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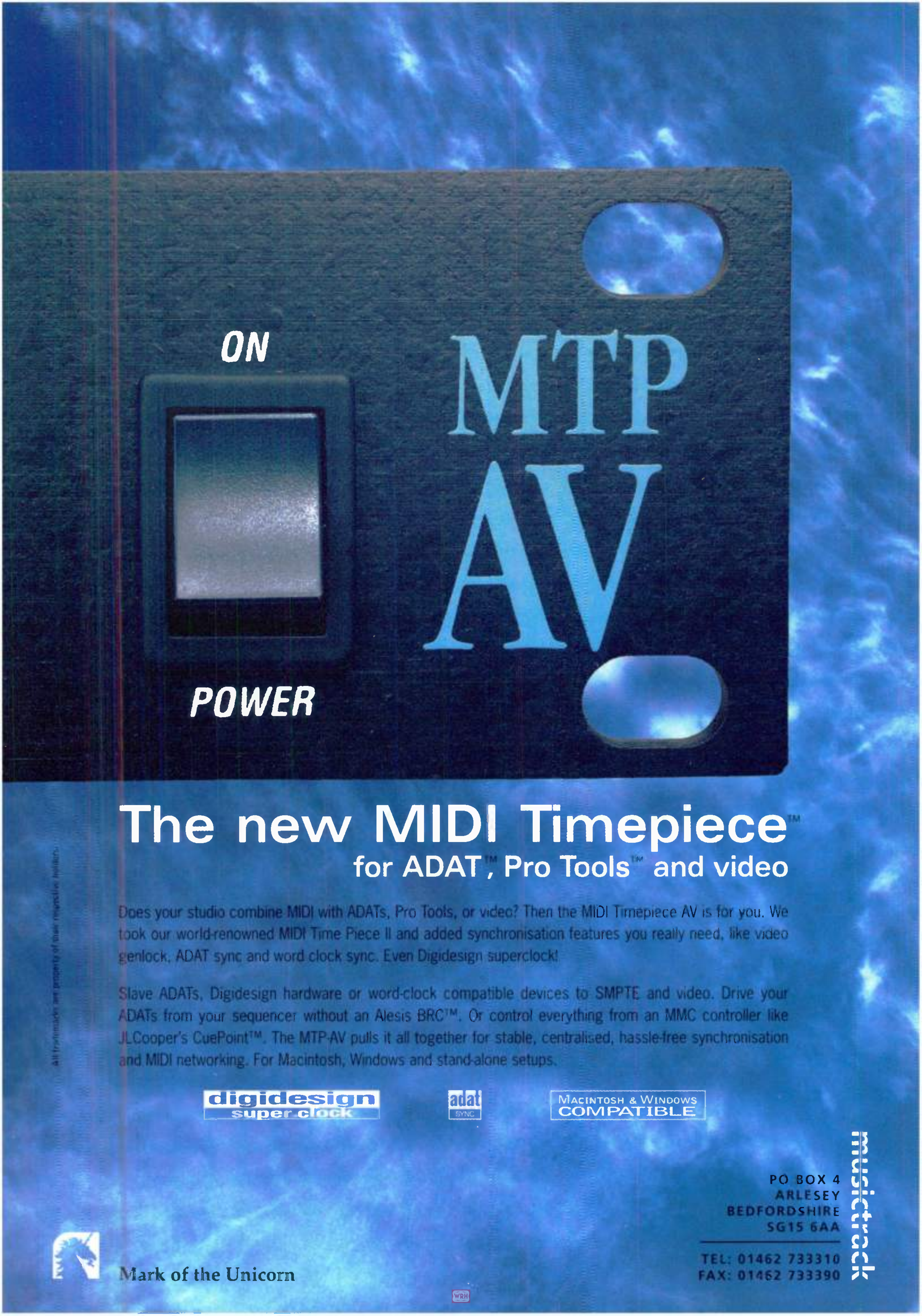

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leader

Where will it all end? — that's a question I'm asked on countless occasions. After all, musical instruments and recording equipment continue to grow more sophisticated without seeming to get any more expensive, so what could be better? On the value-for-money front, we're all doing just fine, but it all comes back down to that old question — 'Is what we're being offered helping us make better music?' Take hard disk recording systems — they enable us to do things we'd never dreamed possible in the days of analogue tape, but how many of those 'impossible' things do we actually need to do on a day-to-day basis.

I recently spoke to an incensed reader who took me to task for not pointing out that hard disk recorders just don't work! He'd tried several systems, all of which gave him horrendous problems of one sort or another, and when he finally got a system that seemed close to running, he found he had to buy a new, faster AV hard drive because the one he owned wasn't fast enough. 'Why don't the manufacturers tell us these things?', he bemoaned. As far as he was concerned, the manufacturers sold him the promise of a digital utopia, but what arrived was a digital hell waiting to crash, conflict, refuse to install, glitch or whatever else it could think of to torment him. And to some extent I sympathise, because computer-based systems have the potential to not work in so many spectacularly different ways. What manufacturers continue to fail to realise is that we're not all computer buffs or software engineers, we're simply musicians looking to come up with that elusive hit tune.

