

extensive processing, and by

deliberately misusing the time-

create some very unusual and

scaling function, it is possible to

expensive-sounding effects. For

example, by compressing the time by

1:2, and then expanding by 2:1, and

perhaps even by 2:1 again, sibilants

take on many of the qualities of the

· When you 'split' part of an audio

soundbite from a larger soundbite.

the volume of the extract can often

'laser breath' effect.

a special effect.

extreme changes, it is very usable as

DSP DISCOVERIES

Studio Vision Pro makes much more use of keyboard modifier keys to alter the effect of mouse clicks. Whilst this can be faster, once learned, it is not as intuitive as an icon that indicates what mode you are in.

My only criticism of *Digital Performer*'s user interface is the slight lack of mouse-awareness. I like to use the mouse for everything, and *Digital Performer* does not allow some values to be changed by clicking and dragging. When changing

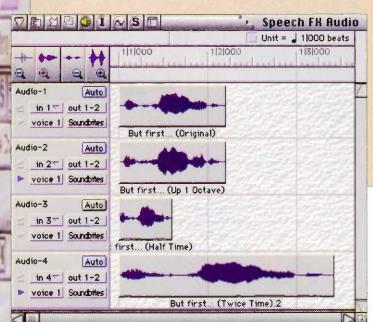
| Drum Loop Rudio | Drum Loop | Drum Loop

The middle beat of the raw drum loop has been pitch-shifted downwards and mixed in just before the end of the bar. The wrongly-named 'Up-beat' is another drum hit which has been pitch-shifted upwards and then placed at the start of the second bar.

be too low — and there's no obvious way to 'normalise' the volume so that it uses the full dynamic range. In fact, the 'Normalise' function is hidden away in the Mix menu option — you merely select one audio soundbite and replace it with itself, normalising it at the same time.

The time-scaling, pitch transpositions and spectral effects processing can radically transform existing audio material. I took a drum loop off a CD, trimmed it and time-scaled its length so that it fitted exactly into one bar, and then extracted one drum sound out of it.

By halving the pitch and using the on-screen 'draw the pan' feature. I had an unusual drum that jumped from one side of the stereo image to the other, I then mixed this into the drum loop and looped the drum loop to provide a backing beat. The part of the bar after the inserted drum sound needed some contrast now, and so I doubled the pitch of one of the subsequent drum hits and mixed that back into the loop. The result sounded like the product of a couple of samplers and lots of detailed editing, but it only took me a couple of minutes!



processing can also be used to provide special effects: in this case by deliberately squashing and then expanding an audio soundbite.

The audio

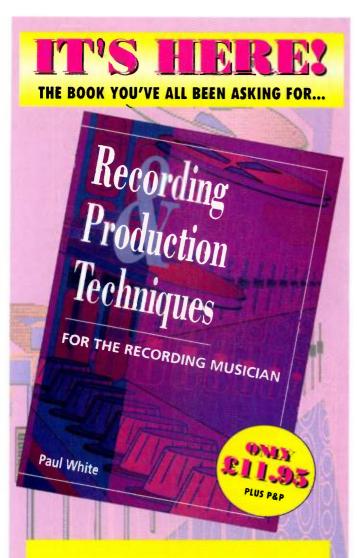
edges of windows than trying to find the middle of each top bar of a window. I can't help comparing *Digital Performer*'s sequencer-specific user interface with Opcode's *Studio Vision Pro. Digital Performer* has a more 3D look, and the extra icons in the top bar of the windows make it much easier to work with multiple windows on the screens at once, or make changing the mode of working quick and obvious. Conversely,

a name, for instance, you can't use a mouse click outside of the box to finish typing — you *have* to press the Return key.

AUDIO AWARENESS

Audio tracks appear in the Tracks window, and there are separate windows for viewing the audio soundbites — the MIDI tracks can't be seen in the soundbite windows. The only concession is that you can see the bar lines, and so it is possible to align a graphic editing MIDI window and a soundbite window, though it is not as straightforward as opening a single window containing MIDI and audio tracks (as happens in *Studio Vision Pro*).

Soundbites can be dragged from the Soundbites window onto the Track window in much the same way as chunks can be dragged from the Chunks window into Song windows. In



Recording & Production Techniques BY PAUL WHITE

Aimed at the recording musician, this highly informative book from Paul White demystifies the techniques used by professionals in the recording of contemporary music.

In logical order, it takes you through the planning stages of a recording session, explains how to gain the best performance from artists, how to produce the best possible mix, and reveals how to make full creative use of all manner of studio effects and signal processors.

Packed with hints, tips and meaningful explanatory diagrams, the techniques can be utilised both in the home and commercial studio.

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MOTU Digital Performer v1.7

fact, the audio editing is mostly so intuitive (you drag soundbites around to move them in time, for example) that you don't need to read the manuals very much — although there's plenty of very clear explanation in the 1200 pages of the four manuals. Audio editing is restricted to cutting, pasting, mixing, splitting (extracting part of a

Background Processing Adjusting tempo of Takefile Ch1-2 Processed 41984 samples of 87935 (47.7%) 8 tasks to do Adjusting tempo of Takefile Ch1-2 Adjust tempo of Takefile Ch1-2.17 Adjust tempo of Takefile Ch1-2 Adjust tempo of Takefile Ch1-2.27

> The analysis and processing of audio soundbites takes place in the background, so you rarely notice it.

Analyze Takefile Ch1-1.6.ct

soundbite) and other tape-like functions — if you need to make changes to the audio waveform, then you will need a separate waveform editor such as Digidesign's Sound Designer II. Mixer windows that look like the real-world equivalent can be used to control MIDI or audio tracks, and this is where you will find any third-party TDM effects plug-ins (if you have any installed).

Track windows do not indicate the actual length of a soundbite, they only show the first box that is occupied. This means that you need to check whether a specific part of the track has audio data in it; you can't see this directly from the Tracks window, so some of the overview capability is lost. This also makes editing audio and MIDI information more difficult, because although you need to 'Split' an audio track so that it forms a separate soundbite within the region, this is again not obvious from the Tracks window. This audio segment display problem will, I am told, be fixed in the next release of Digital Performer. In fact, it appears that the whole of the Tracks window segment display may change from one where the darkness of the segment blocks shows the density of the MIDI or audio data, to one where a tiny representation of the piano-roll graphic window is employed instead.

DSP POWER

One of the most noteworthy aspects of Digital Performer has to be the innovative pitch-shifting and time-stetching facilities. Using native PowerPC code (the Digidesign DSPs are not used), the PureDSP processing firstly analyses any audio that is recorded and then allows some powerful changes to be made on anything that is monophonic. The analysis happens in the background, so you can carry on performing most operations whilst the computer is doing the analysis, and you can select

a special display which reports on its progress.

Although this sounds like magic, the PureDSP processing does in fact work out the fundamental frequency of each sound, and then looks at the levels of the harmonics of that frequency (which actually determine the timbre). The analysis process thus splits the audio into pitch information and

> information about the harmonic structure of the sound (known as the 'formants'). The pitch extraction works best for monophonic sounds — for polyphonic sounds Digital Performer provides conventional pitch-shifting and time-scaling.

> Unsurprisingly, it does take time to perform this analysis: for example, a 30second stereo soundbite (1,009,985 samples at 44.1kHz) took 200 seconds to analyse on my review machine, a Macintosh 7100/80AV, but subsequent pitch transpositions or time-scalings took only a few seconds.

> Once analysed, it is then possible to manipulate the pitch, time or formants of the audio soundbite separately, and with astonishing quality. There are separate pitch

transpose and time-scaling commands available within the program, plus the Spectral Effects control which lets you independently change pitch, time or formants as you wish. Extreme changes using PureDSP still affect the audio quality, but the usable range is far in excess of conventional processing.

With conventional pitch-shifting, where the audio waveform is merely replayed at a higher speed or chopped, the formants change if the pitch is changed. This sounds as if the person or instrument is growing bigger or smaller. In contrast, Digital Performer's PureDSP pitch processing

"Digital Performer's PureDSP pitch processing changes only the pitched part of the sound and then reimposes the original harmonic structure."

changes only the pitched part of the sound and then reimposes the original harmonic structure. So the basic timbre of the audio is left virtually untouched, and the person or instrument appears to stay the same size, only the pitch changes.

One of the really clever features of Digital Performer is the way that the audio editing is integrated with the MIDI editing. Almost all of the editing functions work on a region basis: you select

WHAT MACINTOSH?

Digital Performer v1.7 requires a computer running MacOS 7.0 or higher, with 32-bit addressing enabled and at least 16 Megabytes of RAM. For computers running System 7.5 or higher, then 20Mb is recommended. Stripping unnecessary fonts, sounds, control panels, extensions and other items from your System Folder will probably improve stability and performance too. The Power Mac 7100/80AV used for this review had 32Mb of RAM fitted.

Computers with PowerPC chips will run the DSP code faster since it is 100% PowerPC native, although it will still run on 680n0 Macintoshes (eg. Quadra 650). Before buying a computer for use with Digital Performer, you should confirm its compatibility and suitability with Digidesign, because their digital audio hardware has more exacting computer requirements than MOTU's software.

THE STUDIO 400 TOWERS OVER THE COMPETITION.



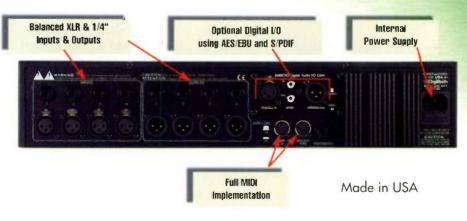
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Ins/Outs	4/4 - 1/4" TRS + XLR	4/4 - 1/4" TRS	2/2 - XLR	2/2 - 1/4" TRS
8 different Effects in any order	yes	no	no	no
Graphic Display	yes	no	yes	no
A/D	18 bit 128X	16 bit	20 bit 64X	16 bit
D/A	20 bit 8X	16 bit	20 bit 64X	16 bit
Sampling Freq.	44.1, 48kHz*	n/a	32, 44.1, 48kHz	n/a
Freq Response	20-20kHz	2-18kHz	10-20kHz	2-16kHz
Digital I/O	AES/LBU, S-PDIF (optional plug-in)	none	AES/EBU, S-PDIF	none
THD @ 1kHz	<0.003%	<0.0032%	0.003%	<0.0032%
S/N ratio	-96dB	-90dB	> -96dB	-90dB
Power Supply	Internal	Internal	Internal	External





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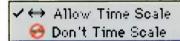
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MOTU Digital Performer v1.7

➤ a region first, and then alter it with a menu command. For transposition or time-shifting, it is perfectly okay to select a region which contains both MIDI and audio tracks, and then to process both sets of information with a menu command. It is possible to set the audio transpose to be either the PureDSP transpose or the normal transpose, rather

✓ ‡ Ø Use PureDSP™ Pitch Shift
‡ Use Standard Pitch Shift
Ø Don't Pitch Shift



like the 'do not transpose' feature that you can set for drum tracks, and so a single transpose command on a specified region can behave differently depending on the content of the tracks — but all that you do is 'transpose' the music. Brilliant.

This direct linking of audio and MIDI is particularly useful when you need to change the tempo of MIDI tracks, because it is easy to then make the audio tracks follow the changes. There can be quite a lot of background processing going on if you have lots of tempo changes, and this gives you some idea of how hard it would be to do this manually.

A FRESH PERSPECTIVE

A lot can happen in 10 years: just about the only bit of *Performer* that I recognised since my last review was the pie-graph memory usage window! The improvements, however, are manifold and very impressive. For example, I actually prefer the time-independent, column-based display of song chunks to the more rigid, time-based display that I get from *Studio Vision Pro*. MOTU have clearly spent a lot of time researching how to make working with a sequencer easier — the window management features may seem like superflous extras at first glance, but when you find yourself trying to push a window to the back in another program, then you know that they are actually very useful indeed.

Working in Audio windows is intuitive — you drag soundbites around (even from the Soundbite window to the Audio window) to move them in time or from one audio voice to another. You have to select an audio sample by double-clicking on it before you can select parts of it for splitting (extracting the selected section) and this 'select and then edit' approach is consistent with the way that Digital Performer works — you are always clearly shown which mode you are in — and in this case, the double-click selection of the audio soundbite causes it to be surrounded by a box, so you then know that you are working on that specific soundbite. Holding the mouse key down to play an audio sample was fine once I got used to

it, but I kept forgetting to turn off this option in the icon bar for the window, and so each time I tried to move an audio sample, it would pause and play before I could move it. Most of these minor irritations would, I feel sure, disappear once I became really familiar with the program.

Effort expended in learning to use the Audio window is easily offset by the sheer power of the audio processing. The PureDSP facilities make large pitch changes to audio tracks entirely feasible, without the accompanying chipmunk or creaky door syndrome. And the background processing of the audio means that you rarely notice it — there were only one or two occasions when I did have to wait a few seconds; typically when changing a tempo map.

Digital Performer is obviously a MIDI plus digital audio sequencing environment for the user who requires comprehensive and straightforward editing and assembling of music, speech or sound effects. It does not have all of the more esoteric features that appeal to MIDI hackers and audio

"Effort expended in learning to use the Audio window is easily offset by the sheer power of the audio processing."

wranglers like myself, but then it isn't aimed at that market. Having said that, I wish the song chunking, window bottoming and a few other features of *Digital Performer* were present in the sequencer I currently use — so I'm weakening.

Perhaps the best advice I can give is probably the least obvious: if you've invested significantly in digital audio hardware and a competing MIDI+Audio sequencer, then the cost of adding Digital Performer's very clever PureDSP processing, neat windowing and ultra-clear song chunk display is a fraction of what you have already spent on hardware — so why not have two sequencers and use each for what they do best?

- £ £599 inc VAT.
- MusicTrack, PO Box 4, Arlesey, Bedfordshire SG15 6AA.
- 01462 733310.
- F 01462 733390.
 - E Compuserve 100415,2665
 - w http://www.motu.com



Digital Performer requires additional hardware support to enable it to work with digital audio, regardless of the Macintosh (or Mac clone) that you use. Currently, only the following Digidesign hardware is supported:

HARDWARE	OUTPUTS	
Audiomedia card		
(I, II, III, LC)	2	
Sound Tools II	4	
Pro Tools	4	
Session 8	8	
Pro Tools Project	8	
Pro Tools III	16+	

Here are some rough guide prices for Digidesign systems:

- Audiomedia II card £469
 (includes Sound Designer II)
- Audiomedia III card (PCI) £704.
- Pro Tools Project (Session 8) £2,231 (NuBus or PCI).
- Pro Tools III (16 channels) £6,238 (NuBus)
- Pro Tools III (16 channels) £7,131 (PCI +extras).
- 882 Audio 1/0 £892.
- 888 Audio I/O £2,678.
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WRH



OFIR GAL reflects on the history of the Falcon with mixed feelings, and revisits the current C-Lab MkX...

've spent the last few days with my Fender Strat plugged into the new C-Lab Falcon with *Cubase Audio v2.06*, recording and playing around with the built-in effects and the audio editing facilities. I was pleasantly surprised to find that it performed faultlessly, in contrast to the original Atari model, which was problematic for me.

Although I was one of the first to buy the Atari Falcon, I never had the need to push its audio capabilities to the limit. I was more interested in general use — word processing. graphics, DTP and comms. When I did try Cubase Audio. I hit various problems. The first version was far from perfect, and the Falcon's clumsily-designed SCSI hardware was showing its weaknesses. I tried two of the SCSI modifications that were published by Atari, and although these improved performance, I just couldn't trust the machine for recording my band's tirst album. Since we were given 'proper' studio time by the record company anyway, we just stuck with our MegaST and plain old Cubase for the MIDI side of things.

THE NEW PRETENDER

The news of the C-Lab Falcon arrived as the aforementioned album was nearing completion. I saw it demonstrated and I was quite impressed, but you can only learn so much from a demo — you can't really tell how

reliable a system is until you try it for yourself.

Later on, I was able to review the new machine, but not for long enough to really push it hard. However, user reports seemed quite positive, so eventually we (the band) decided to get one for the humble home studio which we mainly use for songwriting and putting demos together. For one reason or another, it took

"I recorded some guitars, grabbed audio off a CD, edited the recording, even used effects, and it all worked without crashing once."

until late May this year to arrive — just in time for a little project we had going: a radio jingle to promote a gig on Radio Caroline. Armed with the new Falcon, we started putting together the 30-second promo by capturing audio from our CD and compiling the jingle. The basic idea was to cut and paste together a few key passages from the album and overdub

ATARI NEWS

There's more trouble in Atarl-land, as the last news-stand magazine closes. *ST Format*, the longest-running Atari title in this country, is to close down. Reasons for the closure have not been made public, but are believed to be overestimation of the Atari market and a decline in overseas sales. The only running title is now *ST Applications*, run by the FaST Club (0115 945 5250). This disk-based magazine is still a source of useful, although not music-specific, information. There is also some talk of a subscription only magazine — more news should be arriving over the next few weeks.

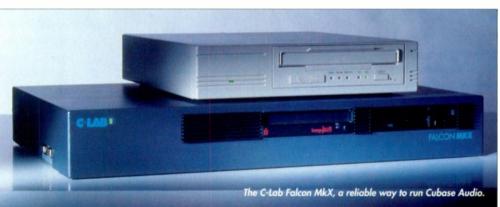
Interactive, one of the biggest supporters of the Atari shareware scene, now has a web page advertising its shareware collection, which includes favourites like Freedom and Egale, plus OCR and other utilities. The Interactive page includes demos and lots of information, and is available at:

http://www.compulink.co.uk/~active/ welcome.htm

complete two versions of the jingle, as Caroline listeners in Kent can testify.

PROBLEM SOLVED

I spoke with Paul Wiffen from C-Lab Falcon distributors Digital Media, who was convinced that there was something wrong with my setup. After I had followed his various suggestions, to no avail, he decided to send me a replacement Falcon. The new machine worked perfectly. I spent hours trying to make it misbehave, but simply couldn't — I recorded some guitars, grabbed audio off a CD, edited the recording, even used effects, and it all worked without



some speech on top — nothing too technically demanding, as I'm sure you'll agree.

We came across a variety of problems. To start with, things went well. Apart from some minor bugs in *Cubase Audio*, the Falcon seemed to be working OK. But gradually, as the recording became more complex and contained more edit points and effects, the odd random audio click would appear, along with inexplicable crashes. I was losing confidence in the Falcon very quickly, but we did manage to

crashing once. The only problem I faced was a bug in *Cubase Audio*, which sometimes forgets to place a new recording in the Arrange window, so you have to drag it manually from the Pool.

Only time (and perhaps a serious assessment of the C-Lab Falcon/Cubase Audio combination) will reveal the long-term prospects for this machine, but in my opinion the C-Lab Falcon is now a system that has had time to mature, with enough hardware support to make it a viable option.



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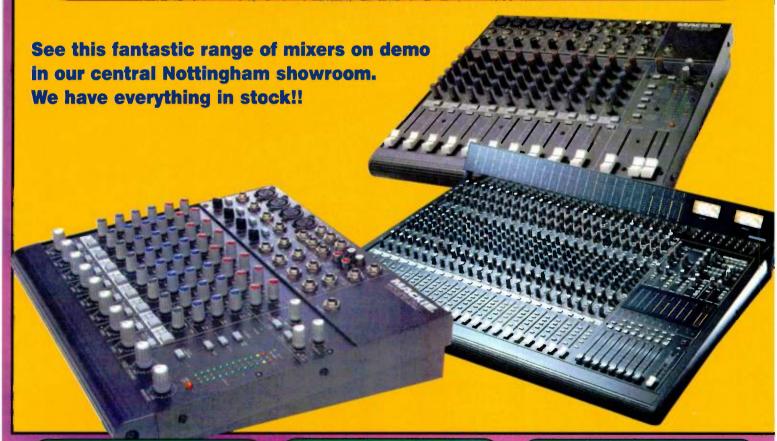
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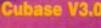
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Jazz saxophonist Courtney Pine is breaking down the barriers between acoustic and electronic sound generation, marrying jazz with modern forms such as hip hop in a cross-genre partnership which is partly forged in his own home studio. PAUL WHITE hears some Modern Day Jazz Stories..

ourtney Pine's remarkable jazz career started at school when he was 13, taking piano and clarinet lessons. Though he subsequently decided that the saxophone was what he really wanted to play, his musical heroes, including Grover Washington Jr, John Coltrane and Miles Davies, all played the piano, and Courtney's piano experience has been very useful, as he now spends quite a lot of time in his home studio, working with a MIDI sequencer connected to an ageing Sequential Prophet VS keyboard. As you might expect, he's also had a lot of experience with MIDI wind controllers.

One of the motivating factors behind this interview was Courtney's latest album, *Modern Day Jazz Stories*, an essentially acoustic modern jazz album underpinned by hip-hop loops and DJ vinyl pyrotechnics. Unlike the many hip-hop records that have a jazz influence or feature a token jazz performer, *Modern Day Jazz Stories* is most definitely jazz with a hip-hop influence, rather than vice versa, and unlike many compositions that use off-the-shelf loops, many of the drum loops on this album started life as an acoustic kit in the studio, while some of the more experimental loops were produced by Courtney at home.

Despite Courtney's obvious enthusiasm to do this interview, numerous obstacles conspired to make it as difficult as possible. Just before my first attempt, my camera bag was stolen from the Audio '96 show, so, armed with the company camera and a new tape recorder. I set off for the Pine residence in London for a second try. Courtney had just had a problem with his house alarm system, which had gone off unexpectedly, then refused to turn off. Undeterred, and pausing only for a cup of coffee,

we went straight into interview mode, but shortly after I switched to a second cassette, my shiny new mini-recorder ate the tape. Obviously, the patron saint of technology was taking a day off! That left us in a studio full of recording gear, looking desperately for something that could be used to record the rest of the interview.

The only cassette deck in the house was a ghetto-blaster which Courtney went to get from another room. Unfortunately, as soon as he entered the room, the alarm went off again, and no amount of punching in codes would silence it — we had to sit and listen to the siren for a further 15 minutes before it timed out! When we finally got a mic rigged up to the ghetto-blaster, we found that it was purely for karaoke use — you couldn't actually record with it! At one point we were seriously considering finishing the interview on *Logic Audio* so that I could take the result back on a SyQuest disk, but we eventually settled on Courtney's DAT Walkman — and even that involved us pooling resources to find enough batteries to make it work!

TALKING TECHNOLOGY

How does a musician playing what is essentially acoustic jazz find himself so deeply involved with technology?

"For me, it was important for composition. I could hear other sounds, I could hear a whole orchestra, and I wanted to get my hands on that. I'm also a science-fiction freak, and using technology was another way to get to places I couldn't previously get to. What they don't teach you in music lessons is how to play things you hear — it's more about classical playing — but for me and the kind of music I was listening to at home, it was a matter of sitting down at the piano and bashing away until you found the right notes. Though you can play chords on the sax, the pitches are all over the place; a keyboard is truly polyphonic.

"I bought my first Atari computer in '86 with my first royalty cheque, and I couldn't afford a grand piano, so I got a DX21 and some Dr T's software. The next royalty cheque bought my first sampler, and so it went on. I wanted to hear my compositions before giving them to the band, and this was a way to achieve that."

Your studio now includes some pretty serious equipment, including a Yamaha 02R digital mixer and a couple of Alesis ADATs. How far do you want to take your recording — do you



want to make records at home?

"I want to record and mix here — it's very serious. What you see here is only a temporary setup, as Γ'm having a studio built onto the side of the house, where I can rehearse and record. On the last two albums, Γ've utilised bits that Γ've recorded here — with *Modern Day Jazz Stories* I did the loops, backing sax, flute lines and keyboard parts here. Some of the stuff was transferred to an acetate so the DJ could spin it in, then we'd play over the top in another studio.

"The musical style of the album is something from our locality — we've been doing this for quite a while. At some of the more modern jazz clubs, you'll see a DJ spinning and band playing, sometimes interacting, and I wanted to get that onto record. The problem is that most wind jazz players don't have a grip on the technology, so they call someone else in and end up playing their part after everything else is done. I wanted to do something which reflected both my studies in technology and in jazz.

"I had a guy called Sparky, who works in the hip-hop field, and a DJ called Pogo, who did all the vinyl stuff and checked that it sounded OK. This went directly to analogue tape, but I also had some material on my Mac, which I took over to the studio in the States. That caused problems, because my material was set up for 25fps [frames per



COURTNEY PANE

second] SMPTE, and of course the Americans use 30fps. We also had problems because the coproducer put the sax on track 23, right next to the timecode, so whenever I played hard, the code stopped working. Once these problems were sorted it was plain sailing."

Was it a conscious decision to record on analogue multitrack?



Courtney Pine in his compact home studio, with his sax by his arm, and, on the left, his Sequential Prophet VS. The Yamaha 02R is just visible behind him on the right.

"Yes, I wanted the warmth of analogue, and I've always enjoyed working with Neve desks. But we had some problems recreating the classic old sounds for loops. We went to another smaller studio, which had a nice piano and a Neve desk, we used an old drum kit with all the old ride cymbals, but we could never quite recreate that '60s sound. We had great musicians who played with the right feel, but it wasn't the same. You can bit-convert, or change the pitch up and then back again, but you can never get

back to the sound of a particular day in 1964 or whatever. Those were the things that were a bit disappointing to me, but it took the sound somewhere else. There were some loops that we had to keep in — I had a Dexter Gordon piano loop which I'd recorded from my cheap turntable over there, and when we came to play it back against a piano in concert pitch, there was a tuning difference. So we tuned the loop

to get it close, and there was a setting where the detuning was really nice, so we kept it that way."

Continey Fine modern thy

STUDIO TOYS

What are the key elements of your studio?

"The \$770 samplers are central to my system. I went through the stage of having masses of tone generators, but six months later I'd be bored with the sounds. So I decided to use samplers, and the London retailers TSC offered me a Roland \$770

for the same price as an Akai \$1000. It just worked — I felt it sounded better, and the screen made editing a lot easier. The \$760 has a slightly different sound, which is useful, but I still have some traditional synth modules, including a Roland D550 and an Oberheim Matrix 1000, which works particularly well with the EWI wind controller. I also produce music for other people, so it's useful to have access to all those other sounds.

"My sequencer is *Logic Audio* running on a Mac with a Digidesign Audiomedia card fitted. I find it does everything I want, and the audio side is great. It's been very reliable, but I like to set my screen resolution for a larger window size, which makes the screen rather cramped. I think a second monitor would make things better.

"The Alesis ADATs originally had some teething troubles — one of them was eating tapes until quite recently, but it's now been serviced and updated to the latest software, which seems to have cured it. These hook up to the 02R via the optical cables, but I've kept the wiring looms for when I take my ADATs out. Ultimately, I'd like my recording system to be as portable as my instruments so I can bring copies of the master tapes back home on ADAT to work on.

"My last console was a Soundtracs PC MIDI, but the 02R has been a revelation. The analogue desk seems to have more bass and is warmer, but the amount of stuff you can do in the 02R is incredible. The EQ is very strong, so you have to be careful with it, but I really like being able to see the graphic EQ curves. The desk has now become a part of the creative process, and if I'm working on a loop. I can mix and process the sound all at the same time, then resample it. I don't think the effects are anything special, but the compressors are really nice.

"One problem is that I'm already running out of inputs. I think that with my next royalty cheque. I'm going to get another one and chain them up. One day we'll have a system where everything talks to

everything else. OK, at the moment I've got a Mac Power Book running Yamaha's *Project Manager*, but ultimately, I'd like to be able to sit down at just one machine and do everything.

"I don't need that many outboard effects with the 02R, but the Ensoniq DP/4 is very good, as is the Sony R7 reverb unit. I wasn't in the bracket to buy a Lexicon PCM70 or 80 at the time, and I needed something

that would just give me quality reverb. I find the R7 very clear and transparent — I really like it, though the internal battery has died, so every time I turn it on, it resets to the factory defaults.

"I have a Digitech harmony machine which I use for detuning effects — I haven't got into creating real-time harmonies with it yet, though it's something I'd like to do. It could be useful live. Most of the rest of my analogue rack of gates and EQs is going, because now I have the 02R, it's

LEXICON JAM MAN: DREAM MACHINE?

"I have a Lexicon JamMan which lets you store and replay loops very quickly. I once had a crazy dream about Roland Kirk, the American saxophone player who did circular breathing and often played two instruments at once. In this dream, Kirk played one line that was going around, then he played another line at the same time, and they went around accompanying each other. Then he took the sax out of his mouth and the sound kept on going! For years, I was thinking, how could I get this effect? Then this machine came out, and my dream came true. I could play a line, trigger it, play another line, pull the sax out of my mouth and it would still go. At the moment, this is more of a road tool than a studio tool."



pretty irrelevant. I do, however, have a Peavey analogue filter, which I tend to use as a kind of parametric EQ rather than as a triggered effect. It really lets you change the character of a sound when creating samples or loops."

WIND CONTROLLERS

Which wind controller system do you prefer, and what improvements would you like to see?

"The first wind controller I bought was the Akai EWI 1000, and that worked fine, although it took some getting used to, because it has touch-sensitive keys rather than mechanical keys. As a sax player, you're taught to keep your fingers on or close to the keys, but with the EWI you have to keep them away. I actually did an article on this for SOS, after which Yamaha contacted me and said I should try their WX7. This has mechanical keys and a sort of pressuresensing reed you can use as a controller by biting on it as you play. That was rather different to the Akai system, where you blow around or across a kind of teat - not like playing a saxophone at all. However, what I didn't like about the WX7 was the plastic keys and the light weight - it wasn't like picking up a real instrument. It also doesn't have the pitch range of the Akai.

"The latest acquisition, an Akai EWI 3020, has a ribbon controller underneath, rather like a Polymoog, and it's nice because it actually does a glide function so you can put a bit more personality into your sound. If you hear two guys playing the same patch, you'll still get a different degree of expressiveness depending on how you use the controllers."

What performance control do you have with the way you blow? The main performance controllers seem to be underneath the instrument, operated by your thumbs, which can't be natural for a wind player.

"Apart from velocity, you have the

pressure sensor, but there isn't really that much control. With a sax, when you play harder into it, or if you change the shape of your mouth, you change the shape of the note. With these controllers, it's more mechanical - you blow into and squeeze the mouthpiece. Wind instruments are very closely connected with the brain in that you don't have to move your hands to change the sound. With the EWI, you have to use several things in combination, and it still doesn't do as much as a real saxophone. We need a unit that can actually deal with that type of information, and hopefully the VL series of physical modelling synths will go some way towards meeting that need. If you play harder, you can have the sound get sharper, as it would do on the saxophone."

Physical modelling synths seem to have the ability to turn controller information into expressive timbral changes, but that still doesn't solve the problem that you can't use your mouth in the same way as you would on an acoustic instrument.

"Yeah, what we need is something with a real mouthpiece that would take the information in, then convert it to MIDI information. Even though they're using different pitchings and tunings and that sort of thing, it still isn't quite right. At the moment, the variations come from the programming, but what you need is to be able to control the variations from the actual interface."

You've said that the Yamaha VL1 interested you in all areas apart from that of signing the cheque!

"When it came out, I thought it was a great idea — I read all the literature — but then I saw the price, which was ridiculous! You pay, at the most, £2500 for a Mk 6 saxophone, which is a really good horn, so who's going to pay £4000 for an instrument that's still an unknown quantity? Is somebody going to book you because you have one? That kind of money is a serious investment — so I've stayed clear and waited for the price to come down."

It seems that you may have done the



COURTNEY PANE



Courtney with his Yamaha 02R: "it's been a revelation".

▶ right thing, because Yamaha have recently announced their sub-£500 VL70m physical modelling module |see page 40 this month for a sneak preview — Ed| based on the VL1, with a simplified user interface and incorporating a wind controller interface.

"That's definitely on my list! The VI.70 should also be better suited to horn players because of its simpler interface. We don't want to edit too much, we just want a sound that we can play expressively — the only time we want to edit is when we hear somebody else with a better sound than us! There should be scope for getting deeper into sound editing if you need to, but learning a Charlic Parker song is hard enough without having to worry about MIDI controller data and suchlike."

DIRECTIONS

What direction will you be taking for your next project?

"I'm going to continue what I'm doing in the jazz/hip-hop kind of vein, incorporating the old styles of jazz but sculpting it using filtering, pitch-shifting, and whatever else it takes to get that traditional sound into 'now'. I'll still be using loops underneath the music, but they will all be acoustic — created by an acoustic drummer, then processed.

"On the album, I'd often play a solo, load it into Logic Audio and then put it down maybe 24 or 25 semitones. The Digital Factory section of the program is great for that kind of thing, because the sound doesn't have to be clinically perfect. What I want is something with more of a street feel. I also like working with microtones, or changing the saxophone to make it sound like a whale. I can do that with Logic Audio or the samplers. It's a bit hit-and-miss, and a lot of times it doesn't work, but you just have to keep trying, putting in the numbers and seeing what comes out.

"It's down to utilising the traditional forms of jazz — the improvising, the interaction with musicians — but surrounding that with lots of detuned stuff that could never exist in a natural environment. I could never play some of those detuned sax parts, but hearing them come back at me inspires my playing to go in a different direction."

You're obviously not concerned about

taking your own playing and electronically shaping it to use it as part of one of your compositions — some purists might object to working this way.

"I want to pitch-shift things, reverse them, finetune them — I want to put my playing into places that I can't get to with my actual horn. I use loops way down in the baritone register, and people wonder 'what instrument is that?' Sometimes I'll use Logic Audio, sometimes I'll use the sampler. The reason I have so many samplers is that they all produce different results. For example, I might create something in Logic Audio, then transfer it to the \$760 and timestretch it manually rather than in auto mode. That way, you get that gritty, bright sound — you can distort the stuff in ways that you could never play on a real instrument."

Does that mean you steer clear of CDs or CD-ROMs of ready-made samples?

"Oh no, I have loads of them, but I don't use them exclusively, and I tend to use the different samplers to totally destroy the sound and then build it up again. You can do things like change the bit rate to distort the sound in interesting ways.

"When we recorded the album, the co-producer Eric Calvey, who's a very good engineer, was watching me working with a piano, drum and bass loop which I filtered, transposed up a semitone, time-stretched back down, then digitally filtered, which took around 15 minutes. He rubbed his chin, then said 'Hang on a minute, plug the original source into a Focusrite'.

"He sat there for about half an hour trying to get the sound I was getting, then he suddenly realised what I was doing — it's not just about filtering, but about the way each machine has its particular way of changing the sound. That's something you can't do with EQ — when you slow down a drum part, things that the drummer would do before flams are magnified, so the picture becomes bigger.

"A lot of people come into technology from the electronic side — jungle or techno. Nobody seems to do this on the acoustic side — it's all about putting up two mics with no EQ and keeping everything exactly as it was played, but we can take that and use technology to do something else with it.

"On the road, we all use the Roland MS1s—the little Roland miniature phrase samplers—which are great for putting together ideas. I also have a Wavestation and I'm very interested in the vector thing, where you have one sound which changes when you press harder or use the joystick. I was looking at the Emu Morpheus, as that seems to offer a lot of scope in that direction."

Will future work feature mainly the saxophone, or can we expect another foray into electronic territory?

"I would really like to get back into electronic territory, but I need the right tone generators and interface. I've tried sampling the saxophone, but it's not quite right — it's an organic instrument that's different every time you blow it. I'm still holding out for the manufacturers to make the perfect wind controller or wind unit."

GOING SHOPPING

I asked Courtney what he felt he needed next for his studio.

"My new shopping list obviously includes the VL70m, but I'm also looking to get a Pro Tools system, a Focusrite EQ, and one major reverbunit. I like the idea of having Pro Tools plug-ins, such as being able to get a Focusrite EQ or Lexicon reverb in software. I've heard about bands recording whole albums on Pro Tools, but I want to know if anyone has been brave enough to do that for jazz. You have to have some way of backing up the data, such as transferring it to ADAT via an Interface.

"I had a had experience with my hard drive, where I had it in the studio, and I had to lean it up on its side because there wasn't room for it. After we'd finished recording, it refused to work unless it was kept on Its side. I had to get it serviced and lost all that data - that whole album was gone! Some kind of removable, large-capacity drive would be a good idea for backups. At the moment, I have a SyQuest EZ135 drive which is great for saving samples. That's the other thing I'd like - some kind of SCSI switcher or patchbay so that I can use the same drive on both my samplers and my Mac.

"When it comes to effects, I've been looking at the TC Electronic MC2000, but I've also heard good things about the Lexicon PCM80. I like the idea of having effects that can change in response to your performance — where the reverb time gets longer as you play harder, for example."

We'd like to see anyone else do that!? ves and changing Part sound assignments, and the ease which you can Anyhow, it's not enough taking a simple create songs live using Part muting and GM-Synth and painting it blue to copu Pattern chaining will have you drooling at the RAVEN. To see how inimitable it is, the mouth." you can read the different reviews in the leading English music magazines. Sound on Sound, March '96: "At the moment, I can think of no other The Mix, March '96: machine that will produce anything like these results for the amount of effort "As a synthesiser it has a very appealing 1111111111111111 sound which convincingly combines anaexpended." logue fullness and warmth with digital "And while your friend with the computer precision and clarity, and it provides a wealth of high-quality preset Sounds and and a couple of multitimbral synths is RAVEN-MAX still digging around the edit pages of his Performances. At the same time, if you're sequencer, your tune will be shaking the into electronic dance music then the speaker cabinets." wealth of authentic Patterns and Motives, the ease with which you can create Future Music, April '96 new Patterns by mixing'n'matching Moti-"An excellent toy for the techno bous"

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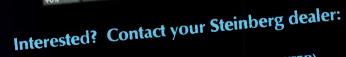
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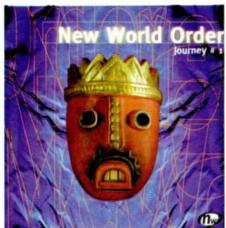
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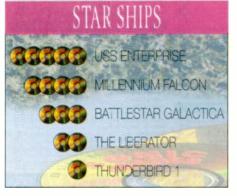
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NEW WORLD ORDER JOURNEY 1

(AUDIO CD/CD-ROM)

The cover artwork of New World Order Journey 1 depicts what appears to be a cyberman auditioning for Henry V while beta-testing Esther Rantzen's teeth — at least it gets your attention! The content of the CD is composed entirely of rhythmic loops featuring instruments from around the world. These break down into 88 different tracks, each comprising 12 rhythmic snatches, and all should be easy enough to loop, even if you go for the audio CD rather than CD-ROM.

Tracks 1-8 cover tribal sounds, varying in tempo from a cool 65bpm to a missionary-melting 145bpm frenzy. In fact, it's not until we reach track 22 that we leave Africa for a detour through the Middle East, pending a transatlantic jump to South America, where Brazilian, Jamaican, Reggae, Calypso, Voodoo, Cuban and numerous Latin rhythms abound. Most of the examples are very well played, nicely recorded, and generally useful, though not all of them would work in a pop or dance music context. Writers of travel documentary themes, on the other hand, should be well chuffed. My only criticism is that many of the rhythms are mixed with a noticeable amount of reverb, which



rather precludes you from adding your own.

The next cultural leap is into Indian rhythms, with spicy tablas, before visiting Japan for a feast of eastern rhythms. After that, it's back onto Concorde for a quick trip to Ireland, to be regaled by bodhran-beating folkies and jiggers, before being whizzed to New Orleans, and finally Texas, for a bit of down-home rockabilly. Six additional tracks offer a selection of more obvious contemporary rhythms (though still featuring ethnic percussion of one sort or another) and the final track is given over to FX loops. Altogether, it's a dizzying selection of over 1000 different loops, all sounding surprisingly usable. If ethnic rhythms are your thing, this has to score a four. *Paul White*

Audio CD £59.95/CD-ROM £149.
Prices include VAT & UK p&p.

THAT JUNGLE FLAVOUR

(AUDIO CD)



Tricks used to extend the basic source material on That Jungle Flavour include re-sequencing cut-up loop segments, adding in the occasional reversed splice, and putting a 'rrrrr' at the end of a pattern ('rrrrr': something like the digital feedback you get when your DAT output is routed to its input in record mode — a bit of a jungle cliché.) For an illustration of how to make one loop into several, check out track 31. Here you'll find five variations on the Funky Drummer, generated by rhythmic triggering and inventive looping of this classic breakbeat.

Four (or occasionally eight) bars are played out where the loop is one or two bars in length. Longer, four-bar variations are sometimes repeated, sometimes not. I found this inconsistency in presentation irritating when it came to sampling (why not just play each loop once and be done with it?), since I never knew when to stop recording, and there are no detailed sleeve notes to indicate number of bars. In most cases, I found it easiest to record the full pattern, which left me with some truncating to do.

Moving onto the sound effects section, I was disappointed to hear old chestnuts like the shakuhachi, sirens and helicopter making an unwelcome early appearance. However, things did improve quite quickly, and I have to admit to nicking one or several gems for my current compositional crop. All samples are pretty well recorded and produced in mono, but organisation is poor — samples are not grouped according to type. I suppose this means that a casual listen for sonic inspiration is helped by the constant contrast between sounds. If you know what you're looking for, though, be prepared to be frustrated.

In conclusion, the loops on That Jungle Flavour are very much of the bread and butter variety — good for, as the title suggests, adding a little 'jungle flavour' to a composition, but not really strikingly original or well engineered enough to form the foundation of a composition. In addition to the loops, however, there are 500odd hits, tones and effects on the CD: some are very good, and you can rest assured that most of the 'essential' cliches are to be found in here. (Check out the earlier Zero-G release Jungle Warfare for a headier dose of imaginative, immaculate junglist programming). However, remixers who are into pitching vocals up 20-30% might appreciate the large, ready-to-use palette of tempo-friendly feels. Be prepared to work out



your own fills, though — those on offer are not nearly dramatic enough to turn heads on the dancefloor. The very best sample CDs represent an insight into an artist's soul. I rather get the impression that *Jungle Flavour* has been put together to fill a gap in the market, albeit pretty ably. *Wilf Smarties*

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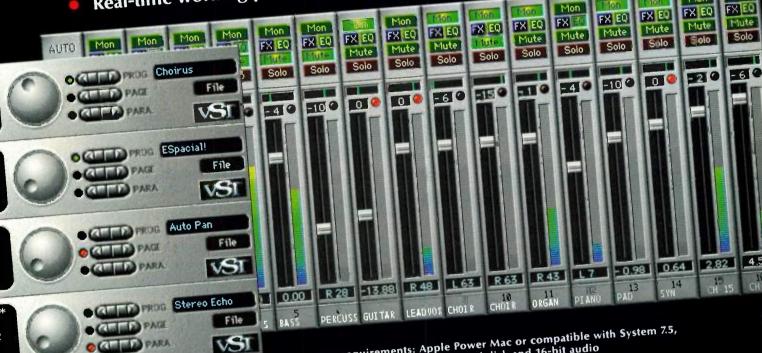
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Making The Most Of Synth Sample RAM With Your Mac

▶ still other ways to get :t — keep reading...

If you own one of the newer Macs, the chances are that it can record 16-bit stereo sound (see the box on Macs that can do this elsewhere in this article). Though the quality of internal analogue-to-digital converters varies a little from Mac to Mac,

you can rest assured that the Mac manages

equal or better sound Edit Selection Sound Effects Special 44.1kHz; 16 bits Windows FIR/IIR Filters Echoes & Reverb 1 S Delay Resampling Mike's Modules Echo Flanger Selection Amplify Dither Fade In Fade Out Keyboard Noise Normalize 面 Quick Min Replicate Reverse Robotize Selection to Channel Silence Smooth Twos2Signed Waveform Generator Veird Tempo SoundEffects* impressive DSP list.

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audio from your Mac, you need a separate sample editing program. I have found three shareware sound utilities which support 16-bit samples, and are outstanding, putting many professional packages to shame. At present, none of the shareware offers support for Adobe *Premiere* plug-ins, like the new professional audio program from BIAS, *Peak* (see review starting on page 58 this month) — but it's really only a matter of time.

SHAREWARE SAMPLE EDITORS

• SOUNDEFFECTS v0.9.2

This is the cheapest and most readily usable of all the sample editors in this article. Believe it or not, the author will even register you if you plead poverty, for the price of a postcard to Italy. The program has been available on almost all the computer magazines' CD-ROM cover discs at various times, so it should be easy to get hold of. Make sure you get version 0.9.2, which (at the time of writing) is the latest.

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 ALESIS QUADRASYNTH AND FAMILY Quadrasynth-series owners also have synths from a company blessed with a bright and progressive attitude. Alesis bundle Sound Bridge with their synths, which allows Mac users to dump AIFF files via the serial port to the onboard PCMCIA flash RAM card.

Sound Bridge is free with Alesis sample RAM synths.

. ENSONIQ TS-SERIES

If you have an Ensoniq TS10 or 12 you are in luck, too. *EPSm* offers really comprehensive import and export of Ensoniq samples on the Mac. I got my copy from the author (see email address below). You can also get the latest copy (v1.44) by emailing the second address given below and requesting *EPSm.sea*, which is around 700K when binhexencoded. Make sure you are connected with a fast modem — or request it is mailed to someone who is!

Primarily aimed at EPS and ASR10 owners, EPSm's ability to create an ASR10 disk (complete with instruments from AIFF, Sound Designer I and II and Yamaha TX16W samples) makes it a perfect utility for TS10 and TS12 owners, who can read ASR disks directly. Unfortunately, the program can't save Yamaha TX16W samples, which would also have been of use to SY99 owners. TS10 and TS12 owners with a SCSI interface may also like to know that they can format SCSI disks via the Mac with EPSm. This allows creation of custom libraries containing new samples, and you can even copy existing floppies onto a hard drive, something you cannot do from the TS10 or TS12 itself.

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- E EPSm 20 US dollars.
- t.g.finstad@fys.vio.no (the author)
- noice@fys.uio.no
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• NOTE: OTHER SYNTHS

I am aware of other S+S instruments which have the ability to load samples into user RAM, and have hunted for similar utilities to support them, but in the absence of these it is pointless to include these synths in this article. If you own a Yamaha SY85 and a PC, there are many utilities that allow conversion to and from WAV files, but I could find nothing to do this on the Mac yet. I hope we can expect one from someone soon!

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TEL: 0171-836-0127 TEL: 0171-973-4734

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MAKING THE MOST OF SYNTH SAMPLE RAM WITH YOUR MACINTOSH

Bored of the sounds in your sample RAM synth? Fear not, freelance engineer and programmer MARK TINLEY can help. Here, he reveals some ways of adding new samples with the aid of nothing more than an Apple Mac and some cheap shareware...

y first sampler was a strange affair which I had built myself at home frequently on products, which 's good for both

which I had built myself at home — an 8-bit, CW/Gate-controlled 32K RAM sampler for a Sinclair ZX Spectrum, offering a whopping four seconds sampling time at 8kHz. My entire setup — including a 21-inch colour screen — cost about £150. Viewing waveforms on a huge valve TV was an everyday practice for me, and I was later really surprised to discover that the Emu Emulator II, Ensoniq Mirage, Sequential Prophet 2000, and Akai S900 couldn't do tnis.

As I became involved in programming and engineering for others, I realised that

manufacturer and customer alike.

Today, sample-based synthesizers with adequate user memory to replace a sampler include the

user memory to replace a sampler include the Kurzweil K2000 (with four SIMM slots supporting up to 64Mb of sample RAM, and an optional sampling board), the Alesis Quadrasynth series, which can load up to 8Mb of samples onto PCMCIA cards (a great feature for live work, as the cards retain memory even in the event of a power failure, and switching cards between songs gives instant access to further samples) and the Ensoniq TS10 and TS12, which have two SIMM slots and can be fitted with 8Mb of user RAM. The TS10 and TS12 can also be fitted with SCSI cards, can access EPS/ASR10 hard

disks or CD-ROMs, and can share their SCSI buss with an Apple Mac.

USING A MAC

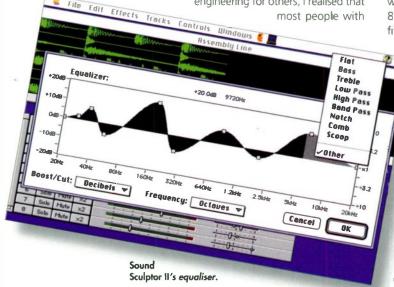
If you own a Macintosh with a 68020 or better processor, there is a cheaper alternative to the sampling option for the K2000, and to sound libraries for the Alesis Quadra series or Ensoniq TS10 or TS12. The purpose of this article is to help owners of these synths on a tight budget create their own sounds, and to point the more seasoned audio professionals at some useful and often overlooked utilities. Yes, I am talking about shareware.

The Internet and ftp addresses for all the shareware mentioned here are given at the end of the text on each program. Where no address is stated, the programs are obtainable from the following ftp site:

ftp://src.doc.ic.ac.uk/packages/infomac/ _Graphic_&_Sound_Tool/_Sound/

Most of the other programs in the article are available from here as well, but not necessarily in their latest incarnations.

The utilities mentioned here will allow you to grab and edit 16-bit sound, and save it as a Macintosh AIFF (Audio Interchange File Format) file. This can then be used with any of the aforementioned sample RAM synths. While AIFF is the common denominator between the programs here, support for other formats will be noted. I haven't mentioned recording yet, because even if you can't record high-quality sound without additional audio hardware for your Mac (hi, all you Performa and LC owners out there!), there are



MACS THAT CAN Record 16-bit sound

- Quadra AV models that include an AT&T DSP chip.
- All Power PCs except some of the new Performas (eg. the 5200), which can only play back 16-bit sound from the internal CD.
- PowerBooks 520/540 and the 5300 series (the 190 can play back 16-bit stereo sound, but has no line input).

samplers had purchased them to *play back* samples, rather than record their own; sampler purchasing decisions were made not on the merits of the samplers, but rather on which had the best piano sound. Korg eventually reacted to this trend by releasing the M1 — basically a sample playback engine that utilised ROM instead of RAM, with no expensive sampling hardware — and suddenly, my Spectrum-based sampier was robbed of most of its work. If only I could get the TR909 bass drum, snare and hi-hats into the M1, I mused.

Others must have been thinking the same, because within a couple of years, synths based on sample playback engines were appearing with *user* sample memory. Gradually, both computer memory and memory cards became fairly standardised, and so SIMMs (Single In-line Memory Modules) and PCMCIA memory cards started appearing more





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SAMSON'

Making The Most Of Synth Sample RAM With Your Mac

➤ conversion from 1-bit right up to 32-bit. There is also comprehensive filtering, smoothing and dithering, and support for multiple channel sound files. A mixer is in the pipeline (the *Quick Mix* plugin can be used as a temporary workaround), as is a spectral display. Some of the other effects are really quite unusual, such as Robotise, a metallic delay effect, and Weird Tempo, which imposes random pitch-shifting and timestretching on the sound file—for these alone the program is worth registering. There is also a facility to play back samples from a virtual keyboard which covers an 8-octave range, and the noise and waveform generators

File Edit Mack Soundfiles Control Channels:

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I sample Rate: 44100,00000
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I 6 Bit Linear

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The recording interface is the most comprehensive of the three editors mentioned in this article. There are also generously-sized level meters. Clicking the record button opens a new window where you set up various recording preferences such as sample frequency and bit depth. The great thing about this program is threshold-triggered recording, which waits for a sound above a previously-set threshold to trigger it. However, record time is dependent on the amount of RAM assigned to the program. No Undo features are implemented yet, so saving after each action is desirable. Only two formats are supported at the moment, System 7 and AIFF. On-line help doesn't work yet either, but most of the program's functions are selfexplanatory if you have used another sample editor. Lastly, it's notable that SoundEffects is claimed to run on a Mac Plus, unlike the other programs mentioned here, which require at least a 68020 processor.

- SoundEffects15 US dollars.
 ftp://ftp.alpcom.it/software/mac/Ricci
- SOUNDHACK v0.872PPC

This is available on the Internet, with the documentation available from another address (see below). As yet, I haven't seen it on any CD-ROMs. The author invites music instead of the fee, but bear in mind that he needs money to develop the

program, so if you can afford it, send the money!

SoundHack is a real 'Swiss army knife' as far as sound editing tools go. The Open Any command allows any file to be loaded and subsequently played and edited. The mere fact that this program handles virtually every conceivable file format makes it invaluable.

SoundHack also differs from the other two editors mentioned here in that it records audio direct to hard disk, and performs most of its functions in the spectral domain. This means that it performs analysis and resynthesis in order to process sounds. My favourite process is Binaural filtering, which the program does quite convincingly. The effect is better on headphones than speakers, but is in my opinion

an equal to Roland's RSS, although it isn't real time. Sounds can also be processed to move around the stereo field over time, and there is a function window where you can draw a graphical representation of your pan.

The Convolution process multiplexes sound files, and one of the effects here is akin to ring modulation. Spectral Dynamics offers frequencyconscious compression and expansion, which can be used for audio restoration. In some cases, I have found this produces superior results to Digidesign DINR, which is amazing, when you consider that DINR costs nearly 40 times as much! Mutation offers spectral combinations of two source files, and creates a third (mutant) sound file. Though this produces similar sonic results to a vocoder (to my ears), it is not to be confused with the program's separate Phase Vocoder. This is a timestretch function that differs from conventional time-based algorithms in that it stretches information in the spectral domain, which can sound a lot more natural. Spectral extraction and analysis are also included here.

Unfortunately, it would take more room than I have in this article to explain any one of the above functions in any depth. The on-line help and the manual do not carry enough information on the processes involved here either. The program performs complex manipulations with strange technical names like 'Uniform Unsigned Interval Magnitude Mutation' — and to understand these fully, you really have to study some of the books and academic papers in the bibliography. That said, if you are using a Power Mac, you will get the native version once you have registered. This is incredibly fast, and it's much easier to experiment to see what everything does. Highly recommended.

- E SoundHack 30 US dollars or send some music!

 If tp://music.calarts.edu/pub/SoundHack/
 W http://shoko.calarts.edu/~tre/SndHckDoc/
 (for documentation)
- SOUND SCULPTOR II v2.1

This has turned up in earlier incarnations on various cover CD-ROMs, and lacks some of the more esoteric functions of the previous two editors, but is probably the most recommendable for the purpose of making S+S RAM synth samples. Most important is that the

SHAREWARE: GOOD & BAD POINTS

THE GOOD

- You can try before you buy (if buying is necessary at all).
- Individual support (usually via email).
- · Evolving programs.
- More esoteric features implemented.
- . The price (low or non-existent)!

THE BAD

- Not generally available from ordinary music stores.
- Some proposed features don't work yet.
- · Payment is in US dollars.

loop function works properly, though it doesn't support loops in Sound Designer II files, only AIFFs (it's important to remember that you can't always edit the loop parameters in some sample RAM synths). The DSP functions are similar to those in SoundEffects, but all the effects are in stereo, and process tracks individually. The program supports sound files with up to eight channels in System 7, AIFF, Sound Designer II and SoundEdit16 formats. There is a really comprehensive mixer, with level. pan and surround sound (in real time), but as with SoundEffects, sample size is limited by the amount of RAM assigned to the program. The EO is probably one of the most comprehensive I have seen, and the reverb algorithms are superb; the best I have come across in any sample editor, shareware or otherwise; they provide real reverb, not just

'bathroom-style' delays. Finally, the on-line help is really comprehensive. Probably the only disadvantage of this program is that you need to register and enter a password before you can save samples, so you can't get working straight away. Again, the reverb and mixer with surround sound functions alone are worth far more than the price, so it makes sense to register.

E Sound Sculptor II 30 US dollars.

ftp://users.aol.com/sculptorii/public/

OTHER SHAREWARE

After patiently reading this far, Performa and LC owners may be starting to wonder if this article does actually contain any information that will be of use to them. Well, apart from gaining access to the entire EPS, Kurzweil, Roland S50 series and Yamaha TX16W libraries, if you have an Apple CD300 CD-ROM (or the newer CD600), there is a function which has been termed 'audio-via-SCSI' by the multimedia fraternity. This lets you import audio directly from an audio CD as raw sample data, so you can transfer 16-bit audio to the computer, bit for bit. You must have Apple QuickTime in your Extensions folder in order to do this, and the easiest way to import audio is from SimpleText. Fortunately, both of these are part of the compliment of utilities shipped with System 7.5. All you do is simply go to Open in SimpleText's File menu, and select an audio track to convert from the CD. The QuickTime audio CD import options dialogue box will appear, from which you can set the sample rate, sample size, number of channels and the part of sound to import. Apple's latest implementation of this feature saves the sound as an AIFF-format audio movie, which is compatible with all the programs mentioned here. Bear in mind that you need sufficient hard disk space to store the sample, and that if you intend to load

it into one of the RAM-based editors, you must have sufficient RAM assigned to the program to do so. In other words, use the options to sample only what you need.

SoundHack has an Import CD Track option to do this from within the program, and there are also various shareware programs that allow you to batch-convert using the 'audio-via-SCSI' process. You can set the computer up to record several tracks from, say, a sample CD, and leave it to get on while you do something else. The neatest I've found is called CDtoAIFF

- CDtoAIFF 10 US dollars.
- QuickTime & SimpleText are free all part of System 7.5 (owners of Macs with earlier systems could try the Apple web site below).
- W http://www.apple.com

ABOUT THE AUTHOR

Mark Tinley is a member of the Apple Interactive Music Toolkit Developers' programme. During the day, he is also a synth programmer, sequencer pilot, engineer and producer. Mark can be contacted on the Internet at the following address - his DAW's always open...

marktinley@easynet.co.uk

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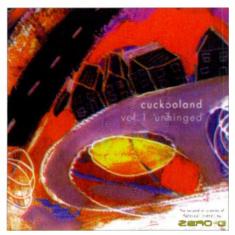
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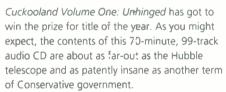


Our regular look at the hottest new sample CDs and CD-ROMs.



CUCKOOLAND VOLUME ONE: UNHINGED

(AUDIO CD)



The CD starts as it means to go on, with 98 seconds of twisted, mangled sound effects and drones. Imagine the most eclectic and harsh whooshes, swoops, whizzes, pops and bangs, shove them through the latest state-of-the-art outboard gear, and you're getting close to the kind of feel that this release has throughout.

Loops form the main body of sounds on this CD, in the form of both drum breaks and instrumental passages, but often these boundaries are cleverly blurred, resulting in chunks of rhythm and sound simply aching to be sampled and used in new and exciting ways. The bpms are listed where appropriate, and there's a good amount of variation within the loops themselves, so chopping them up into different sections is a piece of (fruit) cake.

There are some great live sax, guitar, bass and drum performances, all of which are the sonic equivalent of being chewed up, spat out and left in the sun to dry, before being stuck back together again with luminous sticky tape.

The 81 loop tracks each have between one and nine different loop styles, and at the end of the CD there are some incontinence-inducingly low bass sounds, as well as a good selection of individual drum and FX samples ranging from the conventional to the totally deranged and manic.

As you might have guessed, this is no ordinary CD, and mainstream, non-experimental musos should steer well clear in favour of a cup of herbal tea, a Phil Collins album and a nice lie down. The rest of us, however, can bask in the pear-shaped peculiarity of off-beat drum loops, distorted pad effects, flanged atmospheres, and the kind of stereo treatment that should carry a government health warning.

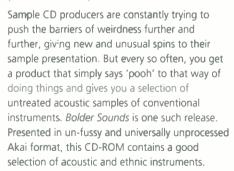
With so much unrestrained nuttiness flying around, you'd think that much of this CD would be confined to the 'Interesting-but-unusable' pile. This, however, is not the case. The more I listened to *Unhinged*, the more ideas it gave me for the kind of tracks I really should be making. Even so, I would have loved to see more pads and ambience samples, as well as a few vocal phrases and effects — maybe for a future release?

As it stands, *Unhinged* is full of sounds the like of which you will never have heard, and if it doesn't breathe new life into your compositions, then I'm a large Swiss cheese called Brenda. *Paul Farrer*

£59.95 inc VAT & UK p&p.

BOLDER SOUNDS VOLUME ONE: ECLECTIC

(AKAI CD-ROM)

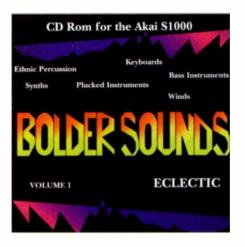


The first partition is full of 'Plucked Instruments'. These range from the unusual (saz, bouzoukis, and dobrolins) through to more conventional recordings

of classical guitars, concert harps, banjos, and a picked Stratocaster. The recording quality is good throughout, and each volume is listed with its size in Mb. Interestingly, although the programmes on the disk are all named, the actual volumes they come in are not, which means that you'll almost certainly need the CD booklet for reference at all times

Wind instruments follow, with a great collection of South American pan-pipes and assorted flutes which is well worth a listen, as are the harmonicas. However, though well recorded and programmed, these sounds don't always inspire as much as they could. The idea of presenting them in a natural, unprocessed state is a valid one, but it does mean that many of the sounds may require additional EQ or filtering before they really shine.

A small but very usable collection of basses (electric and acoustic) is followed by a huge

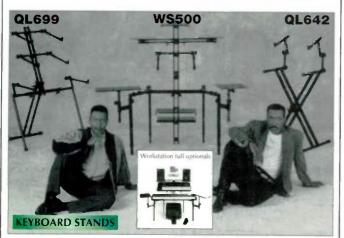


selection of ethnic percussion samples. These are presented firstly as a few multi-sets, then as individual volumes. Steel drums, rainsticks, tablas, marimbas, udus, bell trees and bodhrans are just some of the inclusions in what is by far the strongest section of the release. At the tailend of the CD, there's a whistle-stop tour of the producer's favourite patches from his Korg 01W and Wavestation modules, and the whole thing is rounded off by a miscellaneous bunch of electric violins, cellos, and a few sound effects.

As I said at the start, this is hardly ground-breaking material, and if you're familiar with Akai's own sound library, there won't be much on this release that you haven't heard the likes of before. However, everything is presented in a straightforward and easy to use format, sound quality is good (if a little raw) and there's enough choice to keep the average user happy for a while, at least. To sum up, I feel the title, *Eclectic*, somewhat overstates the contents of this highly usable, but hardly revolutionary CD-ROM. *Paul Farrer*

£ £149 including VAT & UK p&p.

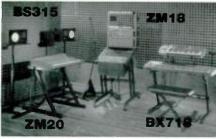
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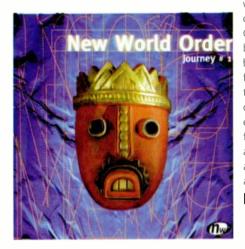
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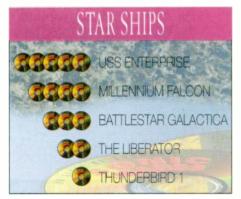


NEW WORLD ORDER JOURNEY 1

(AUDIO CD/CD-ROM)

The cover artwork of New World Order Journey 1 depicts what appears to be a cyberman auditioning for Henry V while beta-testing Esther Rantzen's teeth — at least it gets your attention! The content of the CD is composed entirely of rhythmic loops featuring instruments from around the world. These break down into 88 different tracks, each comprising 12 rhythmic snatches, and all should be easy enough to loop, even if you go for the audio CD rather than CD-ROM.

Tracks 1-8 cover tribal sounds, varying in tempo from a cool 65bpm to a missionary-melting 145bpm frenzy. In fact, it's not until we reach track 22 that we leave Africa for a detour through the Middle East, pending a transatlantic jump to South America, where Brazilian, Jamaican, Reggae, Calypso, Voodoo, Cuban and numerous Latin rhythms abound. Most of the examples are very well played, nicely recorded, and generally useful, though not all of them would work in a pop or dance music context. Writers of travel documentary themes, on the other hand, should be well chuffed. My only criticism is that many of the rhythms are mixed with a noticeable amount of reverb, which



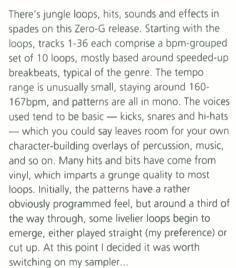
rather precludes you from adding your own.

The next cultural leap is into Indian rhythms, with spicy tablas, before visiting Japan for a feast of eastern rhythms. After that, it's back onto Concorde for a quick trip to Ireland, to be regaled by bodhran-beating folkies and jiggers, before being whizzed to New Orleans, and finally Texas, for a bit of down-home rockabilly. Six additional tracks offer a selection of more obvious contemporary rhythms (though still featuring ethnic percussion of one sort or another) and the final track is given over to FX loops. Altogether, it's a dizzying selection of over 1000 different loops, all sounding surprisingly usable. If ethnic rhythms are your thing, this has to score a four. *Paul White*

Audio CD £59.95/CD-ROM £149.
Prices include VAT & UK p&p.

THAT JUNGLE FLAVOUR

(AUDIO CD)



Tricks used to extend the basic source material on That Jungle Flavour include re-sequencing cut-up loop segments, adding in the occasional reversed splice, and putting a 'rrrrr' at the end of a pattern ('rrrrr': something like the digital feedback you get when your DAT output is routed to its input in record mode — a bit of a jungle cliché.) For an illustration of how to make one loop into several, check out track 31. Here you'll find five variations on the Funky Drummer, generated by rhythmic triggering and inventive looping of this classic breakbeat.

Four (or occasionally eight) bars are played out where the loop is one or two bars in length. Longer, four-bar variations are sometimes repeated, sometimes not. I found this inconsistency in presentation irritating when it came to sampling (why not just play each loop once and be done with it?), since I never knew when to stop recording, and there are no detailed sleeve notes to indicate number of bars. In most cases, I found it easiest to record the full pattern, which left me with some truncating to do.

Moving onto the sound effects section, I was disappointed to hear old chestnuts like the shakuhachi, sirens and helicopter making an unwelcome early appearance. However, things did improve quite quickly, and I have to admit to nicking one or several gems for my current compositional crop. All samples are pretty well recorded and produced in mono, but organisation is poor — samples are not grouped according to type. I suppose this means that a casual listen for sonic inspiration is helped by the constant contrast between sounds. If you know what you're looking for, though, be prepared to be frustrated.

In conclusion, the loops on That Jungle Flavour are very much of the bread and butter variety — good for, as the title suggests, adding a little 'jungle flavour' to a composition, but not really strikingly original or well engineered enough to form the foundation of a composition. In addition to the loops, however, there are 500odd hits, tones and effects on the CD: some are very good, and you can rest assured that most of the 'essential' cliches are to be found in here. (Check out the earlier Zero-G release Jungle Warfare for a headier dose of imaginative, immaculate junglist programming). However, remixers who are into pitching vocals up 20-30% might appreciate the large, ready-to-use palette of tempo-friendly feels. Be prepared to work out



your own fills, though — those on offer are not nearly dramatic enough to turn heads on the dancefloor. The very best sample CDs represent an insight into an artist's soul. I rather get the impression that *Jungle Flavour* has been put together to fill a gap in the market, albeit pretty ably. *Wilf Smarties*

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sound mstage

The Performance Audio Magazine

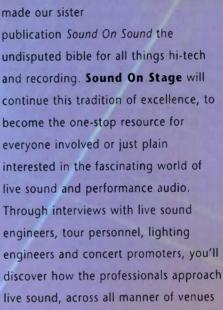
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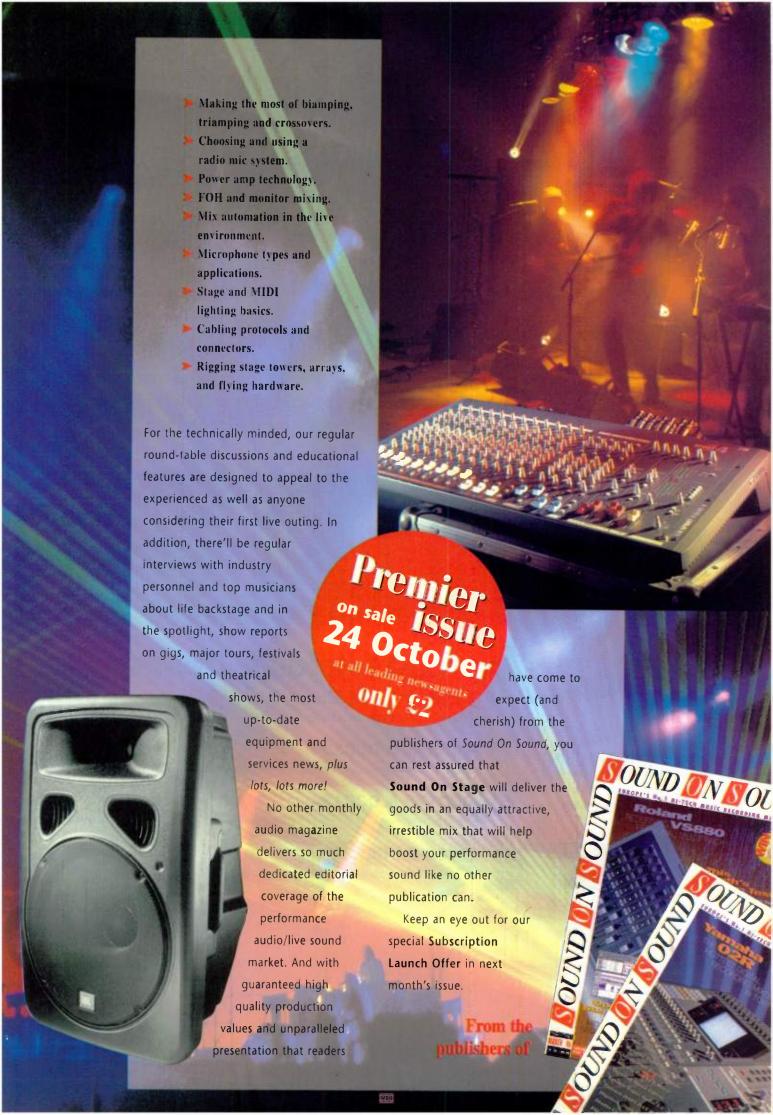
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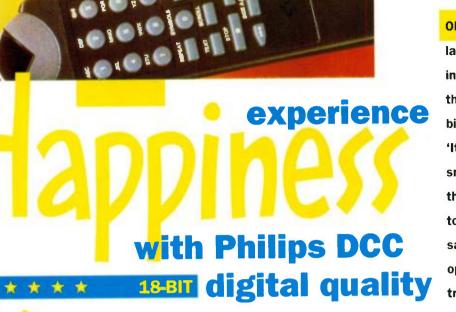


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commentator...

ROLAND A90 EXPANDABLE CONTROLLER

oland were the first Japanese manufacturer to take MIDI really seriously. Indeed, they virtually invented the 'master keyboard' concept when, in 1984, they released the MKB300 and MKB1000 as part of the system that included the MKS10 Planet P, MKS30 Planet S, and MKS80 Super Jupiter sound modules. For a brief spell Roland reigned supreme, before Yamaha stole the high ground with their KX88. Despite adding the excellent MKB200 to the range, Roland were squeezed out as other manufacturers muscled in on their territory — Kurzweil's MIDIboard, the Elka MK88 and the Kawai K8000 at one end, Akai's MX keyboards and the Cheetah MK-series at the other.

In 1988 Roland hit back with the 76-note A50 and, somewhat later, the 61-note A30. In between came the more expensive 88-note, piano-action A80, from which is descended today's offering, the A90/A90EX (pre-fitted with one of three expansion boards, adding sound generation to this otherwise 'mute' keyboard). So, will they place Roland back at the top of the MIDI Controller tree?

A90 AS MIDI CONTROLLER

The A90 is an imposing lump. You immediately notice things like its size and weight, plus the

wooden end-cheeks that look like a Juno 60 on steroids. Then there are the JD800 buttons complete with in-laid orange LEDs, the case on which you could safely park a Chieftain tank, the steel lip that protrudes an inch beyond the keys, and the feel of the keys themselves. On these points and others, Roland can award themselves 10/10, a big tick, and one of teacner's gold stars.

The A90's operation is based upon 64 Performances, each of which contains eight 'Zones' (four internal and four external) whose outputs you define using the plethora of controls and controllers on offer. The most important of these are the 16 primary parameters that you select using the Parameter Select keypad and which you can manipulate individually for each Zone. To be specific: you choose a Zone's MIDI channel using button 1, apply coarse tuning of +/-3 octaves (in semitones) using button 2, and determine the key range over which the Zone applies with button 3. For each Zone, button 4 then offers access to the seven keyboard velocity response curves, the degree of velocity sensitivity, and the maximum velocity that the Zone will transmit to any connected MIDI devices. You control the MIDI volume of the Zone using



button 5, and its pan from button 6.

The next two buttons (Rev Send and Chor Send) are primarily for owners of other Roland modules, and may not be compatible with other manufacturers' devices, but buttons 9 to 12 are far more global, applying modulation, aftertouch, and expression to each Zone, as well as adjusting the portamento time. Buttons 13 and 14 determine the Program Changes and Bank Changes that the A90 sends when you select a Performance and, finally, the last two buttons — Aux1 and Aux2 — should allow you to jump through arcane MIDI hoops by transmitting channel messages, NRPNs and SysEx messages. Unfortunately, every time I attempted to edit them, the A90 crashed. (It did so on a few other occasions, too.) Oops!

Editing couldn't be simpler: just decide whether you wish to adjust an internal or external Zone, press the Edit button, select the parameter that you wish to modify (either via a bunch of hierarchical menus, or by pressing, pushing, or twiddling the offending item) and use the Palette sliders, data entry slider, or Inc/Dec buttons to alter the values presented. You can assign most MIDI functions to most of the A90's controls. including four foot controllers, a breath controller, a pair of traditional pitch-bend and modulation wheels, Roland's more usual mod-lever, twin volume sliders, a number of assignable buttons, and four faders that either assist in editing or initially control the amounts of breath control, aftertouch, expression, and portamento applied to each sound. My only gripe concerns the screen: it's backlit, clear, and can display parameter values as both text and graphics, but it's just too small. Abbreviated function names are acceptable on cheap and vintage gear, but some of those forced

Rolling A-SIC Particular Contracts upon us by the A90's 2x17 (!) character LCD are too short by far. Come on Roland...

The System menu also offers a number of goodies. The most interesting of these are the 12 name maps that, if you have another Roland instrument such as a JV80 or SC55, display the names of the factory presets when you select the appropriate bank and patch numbers. For players with other manufacturers' equipment, there are a further four empty, but user-definable, name maps. These are an absolute blessing when you use the A90 with modules such as the Cheetah MS6 and Korg EX800 that have no onboard patch names. Unfortunately, whilst setting up my own maps proved to be a doddle, I couldn't get the preset maps to display for me. Was this another bug, or was I missing something, somewhere?

Once you've configured each Zone within a Performance, you can direct each of them to any combination of the four MIDI Outs. You can then save everything to one of the 64 onboard memories, or one of the 128 that are available if you have the requisite plug-in RAM card. But that's not the end of the story... you can string together a chain of 64 Performances, and save 10 such chains simultaneously. With 640 configurations available, I can't imagine any performer running out of steps, no matter how long or complex their stage set may be. Nevertheless, Roland have seen fit to make chains loopable, and allow you to move both forwards and backwards within them. You can even dump and load chains using SysEx. Whatever next?

While on the subject of receiving MIDI data, I should point out that Roland have implemented the two MIDI Ins in somewhat different manners. You use In1 primarily as a remote control for the eight Zones within the A90, while In2 merges incoming data with that generated by the A90 and then directs this to the Zones of your choice.

Finally, I should mention the Sequencer Controls and the Effectors. The former will select the Song Number, send Song Position Reset, Start and Stop messages, and determine the tempo of any sequencer that responds to an external MIDI clock. The Effectors are edit messages that determine settings within external effects units and drum-machines. Unfortunately, the manual is very unclear about their use and function, and time and space precluded a detailed investigation from first principles. It's a shame that the

pros & cons

ROLAND A90/A90EX £1699/£1999

Dros

- The quality and feel of the keyboard itself.
- Breadth and flexibility of the controller functions.
- Excellent piano sounds.
- Excellent non-piano sounds.
- . The styling.

cons

- · Small display.
- Limited to one Expansion Board at a time.
- The pressure needed to generate
 Aftertouch.
- · Buggy software?
- · Very poor manuals.

summary

If you're prepared to leap-frog the cheap 'n' cheerful and mid-price instruments on offer, and stick your hand in your pocket for nearly £2,000, you have every right to expect something a bit special. Despite the occasional lapse, the A90EX will not disappoint you. It's a top quality master keyboard, beautifully designed and built, and with a superb keyboard action. It's also the best piano in the business. Enjoy!

SOUND ON SOUND

ACOUSTIC PIANO SOUNDS

Despite its other qualities, it's as a piano that players will perceive the A90EX, not only because of the preponderance of piano Patches, but because of its weighted keyboard. So I patched the A90EX into and compared its piano Performances to my dearly loved Roland HP5600, a classic SAS (Sampled Adaptive Synthesis) piano that weighs a few hundredweight, and incorporates a 6-speaker sound system that rattles and resonates like 'the real thing'.

I may as well come straight out with it... the VE-RD1 Expansion Board, despite using 'mere' PCM technology, offers the most accurate piano simulations I have yet heard. The detail of the hammer action is excellent, the dissonance of the

soundboard is exquisite, and the harmonic richness persists well into the tail of the sound. Yet, in common with just about everything from the cheap and not particularly cheerful Emu Proformance up to an expensive Yamaha PF100, the 'thunk' of the hammer is perhaps a little overpronounced. It's almost as if Roland have decided that you grasp the soul of a piano by close-miking to within a few inches of the soundboard. Unfortunately, this fails to capture some of the richness and body that you hear if you're sitting in the third row of the auditorium. Yet if I stop analysing, and just listen to the A90EX, it sounds superb. While there's no such thing as a definitive 'piano' sound. I'm going to take the plunge... the A90EX isn't perfect, but it's damn close. Listen and be impressed.

Roland A90

documentation should let down what is otherwise such a well-produced instrument.

A90 AS SYNTHESIZER

I appreciate all the arguments for having one powerful keyboard controller connected to a rack full of small, light MIDI modules, but I'm personally still a bit wary of keyboards whose only audible and the VE-RD1 is no exception to this. Four Patches (assigned to the internal Zones) make up a Performance, and it's within the Performance that you apply and store the Patch edits. Unfortunately, and unlike true synthesizers such as the JV1080, the A90EX offers no way to modify the Partials themselves. So, for example, whereas Patch 91 'JP-8 Haunting' demands four voices for

> every note played (reducing polyphony to a maximum of 16 notes) and, we must surmise, uses four Partials, you can only control parameters that apply globally to the Patch itself.

Editing a Patch couldn't be simpler, with the Parameter Select buttons also controlling the dedicated synthesis functions. Starting, somewhat unusually, at button 13, this allows you to choose the Patches that will occupy the four Zones of the current Performance. You can then select the MIDI channels of each using button 1 (which also controls the Patches' fine-tuning), and can adjust the coarse tuning and the key-range of the Patch using buttons 2 and 3. Once again,

button 4 determines the velocity responses and, likewise, you can adjust the volume of each Patch and its position within the stereo field using buttons 5 and 6. Skipping functions 7 and 8 for a moment, we then come to... the Attack function (button 9), which opens up many creative possibilities, and makes the Patches far more flexible than their somewhat defining names would suggest. Similarly, the Decay and Release buttons (10 and 11) offer a remarkable number of synthesis possibilities. Indeed, by the time that you start adjusting the low-pass filter labelled 'Bright' (button 12), you begin to view the Patches as Partials that you can modify using the ADR envelope and lowpass TVF (Time Variant Filter). Hey! This thing's an S&S synth, after all! You can even control the LFO speed using the Sequencer Control's tempo function (which can itself be assigned to any of the continuous controllers). Mind you, the absence of a Sustain control and the lack of modulation routing restrict things somewhat, but within seconds I had the monophonic Sawtooth Patch sounding just like a monosynth sound on Tangerine Dream's Rubycon — and you can't get much more synthy than that.

The final three buttons access the three effects that apply to each Performance. The first is an 8-mode reverb/echo unit (two rooms, two stages, two halls, and two delays), with controls for the effects' level, time, high frequency damping, and feedback. The second is a chorus with level, rate, depth, pre-delay, feedback and output mode controls. (The three output modes are: (i) chorused and reverberated sounds output in parallel, (ii) reverb applied to the chorused sound in series, or (iii) a mix of pure and reverberated chorus.) You control the amount of signal that is directed from each Patch to these effects using the aforementioned buttons 7 and 8 (Rev Send and



output is a dull 'thunk'. It's not a particularly attractive sound, nor one I've ever found the urge to sample. That's why I'm particularly glad that the instrument under the microscope today is an A90EX, not the basic A90

The VE-RD1 Expansion Board sits behind the screen cover, and can be removed by messing about with a few screws and clips. Still, it's a shame that Roland couldn't have made its installation simpler, because it is completely impractical should you wish to switch between expansion boards with any sort of frequency. As a result, I suspect that an A90EX shipped as a piano will always remain a piano, and that one with, say, the GS board installed will likewise remain a permanent source of GS sounds.

Roland have been building sounds from Partials, Patches and Performances since 1988,

PATCHES AND PERFORMANCES

Provided that it is fitted with a VE-RD1 Expansion Board (the architectures of the VE-JV1 and VE-GS1 boards are somewhat different), each A90EX Performance can combine any combination of up to four of the 128 available Patches. The following are not necessarily Roland's descriptions of each:

PERFORMANCES:

- Stereo Concert and Semi-Grand Planos.
- Monophonic Semi Grand & **Grand Planos**
- Electronic Planos. 6
- 6 Rhodes Planos.
- Wurlitzer EP200. 1
- FM Pianos 2
- D50 Pianos. 2 MIDI Stacks.
- Piano +
 - (Strings/Choir/Pad/Bass) combinations. Organs.
- Clavinet.

- Vibe + Marimba combination.
- Polysynth.
- 1 Brass Section.
- 3 Bass + Lead Synth splits.
- Strings. 4
- 11 Pads.
- Pads with LFO effects.

PATCHES:

- Acoustic Pianos.
- IV80 Pianos.
- SAS Pianos (two E Grand, 2 Rhodes).
- CP Plano.
- Rhodes Pianos.

- EP200s
- D50 Patches.
- FM Pianos.
- Hammond and Other Organs.
- Vibes.
- Marimba. 1
- Clavinets
- Polysynth Patches. 6
- Strings. 17
- Brass Patches.
- Pads with LFO effects.
- Monophonic Monosynth Patches.
- Basses.

Chor Send). The third effect is an equaliser that offers low, mid, and high frequency gain, and 17 choices of mid frequency, from 200Hz to 8kHz. There's no 'Q' control though. Shame.

So what does this all add up to? Quite a lot, actually. Roland introduced a similar type of synthesis with the U110 module, and later used it in the U220, the U20, and the Rhodes 660 and 760 keyboards. Its implementation within the VE-RD1 expansion board is somewhat different to these but will nevertheless surprise many players with its range of sounds and programming flexibility. Indeed, describing the A90EX as a 64-voice 'stage piano' doesn't do it justice. OK, many of the acoustic and electric pianos are superb, and the Clavinets are excellent, but the real surprises are the pad sounds one would more usually associate with a powerful polysynth. A bit of tweaking with

transpositions, envelopes and effects produces Performances that display a richness and depth rivalling even the most expensive programmable synthesizers.

One final point about the expansion card: this can be decoupled from the internal Zones and controlled exclusively by the MIDI Ins. You can then route the four internal Zones to the MIDI Outs, making the A90 capable of directing no fewer than eight independent Zones (in any combinations) to any or all of the four MIDI Outs. Powerful!

CONCLUSIONS

There's lots more in an A90EX. We haven't mentioned the Utilities that offer all the writing, copying, dumping, naming and re-initialising features you would ever want. We've skipped many of the 43 edit functions, and we've ignored goodies such as the onboard Help messages that guide you through the controls and parameters.

But details aside, we should judge the A90EX on four fundamental levels. Firstly, despite needing a vice to get any meaningful aftertouch out of it. I suspect that the A90 would today be my piano keyboard of choice. Indeed, Roland have fitted it with perhaps the best hammeraction ever to be incorporated within an electronic instrument. It's fast enough for monosynth chops, smooth enough for L102 swipes, and firm enough to demand and exercise good pianistic technique. Secondly, and with regard to its credentials as a MIDI controller, the A90's routing and controller flexibility are almost without peer, although it seems to need a software revision to eliminate a handful of teething bugs. On the third count, there's nothing on the market to touch the realism of its piano sounds — the A90EX is definitely the instrument to beat. And finally,

there's the question of its limited synthesis capabilities, and even on this level the A90EX acquits itself surprisingly well. (Just don't expect it to replace your Trinity Pro X or K2500X.) So, are Roland back at the top of the MIDI Keyboard Controller tree? Undoubtedly.

- E A90 Keyboard £1699;

 VE-RD1 Expansion Board £399;

 A90EX (RD1 pre-fitted) £1999.

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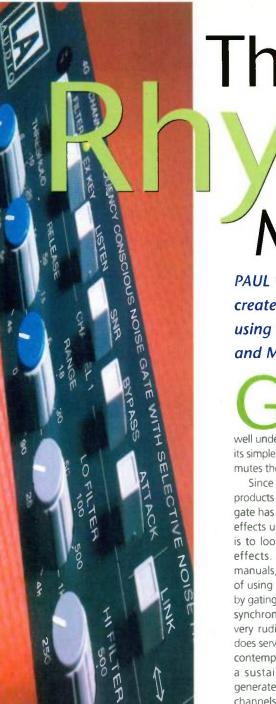
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CREATING RHYTHMIC GATE EFFECTS

Method

PAUL WHITE reveals how to create rhythmic gate effects, both using conventional hardware and MIDI Controller information.

ates were originally intended as utility devices for the removal of noise during pauses in programme material, and their use in this capacity is probably well understood by the majority of SOS readers. At its simplest, a gate is just an electronic switch which mutes the signal when it falls below a certain level.

Since gate manufacturers started fitting their products with external key or side-chain inputs, the gate has had its status elevated to that of 'special effects unit', and the purpose of this brief article is to look more closely at the creation of gate effects. If you read the manufacturer's user manuals, they'll nearly always cite the example of using a gate to 'tighten up' a sloppy bass part by gating it from the bass drum track, thus helping synchronise the two sounds. Although this is a very rudimentary use of the side-chain input, it does serve to illustrate how the setup works. More contemporary gating effects include chopping up a sustained sound (such as a synth pad) to generate a rhythmic sequence or even using both channels of a dual gate to create a stereo effect where the rhythms dance from left to right.

CHOP 'EM UP

In some ways, an externally triggered gate bears a close resemblance to a computer logic 'AND' gate, since you get no output unless both inputs are present. You need an external key signal to open the gate, and there has to be a signal present at the

main audio input of course before you hear any output. Only when the two signals coincide will an output signal become audible. Figure 1 shows how this type of side-chain triggering works; a continuous signal at the

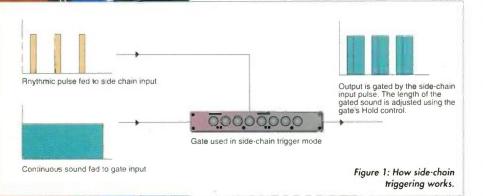
main input is chopped into bursts by a rhythmic input at the Key In socket. This rhythmic input can be derived from anything — from a staccato synth pulse to the hi-hat or kick drum output from your drum machine. In fact, any sound with a clearly-defined start and end will do the job.

The cleanly chopped output is dependent on the gate being set to a very fast attack time and a very fast release time. If you inadvertently set a long release instead, the gate will barely have started to close when the next pulse comes along and opens it again, so you won't achieve the desired chopping effect. However, if the gate opens so fast that it causes an unpleasant click, you should slow the attack down slightly by increasing the attack time setting, to smooth it out a little.

HOLD ON

When creating gate effects, the gate's Hold control is vitally important because it allows you to set the duration of the triggered bursts with rather more flexibility. If your gate doesn't have a Hold facility, then the output bursts will always be the same duration as the Key input sounds, and if the Key signals are drum beats, the resulting bursts might be too short. By using the Hold control, the burst length can be extended to an artistically correct amount.

A number of dance-style records make use of rhythmic gating to drive the music along, and because of the precise nature of the gating effect, the result is as musically tight as the rhythm doing the triggering. It's most common to use the effect in conjunction with a sequencer, because you can dedicate a separate track to controlling whatever sound you are using as a trigger. You can also quantise, where desirable, to ensure a high degree of rhythmic precision. A great many multitimbral synth modules have their own built-in drum parts and it's unlikely that you'll need them all in your composition, so one drum sound can be reserved as your gate trigger source. For example, in my own setup I use an Alesis D5 as my main drum sound source, but drum sounds are also available from my Sound Canvas, Roland Vintage module, my Emu Proteus and Morpheus. In this instance, however, you do have to ensure that your trigger source signal is not mixed in with any other sounds you may want to use in the mix, which means either using a module with assignable outputs (such as the Proteus), or dedicating a whole synth module to the job of gate triggering. So, if you have an old module (single or multitimbral) that you don't use much, it may be worthwhile keeping it purely for triggering purposes. A sound module with a stereo output and pannable sounds is also beneficial for the creation of stereo effects, as I'll explain later.







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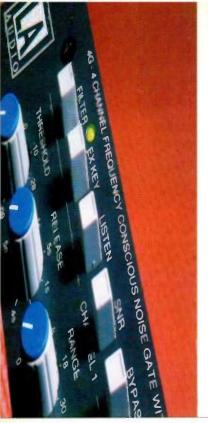
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CREATING RHYTHMIC GATE EFFECTS

If you don't have a drum sound source which you can use for triggering, then any short synth sound with a fast attack and release will do the trick. At a push, if your sequencer is synchronised to your multitrack recorder, you can easily record your trigger source onto one track of tape, thus freeing up your sound module if you need to use it elsewhere in the mix.

WHAT WORKS?

Sustained sounds work best because, when you chop them up with the gate, the rhythmic pulses will be reasonably consistent in level. Guitar is a good candidate, but it needs to be either compressed or overdriven to get the required density of sustain. I find that a mild overdrive combined with loads of compression usually works well.

Other useful sources of 'chop fodder' include layered backing vocals, E-bow guitar (a simple electronic sustaining device), rainsticks (or any other

> form of percussion that can be shaken or rattled continuously), or sustained keyboard chordal pads. You can even take parts from another song (ideally in the same musical key), and chop them up to provide a rhythm.

> > To create the stereo effect

Channel 2 output panned hard right

Outputs are gated by the side-chain input pulses. The length of the gated sound is adjusted using the gate's Hold controls and panning the sounds left and right creates a dynamic stereo panning effect.

panning effect

sound sources might be a pad from a synth or a looped guitar chord from a sampler, and the only requirement is that the instrument responds to Controller 7, so that you can adjust the volume using MIDI data. Now all you have to do is tap in your guide rhythm pattern (or use an existing rhythm track), then go into edit mode and insert a Controller 7, value 127 event whenever you want the sound to switch on and a Controller 7, value 0 event wherever you want it to switch off. To save yourself time, you only need to construct one bar of this, then you can simply copy it within your sequence track. In fact, if you use one of the better sequencer programs, you'll invariably find a means to input this Controller data graphically, which makes life even easier

Although this is a very easy way to create gate effects, you can buy pre-programmed MIDI files containing Controller data that provide readymade gating effects for you to paste into your own music. I use the Twiddly Bits Bytes and Pieces collection, which is regularly advertised in the SOS classifieds, but Heavenly Music and Hands-On offer similar products. If you have the patience, you can build up complex rhythms encompassing a number of sequencer tracks and a variety of different sound sources, and because MIDI sounds are easily panned, you can also generate some exciting

stereo effects. Processing such rhythms via tempo-related delay effects can also help you weave an even more complex rhythmic web. Experimentation is the

name of the game here.

NO LIMITS?

Gating effects are normally discussed in the context of dance music, and there's no doubt they are immensely useful in this field, but the same effects may also be applied to pop music, soundtrack work and even ethnic music. For example, you could take a digeridoo loop and chop that up into a rhythm with an ethnic feel (some less-thankind readers have simply suggested chopping up my digeridoo to cut out the middle man!). You can do the

same thing with sitar drones, hurdy gurdy or tambura, while nearer home, you can find unlikely sources of inspiration in gated vacuum cleaners, washing machines, power tools or industrial factory noises. For new age music, you can chop up recordings of mountain streams (which is far more environmentally friendly than chopping up rainforests!), or you might like to turn your attention to the elements and try chopping wind, rain or the stormy sea.

In the final analysis, rhythmic gating is a very simple effect to achieve, but don't write it off as being trivial just because it is simple. Take the time to experiment and you're almost certain to come up with something that takes both your creativity and your music in new directions - and that's what most of us really need. 505

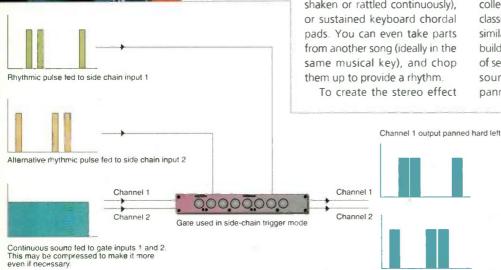


Figure 2: How to create a stereo chopping effect.

mentioned earlier, you simply record two different rhythms into two tracks of your sequencer and then use these to trigger different sounds panned left and right in your trigger source synth module. These two rhythmic signals are used to trigger the two channels of a dual gate and the same 'chop fodder' signal is fed to both gates. All you have to do is pan the gate output signals hard left and right in your mix and the two rhythms will cause the finished sound to dance from left to right speaker. Figure 2 shows how to create a stereo chopping effect.

GATELESS GATING

Those of you working entirely with sequencer controlled MIDI sound sources can recreate most gate-style chopping effects entirely via MIDI. Ideal





Walriner Tulbe?

Imost everybody who has had

ART have followed up their single-channel Tube MP valve mic preamp by developing two more tube designs for both the project studio owner and the audio professional. PAUL WHITE huddles round to warm his signals...

ART PRO MPA & DUAL MP

a chance to compare different microphones will agree that valve or tube mics have a certain sonic quality that solid-state mics generally lack, and it's also generally accepted that valves, when driven hard, add a type of distortion that we find musically pleasing. With early mics, the 'alleged' magic sound of valves wasn't an issue, because valve technology was all that exsisted — transistors were still waiting to be invented. Whatever the valves contributed, you had to accept, because there was no way to adjust the amount of tube overdrive, short of changing the distance between the mic and the subject being recorded. It's only when solid-state electronics became commonplace that people realised there was such a thing as 'the valve sound'.

Reissue valve microphones tend to be expensive, though there are some affordable new designs, such as those built by Groove Tubes (see review in SOS October '95). However, if you're happy with the mics you've already got, using a valve mic preamp is another way of injecting a little vintage warmth into your work. What I find particularly interesting is that every valve circuit has its own tonal character — valve preamps from different manufacturers will never create quite the same effect. The sound changes depending on the types of valves used, how they are biased, the HT voltage applied to the anode, and whether or not transformer input stages are used.

CALL IN THE MPs

ART's approach in both these mains-powered valve mic preamps is to use a solid-state circuit at the front end to provide a degree of quiet gain, and then follow that with a valve circuit that can be driven into varying degrees of distortion as required by the user. The multiple transistor input stage of the Pro MPA is more sophisticated than that of the Dual MP, and is largely responsible for the unit's very low noise figures (though as these are quoted with a shorted input rather than with a typical mic load, it's very difficult to make exact comparisons). Both models also include high-impedance jack inputs allowing instruments such as basses, guitars or line sources to be DI'd with

the benefits of valve 'flavouring'. There's sufficient gain range to accommodate line-level signals, so it's quite possible to use these units via a console's master insert points to warm up a whole mix.

The valves used are 12AX7 (ECC83) dual triodes (one per channel), and a relatively low anode voltage (sub-100V), is applied, which invariably produces a different characteristic compared to the same tube run from a 250-300V HT line. It does, however, mean the power supply voltages can be stabilised, which helps minimise noise and hum. On both models, a LED meter monitors the tube drive, so that you get a visual indication of the amount of clipping taking place. A simple 4-LED meter is used on the 1U Dual MP, whereas the 2U Pro MPA incorporates a 10-LED bargraph.

THE DUAL MP

The Dual MP offers similar facilities to other mic preamps, insofar as it has both input and output gain controls, phantom power and phase invert facilities, but there's also a Norm/+20dB gain switch which operates before the tube stage. Most mic preamps have an input stage with around 60dB of gain variation, but in this design, the input stage has over 40dB of gain, with the other 20 being provided by the valve stage. A similar gain structure is employed in the Pro MPA, and the maximum gain depends on which connectors you use to get in and out of the units.

Balanced XLRs are used for both the mic inputs and outputs, and these are to be found on the rear panel along with unbalanced output jacks — a useful option for anyone plugging into an unbalanced insert return. High-impedance, unbalanced line jacks are located on the front panel.

To set the degree of valve coloration, the Input Gain is used in conjunction with the 20dB switch, while keeping an eye on the four drive LEDs. Green indicates a clean sound, while the two Yellows show that a degree of warmth is to be expected. If the meter stays in the Red, it indicates clipping, which is perhaps best avoided unless you're using the unit as a valve fuzz box for your guitar. In normal use, the red LED will probably flash only on signal peaks.

THE PRO MPA

Though the circuitry employed in the Pro MPA is rather more sophisticated than that found in the

Pros & CONS ART PRO MPA & DUAL MP (1998 1998 1998) Pros • Clean signal path — especially the Pro MPA. • Easy to use. • Variable valve drive with drive level metering. CONS • Unless you're working with really good mics and recording equipment, the subtle timbral changes may be hard to appreciate.

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Art Pro MPA & Dual MP



• Dual MP, the general facilities are broadly similar, the obvious exception being that the Pro MPA has two large, back-lit moving-coil meters to monitor the output levels, in addition to the LED bargraph, which shows the tube drive conditions. There's also a high-pass filter before the gain stage, which provides a gentle 6aB/octave slope with a continuously variable frequency of 7Hz to 150Hz. There's no Bypass for this filter, but if you set it down at 7Hz, it's as good as bypassed for all practical purposes.

All the Pro MPA's audio connections are on the rear panel, and once again, there's a choice between XLRs or unbalanced jacks with jack sockets providing high-impedance inputs for use with electric guitars and basses. Status LEDs are provided for all the buttons.

A g ance inside the box reveals that the input stages are placed right behind the input XLRs as opposed to on the main circuit board (where they are on the Dual MP). This is a good move, as it minimises the risk of interference from inside the box being picked up by the input electronics. A further plus point is that the valves are fitted with screening cans in the Pro MPA.

WARMED UP

Once plugged in, these preamps are much the same to use as the mic input stage on a typical mixing console, the only additional consideration being how much valve drive to apply. With most sources, including vocals, I found that little effect was audible until the drive was set to a level that resulted in the clip lights coming on quite strongly on the signal peaks, but then you have to be careful that further level excesses don't drive the unit into audible clipping. This being the case, it would perhaps have been a nice idea to include a rear panel insert to allow a compressor to be connected before the valve stage.

Operation is simple — the drive indicator makes it easy to set up the required degree of valve warmth, and no vices of any kind were evident. Once the levels are adjusted correctly, the tonal changes brought about are very subtle, and you have to listen quite carefully to notice exactly what the difference is. On vocals, the effect is to thicken the lower mid-range, which emphasises throaty or chesty sounds. There also seems to be a slight loss of transparency, which is replaced by a greater sense of directness or proximity, but I stress again that these effects are on a very small scale — they don't leap out of the speakers at you.

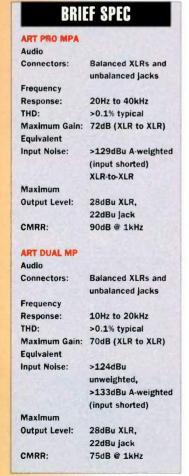
On mixes which include drums and bass guitar, the effect can be to create a richer, rounder bass sound and, at the same time, make drums appear more even in level, almost as though they've been compressed slightly. Once again, I got the impression that some of the 'air' was sucked out of the high end, but in a way that made the sound seem more focused and upfront.

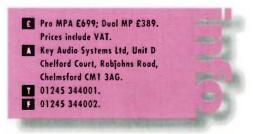
When they are used to DI instruments, either unit works fine with passive guitars and basses, and using the valve drive to warm up the tone helps smooth out the sound. For obvious distortion effects, you can crank the drive up to full or even put the two channels in series, but you definitely need a speaker simulator at the end of the chain to make the overdrive sound usable. With most sounds, you can push the peaks well into the red before any distortion becomes evident and used with a little care, it is possible to add a little valve warmth to mics, instruments, complete mixes or even to synths.

I found little subjective difference between the sound of the two units, though the more expensive Pro MPA is a touch quieter, and does have a more comprehensive control layout, as well as the useful high-pass filter.

SUMMARY

There's no doubt that both units are well designed and nicely engineered. Both are quiet enough for the majority of pop applications with the Pro model being particularly good for a tube product. However, while everything about the units works perfectly, I have to reiterate that the amount of tonal change-you can expect (short of out-and-out overdrive distortion) is subtle. Valve preamps are most definitely not a case of 'the emperors's new clothes', but at the same time, they don't give you an effect that you can lay on with a trowel either. If you're not sure what to expect from a valve preamp, rent one for a day or two before you sign that credit card slip — that way, you'll know exactly what you're getting. This is true of any valve mic preamp, not just these two - the valve sound is one of the most contentious issues in audio, and I don't expect it to go away for some considerable time! SOS





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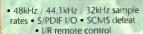
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One of the unwitting founding fathers of socalled 'new age' music, Kitaro has journeyed down many musical roads in his 20-year career. PAUL TINGEN reports. ith the dreamy, lilting synth textures of his now legendary *Silk Road* albums (1976/77), Japanese musician Kitaro was one of the founding fathers of 'new age' music, more than a decade before the genre was invented. Fresh and ahead of his time, Kitaro has remained extremely prolific and now has an array of albums to his name: 20+ solo albums; half a dozen compilation, live and 'best of' albums; plus an album with the London Symphony Orchestra. Although less and less at the cutting edge of

Although less and less at the cutting edge of

year Kitaro is busier than ever, with three new releases under his own name, plus two productions of other artists playing his music under the umbrella of Kitaro's World Of Music.

Of the three albums under his own name, two contain existing material: a live album called An Enchanted Evening, and his second album with a major London orchestra, this time the Philharmonic. The latter will be released this Autumn, around the same time as an album of new material, Peace Symphony, that features ex-Yes vocalist Jon Anderson. One of the Kitaro's World Of Music albums features the Chinese huquin (a Chinese violin) player Yu-Xiao Guang, backed by a Western chamber music ensemble; the other is dedicated to Kitaro's band member Nawang Khechog, a Tibetan flute player and vocalist, who is backed by nature sounds and traditional Kitaro synth washes. Both World Of Music albums reinterpret Kitaro's music for the 'sophisticated Kitaro fan', according to their cover notes. Altogether it's quite a deluge of CDs, and so this is an especially appropiate time to talk to Kitaro and find out what drives and inspires him. A recent promotional tour of the UK to support these five

)]] KITA

KITARO

releases on his new American record label Domo Records, offered SOS a unique opportunity to put these questions to Kitaro, face to face.

MODERN LOVE

For a man who has lived in America now for five years (Kitaro moved from his native Japan to Boulder, Colorado in 1991) his English was still poor, and so it has to be kept in mind that all the quotes in this article are heavily edited. Kitaro, though clearly having great problems getting his points across, happily and imperviously made his generally rather short and cryptic comments to the questions I posed. Given that he is a man who wears his spiritual heritage on his sleeve (witness the 'Great Spirit' poem on the inlay booklet for *Mandala*), interestingly, it was my technology questions that received the most animated responses.

l asked Kitaro about his Shinto background — he was born into a Shinto family in 1953 — and all he wanted to say was that Shintoism is "like a way of life. It's not really a religion, although it is classified as such." Kitaro has gone on record saying that his music is "spiritual" and that "the human element" and "traditional values" are most important to his music, and I was trying to ascertain what these values are and how they fit together with his obvious love for modern Western music technology, and especially for synthesizers. Apparently, it was the legendary Klaus Schulze who first opened his ears to the magical world of

musical developments as his career progressed, Kitaro's albums have nonetheless continued to sell by the million, and have been considered innovative and artistically interesting enough to reap music industry awards such as the Golden Globe Award for his album *Heaven And Earth* (1993, the score to the Oliver Stone movie), and a Grammy nomination for the single 'The Field', from his 1987 album *Light Of The Spirit*. This

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Kitaro



Kitaro's Mochi House control room houses the Neve 8048 console (rear), Minimoog, Prophet 5, and a rarely seen Korg Wavedrum (centre).

➤ synthesizers in the early 1970s, when the ex-Tangerine Dream synthesist produced two albums with Kitaro's group, the Far East Family Band. Kitaro remembered this occasion with enthusiasm: "It was the early time of electronic music, and people like Klaus and Tangerine Dream were pioneers. It was so interesting to see him operate these synths and perform on them. I learnt a lot of technical stuff from Klaus, and then I created my own spiritual style with this technology."

Continued questioning about the exact nature of

this spiritual style and these 'traditional values' led Kitaro to remark that "we need to feel the old ancient stuff. Yesterday I watched the older architecture here in London, and it's really good. It's kind of beyond the times, and we can imagine how people once spent their time and money. I think that it gives a good opportunity for younger people to become aware of other times." And why, exactly, is it so important for people to look into

the past? Kitaro appeared unflustered by the interruption: "A long time ago people didn't have any technologies. They connected with nature more naturally. I'd like to learn more of that natural feeling, how we can live, how we can feel, and how we can survive in the future. And in Shintoism we believe that gods live in nature, in the trees and the oceans, and so on. They're invisible, but maybe if we close our eyes and make some image, we can feel something. That's one of the gifts from the gods, maybe from nature; that's kind of spiritual stuff."

Well, quite possibly, depending on how you define gods, or nature, or both. What this latter quote does make more clear, however, is the nature of Kitaro's attraction to synthesizers. He has said that synthesizers enable him to create visual images in music that he couldn't otherwise create, that he can

conjure up "an ocean, a winter coastline, a summer beach, a whole scene" with synthesizers, and so one assumes that they give him the opportunity to create images of these Shintoist gods that live in nature.

Kitaro continued emphasising that it was especially analogue keyboards that give him the most creative freedom to turn his visions into sound: "Synthesizers from the analogue era are much easier to programme. You can create sounds much more freely than with digital synthesizers. Analogue synths also have a much wider sound

"The sounds of digital synths are becoming too much like gimmicks there's no spirit in them."

picture. Today it's much harder. You spend much more time in the creative process and need big computers to change the data of your sounds. It's much too complicated, and leads many people to just use flat, unoriginal presets. This is why I still prefer to use analogue synths."

NO SAMPLES, PLEASE

Kitaro laughed cheerfully, clearly aware that his attitude will be seen as slightly Luddite in some circles, and enjoying what he considered a spot of controversy. His favourite synthesizers are the Minimoog, the Korg 800DV and the Mini Korg 700, all of which he has used since the time of *Silk Road*. And, obviously wanting to press home the point of the hopelessness of modern, MIDI-fied synths, he adds: "I have a MIDI-Moog, but it's no

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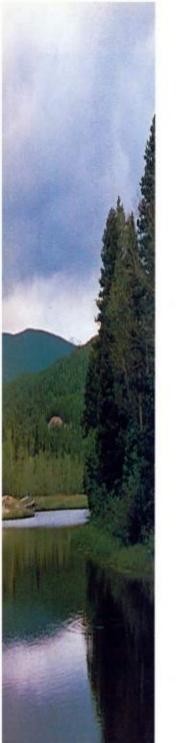
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Kitaro

e good. The sound is different. You know, I once changed the tuning pots on one of my oldest Moogs, and the sound changed even from that! They're really sensitive, and so a MIDI-Moog simply doesn't sound the same as a Minimoog, and I prefer to use the latter. I don't use MIDI very much anyway, because I don't use sequencers very much. Most of the time, I play live to a click track when recording. The only sequencer that I do use is the one in my Synclavier, just to allow me to cut and paste parts. But often I don't like the feel of it, because things sound too perfect when they are sequenced. I like to have a more human feeling and, sometimes, when I make mistakes I simply leave them in."

With the admission that he owns a Synclavier. Kitaro instantly does away with the image of himself as a true technology retro man, adding that he uses the Synclavier mainly for "orchestrating and audio-visual work. It's good for that, with the samples, and it has an incredibly easy and well-functioning SMPTE lock to picture. One touch of the button and it's going."

Other than for orchestrating, Kitaro claims he never uses samples: "I don't even use drum machines. Most people use them as an easy option, but sampled drum sounds are not very good. I think original recordings always sound way better."

The search for 'real', dimensional sound appears central to Kitaro's musical quest. It's why he prefers analogue synths to digital (even though his collection of 50+ synths at his Boulder studio, Mochi House, also contains a fair amount of the

latter - Roland JD800. Korg 01/W, and even a Roland \$760 sampler). Kitaro tends to play his synths through a PA system and then mike the sounds from the speakers, again in order to create the effect of a real sound. "I like to create a natural feeling, and for individual sounds it's not important whether it is stereo or mono, or processed in some 3D system. It's not what matters. I have a friend who has created a 3D virtual sound system, but if your sound is real you don't need that much depth. Real-life sounds can often sound mono, anyway. The important thing is to create good sounds and good music. People often follow the technology too closely and sometimes they forget the music, and they are losing something."

DIGITAL GIMMICKS

His search for 'real' sounds has led Kitaro to learn how to play various instruments, which he also uses to great effect on stage, such as the native American flute, the taiko drums and the six-foot long Tibetan long horn. He plays them in addition to the electric guitar and his beloved analogue keyboards, plus a Roland VP330 Vocoder, a Kurzweil K2000 and a Casio FZ1, which are all part of his live rig.

For his most recent live concert CD, An Enchanted Evening, eight Tascam DA88 digital recorders were used to record Kitaro and his 8-piece band across 64 tracks. Despite his pledged reservations about people being too focused on

MOCHI HOUSE STUDIOS

Kitaro makes most of his original recordings In his Mochi House Studios In Boulder, Colorado, where he owns a 180-acre estate surrounded by spectacular mountain views.

Mochi's 2,500 sq ft control room is large enough to hold a 70-piece orchestra. As everything with Kitaro, the studio is a strongly contrasting mixture of old and new, with a vintage Neve 8048 32-input desk having pride of place in the control room. "I like old valve gear. The Neve sounds so much better than modern, digital boards. The only problem is the maintenance; it's really tough!".

His last studio album, Mandala, as well as his Kitaro's World Of Music albums, were all recorded at Mochi House on his state-of-the-art, 32-in/32-out, 16 Gigabyte Sonic Solutions hard disk recording system. "I'm using Apogee A/D filters and we're actually working the whole thing as a 20-bit system. And you know, 20-bit does sound much better than 16-bit. It's a totally different dimension. You can feel the exact place of all the instruments within the stereo image. It's much much more spatial and dimensional."

new technology, Kitaro spontaneously sings the praises of one particularly good piece of gear that enhanced the sound quality of his live CD: "We recorded directly to the DA88 via a special preamp which a friend of mine created. They've just gone on the market with it as a commercial company, called Luna Tech. We compared their preamps to



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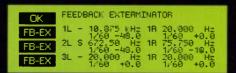
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Kitaro

many others, even George Massenburg's, but the Luna Tech units were definitely the best. It has warmth and depth, and a really good sound."

Kitaro's obvious enthusiasm for technology keeps raising the question of how this relates to the self-professed "warmth" and "humanness of his undeniable, and that forced respect. It was the music of a man who had somehow found a way to forge synthesizers in the creation of an original voice that was entirely his own. No mean feat in the often rather faceless and bland world of synthesizer music. Yet listening to Kitaro's newer

material - Mandala and the live album, An Enchanted Evening, which contains the title tune from Silk Road all that delicacy has somehow gone. Most of his music now sounds like rather derivative symphonic rock, a kind of sub-standard Pink Floyd, weak on good tunes but heavy on the big drums, bombastic synth washes and long, ecstatic guitar solos. Occasionally there are some nice elegantly subtle touches, like the flute solo that carries the short piece 'Planet', but then it is off to the Andes again for a pan-flute filled rendition of some cliched Andean music, and on to what sounds like an out-take from Meddle-era Pink Floyd in 'Chants From The Heart'.

One wonders what happened to Kitaro's own voice? A normally rather tolerant and broad-minded friend of mine, who was a fan of *Silk Road*, was seriously affronted on hearing Kitaro's recent releases. Slightly more reflective about the whole thing myself, I chose to put my friend's reaction to Kitaro, instead of my own as yet unformed one.

Kitaro didn't miss a beat, hardly appeared to notice the criticism inherent in my question, and put the whole thing down to fans who don't want to change with their artist: "My life is about change, and over the years my music has changed

"His favourite synthesizers are the Minimoog, the Korg 800DV and the Mini Korg 700, all of which he has used since the time of Silk Road."

a lot as well. There's a big difference with what I did 20 years ago. That's OK. I don't worry about that. I'm not losing the spiritual things. I go through different stages and I'm not going to stay the same in each stage. Silk Road was like a prototype for new age music, and they have since tried to pigeonhole me on that corner. But I think



Mochi House: Pride of place goes to Kitaro's NED Synclavier with Macintosh front-end, and the Roland JD800 (top left).

music." So what is his angle on the generally held view that technology is somehow cold and inhuman?

Kitaro shrugs his shoulders: "It totally depends on how you use technology. Twenty years ago we didn't have digital technology, and synthesizer music sounded really nice. Unfortunately as technology grew better and better, people became more confused. If we didn't have any better technology, then the sound quality of today's music would actually be higher. This is my opinion. The quality of original sounds, whether samples or patches or recorded music, is getting worse now. The sounds of digital synths are becoming too much like gimmicks - there's no spirit in them. I like analogue synths much better; they're much warmer. I think we should really think about how we can make sounds more real. and the way to do that is to create them via air and use microphones to pick them up. If we didn't have air we wouldn't have sound, and so we need to appreciate oxygen and air in our music."

DERIVATIVE?

So good music needs air, and the important thing when working with technology is to not forget about the music... So how does Kitaro's music hold up then?

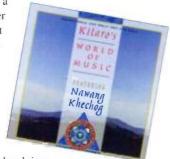
Silk Road may not be everybody's cup of tea (and certainly wasn't mine), but there was an integrity and delicacy to the music that was

that most new age artists don't have a recognisable identity—each person sounds almost the same. Vangelis and Jean-Michel Jarre were also forefathers of that new age, but they do have their own sounds. Vangelis has melodies that are really identifiable. The audience can find true sounds in his music, but in today's music that's virtually impossible."

WORLD OF MUSIC

It may be Kitaro's quest for 'real sounds' that has contributed to the first two releases through his Kitaro's World Of Music project, featuring Tibetan Nawang Khechong on flutes/vocals and Chinese musician Yu-Xiao-Guang on the Chinese violin (the huiquin), plus assorted acoustic instruments and/or nature sounds. Kitaro

asserts that he started the project to "give new artists a chance. Nawang is a member of my band, and I thought that he and other great musicians can perform their own solo albums. They interpret and play my music on these particular albums, which were also produced by me and recorded at Mochi House, but on their next

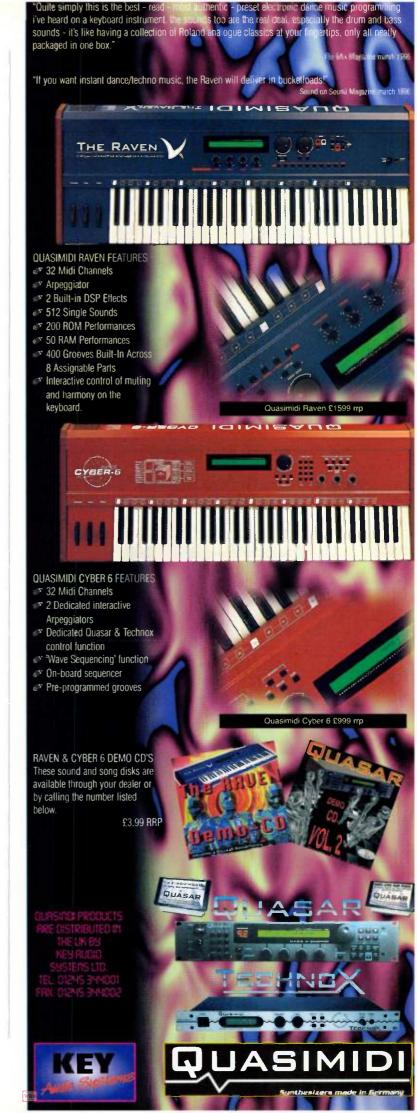


albums they will hopefully be doing

their own music. All the nature recordings for Nawang's albums were done by ourselves. I don't like using sample CDs, and so we went out and recorded many things to DAT. I even recorded the cracking of the ice on a frozen lake. We made holes in the ice, then put hydrophonic, waterproof microphones into the lake and recorded the cracking sounds. We didn't use that particular sound on these latest albums, but I will try to use it on my next album."

Kitaro adds that other World Of Music projects are already in the pipeline, including one with a Peruvian player and another with an Indian player. On the evidence of the two existing World Of Music CDs one would hope that their quality improves, for the semi-classical arrangements behind Yu-Xiao Guang's violin are (to my ears, at least) dreary and dragging, whilst the mixture of environmental sounds with Tibetan flute and chanting on Nawang's CD sounds contrived and doesn't hang together. Add to this the fact that, despite Kitaro's valid claims to being an original voice in the instrumental music of the mid-seventies, his last two albums (Mandala and An Enchanted Evening) sound rather derivative, and one wonders what has happened to his creative spirit and sense of adventure.

Kitaro himself, however, clearly holds the opposite to be true. He explained that the reason for the strong Pink Floyd influences on Mandala (and five of the eight tracks on An Enchanted Evening are also from that album) was a conscious effort to return to his roots: "I was trying to remind myself of my original music, and of the original spirit with which I started my musical life. 20 years ago I played electric guitar, then I changed to synths and orchestrations. Mandala is the next step, back to the original music that inspired me — Pink Floyd, '70s progressive rock... The album that Γ ve just finished with Jon Anderson, *Peace Symphony*. is also a little like '70s progressive rock. I will soon start work on my next solo album, which should be out during next year, and this will be entirely different again. It will be based on the planets of our solar system, similar to Gustav Holst's classical work The Planets. So my next album will be another step. I'm trying to keep in good shape. Life is different, and the time is good and passing by... and Γm happy." SOS





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CREATING CUSTOM SAMPLE TEXTURES

any of the sounds on sample CDs or CD-ROMs such as Spectrasonics' Distorted Reality, or Ian Boddy's ambient sample collection, are so complex and evolving that you wonder how on earth they were created. The people who produce these CDs all have their own tricks and trade secrets, but the truth is that with relatively little equipment, plus a lot of patience, you too can create custom samples that nobody else will have.

The type of samples I'll be concentrating on in this article are the textural type which tend to be

THE INGREDIENTS

• SYNTHS: The equipment lists on texture-type sample CDs invariably feature a large number of synthesizers, but by combining the sounds from even a modest range of instruments, you can create quite startling sound textures of your own. Analogue synths are useful because of the ease with which sounds can be manipulated manually, but in the context of creating custom samples, a guitarist's wah pedal stuck on the end of a GM module can come pretty close. My personal



If you want off-the-wall evolving pads and tones, and are prepared to program to get them, the Emu Morpheus could be the synth for you.

used as beds, breaks or intros rather than for playing chords or obviously musical parts. This makes keymapping easy, because in most cases, a single sample is mapped onto the whole keyboard — even though you'll probably only ever use it over an octave or so. If you need the ability to hold down a sustained pad, you'll need to loop the sounds, but with textural pads, a longish crossfade loop will generally do the trick.

favourite synth for creating weirdness is the Emu Morpheus, but the Kawai K1 is also capable of producing curious textures and atmospheric rhythms. The bottom line is that it doesn't matter too much what you have as a starting point — it's how you use and process it that really matters.

• EFFECTS: Custom samples tend to rely heavily on effects, so a multi-effects unit of some sort is essential. At the budget end, I like the original Alesis Quadraverb/Quadraverb Plus because it includes ring modulation (see box 'How Ring Modulation Works' for an explanation) and resonant chord programs. The now-discontinued Boss SE50 and SE70 are two units which are also useful, as they both have a vocoder function, which can be an immensely powerful tool for welding two sounds together to create a new one. Cheap effects such as guitar pedals (particularly distortion boxes) are also useful allies in the battle against mundanity.

Going upmarket somewhat, those with access to a Lexicon PCM70 or PCM80 will find their high-quality resonant programs useful, and there are numerous other Lexicon treatments that lend themselves to sample creation.



With a little work, the Kawai K1 can also generate some peculiar, distinctive sounds — and it's a cheaper option than a Morpheus.



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CREATING CUSTOM SAMPLE TEXTURES

 NATURAL SOUNDS: As a rule, samples from synthetic sources have a certain electronic sameness to them, so I like to add in natural sounds. Unpitched or vaguely-pitched sounds such as bamboo chimes and rainsticks take on quite a different feel when you add effects, while heavily-treated electric guitar can often produce a more organic result than a synthesizer. Everyday sounds



washing machines, vacuum cleaners and power tools take on quite a different timbre when played back at different speeds — and don't forget the human voice.

LAYERS

Perhaps the easiest way to build up a sound texture is to record the parts onto tape, in layers, just as you would for a conventional multitrack recording. The choice of whether to add effects to the sounds as you go or to add all the effects in the mix is up to you, obviously, adding the effects last gives the greatest flexibility, but if you want to add different effects to each track, you may have to lay some effects to tape as you record. For sounds that need

to be started in sync, it helps to trigger all your MIDI sources from a sequencer.

"Samples from synthetic sources have a certain electronic sameness to them, so I like to add in natural sounds."

It's probably best to aim to get a minute or two of material onto your multitrack — that way you can pick the best bits to make up your loop. If you need to change the pitch of a natural sound by more than the varispeed range of your recorder, simply sample the sound into your sampler, play it back at the new pitch and record it back to

tape. Similarly, if you want to reverse one of the sounds and you're not working with analogue multitracks (in which case you could simply turn the tape over), you could sample it, do a reverse sample operation and then record it back to tape.

If you're using a synth pad as the basis for your layer, the choice of pad will depend on whether you're creating a one-shot sample, or whether you want something you can loop. With memory costs falling and modern samplers offering very long recording times, creating a 30-second, stereo

one-shot sample is quite feasible, but if you want something you can loop indefinitely, keep in mind what will happen at the loop points. For example, if you include a slow downward filter sweep, it'll need to sweep back up again to the same timbre as it started at if the loop point is to be successful.

One way of giving a shifting, evolving character to a sound is to layer two or more pad patches and then vary their levels so that they all take turns in being loudest. You could simply do this by moving the faders on your console, but it's more flexible to drive the synths from a sequencer and use Controller 7 (volume) information to modulate the levels. For example, if you have three pads going at once, you could create a triangular level modulation (like a very slow tremolo), using the graphic interface provided by most modern sequencers, or you could enter controller values manually. The same controller data could then be copied to the other two tracks, but with

different delays, so that the mix between the three layers is constantly changing. The same techniques can be used to build panning into stereo samples.

By using sounds that have some timbral similarities, such as string pads and choirs, or voices and woodwind, you can create slow morph-like effects, where the sound mutates from being predominantly string to predominantly choir, and then back. On top of this, you might get a real singer to sing a simple phrase or sustained note. Pseudoethnic 'nonsense' languages are currently quite popular. Because you're aiming for a stand-alone texture pad that you can play from one key, you can opt to either make everything play the same note, or you can create a chord. In the latter case, it's an idea to create both major and minor versions, which will give you more flexibility in the types of musical structure where you can use the sample.

You can often give a pad a more haunting sound by including bamboo chimes, muted bells, or other gentle percussion in the background, and even if these sound a bit routine when you first record them, you'll be surprised what changes you can make with effects. Used in the background, and soaked in reverb where appropriate, such sounds can really lift a sample out of the ordinary. Similarly, natural environmental sounds such as wind, rain, sea, running water, insect noises, birdsong, and so on, can all help create a mood.

GUITARS

As I said earlier, the electric guitar is a great source of sound. If you have a small practice amp, you could get your guitar to feed back on one note and then record that as part of your layer. Adding a little gentle, slow vibrato can help make the sound more human, and using lots of overdrive and/or compression should ensure that just about any guitar will feed back. Use your fingers to damp any strings not feeding back to make sure they don't join in; the third string is always a good bet for feedback effects. You might also like to experiment with chopping up the drone sounds using a gate triggered from a drum machine or similar rhythmic external source.

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CREATING CUSTOM SAMPLE TEXTURES

▶ If you have an E-bow (an electromagnetic bow that creates indefinite sustain on single notes), you'll find making controlled feedback drones far more predictable; by changing the tone controls on the guitar, amp or recording preamp, you can get a whole range of sounds, from soft flute-like notes (or whale sounds using the vibrato arm), to harmonically rich, eastern-sounding effects. Filter sweeps can be recreated using a simple wah



An e-bow can considerably extend the tonal palette of your electric guitar, yielding some fascinating, almost synth-like evolving tones.

pedal, though an old analogue synth with an external audio input, such as the Sequential Circuits Pro One is rather more versatile. Alternatively, a modern, stand-alone MIDI-controlled filter (such as those from Peavey, Waldorf, or Mutronics) offers creative potential plus the repeatability provided by MIDI control.

EFFECTS & EQ

Having recorded your material, what can you do with it? The simplest effect is EQ — taking the top end off a digital pad can leave it far smoother and more musically useful. Guitar preamps with speaker simulators are also good for smoothing out sounds, and if you want to be more radical, you can process your recorded sounds through a fuzz box and then use EQ to shape whatever comes out!

In one of my own experiments, I layered eight different E-bow sustained notes playing root, octaves and fifths, used a guitar preamp with a speaker simulator to smooth off the rough edges, and then added an effect from my Quadraverb, which combined chorus, stereo delay and a long reverb. The eerie chordal drone that resulted was surprisingly rich and dynamic — unlike synth chords, you can hear the various guitar notes drifting in phase — and because the level is nominally constant, it's also quite easy to achieve a seamless crossfade loop.

Where sounds are less even in level, a healthy dose of compression before sampling makes looping easier, and if there are just one or two elements in your layering scheme that are causing trouble, try compressing just these rather than the whole sample.

SHOCK TREATMENTS

- REVERB & ECHO: Long, grainy reverbs and dancing stereo echoes are often very effective in giving a sound an unearthly feel, and to really create a sense of distance, you can leave out the original sound altogether and just use the effects output. However, there's more to effects than reverb, chorus and delay. Only a few budget effects units include ring modulation; the Sony HRMP5, the Korg AX30G and the Alesis Quadraverb are some of those that do have it, and though the operation on the latter is fairly limited, it can still produce some unusual sci-fi effects.
- RESONATOR EFFECTS: The other Quadraverb effect I really like is the Resonator program, which comprises five delay lines, each with a very short delay time and variable feedback. With the feedback turned up to 99, the resonators ring whenever a percussive sound is played in, and the pitch of the ringing depends on the delay time set up. Now comes the interesting bit: the pitch of the resonators may be controlled via a MIDI keyboard so that, for example, a drum part would set the resonators ringing to sound like a chord of up to five notes. Subjectively, the result has much in common with the vocoder, another of my favourite toys. Any sound with a percussive element can be given a completely new character, and even harmonically rich pad sounds produce good results, with some notes being subdued and others rising mysteriously out of the background whenever they coincide with the resonator pitches. Drum or percussion loops also make good source material and you can play any MIDI note or chord you like to control the resonators — providing it doesn't have more notes than your effects unit has resonators. The Lexicon PCM70 and 80 also have Resonator programs.
- VOCODERS: A vocoder can also be used to give one instrument the character of another. The usual example is modulating a keyboard pad using the human voice, but you can just as easily modulate drums using a harmonically-rich keyboard pad or modulate one continuous sound with a completely different sound. A vocoder uses the frequency spectrum of one sound (the Modulator input) to filter the other (the Carrier input), so using a modulation source that changes over time produces the best results.
- FLANGING: This is yet another common effect that works well in samples, because you can use it on selected layers of the sample to create movement. For example, over your basic evolving sound, you could add something like heavily delayed or reverbed wind chimes, shakers or oddball percussion, then flange the result to create movement. Long, bright reverbs work well with flangers, as there are plenty of harmonics to pick out.

HARD DISK EDITING

Most professional sample authors use hard disk editing systems because they provide a convenient

CIRCLE LINES: HOW RING MODULATION WORKS

A ring modulator, so called because it was originally produced using a circuit composed of a ring of diodes, is a device that processes two input signals to produce a new signal corresponding to the sum and difference of the input frequencies. If you put in two sine waves, then you'd simply get two new pitches out, but if you used harmonically rich waveforms, you'd get a whole new spectrum of harmonics not related to the original input in any musical way. The classic example here is ring-modulating the human voice with a 50 or 60Hz sine wave - the result is a Dalek. The Alesis Quadraverb has a built-in sine wave oscillator which can be varied up to 300Hz, but unlike most ring modulators, there's independent control over the level of the sum signal and the difference signal. What you get out of a ring modulator is largely a matter of experiment, but percussion and bell sounds can be altered in drastic ways to create new noises that bear no resemblance at all to the original.

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DREATING CUSTOM SAMPLE TEXTURES

way of editing the basic sample before piping it into the sampler — a multitrack system with level automation offers the most flexibility in moving and mixing the various elements within a sound. However, even with a stereo audio editor, you can start with a two-minute texture, decide which 30 seconds is best, select your loop points and even reverse



Want to sound like a Cylon off Battlestar Galactica? The vocoder on the Boss SE70/SE50 can help you (and make your samples sound much more interesting tool.

the entire sound if you want to. Finally, the sample level can be given some overall EQ, if required, and then normalised to make the best use of the sampler's dynamic range. Similar facilities are available using 'Audio + MIDI' sequencers, though it's obviously best to use a system which saves the file in a format that can be transferred into your sampler digitally, either via MIDI (which is painfully slow), or

If you don't have access to a hard disk system, you can load the sample into your sampler via the analogue audio inputs — you won't lose much in the way of sound quality. It's usually best to mix samples onto DAT and then have a

separate session for loading and editing the finished samples. Once in the sampler, you can decide what sort of attack to give the sample, apply dynamic filtering if your sampler has the capability, and optimise those loop points. Again, the pro would use a software sample editor to make the job easier, but providing you have a little patience, you can do all that needs to be done from the sampler's front panel.

"Everyday sounds such as washing machines, vacuum cleaners and power tools take on quite a different timbre when played back at different speeds."

SOUNDS INSPIRATIONAL

As you can imagine, there are endless things to try, but layering natural with unnatural sounds, and then using effects to modify the basic character of the sound, is a good way to go. You don't need banks of synths or racks of effects - all that's required is a few basic bits of gear, a sampler, and plenty of imagination. Just remember not to include any copyright material

in your own samples if you're looking for a commercial release. Instead, keep your ears open for unusual sounds the gurgling from the back of the freezer, the creak of an iron gate, or the boom of a metal garage door. Even top film designers rely on everyday objects for their inspiration the laser guns for Star Wars came from hitting a steel pylon support cable, not from a synth, while that famous TARDIS take-off noise, familiar to all Doctor Who fans, started life as a key being run down a piano string! (If you call Assistant Editor Matt Bell, he'll probably be able to tell you whether it was a Yale or a Chubb key, and probably what the serial number was too!).

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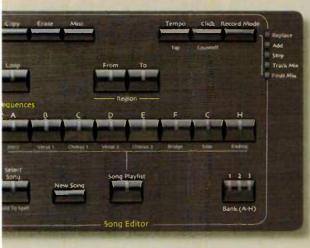
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ACCESS Modern synths are

Modern synths are undeniably powerful, but for many users that power remains locked in by non-intuitive digital parameter access editing. PAUL WHITE and PAUL NAGLE check out a pair of knobequipped hardware programmers that could reveal hidden depths for Microwave and Matrix 1000 owners.

all Areas?

ACCESS MICROWAVE & MATRIX 1000 PROGRAMMERS

hen the technological changes of the '80s made digital access, LCDs and alpha dials the norm for editing synthesizers, it seemed that the ability to be truly creative was becoming submerged under dozens of pages of software and a multitude of multi-function buttons. For many seasoned synth programmers, the prospect of creating or tailoring sounds by altering a single parameter at once was a painful process when compared to the control offered by a handful of knobs, sliders and switches. And with the everimproving quality of factory sounds and the blossoming industry of third-party patches, so the perceived need to be original diminished. These days it's almost amusing that so many modern synths try desperately to recapture the magic of the instruments they were supposed to consign to the scrap heap. Perhaps the old ways had something to offer after all?

Of the few companies still providing 'hands on knobs' facilities, Roland found probably the most successful compromise: hardware programmers. Bought separately to the instrument itself, these were small boxes laden with physical

controls for the synth. They were an optional extra which allowed the musician to have the best of both worlds — a practice all too rare. Now a German company, Access MIDI Tools, have spotted this gap in the market and have produced hardware controllers for a couple of modern classic instruments: the Waldorf Microwave and the Oberheim Matrix 1000.

MICROWAVE PROGRAMMER

The Microwave programmer is small (355 x 185 x 666mm), weighs 1500g, and requires an external 9V power supply (not provided). Its construction is solid, and the feel of the pots reassuringly smooth and positive. It may be incorporated into any system, slotting into the MIDI chain after the main keyboard but before any computer/sequencer, thus allowing all synth edits to be recorded. Alternatively, it could be connected directly between keyboard and Microwave, or patched in via a MIDI patchbay when required. All incoming MIDI information is merged with the System Exclusive data generated by the pots and switches. On power-up, it defaults to 'lock' mode, which effectively disables all functionality, its output becoming a simple MIDI

Thru. This prevents accidental production of SysEx, whilst also improving MIDI throughput.

IN USE

As the programmer features only 26 rotary pots and nine on/off switches. Access have had to make some tough choices about which programming options to include. Three of the switches render some of the the controls multi-functional, but considering that a typical software editor for the Microwave could have more than 140 separate objects just to perform voice edits (more when wavetable creation, multi mode, user tuning and velocity tables are included), some compromises have inevitably been made for the purposes of this unit. The most obvious of these are in the modulation and envelope departments. No routings or amounts



can be set for the two LFOs without turning to the Microwave itself: you can alter their rate and shape but that's all. This is probably due to the synth's extensive modulation matrix, but I would have liked some of the more obvious routings, such as VCF modulation and vibrato, hard-wired. The filter and volume envelopes fare slightly better but share the same knobs as the 8-stage wave envelope. Having taken time to create a complex wavetable sweep, it is annoying to lose the settings when you switch to tweak the filter or amplifier ADSR. Any subsequent return to your wave envelope is a laborious process, and the only real solution to the problem would be the provision of dedicated controls, with whatever price increase this would entail.

The control panel is laid out like a conventional analogue synth, with oscillators (complete with wave and noise source mixer, detune and transpose), filter and output settings, complemented by the more esoteric wavetable selection, wave envelope amount and wavetable start position. A useful pointer to the Access design philosophy is the inclusion of three buttons: TRI, SQU and SAW, which select these waveforms from the current table but also turn off any wavetable modulation. This is useful partly as a preliminary to experimentation with the wave envelope, but also because it effectively transforms the Microwave into a straightforward analogue-style synth. It is then a simple matter to produce all kinds of traditional analogue sounds very quickly, using filter cutoff, resonance, envelope amount and ADSR. I created many worthwhile patches during the review period using just this

method. The downside of this simplification is that it becomes easy to overlook the Microwave's many other options, which you have to edit using the synth's front panel, as before. Actually, this is the biggest danger of using this programmer: you might discover that the majority of your new sounds could easily have been produced by a lesser instrument, with many of the Microwave's unique properties remaining hidden.

All is not lost, though. Wavetable Selection, when combined with the Startwave parameter, is perhaps the programmer's most creative and powerful function — the ease of access to both the start position within the table and the table itself provides unparalleled control over the Microwave's unique synthesis method. Unfortunately, the LCD is not updated as you select new tables, so if you want to see the new values you must scroll to the appropriate page, then hit Enter for each change you make. Yuck! Using the three function buttons, wavetables are selected from three sets: internal factory; user and card; and the Microwave's new version 2.0 tables. I was unable to test this latter option, as the Microwave supplied for the review was pre-2.0.

Six of the programmer's rotary pots have a notched '0' position at 12 o'clock. These pots are (sensibly) Wave 1&2 Env Amounts, Oscillator 1&2 detune, VCF Env amount and VCF Keyboard amount, which are all designed to have negative or positive values. Instrument Select Mode is a unique feature of the Access unit which could easily be overlooked, especially with its minimal

pros & cons

PROGRAMMER £369

pros

- Knobs provide quick access to many basic functions.
- Solid construction.
- SysEx data can be recorded into a sequencer.

cons

- LCD does not update as values change.
- Still necessary to use on-board editing for all but the most simple functions.
- Wave envelope shares knobs with conventional filter and amplifier ADSR.
- PSU not provided as standard.

summary

A worthy attempt but lacking in sufficient options to fully exploit the full wattage of the Microwave. More knobs is the only answer.



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ACCESS MICROWAVE & MATRIX 1000 PROGRAMMERS





 coverage in the manual. It permits editing of individual patches in a Multi (up to eight patches, each with their own output routings, MIDI channels, and so on), but best of all, allows you to work on multiple instruments simultaneously, resulting in some gargantuan layered patches achievable by no other means. You need to remember to store the patches afterwards, but fear not — the Microwave's eight edit buffers will always come to your rescue.

CONCLUSION

Whilst I applaud all efforts to make modern synthesizers more accessible, the Access Microwave Programmer is only a partial solution to the complexities of mastering this powerful instrument. Its main strengths are in 'quick and dirty' patch editing, bringing conventional synthesis easily within reach. Unfortunately, its handling of wavetable synthesis merely scratches the surface of what is possible, and its inability to tackle the complex modulation possibilities on offer is a lost opportunity. Nevertheless, it provides a tantalising glimpse of what's possible and could certainly help a new Microwave user create some devastating patches very quickly, or provide a fresh perspective for even a long-time user.

Although initially disappointed with the number

of options on offer, I did come to appreciate them in combination with the synth itself. I think it's true to say that editing several instruments at once in multi mode produced some of the biggest sounds I have ever heard. If you are prepared to accept the limitations of using the programmer as your hammer and the synth itself to chisel out all the subtle nuances, then this unit could make you very happy. Personally, I think Access MIDI Tools have shown us what all electronic instruments really need — control! Paul Nagle

MATRIX 1000 PROGRAMMER

Oberheim's Matrix 1000 is a hugely powerful, 6-voice analogue synth, but because it can't be edited from the front panel, most users rely on the wealth of presets included with the machine. As a Matrix 1000 owner myself. I can confirm that once you've called up a preset, you invariably get the urge to tweak it a little, but without some form of editor, you're stuck. If you have an editor/librarian computer package that includes a module for the Matrix 1000, you can go ahead and customise your patches, but for the non-computer user, the Matrix 1000 has been, until now, a closed book.

The Matrix MIDI Programmer is a dedicated Matrix 1000 hardware editor (though it can be switched to talk to Matrix 6s and 6Rs too), taking the form of a compact desktop control unit adorned with various knobs and buttons. It has a MIDI In to allow you to merge your keyboard data with the SysEx data generated by the editor, and a MIDI Out to send the combined data stream to the synth. As the Matrix 1000 is one of those synths that doesn't have a SysEx device ID, you can only connect one Matrix 1000 at a time when editing — I have two of the things but found that simply switching one of them off did the trick.

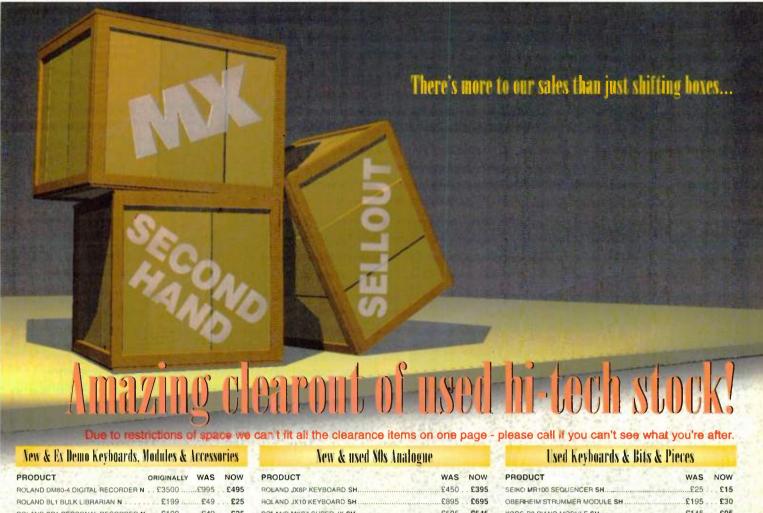
Behind the deceptively simple 1U facade of the Matrix 1000 lies a powerful synth based on the far more expensive Matrix 6, but if you were hoping this editor would allow you to create monster Matrix 6-style patches from scratch, I'm afraid that

MATRIX 1000 EDITABLE PARAMETERS

- · LF01 Rate/Shape
- · LF02 Rate/Shape
- LF01 Amplitude/VCF FM Amount
- . LFO2 Amplitude/FM Env Amount
- DC01 Frequency
- Shape
- · Pulse Width
- · Sync On/Off
- · Wave On/Off
- Pulse On/Off

- DC02 Frequency
- Shape
- · Pulse Width
- · Noise On/Off
- · Wave On/Off
- Pulse On/Off
- . DCO mix
- VCF Cutoff Resonance
- Envelope Amount/Envelope
- **Amount by Velocity**
- Keyboard Track On/Off

- · Env 1 Attack
- Env 1 Decay
- Fny 1 Sustain
- Env 1 Release
- Envelope Select Env 1/Env2
- · Env 2/3 Attack
- Env 2/3 Decay
- Env 2/3 Sustain
- Env 2/3 Release
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ore years ago than I care to remember, I was introduced to multitrack recording after reading a leaflet issued by Tascam. It boldly announced the imminent release of their 144 Portastudio, the world's first affordable 4-track recorder based around the humble compact cassette. Some time after this groundbreaking event, I managed to save enough money to buy the by-then-upgraded 244 machine. I carried this home from the shop with my flares flapping in the breeze, sure in the knowledge that it would rocket me to recording stardom.

Years on, after cutting my teeth on these 4-track wonders (and still no stardom), portastudios and

rear panel and allows options of on, off and sync (which disables the dbx on channel 4 only). Although the 424 MkII's grey casing is an all-plastic affair, the overall look is very smart and construction seems reassuringly robust. The only slight reservation I have is the feel of the rotary pots, which appear to be almost loose in the casework because of the way they are mounted. However, they did not prove problematic in use and were fairly even in feel.

INPUT CHANNELS

Signals enter the 424's mixer section either through the four balanced mic inputs, or via the unbalanced jacks on the rear panel. The

Porta Power!

With the advent of digital portastudios, manufacturers are busily revamping their analogue machines and packing them full of more features.

ANDY DAVIES checks out Tascam's latest cherry...

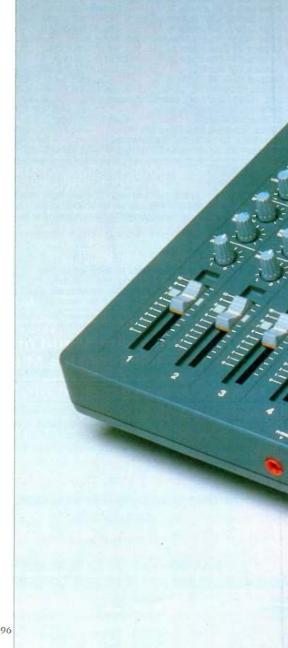
TASCAM PORTASTUDIO 424 MKII

their clones seem to be as popular as ever. For anyone new to recording they offer a user-friendly, all-in-one introduction to the multitrack process, and for the more experienced user a form of musical notepad to try out ideas. Many companies have come and gone in this introductory sector of the market [anyone remember the Cutec, Clarion and Amstrad 4-trackers? - Ed.], where competition is at its most fierce. However, the Tascam name is still considered synonymous with the portastudio concept (they invented it, after all) and new models keep emerging in different guises on a regular basis. The newest kid on the block is the Portastudio 424 MkII, an upgraded and improved version of the earlier 424.

DEJA VU?

Although the cassette multitracker has taken many diverse forms, the basic shape and layout has become more or less standardised. The 424 is no different in this respect, following the tradition of a standalone unit, with the controls roughly divided into two equal areas. On the left-hand side is the mixer section, with four fully-featured mono channels and the bonus of two stereo channels; the latter offer simple level controls only, but are welcome just the same. To the right is located the cassette door, associated transport controls and the display area, which is reasonably big, bright and informative. As an aside, on the rear panel, Tascam have fitted a pair of Sub In sockets to receive signals from an external mixer, making the 424's integration within a sequencing setup even easier.

Most of the various ins and outs are positioned on a sloping rear panel, which makes access easy for any repatching that may be necessary during a session. The only sockets contravening this are the four tape track outputs, stationed on the very rear panel, and a headphone and remote punch in/out socket, which are sensibly placed on the front edge. A 3-position switch, for the onboard dbx noise reduction system, is also located on the



informative owner's manual warns you not to use both of these inputs at the same time, but mysteriously omits to tell you what would happen if you did! As is now convention, the signals then pass through the input gain control, which Tascam prefer to call a 'trim'. It is here that the first of the MkII upgrades appear in the form of improved mic input circuitry, and indeed noise only starts to rear its ugly head when the Trim controls are in the last quarter of their travel. Directly below this is a 3-way input routing switch, which allows selection between mic/line, channel off or tape return, for monitoring of the final mix.

The signal then passes through the improved EQ section, which consists of a high shelving control at 10kHz, a sweep mid section centred from 250Hz to 5kHz, and a fixed low frequency control at 100Hz. These frequencies seem to be well chosen and fairly flexible, allowing you to get at most areas for general tonal tweaking. The three gain controls are all centre-detented and offer a generous amount of cut or boost.

Next up are a pair of auxiliary circuits. Both Effects 1 and 2 have separate send controls, but unfortunately no dedicated return sockets. This

means tying up those extra stereo inputs mentioned earlier, although I'd rather do that than not have the facility in the first place. Effect 2's send control also doubles as a tape cue (via a dedicated switch) to allow the monitoring of signals coming back from tape when overdubbing.

Last in line is a centre-detented pan control and smooth, but short, fader. As with nearly all cassette multitrackers, the fader tends to be quite abrupt towards the end of its travel, which can lead to a curtailed fade if care is not taken.

MASTER

The simple master section is situated to the left of the tape transport controls and occupies the unused space of the stereo input channels 5-6 and 7-8. Here we find a single stereo master fader, which Tascam have sensibly made longer than those used on the inputs. The various monitor options are also assembled here and include switches to listen to the left and right busses, as well as any signals going to effects send 1 or 2. Finally, an overall volume control is included to adjust the signal level sent to the monitor outputs and headphones.

pros & cons

TASCAM 424 MKII £499

pros

- Plenty of inputs (10 on remix) including four good quality mic ins.
- Varied range of locate and auto features make rehearsal and drop-ins a breeze.
- The price

cons

- Slightly offputting feel to the pots.
- . No others at the price.

summary

Good value for money package which epitomises the 'portastudio' concept — easy and quick to operate, with plenty of flexible features to maximise its creative use.

SOUND ON SOUND



Tascam 424 MkII

"...sound

quality on

even after

bouncing,

remain quite

things

crisp."

the 424 Mkll

is very good;

TRANSPORTATION

Besides the normal cassette transport, counter reset and return-to-zero controls, Tascam have provided a number of locate and auto tape functions, which tend to make life much easier when searching for a specific area on tape. Two locate points can be set up anywhere along the tape path and the machine can be asked to fast-forward or rewind directly to these locations. Pressing the Repeat button, you can even cycle between them to create a playback loop whilst rehearsing a certain part.

If you need to correct a mistake in the middle of a recorded track, it is no longer necessary for nifty footwork to drop in, because there is an automatic facility for doing so. It is wise to rehearse the part that needs replacing and by pressing the Rehearse button, the 424 MkII allows you to set up punch-in/out points, which switch the monitoring from tape signal to 'live' instrument. This allows you to practice the new part without erasing the existing one, until you are ready to record. If you need a lot of practice, like me, the facility can be indefinitely repeated and the pre-roll time is user-definable. When ready, a simple push on the Auto in/out button will then switch any selected tracks into record mode and permanently overwrite the existing gaff.

The 424 MkII will run at both high and low tape speeds, selectable via a front panel switch. For improved recording quality when multitracking, it is advisable to use the 9.5cm/sec setting. The 4.8cm/sec speed should only be used for less critical projects and when listening back to normal cassettes, which of course can be played. Also incorporated within the transport controls is a tape varispeed function, with a generous range of 12% either way.

IN USE

After the initial learning curve necessary to understand the multitrack process, operating a cassette-based machine is a doddle and the 424 MkII is no exception. Once your tape is inserted under the clear perspex door, simply connect a mic, or instrument, to an input channel. Select the channel's Mic/Line switch and set the Pan control to the desired buss (remember left for track 1 and 3, or right for 2 and 4). Place your nominated track into record-ready mode, using the Record function buttons, and set up your monitor section by selecting either left or right from the monitor switches. External effects processors can either be monitored when recording, or printed to tape along with the main signal, by utilising the extra stereo input channels. After setting the recording level with the channel input and master faders, you're ready to go. As with all multitrack machines, it is important to place the newly-recorded track back into safe mode once recording has finished, to prevent accidental erasure.

To overdub, it is necessary to hear tracks already recorded and this can be achieved by

switching to 'tape cue' in the monitor section and turning up the Cue level control on the relevant channels. Once you have finished track-laying, all channels can be set to mix mode and more effects can be added, via the two auxiliary circuits if required. For most users the ability to bounce tracks will be a necessity, with only four available, and this is as easy to accomplish on the 424 MkII as on any other multitracker.

In general, sound quality on the 424 MkII is very good; even after bouncing, things remain quite crisp. As long as you look after the recording levels and use reasonably good quality mics, far more noise is generated by the cassette tape itself than by the electronics. On the subject of tapes, Tascam recommend the use of high bias 'Type II' cassettes — so no cheapies please, it's false economy. The EQ section is quite flexible for a machine of this price, although if pushed it can tend to sound slightly peaky and, because of the tape format, the high frequency control can accentuate tape noise on quiet passages, if care is not taken.

CONCLUSION

We are now truly in the digital age, with hard disk recording offering exceptional sound quality and unlimited creative choice. The downside to this, however, is the fact that the instruction manual for such beasts often weighs more than the product and creativity can sometimes get lost in the technology.

The portastudio, on the other hand, offers a budget platform where ideas can be directly printed to tape, quickly and without the paraphernalia of more upmarket systems. The 424 MkII makes recording even easier, thanks to its locate, rehearsal, and auto in/out features. Musicians wishing to utilise the 424 within a sequencing setup will find the sync facility makes it possible to run sequenced keyboard and drum parts along with guitar and vocal tracks recorded on the 424. By using multitimbral modules, these 'live' tracks could even be returned through the stereo input channels, without recourse to a separate mixer.

It's difficult to find anything to criticise about the 424 Mkll. Yes, it would be nice if there were dedicated effects returns or longer-throw faders. The tape counter display could have been in minutes and seconds, or the EQ section might have featured a bypass switch. But when you consider my first guesstimate price for this unit was £200 higher than the recommended retail, it makes these minor whinges pale into insignificance. All in all, I have to admit that the portastudio concept has come a long way since the days of my old 244.

FLEXI-ROUTING

Tracks are placed into record mode by using their own dedicated Record function switches, located directly above the transport controls. There are three positions on each of the four switches labelled 'direct', 'safe' and 'buss'. Safe is self-explanatory, while the buss setting is the typical arrangement of the left buss carrying signals to tracks 1/3 and the right to tracks 2/4. This would normally restrict the number of simultaneously recordable tracks to two, but Tascam have cunningly included a direct setting, which allows each of the 424 MkII's four inputs to be routed to their corresponding tape tracks, to allow recording on all four tracks at once. All in all, a well thought out and flexible arrangement.



THE ONLY REAL





THE ONLY REAL



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Aphex 104	£ 269	Fostex MN06	£ 49
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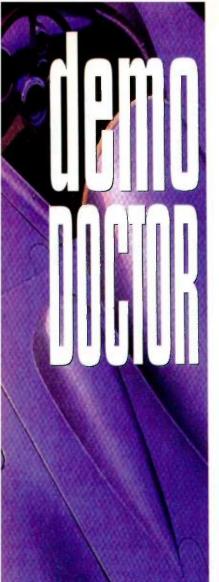


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CANDID

Recording Venue: Home.

Recording Equipment: Fostex B16 16-track, MTR 16:8:2 desk, Atari running Mastertrax, Yamaha FX500 and SPX1000 effects, AKG condenser microphone.

This tape was "recorded in a flat in Edinburgh", writes Duncan Roberts. He also adds that the songs are more suited to the continental market "as many of my influences are French". Well, there's a strong historical link between Scotland and France. but it doesn't often come out in the demos we receive from over the border. It seems to me that there's a strong folk influence, too, in the accordion and fiddle sections of the first song, 'The Bombmaker'. This song swings between definite accordion- and

fiddle-led instrumental sections, and light-rock choruses, where the electric quitar takes the counter-melody to the sung chorus. A clever key change emphasises this movement from one section to the other and keeps the frenetic pace going. The continuity between different parts of the arrangement is provided by acoustic guitar and voice.



Nicki Ross provides the intimate female vocal performance or 'Winona', and her voice blends well with Duncan's when they sing in harmony too. The production is well handled, with a lightweight, almost jazzorientated bit of drumming played into the sequencer from Simmons pads, with minimal (if any) quantisat on. The ride cymbal and brush-hit snare of the Alesis D4 are a good choice and work well with the acoustic bass, vibes following the melody, and synthesized musical saw! The original sound of the production is occasionally given a dynamic

> wallop by some heavily-overdriven quitar chord punctuation. This is mixed just right — you can't tell what it is at first, but after a few listens you can just catch what instrument it is and be surprised!

> Good songs, good production ideas, and nice touches on the mix in places make this Top Tape for the month

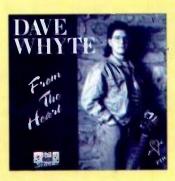
DAVE WHYTE

.....

Recording Venue: Home.

Recording Equipment: Tascam 80-8 recorder, Tascom 644 MIDIStudio, Atari 1040ST running Cubase, Midiman sync box, Boss SE70 effects, AKG C3000 mic, Alesis 3630 compressor, Behringer Ultrafex enhancer, Tannoy monitors, Yameha AX500 power amp.

Dave brings up a few interesting points in his letter about his CD. One is to do with the mastering levels of DATs intended for transfer to CD. His problem was that although the DAT peaks on his tape were recorded to within two or three decibels of clipping, the overall level of the CD seemed to be low. One

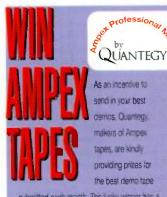


reason for this could be that the average level of the program is too low and that the peaks are way above average. Your average signal level should be above -12db, and higher if possible. One way to achieve this is to use a limiter on the mix (as explained in my book Tips for Recording Musicians), with a threshold set at -2dB on the DAT. This will allow you to master at a higher overall level without overload. Alternatively, be more careful with the recorded sounds as you build up the sound picture, and make sure that there are no instruments which really stick out in the mix. Some compression on recording or even at the mixing stage. can be useful for sounds that are prone to get out of hand. Finally, most digital editing systems have something called 'normalisation', which is useful as a post-production tool to bring up the average signal level

It's fair to say that there are a few spiky guitar sounds on this CD which could easily have provided peak signals. And the backing drums and bass underneath them are pretty heavily

compressed — too much on the snare, about right on the bass and kick drum Aside from this, the production is pretty minimal, with guitar and voice clear in the mix, occasional keyboards, bass and programmed drums. The playing and programming is good, and Dave has a decent, workmanlike voice, though he sounds as though he may have sung some of these songs a few times too many and lost the fire in places. Also the voice could do with some more body in the sound — a slight boost at 500Hz would be a start.

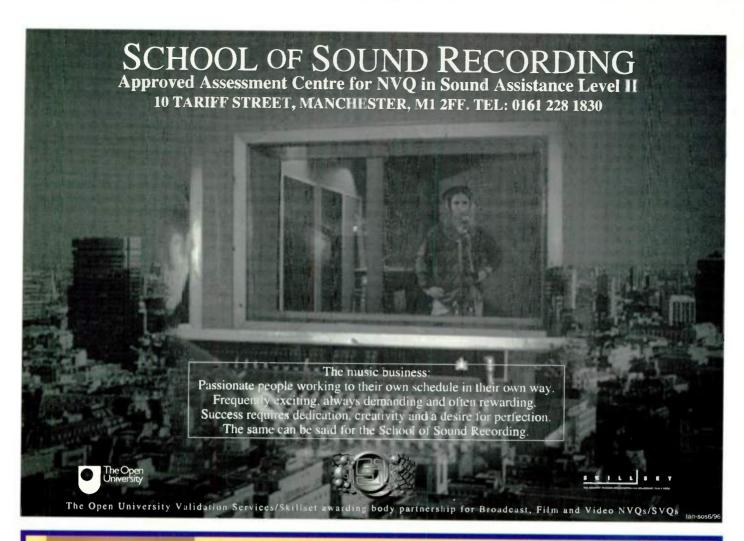
The country-rock tracks on this selffinanced album are decently handled and should do well if they get to the right ears in the business. Some of the choice of covers is questionable, such as 'Don't let me be misunderstood' the Costello version of this Benjamen/Marcus/Galdwell song is a hard act to follow. However, I found myself warming to the lazy swing and twang of 'Johnny B. Goode', a song I normally can't stand — perhaps it was the guitar playing, excellently handled by Dave himself.



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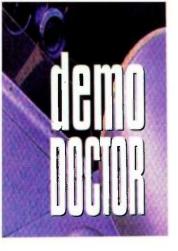
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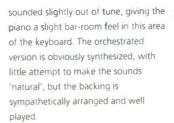
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QUICKIES

All the way from Spain, **RK TOMS'** production, 'El Jardin' features solo acoustic piano on side one, with a synthesized orchestration accompanying the piano on side two. On side one, the sound of the piano has been well recorded but would benefit from slightly more reverb in the mix, although the choice of reverb, a short hall, seems about right as regards decay time and EQ. It's

important, when recording acoustic piano, to make sure that there are no weak notes, and I couldn't spot any problem in this area. However, the 'E' above middle 'C'



KIMBERLEY AND O'NEILL started to record this tape on a Tascam 24-track with Dolby S, but the studio they were working in changed to



ADAT halfway through. In retrospect, I wonder if these two lads are still happy with that decision. Nevertheless, the session struggled to a

conclusion and resulted in the two mixes on this demo. The first is unashamed jingoistic England support. whether on the football, cricket or Rugby pitch. It must be tongue-incheek, as the supporting Colemanball on the cassette cover demonstrates: "Winning doesn't matter as long as you win" (Vinnie Jones) The samples - all great sporting moments or schoolboy patriotism drawn from movies - are appropriate, and the rock backing track thunders along. This is much better than the second track, a slushy ballad that is the musical version of that Euro '96 penalty kick, a palpable miss Still, I'm a Celt, so don't expect me to be sympathetic!

reviewed in other publications, and also played by Kiss FM, so I looked forward to hearing their dance mixes of 'No Control'. The first is definitely a product of the handbag house era,



bearing all the hallmarks bouncy bass line, built-up snare breaks, four-on-thefloor spongy kick, occasional soul strings, sampled vocals

treated with reverb and echo. My feeling was that it was well put together but lacked the real invention of the full mix later on the tape. Here, modulation has been used occasionally on the synthesized chords, with more modulated filter effects creeping in here and there. These are left out of the short mix, for some reason, which then suffers from being too 'safe'. The vocals on the first mix also have too much reverb and not enough echo,

and this places them too deep in the sound picture. In contrast, the second song, a soul ballad, is well handled, with some good singing and clean guitar touches from Alviolent. The heavily-treated vocal ad libs work well on this track too, and all the sounds sit together in the mix. In fact, the production sound is really warm and moody — it's nice to hear something without loads of treble heaped on it for a change.

GOG's tape is another direct-tocassette master, as far as I can judge by the minimal slip of paper accompanying the demo. The quality of the recording is excellent, in terms of both mixing and choice of sounds. After the big, Pink Floyd-style intro, the opening track, 'Stumpy Jumbo', develops into a collage of dance. echoed synth, and guitar with so many effects that it blends seamlessly into the keyboards Echo and modulation are the main effects used on the quitar, but the playing also really allows it to merge into the rest, with echoed, sequencer-style lines in the upper part of the guitar fretboard that sit well against the sleepy flute loops



and phased strings. The movement from this track to the second, 'Man in a Field', is seamless. Sampled crows are kept low but

effective in the mix, and the lone piano notes are left to hang, using copious amounts of reverb. The atmosphere builds, using echoed clean guitar and drone synth in a manner suitable for film and TV soundtracks. Maybe they should think about pursuing this line.

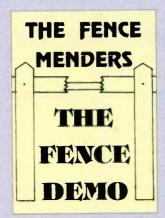
ELEMENT 303 thoughtfully provide a list of sources for their samples, which range from Blackadder to Johnny Ball. The sound of the tape is dark, with the emphasis on a weighty bass drum that's a little overcooked in the mix. Even so, obviously synthesized string and pulse-wave lines provide disturbing melodies that are in sympathy with the mechanistic way the samples are used. You could say that Flement 303 sound like a more modern Kraftwerk in places, because of the use of samples. Lalso like the grainy nature of the open and closed hi-hats, which help give the tape its low-bandwidth, underground feel. Unfortunately, this low-bandwidth element also works against the sound in places, and a little post-production sweetening in the presence area would not spoil the sound.

THE FENCE MENDERS

Recording Venue: Home.

Recording Equipment: Atari 1040 STFM running Cubase v2, Atari ST1040 STE running Replay 16, RAM micro mixer, Alesis Quadraverb GT effects, Yamaha SPX50D effects, Aiwa F220 cassette deck.

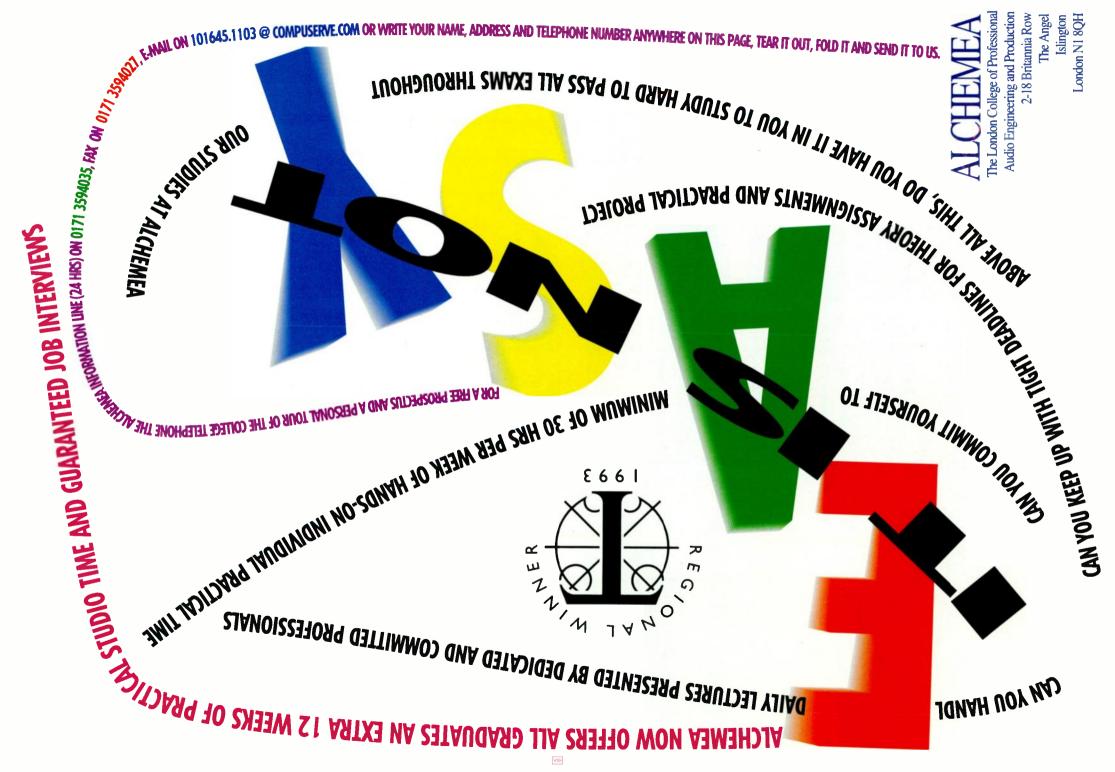
Recording direct to cassette seems to be increasingly popular, at least for sequencer-based systems. The high quality of digital sound sources and lack of any instrumentation that is



likely to introduce high levels of background noise (gurtar amps, for example) are the mair reasons for this. Most readers will probably also say that cost is a big factor, but with the price of digital casiettes and recordable Minidisc players falling, a change to digital mastering is bound to follow. Yet the calibre of some demos mastered to cassette never ceases to amaze me, especially given the vagaries of cassette machine playback!

The Fence Menders tape is a case in point. All the sounds are clear and well balanced, even using minimal mixing equipment, so I guess some use must have been made of the MIDI mixing power of the sequencer The sampled ethnic vocal chants and female soul vocals on the opening track, 'Lamu', are well done and fit nicely over the programmed dance beat An unusual, simple, sixteenthnote bass line is underplayed in the mix, but this is a good thing for the overall sound, which would otherwise have been messy with such a busy part. Some of the distorted quitar power chord samples are a bit abrasive in places, and a little HF cut wouldn't have done any harm Otherwise, it's a well conceived and produced track that is perhaps a minute too long for its own good

'Sky Blue' is the title of the second track, and this one is more laid-back in approach. It relies on a rhythmically echoed, short-release synth sound to bring the track in, and then a carpet of heavy, swelling strings for the main body. The drums are also echoed, but provide occasional dynamically lifting breaks that prevent the track from becoming boring. The last track on side one has the best mix, with a full sound created by a fat bass line and use of echo and reverb on the drum track. You might almost believe that the sound sources were analogue! Again, strings are used, but this time in the form of sampled chords. interspersed with atmospheric pad chords __



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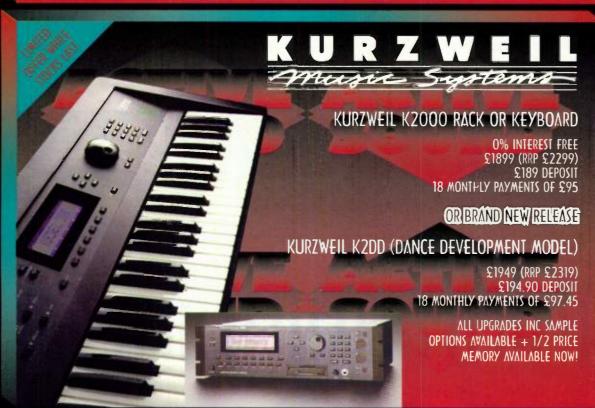
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Planet Rock

ROLAND JUPITER 6 ANALOGUE POLYSYNTH

On its release in the mid-'80s this characterful synth was overlooked by many in favour of its better-known brother, the Jupiter 8, yet it still has much to offer. STEPHEN BENNETT does a spot of space exploration...

think it was the mid '80s. I had just given up my job and was about to try and break into the music business. I had always had a soft spot for Roland synthesizers, even going so far as to make an external case for my Wasp and painting 'ROLAND', in the company typeface, on the back. (I spelled it 'RONALD' but no one noticed). So it was 1985, or thereabouts, I had six hundred hard-earned pounds pressed against my thigh and I was going to buy a Roland synthesizer. Unfortunately, it wasn't the one described in this article.

I went in, paid out the dosh for the cheaper machine, and then spent the next two hours playing the Jupiter 6. It was a sort of cutdown Jupiter 8, but to my eyes it looked even better, and to my ears, sounded just as good.

Now, it's 10 years on, and I'm looking over my monitor at the Jupiter 6 sitting on my keyboard rack. Physically, it's impressive, about four feet long and one and a half feet wide, and covered in sliders, knobs and flashing lights. Having sold the tape machines and mixing desks in my studio, the Jupiter 6 is the only 'wow!' factor I have left to impress new clients.

SIMPLY POWERFUL

The Jupiter 6 is a simple yet powerful analogue synth. As its name implies, it's a 6-voice polyphonic machine with 12 oscillators, and it fell just below the Jupiter 8 in the Roland product line. Unlike the Jupiter 8, however, it has MIDI. No-one quite knew what to do with MIDI in 1985, and the Jupiter 6's limited specifications reflect this. Fortunately, these days there are one or two updates available from Roland and third parties.

All the synth's parameters are accessible from the front panel via sliders and switches. Some of these are the typical Roland 'LED-in-aswitch' types, but on the Jupiter 6 they're much more visible than on newer Roland synths. The other push-buttons are small, lego-like widgets with an internal, gently-lit red neon. The synth can store 48 patches in six banks of eight and as these are selected, the red neons change to their new settings. This looks brilliant!

A patch is the basic sound unit on the Jupiter 6 and is made up of filter settings, oscillator waveforms, envelope generator parameters, and so on. The next level up is Patch Preset mode, where you access functions such as keyboard splitting and arpeggiator programming. All parameters

except those on the performance panel (such as pitch-bend and LFO2), can be stored within the synth.

INTUITIVE PROGRAMMING

The Jupiter 6 is a very intuitive synthesizer to program. You can either choose an existing patch to modify, or go into manual mode and start from scratch. In manual mode, the sliders and buttons work in 'real time', their positions reflecting the actual settings in the synthesizer. This can be the source of some lovely accidental sounds, derived from random tweaks performed on existing patches. Editing an existing patch is slightly different. The slider position does not necessarily reflect the actual position stored in the synth, and when the

SECOND TIME LUCKY: USED JUPITERS

A mint-condition Jupiter 6 will probably set you back between £600 and £650 today, against a release price of around £2000. If you're looking to buy a second-hand Jupiter, check obvious stuff first, such as whether all the sliders work, and make sure that the machine looks in good condition. The Jupiter 6 is very well built, and if it looks scarred, it's probably taken quite a beating. The only problem I had with mine was that the internal battery, which

maintains the patches, failed. I rang Roland. they sent me a battery, and I fixed it myself. This instrument is more than 10 years old, after all, and the manuals do warn that the battery will only last this long. The machine takes about five minutes to warm up, and during this period, the oscillators can sound out of tune. If, after this time, the Auto Tune button doesn't bring them into line, just walk away - or re-negotiate the price!

slider is moved, nothing will happen until you reach the stored value. When this is reached, the slider becomes active and the parameter can be adjusted, then the patch light flashes to indicate that an edit has been performed.



MIDI UPGRADES

The original MIDI specification of the Jupiter 6 was very primitive. It could only respond to MIDI note on/off information and Patch Preset changes — not the patches themselves - and the synth was also in permanent omni-on mode. Roland UK (01792 702701) still supply an upgrade which allows you to set individual MIDI channel reception, though it loses this setting on power down. Jupiter 6 owners simply have to send £15 to Roland; they send you the new ROM, and if you return your old System ROM to them, they send

you £7.50 back! So the upgrade essentially costs as little as £7.50. In addition, American company Synthcom Systems have developed a MIDI upgrade which provides numerous improvements, including local on and off; patch dumping over MIDI; MIDI SysEx control of front panel buttons and sliders, excluding pitch bender and master volume control: assignment of various MIDI controllers to sliders; transmission of arpeggio notes over MIDI; and sync'ing the arpeggiator to MIDI Clock. Other new arpeggiator

features provided by the mod include additional time divisions and programmable arpeggio rhythms. Contact Synthcom Systems at 16275 NW Schendel, Unit E, Beaverton, Oregon 97006 USA. email: root@synthcom.com.

These upgrades are provided on an easily-fitted chip. Just remember to earth yourselves before you touch any semi-conductors, and don't bend the pins! The Jupiter 6 is very well built and was designed with servicing in mind, so it comes apart easily. Bear in mind, though, that opening the synth will void any warranty you may have.

There's no parameter value display but it's not really needed — ears are enough! Patches can then be stored, and there's the usual memory protection switch to make sure they stay stored. Externally, patches can only be dumped to cassette tape — no SysEx here (see 'MIDI Upgrades' box, though).

FINE FEATURES

It would be a pointless exercise to go through all the Jupiter 6's parameters here, but I'll single out some of the most noteworthy. The oscillators are voltage controlled (VCO) and are very stable, with a warm tonal quality. They provide four waveforms, and three can be used at the same time. They can be modulated separately by the LFO, sync'd together for those searing lead sounds, or cross-modulated for FM-type clangs.

"In Unison mode, all 12 of the oscillators are stacked and detuned, for a monster monosynth noise."

The two envelope generators are of the ADSR type, with either routable to the VCF (Voltage Controlled Filter), Envelope 1 routable to the VCO Modulation or Cross Modulation controls and Envelope 2 routable to the VCA (Voltage Controlled Amplifier). The filter itself is very flexible, with a choice of high-, low- or band-pass types with frequency and self-oscillating resonance. It's a typical Roland analogue filter, clean and versatile. If you really want the filter sounds of an Oberheim or Moog then the JP6 is, perhaps, not for you. In general, the synth is a fully specified polysynth of the period and follows

the facilities and signal path laid out in early polysynths such as the Sequential Prophet 5.

Jupiter 6 patches can be organised into Patch Presets, as mentioned at the start of this article. There are 32 of these, which are similar in function to 'Performances' on some modern synths. A Patch Preset can consist of up to two patches, which can be split across the keyboard in various ways, but not layered. Portamento and glissando can be applied, and there are various key modes. With these, you can play the Jupiter 6 polyphonically; in solo mode, where it acts as a monosynth (great for bass and lead lines); and in unison mode, where all 12 of the oscillators are stacked and detuned, for a monster monosynth noise. The Jupiter 6 has a powerful bass end, so watch your speakers!

The rather nice arpeggiator provides an arpeggio rate control, up and/or down buttons, and a range of up to four octaves. There's also a hold button, so you can go and fiddle with something else while the Jupiter 6 arpeggiates away. The arpeggiator can also be triggered by a (non-MIDI) clock input.

The performance panel is perhaps the weakest part of the synth. It has the usual Roland bend lever (love 'em or hate 'em) but the modulation (LFO2) is a separate momentary on/off push button. Neither bend or modulation are received or transmitted over

MIDI. On the plus side, each VCO can be bent separately and the filter can be swept with the bender.

OUT OF THIS WORLD

Before I got the Jupiter 6, my main experience of analogue polysynths was with the likes of the Roland JX3P and the Cheetah MS6. Although both sounded fine to my ears, I was unaware at the time of the vast superiority of the Jupiter 6's output. It's not easy to put this difference in quality into words. The bass is deeper, and the sounds stand out more in a mix — it's just class!

The Jupiter 6 is perfectly capable of rich whooshes and strings without the benefit of external effects — except, perhaps, a little reverb. The flexible filter, however, makes the production of 'thinner' sounds a cinch. Unlike

"The Jupiter 6 has a powerful bass end, so watch your speakers!"

the Oberheims and Prophets which, to my ears, sound full and fat all the time, the Jupiter 6 can be coaxed into producing techno timbres and ethereal lead lines.

If you like the Roland sound and want an analogue poly, the Jupiter 6 is highly recommended. It's cheaper than the Jupiter 8, has MIDI built in, and Roland still have spares and upgrades available in the UK. Its competitors, the Oberheims, Moogs and Sequentials, are much more of an unknown quantity as far as maintenance and upgrades are concerned. For me, newer synths just don't cut it in terms of quality of sounds, and no rackmount anonymity is going to compete with the sheer pose value of the Roland Jupiter 6.

JUPITER 6 SPECIFICATION

KEYBOARD	61 key
KEY MODE	Split 4-2, Split 2-4, Whole
VC01	Waveforms: Sawtooth, Triangle, Pulse, Square; Range: 32', 16', 8', 2' with chromatic adjustment; Cross Mod: ENV1, Manual
VC02	Waveforms: Sawtooth, Triangle, Pulse, Noise; Range: 32', 16', 8', 2' with chromatic adjustment plus high and low extension; Tune: +/-50 cent
SYNC	VC01-VC02 or VC02-VC01
VCO MOD	LFO & ENV1 amount; VCO1 & VCO2 selectors
CROSS MOD	Manual & ENV1 amount
PWM	Pulse Width: 50%-0%; PWM Select: ENV1 or LFO
VCF	Mode: LPF/24dB, HPF/24dB, BPF/12dB; Cutoff Freq: 5Hz-30kHz; Resonance: Peak Gain 15dB; ENV selector; ENV, LFO & Key Follow amounts
VCA	ENV2 & LFO Level
ENVI & 2	Attack Time (Max 18s); Decay Time (Max 20s); Sustain Level; Release Time (Max 20s); Key Follow (0-120%); Polarity selector (ENV1 only)
LF01	Waveform: triangle, sawtooth, square, random; Rate: 0.04-100Hz (0.04-400Hz for Random waveform); Delay Time: 0-2s
LF02	VCO/VCF amount; Rate: 1-10Hz; Rise time: 50ms-1s



tweaks made from the front panel controls can be recorded and reproduced over MIDI. For finer control, almost every DrumStation voice generation parameter has its own MIDI controller, allowing you to alter these apparently simple sounds with just a few MIDI controller messages.

Offenng an impressive compliment of six individual audio

outputs. the DrumStation could form an impressive addition to your MIDI setup — and as luck would have it. SOS happen to be giving one away in this month's competition. To enter, have a stab at the simple questions on the form below, and use your razor-sharp minds to come up with a tiebreaker that exhibits an eloquence as yet unheard of in, well, most SOS competitions, anyway. When complete, envelop the form in an appropriate holder of good quality paper, and affix the higher right-hand comer of the latter with a finlly-edged, sticky-backed image of Her Majesty.

Thereafter, launch the envelope such that it glides through the rectangular portal atop the postal collection receptacle nearest your domicile, with the avowed intention of its contents arriving with the stout yeomen of the SOS office no later than the closing date: **Friday, October 4th**. Dead easy, really.

Prize kindly donated by Novation (01628 828888).

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NOVATION DrumStation

Drum Synth Module

Ithough the sounds of the Roland **R808 and 909 Rhythm Composers exude almost universal appeal, they have, sadly, long lince passed into the realms of the absurdly unaffordable for most people. Earlier this year, Novation sought to remedy this problem by releasing the DrumStation. Utilising a combination of the latest Analogue Sound Modelling (ASM) techniques and high-quality samples of the original sounds, this convenient TU rack module makes 808 and 90% sounds available at a price lower than you might pay today for just one of the original machines.

The DrumStation is fully MIDI-compatible, and offers a staggening degree of control over the drum voice: from its front panel, including the pitch, attack and decay of many of the sounds. Furthermore, all I ve

QUESTIONS

The Novation DrumStation contains sounds derived from which drum machines?

- a Emu SP1000 and Ro and TP606
- b Alesis DM5 and Boss DR550 Mkll
- c Roland TR808 and TR909
- d Your mum's saucepans (plu- lid 'cymbals')

2. What sound modelling technology is employed to recreate the DrumStation's vintage voices?

- a ASM Analogue Signal Monitoring
- b ASM Analogue Sound Modelling
- c ASM Abyss nian School Of Motoning
- d ASM Advanced Saucepan Modeling

3. Which of the following features does the DrumStation not possess?

- a Teak handle and solid copper bottom
- b Easy-to-use front panel controls
- c Full MIDI compatibility
- d Six individual audio outputs

4. What would you almost certainly not use a DrumStation for?

- a Killer rhythm tracks
- t. As a cheaper alternative to a TR808
- c Recreating vintage drum sounds under MIDI control
- d Mixing condiments to create a barbecue sauce.

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	TIE-BREAKEK
other than those Your answer ma sample CDs, oth	esign an electronic drum unit containing sounds from the TR808/909, which would you choose? By include the drum sounds from real players' kits, ther drum machines, or indeed anything else if it'll make you win — provided it's not more than 30
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ROLAND \$C55 Sound Canvas, as new, still boxed, unwanted gift £250 ☎ Neil 01384 838938

ROLAND SH101 cared for like a baby, but no instructions, £175 ono Patrick 01491 872102.

ROLAND SH1000 analogue synth, average condition, with hard case, £130 ono; SH101, £250 ono; International Musician mags, 1984 onwards, £50 ono # Mark 01782 849019

ROLAND U20 vgc, heavy duty custom built flight case, but not gigged1, £395 ono

Richard 0181 366 4108

ROLAND U220 multitimbral sound module, excellent condition with manual, £320. \$\pi\$ Greg 01457 870595 (Manchester).

SEQUENTIAL PROPHET 5, Control Synthesis Deep Bass 9, Mackie 1202 mixer, Sony TCD D7 DAT, Steinberg Cubase V3, Atari STE 1Mb, Ultimate Support A-frame keyboard stand Offers. = 0113 263 3179

TECHNICS KN3000 superb home keyboard, never used due to illness, £1795 ono. ☎ Paul 01380 830828

YAMAHA CS70M dual channel polyphonic analogue synth, complete with voice cards and manuals. Classic keyboard, good condition. # Duncan 0589 148868 (London).

YAMAHA DX5, like two DX7s with 76-note keyboard, includes owners manual and 2 ROMs, £350. ★ 01274 620004 (Bradford)

YAMAHA MU50 synth sound module, 737 sounds, 22 kits, 3 effects sections, 160 performances, GM/XG etc, as new, £270 & 01933 678608. YAMAHA PF100 piano, £800 ono; Hammond B200 with Leslie, £700 ono; Yamaha R100, £90 ono & Alistair 01706 843956

YAMAHA PFP100 piano, £699; Roland MC500 sequencer, £249 = 0181 883 8414.

YAMAHA PFP100 digital, weighted 88-note stage piano, stereo samples, many master keyboard functions, as new, £1050 ono. © 01903 694807.

YAMAHA SY77 vgc, combines AWM with FM synthesis, ideal keyboard for keen programmer, £600.

Steve 0116 237 6634.

YAMAHA SY85, £700, Moog Source, £300; Bit 99, £250; Alesis D4 drum rack, £150, XR300 SMPTE sync box, £100. All vgc, boxes, manuals. ♥ Tim 01535 600882 days

YAMAHA W5 synth workstation, vintage board fitted, 76-note keyboard, 100,000 note software style sequencer, really versatile and reliable. Excellent sounds, immaculate condition, boxed, manuals, long warranty.£899. \$\pi\$ 01952 260064

RECORDING

ACES 24-BUSS MIXER 48 inputs, modular, 5-band EQ, 5 aux sends, LED and VU meters, patchbay, prof reliable desk, £1600. Consider p/ex outboard, FX, mics or guitars. © 01482 448767.

AIWA XDS110 DAT machine, full size, 3 motor transport, remote, very little use, good condition, box, manual, £550. © Steve 01273 709029 (Brighton).

AKAI MG614 pro cassette multitrack, with 6-channel mixer, equivalent to Tascam 464, LED metering, digital counter, auto locator, bargain at £345 \$\times\$ Patrick 01491 872102.

AKAI DR4D boxed with manuals, mint condition, £900 ono, Soundcraft Spirit Studio 16-track, 8-buss mixer, boxed with manuals, mint condition, £800 ono \$\pi\$ 01782 610365

AKAI DR4D 4-track hard disc recorder

with MIDI interface, 213Mb hard disk, mint condition, with manual = 0171 251 1920

AKAI STEREO Graphic EQ £65; Yamaha TX812 synth module with editor, 1000s of sounds, £180; Yamaha DR100 reverb, £65; Casio CSM10P piano module £60. All vgc, manuals © 01256 468208

ALESIS 30-BAND GRAPHIC EQ stereo, £130; Alesis 1622 mixer, £330; Trantec 177MHz receiver, £95; Trantec 175MHz receiver, complete system, £235; Technics 7-band stereo EQ/analyser, £75 All as new

Joe 01609 748339 (N Yorks).

ALESIS QUADRAVERB, £200; Digitech Vocalist, £400; Peavey De-Esser, £100; Peavey Parametric EQ, £100. All home use only. \$\tilde{x}\$ Robb 01623 514777, 0115 965 4121 eves (Notts)

ALESIS ADAT 8-track digital recorder in very good condition, £1500, Gibson Epiphone Strat guitar with three hotrail pickups, only £150. = 0114 288 2236.

ALLEN & HEATH GS3V 16:8:2, with MIDI mute and VCA automation, timecode interface and automated software to drive Atari or PC, £1350. © 01428 656178 (Haslemere).

ART SGE II excellent effects, surplus to requirements, £200. = 01752 702139
BEHRINGER PRE-Q 2-channel mic/line
pre-amp, brilliant for stereo recording,
direct to DAT, £160; Tascam 103 3head semi-pro rackmount cassette
deck, light use only, £180. = Oliver
01425 274422 (Hants/Dorset).

BEYERDYNAMIC \$250 wireless mic and receiver Boxed, manuals, never gigged, £350, \$201822 852274.

BOSS RCE10 micro rack digital chorus, as new, cost £120, sell for £45. 22 Patrick 01491 872102

DIGITECH VOCALIST II as new, boxed, £350 # Mick 01788 570195 DRAWMER DF320 noise reduction unit, boxed as new, £275 # 0116 2743108

FOSTEX 160 4-track cassette multitracker, one track faulty but can still be used as sync track, includes 4-track mixer facility, £80 = Gary 0121 445 5274

FOSTEX 280 multitrack, as new, boxed, £390 = 01736871447
FOSTEX 280 4-track and 8-channel

mixer, excellent condition with box and manual, home use only, £300 = Keith 01707 333868 (Herts)

FOSTEX 812 mixer, 12 mic/line and 12 tape/line inputs, six aux inputs, eight sub-groups, very flexible routing, home use only, original packaging and manual, £500 or best offer ♥ 01788 571623 (Midlands)

FOSTEX 2016 LINE MIXER use as 16:2 or two 8.2 mixers, 4 aux, gain & pan, boxed with manual, £160 © 01943 873121

FOSTEX A8 8-track reel to reel, low hours, superb condition, boxed with remote, loom, spare head, rackmount kit, £375, Tascam 34 4-track, £175.

□ 01522 530605

FOSTEX A8 multitrack recorder, vgc, regularly serviced, boxed with manual, £450; Tandberg TD2OA stereo 1/4" recorder, £300; Roland MC202 with manuals, £280. # Phil 01489 577050 (Southampton)

FOSTEX E16 flightcased, £1500; Studiomaster Mixdown Gold 16:8:16:2 with MIDI muting, £950; Tascam 32 quarter-inch open reel, £400; Zonal half-inch alignment test tape, £50 ₪ John 01822 854389

FOSTEX R8 with remote control and 2 eight way looms, As new, boxed with manual £650; JL Cooper PPS100 SMPTE/MIDI synchronizer £120. Both for £750. \$\pi\$ Sean 0171 221 7274.

FOSTEX R8 good condition, manual, £650, Fostex 2016 line mixer, as new, £150, Yamaha RBX 350 bass guitar, £175. © Roger 01450 870225.

FOSTEX M20 2-track quarter inch, centre track for time code, remote control, excellent condition, 20 hours max - offers? © Celfyn 01222 864243 FOSTEX M80 8-track reel to reel, very good condition, home use only, £420 and 01992 560341 (Essex)

FOSTÉX M80 8-track, very good condition, £590; XRI XR300 SMPTE/MTC synchroniser, £90; two Fostex 2.5 metre looms, £49.

■ Luke 01252 710244 (Farnham)

FOSTEX X26 4-track, effects send, Dolby, sync, two mic inputs, four channels out, six inputs, monitor out, boxed, manual, leads, lovely machine, heads kept demagged, £150 \pm 0171 702 7990 (London)

FOSTEX X28 4-track cassette, built-in 8-channel mixer, PSU, manual, vgc, £200, Roland MT32 sound module, plus 100's sounds on disk, £100 © 01283 210414 (Burton on Trent).

MXR RACK DIGITAL DELAY, 2 outputs, flanging, chorus, ADT, long delays and much more, immaculate, £250 \$\infty\$ 01482 448767

ROLAND DM800 digital professional studio, interface for ADAT/SA88, SMPTE, monitor output, full automation, 1Gb hard disk, £1950, Sony M7, £390, Roland SRV2000, £330. # Alain 0171 720 7744

SECK 18:8:2 desk, £650; Fostex 16-track analog tape machine, £975 Mr. Stevens 0181 905 4370.

SONY TCD D7 DAT recorder, excellent condition, includes battery charger, carrying case, earphones and DAT tapes, only 4 months old, hardly used, £325 ono = 01772 433418 (Preston).

SPIRIT AUTO 16:8:2 VCA fader automation, need more inputs, swap Spirit Studio 24/Behringer non auto, or £1350 = 01253-829978 (Blackpool).

SPIRIT FOLIO 12:2 mixing desk, vgc, PSU manual, chinagraph pencil(1), excellent guide book by Paul White,

superb mixer, high spec, £260. \Rightarrow Dave 0191 3722621 (Durham). SPIRIT FOLIO 4 monitor section needs repairing, can still be used perfectly for home recording, £350. \Rightarrow lan 01322

409106 (Dartford)

SPIRIT FOLIO SI 18:2 sub-mixer, ideal for MIDI set-up, pristine, boxed with manual, £250
Martin 0151 726

SPIRIT FOLIO \$118:2 stereo input keyboard mixer, perfect condition, hardly used, £300. © Marc 0973

SONY 701 digital stereo mastering processor, the same quality as top professional DAT machines, perfect working order, 100% reliable, world class sound, £150 ± 01482 448767

STUDIOMASTER 24:8:2 3 aux sends, wired for multicore, pro flightcase, £500 or may swap for Rac Pac or Mackie CR1604 - I need a rack mixer for live work.

Steve 01387 720133

STUDIOMASTER DIAMOND 8:2 stereo mixer, boxed, home use, £120. ** Nik 01482 844556 (Hull).

SOUNDCRAFT SERIES II 24.8 console, PPM meter bridge, Penny & Giles faders, sweep EQ, stand included, full patchbay, one owner from new, used to record Undertones - offers © Dave 01767 600398.

STUDIOMASTER SERIES II 24.8:2 mixing desk with full MIDI muting, 4-band EQ, 6-aux sends and meter bridge Bargain at £650. # Paul 0115 962 0131

STUDIOMASTER SERIES 5 16:8:2 mixing desk, recently serviced, excellent condition, £600 ono. Can deliver locally. \$\pi\$ Tony 01787 228061 (Colchester).

STUDIOMASTER SESSION MIX 16.2, 3-band EQ, sweepable mid, 4 aux sends, flightcased, £350 @ 01752 702139

STUDIOMASTER SESSION MIX 16.2, parametric EQ, four effect sends, channel inserts, direct outs, excellent desk, home use only, boxed with

instructions, £495. # Phil 01489 577050

STUDIOMASTER SESSION MIX Gold 8:2 mixer, flightcased with manual. Excellent condition, £225 Peter 01827 880091(Leics)

TASCAM 38 8-track open reel, good condition with remote control, tapes and leads only, £550.

■ Rob 01442 391363.

TASCAM 85/16B 1" 16-track, with full function remote plus drop-in, dbx, tapes, XLR transformer, many features, perfect working order, easy to move, bargain, £1850 # Tim 0117 951 4035 (Bristol)

TASCAM 2385 8-track cassette deck with brilliant Dolby '5' noise reduction system, excellent condition, very low hours, boxed with instructions, £750. ₱ Mark 01746 710477 (Midlands)

TASCAM 424 portastudio, home use, manual, boxed, £320. ♥ Nik (Hull) 01482 844556

TASCAM 488 8-track, excellent condition, four groups, high speed, dbx, 10 inputs, lovely machine, footswitch, leads, manual, boxed, £600. © 0171 702 2990 (Whitechapel). TASCAM 488 8-track portastudio, excellent condition with JL Cooper PS2 sync unit, manuals, £600. © Brian 0161 445 2485

TASCAM 488 MKII best portastudio on the market, forced reluctant sale, with 8 months guatantee, £850. ☎ 01580 892333

TASCAM MM1 MIDI keyboard mixer, 20 inputs, MIDI muting, 4 aux sends and returns, rackmountable, £395 Alesis Quadraverb plus, £265 ≈ 0181 8834098.

TASCAM MSR245 Dolbys 24-track with remote and trolley, very good condition, £3800 ono © Luke 01252 710244 (Farnham).

TC ELECTRONIC 2290 with 0144 foot controller, 64 sample, 32 seconds dealy, flightcase, £1200; Pentium P150, 15Mb RAM, 11.4Gb hard drive, speakers, monitor, modem, etc, £1350, # 01829 271255

TECHNICS RSDC10 DCC machine, 20Hz-20kHz, digital ins and outs, full size, boxed with remote and manual, £145. ■ Tim 01484 656317.

VESTAX MR44 rack-mounting 4-track cassette multitracker, compact, easy to use, simple mixer offers good routing, one aux send, global graphic EQ, all connections on front, with manual and PSU, good condition, £160 ono.

₱ 01843 587098

YAMAHA MT1205 4-track, boxed, manual, mint condition and virtually unused, 40Hz-18Khz, dbx, double or standard speed, very well kept, £265.

Dave 0191 372 2621 eyes.

YAMAHA MT8X just a few hours recording, unmarked, boxed with manuals plus Kudos 6:2 mixer, 2 aux sends, balanced/unbalanced operation, XLRs on every channel, £850 or may split. \$\pi\$ Scott 01732 850892.

YAMAHA MV802 8:2 rackmount mixer, 2 aux sends per channel, £150; Yamaha P2040 power amp, 4x20, rackmount, £150. £275 for both. ♥ Nick 01604 792224

SAMPLEAS

AKAI \$950, £725; Roland Alpha Juno 1, £250; Yamaha TG33, £225; Alesis Midiverb 2, £80; Atari 1040ST with monitor, £200 & Nathan 0181 3484915 after 7pm or weekends.

AKAI \$1000 6Mb RAM, digital card, £1400, Mackie CR1604, loom, leads, £550; Novation Bass Station, upgraded, PSU, case, £300; Zoom 9120, £175, Ibanez DM1000 delay £100; 21U rack £50; CIS rack £100; Atari 1040STE, mono monitor, printer, £260; Laney Linebacker 65 amp £100; Kramer Focus 3000 guitar £200.

Jame 0161 861 7761

AKAI \$1000KB master keyboard, 8Mb SCSI, 8 outputs plus lots of samples, £1600 ono. \$\pi\$ Tim 0181 2923 3408.

AKAI \$1100 and \$1100 expander, with \$2Mb RAM, digital interface SCSI, and SMPTE, excellent condition, £3000 ono \$\pi\$ Chris 0171 924 0211.

AKAI \$2000 6Mb, 6 months old, home use only, boxed with manuals, £700, no offers. # Adam 01993 850755

AKAI \$2000 brand new sampler, 6Mb and sample CD, £895; Roland A30 mother keyboard, 76 weighted keys, 4 months old, £175. \$\pi\$ Nick 01423 679168

AKAI \$2800 manual, MESA for Mac v2.00, 4 output including effects, with box, mint, home use only, £1000; Roland JV880, mint condition, manual, £400 \(\pm\) Pascal 0181 368 1877.

AKAI \$3000 2Mb, £1250; 8Mb boards, £225 each; 18104 digital board, £100 = 01923 267733

CASIO FZ1 expanded memory with new disk drive, £500; Atari 1040 and Replay 8 sampler, £180

Guy 01903 211962 (W Sussex).

CASIO F210 sampler, plus 100s of disks, £590. **Brad 01633 873118, or 01633 867578 eces and weekends. EMU EMAX II sampler, 2Mb plus disks, £850; Roland R5 drum machine, £225, Studio Research mixing desk 12:2, £250. All boxed including manuals, home use only. **D 01472 884064.

EMU EMAX II turbo sampling keyboard, 8Mb, loads of processing, 16-track sequencer, £1500 ono ₱ 01580 763094

EMULATOR II+ with memory upgrade, boxed, £750; Oberheim DPX1 sample replay unit, plays Akai S900, Emu II, Mirage and Prophet 2000 disks variable filter etc, rackmount £295 = 01726 66715.

EMU EMULATOR 4 1.2Gb internal Quantum drive, 32Mb RAM and CD ROMs, awesome machine, extremely reluctant sale, mint condition, 1 month old, boxed, £3650. \$\pi\$ 01480 385059. \$EMU ES132 sampler, £850; Tascarn 38 1/2" 8-track with reel and looms, £700; TS1 sync box, £80; Seck 12-8:2 mixer, £400; Atari 1040ST, monitor, mouse, Cubase V3 and more, £250. All very good condition. \$\pi\$ 01373 812674

EMU ESI32 32Mb, boxed, manual, mint, discs, reluctant sale, £1350 ovno, Sony DTC750, needs servcie, hence £200 ono, XRI300 SMPTE sync, £100 ono. \$\pi\$ 01873 860316

EMU ESI32 boxed as new, immaculate, 8Mb upgrade, £1200; Akai \$950, fully upgraded, never gigged, £800 ono; Tascam DA20 DAT machine, remote control, brand new, boxed, bragain, £700.

271167

271167

EMULATOR EXIIIP TURBO 32Mb RAM, SCSI, 8 analogue outputs, hard drive, 32 note polyphony, digital 1/0, rarely used, home use, immaculate, £2800 ono. © 01344 51616 (Bracknell).

ENSONIQ ASR10 stereo sampling keyboard, boxed as new with manuals + sound disks, 3 months old, £1550.

□ Toby 01789 450 297

PEAVEY SX sample expander, makes samples for MIDI sample dump compatible synths, such as the Yamaha SY85, TG500, Peavey SP, etc, with power supply, £95. © 11933 678608. ROLAND \$10 sampler, 4-octave velocity sensitive keyboard, MIDI, including disks, £275 ono, or swap for Novation Bass Station. © 0131 2294820

ROLAND W30 sampler, sequencer, manuals, flightcase, home use only, £500 # Paul 01527 853761

ROLAND W30 sampling workstation, 16-track sequencer, 8 outputs, lots of discs, manuals, stand and flightcase, everything for £690. \$\pi\$ 1018 657 1058 ROLAND W30 sampler, resonant filters, on board sequencer, equivalent to MC50, as used by Prodigy, 8 separate outs, new, boxed with manual, £700 or swap for basic Akai \$2000. \$\pi\$ 01744 631 731.

SEQUENTIAL PROPHET 2002 digital sampler with analog filters , these rare beasts hardy ever come up for sale and this one is only £350 ≠ 01472 824196

COMPUTERS & SOFTWARE

ALCHEMY V2.5.1 for Mac, leading sample manipulation software, £60 # Rich 01494 763774

AMSTRAD PC1640 IBM compatible computer, 3.5° and 5.25° disk drives, mono monitor, keyboard, mouse, manual and disks, £200° 01977 791770 iPontefracti

APPLE POWER BOOK 5300 500Mb HD,8Mb RAM, grey scale monitor with external video support, £1250, extra 24Mb RAM card, £290. Tim 01484 656317

APPLE QUADRA 840AV 16/500/CD including 14" monitor, keyboard and mouse, £1200 or will swap with £1000 cash for an Akai \$3200XL sampler.
Andy 0151 336 6657

ATÁRI 520ST FM upgraded to 4Mb, 14" hi res monitor, including mouse and all leads, £250 ono ± 0181 998 5325 ATÁRI 1040STE 2Mb with hi res monitor and Cubase v3 1, £325. ± 01858 575353 anytime.

ATARI 1040STE 4Mb upgrade with hi res monitor, Steinberg Pro 24 sequencer, loads of disks, samples, games, mouse, oppads, everything perfect, £375 ono ± lohp 0.1964 624067

ATARI 1040STE 4Mb, external drive, monitor, second serial MIDI port, disks, joysticks etc, all very good condition, £295 ono.

Nick 0141 945 0715

ATARI 1040 STFM with Marpet memory expansion board, upgraded to 2 5Mb, Atari SM125 hi res mono monitor with swivel base, £240.

11354 695239

ATARI MEGA4 ST SM144 14" mono monitor, 500Mb hard drive, Sound Tools system, Cubase v3, genuine reason for sale, immaculate condition, £875 ono # Matt 01629 636572.

ATARI SOFTWARE Hi Soft Lattice C V5, £45, Atari ST Basic, by Metacomco, £5, Mandarin STOS games creator, STOS Compiler, STOS Sprites 600, ££30 the set. All boxed, originals with master disks # 01354 695239.

ATARI ST 1Mb, with hi res monitor, leads, accessories, was used with Cubase, etc. £210 Other Atari bits for sale # 01884 257487

ATARI ST computer with hi-res monitor, sequencing software, word processor, mouse, double-sided drive, extra discs, all leads, connections, boxed vgc, quick sale, £240, Roland PC200, £100, 8.2 mixer, vgc, £120 \$\pi\$ 01252 370550

ATARI STE 1Mb, £85, STFM 1Mb, £75 # Nick 01273 208099

ATARI STE hi res monitor loads of accessories, excellent condition, home studio use only, £210 ono. Memory upgrade available. © 01884 257487

ATARI STE computer with hi res monitor, mouse, leads, excellent for sequencing, only used at home, £240 to 01234 355307 (Bedford).

CADENZA music sequencing software for IBM compatible PC, 3.5 and 5.25 disks plus manual, still boxed, £100

□ 01977 791770 (Pontefract)

 DIGIDESIGN SESSION v2 0 software for Macintosh/Power Mac, brand new, unopened, disks still sealed, unregistered Unwanted gift, £130 ovno # David 0121 449 6603

DIGIDESIGN SESSION 8 with Steinberg Cubase Audio PC, four months old, hardly used, immaculate condition, £1650; Aiwa XDS1100 DAT, mint with 19 rack kit, £380. All offers considered \$\pi\$ 01394 388693

DX250 overdrive, £55, Yamaha TX302 GM synth, £100, Mitsumi FX100 CD ROM, £20 # Jeff 01925 291805 (office

EMAGIC LOGICV2.5 for Mac, £249, Logic Audio module, £200; Logic Audio AV Mac module, £45 or £475 together # Steve 0.171 594 7523

MIDIQUEST MIDI CARD for PC, 16 channel with software, sold due to upgrade, £45 ono

Richard 0181 366 4108

OPCODE STUDIO VISION Pro/Galaxy v3.0.1, £200, Opcode Vision/Galaxy v3.0.3, £100, Opcode Galaxy Plus editors v3.0.1, £100. # Andy 0151 336 6657

PENTIUM P120 32Mb, 2.1Gb drive, Adaptec SCSI, Zip drive, SB16, 6X CD drive, 15[®] monitor, Pipeline 600dpi laser printer, Windows 95, mouse, keyboard, 2 months old, £1800.

□ 01480 385059

ROLAND SMPU 2-in/2-out MIDI interface and Cakewalk v3 Windows, £120, Waveblaster daughterboard, £30, CMS 401-II, 2-in/2-out MIDI interface, and Cadenza V2 Windows, £100. © Nick 01482 844556

SAMPLITUDE STUDIO Windows 3 11/95 compatible, £250 Paul 01352 754320

STEINBERG AVALON 16-bit D/A stereo converter plus Steinberg Avalon universal sample editor software for Atari ST/STE computers with key and manual, cost, £700 sell for £295.

0181 883 4329 or 0956 339577

STEINBERG CUBASE AUDIO V2 for Apple Mac, £250 for quick sale = Jay 0171 426 0340

STEINBERG CUBASE AUDIO 3XT Mac, £500, MOTU MIDI Express, £250, Aiwa XDS1100 DAT, £400, Mackie CR1604, £600, Novation Bass Station, £250, Akai PEQ6, £150, Akai S3200, 32Mb, 340Mb hard drive, £3000, three ISO Patchbays, £100, # Will 01273 697025

STEINBERG CUBASIS AUDIO for PC, full boxed version, new and unregistered, £150.

To 1204 885538

STEINBERG computer music starter kit, basic PC Soundcard/MIDI interface plus Cubase Lite software, unregistered, worth £129, sell for £55 ono.

Patrick 01491 872102

SEQUENCERS

ALESIS MMT8 sequencer, boxed with PSU and manual £70 \odot Tony 01222 236036, 238670

KAWAI Q80EX sequencer, 32 tracks, 2 MIDI outs, independent track looping, tape sync, plays MIDI files, ideal for live, as new, £400 = 01472 824196

ROLAND MV30 16-track sequencer/ sound module with 220 editable sounds and filters, automated mixing and tape sync, excellent condition with manuals disks and tutorial video, £500 # 01943 873121

YAMAHA EMQ1 disk-based sequence replay device, suit pub duo, £75, Sony PCM 701 converts a video into a DAT machine vgc, £175 ■ Tony 01579 382850 (Cornwall)

YAMAHA QY10 excellent condition, for use as sequencer or composer, £100 ono

Gary 0121 445 5274

DRUM MACHINES

ALESIS SR16 drum machine boxed as new, manual, power supply, extra patterns on cassette. Never used, £150 # 01763 838722

ALESIS HR16 drum machine, 49 digital samples, 100 songs, manual and adapter, £75 ono # Alex 01483 480562

EMU PROCUSSION drum module, mint condition, boxed with manuals, £350 ovno # Paul 0181 505 0637

KORG 53 RHYTHM WORKSTATION PCM samples, velocity sensitive pads, multi digital effector, 8-track sequencer, SMPTE reader/generator, ROM & RAM cards, instruction manual, £235 ono.

Patrick 01491 872102

ROLAND OCTOPAD 2 with manuals and stand attachment, £350 ≠ 0171 701 0539

ROLAND OCTOPAD 2 eight MIDI pads, all fully programmable, 64 memories, immaculate and as new with manual, £350 \$\pi\$ 01482 448767

ROLAND R5 drum machine, superb editable sounds, including 808, human feel and nuance functions, 6 outputs, boxed with manual and PSU. Home use only, £150. © 01362 687749

ROLAND SPD8 with clamp and stand, boxed with manual, £210 ono ■ Matt 0181 5218100

ROLAND TR626 individual outs, adjustable volume, pan & pitch for all instruments, built-in MIDI/tape sync, trigger out for sync/ing SH101, TB303, etc to MIDI, bargain at £65 Patrick 01491 872102

ROLAND TR808 rhythm composer, excellent condition, complete with instruction manuals. Home use only, £595 \approx 0171 794 0847 fNW London. ROLAND TR808 absolutely as new, in pristine condition, includes owners manuals, reluctant sale, £500 \approx 01274 620004 (Bradford)

ROLAND TR909 rhythm composer £600 ono # Nick 01382 730551

SIMMONS SDS9 brain, very comprehensive, fully MIDI controllable, built-in echo, delay times, has own sound, sample capability, absolutely immaculate, as new, with manual, £225 = 01482 448767

MISCELLANEOUS

AMPEX 10.5- and quarter-inch empty alloy NAB spools, immaculate, £4 each, Revox and Teac NAB adaptors, £15 pair, one pair of unknown make, £9. All excellent condition.

□ 01482 448767

CARLSBRO COBRA keyboard amplifier 90 watts, includes cover and reverb footswitch, £210.

□ 01977 791770

CROWN MACRO TECH PA amp, 600W per channel, recently serviced, £650 ono, Steinberg Cubase Lite PC, boxed, manual, £40, four 256K SIMMs, £12, two Korg DDD/DRM series ROM cards, £15 each # 0121 622 2743

(Pontefract)

FREE BACK ISSUES MT most issues 1989-92, in binders. You collect or will deliver locally. # Andrew 01454 772237

GRAFF SAPHIRE 16X high speed cassette duplicator, glass heads, copies each side seperately or simultaneously, excellent condition, Chrome master/ferric copy, £575, # 0121 474 2149

H/H VX900 stereo amp, 450W per channel, both channels can be linked giving 900W into 40hms, fan cooled,

powerful and sturdy, £450 = 01752 702139

H/H STEREO SIX MIXER fitted with jacks and XLR, ideal keyboard sub-mixer or small PA, £100 = 01752 702139

HUNDREDS OF MUSIC MAGS looking for home, 1986 onwards, H&SR, SOS including first 3 issues, phone for details and make me an offer. # Nick 0141 9450715.

KLYNSTROM 3/2 WAY active crossover, low 120hz, high 3Khz, 1U high, very light & compact, £175 = 01752 702139

LESLIE ROTARY SPEAKER 400W, very good condition, £295, Digitech Vocalist wanted # John 01484 546062

MAGAZINES FOR SALE 216 editions HSR, E&MM, MT, RM and SOS, Some back to 1984 25p each or, £50 the lot Buyer collects. © 0181 855 8263

MPC SYNC TRACK syncs pre-MIDI Roland gear to multitrack tape, runs off 9V battery. If you don't need MIDI, then you need this, only £20. = 0.1354695239.

PEAVEY DELTA 528 stereo amp, 250 watts per channel, weighs only 10lbs, 1U high_£350 # 01752 702139

PEAVEY KB300 keyboard combo, 3 channels, 3 band EQ, reverb, compression 15 spacer and horn, pull gain switch, £300 a John 01484 667317 (Huddensfield)

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GERMAN MUSICIAN pays for TB303 £500, TR808, £250, TR808 MIDI, £350, TR909, £500, SH101, £150, MC202, £150 = 0049 5152 6176 or fax 0049 5152 8179

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SONY ECM PB1C parabolic reflector microphone, new or used but good condition, will pay cash and collect. © 0973 320803 days, 01730 814531

WANTED D50 can pay £300, Sequential Pro 1 £200, JD800, £800, TR808, £225, TR707, £75, MC202, £180, Moog Source, £325, VC10, £175 ≠ lan 01432 266752

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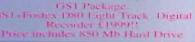
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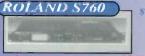
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• Merges Clock and MIDI Time Code • Merges all controllers . Handles large volumes of data

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The price includes transmission note requires two 9V AC adaptors.) £115 inc VAT. The price includes transmitter and receiver. (Please

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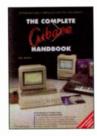
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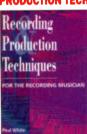
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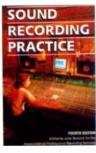
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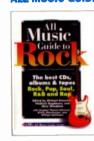


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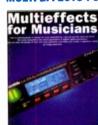
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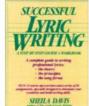
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DIRECTORY

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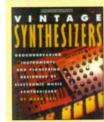
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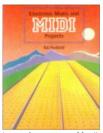
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ELECTRONIC PROJECTS

ELECTRONIC MUSIC AND MIDI





by RA Pentold Want a MIDI THRU box, patchbay or witcher? they're all here. And you don't need a degree in electronics either. All the projects are explained in detail, with full

instructions on assembly. So if your into MIDI and you want to expand your system without taking out a second mortgage, lear not. Here's the book to help you build up your MIDI system without laying out thousands on hardware.

CODE B203

£9.95 Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

DIGITAL AUDIO PROJECTS

by R.A.Penfold ,

A two part book, with the first section looking at the basic principles involved including converting an audio signal into digital form and then converting it back to an analogue signal. The second part contains some circuits – for the moderately experienced

CODE B279

£2.95 Postage: UK £1.50, Europe £3.95, R.O.W. £4.50

HIGH POWER AUDIO AMPLIFIER CONSTRUCTION

By R.A. Penfold

Much useful background to amplifier design, speaker matching and more is included in the first couple of chapters, while the last section contains a selection of high power amp circuits plus suitable PSU circuits. Copper track patterns are also provided to allow you to make your own PCBs. While the circuits aren't too difficult as such, those with limited constructional experience should note that due to the high supply currents and voltages involved, even minor mistakes could be extremely dangerous.

CODE B282

Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

ELECTRONIC PROJECTS FOR MUSICIANS

CODE BOSS

£10.95

£2.95

Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

MIDI PROJECTS

to R V Peuplat
A comprehensive collection of simple MIDI
projects, including CV and gate converters and
a MIDI Thru box. A lot of the book is taken up
with interface various obsolete computers to
MIDI (Spectrum, CPC464, Commodore 64,
BBC B, ZX81 and so on), but the general
information is basically sound. Could prove a
boon to musicians who are really broke!

CODE B278

Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

PRACTICAL ELECTRONIC **MUSIC EFFECTS UNITS**

by R A Penfold

Another selection of musical effects, with more of a guitar angle. Projects include distortion, sustain, parametric EQ, graphic EQ, treble and bass booster, envelope modifier, wah wah effects and more.

CODE B290

£4.95 Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

ELECTRONIC PROJECTS FOR VIDEO ENTHUSIASTS

by R A Penfold

Projects for the video and camcorder user, including dynamic noise limiter, automatic audio fader, video faders, video wipe and video crispener.

CODE B288

Postage: UK £1.50, Europe £6.95, R.O.W. £9.50

PRACTICAL ELECTRONIC MUSIC PROJECTS

CODE B289

£4.95 Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

ELECTRONIC MUSIC LEARNING PROJECTS

VOICE BUILDING Cassette/CD

by Sam West
Although geared towards singers of varying abilities, voices and styles, the contents of this recording are often challenging even to the professional singer! The video (code V067) goes into more technical detail, whereas the CD or Cassette concentrate on

more intensive practising. First of all the exercises are sung, in various keys and then with musical accompaniment and melody line, so you can

CODE B286

concentrate on

£4.95 Postage: UK £1.50, Europe £3.95, R.O.

VOICE TRAINING



will find this
video a great aid
in assisting
their vocal
efforts. It
begins by
explaining the
principles of
voice
production.
Breath
control control

excercises plus general vocal techniques are all explained and visually demonstrated. All the exercises are written out in an accompanying booklet, with piano accompaniment.

Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

CASSETTE CODE MC001 £22.95

concentrate more on your voice while practising (karaoke style). Vocal exercises can be boring, but this studio recording has been produced and presented to a very high standard, with interesting musical accompaniments to the

concentrate more on your voice while

£9.95

£6.95

CD CODE CD037

OVERNIGHT DELIVERY OPTION: ONLY £5.00! See Order Form for details

ROLAND MS-1 VIDEO



MANUAL

This video manual has been produced by Roland Corporation US, and has been US, and has been designed to provide the user with tuition, and examples of how to apply your new found knowledge in various applications. There is also a comprehensive "Tips & Tricks" section to give you that extra edge!

£24.99 **CODE V047**

Running time 50 minutes (approx) Format, VHS (PAL) Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND GP100

Presented once again by Nick Cooper, this video manual for the Roland GP100 covers every aspect in detail with many practical demonstrations. Everything you need to know is covered; topics include; an explanation of COSM, layout, typical setups, initialisation, global settings, use of the tuner, selection and editing of patches, and use of the FX loop and harmonist.

CODE VO62

£19.99

Running Time 45 Minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND TDE-7K DRUM SYSTEM



Roland's TDE-7K Roland's IDE-7R Compact Drum System Comprises the TD-7 Percussion Sound Module, MDY-7 Cymbal Pad Holder, FD-7 Hi-Hat Control Pedal, MDS-7 Drum System Stand PD-7 System Stand, PD-7 Drum Pads & KD-7 Drum Pads & KD-7
Kick trigger. You may
have a different
configuration to what
is shown in the video,
but no matter!, Roband Product Specialist
Conf O'T-but shows be been been to be

but no matter!, Roland Product Specialist Gary O'Toole shows you how the complete kit is put together. Gary concentrates on the TD-7 in detail, showing how the parameters are set up, and giving demonstrations of how the sounds are derived and altered. Good use is made of the visual side in this video with mulicamera shots, a 'birds eye' view of the entire Kit shows Gary's playing abilities to the full. As you would expect from a production aided by Roland U'K & U'SA, this video shows you everything you need to know.

CODE VO45

£19.99

Running time 65 minutes Postage: UK £1.75, Furope £4.95, R.O.W. £6.95

YAMAHA PSR6000 **ELECTRONIC KEYBOARD VIDEO** MANUAL



Yamaha's PSR6000 is a home keyboard with a difference, and offers many profes-sional features plus excellent sound quality. Tim Walter starts at the beginning and makes the instrument look easy and fun. His enthusiasm is catch-ing, and, yes, the PSR6000 is a very capable instrument. Yamaha's PSR6000 is

capable instrument.
The tape runs to 75
minutes, which makes for excellent value. £19.99

CODE V029

Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND GR-1 GUITAR SYNTH

These two video manuals have been produced to help the user get the most out of Roland's sophisticated GR-! guitar synth, the first covering all the basics from mounting the pickup and getting tuned up to selecting sounds and using the on-board sequencer. Each step is patiently explained and demonstrated by Roland's guitar synth procedule. The Strokes specialist, Jay Stapley.

The Advanced tape takes the mystery out

The Advanced tape takes the mystery out of sound editing, custom tuning, advanced sequencer applications, external sequencer hookups, using other MIDI sound modules, indeed virtually everything the GR-1 is capable of doing. If you own a GR-1 or are thinking of buying one, do yourself a favour and order these indispensible videos.

CODE VO14

ONLY £29.99

FOR 2 VIDEOS
Fotal Running time. 4 hours. Format: VHS (PAL)
Postage: UK £1.75. Europe £4.95, R.O.W. £6.95

STEINBERG CURASE

This manual is presented by Chris West, Steinberg expert. It's very much a practical, 'get up and running' video, showing the novice user exactly how to install and begin using user exactly low to install and begin using Cubase, whether they're running the program on an ST, Mac or PC computer—there's even a basic background on using the computers themselved: All of Cubase's controls are shown, explained and demonstrated in depth. Once explained and demonstrated in depth. Once you're familiar with the basic controls, Christakes you slowly through recording your first session, followed by overviews of the various edit screens. It's rather like having an expert tutorial that you can run again and again in the comfort of your home, until you can use Cubase like a true pro. Topics covered include; the main screen. Topics covered include; the main screen, entendable pages and output, correlated.

customising names and outputs, copying and pasting between arrangements, MIDI filter, cycle mode recording, the tool box, all edit screens.

CODE VO11

Run time: Thom 30 minutes - Format VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

KORG AX30G TONEWORKS



VIDEO MANUAL

£29 99

The Toneworks series of guitar processors of guitar processors from Korg gets a real work out on this 55 minute tape. Korg's guitar demonstrator Steve Fairclough whizzes through the G1, G2, G3 and the

AX30 glaship AX30C and the flagship AX30C and provides clear explanations of how each units works. And to put the units into context, there's lots of footage of Steve showing off the sonic capabilities of each processor (not to mention his prowess as a guitarist).

ORDER CODE V028

£19.99

Postage: UK £1.75, Europe £4.95, R.O.W.£6.95

BAND IN A BOX 6.0 BASICS FOR WINDOWS

Designed to get the new user, and those less familiar with Band In A Box, up and running quickly and easily. Experienced users can also benefit from the indepth untorials which cover Basic MIDI. MIDI Connections, Castom Patch Maps, Screen Layout, Juke Box, Printing, Recording & Editing Melodies, Importing & Editing Styles, Drum Editor, Masks, Assigning Instruments.

£34.99

Running time: 88minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

3 CAKEWALK 3.0 VIDEO MANUALS

CAKEWALK 3.0

A collection of three videos on the Cakewalk Professional system for Windows, covering just about everything you would need to know to become totally proficient with Cakewalk. If you own Cakewalk Home Studio — no problem! The videos cover everything Cakewalk Home Studio is capable of and more...

Basic MIDI, Step & Realtime Recording, Playback Features (on the fly), Editing Features, Graphic Views, The Inspector Menu, Menu Overiew, The Control Bar.

CODE VO32

Running time: 120 minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

BEYOND BASICS

This video explains Customising Cakewalk, Extrack Merge, more graphic Views, Advanced Editing, the Settings Menu, Synchronisation, Embedding Wav Files and more...

CODE VO33

£34.99

£34.99

Running time: 113 mins Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

Programming Fundamentals, Creating a Program, Creating a CAL Program, How to use CAL Programs, CAL Examples, Automating Tasks, Tips on working with CAL, Creating Computer Music, Troubleshooting.

CODE VO34

£34.99

Running time 90 minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

SOS Videos

JUST ARRIVED!

MACKIE ULTRA MIX VIDEO GUIDE

This highly informative video for the Ultramix automation system, clearly demonstrates how to set up and use Ultramix's many time-saving features to get the best from your system. The cost of the video may be redecemed against the purchas price of an Ultramix system, making the video a good way to try before you buy!

CODE VOG6

Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND G800



Presented by Roland UK's product demonstrator Sara Reybould, this video covers every essential feature and function of the Roland G800, Sara provides the user with a wealth of knowledge on this sophisticated instrument, with recourse to many practical examples and dose-up shots of the

£9.99

association with Roland USA and Roland UK to ensure that the content is accurate and to ensure tl informative

CODE VOGO

£19.99 Running Time 92 winutes Postage: UK £1.75 Europe £4.95, R.O.W. £6.95

ROLAND GR09



Presented by Roland UK product Presented by Roland Us. product demonstrator. Nick Cooper, this application-based tutoria: video for the Roland GR09, produced in association with Roland USA, covers every function completely. Covered topics include; the GK2A Synthesiser Driver, topics include; the GSZA Synthesiser Driver, pickup sensitivity, use of the tuner, what a patch consists of, use of the pedals, patch edit 1 & 2 (including lawering and detune, chromatic function, reverb & chorus, edit target, pitch shift), the use of external mid-devices, saving to an external sequencer & more.

CODE VO61

£19 99 Running Time 57 minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND JV-1080



VIDEO MANUAL Roland's amazing JV-1080 synthesizer module is covered in detail in this detail in this informative video. Presented by Tim Walter the video the video guides you through the basics, and

leads you painlessly onto the advanced features. The video even shows you how demonstrations of some of the wonderful sounds they contain. Once again this video has been produced in association with Roland UK & USA to ensure that everything it contains is accurate, and relevant to the new and more experienced users alike. £19.99

Running time: 80 minutes Format: VHS (PAL) Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND XP-50



£24.99

This XP-50 video owners manual is produced by Roland Corporation US and covers all the by Roland Corporation US and covers all the major features of the instrument in detail. This is an application based video that provides many examples of how your new found knowledge can be applied, Just a few of the 30 separate topic areas covered are: Effects, Choosing Sounds, Loading a Song, Loop Recording, Copying a Track to Pattern, Making an RPS Set, Track Editing, Multitrack Recording, Patch Editing, Creating Splits & Layers in a Patch.

CODE VO63

Running time: 63 minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

WINDOWS 95: WHAT WILL

YOU LEARN

£19.99

Start! Nindo4

TODAY? This video is aimed at new Windows 95 users and goes from basic to in-depth advice, covering topics such as minimum hardware requirements and common problems. and providing useful tips and tuition. The video ab and futton. The video also features Labvrinth's Video Index System to help the user locate particular topics, by means of on-screen timecode and an

index booklet.

The video is written by computer journalist Ian Waugh

CODE VO65

Running time: 74 minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

EVERYTHING YOU



WANTED TO KNOW ABOUT PCs BUT WERE AFRAID TO ASK!

Written by Ian Wauch This video has been produced in response to the number of potential PC buyers and existing new users who do not fully understand the jargon

and basic operating procedures associated

with PCs.

It covers everything from 'What is a PC' to
the 'Internet'. There is even a Windows
tutorial, and a DOS basics section, (Over 120
different sections.)
It includes a booklet listing all the main
and sub-sections along with their respective.
TimeCode number for easy access when used as a reference tool.

CODE VO48

Running time 91 minutes Postage: UK£1.75, Europe £4.95, R.O.W, £6.95

KORG PROPHECY VIDEO MANUAL

Written by Phil MacDonald

Written by Phil MacDonald
Korg's new Prophecy Synthesizer now has
its own video manual!
The video covers all the major features
over 6 sections, with lots of examples of the
amazing effects that are available using the
'log' and 'mod' wheels. The video's visual
interest is maintained by the extensive use
of Chroma Key and multi camera effects.
This is a video that is ideal for new owners,
and those who want to know more about
the Prophecy before they make a purchase.

CODE VO49

£14.99 Running time: 36 minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

BOSS ME-8



Nick Cooper (Roland UK product demonstrator) explains demonstrator) explains every single feature and function of the ME-8 in detail. The unit is clearly explained in a logical sequence with examples given of how the functions effect the available sounds, a perfect aid to new users of the ME-8 and those who would like to get that little bit more from

ina inter bit more from it. Just some of the main points covered are: What is a Patch?, Selecting a Patch, Copying a Patch, Edit Mode, Using The Effects, Control Effects, The Tempo Function, Manual Mode, and lots more.

£19.99

Running time: 72minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

SOS Videos

EMAGIC NOTATOR VIDEO TRAINING MAGIC MANUAL



MANUAL
This video manual is detailed and helpful, and is presented in a most friendly and approachable manner by session musician Tim Walter, whose tone throughout the video encourages and inspires confidence. If you are new to Notator and are still in awe of its power, this is the video to bring you down to earth. An introduction and 28 tutorials take the user from the absolute basies - including plugging in the dongle - to working with Unitor and SMPTE, and synchronising to video. As well as actual recording of MIDI data and sequencing, comprehensive coverage is given to using the score layout and printing facilities that are so much a part of Notator. Topies covered include; sequencing page, score editing, brics and text, graphic arranger mode, hyper edit, the printer page, using the part box.

CODE VO12

ONLY £19.99

Running time: 2 hours 20 minutes Firmat: VHS(PAL) Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

KORG X3

This video offers an easy way in to this powerful workstation. It starts from absolute basics, including audio connections and basics, including audio connections and volume levels, and the clear and helpful script covers all basic facilities of the X3. The video features a sophisticated use of picture in picture, with the X3* display cut into the main image to show you clearly what Phil is actually doing, and main points are reinforced with on screen text and graphics. The main section headings are:

• X3 Audio Connections • Getting Around the X3
• Factor Disk • Disk Drive Modes
• Selecting Sounds • Global Modes • Sequencer Mode • Quick Sound Editing
• Planing MIDI Files on the X3 • Using the X3 with an external sequence.

Note that these a cloose headings, with each section also containing information on connected subjects in varying amounts of detail. A lot of ground is covered, and we can recommend the tape to any X3 owner.

CODE V018

£19.99

HOW TO GET A RECORD DEAL

The facts you need from the people who know. How To Get A Record Deal contains vital information and insight that you will not find anywhere else, from artists and executives who have made it and know what it takes.

On this video music industry pros give you the straight facts on how to break into this extremely competitive business. Because sometimes the difference between success and failure is information.

Presented by the National Academy Of Songwriters

CODE VOOS

£14.95

£19.99

Running time: 1 hour 7 minutes Format: VHS (PAL) Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

BOSS DR-5 DRUM MACHINE

Presented by Nick Cooper (Roland UK Product Specialist) this video covers all the functions of the DR-5 in a clear and concise manner. Produced in association with Roland manner. Produced in association with Roland UK & USA. By using the information gathered from Roland 'helplines', particular attention has been paid to the areas that many users find most difficulty in. This makes it of interest to beginners and experienced users alike. Nick imparts the information with ease and a professional manner, making it enjoyable and entertaining.

Running time 27 minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND JV-90 SYNTH



Roland's JV-90 synthesizer gets the treatment in this informative Labyrinth informative Labyrinth production. Virtualls even fact of the JV-90 is covered, from the basic functions to more advanced programming. Chris Allen guides you through the powerful features this instrument has to offer. Produced in association with Roland UK & USA to ensure that everything it contains is accurate, and relevant to new and more experienced users alike.

experienced users alike.

CODE VO44

£19.99 Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ANALOGUE HEAVEN



Remember our feature Remember our feature on the opening day of the Museum of Synthesizer Technology which we ran back in October 1994? Wish you'd actually been able to attend?

actuals been able to attend?
Well, now you can have the next best thing; the museum has released a fascinating 50 minute promo video that leatures tootage shot on the davas well as a lightning tour of the facility. The program is hosted by SOS contributor Julian Colbeck. The tape opens with synth pioneer Bob Moog making the inaugural speech and officially opening the museum, followed by a nostalgic run through one of his old modular systems. Analogue Heaven makes diverting viewing for anyood value, and offers the perfect companion to the Museum's guide book, also available from SOS Bookshop. Bookshop

CODE VO26

£12.95

Running time 50 minutes Format: VHS (PAL) Postage, UK ±1.75, Europe £4.95, R.O.W. £6.95

MASTER TRACKS PRO 4/5



FOR WINDOWS & MACINTOSH

All the basic functions All the basic functions of Master Tracks, from installing the software to advanced editing. Everything you need to know to get you started and beyond in easy to understand sten-by-sten

Editor Window, MIDI Settings, Screen
Layout, Conductor Window, Transport
Controls Window, Inserting Measures, S
Real Time Recording, Event List Editor,
Plans Paul Editor, Overshing and model Piano Roll Editor, Ouantising, and much more

CODE VO41

Running time 102 minutes Postage: UK £1.75, Furope £4.95, R.O.W. £6.95

ORDER YOUR VIDEO NOW! 01480 461244

PERFORMER 5.0 BASICS

FOR MACINTOSH

Expert uition covering the basics and more for Performer 5.0. This video will provide you with all that you need to know, covering all the major topics: Basic MIDI, Tracks Window, Multitimbral Operation, Patch Changes, Time Signature & Meter, Real & Step Time Recording, Event List/Graphic & Notation Views, Regional Editing, Quantisation, Transposing, Copv/Cut/Paste/Merge & Erase, Loop Recording, Track Palette, Device Groups, Counter Window, and much more.

CODE VOA2

Running time 87 minutes Postage: UK £1,75, Europe £4,95, R.O.W. £6,95

KORG X5 SYNTH



Korg's new X5 synthesizer, reviewed in SOS' January 1995 issue now has its own video manual. Presented by Tim Walter in an water in an entertaining and lighthearted manner, and explains all basic aspects of Korg's highly affordable

£19.99

£34.99

clear terms. If you're in any way daunted by your new purchase, or want to get a feel for the instument before laying out your cash, this is the video for you.

CODE VO27

Pestage: UK £1.75, Europe £4.95, R.O.W. £6.95

YAMAHA QY20 MUSIC SEQUENCER VIDEO MANUAL



by Tom Robinson . Yamaha's popular QY20 portable sequencer/ sound source is a deceptively simple device to use; if you think you might like some insight into getting that little bit extra out of the device. then look no further. Produced in

co-operation with Yamaha, the video features mobile musician I om Robinson showing you how to get the best from this portable marvel. Tom, who has used the QY20 extensively as a writing tool on the road, says: "I never leave home without it"

CODE VO16

£19.99

Russing time: 90 minutes Format: VHS (PAL) Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

HOW TO GET THE MOST OUT OF HOME RECORDING 3 TOP CLASS VIDEOS

A superbly presented set of videos which no home recordist should be without. Have you got your set yet?!

LEVEL ONE



This well presented video explains how to set up and operate a simple cassette-based multitrack home studio. It clarifies all the terminology demonstrates

how to record machines; which microphones to choose; how to patch in effects units and drum the patch in effects units and use them well; what makes a good arrangement; what makes a good mix; plus what to master on to and why. Full of professemal tips and clear examples, this superb video offers the musician with no recording experience a fast route to successful operation of a simple home studio.

CODE VOOS

£24.95

Running time. 4 hour 10 minutes Format: VHS(PAL) HiFi Stereo Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

LEVEL TWO



This is, in our opinion, the best ever guide to the equipment and skills needed to produce high quality results from a home studio.

Full of clear examples and graphic information, the wideo majors on effects and how to use them well. It also covers the do's and don'ts of track bouncing;

microphones and mic techniques for different applications; getting the most out of multi effects units; plus an analysis of guitar effects with top session guitarist. Milton MacDonald and an enlightening interview with ace producer Alan Parsons. Writer/presenter Julian Colbeck packs the programme with professional tips, allowing musicians of all kinds to get the most out of their home studio.

CODE VOOG

£24.95

Running time: 1 hour 45 minutes Format: VHS(PAL) HiFi Stereo Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

LEVEL THREE



This video is packed with information and professional tips on advanced MIDI applications in the home studio, including interfacing with

sequencers, which sync code is best for which application and why. Hit producer Martyn Phillips (Frasure. (Erasure

(Erasure, London Beat) discusses modern recording techniques, and top programmer Paul Wiffen examines the opportunities and benefits offered by hard disk recording It offers practical advice on sampling - how to save time and tracks; plus professional tips on advanced arranging and mixing techniques, including spectrum mixing.

CODE VOOT

£24.95

Running time: 1 hour 30 minutes Format: VHS(PAL) HiFi Stereo Postage: UK £1.75, Europe £4.95, R.O.W, £6.95

GEITING THE MOST OUT



KORG M1

Written and presented by Julian Colbeck

The Korg M1 is a classic instrument. The range and quality of its sounds has made it one of the most one of the most successful synthesizers of all time. But because the M1 is so immediate, it's too.

man of its exciting capabilities undiscovered.
This highly informative video enables MI owners to unleash the full creative potential of other potential of the capabilities. owners to unusal the tint relative potential of this enormously powerful workstation. Wirt plenty of musical examples, tips and inside information, the video offers clear, concise explanations of the instruments features and operating procedures, helping you to greatly expand your dexterity and creativity across he whole range of this world-

creamy across ne whole range of this world-beading instrument.

Comes with a FREE exclusive custom library of fabulous new M1 sounds on Atari format floppy disk (100 Programs, 100 Coribinations) created by ABWH Yes programmer Chris Macleod. £24.95

CODE VOO2

Running time. I hour 10 minutes Format. VHS (E.W.) Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

4 FINALE 3.0 VIDEO MANUALS

FOR WINDOWS & MACINTOSH



to the most Advanced topics in Power User, these detailed videos will guide you through Finale, giving you the knowledge you need to Finale expert with eas

BASICS

MIDI setup, Tool Palette, Default File Customising Templates, Drawing Slurs & Expressions, Key & Time Signatures, Metatoob, Music Spacing & Allotments, Printing, Measure & Page Layout, and much more.

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BEYOND BASICS

Custom Instrument Library, Font Size, Pickup Measures, Measure Number Enclosures, Chord [midi & manual input), Finale Chords, Guitar Fret Boards, Mirroring, Mass edit Menues, Transoping, Alternate Notation, Moving Layers, and

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ADVANCED

Clef Changes, Text Blocks, Tempo Tool, Multi-measure Resis, MIDI Tool, Making an Ossia. Optimising Staves, Custom Score Layout, Page Tool, Multiple Windows, Tiling Pages, and much more...

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Running time 75 minutes Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

POWER USER

More Options Menu, MIDI Tool More Options witch, MiDT 1001, Optimising Staves, Using Clip Files, Grouping Staves, Using a Macro Program, Shape Designer, Importing MIDI Files, Multiple Windows. Short Cuts, Hints & Tips, Advanced MIDI Topics, Tiling Pages,

Running time 108 minutes Postage: UK £1.75, Earope £4.95, R.O.W. £6.95

THE EMAGIC LOGIC



TUTORIAL VIDEO VOLUME 1

Produced by Emagic themselves, this video once again sees Tim Walter (featured on the excellent Notator video) in the tutor's chair. There are plans for a series of videos which become ever more detailed and informative, but for now Volume 1 takes you through the first steps of getting the software up and ru

steps of getting the software up and running, and covers virtually all-the controls you'll need. This vados is valid for all versons of Logic, whether being run or an ST. Mor on PC. Presentation is rather intriguing, with a mobile camera that helps to hold the interest more than the average training video and some interesting graphics that aid comprehension and help to quickly find specific tutorials and bits inside tutorials. Contents as collows: tutorials. Contents as follows:

• Futorial 1: The Arrange window and basic

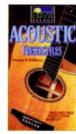
- sequencing
 Tutorial 2: Playback parameters & Toolbox
 Tutorial 3: Controlling MIDI data flow
 Tutorial 4: Manipulating sequence data
 Futorial 5: Moving around in Logic
 Tutorial 6: Windows and key commands
 Tutorial 7: More sequencing

- Tutorial 8: Score
- . Tutorial 9: Looking at the Event List

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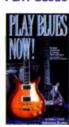
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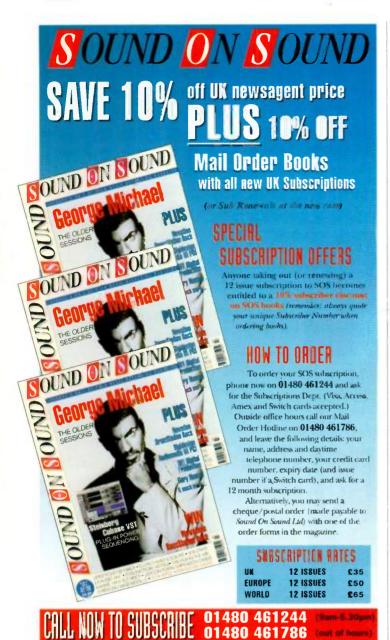
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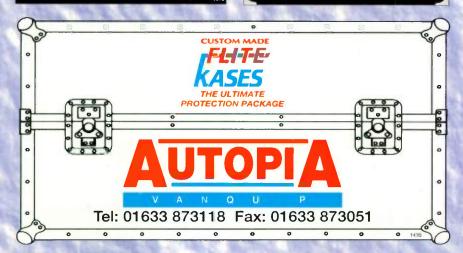
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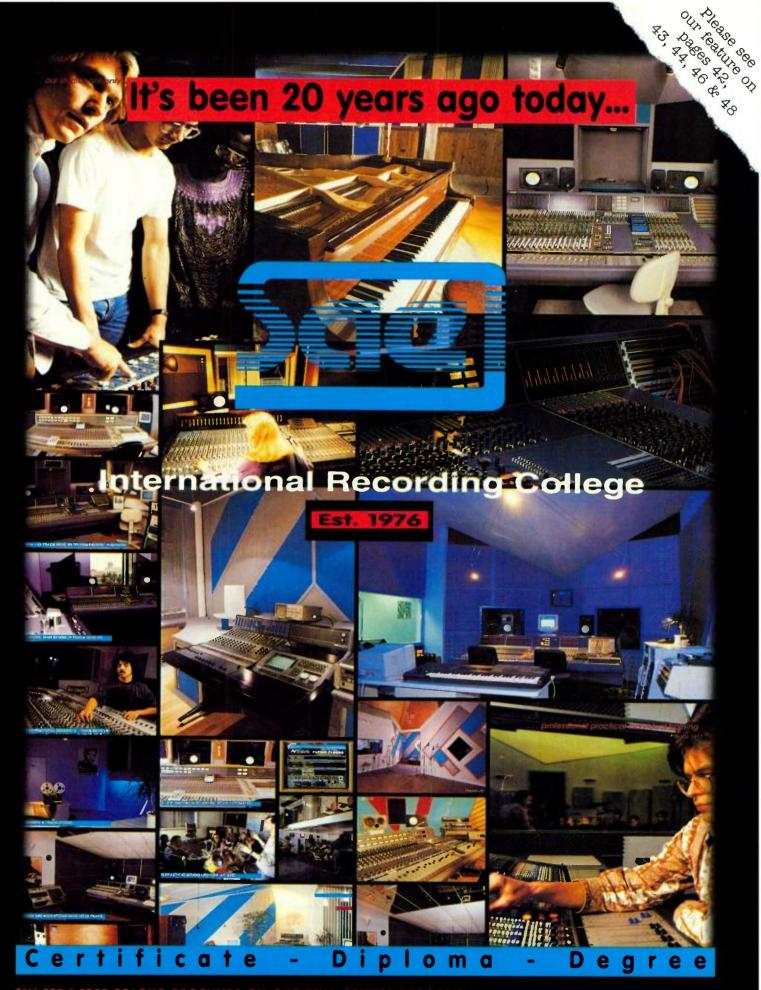
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0.5 Technician (Music and Performance Technology) Salary £2,803 - £5,707 Ref: 647/DS

You will provide a technical support service to staff and students which contributes to the development of a positive learning environment. This will include carrying out routine and non-routine servicing and maintenance tasks on music and sound recording equipment, as well as implementing security and booking systems. You will have experience of working in recording studios and MIDI facilities, equipment maintenance and servicing experience, along with relevant qualifications to National Diploma or equivalent.

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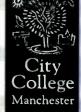




For further details and application form please quote the appropriate reference number and contact:-

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Stephen Bennett showing the lengths some people will go to get interesting samples.



K, I admit it. I own an Apple Macintosh computer. This may not seem like much of an admission, but here it is again — I own a Mac. And what is worse, I actually made a conscious decision to buy one. Not an IBM PC clone, Atari or Cray.

I wrote an article for Sound On Sound in the June '95 issue describing my passage from a tape-based setup to a hard disk recording system; unfortunately, I happened to mention the fact that I had chosen a Mac to run the system on. Not only that, but I also said that I preferred using a Mac. The avalanche of mail (electronic and otherwise) that arrived criticising both my decision and the supposed 'Mac bias' of SOS surprised me. I got the impression that if I had made a racist or sexist statement (eg. 'no Northern Man could understand or use a hard disk recording system') there would have been hardly a

whisper. The article didn't even focus on the platform I was using — just on

> the hard disk systems. Such 'computer evangelism'

surprised me, and got me thinking.

I chose to use a Mac because I didn't want to spend much time using the computer in itself. I wanted to make music, draw and write. I use a PC when I need specific software or hardware, when I

want to access the low-level system, and when I have no choice. I also use one when I work at home and need to use the same software I have at work. Incidentally, this often happens; people buy PCs because they use them at work, which then allows them to obtain software such as Word, er, 'cheaply'. This explains why the shops are full of books called Microsoft Excel For People Who Don't Have The Manual (possibly not exact title). It's one of those things we never want to admit to, like voting Tory or watching Baywatch. But we all, at some

What I'm really interested in is where these strong feelings come from. Why should we get all gooey over what is essentially an inanimate object? Well, the first Macs were cool to look at, and had graphics from the word go. Early PCs were different. Clunky, ungainly and text-orientated, they were the 'Nigel from Eastenders' of the computer world. So, people who like computers for

time in our lives, pirate software. Except me. I can't.

Luse a Mac

evangelists...

what they are, loved PCs. People who like computers for what they do, loved Macs.

The Mac also has a large dollup of that indefinable thing called 'style'. This is very important in the music biz. Designers' bedrooms and trendy films have Macs in them. Mac owners wear the best clothes and listen to the coolest music. PC users wear polyester, anoraks and are Magnum and Saxon fans. I went to a party recently which was full of computer programmers. An amazingly large proportion of them wore those pear-shaped glasses, heavy metal band T-shirts, jeans and trainers. An even more staggeringly high proportion of them had PCs. Some of them even had them at the party, but hopefully not in the marital sense.

Computer people in general, and programmers in particular, don't like to be confined by the hardware. They like to tweak, to extract every last ounce of performance from their machines. The Mac, because of Apple's domination, doesn't allow this. Apple control the video driver, the input and output, the horizontal and the vertical. Luckily, they do it pretty well, and the Mac is a fast and powerful computer. I like to think that it's like a production Ferrari while the PC is a TVR — zippy and powerful, but with parts sourced from different manufacturers. And with the brake pedal just slightly in the wrong position.

For general applications, like running a word processor, there is little to choose between a PC and a Mac. But we want a bit more than that, don't we? Just as the games PC people play benefit from the lack of 'rules' in PC programming, musicians and artists benefit from the Mac's consistency. The Mac is a joy to use. The PC is still a chore, Windows 95 and all. OK, I admit it — it can be an enjoyable chore, if I'm in a geeky mood (author pauses to don Metallica T-shirt). With my Mac, I just switch it on, load *Logic Audio*, and wait for inspiration. Usually, with inspiration reluctant to leave its abode, I rapidly de-load *Logic*, load *Dabbler* and draw rude cartoons.

In my humble opinion, there is just one final and overwhelming argument for the superiority of the Macintosh over everything else. In the film *The Net*, Sandra Bullock used one. And if it is good enough for her, then so am I.

505

Stephen Bennett is a male Northerner who can use hard disk recording systems. He lives in Norwich with three cats and an Apple Macintosh. They are very happy together.

This month's
Sounding Off lives
dangerously, reopening the dreaded
'Mac vs PC' debate.
With tongue planted
firmly in cheek,
STEPHEN BENNETT
prepares himself for
next month's
onslaught of hate

If you'd like to air your views in this column, please send your ideas to: Sounding Off, Sound On Sound, Media House, Burrel Road, St Ives, Cambs PE17 4LE.

Any comments on the contents of previous columns are also welcome, and should be sent to the Editor at the same address.





"This mic instantly justifies all the fuss and hype over valve audio gear and certainly does hit the nerve if vou're looking for warmth and grunt factors. Combining all this in a modern, dependable package (and at a price which seems like they may as well have put a few \$100 notes in each mic case) definitely puts the Classic in the winner category

Australian Digital

Røde Classic Valve Microphone

Beautifully designed and superbly engineered, the new Røde Classic exhibits the smooth, warm sound that, to date, only the very best and most expensive vintage valve microphones could deliver. The capsule is a hand assembled and meticulously tested Dual Pressure Gradient Transducer, using a 6 micron, gold sputtered Mylar diaphragm, and the preamplifier is based around the highly prized GE 6072 twin triode valve. Although out of production for 15 years, Røde has discovered a hidden stock of this most rare of valves, and has commissioned a custom-manufactured Jensen output transformer for the Classic, to precisely match its characteristics. The solid brass, nickel plated body of the Classic is commensurate with the sonic quality of this extraordinary microphone and the separate power supply features vintage rotary selectors for a 2 position high pass filter, -10dB and -20dB pads and no less than 9 polar patterns. Coupled with an excellent dynamic range, this makes the Classic an extremely versatile microphone, ideal for use on both voices and instruments in a wide variety of acoustic environments.

SPECIFICATIONS

Capsule	Dual Pressure Gradient Transducer
Preamplifier	Valve
Frequency Response	20Hz - 20kHz +/- 3dB
Sensitivity	13 mV/Pa
Impedance	
Max SPL	
Pads10dB an	d -20dB switchable from power supply
Filter 2 position h	igh pass switchable from power supply
Polar Patterns	9, switchable from power supply
Microphone Dimensions	175mm (L) x 67mm (Diameter)
Microphone Weight	1Kg
	10 Metres
Power Supply Dimensions	175mm (W) x 165mm (D) x 85mm (H)
Power Supply Weight	1.9Kg
	Microphone, power supply, cable,
	aluminium case, operating instructions



"... quite extraordinary for the price

Studio Sound

"The only major problem we experienced was giving it back

Audio Media

"A very intimate yet assertive sound" Sound On Sound

Røde NT2 Condenser Microphone

Again combining exceptional quality with affordability, the Røde NT2 couples the same, large diaphragm, Dual Pressure Gradient Transducer as the Classic with low noise, transformerless circuitry to create a vintageflavoured condenser microphone ideal for vocal or instrument miking. Cardioid and omni polar patterns are switchable along with a -10dB pad and a filter, enabling the user to change the low frequency response of the microphone. Like the Classic, all internal connections are gold plated and all components have been selected without compromise for high performance rather than low cost. The superbly engineered NT2 has already been purchased by 10,000 users worldwide, and is supplied complete with a high quality shock mount (also available separately) and pop shield, in an aluminium flight case.

SPECIFICATIONS

Capsule Dual Pressure Gradient Transducer
Frequency Response
Sensitivity
Impedance
Max SPL
Pad Switchable -10dB
Filter Switchable high pass
Polar Patterns Switchable omni and cardioid
Microphone Dimensions 205mm (L) x 53mm (Diameter)
Microphone Weight 530gm
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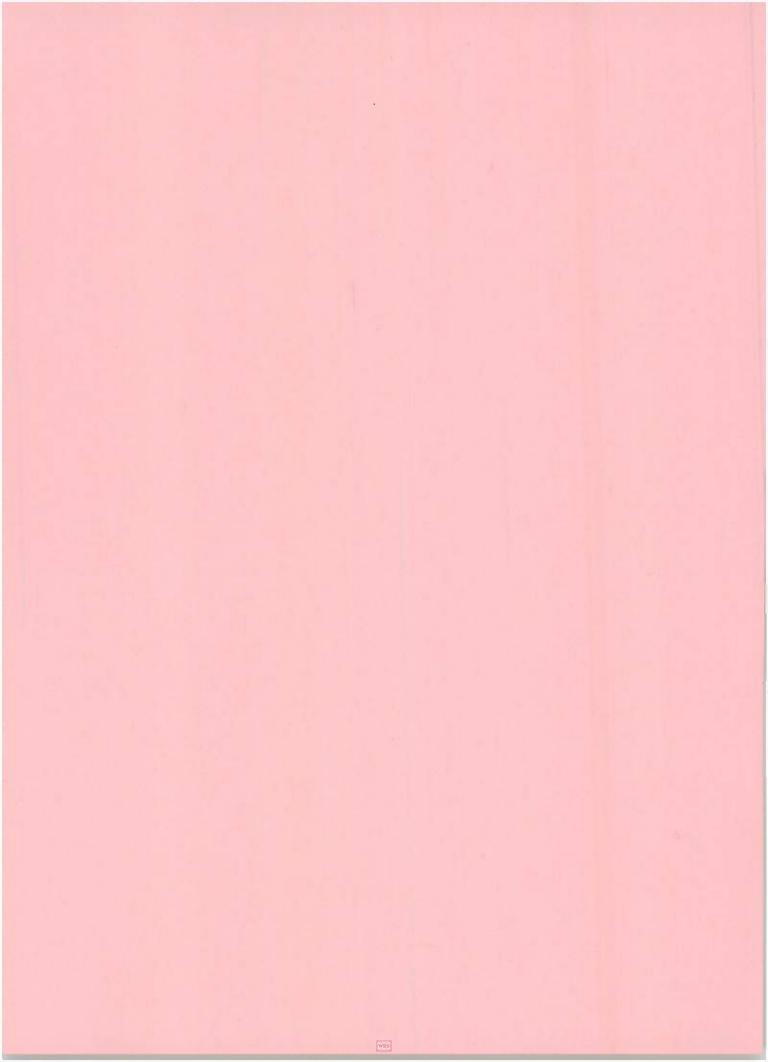
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and the rest of the SOS staff have just returned from the Frankfurt

Musikmesse after five days of wandering through endless acres of new musical instruments and recording equipment, and the impression I've come away with is that most manufacturers see techno as the cash cow capable of laying the golden egg. Virtually all new keyboards are stuffed with techno sounds — some are even filled with techno loops, and software is popping up to enable those with no musical experience at all to cut and paste pre-packaged musical elements to make their own techno mixes. And still there are more techno sample CDs than you can shake a stick at 1 don't know about you, but it all strikes me as rather sad.

Obviously it's sad because musical forms other than techno tend to get neglected, but it's also unhealthy for the techno market itself.

Techno is only one sector of an ever-evolving dance-based musical movement, and though I'll admit there's only so much techno I can deal with in one sitting, the exciting aspect was that it started out as an experimental art form based on largely obsolete technology and relatively simple MIDI sequencing software. Unwanted old analogue synths

that could be picked up for peanuts were pressed into service so that spontaneous timbral adjustments could be made during a performance, and though the underlying rhythmic parameters seemed fairly restrictive, there was still a huge amount of scope for variety and creativity.

Now the anarchic and experimental nature of dance music is being challenged by the company balance sheet, and there's a very real danger that such originality as still exists will be smothered beneath a deluge of pre-packaged techno for the masses. If you don't believe me, consider that Latin music used to be regarded

as daring and trendy before it found its way into those awful automatic style accompaniment home keyboards. Remember the Smith & Jones sketch where they placed a tortoise on the keyboard of one of these monstrosities and started up the Bossa

Nova backing? — even the family pet can play it! How long before we see that tortoise performing at a club?

I'm also concerned by the way dance composers are led to believe they need to pay ludicrous sums of money for an original TB303 Bassline or TR909 drum machine. When the TB303 was current, you couldn't give it away because, frankly,

it was hard to program and the bass sounds were pretty unimpressive by any standards. Yet we're told that's what real dance music producers use, so we have to have them, or at the very least, use a modern keyboard stuffed full of samples of the same old machines. I can't see it myself,

because given any half-decent analogue synth, or even a basic General MiDI synth with a hardware controller that lets you get at the filters, you can create your own sounds that are every bit as engaging, and still work within the genre. Considering that this is a supposedly anarchic art form, there's an almost frightening degree of self-imposed conformity.

For me, the last straw was seeing one of the world's most prestigious cymbal manufacturers announce a range of cymbals designed to emulate the sounds of TR808/909 hi-hats and cymbals. Whatever happened to choosing your own sounds and making music the way you wanted it?

As Devo probably never said, "Are we not Sheep?"

On a completely different note, all of us at Sound On Sound are pleased to be able to welcome on board Hugh Robjohns as Technical Editor. Hugh is a keyboard player who uses a PC for sequencing, and has contributed extensively to Sound On Sound over the last couple of years — his background in operational engineering and training for the BBC helping him to become one of the most authoritative voices in audio journalism.

Paul White Editor

SOUND ON SOUND

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Classical Gas

After reading Big George's interview with Debbie Wiseman in SOS March 1998, something struck me. In the last paragraph, Big George writes: "Watching Debbie Wiseman create such wonderfully rich and full music with only six people and without the use of any electronic instruments made me realise how the ability to write great classic music is a skill bestowed only on the very elite".

Maybe nothing has changed in the last 200 years and we're still entrenched in the idea that to produce really "classic" music one has to assemble a group of musicians whose instruments have been hewn from a recently felled tree and strung with fresh catgut (organic, of course), to play a score whose every note has been painstakingly thought out in advance by someone who is a member of the "elite". Will someone please tell me why, in certain peoples' opinion, music takes a good few steps up the class ladder as soon as one ditches electronics in favour of 'real' instruments (whatever they are), and employs musicians who most of the time specialise in musical necrophilia (the art of playing dead peoples' music)? The whole idea that the orchestra is the pinnacle of western musical culture no longer exists. The musician/composer of today has access to a broad tonal palette and he/she is not limited to the fixed timbres of the orchestra. Of course, this is not to say that traditional orchestral instruments are redundant. Far from it; they are all part of the 'sound world'. If a composer needs to use a violin, fine, but s/he also might choose to use an abstract sound produced by an electronic instrument of some kind. In my mind, both are just as valid and of equal importance to the development of our musical history. However, there are people

who at the slightest opportunity will have a go at the composer who dares to use electronics in his or her work. This is not surprising, given the fact that as soon as you mention the synthesizer to anyone involved in contemporary classical music they immediately think of the tedious computer experiments of the '50s and '60s, or the mindnumbing, four on the floor dance music that seems to invade every area of our lives at the moment.

Big George's comments, innocent as they were, do nothing

orchestrated, with sublime melodic counterpoint and without the use of binary quantisation.

With regard to your comments on felled trees and catgut, at least these are instruments made of ecologically sound materials, which will not only still work when the electricity supply dries up, but will eventually make good firewood. Plus you have to admit that instruments which have needed no upgrades for around three centuries must be good for something. I'm sure if Mozart were alive today he'd be stuck in front of

when you work with highly trained musicians (who may or may not be stuck-up elitists) you have the opportunity to get a truly wonderful performance. I've always thought that the second most wonderful moment in life is between the count of "four" and the music starting.

As for musical necrophilia, good music does not diminish with the passing of time; in my opinion, it matures. Jimi Hendrix, the Beach Boys, Duke Ellington and the rest of 'em (dead or alive) sound better today than they did in their time. Likewise the genius of Bach, Mozart, Beethoven and the others in that gang are more relevant today than at any other time.

I'm a great believer in the three elements of music — rhythm, melody and harmony — but I think there should be another one: emotion. But any one of these can stir the listener into rapture. The 500,000 people who went to all-night raves last New Year's Eve were more than happy with the predominantly rhythmic "four on the floor".

Also, I must take you to task about the tedious computer experiments of the '60s. You're wrong. Check out the classic delights of An Electric Storm by White Noise (Delia Derbyshire and David Vorhaus). Alternatively, the output from that lot at the BBC Radiophonic Workshop is still the benchmark which most scientists of sound today fail by. What a shame the top brass at the BBC, in their infinite and unparalleled stupidity, decided to close it down - although I shouldn't complain, since some of that work has come my way!

And finally, you say that I, albeit innocently, do nothing to break down the class system which permeates the musical establishment: piffle. There are two things, in my humble but guilty opinion, which perpetrate the 'them and us' feeling between different groups of musicians: the first is success and the second is being jealous of that success.



Big George.

to break down the class system that seems to permeate the musical establishment. Finally, time is the only judge in deciding whether a piece of music deserves to become a "classic", and unfortunately, very few composers produce works worthy of that accolade, even if they are a member of the "elite".

Tony Flynn
London

Big George replies: Firstly, I'm so pleased you made it to the last paragraph of my piece on Debbie Wiseman. It gladdens my heart to know that all the time I spend speling thighs properley isn't for nothing. When I said "classic", I meant that she writes music which is classically

an Apple Mac, but not wishing to be presumptuous, I'm even more certain that when it came to recording his pieces, he'd avail himself of the most powerful musical force known today: a full orchestra.

Personally, I don't own an orchestra myself and spend most of my time in front of my own trusty and reliable Mac, happily composing my own classic pieces (just give 'em a couple of hundred years) with the aid of top MIDI-compatible modules. But I'm aware of two things. Firstly, if there was no electricity, I'd be stuck with good for nothing, non-biodegradable chunks of tin and plastic. Secondly, every time I hit that start button the piece comes back at me exactly the same. This is just how some people want it, but







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Crosstalk

Drum Major

I've been enjoying Nicholas Rowland's drum programming series, but it has left me with a question regarding the setup of my Alesis D4. Conventional wisdom suggests that closed hi-hat, pedal hi-hat and open hi-hat should be assigned to a group so that only one can be heard at any one time. This also cuts off the open hat when appropriate.

Anyway, the use of pedal and closed hat is invalidated by this setup so I was wondering what you would suggest. My current work-around is to assign pedal and open hat to a



group, and where a pedal hat does not follow an open hat I've inserted a very low-velocity pedal hat to end the open hat. This seems to result in a realistic sound, but I have to remember to insert the low-level pedal hat after any open hat.

On the subject of hi-hats, we all seem to limit ourselves to three sounds — originally, I assume, because of the limited capabilities of the boxes we used, and now because of General MIDI. Have you ever tried using more than three sounds in a hi-hat part? The D4 has

some half-open sounds but I've not managed to figure out how to use them to make a more authentic part.

Thanks for an informative series.

Graham Owen

via email

Nicholas Rowland replies: I'm pleased to hear that you've found the series interesting. While I'm not totally familiar with the Alesis D4, the grouping function you mention is common to a lot of drum machines and sound modules. The thinking is that if they don't allow you to programme combinations of hi-hat sounds on the same beat, your results will automatically sound more realistic. But as you've said, it can be a useful way of controlling the duration of open hi-hat sounds. If the D4 allows this, you could try first ungrouping the hi-hats so that all the sounds become free agents. Then group the open hi-hat with another sound - say, a shaker - which becomes the means by which you control the length of the hi-hat in the manner you've described. Another approach - and again, I don't know whether the D4 responds to this treatment is to control the length of open hi-hats with MIDI note off messages. You don't say what sequencer package you're using, but it should be easy enough to draw in the right note lengths. As an alternative to this, simply replace the pedal hi-hat with a similar type of sound. Again, cabasas and shakers are usually good substitutes.

To address your second point, yes, I often use more than three hi-hat sounds in patterns. Like the Alesis D4, my venerable Cheetah MD16R also offers a half-open hi-hat. However, when it came to constructing examples for the feature, I thought that, in the interests of making the patterns as accessible to as many people as possible, I would just stick to the GM holy hi-hat trinity.

To be honest, I don't like most of the open hi-hat sounds I hear on drum machines, and more often than not I substitute the half-open sound, which I think sounds more realistic. When I do use a fully open hi-hat, it tends to be as an accent feature. For example, if I'm programming a rhythm around the basic dance pattern (four on the floor bass drum with a hi-hat on the offbeats), I would use a half-open hi-hat on the first seven offbeats of a 2-bar phrase, then maybe a fully open hi-hat on the eighth offbeat. I also tend to keep open hi-hats low in the mix: somehow they always seem to sound much louder than the closed and pedal variants. The exception to this rule is the TR808 open hi-hat sound. I occasionally use this as a feature sound in rhythms which otherwise employ 'acoustic' hi-hat samples. But these are my personal preferences. The only rule to really take seriously when programming rhythms is: if it sounds right, it is right,

I hope this helps. Thanks again for your interest in the series — I really appreciate your feedback and comments.

To DI For

I've been playing bass guitar for a couple of years, but have only recently begun recording. I record my bass by plugging it directly into my Yamaha MT100 cassette 4-track and monitoring with headphones. I find that when I'm rehearsing or recording a part the bass sounds great; however, as soon as I play a recording back it sounds lifeless and dull, and significantly quieter than when I was recording. I've also tried sampling with a friend's sampler, but I still lose a lot of brightness and volume.

Am I doing something fundamentally wrong or do I simply need better recording equipment? Ben Dalton Poole

I wonder if you can help me? I'm looking to buy a DI box for recording my guitar on my 4-track. Have you done any product reviews recently? What's the best way of finding out about DI boxes and making a choice? I'm not very technically minded when it comes to reading brochures and so on.

Any help would be much appreciated.

Ian Clarke via email

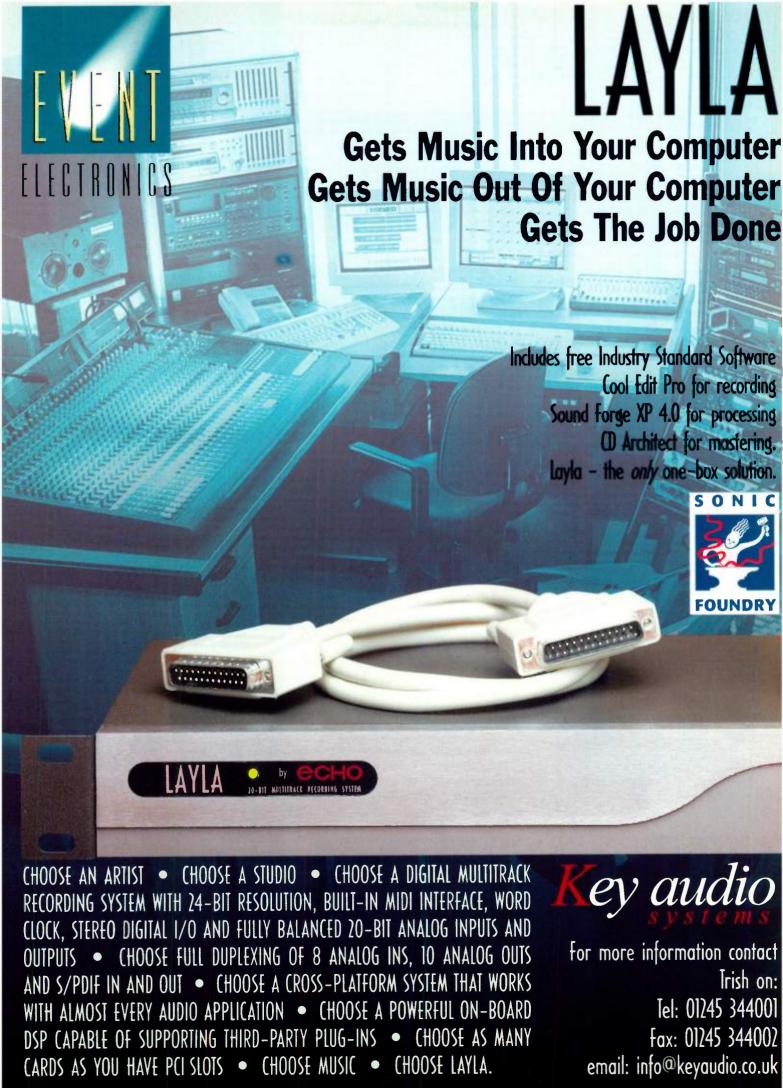
Derek Johnson replies: One answer to Ben's question can be found in Ian's: Ben probably needs a direct inject box. His problem could be due to an impedance mismatch between the bass and the MT100's line input, and a DI box will provide the necessary matching. Both Ben and Ian could do worse than check out the article Let Me Be Direct: DI Boxes & Why We Need Them from our April issue, which discusses all aspects of using DI boxes. It's available as a back issue from our mail order department for £5.50 including UK postage. We have reviewed various devices in the past, ranging from

simple passive DI boxes, costing around £50 or £75, to esoteric valvebased devices that are virtually signal processors. Both Ben and Ian will probably be happy with a simple unit, such as the BSS AR116 Active DI Box (BSS 01707 660667), Canford Audio's active DI box (Canford Audio's active DI box (Canford Audio 0191 415 0205), EMO's E520 single or E525 dual DI (EMO Systems 0191 373 0787), or P&R Audio's DI2 passive and DI3 active DI boxes (P&R Audio 01323 849522).

Paul White adds: If your recording equipment is adjusted and maintained properly, what comes out should be pretty close to what goes in bar a little tape hiss. Check you're using the correct type of tape, as specified in the manual, and that the machine is properly cleaned (using alcohol, not a cleaning tape!) before each recording session. An active DI box will produce a better match between your multitracker and your guitar, resulting in a brighter

sound, but if you were satisfied with the sound you were monitoring whilst recording, a DI box isn't going to solve all your problems. If, after cleaning your machine and checking the tape type, the sound still isn't good enough, you may have to consider something more sophisticated, such as one of the new digital multitrackers.

For dirty guitar sounds, you need a speaker simulator to create that miked-up cab sound, in which case you can't better the passive Palmer Junction Box at around £79 (contact Gladden Pro Audio on 01206 303017). This will accept pedals, preamp outputs or even speaker outputs, and it plugs directly into the mic input of any mixer or multitracker. One or two of us at SOS use them ourselves, and it's about as close to a miked-up sound as you get. Remember that a speaker simulator doesn't include overdrive or effects: it just comes at the end of the chain to emulate a miked speaker cab.

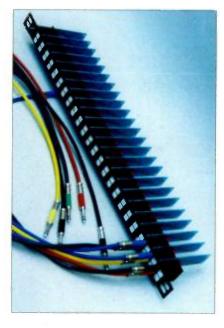


Crosstalk

He'd Rather Jack

Paul White's article about patchbays in March's Sound On Sound made good reading and covered the subject well, but I hope he will allow me to add a few comments which come from years of experience with these passive, but often temperamental, pieces of studio equipment.

it should be explained that there are three types of 'jack plug' audio patchbay in use, namely the domestic quarter-inch jack (be it 2- or 3-contact), known as the A-gauge jack, the old post office standard quarter-inch (or B-gauge) jack, and the bantam jack, which is a miniature version of the B-gauge. Most professional studios use B-gauge or bantam jackfields due to the solid construction of the components. These jackfields will be hard-wired at the back, either with solder connections or insulation displacement methods. Some I have seen recently are wired to high-quality multi-way EDAC connectors, allowing pre-fabrication of the wiring loom off-site before installation



I've come across an A-gauge jackfield only once in the last 15 years and I have to say it was rather problematic. This wasn't necessarily because of the type of jack, though their low cost is probably reflected in a lower standard of construction, but rather in the use of jacks back and front of the panel. Open connectors tarnish quite rapidly and without regular removal and insertion, which wipes or scrapes the contacts, a buildup of oxide occurs which eventually leads to crackling connections. I would urge anyone installing a patchbay to solder the wires to the back using a small-diameter twin and

screen cable, such as Wadsworth FST audio installation cable at around £20 for a 100m drum (Wadsworth 0181 268 7000). Two pieces of this cable will easily fit into a TRS jack to make an insert lead and, with the help of cable ties, it can be easily loomed to make a neat job. If you expect to change your rack, the tail from the jack should have some spare length to it, which can be lost in the loom until required. Even if your equipment is all unbalanced, I would recommend, if you have any thoughts of upgrading in the future, that you wire your installation with twin and screen cable with 3-pole jacks. Changing a few connectors and the designation strip is a lot quicker than wiring a whole new installation from scratch. Second-hand B-gauge patchbays are often a good buy from audio dealers at about £50 for a 1U panel with two rows of 20 or 24 jacks. These dealers can often supply the plugs, though an A-gauge plug will normally fit a B-gauge socket (but not the other way round!). Proper cleaning equipment for patchbays is available from companies such as Canford Audio (0191 415 0205) and Lagree with the comment about mounting the panel vertically to keep out dust and foreign objects.

Finally, a thought on the patch leads themselves. I have a selection of lengths, to keep the amount of knitting down to a minimum. Also, when I started in audio many years ago, yellow patchcords were phase reversed (ring and tip connections reversed at one end). I have extended this so that any phase reverse lead in my kit is yellow, be it jack or XLR. It's gratifying to note that Canford still list and sell their yellow patch leads as phase reversed and I would urge anyone using patchbays to follow this standard.

I look forward to the article on digital patching! Keep up the good work. Andrew Groves via email

Paul White replies: Thanks for your comments and additional information. As you can probably imagine, we tend to stick to talking about A-gauge jacks in the typical home MIDI studio, simply because quarter-inch jacks are the common currency of musicians, but I agree with you entirely as to the questionable reliability of some of these patchbays, due to contact tarnishing. Hard-wiring the back of patchbays also makes sense, but there are still a lot of studio owners who won't pick up a soldering iron (and I have tried to encourage them!).

Digital patching - now there's another can of worms!

RnB Music Concert Systems Dicital Village O Mussic London Microphone Centre (LMC) Rainbow Sound X Musac Dawsons Music Music Village Russell's Music Musical Exchan Ken Mitchell Music Control Techniques Ire Sound Control The Audio Conr The Warehouse Percy Priors The Music Station Earth Music Carleben Carlsbro Ad Lib The Synthesizer Company (TSC) Graday Theatre Service Raper and Wavman HHB Communications Ltd. DM Music A1 Musac Centre Willow Comm Carlsbro Academy of Sound Carlshim PMT B&H So The Live Music Shop Nevada Music A1 Music Centre ration (TMC) Daw Musar Carlshro Academy of Sour Music Control The Music Station KGM Studio Specialists

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WINCHESTER 01962 865 253 by Soundcraft







IRIT FOLIO FX8 & FX16 Live/Recording Mixers with Effects re on FX8 [] FX15 [] The full Spirit Range id use my FX console for Live Rand Name Spirit by Soundcraft*, Harman International Industries Ltd., Cramborne House, Cranborne Industrial Estate, Cranborne Road, Potters Bar, Hertferdshire EN6 3JN, England. Tel: +44 (0)1707 665000. Fax: +44 (0)1707 665461

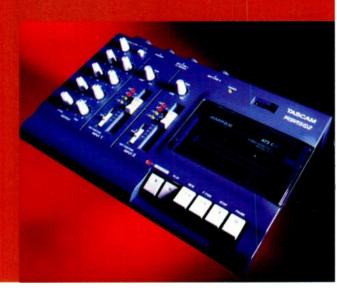
shape of things to come

Now we are 02...

ascam's new Porta 02 cassette multitracker has been released at the very user-friendly price of £150. The easy-to-use 4-track offers a 4-channel mixer section with level and pan, two mic/line inputs with trim control, and two tracks of simultaneous recording. There's not much else to be said

about the Porta 02: it's compact, it's cost-effective, and it's got an attractive paint job!

- A Tascam, 5 Marlin House, The Croxley Centre, Watford, Hertfordshire, WD1 SYA.
- T 01923 819630.
- F 01923 236290.
- W www.tascam.com



All hands on decks!

loset DJs are invited to come out and attempt to win some prizes, thanks to Nottingham's Millennium Music Software and Arnold & Carlton College. The Steal The Wheels National DJ Championships begins at 8pm on Tuesday 26th May at Sam Fay's, The Great Northern Close, London Road, Nottingham, with weekly heats leading up to a grand final. And what do the winners get? Top prize is two years of free tuition on the Arnold & Carlton College Music Technology/DJ Skills course, which normally costs £3500. Also up for grabs is a Millennium PC system, complete with Steinberg Cubase VST and ReBirth, Mixman Virtual DJ software and 16-bit soundcard, altogether worth £2000. Runner-up prizes include £300 worth of assorted sample CDs from Time & Space and Zero G, two pairs of AKG headphones, worth £99 each, and

four copies of *Virtual DJ*, worth £40 each.

The competition is open to anybody, whether newcomers or more experienced performers. A panel of judges, including well-known DJs and nightclub promoters, will be on hand to judge entrants' DJing skills, as well as audience reaction and dancefloor action, and a "surprise celebrity guest" is promised to help judge the grand final. Entry forms can be obtained by sending your name and address to Millennium or by dropping into Millennium or Arnold & Carlton College.

- A Millennium, 172 Derby Road Nottingham NG7 1LR.
- 0115 955 2200.
- 0115 952 0876.

.....

- sales@millennium-music.co.uk
- W www.dj-net.demon.co.uk
- Arnold & Carlton College, Bath Street, Nottingham, NG1 1DA.

24 Tracks the MOTU way

ark of the Unicorn, noted for their MIDI sequencing products and MIDI interfaces, are making a surprise return to the soundcard market. (Some of you may recall the NuBus Digital Waveboard of some years ago.) Now MOTU are jumping into the PCI soundcard market, but they're doing it with a difference. For £995, their 2408 system offers a PCI card that interfaces with a 1U rackmounting breakout box. Not only does this unit provide eight analogue inputs and outputs, but it also comes with three sets of Alesis ADAT digital optical ins and outs and three Tascam DA88 TDIF in/out connectors as standard. Any three of these sets of connectors can be used at once, for a

maximum of 24 simultaneous inputs and outputs. You can mix and match the connectors in any way, so you could connect an ADAT and a DA88 and still use the analogue ins and outs.

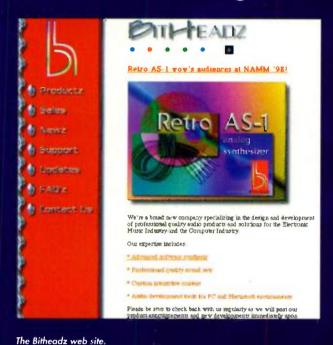
There's a main stereo analogue output, and three sets of S/PDIF digital outs: one is for the main stereo mix, and the others serve as stereo ins/outs. In addition, BNC word clock connectors are provided for synchronisation with standard word clock devices; sample-accurate ADAT and DA88 sync is possible via the PCI card. And if that's not enough for you, it's actually possible to hook up *three* breakout boxes to the PCI card, for a total of 72 simultaneous tracks.

Included with the 2408 system is a full-featured audio workstation software package for Macs that includes multi-channel waveform editing, automated virtual mixing, graphic editing of ramp automation, real-time effects plug-ins with 32-bit floating-point processing, crossfades, support for third-party audio plug-ins (in the MOTU Audio System and Adobe Premiere formats), background processing of file-based operations, sample-accurate editing and placement of audio, and more. The 2408 system can also be used with MOTU's Digital Performer audio sequencer software package (the latest version was reviewed in March 1998).

- A MusicTrack, 19a High Street, Shefford, Bedfordshire SG17 5DD.
- 01462 812010.
- F 01462 814010.
- W www.motu.com



Retro makes the grade



ew American software house Bitheadz have introduced a virtual synth for Power Mac users. The Retro AS1 is claimed to be "the first fully programmable, professional-quality, analogue [style] synthesizer for the Macintosh". The software has polyphonic capability, an arpeggiator and real-time input, with all the functionality of a real-world synth at a US price of \$259. BitHeadz CEO Steve O'Connell notes: "We've taken '60s technology and spiffed it up for the '90s. With the Retro AS1, the user gets the best of both worlds - great sound quality plus effects and an arpeggiator. Being a musician myself, it was important to me to design a 'musician friendly' interface, and I also made sure that the Retro AS1 will painlessly integrate with a user's current MIDI setup."

The software comprises a synthesizer engine, editor, control panel, mixer application, 1000 sounds, a direct serial port MIDI application, OMS driver, FreeMIDI driver and an on-screen keyboard. It features 24-bit, 44.1kHz sound quality, up to 16 voices (CPU dependent), unlimited presets, and stereo output. The software also boasts complete matrix modulation controls, multiple filter types, multiple oscillators, insert and global effects, and 16-part multitimbrality. The built-in arpeggiator actually imports and exports in MIDI File Format. When UK availablity is announced, we'll let you know.

- A Bitheadz, 4400 Capitola Road, Suite 202, Capitola, CA 95010 USA.
- T 001 408 465 9898.
- F 001 408 465 9899.
- W www.bitheadz.com

Launch of the dance

ondon hi-tech retailers Turnkey recently launched their new Loopstation dance music technology division with visits from the legendary Robert Moog (see our interview with Dr Moog starting on page 46 of this issue) and Orbital's Paul Hartnoll. The new Loopstation division features over 2000 square feet of space given over to DJ consoles, samplers, drum machines and hard disk recorders. Also on display is a huge collection of vintage synths integrated into a 10-metre-wide "mega-synth", which is actually available for customers to use: visit Loopstation, create a sound with the mega-synth, and take samples away with you

- A Loopstation, 114-116 Charing Cross Road, London, WC2H ODT.
- 0171 379 5148.
- 0171 379 0093.
- W www.turnkey.uk.co



A3000 _{looping} good

amaha have released a v2
operating system update for
the A3000 sampler (reviewed
in July 1997's SOS). New
performance, editing, and utility
facilities have been added that
"make the A3000 even more
powerful and even easier to use".
Major new features include:

- Loop Remix, which automatically rearranges a looped breakbeat into new variations.
- Loop Divide, which automatically slices up a breakbeat pattern and maps the pieces to successive keys along the keyboard.
- New filter types: 10 additions bring the total to 16. The collection now includes various

low-pass, high-pass, band-pass, band-reject and peaking options.

- MIDI-controlled LFO: this new LFO, sync'able to MID clock, can be set up separately for each program.
- Effect routings: new serial and parallel options are joined by the ability to route each effect to any of the assignable outputs.
- New modulation matrix destinations and sources.

 In addition, sample management is enhanced by new automatic mapping routines, and more copy, mapping and offset routines, v2.0 is rounded off with a new safer disk-saving routine, faster loading from both floppy and SCSI disks,

as well as improved SMDI transmission, a "better layout" of Easy Edit, with more parameters on screen, and improved import/export of Akai samples, with support for Roland and AIFF format samples. Data can now be saved across multiple floppies, and larger SCSI disks can be used — up to 8Mb. A DIY upgrade kit will soon be available for purchase by v1 owners.

- Yamaha-Kemble Music (UK),
 Sherbourne Drive, Tilbrook, Milton
 Keynes MK7 8B1.
- Brochure Line 01908 369269.
- 01908 368872.
- www.yamaha.co.jp/product/ homeenglish/index.html

SOS can be reached at sos.feedback@sospubs.co.uk
Our web site address is www.sospubs.co.uk

shape of things to come

The software required to join in Res Rocket's live Internet Jams is now completely free! Previously, it cost US\$4.95 a month to get the software and Join in the activities but now, with membership standing at 4000 people, advertising and sponsorship will be able to subsidise the system. The software can be downloaded from www.resrocket.com.

Keyboard player Rick Wakeman was recently added to the list of endorsees for Generalmusic's Pro2 Real Plano. Rick said: "The feel and action of the keyboard, an often-overlooked part of keyboard manufacture these days, is really excellent."

Generalmusic UK 01827 312230.

Recording musician Blue Flux, who has appeared more than once in our Demo Doctor pages, has formed his own record label, Enthaloy Records, The label will act as a vehicle for his five currently available CDs, as well as providing a launch pad for other independently minded acts. The launch of the label coincides with the recent completion of In Flux, the Blue Flux web site where visitors can listen to audio clips from all available albums, new record label, and order CDs. The site also features a comprehensive page of studio and recording tips and details, two picture libraries with free download facility, and a large 'Cool Links' section.

W freespace.virgin.net/thomas.kunze /index.htm

Sounds OK, UK distributors for Voice Crystal sample CDs, are offering all Voice Crystal CDs at the special price of £24.95 each including VAT (normally £44.95) until May 30, 1998. Titles include Liquid Guitar, Maximum Impact, Cyclotronic Resonator and more.

01276 682313.

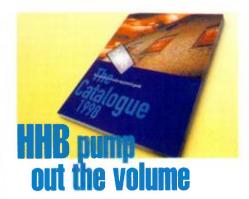
soundok@cableol.co.uk

World Control's Ultra Control analogue sound series for Kurzweil's K2000 and K2500 has been reduced in price. The Nordlead, 303, Jungle Kits and Prophet Pad sets now cost £27.50 each in the UK (£33 or US\$55 overseas).

01924 785945.

www.wcontrol.force9.co.uk

SOS can be reached at sos.feedback@sospubs.co.uk or visit www.sospubs.co.uk



t's that time again: the new catalogue from HHB
Communications is out now. The 1998 catalogue runs to 168
pages, lists over 1300 products, and is printed in full colour.
It's free to qualifying UK audio pros and organisations. Once again, the HHB service department has provided a selection of technical tips, and comments from HHB staff are augmented by interviews with pro audio manufacturers.

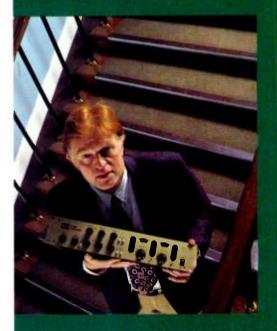
- A HHB Communications, 73-75 Scrubs Lane, London NW10 6QU.
- 0181 962 5000.
- **3** 0181 962 5050.
- E sales@hhb.co.uk
- W www.hhb.co.uk



Mad about the Boy

fter a few years in the MIDI building block file business, Keyfax have made a surprise move into hardware. Phat Boy is a MIDI controller, equipped with 14 knobs, that provides hands-on control over Roland GM/GS and Yamaha GM/XG sound modules and Steinberg's ReBirth RB338 software - just the thing if you feel the urge for some real-time tweaking. The knobs are hard-wired to the appropriate controllers that allow you to play with - and record to a sequencer — the following parameters over MIDI: filter cutoff; resonance; portamento; envelope attack; envelope decay; envelope release; vibrato depth; vibrato speed; vibrato delay; pan; volume: reverb level; chorus (FX); MIDI channel 1-16. Phat Boy comes with a disk of custom MIDI samples from Twiddly. Bits, and should retail for £159.95 including VAT.

- A Keyfax Software, PO Box 4408, Henley-On-Thames, Oxon, RG9 1FS.
- 01491 577147.
- www.gmedia.net/keyfax



Strong Stirling takes on the Germans!

tirling Audio have taken on the exclusive UK distribution of products from SPL (Sound Performance Lab), the German signal-processing company. MD Andrew Stirling notes: "We knew all SPL's products, such as the Vitalizer and Loudness Maximizer, were innovative and exceptional performers... We feel that SPL fits perfectly into our expanding pro-audio portfolio."

SPL's move to Stirling coincides with the launch of "a world first in dynamic signal effect processing".

The Transient Designer introduces SPL's Differential

Envelope Technology, which provides much finer control over transients and sustain. Transients can be accelerated or slowed down and sustain prolonged or shortened, while all time constants are automatically adjusted for maximum musicality. The Transient Designer can be used to enliven samples, and has four independent channels, with which interesting panorama effects can be created using the link controls. For example, the attack of a bass drum or sample can be given emphasis to increase its power and penetration. The sustain of a snare or reverb can be damped down musically, to clean up a mix for more transparency, while acoustic or electric instruments can be mellowed, to reduce

- A Stirling Audio, Kimberley Road, London NW6 7SF.
- 1 0171 624 6000.

their attack.

- F 0171 372 6370.
- E sales@stirlingaudio.com
 - www.stirlingaudio.com

Our customers' comments

"Ghost is Killer! Classic fat British EQ like you've always dreamed of, And the faders are awesome...the taper on them is as smooth as anything I've ever used. Incredible. Ghost has just about everything I look for in a quality console; great tone....great feel...looks...even the name! I'd swear vou custom made this for me. I could not have picked a better console for sound, features and feel."

Geno Porfido, Boulevard Recording Co. New Milford, NJ "Other consoles I've worked with in the past just couldn't deliver the levels of punch and clarity I felt the music deserved. I never have this problem with my Soundcraft Ghost. The Ghost gives me the flexibility I need over a wide range of frequencies and has the body and warmth to really bring my music to life."

Johnathan Moffett, Drummer with Michael Jackson and Madonna "After the first mix I did, I realised I was in a whole new league. This thing sounds beautiful. Very silky in the high end and full in the lows. The EQ is totally cool and the board has a quality feel to it. I know of nothing that touches it in its price range and I have been recommending Ghost for months to anybody who's looking for a console."

Garth Webber, Red Rooster Studio, Berkeley CA

"I've worked on many competing 8 bus consoles and none can compare to the Ghost in features, ergonomics and, most importantly, sound. The Ghost, simply put, sounds warm and musical - you don't have to work hard to get great sounding mixes on this board. The EQ is very flexible and we compared the mic preamps (using a Neumann U-47) to the Neve 1066s in our studio. We were very surprised at how favourably they compared to these megabuck classics."

Peter Thorn, What If? Productions.



Just about the only sound as sweet as our EQ!

Let us know what you think about the Soundcraft Ghost by visiting our web site at http://www.soundcraft.com or via e-mail to info@soundcraft.co.uk



H A Harman International Company

SOUNDCRAFT, HARMAN INTERNATIONAL INDUSTRIES LTD, CRANBORNE HOUSE, CRANBORNE RD.
POTTERS BAR, HERTFORDSHIRE, ENG 3JN, UK TEL +44 (0) 1707 665000 FAX. +44 (0)1707 660742
SOUNDCRAFT US, HARMAN PRO NORTH AMERICA INC, AIR PARK BUSINESS CENTER 12 1449
DONELSON PIKE NASHVILLE TN 37217 USA TEL 1-615-3600-471 FAX 1-615-3600-273

shape of things to come

educationcorner

LOWESTOFT COLLEGE

Lowestoft College have provided students of their BTEC National Diploma in popular music/music technology with a new music technology suite. The Norwich branch of Academy of Sound was instrumental in specifying and supplying the suite, which comprises 12 computer music workstations based around Korg and Yamaha keyboards connected to Macs and PCs. In all, 50 students will have access to the workstations during the course.

- A Lowestoft College, St. Peters Street, Lowestoft, Suffolk NR32 2NB.
- T 01502 583521.
- F 01502 500031.
- info@lowestoft.ac.uk
- W lister.lowestoft.ac.uk/
- 1 Academy of Sound 01603 666891.

CANTERBURY COLLEGE

Canterbury College is now offering a two-year full-time BTEC National Diploma in Music Technology. Modules include electronic music production, recording and production techniques, audio electronics and multimedia. The new Music Technology facility has 20 workstations, all running Steinberg's Cubase VST with Korg X5D synthesizers; seven workstations are further equipped for synchronised analogue multitrack recording. Digital audio is a particular focus of the course and material produced either through the application of Cubase VST or Digidesign Pro Tools may be mastered onto DAT, MD or CD.

Planned developments for 1998 include the establishment of two new courses: a one-year, full-time First Diploma and a 10-week evening course. In addition, the establishment of a recording studio will augment the resources for Music Technology within the college.

A Admissions, Canterbury College, New Dover Road, Canterbury CT1 3AJ. T 01227 811260.

ANDERTON'S MUSIC EDUCATION CONSULTANTS

Due to expansion over the last year. Anderton's Music Company's education department has now become a dedicated division, called Music Education Consultants. MEC aims to provide schools and colleges with a one-stop solution for advice on music technology in the National Curriculum. The department, which can advise on educational discounts, has specified, designed and built facilities ranging from simple 4-track studios, though concert halls, to digital studios costing a quarter of a million pounds. MEC is an INSET (IN SErvice Training) centre for teachers and has also just become a Steinberg Training Centre. Software-based courses cover sequencing. scorewriting and hard disk recording. Courses covering multitrack recording techniques and sequencing aimed at A-level Music Technology teachers have also been run. A free catalogue outining MEC's services is available.

- Andertons Music, 58 & 59 Woodbridge Road, Guildford, Surrey GU1 4RP.
- 1 01483 456888.
- F 01483 456722.
- E mec@andertons.co.uk

ST HELENS COLLEGE

Students studying BTEC Music Technology at St Helens College are planning to produce and release a CD compilation of unsigned dance acts. The release of Digital Nation, as the CD will be called, forms part of the Integrated Studies module of the course, which is designed to benefit students by giving them first-hand experience in the design, marketing and selling of a commercial product. The module also provides hands-on experience of recording, producing and mixing in a live studio environment. To fill the CD, the students are looking for demos in any dance style, no more than five minutes in length, on DAT or Minidisc. Send your track, together with contact details, to the college.

- A Digital Nation, Room J226, SKB Building, St Helens College, St Helens, Merseyside WA10 1HS.
- T 01744 623221.

 W www.jill.u-net.com

SAE TECHNOLOGY COLLEGE

SAE have announced two partnerships. First of all, after more than a year of preparatory work, SAE has negotiated a partnership with the University of Middlesex. The University has agreed to validate two new degrees to be run by SAE Technology College, London. These will take the form of Bachelor of Arts (Hons) in Recording Arts and Multimedia Arts. Initially, the courses will be available in London, Munich and Sydney. Students who have completed current SAE diplomas in audio and/or multimedia will have the option to carry certain credits towards the degree.

Secondly, the school has chosen to use recording media from

Quantegy, following an extensive evaluation of Quantegy products.

- A SAE Technology College, United House, North Road, London N7 9DP.
- 0171 609 2653.
- F 0171 609 6944.
- W www.sae.edu

JAMES WATT COLLEGE

For the past 10 months, HND Music Technology students at Greenock's James Watt College of Further & Higher Education have been working on an album of up-and-coming Scottish bands. Initially, ads were placed in local papers for demos, and students voted for the six best. These six bands were then recorded by students at the college's digital studio. This was only installed in 1996, and includes much state-of-the-art equipment: two Yamaha 02Rs, two Alesis ADAT XTs, Tascam DA60 DAT, Digidesign Pro Tools system, and plenty of signal processing, synths and samplers. The project had the dual benefit of giving students a chance to work on a commercial release, and providing an outlet for as-yet unsigned talent. The CD is priced at £10, and is available locally. Contact the Music Technology department of the college if you're out of the area.

- A James Watt College, Finnart Street, Greenock PA16 8HF.
- T 01475 724433.
- www.jameswatt.ac.uk:80/~pquinn

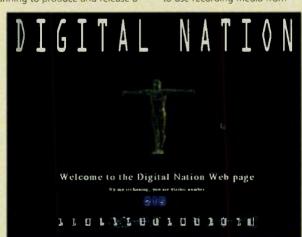
ROSE BRUFORD COLLEGE

Stuart Roslyn, a final-year student on Rose Bruford College's new Music Technology degree course, will be amongst the first to graduate this July. Yet Stuart is already developing a career in TV music: he produced all the music for Mad Cows and Englishmen, a BBC2 series that aired during February, and has written music for Channel 4's Despatches and a number of TV ads.

- A Rose Bruford College, Burnt Oak Lane, Sidcup, Kent DA15 9DF.
- T 0181 300 3024.
- F 0181 308 0542.
- E admin@bruford.ac.uk

SANDWELL COLLEGE

Sandwell College, located to the north of Birmingham, has recently revamped its media centre. The new



The Digital Nation web page, as produced by music students at St Helens College.



Sandwell College.

facility is now equipped with two Yamaha 02R digital desks, a Yamaha 03D digital desk, Tascam DA88 and DA38 digital 8-tracks, and a Tascam DA30 MkII DAT machine. The hardware was supplied by Birmingham's LMC Audio Systems. Other equipment includes Yamaha REV500 effects processors, Yamaha P1500 power amps and a Digidesign Pro Tools system.

- A Sandwell College of Further and Higher Education, Woden Road South, Wednesbury, West Midlands WS10 OPE.
- 1 0121 556 6000.

DARNALL MUSIC FACTORY

Darnall Music Factory is a community music project based in the east end of Sheffield. It targets the young unemployed and offers training and employment opportunities in the music industry, as well as recreational and cultural activities. At its heart are a 16-track studio, pre-production room, IT facilities, rehearsal space, classrooms and a library. Courses offered include sound engineering, music technology, music industry studies and musicianship. A range of short courses is also available.

- A Darnall Music Factory, Darnall Education Centre, Darnall Road, Sheffield S9 5AF.
- 0114 244 4603.
- frank@darnall.demon.co.uk

MUSIC LAB

Audio retail and hire company
Music Lab, in conjunction with
Digidesign, has opned a Pro Tools
School. Regular sessions will be
hosted by Music Labs' Martin Bell
(their resident Mac guru) and
Digidesign's Cliff Smith at Music
Labs' London demo facility. The pair

will be showing how to get the best out of the latest Pro Tools systems, and highlighting various plug-ins and peripheral equipment.

- A Music Lab, 72/76 Eversholt Street, London NW1 1BY.
- 1 0171 388 5392.
- F 0171 388 1953.
- info@musiclab.co.uk
- W www.musiclab.co.uk

THE RECORDING WORKSHOP

The Recording Workshop, which has been providing recording courses for small groups for eight years, has moved to larger premises in north Kensington, London. Three studios are now available to teach live multitrack recording, Steinberg's Cubase sequencer package, sampling, synthesis, and advanced production.

- T 0800 980 7452.
- E recordwk@dircon.co.uk

LONDON GUIDHALL UNIVERSITY

Tyrell Corporation, noted non-linear audio and video systems specialists. have hired their fourth London Guildhall University student. The Guildhall-recruited staff have all studied either a BSc (Hons) degree or BTEC Higher National Diploma in Musical Instrument Technology at the University's Sir John Cass Department of Design & Technology. The BSC (Hons) course is a three-year full-time degree with a focus on both acoustic and electronic music technologies. The BTEC HND is a two-year full-time course which offers two paths: electronics for the music industry or an acoustic instrument specialisation.

- A London Guildhall University, 41-71 Commercial Road, London El 1LA.
- 0171 320 1840.
- F 0171 320 1830.
- www.lgu.ac.uk/mit
- Tyrell Corporation 0171 343 5500.

SFIDA CREATIVE LEARNING

If you want to break into the film and TV music field, you'll find that it's both highly competitive and also requires some very special skills. *Music for the Media*, Britain's first home-study course for film and TV composers, won't guarantee to get you the work, but it will help to hone your skills so that you'll know what's required of you when you do

get your first commission. The course has been formulated by TV composer Guy Michelmore, and consists of 10 units which take students from their first corporate video, through signature tunes and wildlife documentaries, to scoring a short feature film. The supplied material includes video tapes (with examples for students to score) and audio cassettes featuring interviews with well-known composers such as Michael Nyman and Debbie Wiseman. Your assignments are marked by a personal tutor — all tutors are working composers and the course as a whole is printed to order, personalised and tailored to a student's needs. The cost is £399 including VAT.

- A SFIDA Creative Learning, 35
 Binden Road, London W12 9RJ.
- T 0181 749 2828.
- F 0181 740 7727.
- E sales@sfida.com
 W www.sfida.com

ISLINGTON MUSIC WORKSHOP

Islington Music Workshop's mission to provide affordable training on high-quality equipment continues with the addition of Ultimation moving-fader automation to their SSL SL4000 G+ console. IMW claim that they are the only school where you can train on the latest SSL 4000 G+ technology and gain a recognised vocational qualification; training packages start at £450 for 38 weeks.

- A Islington Music Workshop, 44 Peartree Street, London ECIV 3SB.
- 0171 608 0231.
- F 0171 490 0120.



Opcode go o Xtremes

pcode have launched a new cross-platform MIDI interface. The 1U rackmounting Studio 128X is compatible with both Macs and PCs and is equipped with eight MIDI inputs and outputs, for up to 128 channels of simultaneous MIDI input and output, supports SMPTE synchronisation, and features full MIDI patchbay capabilities. Up to four Studio 128X units can be linked together to provide 512 MIDI channels; linked systems can also include Opcode's Studio 64. Studio 64XTC and Studio 4 interfaces. The Studio 128X automatically detects what kind of computer it's connected to and changes its settings accordingly. For synchronisation, the 128X can read and write SMPTE timecode in all formats; MIDI Time Code and MIDI Clock are also supported.

As a MIDI patchbay, the Studio 128X offers extensive routing and merging capabilities. Any in, or combination of ins, can be directly routed to any out(s). On-board MIDI filtering is available, and eight user memory locations are provided for easy storage of patchbay setups. Stored configurations can be instantly recalled from the front panel of the 128X or remotely via computer. Other features include an additional two pairs of MIDI Ins and Outs on the front panel, a 'Peripheral Thru' switch to provide access to printers and modems without rewiring, and battery backed-up memory.

- SCV, 6-24 Southgate Road, London N1 3JJ.
- 0171 923 1892.
- F 0171 241 3644.
- E mail@scvlondon.co.uk
 - www.scvlondon.co.uk
- W www.opcode.com

shape of things to come

Seriously

ennheiser have signed Brit popsters Dodgy as official endersees for the new Evolution series of stage mics. The band will soon be supplied with a complete kit of Evolution mics, and have been working both on and off stage with a selection of Sennheiser and Neumann high-end mics.

- A Sennheiser UK Ltd, 3 Century Point, Halifax Road, High Wycombe, Bucks HP12 3SL.
- 01494 551551.
- 01494 551550.



org's new N1 merges the 88-note weighted keyboard used by their SGproX stage piano with a synth engine based on the N5 (reviewed in March 1998). The sound ROM includes 18Mb of samples; the first 12Mb covers everything from acoustic instruments to synth waveforms, just like the N5, while the

remaining 6Mb provide 35 new waveforms, including a stereo sampled piano, new electric

workstation range also has a

newcomer in the i30: the sound source is based on 18Mb of sample ROM, there are two multi-effects units on board, and the sequencing/arrange mode includes a large selection of presets, with plenty of room for customisation

- A Korg UK Ltd, 9 Newmarket Court, Kingston,
- Brochure Line 01908 857150.
- 01908 857199.

W www.korg.com







- Milton Keynes MK10 OAU.

Cycling '74, the company behind the MSP signal processing object set for Opcode's MAX 3.6 programming environment, have announced a nifty new trick. Users can now use Cubase VST-compatible plug-ins from within MSP. or use MSP to create their own plug-ins. MAX 3.5 is needed to create and edit MSP applications, but MSP itself can be downloaded from the Cycling '74 web site; full authorisation costs US\$295. MSP can run with a Power Mac's audio hardware, and also supports PCI audio cards from Digidesign and Sonorus. Look out for support for Lucid Technology, Korg and Emagic cards in the future.

W www.cycling74.com

New for the desktop are Yamaha's YSTM100 multimedia speakers (£119 a pair). Designed for computer users, the speakers offer a ported wood cabinet, and use a 1.5cm tweeter and 9cm woofer. Frequency response is quoted as 50Hz-20kHz.

T Brochure Line 01908 369269.

Kevin Lightner, the man behind the entertaining synth web site Synth Fool, is offering an unusual modification for Roland's classic TB303 Bassline. If you can stand having your valuable baby altered, check this out: for a fatter-sounding 303, Kevin's mod adds sub-octave VCO outputs. Two small three-position switches mix in a signal one or two octaves below the 303's main output, at half or full volume. Nothing else is changed regarding the 303's sound or operation. It's priced at U\$\$99.95, plus shipping and handling. Check out the Synth Fool web site for further details

W 222.synthfool.com/phat303.html

Users of Allen & Heath mixing consoles now have a club of their own. The Independent Ailen & Heath Association, devoted to all Allen & Heath consoles from 1970 to the present day, has been formed to provide members with information and advice on A&H consoles, and to give them an opportunity to share Ideas, tips and experiences. Membership benefits include discounted technical services, cut-price equipment insurance, exclusive merchandise, free classified ads, a quarterly newsletter giving in-depth coverage of A&H mixers, and more. The Association has also set up its own web site, with "member only" ccess to an on-line forum

A JAHA, PO Box 26, Redruth, TRIS TYG.

igha@allenandheath.com www.allenandheath.com

Signex socket to 'em

he new Isopatch patchbay from Signex has been redesigned. The CPJ48 offers two rows of 24 standard jacks and has a fully enclosed design to keep out contaminants All sockets are mounted on two horizontal PCBs, which eliminate internal wiring and provide extra rigidity. All sockets are supplied isolated, but each channel can easily be full- or

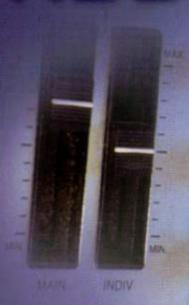
half-normalled with a blob of solder. The CPJ48 is available in three flavours: rear jacks. £116.03 including VAT: rear phono sockets. £110.74: or rear solder tags, £94.29

- A Isotrack, 21A Hankinson Road, Bournemouth, BH9 1HJ.
- 01202 247000.
- F 01202 247001.



K5000

ADDITIVE POWER











K50005

Additive synthesis with up to 64 harmonics per source

- Unique 128 band formant filter
- 4Mb of PCM samples
- Up to 6 sources per patch (sources can be either pcm or additive)
- Hi-pass and multipole low-pass filter
- 2 LFO's
- 2 envelopes
- 4 individual effect processors (37 effects including delay, reverb, chorus etc)
- 4 outputs
- Graphic Eq
- Excellent programmable 40 pattern arpeggiator
- Portamento
- 32 note polyphony
- 18 real time controls
- 4 real time controls can adjust 2 parameters (ie add harmonics while closing the filter etc)
- 61 quality keys

K5000R

2u rackmount version of K50005. Does not include real time macro controls



к5000Ш

The workstation version includes an additional 4Mb of PCM samples and a 50000 step, 40



track sequencer with 32 midi channel support

Did you know that if you break down any sound to its individual components, you will end up with a collection of sine harmonics?

ARPEGGIATOR

Additive synthesis was developed to emulate the way nature creates sounds by adding harmonics with different envelopes. This most natural and expressive method for generating sounds is the basis of the Kawai K5000 series of synths.

Great real time controls, a cool filter and excellent effects adds to the power of K5000. The included editor for mac and pc makes it even easier to program your own sounds.

KAWAI

ARBITER PRO AUDIO

a division of ARBITER GROUP PLC, Wilberforce Rd. Landon NW9: 6AX
Tel: 0181 207 5050 • Fax: 0181 207 4572 • Web: www.arbitergroup.com

shape of things to come

Label on Line

eavenly Music are well known for their MIDI song files and MIDI building-block files. However, owners Joe and Pauly Ortiz are also experienced musicians, with major-label background on their CV. They are now spending time on their own music, starting their own label and promoting it via the Heavenly web site. The site will be streaming previews of forthcoming releases of six new albums from four acts on the label's roster, using Yamaha's all-new SoundVQ audio compression technology. You'll need the SoundVO player to hear the samples at their site. The player can be downloaded free from a link to Yamaha, where a SoundVO encoder is also available. Further details from the Yamaha SoundVQ site at www.yamaha.co.jp/ english/xg/SoundVQ/. Heavenly's

record release dates and other details are at www.ortiz. demon.co.uk/soundvq.htm.

Heavenly aren't neglecting their MIDI file business: Funkenstein features over 40 of the greasiest drum beats ever heard on MIDI file, with full on-disc documentation. All the funk is there, from James Brown to Tower of Power-style patterns, fills and breaks. As with HM's other building block products, you can easily paste these patterns into existing material or use it as a foundation for fresh ideas. The introductory price is £14.99.

Other news includes a price cut for Heavenly's AWE SoundFont collections, from £49.99 to £39.99 plus postage and packing, and the release of a tutorial CD-ROM for Steinberg's Cubase, which builds on Heavenly's education experience with this popular sequencer.

Essentially a book in HTML format (readable by web browsers such as

Netscape Navigator or Microsoft
Explorer), Cubase Unleashed
"discloses virtually all of the trade
secrets" used by Heavenly to
produce their library of MIDI files.
The disk is PC- and Mac-compatible,
and includes dozens of illustrations,
example files and MIDI files, as
well as hundreds of WAV files. It's
priced at £24.99 plus postage.

Just as we went to press, we learned that Comtracks Ltd, have been appointed exclusive UK distributors for Heavenly's MIDI file library. Comtracks now claim to have the largest legal library in the world — over 8000 titles. Other Heavenly titles will also be sold by Comtracks.

- A Heavenly Music Productions, PO Box 3175, Clacton, Essex CO16 8GX.
- T 01255 821039.
- F 01255 821039.
- heavenly@ortiz.demon.co.uk
- www.ortiz.demon.co.uk
- T Comtracks Ltd 0131 468 1150.



News from ITN

n the Nursery, the band of occasional SOS contributor Nigel Humberstone and his brother Klive, have released their latest CD, on their own ITN Corporation label. Lingua takes language as its theme, and explores language's "development, and diverse phonetic styles along with our understanding and use of words". ITN have incorporated a selection of worldwide vocal contributions into the album. The result, a mixture of Mayan, French, Japanese, and other languages, adds an unusual phonetic layer to ITN's musical backing.

A ITN Corporation, 52 Roebuck Road, Sheffield S6 3GQ.

W www.inthenursery.com

Oram's latest **Squeeze**

ram Professional Audio have released their first compressors, both of which are design hybrids of light-dependent resistors (LDR) and straightforward solid-state technology. The Sonicomp 1 is a 1U, rackmounting, 2-channel processor aimed at the project studio and featuring LED metering. The 2U Sonicomp 2 has a 6mm sculptured front panel, large VU meters, and

.....

hand-turned alumininum control knobs. Both units have individual LDR/solid state switching, a link switch for stereo operation, a bypass switch, and rotary pots for input level, theshold, ratio, attack, release and output level. For more about the design philosophy of John Oram, check out our interview starting on page 244 of this issue.

Also new from Oram is the Octamix, a 1U,

Also new from Oram is the Octamix, a 1U, rackmounting, 8-channel stereo mixer, and the 2U MWS (Microphone WorkStation) MkII. The MWS offers two channels of high-quality mic preamplification, with 4-band EQ identical to that found on Oram's BEQ Series 24 console. The MkII tag indicates an improved noise floor specification and an insert point that has been placed between the mic preamp and the EQ. The MWS was apparently the chosen system for podium mics at the recent Oscars.

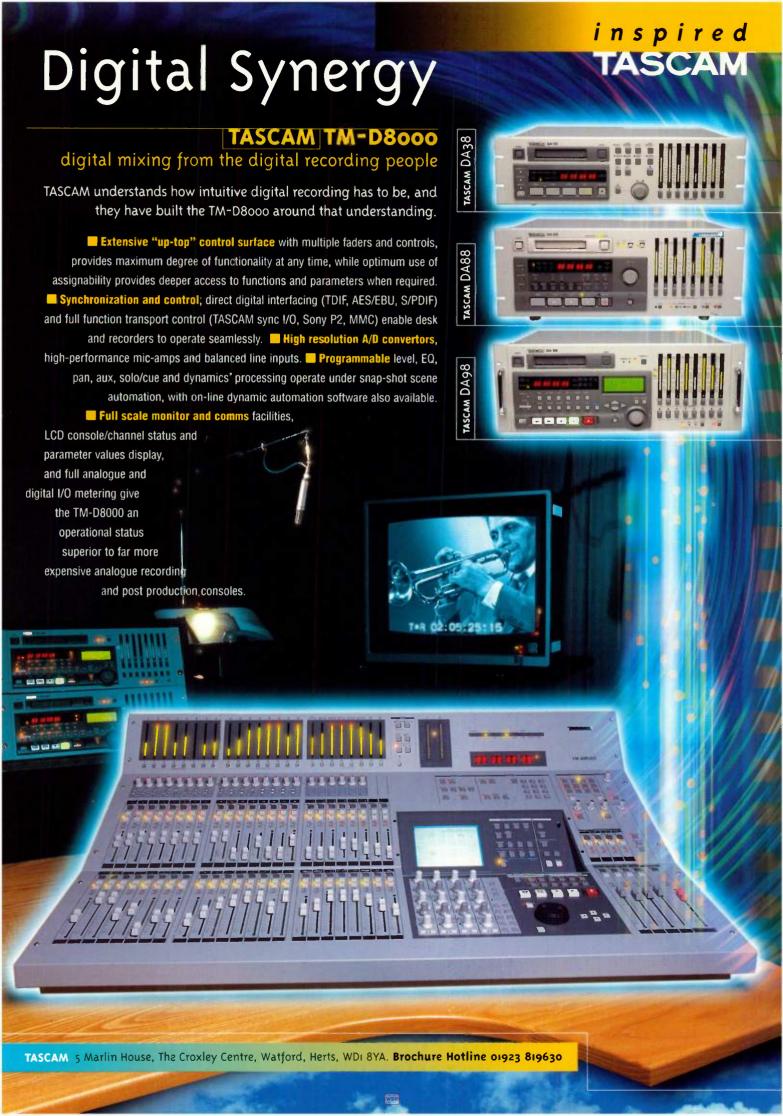
A Oram Professional Audio, The Old Forge, Hook Green, Meopham, Kent DA13 OJE.

- 01474 815300.
- 01474 815400.
- 🖪 sales@oram.co.uk
- www.oram.co.uk



Oram's MWS (above) and Sonicomp 2 (right).





shape of things to come

Red Sound Systems make it count

ed Sound Systems have followed up their Voyager 1 Beat Extractor (reviewed in February 1998) with the Micro



BPM. This compact, sub-£100 device is a combination of intelligent bpm (bears per minute) counter and headphone amp. Connect it to the headphone monitor output of any mixing desk, and your headphones to the Micro BPM. Using similar technology to the Voyager 1, the Micro BPM constantly analyses and calculates the tempo of the monitored audio, then displays it on a bright 4-digit LED display. A 'Beat' indicator also flashes on each downbeat. The headphone amp features a 2-band EQ section, mono/stereo switching and high output level.

- A Red Sound Systems Ltd, Chancery Court Business Centre, Lincoln's Inn, Lincoln Road, High Wycombe, Bucks HP12 3RE.
- T 01494 429321.
- F 01494 446321.

.......

- E red@redsound.com
- www.redsound.com



Neumann's birthday gifts

o celebrate the company's 70th anniversary this year, Neumann have launched an international competition, with some very special prizes. All details of Neumann's Sound Engineering Contest 1998, as well as the competition questions themselves, are on Neumann's 1998 mic catalogue CD-ROM (PC- and Mac-compatible). First prize is a U87 limited-edition

Gold Jubilee stereo pair and a trip to Berlin; second prize is an M149 Tube Set; third prize is a new TLM103; and lastly, there are special prizes of three TLM193s. The competition essentially tests your knowledge of recording technology and music, by testing you in a choice of six different categories. Don't worry: you only have to work through the three that best reflect your abilities and knowledge. The test is in interactive format, and is made up of a mixture of multiple-choice questions and your responses to actual audio. Copies of the CD-ROM are free, and your entries don't have to be in until September 31, 1998.

- A Sennheiser UK Ltd, 3 Century Point, Halifax Road, High Wycombe, Bucks HP12 3SL.
- 1 01494 551551. 1 01494 551550.
- W www.neumann.com/



ANOTHER FINE MESSE

Product Highlights from the Frankfurt Music Fair

ou might think that as the American NAMM music show was only a little over six weeks before the Frankfurt Musikmesse, there would be few new products to report on, but you'd be mistaken (a full list of all the new gear the SOS team saw at the show can be found on pages 22 and 23); some manufacturers keep their main announcements for the European show, while others simply can't finish their exhibition prototypes in time for NAMM!

This year, only a couple of products seen at Frankfurt offered anything radically new, most being refinements of existing technology. One of the products with at least the potential to break new ground came from **Creamware** (System Solutions 0181 693 3355), who were displaying a very early version of a totally new kind of computerbased combined synthesis, mixing, recording and processing system, entitled SCOPE (SCalable Object Processing Environment).

Planned for release in the late summer, SCOPE aims to blur the edges between hardware and software, providing a Mac or PC computer with huge DSP power on a PCI card, which it will use to run-'virtual hardware' of many types.



Each PCI card uses six of the fastest DSP chips currently available, and up to four boards can be used in tandem. All you need to add is an I/O card and a connection to a MIDI sequencer to tie in the rest of your gear.

Creamware are hoping for extensive support from third-party developers by the launch date; the plan is for SCOPE to be supplied with a large library of components such as oscillators, filters, modulators, and mixers. Whether you need an analogue, FM or physical modelling synth, a sampler, a digital mixer or a DSP effects rack, they will all be realisable in the same virtual environment. Certainly the 'virtual Minimoog' assembled on the desktop of the SCOPE host PC by the Creamware Messe demonstrators sounded very realistic - and it looked great, too.

Ensonia (01245 344001) were exhibiting the MEC expansion chassis for their PARIS hard disk recording system (mentioned in our January '98 PARIS review) which allows the installation of up to nine modules of digital I/O in various formats. The first two of these, the analogue 24-bit 8-input module and 8-output module, should be available by the time you read this, and ADAT optical and AES/EBU modules are to follow shortly. Also introduced was the ZR76 S&S keyboard workstation (a slightly upgraded version of their previous MR76) with a weighted keyboard, 24-bit effects, and a built-in 16Mb Piano ROM expansion board.

Also slightly upgrading, rather than completely overhauling their existing product range were **Lexicon** (Stirling Audio 0171 624 6000), whose PCM80 multi-effects and PCM90 reverb are to be replaced by the PCM81 and 91. The PCM81 includes all the existing PCM80 functions but incorporates more onboard effects and algorithms (including the pitch-shifting previously available on an optional card), more delay memory and AES/EBU digital I/O.

The PCM91 reverb has undergone similar hardware changes, and now includes 450 presets (with new dynamic spatialisation effects) as well as the Dual Reverb algorithms from an expansion card built in as standard.

Akai (0181 897 6388) unveiled two new-generation samplers, the



The Akai S6000 sampler.

S5000 and the S6000, which they apparently designed 'from the ground up', doing away with their old proprietary file format in the process and adopting the PC-standard WAV (if you load samples in the old Akai format, they are automatically converted to WAVs). The basic \$5000 has 64 voices, expandable to 128, while the \$6000 has 128 voices, and both can play back long stereo samples direct from disk. The RAM can be expanded up to 256Mb for both models. Both samplers have huge displays, with graphics more like those you'd find on an editing software package than a stand-alone sampler — and the top-of-the-range S6000 also features a removable front panel for remote operation.

Bringing their experience of top-end professional mic manufacture more firmly into the project studio arena were



Neumann's new TLM103.

Neumann (Sennheiser 01494 551551), whose new large-diaphragm cardioid TLM103 mic employs a capsule derived from the classic U87, and looks set to retail in the UK for around the £700 mark. Expect an SOS review very soon!

After the release of their MDMX4 4-track Minidisc multitracker last year, products aimed at the project studio market have been few and far between from **Sony** (01932 816000), but the Messe saw them return to the fray, with the release

of a new quad-channel multi-effects unit, the DPSV55, and a Mkll version of the MDMX4 hardware. This includes a new machine sync option, allowing two MDMX4s to be locked together so that new tracks can be recorded to the second machine while previously recorded tracks are played back on the first.

A number of manufacturers exhibited products which were either designed to tie in with other manufacturers' equipment or which used third-party technology to create something new. Into the first of these categories fell a hardware product from Danish TC Electronic (Raper & Wayman 0181 800 8288), the appropriately titled UNIT•Y, which resulted from a collaboration between TC and Yamaha. The UNIT•Y is a plug-in signal processing card for Yamaha's 02R digital mixer, which contains not just the effects algorithms derived from the award-winners used in TC's M2000 hardware processor, but also the DSP power needed to make them work, so that the host 02R's processors are not burdened by the card.

Also acting as effective third-party developers for Yamaha were German software company CMEXX (SCV 0171 923 1892) who have developed PC-based graphical front-ends for the 02R and the new Yamaha DSP Factory announced recently. Meanwhile, PC soundcard manufacturers Terratec (01600 716911) showed the microWAVE PC, the results of their work with Waldorf (a chunky module which plugs into a spare PC drive bay to give you a desktop Waldorf Microwave II synth), and pro recording hardware manufacturers Studer (01727 842658) announced the V-Eight, a 20-bit ADAT Type II-format recorder (with the ADAT technology licensed from Alesis, obviously). The difference is that the V-Eight will employ Studer's own very highquality D-A and A-D converters

when it appears later this year.

A show the size of Frankfurt

allows you to see in one place the

contradictory ways in which the

continues to develop. Although

there was a lot of new digital

equipment at the show, there

music technology industry

designs and valve technology. In the digital corner were the usual heavyweights like Yamaha (01908 369269), and Apogee (Raper & Wayman 0181 800 8288), but also now Spirit by Soundcraft (whose stylish digital 328 mixer, first seen at NAMM, is inching nearer to completion - more on this very soon) and a newcomer in the form of LEM (Generalmusic UK 01827 312230), a division of Generalmusic, who announced plans for two digital mixers, Eagle and Falcon, featuring flexible built-in dynamics and multi-effects processing. Falcon offers 10 analogue ins and two digital inputs, while the larger Eagle features the same number of digital inputs but 16 analogue ins, and has motorised faders. MIDI snapshot automation is possible on both mixers, and an optional ADAT digital optical interface is also planned for both products.

Apogee were proudly exhibiting their striking new AD8000 8-channel stand-alone A-D converter box. A true 24-bit converter with comprehensive bargraph metering and channel routing options, the AD8000 incorporates Apogee's UV22 technology, which dithers 24-bit signals down to 20- or 16-bit (ideal for use with a 24-bit recording system from which 16-bit CDs need to be burnt, for example). Optional interface cards will provide digital I/O in a variety of formats (S/PDIF, ADAT optical, AES/EBU and TDIF, for example), so you can also use the AD8000 as a format converter box if you have the right optional cards.

Yamaha, meanwhile, sprang another 0-series digital mixer on an unsuspecting world. Set to replace the Promix 01 at the bottom end of their digital mixer range, the smart new 01V still incorporates some of the top-end features included in last year's 03D (and at a amazing

projected UK price of around £1500, apparently). With a total of 24 inputs and 14 outs (including eight digital ins and eight digital outs), a large 03D/02R-style display for easy numeric readout of parameters or graphical display of EQ curves, two built-in

were also plenty of companies
pouring money into analogue
designs and valve technology. In
the digital corner were the
usual heavyweights like
Yamaha (01908 369269),
and Apogee (Raper &
Wayman 0181 800
8288), but also now
Spirit by
Soundcraft
(whose stylish
digital 328 mixer, first
seen at NAMM, is inching nearer
to completion — more on this very
soon) and a newcomer in the form
of LEM (Generalmusic UK 01827

multi-effects processors, a total of 15 faders (all motorised) and total parameter recall, it's an impressive piece of kit.

Flying the flag for older kinds of technology in the face of all these zeros and ones were the likes of ART (who unveiled three new valve-based processors; see page 22 for details); German processing giants SPL (Stirling Audio 0171 624 6000), whose new valve-based Qure EQ and Tube Stereo Vitalizer were on show alongside the Transient Designer (see page 12 for more details); and German company Jomox (Global Distribution 01799 584925). The latter's analogue tabletop XBase09 drum machine has now been joined by a rackmount version (the curiously named AiRBase99), and a fully analogue 8-voice MIDI synth, the SunSyn. Jomox claim that the SunSyn's internal routing system gives the self-contained synth modular-like properties, and the filtering section is equally flexible, allowing the creation of band- and high-pass filtering effects.

But the prize for the most defiantly old-fashioned outlook goes to the splendidly-named Swiss company Technosaurus (0041 344 240 110), who were displaying three analogue pieces of gear: the Cyclodon, a 16-step analogue sequencer; the Microcon, a stand-alone analogue synth; and the truly Jurassic

Continued on page 24 ▶

NEW AT FRANKFURT

Here's a list of all the new products the SOS team saw at the Frankfurt show. Being hot off the mark, we've managed to squeeze reviews or previews of one or two of them into this very issue, and a few have been featured in the news pages of SOS already (the items can be found by reading the coloured notes at the bottom of this table); but the rest should keep the reviews section of the magazine busy over the coming year! Apologies, as ever, to anyone we've missed out.

Mail	MANUFACTURER	PRODUCT NAME	DESCRIPTION	FURTHER INFO FROM
15.55	AKAI	\$5000	New redesigned 64-voice mid-range sampler	
Millor M	AKAI	S6000	New top-notch 128-voice sampler with 'touch and tweak' user interface	Akai UK 0181 897 6388
MESS Q20	ALESIS	DM Pro	20-bit expandable drum module	Sound Technology 01462 480000
Allen 8 Health G33000 Bubus recording miner Allen 8 Health G328 372070	ALESIS	Nanotracker	MIDI data filer	Sound Technology 01462 480000
NTABLES	ALESIS	Q20	20-bit multi-effects processor	Sound Technology 01462 480000
SPIEK Aural Excitor	ALLEN & HEATH	GS3000	8-buss recording mixer	Allen & Heath 01326 372070
WHEX	ANTARES	ATR1	Hardware version of Autotune plug-in	Unity Audio 01920 822890
### Model 1788 8-channel remote controlled mic preamp with Windows software Spring 0171 624 6000 8-channel 245-bit digital connections Rapper 8 Wayman 0181 800 288 ROGGE Session Tools Cross platform studio management software Rapper 8 Wayman 0181 800 288 Report Wayman 0181 800 282 Repo	APHEX	Aural Exciter	Software enhancer plug-in	Stirling 0171 624 6000
PROCEE ADB000 R-channel 2-kb in digala converter Raper & Wymnan 018 1800 8288 PROCEE Session Tool Cross-patients studio management software Raper & Wymnan 018 1800 8288 ABBORETUM Meta Synth Sound editing/synthesis software Unity Audio 01920 822890 MRT Dual Tube EQ Two linked Tube Co, for, she name suggests) in a 1U rack Musc Connection 0171 211 5993 MRT Tube EQ Half-rack parametric equalities Musc Connection 0171 211 5993 MRT Tube EQ Half-rack parametric equalities Musc Connection 0171 211 5993 MIDIO TECHNICA AT3237 Connection of the connectio	APHEX	Big Bottom	Software processing plug-in	Stirling 0171 624 6000
### Seption Pools Cross-platform studie management software	APHEX	Model 1788	8-channel remote controlled mic preamp with Windows software	Stirling 0171 624 6000
Medical Synth	APOGEE	AD8000	8-channel 24-bit digital converter	Raper & Wayman 0181 800 8288
Audio restoration software	APOGEE	Session Tools	Cross-platform studio management software	Raper & Wayman 0181 800 8288
March Mayour Audio restoration software	ARBORETUM	Meta Synth	Sound editing/synthesis software	
MRT	ARBORETUM		Audio restoration software	Unity Audio 01920 822890
Name	ART	17.51	Two linked Tube EOs (as the name suggests) in a 1U rack	
NRT	ART	Ouadra FX		Music Connections 0171 731 5993
NUIDI TECHNICA	ART	*		Music Connections 0171 731 5993
MUDIO TECHNICA AT3525	ART	*	·	
NUIDIO TECHNICA AT3527				
MUDIO TECHNICA AT3528				
MODITION CX1 CX2 Studio condense mics SCV London (1719) 23 1892				
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Advanced dual gate				
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-MEXX C_Meter PC virtual meter bridge for Yamaha 0.2R mixer -MEXX The Visualizer Real-time PC software control interface for Yamaha 0.2R mixer -SCV London 0171 923 1892 -REAMWARE SCOPE DSP-based PC/Mac synthesis/mixing/recording/processing system -System Solutions 0181 693 3355 - bix S66 Dual valve preamp -Arbiter 0181 202 1199 - bighat dynamics processor - Arbiter 0181 202 1199 - bighat dynamics processor - Arbiter 0181 202 1199 - bighat dynamics processor - Arbiter 0181 202 1199 - bighat dynamics processor - Arbiter 0181 202 1199 - bighat dynamics processor - Arbiter 0181 202 1199 - bighat dynamics processor - Arbiter 0181 202 1199 - bighat dynamics sprocessor - Arbiter 0181 202 1199 - bighat dynamics arbiter of the order of the order of the order 0181 202 1199 - bighat dynamics arbiter of the order of the order 0181 202 1199 - bighat dynamics arbiter of the order of the or	CHARLIE LAB	Megabeat One	Hard disk MIDI file player	Charlie Lab 0039 884 541884
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AWAI K5000X K5000W workstation with more memory and real-time knobs Arbiter 0181 202 1199	IOMOX			
	KAWAI	MP9000	Stage piano with easy-edit front-panel controls	Kawai UK 0049 2151 37300

MANUFACTURER KEYFAX	PRODUCT NAME Phat Boy	DESCRIPTION GM/XG/AWE hardware controller	FURTHER INFO FROM Keyfax 01491 577147
KURZWEIL	DMTI 1 & 2	Universal digital format/sample rate conversion interfaces	Washburn UK 01462 482466
KURZWEIL	K2000VP	K2000 upgrade: more RAM. v3.5 OS, new disk set	Washburn UK 01462 482466
URZWEIL	XM1 Expression Mate	Hardware MIDI processor with 60cm ribbon controller	Washburn UK 01462 482466
ORG	130	Auto-accompaniment keyboard based on i3	Korg UK 01908 857150
OGIQ	Micro Sync	MIDI-to-Sync 24 converter for vintage gear	Seeking UK outlet
		, , , , , , , , , , , , , , , , , , , ,	
M	Eagle	12-in, 8-out digital mixer with digital connectors & built-in processing	Generalmusic UK 01827 312230
EM	Falcon	18-in, 10-out digital mixer with digital connectors & built-in processing	Generalmusic UK 01827 312230
XICON	MPX100	Affordable multi-effects processor (UK price now confirmed at £249!)	Stirling 0171 624 6000
XICON	PCM81	Upgrade of PCM80 effects, with digital connections	Stirling 0171 624 6000
XICON	PCM91	Upgrade of PCM90 reverb, with digital connections	Stirling 0171 624 6000
NE 6	Flextone	Physical modelling guitar amplifier	Sound Technology 01462 480000
IACKIE	Digital 8-buss	Digital console with Apogee UV22 CD encoding software	Key Audio 01245 344001
ARANTZ	CDR630	CD recorder using consumer/pro blanks, CDR/CDRW	Marantz Europe 01753 686080
ICROTECH GEFELL	UM900	Multi-pattern valve condenser mic	Stirling 0171 624 6000
IDIMAN	Audio Buddy	Phantom-powered mic preamp/DI box*4	Midiman UK 01205 290680
IDIMAN	Pipeline 8x8	24-bit, 8-channel ADAT D-A/A-D converter box	Midiman UK 01205 290680
IDI TERMINAL	MIDI interfaces	PC & Mac MIDI interfaces starting at £99	CIMPLE 0181 904 4141
IDI TERMINAL	VAMS	Stand-alone rackmount PC-based digital recording system	CIMPLE 0181 904 4141
IDI TERMINAL	WA•MI Rack	PC/Mac multi-port MIDI interface & A-D/D-A converter box	CIMPLE 0181 904 4141
IDI TERMINAL			CIMPLE 0181 904 4141
	Wave Terminal	4-channel PCI card with digital connections	
OTU	2408	Cross-platform PCI card-based hard disk recording system*5	Musictrack 01462 812010
UMANN	TLM103	Large-diaphragm studio mic based on U87 capsule	Sennheiser 01494 551551
OVATION	Supernova	Rack modelled analogue megasynth + optional 16-voice expansion card*6	Novation 01628 828888
PCODE	Studio 128X	MIDI interface/patchbay	SCV 0171 923 1892
PCODE	Studio Vision Pro 4	MIDI + Audio sequencer upgrade	SCV 0171 923 1892
RAM	Sonicomp	2-channel dynamics processor	Oram 01474 815300
FFTRONICS	RADX	Analogue delay unit	Xenovator 01491 827508
IONIC	MM122	12-channel mini-mixer	HW International 0181 808 2222
HONIC	SE206/207	Compact monitors	HW International 0181 808 2222
UASIMIDI	Sirius	Polyphonic modelled analogue synth with built-in vocoder*8	Turnkey 0171 379 5148
ED SOUND SYSTEMS	Micro BPM	Intelligent BPM counter/headphone monitor amp	Red Sound Systems 01494 429321
OCKTRON	Floor Artist	Preamp with effects	BLT Industries 01384 633821
OCKTRON	PC Preamp	Guitar preamp software plug-in	BLT Industries 01384 633821
OLAND	DJ 2000	4-channel DJ mixer with MIDI, effects, BPM counter	Roland 01792 515020
CHOEPS	CMBI	Battery-powered mic preamp for use with other Schoeps mics	Project Audio 0171 428 9700
CHOEPS	CMXY	X-Y stereo mic	Project Audio 0171 428 9700
EKD	ARC 88	PCI-card-based digital recording system for PC	SCV London 0171 923 1892
ONIC FOUNDRY	ACID	Loop-based music production software	SCV London 0171 923 1892
YNC	DPS55M	Multi-effects processor	Sony UK 01932 816000
YNC	F740	Instrument dynamic mic	Sony UK 01932 816000
YNC	F780	Vocal dynamic mic	Sony UK 01932 816000
YNC	MDMX4 MkII	Minidisc multitracker	Sony UK 01932 816000
ONY	MDR7506	Pro studio headphones	Sony UK 01932 816000
ONY	SMS2P	Powered monitors	Sony UK 01932 816000
			Soundscape 01222 450120
DUNDSCAPE	Mixtreme	PCI card recording system and digital format converter boxes	
BELIUS	VMP	PC/Mac/Acorn Virtual Manuscript Paper scoring software	Sibelius 01223 302765
PIRIT	328	32-channel digital mixer with built-in Lexicon effects 9	Spirit 01707 665000
PIRIT	Folio FX8/FX16	General-purpose mixers with built-in Lexicon effects	Spirit 01707 665000
PL	Qure	Dual-channel 3-band tube EQ	Stirling 0171 624 6000
PL .	Stereo Tube Vitalizer	Tube enhancer, more affordable than the Tube Vitalizer	Stirling 0171 624 6000
PL .	Transient Designer	4-channel dynamic effects processor*10	Stirling 0171 624 6000
TEINBERG	Rebirth v2.0	Still-further-upgraded software TB303/TR808/TR909	Arbiter 0181 202 1199
EINBERG	Cubase VST24	24-bit version of popular MIDI + Audio sequencer	Arbiter 0181 202 1199
TUDER	V-Eight	8-track ADAT-format tape-based digital multitrack	Studer UK 01727 842658
UDIOMASTER	Club DSP	8-channel rack mixer with built-in DSP effects unit	Studiomaster 01582 570370
		Nearfield monitors	TEAC 01923 819630
ANNOY	Reveal		
ELECTRONIC	Gold Channel	Digitally-enhanced mic preamp	Raper & Wayman 0181 800 8288
CELECTRONIC	UNIT•Y	Plug-in DSP processing card for Yamaha 02R mixer	Raper & Wayman 0181 800 8288
C WORKS	Native EQ Works	EQ for PC	SCV London 0171 923 1892
WORKS	Native Essentials	PC plug-in bundle: reverb, EQ, dynamics	SCV London 0171 923 1892
WORKS	Master X	TDM mastering plug-in	SCV London 0171 923 1892
CHNOSAURUS	Cyclodon	16-step analogue sequencer	Technosaurus 0041 344 229 555
CHNOSAURUS	Microcon	Desktop analogue synth	Technosaurus 0041 344 229 555
CHNOSAURUS	Selector	Modular analogue synth	Technosaurus 0041 344 229 555
RRATEC	Microwave PC	PC board with built-in Waldorf Microwave, fits into PC drive bay	Terratec UK 01600 716911
		Affordable series of valve-based processors	TL Audio 01462 490600
. AUDIO	lvory range	- · · · · · · · · · · · · · · · · · · ·	Vestax Europe 01428 653117
ESTAX	SL201 MKII	Dual compressor/limiter	
SCOUNT	EFX200m	24-bit stereo effects unit	CIMPLE 0181 904 4141
ALDORF	Microwave XT	Bright orange updated version of classic digital synth*11	Arbiter 0181 202 1199
/AVES	De-esser	Plug-in Plug-in	SCV 0171 923 1892
/AVES	EZ-Waves	Expanded plug-in bundle now with reverb, EQ, compressor	SCV 0171 923 1892
AVES	PAZ	Real-time psychoacoustic analyser plug-in	SCV 0171 923 1892
AVES	Renaissance EQ	EQ plug-in in Renaissance series	SCV 0171 923 1892
AMAHA	A3000 MkII	Sampler, upgrade of A3000	Yamaha 01908 369269
	CHANGE ININII	Jumplet, appliede of 75000	

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Continued from page 21.

Selector, an enormous modular synth system currently under development. The company are seeking UK distribution at the moment; as soon as details are confirmed, we'll let you know.

Perhaps the most surprising revelation at the Messe was that German software sequencer manufacturers Emagic (Sound Technology 01462 480000) and Steinberg (Arbiter 0181 207 5050) have put aside their long-term rivalry to implement greater compatibility between their systems. By the time of the next software releases from these companies, it is promised that Steinberg's Cubase VST will have full access to Emagic's Audiowerk8 card and Unitor8 interface, while Emagic's Logic Audio will support ASIO drivers and DirectX plug-ins, so as to be able to run Steinberg's VST plug-ins. Steinberg also announced the launch of numerous upgrades, including a 24-bit version of Cubase VST, and version 2.0s for both ReBirth 338, the Mac/PC-based desktop TB303/TR808 emulator (which now features TR909 sounds, a new built-in compressor and four individually assignable distortion boxes), and the WaveLab audio editor (which now supports VST plug-ins).

Incidentally, it seems even hardware is starting to embrace the plug-in software culture; for example, **Mackie** (Key Audio 01245 344001) announced during the show that their still-eagerly awaited D8B (Digital 8•Buss) mixing console will be capable of running third-party processor plug-ins.

Still with software, over at the Sonic Foundry, a new piece of mind-expandingly-named PC software popped out of the furnace. ACID is a piece of WAV file composition software optimised for the production of loop-based music such as techno or hip-hop, with an emphasis on instant results. The software is supplied with a huge selection of style-based WAV loops and single-shot sounds, which you can then 'drag and drop' onto a sequencer-style Arrange page and rearrange to your taste with extensive editing options. The clever bit is that ACID allows real-time changes to pitch or tempo, so that you can alter the tempo of a whole clutch of different loops to run in sync, simply by moving a bpm slider.

Finally, mention has to be made of *Meta Synth* from Arboretum Systems (Unity Audio 01920 822890). As originally reported in *SOS* March news, *Meta Synth* is fully-featured Macbased sound design software, but most radical is its ability to use graphics to modify or create sounds. Any package that will let you use the cover artwork of an album to generate what's recorded on it has to be worth a look — and we *swear* this isn't a leftover from the April issue!



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GHOST CONSOLE

- Pristine Audio Quality Throughout
- 4 Band EQ & Fully Parametric Mids
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- MMC, Jog/Shuttle, Track Arming, MIDI Muting & Synchronisation Built-In (not LE)

The project studio has changed how professional musicians make and record music. Record advances used to pay for studio time,

but now its for an artist's home studio utilising digital 8 track and a compact high quality console.

The Ghost, though, is more than a project console, you only have to look at the features to see this. Soundcraft continues to break new ground in analogue console manufacture bringing fully professional facilities: Ultra low noise inputs, 4 band EQ with 2 fully parametric mids, up to 12 auxiliary sends, MIDI mute automation and MTR transport control (not LE) are a few of the features that put other project consoles to shame. In fact the only comparison with a project console you



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2nd ADAT XT



Alesis pioneered low cost digital multitrack recording with the introduction of the ADAT, and changed the face of home and professional recording. The new LX20 version still plays tapes

from the old machines, but now records at full 20 bit resolution - 16 times more detail than previously!

The clarity really must be heard to be believed, revealing the finest nuances in both acoustic and electronic sounds. Improved locking times make multi machine setups a dream to use.

could make is the price. digideeign **ProTools Plug-ins** TOOLS t.c. tools £775 Ligides in have added in high performance 24 bit system audio card is based on the Motorols 65:01 processor, and increases the audio tracks from 16 to 24 per card. There is also an updated 888 interface with 24bit A/D & 20bit D/As, multiple 888, enabling up to 72 channels of discrete analog or digital I/O. They have also reduced the price of the standard ProTools from £7,131 to £4,448. **Dolby Surround Tools** £1339

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Focusrite D2



Antares Auto-Tune





RRP £7575

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+ ADAT LX20

AD 0 £499 ₪ FOR

32ch METER BRIDGE

Ask anyone in the know in the audio industry about who are the foremost acoustic designers in the business, and the chances are that the name of Roger Quested will be top of the list. He has built an unrivaled reputation for himself in a notoriously difficult process which is half science, half art.

Whilst his initial designs were all large bespoke projects for his studio installations, the last few years have seen the emergence of a very carefully thought out, high quality range of monitor speakers, to cater for the demands of new FII, to the incredible HO410

The Quested range is probably the most comprehensive available, covering active, passive and self powered designs, as well as amplifiers and active crossovers, from subwoofers through nearfields to custom built soffit mounting units

Call Turnkey Professional to arrange a demonstration, a free trial in your own studio, or to enquire about our generous part exchange facilities.



The FLI's cabinet design is another Quested first, being made from a new mineral loaded material which offers excellent acoustic properties using a considerably smaller box than would be possible using conventional materials. The design is a self powered two way bi-amplified one, with 165mm bass driver, and 28mm soft dome HF unit. 28mm soft dome HF unit. Months of fine tuning have resulted in a speaker which



VS2205 SELF POWERED MONITOR



One of the most popular models in the Quested range, the V52205 is designed as a highly accurate reference monitor, and its low profile and shielding made it ideal for a wide variety of uses. The built in amplifiers separately drive two 130mm bass units and a 28mm ferrofluid

damped soft dome tweeter.
Switches are provided for input sensitivity and HF and LF equalisation, to compensate for room conditions and positioning

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OPE'S LOWES

YAMAHA

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PROMIX 01 Digital Mixer

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• Up to 20 Inputs in Total

Moving Fader Automation

2 Built in Effects Processors

3 Assignable Dynamics Processors

CDR or MiniDisc with absolutely no loss of quality. This was incredible

value at the original price, but this new low price makes it probably the best value for money

mixer on the market.



03D Digital Console

Like the 02R, the 03D is a fully-automated digital mixing console set to have a large impact on the mixing market. With 26-inputs & 18-outputs the console features fast 32-bit internal digital audio

processing, versatile analog and digital I/O configuration, new 32-bit onboard multieffects processors with freeze (sampling) and guitar amp simulation effects, motorised faders, fader and mute grouping, surround sound mixing, onboard automation, MIDI remote capabilities and much more.

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jog / shuttle wheel, 4 XLR mic inputs, 37 mins record time per

of the original parts even after digitally bouncing tracks. Far

too many specs to list here - a recording studio in a box!

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were also the first on the market with a MiniDisc based

professional quality mastering cassette decks. Both are full 19" rackmount. units, the 102 MkII is a single deck unit, the 202 MkII is a

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DMT-8 VL INC SCS

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MT4X MULTI-TRACKER

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VS880 DIGITAL WORKSTATION



VIRTUAL STUDIO? VIRTUAL GIVEAWAY!

Roland's VS880 has become the de-facto standard for compact digital eight track recording, hardly surprising with it's combination of great sound quality, compact size, and excellent feature set.

Each of the 8 tracks has 8 virtual tracks, allowing you to record several different takes, and then compare

them afterwards, even if you've already recorded on the

other 7 tracks. The built in digital mixer can handle up to 14 channels, features 2 band parametric EQ, I external and 2 internal aux sends (to the optional FX board), and is fully automatable over MIDI. The SCSI port allows the connection of external SCSI devices for recording or backup, which can also be made to DAT via the digi i/o. There's not even any need for a separate synchroniser, as it puts out MTC as standard to sync up your sequencer.

New version 2 software not only allows automation data to be recorded directly to the hard drive for total integration, but also brings numerous new effects to the optional board, including COSM based mic emulation - make your SM58 sound like a U87! Existing owners can upgrade to version 2 for only £49%.



NEW

To offer a completely integrated solution, we are bundling the VS880 with a 1.4 gig hard drive and mounting kit, and the FX board together. These would normally have a combined retail price of £2238, but for a limited beriod only all this can be yours for only £1499 1

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to 64 virtual tracks) onto its

built in Zip drive, you still

Roland a new VS840 should fit

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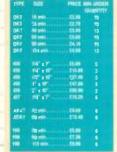
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WES



ostex dominated the home recording market in the 80's and early 90's with such classics as the Model 80, the A8 and the R8 8 track recorders. Now in the late 90's they have combined that wealth of experience, together with that of key New England Digital staff to bring you this superb range of digital multitracks, specifically designed for the project studio owner. Just check out the range!

SCSI INTERFACE!



THC-00

Freeform Analog Technologies FreeBass is already one of the most successful sound modules of the year, and now following hot on the heals of the Freebass and PCP330 Procoder is the new THC-00 Resinator.



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last, and at a price you won't believe! 8 separate tracks of CD quality audio recoil 1 6 Gb hard-disk (40 minutes) Record 2 tracks simultaneously, jog-shuttle audio and sync to MIDI w losing a track. The B channel mixer accepts 2 mics, with a 2 band EQ and 2 aux sends. Separate outputs and SIPDIF optical ut. Price includes optional SCSI interface Why buy 4 tracks when you can have 87

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D80 HD RECORDER MILE 1 365 HO

individual in/outs and outputs, a removable front panel doubles as a remote and meterbridge, and a removable cannister drive slot. Slaves to MMC as well as being able to act as a m all with no track loss, and has S/PDIF digital ins and outs to allo

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is the superb D160, giving you a full 16 tracks of hard disk

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n today's increasingly digital world, many people are still using their equipment's analogue ins and outs, because of the difficulty of inter-connection and synchronisation. Friend Chip's new sensibly priced dig-ital patchbays and 'black box' problem solvers end the misery and make the digital studio a reality! The DigiMax digital patchbay (£299.99) has 8 inputs and outputs (2 each on optical), can accept both AES/EBU and SPDIF signals, and is MIDI controllable. An XLR version (£499.99) is also available for greater AES/EBU reliability. The Audio Time Base (£499.99) is a lu 19" rack which acts as a master clock source for your studio, outputting word clock, Digidesign Super Clock and SPDIF. The master clock can be internally generated, or a reference taken from mains, SPDIF word clock, Super Clock, video or LTC (SMPTE). Lockup from timecode is in around I second!

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RP533 Studio Tube Multi-Processor

Whilst mixers these days are of a better quality than they used to be, to get the best possible signal to tape or disk, you can't beat a dedicated unit - and for value for money, you can't beat the Bellari RP533 Studio Tube Multi-Processor. The all tube 2u box, features a premium quality

transformer balanced mic pre amp with switchable 30dB pad, phase reverse and true 48V phantom power. The compressor has all the features of the RP583, and the exciter section adds a wonderful sheen to virtually any sound, THEW PRODUCT as well as beefing up the bottom end. Each stage has it's own bypass switch, sidechain access is provided, and the large VU meter can monitor input, output, or gain reduction. No serious recordist should be without one



RP520 Studio Mic Pre Amp

A true dual tube mic pre amp at a bargain price, with tubes used at all the crucial gain stages, not just strapped across the outputs. Features include phase NEW PRODUCT reverse, input and output pads, separate

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RP562 Stereo Exciter

Traditional exciters usually do a good job of brightening up the extreme top end, but can often NEW PRODUCT

leave you with a rather harsh signal lower down. The incredible warmth of the Bellari Sonic Exciter ends all that, providing a sparkling top end with no harshness, and a huge bottom end to boot. The stereo unit has both Jack and XLR connectors, dual VU meters, and even a separate subwoofer output with it's own cutoff and level controls. Superb sound quality at a fraction of the price of similar devices.

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MP110 Direct Drive Mic Pre Amp

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5021 IVORY RANGE 2 CH. VALVE COMPRESSOR

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REFLEX UNDER HALF PRICE! EFFECTS PROCESSOR



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The Reflex packs stunning reverb quality together with other effects such as delay and Resonator, and some of the most comprehensive MIDI control available into a 1U rack unit. Reverse, gated and plate verbs are included along with more traditional algorithms, and up to 10 editable parameters are available for each program. Lexicon's famous Dynamic MIDI allows for any four of these to be controlled in realtime via virtually any MIDI information - imagine varying decay time via note number, or feedback from your modulation wheel - the possibilities are endless! The best sounding reverb this side of an MPXI.

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you have a problem, just call us!

A modern Pentium can be used for a myriad of tasks ranging from desktop publishing, multime-

dia, games, and office work. However, few applications are as demanding as digital audio recording. Criteria which are irrelevant to most PC

shoppers (such as the level of radio frequency interference within the casing), become very important, and sound cards which are

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We sell audio equipment - not office software and games! The computer is the heart of

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otherwise considered "best buy" in the press often lack the







MU10 OUT OF THIS WORLD GM SOUND MODULE

Turnkey's incredible buying team have done it again! Yamaha's MUIO was already great value for money, but this exclusive offer makes it unbeatable! The "XG" range of products (including the famous DB50XG) has long been highly regarded for its 676 excellent sounds, 3 bullt in effects processors and superb integration with computers.

The MUIO comes in a handy module format which means there's no need to open up your computer, no IRQ con-flicts or DMA problems, you just connect it to the serial port of your Mac or PC (cable included). What's more its MIDI in and out ports means it also acts as a MIDI interface, and it can

The 34 built-in effects can be used not only with the built in sounds, but als

A complete starter kit for anyone looking to get into makir This exclusive offer is only available whilst stocks last - get

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CUBASE VST FOR PC!

REBIRTH RB-338 SOFTWARE SYNTHESISER



RICES GUARANT

A DIGITAL K2000/K2500 SYNTH/SAMPLE WORKSTATIONS HURRICANE

99% of available sound cards use the IN YOUR PC? old-fashioned "DMA" system of recording audio in order to be compatible with Soundblaster games. With the Pinnacle and Fiji, Turtle Beach abandoned this

system in favour of their proprietory Hurricane architecture. Basically, it gives you more tracks than DMA on the same PC hardware, and leads to less driver conflicts.

The Turtle Beach Multisound series has long been considered the "Rolls Royce" of sound cards, from the very first Multisound in 1993, through to the highly respected Tahiti card, and now - the Multisound Pinnacle.

The audio quality of the Pinnacle is beyond reproach, based around a Motorola DSP, with 20bit convertors on both record and playback, 64x oversampling, and Delta/Sigma convertors. An on-board Kurzweil chip provides a top-quality set of synth sounds, which can be augmented with your own samples which can be mapped to a MIDI keyboard via the SampleStore™ control panel. (Up to 48 Meg of samples can be loaded, depending on the size of SIMMs fitted). Create your own drum-kits, mix in break-beats sampled from CD etc... etc...



Other upgrade options include a synth daughter-board (eg DB50XG), cable for MIDI interface, and S/PDIF daughter board allowing direct digital transfer to/from DAT, CD player, MiniDisk etc... (£99" for either card). The Pinnacle is bundled with Voyetra's D.O.P. sequencer which gives up to 16 audio tracks with digital effects (eg reverb, delay...) depending on hardware specification.



20 BIT DAC / ADC

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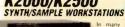
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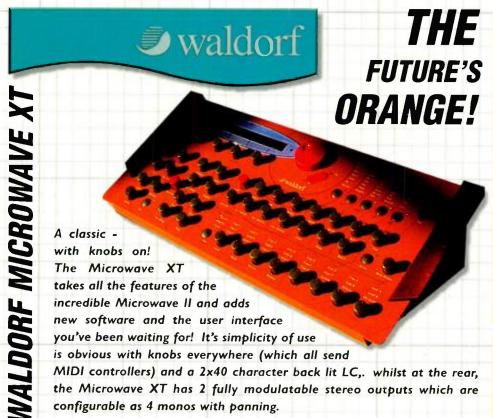
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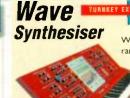
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Novation Supernova

Polyphonic Synthesizer Module

SIMON TRASK previews the Supernova, Novation's most ambitious synthesizer module to date.

rom humble beginnings in the early '90s with the MM10 keyboard add-on for Yamaha's QY10 Walkstation sequencer, UK company Novation have steadily built a strong reputation for themselves as developers of affordable latter-day analogue monosynths, based on the success of the BassStation, one of the earliest recreations of TB303-style analogue bass synthesis. However, the company's latest synth module, the Supernova, is set to take them into an altogether more ambitious league, in which they will join the growing ranks of digital synths that model traditional waveform-based subtractive analogue synthesis in software.

NEW MODEL SYNTH

A 3U rackmount unit with the sort of controller-rich front panel we've come to expect from Novation, the Supernova is an all-digital instrument which uses a more developed version of Novation's proprietary Analogue Sound Modelling technology, as

pass, band-pass or high-pass filtering, with 12dB, 18dB and 24dB/octave roll-off options, plus an overdrive function. The filtered output is then passed through a familiar ADSR volume envelope and on to a multi-effects section which lets you use up to seven effects - distortion, reverb, chorus/flanger/phaser, delay, pan/tremolo, EQ and comb filter — in a variety of configurations. Two freely assignable ADSR envelopes and LFOs are also available as general-purpose modulators. The oscillator section has a 5x5 modulation matrix for each oscillator, while in the filter section you can independently modulate filter cutoff point and resonance amount from any of five mod sources — the two envelopes and two LFOs just mentioned, plus mod wheel. Effects, too, can be dynamically modulated.

The oscillator, filter and effects sections each have a button labelled 'Special', which is reserved for accessing further features to be added via operating system updates. Owners will be able to download these from Novation's web site and then upload them into the Supernova's flash ROM via MIDI from a sequencer or other MIDI utility.

Novation's new module also features a programmable arpeggiator, syncable to internal or MIDI clock, with not only

512), and it's here that things start to get really interesting, creatively speaking As you might expect, Performance mode lets you play up to eight Programs independently or in keyboard split/layer textures via MIDI. However, more unusually, you can also have up to eight arpeggios running at once, which turns the Supernova into an exciting compositional tool. And as if that wasn't enough, each of the eight Parts in Performance mode has the same effects-processing capability that's available to an individual Program in Program mode. That's right — you don't sacrifice anything in Performance mode (well, OK, you don't get eight times the polyphony). Eight audio outputs, in addition to the usual stereo pair, provide scope for separate routing of effected Parts to a

Arpeggio note data can be transmitted live via MIDI, as can all front-panel sound edits, so you can record live arpeggiator-based performances into an external sequencer. The pre-production model I spent a couple of hours with, in the company of Novation's Phill Macdonald, didn't allow arpeggiated parts to be dropped in and out live from the front-panel Part buttons — a feature I'm hoping will be added for the production version.

WATCH THIS SPACE...

My initial impressions of the Supernova are that it has a natural, realistic and satisfying analogue sound, enough programming functionality to provide a rewarding combination of sonic versatility and depth, and a user interface that will prove accessible enough to make programming an enjoyable experience. Also appealing are the module's rich multi-effects functionality and the live compositional possibilities of its multiple arpeggios. I can't wait for the full review...



first employed on their 808/909-emulating drum module, the DrumStation. The Supernova is also Novation's first polysynth, coming in a choice of 16- and 32-voice models, with an optional 16-voice expansion board allowing the polyphony of the cheaper model to be upgraded.

For each voice of polyphony the Supernova has three fully independent oscillators (each with its own virtual sync oscillator), two ring modulators, and a noise generator. In this section the module also provides three special mod effects — Sync Skew, Formant Width, and Soften — for altering the oscillator timbres.

Oscillator outputs are routed through a mixer section into a multi-mode resonant filter section which offers a choice of low-

standard up, down, up/down and random patterns, but also 128 preset and 64 programmable monophonic patterns and the same number of polyphonic patterns. LFO rates and delay effect rate can be synced to the arpeggiator.

Values for all the parameters mentioned above can be stored for each Program memory. The 32-voice Supernova has 1024 Programs, while the 16-voice model has 512, expandable to 1024 with the 16-voice expansion board fitted.

STAR PERFORMANCE

Novation's new module also has an 8-part multitimbral Performance mode (the 32-voice model has 512 Performance memories and the 16-voice model has 256, expandable to



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Dynaudio BM15A

Powered Monitors

PAUL WHITE listens to
Dynaudio's latest powered
nearfield monitors and
counts the days until he has
to give them back.

must confess that I've always liked Dynaudio monitors, so when the BM15As came along, I was more than keen to try them out. Technically, the active 2-way Dynaudio BM15As are nearfield monitors, but they're a little larger than most nearfields and are more likely to sell in quantity to project studio owners who want a compact and accurate full-range system.

CONSTRUCTION

The cabinets, which are supplied as a left/right mirror-image pair, measure 455 x 290 x 387mm, and appear to be fabricated from ready-laminated board that's notched and then folded to produce the cabinet top, bottom and sides with no visible breaks in the vinyl laminate. The MDF baffle has rounded

edges and is fixed to the main body of the cabinet by 10 cap-head bolts. Each cabinet weighs around 19kg.

A 28mm Esotech soft-dome tweeter comes in at a crossover frequency of 1.7kHz and takes the response right up to 21kHz, while the 240mm bass/mid driver takes the low-end response right down to 40Hz (-3dB point). A fairly sharp 5th-order crossover slope is used to minimise the overlaps between the two drivers at the crossover point, and the tweeter dome is afforded some mechanical protection by means of a three-bar metal cage. This may be removed if required.

The bass/mid driver is typically Dynaudio: it utilises a synthetic cone suspended in a soft roll surround, with a large vented dust-cap covering the 100mm voice coil. The voice coil and magnet are the same as used on Dynaudio's 12-inch driver. Both drivers are recessed into the front baffle, as is the moulded plastic cabinet port. A green LED shows when the monitor is working normally and a red LED warns of clipping on the LF driver feed. Both drivers have their own discrete MOSFET amplifiers — 100 Watts for the tweeter and 200 Watts for the bass/mid unit. A slow-attack

DYNAUDIO BM15A £1939

DTOS

Excellent overall sound quality with a wide frequency range and pinpoint imaging.

Plenty of level for those who like to mix loud.

CONS

Um, I'm working on it...

STURMARY

These are extremely nice powered monitors that provide full-range monitoring in a relatively compact format. The overall sound quality would be hard to beat at any price.

optical limiter is used to protect the tweeter against overload damage.

SOUND ON SOUND

There are knobs on the back of the speakers to tweak the LF and HF levels, for optimising the monitors to their surroundings. These provide a more than adequate +/-3dB range, though it looks as though the previous

"The BM15As have to be amongst the nicest speakers I've used at any price."

user or reviewer of this particular pair had experimented with them set close to their extremes! There's also a -10/+4 sensitivity switch. All that remains is the power switch and the mains lead inlet, though I will just mention that although the amplifier heatsinks cover a large area of the cabinet back, they are fairly shallow and don't restrict your monitor positioning options.

LISTENING TEST

Ultimately what matters is what you actually get out of these black boxes, and on paper you can achieve a maximum of 120dB at a distance of 1 metre from a single unit. However, quantity says nothing about quality, which Γ m pleased to confirm is well up to



what I've come to expect from Dynaudio. Unlike most so-called nearfield models, the BM15As have a smoothly extended bass response that reveals what is really going on in that elusive bottom octave, though if you need to go even lower the Dynaudio ABES (Active Bass Extension System) can be used with the BM15As to achieve a low-end response of 3dB down at 35Hz.

The stereo imaging on these speakers is amongst the best I have heard. Indeed, at one point I thought I'd identified a new percussion element in one of my test records, but it turned out to be my pet rat Dylan chewing an empty toilet-roll tube directly behind my chair! There's no weakness or discontinuity at the crossover point, and while the speakers have a very slightly forward characteristic, it doesn't get in the way of accurate monitoring and in some ways makes it easier to hear detail. Vocals remain smooth, even at fairly high listening levels, and the response to transient bass sounds is very tight and well controlled.

Importantly, the sound, and even the

stereo imaging, remains sensibly consistent if you move off axis, and despite their open. detailed sound you can listen to the BM15As for long periods with no sense of fatigue. Of course, with a maximum SPL of around 120dB, there's more than enough level to make your head ring, but I prefer to monitor at sensible levels and consider the extra power as headroom! Absolutely everything in my test collection passed with flying colours, and even material that brings out the edginess in lesser monitors sounded smooth and pristine through the BM15As. Of course, if you do have a nasty mix playing, the BM15As will let you know in no uncertain terms, but that's what a good monitor is all about. What's important is that the speakers seem to have no vices of sufficient magnitude to mask the shortcomings in a recording.

SUMMARY

As you can tell, I like the BM15As very much indeed. As medium-sized monitors for the smaller studio after serious results, they are pretty close to perfect, and yet they're by no means the most expensive small powered

monitors around. The frequency range is ideal for full-range monitoring in smaller studios with little or no special acoustic treatment, and the sense of detail and imaging is superb.

Though they are possibly on the bright side of neutral, this is only by a tiny amount, and, as I said earlier, if this helps you pinpoint detail it's not such a bad thing. The BM15As have to be amongst the nicest speakers I've used at any price, and they make a very worthy addition to an already fine range of monitor loudspeakers. In fact I can't find anything not to like about them, which is going to make the pros and cons list tough to finish!

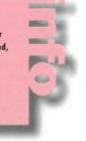
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SPL Dual-channel

Valve Signal Processor

PAUL WHITE finds that though the new Charisma has only two channels instead of eight, it's lost none of its original charm.

PL's original Charisma (reviewed in SOS November 1996) was an 8-channel device designed for use with 8-track recorders, and its aim was to add valve coloration and saturation effects in a very controllable way. Now the company has released a 2-channel version, so that people who don't need to process all their tracks at once can use the Charisma process on either individual mono tracks, a stereo subgroup, or a whole stereo mix.

The Charisma's two channels have identical sets of controls. Its internal circuitry features a pair of dual-triode ECC83 valves running at 230V (though the input and output circuitry is solid state and uses SSM 2141 and 2142 balancing drivers, which permit unbalanced use without level loss). Elaborate power-supply design is used to keep hum and noise from the valve stages to an absolute minimum, and a rear-panel ground-lift switch is fitted to isolate the circuit ground from the chassis ground. Both balanced jack and XLR inputs and outputs are fitted on the rear panel, and power comes in via the usual EC socket and lead.

WHAT DOES IT DO?

Developed by SPL's own designers, in conjunction with Manfred Reckmeyer, the creator of the original Charisma, this unit is designed to generate the beneficial side-effects associated with the best vintage valve equipment, notably that elusive quality of warmth and dynamic compression. The effect can sound like tape saturation (unsurprisingly, since the non-linearities of valves and analogue tape under high-level conditions are

quite similar).

The valve's behaviour is governed by the Drive and Charisma controls: the Drive control adjusts the level of the signal fed into the valve stage by up to +24dB, and the Charisma control varies the valve's saturation characteristics. A Gain control adjusts the output level of the processed signal, and each channel has its own bypass button - a sort of Charisma bypass (I used to work with somebody fitting that description!). As Drive is increased, the valve starts to operate in its nonlinear region, but because valves saturate softly, rather than clipping in the way that most transistor circuits do, the effect is to add subjectively musical harmonics, while at the same time restricting the dynamic range by compressing individual waveform peaks.

With most valve devices, drive level is the only factor the user can vary, but SPL have added the Charisma control so that you can alter the way the valve sounds when it saturates. Varying the Charisma setting changes the saturation effect from hard to soft, and from what I can tell this determines how quickly the valve becomes non-linear once a certain signal level has been reached. Though the effect is different to compression, there is an analogy to be drawn between the soft Charisma setting and soft-knee compression, where the effect increases progressively with level. The Hard

"SPL have added the Charisma control so that you can alter the way the valve sounds when it saturates." Pros Cons

SPL 2-CHANNEL
CHARISMA £469

Pros

• Very easy to set up.
• Very controllable.
• Authentic valve saturation sound.
• High standard of mechanical design and construction.

CONS
• The Process LED gives only an approximate indication of how the unit will sound, so you really have to count on your ears when making adjustments.

SUMMARY
A very controllable way to add either subtle valve coloration or more obvious valve distortion to any audio signal.

setting, on the other hand, features a rapid transition from clean to coloured when the signal exceeds a specific level. The manual describes the Soft side of the control as providing warm, smooth sounds, while the Hard side creates punchy, crisp sounds.

The 2-channel Charisma has no on-board metering but does feature two LEDs designated Max and Process. The Process LED lights when the signal level is high enough to cause the tubes to start behaving in a non-linear fashion, and the Max LED warns that any further level will cause clipping. However, the manual wisely points out that the Process LED can only be a guide, because some signals, such as drums, can stand very heavy processing before much change is evident, whereas some types of musical signal can sound over-processed at such low levels that the Process LED may not even have come on.

IN USE

When I first switched on the Charisma, only one channel was working, so I removed the cover and found that one of the ECC83s had worked loose in its socket. I guess the unit must have received quite a jolt in transit, as the



Charisma

valves are securely seated in good quality sockets, but this did make me think that perhaps sockets fitted with spring retaining clips might be a good idea. Once the valve was pushed back home, the unit worked perfectly.

I tried the Charisma with single voices. solo instruments and full mixes, and found that it delivered those characteristics normally associated with 'the valve sound' very authentically and controllably. It also confirmed what the manual warns of: namely, valve distortion doesn't suit every sound source. Some musical sounds suffer from rather unpleasant intermodulation distortion when valves are deliberately pushed into saturation, and in such cases you might find that running the valves below the level at which the process LED comes on gives a subtle but tangible effect that does remain musical. The Charisma's effect on vocals also tends to vary from singer to singer, but I prefer to err on the side of minimum saturation to keep the sound natural and clear. A soft setting of the Charisma control, with the Process LED

coming on only occasionally, seems a good bet. Heavier processing can be used to beef up synth or percussive sounds, especially those with spiky waveforms, and because of the way in which tubes saturate you can gain a significant increase in perceived level without increasing the actual peak level at all. This can be useful when recording to a digital medium, as it helps protect against peaks.

The more assertive Hard setting of the Charisma control seems best suited to percussive sounds, where a little crunch is perceived as better attack and more power rather than as obvious distortion, though it's also possible to use this setting as a type of limiter, just to catch peaks. There's also enough Drive available to move out of coloration and into obvious distortion, and this setting may be useful to treat sampled organ patches or to further process electric guitar tracks. The real trick is to listen, and not be tempted to overdo the processing — quite often, if you can hear a definite effect you've gone too far. Original valve mics were

designed to be as clean as possible, not to deliberately distort the sound, so with most vintage gear you don't get significant amounts of distortion until signal levels are very high.

SUMMARY

There are numerous boxes on the market that claim to let you add the valve sound to your music as if it were some kind of sonic stock cube that you could sprinkle on, and some do the job more successfully than others. As usual, SPL have taken a somewhat different approach to their competitors, by making the valve overdrive characteristics user adjustable, so that it's possible to get any amount of coloration at any signal level, and to choose between a soft, progressive coloration and fairly tough saturation. If you're into the sound of valves working hard, this is certainly the most controllable and flexible box I've yet tried for achieving that sound. sos

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Digital Switcher

PAUL WHITE tries a simple but useful digital switching system that can be used with S/PDIF or ADAT-format signals.

s more items of studio equipment become digital, the problem of patching them together grows increasingly complicated, because, as with analogue gear, you occasionally need to change your setup to perform specific tasks. In the analogue domain the job is generally done with mechanical patchbays, but there's no direct

optical, and vice versa. If you feed in an ADAT signal, you'll get an ADAT signal out, and if you feed in S/PDIF from a DAT machine or similar source, then S/PDIF is what you'll get out. You can't merge data streams (that would require a digital mixer), though it is quite possible to split one input to feed several destinations.

THE HARDWARE

The DP8 is presented as a shallow 1U rackmount device (wall-wart powered, of course), with two phono ins and outs (channels 1 and 2) and six optical ins and outs (channels 3 to 8). Inputs 7 and 8 are located on the front panel for convenient access when



- pros
 Inexpensive.
- · Very simple to use.

- Insufficient co-axial channels for studio applications where the requirement is mainly to switch S/PDIF phono connections.
- · No 'off' position on the switches.

summary

The DP8 is a simple and affordable solution to a number of digital patching problems.

SOUND ON SOUND



digital equivalent. There are some programmable digital patchbays around, but these can be expensive and difficult to operate, especially when you only want to make a simple patching change. Life is also complicated further by the fact that there are several types of digital connection format, predominantly ADAT optical, AES/EBU XLR and S/PDIF on both phono and optical ports.

Fostex have come up with one solution to the problem, in the shape of the DP8, a nonprogrammable 8-in, 8-out digital routing box where the routing is controlled entirely by rotary switches. Both phono and optical inputs and outputs are provided, but there's no XLR option.

The secret of the DP8 is simplicity there's no data conversion or other clever processing inside. The most complicated thing that happens is that phono ins are converted to

visiting gear, whereas all the others are on the back panel for permanent connection. The brief manual states that dust caps are fitted to all optical ins and outs, and that these should be replaced when the optical ports are not in use, but the review sample came without dust caps.

The only user controls are eight rotary switches, each of which relates to one of the eight outputs. Turning a switch selects which of the eight inputs is routed to that output; there's no 'off' position, so one of the eight inputs is always selected. There are no restrictions on which signals are routed to which outputs, but clearly there's no sense in routing an ADAT optical input to a phono output, as the data stream will still be in ADAT format and thus will be unreadable by an S/PDIF phono input. However, optical S/PDIF can be sent to a co-axial phono S/PDIF output with no problem.

The simplest way to connect equipment to the DP8 is probably to use I/O 1 for one

machine. I/O 2 for another machine and so on. though you don't have to work in this way if you don't want to. There's room above the selector knobs to fix a strip of tape carrying the names of the connected devices, but there's no official scribble strip. Furthermore, because the DP8 doesn't have a programming system it might be useful to write down the knob settings for your most common patches, so that you don't have to figure out everything from first principles every time.

IS IT USEFUL?

The DP8 is such a simple device that I hardly need to talk about how it performs in use (suffice it to say that signals go where they're supposed to go), but I think a few suggestions on where it might come in handy are in order. In a studio where there are, for example, two DAT machines and a computer with a digital interface, the DP8 could swap between a configuration where one DAT machine is connected ready for cloning tapes onto the other machine, and a completely different setup where one DAT machine might be used

as the A-D converter feeding the digital card and the other monitoring the card's output. Similar situations could occur with ADATs, digital mixers and ADAT-compatible soundcards, where sometimes your ADATs will need to be connected to each other for track copying and cloning, while at other times you'll want to connect your ADATs to your soundcard or mixer. I know, in my own digital editing setup, that there are times when I'd like to be able to change my digital connections more easily, and with a device such as the DP8 I could feed the output from my editing system into both DAT machines at the same time, to simplify patching when making two simultaneous DAT copies from disk.

To me, the greatest limitation of this device is the fact that the I/O ports are mainly optical, while most studio DAT machines have co-axial phono S/PDIF connectors. Of course, if you're using mainly ADATs this is an advantage. If all the outputs had been available on both optical and phono simultaneously (as was the case for the programmable Midiman Digipatch unit we looked at in the December 1997 issue of

SOS), the connectivity options would have been rather more



flexible. Incidentally, the manual warns against using two or more DP8s in cascade, because of the risk of introducing clock jitter. Other than that, the unit is simple in concept and does just what it says on the tin!

SUMMARY

This box is ideal for anyone who has a fairly simple digital setup and who needs to switch between relatively few configurations. The ratio of optical to co-axial connectors makes the DP8 most useful for those who have equipment with mainly optical interfaces, and because the optical connectors can also handle ADAT information, there are numerous applications in ADAT-based studios (or systems using the ADAT protocol).

This isn't a unit that needs the hard sell — you either have an application for it or you don't, and if you do you'll be choosing between the DP8 and something programmable and more flexible, that's probably a lot more expensive.





loeMeek Meequaliser

3 - b a n d

While this outboard EQ provides little more than a decent desk EQ in the way of facilities, it does have that distinctive vintage Joemeek sound at a price that won't break the bank. PAUL WHITE meeks out.

he Joemeek Meequaliser appears to offer no more than you'd be likely to find on the EQ section of a typical budget desk - high and low shelving controls, plus a single sweep mid. However, no matter how similar the control layout, or even the paper specifications, equalisers by different designers always sound different. This particular 2-channel design is based very closely on a circuit originally used by Joe Meek in his own studio, and is said to comprise simple bass and treble shelving

unbalanced. Power comes from an internal supply connected via an IEC lead.

The front-panel controls are both simple and familiar, though they have no centre detents. Treble comes first, providing up to 18dB of cut or boost at a fixed frequency of 8kHz. The Bass control offers the same range, but at 100Hz. Around 16dB of cut and boost is available from the mid-range controls, with a second pot sweeping the frequency between 600Hz and 3.5kHz. The mid-range Q varies with frequency, from around 1.2 at 600Hz to a tighter 2.5 at 3.5kHz. This has less range than I usually like from mid controls, as I find it valuable to be able to get into the 150-200Hz band to modify errant bass sounds, but I'll reserve judgement until after the listening test. The final control, accompanied by a dual green/red LED level indicator, provides up to 12dB of overall gain or attenuation. A separate bypass switch, with status LED, is fitted for each of the two channels.

ALL SYSTEMS GREEN

I tested the VC5 Meequaliser alongside the 3-band EQ section of one of my own small consoles (one that I regard as being reasonably good), and in all respects the VC5 produced nicer sounding results. With drums, for example, the bass control on the VC5 adds

in all cases). This connection is, of course,

pros• Warm, musical sound. Not excessively expensive. · Simple to operate. • 3-band, fixed-Q format makes it less flexible than some other models. · Limited mid-sweep range . Only one mid band.

JOEMEEK MEEQUALISER £349

summary

pros & cons

The VC5 Meequaliser is a simple, straightforward 3-band equaliser with a warm, natural sound, What it lacks in flexibility it makes up for in sonic charm.

SOUND ON SOUND

desk EQ (fixed at 80Hz rather than 100Hz), seemed almost to miss it entirely. I put this down to the gentle slopes of the VC5, which must bring the bass EQ right up into the midrange, though no curves are provided to corroborate this impression. Similarly, with mixed material, modest amounts of EQ are effective in sweetening the overall sound without giving it that phasey, disembodied quality that desk EQs often seem to impart.

FIRST AMONG MEEQUALS?

This isn't an EO for making radical changes to a sound, but more a sweetening EQ for use in situations where you need to make tonal changes without sacrificing the natural character of the original sound. It's probably fair to say that it's most useful on mixes and vocal tracks, where it works exceptionally well, but it's also flexible enough to work with guitar and bass, providing the type of change you're after isn't too radical. Obviously there are better equalisers around if you're prepared to spend the money, and there are equalisers with rather more flexibility, but as with the existing Joemeek products, the VC5 has a smooth, friendly character that should win it a lot of friends. If you're disillusioned with your desk EQ, but can't afford one of the big-name esoteric outboard equalisers, the Meequaliser could be exactly what you need.



controls with a mid circuit based around an inductive filter - one that uses a wound-coil inductor rather than a capacitor in a gyrator feedback circuit. Indeed, Ted Fletcher (the man who refined Joe Meek's original designs), has few kind words to say in favour of typical desk equalisers based on gyrator circuitry.

Built into the familiar Joemeek green 1U case, the Meequaliser has TRS jack ins and outs that can be used balanced or unbalanced. In fact there are two identical outputs per channel, just in case you need to split the signal. Additionally, each channel has a direct insert TRS jack socket that can be connected to a console's insert point with a regular stereo jack cable (though there are still one or two mixers that wire their inserts the opposite way to everybody else, so this may not work

weight but doesn't mess up the mid-range or create an unnatural sound - it simply acts like a volume control on the bass elements of the sound, which is how I feel it should be. The treble control emphasises cymbals and transient hits, but you have to add quite a lot before the sound gets aggressive or spitty. whereas I only had to add a little of my desk EQ before the top end took on a rattly quality.

The mid-range control works very sweetly. and you can pile on a lot of boost without feeling you're overdoing it. Again, trying similar settings with my desk EQ resulted in a rather more nasal sound.

Re-testing with vocals showed the bass control on the VC5 to be particularly good at bringing out the chest resonance of the voice in a very natural and controlled way, while my

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PAUL WHITE talks to one of the seminal figures of the electronic music era, pioneering synthesizer designer Bob Moog. ob Moog's name is synonymous with analogue synthesizers, but these days you're more likely to find him experimenting with MIDI theremins and alternative MIDI control systems. His company, Big Briar, manufactures both inexpensive traditional theremins and a far more sophisticated MIDI version housed in a splendid mahogany cabinet. On Bob's business card, his position with Big Briar is described as 'Grand Poobah', which makes a refreshing change from all that President and Chairman stuff! I caught up with Bob Moog at the opening of Turnkey's new in-house synthesizer museum and 'Loopstation' showroom and asked him about the past, present and future of electronic music.

When you set about designing the Minimoog

to be both affordable and portable, did you agonise over which modular features you could include and which you'd have to leave off?

"The first trial feasibility prototype consisted of modules — I think there were two oscillators, a filter, a VCA and one or two envelope generators. It also had a very small keyboard, which was maybe just a couple of octaves. Of course, that wasn't enough, so we began adding things back in, and by then we knew what people liked most — what they had to have for a basic voice."

Is there anything from the modular system that you really feel it would have been nice to include if you could have at the time?

"It would have been nice to have had patching, of course, linear frequency modulation would have

BOB MOOG

Bob Moog's new company is working on a new version of the Minimoog, scheduled to be ready around the end of this year: "The specification I've set myself is that it should sound like the original Minimoog, but it should also be stable and reliable."

been interesting, perhaps synchronisation of oscillators and a fixed filter bank. When it comes to modular synthesis, there was no idea of how much was enough. The simplest modular systems were just one cabinet systems and were probably about as powerful as a Minimoog, but we always understood that we could add any number of extra modules. The flexibility was just down to how many modules you had."

Do you think synthesis lost anything when it went polyphonic? The controllers that you built into those early machines seemed applicable more to single note lines than they were to chordal work.

"Oh yes, of course. A polyphonic instrument with a keyboard, from the point of view of the player, is more like an organ. A synthesizer to my mind is more of a lead instrument or monophonic instrument where you put all your attention into getting a sound that changes in interesting ways. With a polyphonic instrument, what you need is a sound that changes in simple ways. Nevertheless, a lot of instrumentalists were very happy to have polyphonic synths, such as the Prophet Five, the Memorymoog or the Oberheim stuff, because even though you played it like an organ it sounded pretty good."

DIGITAL SYNTHESIS

We now have digital synthesizers claiming to replicate the sound of the original analogue

synths with absolute tuning accuracy and stability, but do you think that the sound has lost something?

"I think the absolute accuracy and regularity of digital systems detracts from an aspect of the sound that is pleasing and comfortable to our ears. I like analogue sound better, but I'm sure that as time goes on and digital systems get better, you'll be able to simulate those pleasing imperfections and uncertainties. Right now I don't think that anyone really knows sufficient to make an accurate enough model so that an informed listener could not tell the difference. I don't think there's a digital system in existence that would fool anybody in a side by side comparison."

Which imperfections of analogue do you think are the most important in creating that pleasing sound?

"The things that really distinguish analogue instruments from digital instruments are right at the edge of perception — we have trouble pinning them down and describing them accurately. A lot of it comes down to the fact that analogue instruments are not exactly accurate in the way that digital instruments are. Acoustic instruments are not exactly accurate either, and with an analogue synth, when there are two oscillators slightly apart, the rolling beating that you hear is not perfectly regular — it has a random or drifting component to it that keeps our ears from getting fatigued."

Does physical modelling interest you as an area worth pursuing, or do you feel it might be a dead end?

"Oh no, I think it's probably the most fruitful digital synthesis area to explore right now. You can go every way from modelling a real physical system like a violin, all the way to modelling something fictitious that's never been heard before. If I were to work with a digital system for my own edification and enjoyment, it would be physical modelling."

Synthesis methods, such as physical modelling, give us more parameters we can control in real time, so what improvements do you think are possible in that area given that a typical keyboard player has got a couple of free feet, maybe the left hand, and perhaps the opportunity to use a breath controller?

"Ah, the optimum control system! I don't think there's such a thing as the optimum control system, but there are a lot of good ones and more will come. That, I think, is the big area for the near future. I believe it is a mistake to think in terms of one parameter for one finger, another parameter for another finger, but somehow you should be able to control many high level parameters that have to do with things that we hear. For example, if we had a sound with 40 overtones, I don't think anybody would want to be able to control the overtones individually, but we may want to be able to control a whole band of overtones at once. With MIDI now, you can build a controller and then use the output of that controller to vary any parameter you want, and I think that type of experimentation could shed some light on what aspects of sound musicians like to control."

As a guitar player, I've experimented with MIDI guitars, which are pretty imperfect things, but the one thing I do like is being able to apply

different degrees of vibrato at different speeds to different notes. Is that something that could be translated into keyboard terms, for example by using a key with a position-sensitive surface?

"I've built a few keyboards like that and they were described in the Computer Music Journal maybe six or seven years ago. I began with a regular wooden keyboard and then put a touch sensitive coating on top of each key so that the key was position-sensitive to where you placed your finger in two dimensions. That's very interesting, but it's also expensive to do. There are various ways of approaching that problem in engineering terms, but the real difficulty is getting musicians to study it — to put behind them the techniques they've learned and to try something new."

Surely this will always be a problem as long as the keyboard is the main player interface for electronic music?

"That's right, and that's why I'm more interested these days in alternative controllers. The multiple touch-sensitive keyboard that I developed was built around a conventional keyboard because that was something that was available, not necessarily because the keyboard is the best means of control."

Aside from theremins, what other forms of non-keyboard controller have you explored?

"One that everybody talks about is what you see in the Beach Boys *Good Vibrations* video, a ribbon controller that we made back in the mid '60s. I think that sort of thing would be interesting to explore further. Another approach I find interesting is something built by Wendy Carlos, which she calls a Circon. It's really a big pointer that rotates through 180 degrees, and you hold the end of the pointer in front of a scale that shows the notes being played. This gives you some kind of visual feedback, and though it controls pitch in the same way as a ribbon controller, it feels different. Wendy has tried the theremin and the ribbon controller, but she likes the Circon because of its feel, and that's very important."

Essentially though, it's basically a frequency pot with a pointer attached to it.

"Yes, but the size and the shape of the part you put your hand on, exactly how smooth it is, how fast the frequency changes when you move it — all those things affect how it feels, and that's part of my craft, getting those things as close to right as we can."

THEREMINS

Moving onto theremins, they used to be notoriously unstable — one of the oscillators has to be free to drift so that you can use hand capacitance to change its frequency. How have you improved the stability — the only way I can think of to make a MIDI theremin would be to do a quick autotune routine every time a MIDI Note Off occurred?

"Well, we could do something like that, but in fact we don't, though it would be useful for applications such as having a theremin set up in a museum where you can't have somebody tuning it up all day. Our instruments are fairly stable, but they're not 100% stable, they couldn't be, because the temperature and the moisture content of the air affect the tuning. In practice it doesn't matter too much because you quickly feel where the notes are and compensate for any changes in tuning — you

WHAT'S IN A NAME?

"I sold my interest in Mocg Music in 1978 and after that, the company continued for a few more years, then ran down. A few years ago, there was no business activity whatsoever coming out of the old Moog Music and the company was getting rid of all the old service inventory, showing signs that they were about to abandon the use of that trademark. Now, under US trademark law, if you stop using a trademark, it lapses and is considered to be abandoned. That's what Moog Music did.

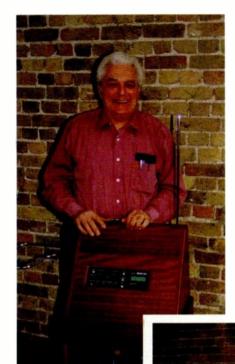
"A man called Don Martin applied to register the Moog trademark, which ordinarily, he would be antitled to do, but there's another aspect to US trademark law in cases where the trademark is the name of a well known person and where use of that trademark might confuse the public as to whether or not that person was involved. That's where we are now — Don Martin applied for use of the trademark first, and I ve subsequently applied for use of the trademark, so we have to wait for a legal resolution.

"I've registered the Moog trademark in France and Germany and applied for it in a number of other European countries, but the situation is rather different in the UK where another party has claimed the right to my name. That's a problem for us right now, and again we will have to wait for a legal resolution."

"I don't think there's such a thing as the optimum control system...that, I think, is the big area for the near future."

BOB MOOG

"A synthesizer to my mind is more of a lead instrument... where you put all your attention into getting a sound that changes in interesting ways."



Bob Moog's 'deluxe', mahogany cabinet MIDI theremin. Like the standard model (inset) it has two antennas, one for pitch and the other to generate a control signal, usually for

▶ basically play the instrument by ear. You don't think in terms of putting your hand in exactly the same place to get a given note."

I guess that if you feed the output of a MIDI theremin into a sequencer, you're going to see oceans of pitch bend data and not much in the way of note information.

"That's right, there's almost no note information, though there are a couple of different MIDI modes you can choose to use. In one there is a Note On message when you begin a sound, then when you go back to silence, there's a Note Off. Everything in between is pitch bend, and that has a range of plus or minus four octaves."

So editing a performance could be tricky!

"Yes, and we're interested in working with sequencer manufacturers to get some good graphic editors, because there are some very interesting things you can do with graphic editing if you display the pitch bend contour as a function of time, and just move it around a bit. You can, in principle, correct notes, change the amount and speed of vibrato and things like that."

The theremin is an intriguing instrument, but is the old capacitance-controlled oscillator technology the best way to do it? For example, wouldn't it be more stable if you wore a small transponder on your finger, then used a radio system to continuously calculate the distance of the transponder from the sensor? Couldn't you use one of the passive transponders that are used in anti-shoplifting tags?

"The advantage of analogue theremin technology

is that it is absolutely continuous, whereas having something like a supersonic transducer would provide the data in steps, which would take time to compute."

Unless you checked it at a high enough rate that it was effectively continuous. After all, what comes out over MIDI is essentially a series of steps.

"Yeah, we update the pitch information 200 times a second, though you can select a lower update rate if you want to. It turns out not to be a problem that this is an analogue device, and as an engineer, I'm not sure that any other transducer type that I know of would have all the musical advantages of the traditional theremin."

ALTERNATIVE CONTROLLERS

What do you think about some of the optical MIDI control systems that have been developed?

"I think they hold promise as controllers, but they're different from the theremin. With the theremin, you can get up to a distance of less than a centimetre and still be playing. This is ideal for the playing range of the arm, around 60 cm, whereas optical controllers work over a different range. Buchla's

Lightning [infra-red light-based alternative MIDI controller] is interesting in that it is two-dimensional, so you can move your hand from side to side and control another parameter. They're two different types of controllers that are appropriate for two different types of gestures."

As Bob had brought a theremin with him, I had to give it a try! Because there's no physical feedback other than what you hear, it takes some getting used to, but even so, I could appreciate the appeal of the instrument. I asked Bob if he had considered extending the control capabilities into three dimensions.

I guess that if you were to develop an effective three-dimensional scanning system covering the space around the antennas, then you could have control over pitch and two other parameters from one movement.

"Yes that's right, whereas the theremin has two antennas, one for pitch and the other to generate a control signal, usually for amplitude. There is another MIDI mode where we can assign the antenna outputs to any MIDI controllers at all — pitch bend, filter, modulation or even for turning lights on and off. There are all sorts of theatrical applications. There's also a footswitch and pedal input for further control."

Obviously you're always thinking of new ways to provide more performance control. Is there anything you can talk about without giving away too many secrets?

"Well, I can tell you what we've done so far, but there are also things I don't want to talk about, not because they're secret, but because they're less than



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vapourware and may not turn out to be good ideas. However, there are four MIDI modes on this instrument, one of which is a conventional theremin where the right hand antenna sends out pitch bend and the left hand antenna sends out one of a small selection of control change messages. The second is a more general continuous controller, where either antenna can be assigned to any MIDI controller. Third is a chromatic mode, where we use Note On

Some of Bob's early Moog modules.

"I think the absolute accuracy and regularity of digital systems detracts from an aspect of the sound that is pleasing and comfortable to our ears."

messages to quantise the space around the antennas. There's a selection of 16 different scales you can play like air harp or air guitar. That's very different from playing with continuous pitch change. The fourth mode is called Smart Theremin mode, where we use a combination of Note On and Pitch Bend to add pitch bend to whatever MIDI note you happen to be playing. In normal theremin mode, the note is always middle C plus pitch bend. This last mode is appropriate for playing things like sample playback, because samples don't usually work well when they're being bent over four octaves, they're best used over a relatively narrow range."

RESURRECTION OF A CLASSIC

Does your vision extend much beyond theremins at the moment — is there something else you'd particularly like to explore?

"Well, I love thinking of new things, but I'm running a small business now, so we need to think of having new products that people will buy. We've been very gratified at the acceptance of our theremins, but that market is very small, so now we're looking at introducing some new products going back to analogue synthesizer-like things. There's a high awareness of the musical value of analogue instruments amongst musicians these days, so I expect that in around six months time we'll be introducing a set of effects that are organised more like analogue synth modules than the usual pedals. There'll be things like filters, ring modulators and so on. We're also working on a new version of the Minimoog which should be ready by the end of this year."

Will that be a replica of the original design or will it be enhanced in some way?

"It'll have all the basic sound quality and function of the original model, but with a few additional things like synchronisation and different ways of controlling the filter. We'll use 1990s components instead of 1960s components — you can't get 1960s components any more, and even if you could, I'm not sure we'd want to use them! I'm an engineer, and an engineer will build a design to meet a specification. The specification I've set myself is that it should sound like the original Minimoog, but it should also be stable and reliable."

Is that going to be a difficult task when, as you said earlier, some of the things that make the original sound distinctive are actually quite subtle? Is there a danger that you might 'throw the baby out with the bath water'?

"Between my associates and myself, we're pretty confident that if we design something that doesn't sound like a Minimoog, we'll know it. We won't sell anything that doesn't sound like a Minimoog. As an engineer I'm confident that if we spot something that isn't right with the design, I'll know how to fix it. At worst, we could go back to doing things as they were in the old instrument, but I don't think it will come to that. We'll be keeping the original ladder filter circuit, but using modern transistors that should be quieter and more reliable."

INTO THE FUTURE

"Beyond that, I'm interested in all types of alternate controllers. Wendy [Carlos] and I have talked about us manufacturing a Circon-like device, and we certainly know how to build ribbon controllers. I can foresee a ribbon controller with MIDI output."

Would this be a new kind of instrument, like a device with ribbons replacing strings?

"I was once asked what I thought the future held in store for electronic music, and I predicted that musicians who played electronic instruments would own their own finely crafted controllers which would be very sophisticated and quite expensive, and for a performance, they'd plug this into a generic sound generator, the same way musicians today plug into a generic PA system. And I'm amazed today at how fast we're approaching that. I also predicted the advent of MIDI, and I missed it by only one year. This was back in 1976. Now you can plug a sound card into your computer and emulate fairly closely, not exactly, but fairly closely, just about anything. You get all that stuff on a card now, so if you look 10 or 20 years ahead, I think it's safe to say that sound production is going to be generic. With just a little bit of money, you'll be able to make any sound you want, and the real expense will be in the device that you use to play and control those sounds."

Presumably, different players will demand different things from their controllers, so does that mean the controllers themselves will end up being modular?

"You can already customise guitars or have a custom guitar made, so why not MIDI controllers? You're still a human being, you're still using your hands, and the same sort of things are going to continue to make you feel good."

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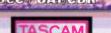
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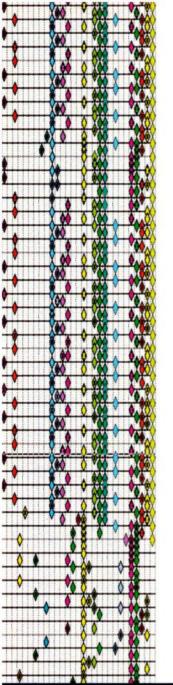
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BREAKING THE STEREO BARRIER

Many drum machines and sound modules are equipped only with a pair of stereo outs. Yet conventional rhythm track recording wisdom dictates that bass drums are recorded dry and snares have gated reverb applied, while hi-hats and other top-line percussion benefits from a touch of ambient reverb.

If you can't multitrack the various elements of the rhythm separately to tape, sample the hi-hat parts with the necessary EQ and effects and run this loop alongside the bass and snare part, as supplied by the drum machine. Panning the snare and bass to opposite sides of the stereo spectrum allows you to then treat them with separate effects and EQ. Of course, when doing this you might want to consider applying the techniques mentioned elsewhere to the sampled part of the rhythm — for example, recording at a low resolution or trying out the 'octave-apart' trick.

Rhythm EFFECTIVE DRUM PROGRAMMING

Even a killer rhythm pattern won't make the grade if it's played with lacklustre sounds. In the concluding part of this series, NICHOLAS ROWLAND puts on his sound designer's head and explains how you can re-tread your tired timbres...

n the first instalment of this series, I made the point that one of the main attractions of sampled rhythm loops is often not the intricacies of the rhythm pattern itself, but the sonic character of the loop. This character might come from the particular ambience of the recording or the accidental presence of other instruments which add an unexpected twist to the drum rhythm. Or it might be there because someone has employed a whole bank of effects to flog the sounds to within an inch of their lives.

We've already looked at more extreme approaches to rhythm programming, in last month's issue. But in this final session of tub-thumping I'd like to talk about a number of techniques for manipulating drum and percussion sounds — techniques which can be used to make even the most boggish of bog-standard drum machine rhythms sound that bit more interesting.

But first a disclaimer. What I'm outlining here is my personal armoury of techniques: I'm not claiming to cover the whole spectrum of possibilities. And remember — parameter values can go down as well as up.

TAKE IT TO THE LIMIT

The first place to look for inspiration is in the manual. In other words, it's always good to know what your equipment is actually capable of (missus). Many drum machines and sound modules have various on-board facilities for customising sounds, such as programmable pitch, decay, and timbre. Some also give you control over such parameters as sample start point, velocity-controlled pitch-bend and velocity-sensitive crossfades between samples.

These parameters can be used in both subtle and not-so-subtle ways. As a simple example, you can add interest to a straightforward rock-style rhythm pattern by using different pitches of the same snare drum on different beats. Or try shortening the decay values on each successive beat of a snare fill, so that the sound tightens up as it reaches the climax of the roll.

Some drum machines allow you to spread a percussion sound across the drum pads so you can easily play it at different pitches. Rather than just tapping in a straight 8th- or 16th-note hi-hat pattern, with the voice at the same pitch, try programming in your hi-hat or other top-line percussion instruments (such as shaker, tambourine and so on) more as melodic riffs. (As an aside on tuning voices like conga and bongos, don't try and tune them to some precise melodic pitch — somehow this has the effect of making them disappear from the mix.)

I mentioned last month that extreme tunings of sounds can yield some unexpected results. Yamaha's RX5 drum machine, for example — a veritable giant of its time — allowed transposition of samples over a staggering eight or nine octaves. You quickly discovered that at very low pitches electro-toms sounded like small explosions, while splash cymbals turned into J Arthur Rank-style gongs. Sadly, the designers of many other drum machines which offer tunable drum sounds see fit to restrict the pitch ranges to 'realistic' values — a pity, really, as I don't feel you really get to know the true gut-wrenching potential of a vibraslap until you've heard it at subsonic levels.

PAN HANDLING

Conventional wisdom dictates that when you place a drum sound in the stereo spectrum you should take your lead from how it would sound if you were standing in front of a drum kit. In other words, bass and snare dead central, hi-hat panned slightly to the right, ride cymbal slightly to the left, and the toms spreading from half-right to half-left in descending order of pitch. (Unless, of course, your drummer happens to be left-handed, in which case the kit placement would be reversed.)

These rules are all there to be broken, of course, though I would stress that panning effects are best applied only to sounds in the mid- to high-frequency range. As you probably know, it's much harder for the human ear to accurately pinpoint the directional presence of low-frequency sounds such as bass drums. Generally, then, gratuitous panning of bass sounds is a waste of time.

Where a rhythm has fairly busy high-frequency percussion elements (that is, hi-hats, ride cymbals,



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FFFECTIVE DRUM PROGRAMMING

▶ shakers and the like) try panning these elements hard left and right. This immediately opens up the soundstage and helps it to feel less cluttered. Extreme pannings of tom sounds can also work quite well in what, for want of a better phrase, we'll call 'jungle rhythms' (or, if you want the Politically Correct term, try 'tom-intensive ethnically orientated beats').

If you want to add a new twist to the machinegun snare-drum rolls which usually come as standard issue with dance tracks, first program two rolls using separate snare sounds. Then either cross-pan them during the roll; start them at opposite ends of the stereo spectrum, then bring them together; or start them together and widen them out. Couple this with volume fades or changes in pitch to add extra "gosh" factor.

MIDI METHODS

The above ideas are easy to apply if you're using a MIDI sequencer to control drum sounds from an external unit. With a fistful of MIDI Controller commands you can simulate ping-pong echoes, tempo delays and dub-style delay effects. (In fact, sequencers such as *Cubase* offer a MIDI delay program as part of the furniture.) Regard these features as your friends.

You can also create simple echo effects by copying a drum pattern to another sequencer track, then moving it forward by, say, a 16th note. You could then try assigning a different style of drum kit to this second rhythm pattern. If you were using a big-sounding rock kit for the main rhythm, you could try a softer jazz kit played at lower volume for

the 'echo'. Obviously, you can take this technique a few steps further. For example, you could have a series of echo tracks built around just one element of the rhythm, with each 'repeat pattern' assigned to a different set of drum sounds.

SET PHASERS TO STUN

If you're triggering a drum machine or sound module from a sequencer, you'll probably have noticed how doubling up the pattern (ie. sending the same information down the same MIDI channel twice) causes the double-triggering of the sounds to create a kind of phasing effect. This can be quite useful for giving flappy drum machine sounds a much harder edge. Try trebling or quadrupling up and see what happens.

The phasing ploy can be used to accent individual sounds, and is effective when creating big, bad bass drum sounds. If you want to go further down this road, try programming two bass drum samples on the same beat, but pitch one of them up by two or three octaves.

GRUNGE HILL

As a spin-off from the interest in analogue synths, there has been a revival of interest in the use of lofidelity techniques to give rhythm loops more roughage than a bucketful of All Bran. If this is the kind of territory you're interested in exploring, there's plenty you can do to dirty up your dance drums.

The basic advice here is to connect your drum machine through anything you think might distort the sound in some way — guitar pedals, the filter section of an analogue synth with an external

merchant on the prowl.



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EFFECTIVE DRUM PROGRAMMING

 input... even a miked-up bowl of custard if you feel it'll create something interesting.

Effects treatments are an obvious place to start. Even budget units now offer various soundcrunching lo-fi presets. The Zoom 1201, for example — at a mere £99 — offers a number of 'lo-fi' settings, plus a vocoder. Effects plug-ins for programs such as Cubase VST are another useful tool for the grunge merchant on the prowl. Steinberg's Grungelizer and, more recently, the Trancemitter plug-in are worth a look, while the BIAS SFX Machine gives you a range of effects from radio tuning drift to ring modulation. One piece of freeware I've recently come across is Stephan Sprenger's North Pole resonant filter plug-in for Cubase VST (for Mac users only at this stage). Go to http://www.prosoniq.com/ sms/sprenger.html for details of how to download.

"Try sampling (at low resolution) a beat-box rhythm at twice the tempo you need it, then play it an octave lower..."

There's also a range of external filters to suit every price and pocket, including the Mutator, the Sherman Filter Bank, the Waldorf X-Pole, the FAT Resinator and the wonderfully named Lovetone Meatball. Guitar pedals are also a particularly good source of mangle-isation. Not only are they comparatively cheap, you also get the added bonus of gratuitous hum, noise and distortion, particularly if you overdrive the inputs.

For the grunge programmer on a budget, there are a number of DIY options — all part of general home recording tricks of yesteryear. For your own

'played down the telephone' effect, try running your mix through a low-pass filter set at around 3kHz with a little bit of resonance. Combine this with some sampled vinyl surface noise trimmed to the length of the drum pattern and triggered alongside. You can also try recording your drum machine through a miked-up guitar amp, preferably one with a dodgy spring reverb that's been dropped several times down a flight of concrete steps. Or record your rhythms to tape, then play them back on a portable cassette player turned up loud. Stick a microphone in front and enjoy.

SAMPLED DELIGHTS

Samplers provide another creative behaviourmodification tool. For a quick-fix lo-fi effect, try sampling your drum machine pattern at a low resolution and then trigger it from your sequencer as you would a loop from a sample CD.

If you know your sampling maths, you'll be aware that when you play a sample an octave higher than its original pitch, the sample is in fact running at twice the speed. And conversely, if you play it an octave lower it runs at half the original speech. So try sampling (at low resolution) a beat-box rhythm at twice the tempo you need it, then play it an octave lower than the sample key it was assigned to. The result is a detuned version of the rhythm running at the correct tempo. Obviously, you can play around with the tempos and sample playback speeds to arrive at different combinations of these tempo/detuning parameters. If anyone has a mathematical formula for determining the precise results of this approach, I'd be glad to hear it.

When sampling your own loops, it's a good idea to always apply some kind of effect during the sample recording process — reverb, chorus, flange, distortion, EQ, filter. Basically, what we're interested in is messing up the frequency content a little, to try and blur the edges of the original drum voice. Once you start pitching the rhythms up or down, the results will be that much more interesting.

IN THROUGH THE OUTBOARD

Here are some (very general) observations on the use of external kit with drum sounds:

• REVERB

Percussion always benefits from a touch of reverb, though the precise settings will generally be determined by what's going on with the rest of the track. For a harder-edged sound, go for plate reverbs. Gated reverbs appear to have long gone out of fashion as the *de rigeur* effect for sarres — I certainly never touch 'em myself, guv. But you might want to try reverse reverb as a once-in-a-blue-moon special effect on fills. For all our sakes, though, please use sparingly.

• EQ

If you want to create ground-shattering basses, it's not just a question of cranking up the low end. The 'bass-ness' of a sound is more defined by the sum of frequencies and the shape of the wave than the fact that it Inhabits a frequency deeper than hell itself.

If you must play around with EQ, try boosting at around the 80Hz mark. But you might also want to try cutting the mid-range back slightly, to tighten up on the muddiness which often results.

COMPRESSION

Unlike real drums, the sounds from drum machines are generally well-behaved enough not to require much in the way of compression. However, if you want those larger-than-life big beats, try a low threshold value (-20dB or lower), a ratio of 12:1 or lower, and a release of around 40-80ms. Then play around with the attack times until you get a hard-edged sound.

• TEMPO DELAY

Tempo-related delay is one of the most underrated rhythmic tools in the drum programmer's kit, and provides a good way of creating complex-sounding rhythms from otherwise simple percussion lines.

Some delay units kindly allow you to simply punch in

the tempo and the musical value of the delay you want, and they will then make the necessary calculations. The rest of us need to keep a calculator or a tempo delay chart about our persons.

To work out the sum, divide 60 by the BPM value, then divide again by the desired sub-beat (4 for a quarter note, 8 for an eighth note, 12 for an eighth-note triplet). There are also lots of freeware tempo-delay calculators available on the Internet. A trip to the Shareware Music Machine site (http://www.hitsquad.com/smm) produced links to various examples for Windows PCs, Macs and Ataris.

• PITCH SHIFTING

Tempo-related pitch-shifting delay can be another useful tool. For example, try feeding a single hi-hat beat into a pitch-shifting delay, set to give eighth-note repeats that rise or fall by a semitone with each repeat. Then stand back and be amazed. You can also use pitch-shifters to create dub effects which rise and fall in pitch throughout the pattern.

Clearly, you can apply this basic technique to entire rhythms or just sections of them. For example, you could investigate the potential of sampling the hi-hat and top line of percussion, then running that as a detuned rhythm loop against a bass and snare pattern provided by your drum machine/sound expander.

Another technique related to the one above can be used to produce ethnic-sounding, lo-fi percussion tracks. Again, this trick is based on the fact that samples played an octave higher run at twice the usual speed. Let's say you sample a rhythm loop on middle C. Now play it back using the G below and the G above. This works particularly well with patterns made up of latin and hand-held percussion — bongos, congas, shakers and so on. You usually end up with a plicky-placky percussive line at the top and a heavy-sounding tom tom-style beat running underneath.

AND FINALLY...

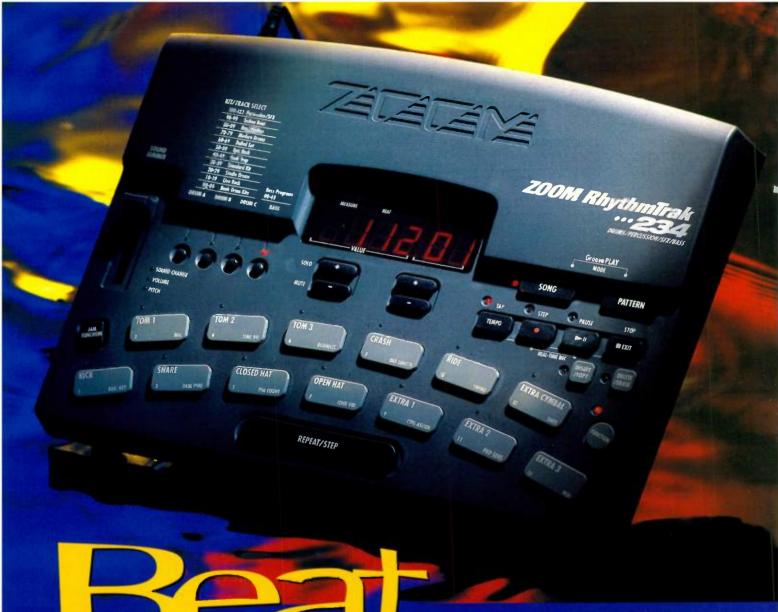
If you want to add a touch of real-life ambience to your rhythm tracks, as well as bringing in all that touchy-feely human stuff I was banging on about in the second instalment of this series, why not record part of your rhythms live, using *real* instruments? While I recognise that most people don't have the luxury of a full drum kit to call on

— or, indeed, the kind of neighbours who would tolerate the noise — it's relatively simple to add percussion parts to bass/snare rhythms with tambourines, shakers, maracas and other instruments. You might even consider vocalising these sounds. Providing you're not the sort of person who feels self-conscious going "tss-te-tess-te" or "che-che-che-che" into a microphone, you might find you actually enjoy it. In one memorable (and, I have to admit, drunken) session, a friend and I once partnered a drum machine pattern with the sound of cutlery being shaken in a tambourine and recorded through a guitar pedal flanger. But we've both had treatment for it now.

Clearly we're beginning to stray into territory normally inhabited by fresh-faced *Blue Peter* presenters, but just before we fall into the abyss, I might as well encourage you to raid the kitchen for pots, pans, glass jars and bags of rice, with which to construct makeshift rhythm instruments. Just make sure an adult is present whenever you attempt to use the scissors.

And there you have it. Go forth and make beauteous beats. I'm off to watch that old *Blue Peter* episode where John Noakes makes a drum machine dust-cover out of squeezy washing-up-liquid bottles and a length of sticky-backed plastic.





Beat

ZOOM RHYTHMTRAK 234 DRUM MACHINE

New drum machines are few and far between these days, but as NICHOLAS ROWLAND discovers, this one has a lot to offer even in a world full of computer sequencers.

n this sequencer-driven, multitimbral world, you would think that beat boxes might have hung up their virtual drumsticks some time ago, out-gunned by alternatives which are often far more versatile and a great deal more expandable. However, the fact is that at the budget end of the music technology evolutionary scale the dedicated drum machine still has its place for live playing, for non-MIDI musicians, and for those times when you simply don't want to turn on two grand's worth of computer technology just to beat out a simple cha-cha-cha. That explains steady sales of models like the Alesis SR16 and the Boss Dr Rhythm series of drum machines. And it also explains why Zoom's first departure from the effects units for which they are justly renowned takes the form that you see here on these pages. Actually, 'drum machine' is a slightly too tightfitting phrase for the new RhythmTrak 234, as its subtitle — 'drums/percussion/SFX/bass' — might suggest. First, it offers loads of sounds: not just drums and percussion but melodic basses of all shapes and timbres. This in itself makes it interesting for guitarists, keyboard players and instrumentalists looking for a rhythm section. Second, it offers some novel ways of manipulating these sounds in real time. Third, along with its 99 preset and 99 user programmable patterns, it gives you the facilities to play with loops DJ-style — building up and breaking down rhythms layer by layer. Fourth, all this is yours for a modest £199.

PLASTIC FANTASTIC

The RhythmTrak is sounding good before you even start to remove the packaging. Take it out of the box and it looks very good indeed. It's a well-designed piece of kit, with a low-profile grey plastic case and the fan-shaped arrangement of the main drum pads giving it, to my eyes, a pleasing, slightly futuristic appearance, like something you might expect to play a crucial part in the plot of a *Star Trek* movie. On a more down to earth note, the RhythmTrak also feels as though it has the mettle to stand up to the kind of (un)fair wear and tear that drum machines usually experience in their lifetimes. The rectangular shape of the 13 drum programming pads makes it easy to tap them with

two fingers — ideal when you feel the urge to simulate the opening bongo roll from the Pearl & Dean theme tune. They are also velocity sensitive. with a choice of seven sensitivity options. Above each pad — and, indeed, above most of the other buttons — is a tiny LED which lights whenever that pad is played or whenever the sound assigned to it is triggered. This is extremely useful when you're editing a drum pattern which uses lots of different sounds, as it enables you to quickly identify which pad/sound combination is playing. As the drum pads are also used to access many of the machine's programming features, these LEDs also help you keep track of which editing function is live at any one time. With clear labelling, a logically laid out front panel and the main 6-digit, 7-segment LED in the centre of the unit, the RhythmTrak is very easy to get to grips with, even without recourse to the manual. And as I didn't have a manual for most of the review period, I speak from experience.

Around at the back you'll find a power switch, the input for the supplied 9V transformer (wallwart alert) and a small rotary control for overall volume. Along with these are stereo outputs on quarter-inch jacks, an audio input, two inputs for control pedals, and a MIDI In socket. The lack of a MIDI Out did cause me to raise a few eyebrows or, more correctly, to raise my two eyebrows several times. However, as the RhythmTrak 234 is aimed primarily at the solo instrumentalist, or the gigging musician, rather than at the fully fledged MIDI studio muso, I'm sure most potential users won't see this as a disadvantage. That said, I would like to have seen at least one more auxiliary output, particularly on a unit offering melodic bass sounds, since these are often likely to require separate processing from the drum sounds.

SOUNDS GOOD

The RhythmTrak has a total of 174 basic sounds. including the basses, which are assembled in various combinations to give 124 drum kits and 50 melodic bass patches. The styles into which the kits are grouped (displayed on the front panel) show that the emphasis is firmly on contemporary popular styles - rock, funk, hip-hop, techno and rap. That's confirmed by preset patterns which cover styles such as rock, thrash, metal, punk, techno, acid jazz, hip hop, funk, big beat, R&B, ska etc... not a paso doble or a Gay Gordon in sight. It's all competent (and occasionally inspiring) stuff. As each preset comes with an appropriate bass line, they're great to jam along to. Each kit consists of 13 instruments, with the first 100 kits comprising conventional collections of drum sounds — in other words, bass drum, snare, three toms, hi-hats, crash and ride cymbals, with the rest of the numbers usually made up with latin and ethnic percussion sounds. The last bank of 'Percussion/SFX' kits consists of collections of more exotic sounds, ranging from temple blocks, tablas and gamelan, to off-the-wall FX such as thuds, squeaks, ghostly howls and reversed cymbals. Among this list you'll also find a brush snare set, classical orchestral collection, and a set of cymbals. Overall, the individual sounds are excellent, and many of them also have a distinctive. slightly grainy character which is not unappealing. There are plenty of crowd-pleasers in the form of big ambient rock drums, feisty hip-hop kits and snappy techno sounds. The TR808 and TR909 imitations are pretty good, with the bass drums in particular having plenty of bottom end. And among the ethnic percussion you'll find some of the best drum machine tablas I've ever come across.

A RhythmTrak pattern can make use of any combination of three drum kits, plus one sound from the bass bank (each one of these pattern elements is henceforth known as a track). This means that for each pattern you have access to a total of 39 drum sounds, plus bass. Note that the kit and bass assignments are memorised as part of the pattern data, so switching to a new pattern brings up the appropriate kit selections. You can also program an overall volume for each track and save that as part of the pattern data.

A PATTERN IS EMERGING

Even if you haven't used a drum machine before. you'll find the pattern programming and playback functions very easy to get to grips with. Both steptime and real-time recording are available, with the basic stop, start, pause and record duties handled by four tape transport-type buttons in the top righthand corner. Pattern length is programmable between 0 and a generous 99 bars, although options for time signatures are rather restricted at 2/4, 3/4 and 4/4. Progressive jazz rockers will have to look elsewhere. Possible quantise values are 4, 8, 12, 16, 24, 32, 48 and Hi (in other words, quantise off), with 16 being the default. The quantise value also determines the timing of the auto-roll function (controlled by the elongated repeat/step key below the drum pads) as well as the length of the rests when inputting in step time. You can also apply a swing function, to shuffle-ise the pattern, and make offset-timing adjustments to give the pattern more of a human feel. Tempos can range from 20-250bpm, and it's good to see that the RhythmTrak has a tap tempo function, which was often lacking even from more expensive drum machines of yore With facilities such as programmable count-in and click volume, plus an easy delete function (both for individual instruments and whole patterns), programming the RhythmTrak really is very straightforward indeed.

SHAPING UP

During programming you can make use of the Sound Jammer function — the slider on the lefthand side of the panel — which allows you to continuously adjust the pitch, volume and tone (known in RhythmTrak speak as 'Sound Change') of individual instruments as you record. Pitch and volume behave in much the way you'd expect. But the effect of the 'Sound Change' function varies from sound to sound. In some cases, moving the slider up will lengthen the decay and increase the attack of a sound. In other cases, it will allow you to crossfade between two variations of the same sounds — for example, between a ride cymbal 'surface' sound and a ride 'bell' sound, or between a closed and open hi-hat sound. At other times you can toggle between two completely different sounds — a clap and a cowbell, for example This is a great tool, even though you are restricted to just one Sound Jammer function at a time. You can

Pros & COIIS ZOOM RHYTHMTRAK £199 Pros Easy to use. Great looking. Has bass sounds. Innovative features, including real-time jamming tools. COIS No MIDI Out, which could be a problem

summary

for some users

. The dreaded wall-wart!

The BhythmTrak 234 offers a lot of bang (not to mention kick, snare, hi-hat and bass) for the buck.

· Lacks super-detailed editing facilities.



ZOOM RHYTHMTRAK 234

▶ also use the Sound Jammer function when playing the pads along with a pre-recorded pattern or song. However, it has no effect on the prerecorded pattern itself during playback. Incidentally, when the Sound Jammer function is not activated, the slider doubles up for virtually a l other data entry functions — another factor which makes the RhythmTrak easy to use.

FEEL A SONG COMING ON?

Songs are assembled from blocks of user patterns. Technically, you can't use the preset patterns in this way, though you can get round the restriction by copying presets to user locations. Each song can consist of up to 255 steps (one step equalling one pattern) and the RhythmTrak can store up to 99 songs. Tempo and volume changes can be stored as part of the song, while bass tracks can be transposed up or down by up to six semitones. With these parameters at your disposal it's possible to construct fairly complex backing tracks for, say, a live performance. As with all hardware sequencing devices, though, the real limit is available memory. In the RhythmTrak's case this weighs in at a reasonable 13,000 notes.

GETTING INTO THE GROOVE

While the concepts of pattern and song programming should be fairly familiar, pressing both song and pattern buttons on the RhythmTrak allows you to explore stranger territory: RhythmTrak's world of groove play — described in the manual as playing with patterns "like a DJ spinning records". You can assign any of the RhythmTrak's 99 groove loops, or any of the 99 user-programmed patterns, to any one of the 13 drum pads. The pattern starts playing as soon as you touch the pad, and if you touch the black bar as well it will continue to loop until you stop it by pressing the drum pad again. You can build up and break down percussion tracks layer by layer, with a maximum of four patterns playing at a time. Once again, those tiny LEDs keep you, the customer, informed at all times as to which pad is active. However, you will need a good memory, as there's nothing to indicate which loop is assigned to which pad. You will also need a good sense of timing and accurate button tapping skills, as the various loops don't automatically lock in with each other — they just start whenever you hit the pads. This is a source of potential embarrassment or a great creative bonus, depending on (a) your rhythmic abilities or (b) your sense of creativity. Those whose (b) outweighs their (a) might be interested in the prospect of assigning the same loop to two different pads, then starting the second one, say, a beat or two after the first to create impressively complex polyrhythms. Lke the preset patterns, the preset loops cover a multitude of 'modern' styles: impressive big beat and hip-hop workouts, delicate ethnic percussion lines, thumping bass lines and twiddly arpeggios. You can also alter the global pitch, volume and tonal characteristics of the loops in real-time via the Sound Jammer control.

However, this is something of an imprecise science: only those with a good sense of pitch will be able to manipulate the melodic loops to create something approaching a tune. Nevertheless, it's a great function and you can have lots of fun...

ABOVE THE DIN

Judging by its single MIDI In, I wasn't expecting great things from the RhythmTrak's MIDI specification, but in fact I was pleasantly surprised by how comprehensive the spec is. Each of the three drum kits assigned to a pattern can be triggered over a separate, programmable MIDI channel, as can the melodic bass patch. A special Auto mode for the bass means that when the RhythmTrak receives a GM sound source bass select message, it automatically switches the bass track to the appropriate MIDI channel. Kits and basses can also be called up using pre-assigned program change numbers. In the sync department, the RhythmTrak 234 will slave to an external MIDI clock and recognise MIDI starts and stops. All the Jammer parameters can be accessed via MIDI and all the sounds will respond to pitch bend — what more can the creative rhythmster want? What you can't do, though, is program patterns remotely — in other words, record a bass line using a keyboard. And obviously the lack of a MIDI Out also means that you can't dump RhythmTrak data to any external devices or use it to trigger external modules.

Along with MIDI control, you can also access the Jammer functions via a continuous controller footpedal (such as Zoom's very own FP01). An on/off footswitch type (such as the Zoom FS01) allows remote starting and stopping of playback too. You can also program the unit so that a pedal of this type will trigger any of the sounds or switch between two specified sounds. This last function allows you to switch between an open and closed hi-hat sound, if, for example, you were using the RhythmTrak 234 as a sound source with MIDI-flied drum pads.

VERDICT

I raise my hi-hat to Zoom. The RhythmTrak is an excellent debut outside the company's usual sphere of operation. Indeed, given its highly competitive price, I'd happily live with the RhythmTrak's failings, which, I must stress, are relatively few. The bottom line is that the RhythmTrak not only delivers a lot for the money, but manages to come up with several new twists on what you would have thought is now a very tried and tested formula. To paraphrase Zoom's corporate slogan: Catch it if you can.

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"The RhythmTrak is an excellent debut outside the company's usual sphere of operation."

A SUITABLE BASS FOR TREATMENT

Calling up a bass patch assigns it chromatically across the 13 pads in semitone steps. In default mode. E2 is the lowest note. You can transpose the patch as a whole, or set Individual notes for each pad, in a range from A1 to A4. These settings are then memorised as part of the pattern. Another useful function is the fine-tune facility, offering a 435Hz-445Hz range. There's a very comprehensive set of bass sounds. ranging from twangy Indie-style bass guitar samples to pumping analogue synth soundalikes. In between, there are funk pops and slaps aplenty, hybrid bass/percussion sounds, and a rather impressive gritty bass slide. The Sound Change function allows you to further express yourself by bringing out the resonance on synth basses or beefing up the bottom end of acoustic guitar samples.