But manufacturers keep telling us we demand all this sophistication and complexity, so don't we deserve all we get when the previously eaten pizza hits the Archimedian air moving device? Well, no. At least I didn't ask for all that stuff, did you? It wasn't me who insisted on having virtual studios as part of my sequencer package, and I never really gave any thought to audio-to-MIDI conversion; I suppose it could be useful, but as yet I don't know anybody who's actually got it to work properly (aside from at trade show demos) — so who asked for it? And as for quantising audio, isn't it better to spend 30 seconds recording the part again properly than it is to spend the best part of an hour messing about with an audio file, only to find that the result is so unnatural sounding that you can't use it anyway? No, we don't ask for these things — the manufacturers put them in to get one over on their competitors.

But if you have too many features, can't you just use the ones you want and ignore the rest? Maybe, but things eventually reach such a stage that you can't find the obvious features for the frivolous ones. What's more, the programs end up so huge that you need 16Mb of RAM before you can even start work! So here's a suggestion — why don't the software designers come up with sensible and (very importantly) stable core programs which do most of what the majority of us want, and then provide all the other baggage as modules, which we can load or not load depending on what job we're doing. Perhaps systems of the future will be marketed on the basis of features they don't have, rather than features they do!

If sanity doesn't prevail soon, software will be too slow to run at all. Every time computers double in power, the software demands on them are quadrupled, and it's not just in music. When I first started writing articles, we used 8-bit BBC computers with 32K of memory, and those word processors easily outpaced the ones we now run on our Power Macs and Pentiums! That's progress for you.

Paul White *Editor*

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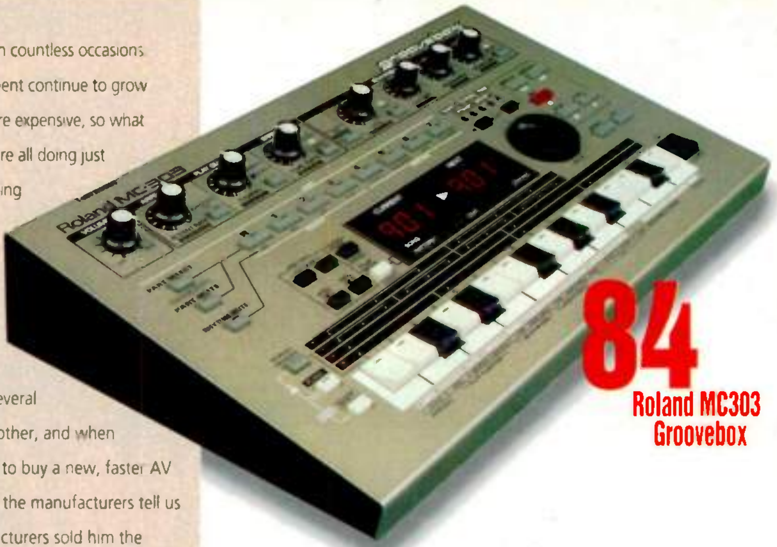

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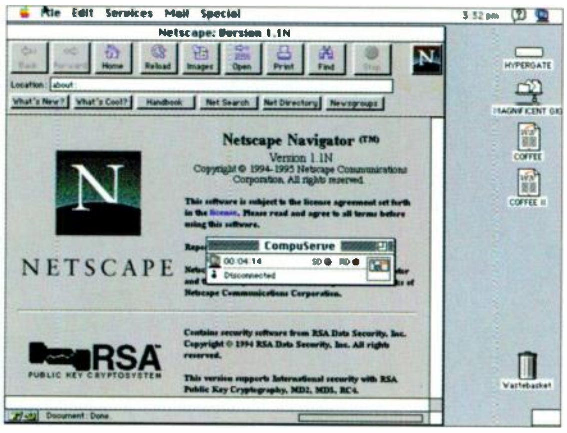
Welcome to the information super single-track road with passing places

I was interested to read your July leader about the much-hyped thing some call the Information Superhighway, especially because during my working hours that's where I spend most of my time. Whilst I generally agree with the "technology is only a tool" attitude that *SOS* displays, I feel your piece is rather unfair to certain aspects of life on the Net, particularly file transfer. I send files by email every day, sometimes up to 1Mb or so in size, and have almost no problems. The recipients and I don't even use the same software, nor the same operating system. There's no need to split the file into chunks and even executables (probably the file type most sensitive to transmission errors) arrive intact.



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Version 1.1N
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This version supports International security with RSA Public Key Cryptography, MD2, MD5, RC4.

When something is too big to send by email, I use the venerable FTP protocol to put the file where someone else can go and get it. Your piece sounds to me like the old familiar problem of software incompatibility or immaturity rather than a failing of the Net.

With regard to your comments about the speed of access to the Web, certainly that's true at the moment. However, the major ISPs and carriers in Europe and the US are investing considerable sums in expanding bandwidth generally. It's probably also true to say that the low-bandwidth technology of modems is only an interim way of getting online, and that a rapid expansion of ISDN access is coming in the near future (as soon as BT decide to charge a reasonable sum for it, that is). Try looking at the Net from the end of a 64k or 128k ISDN connection; the M25 in comparison can look like a 'B' road on a bank holiday! You close by saying that the information age demands something much faster and better structured than the Internet. As one who works with all the pieces that make up the Net, from the wires to the software, I'd argue that the Net is already very well-structured, will only become faster, and is the only global information infrastructure that has the momentum and acceptance to become the backbone of that information age.

Genuine compliments on your excellent magazine.

Ben Last
via the Internet [*where else? — Ed*]

Paul White replies: *As you may have gathered from my Leader columns, I have a tendency to play Devil's Avocado [*er... puzzled Assistant Ed*]. At one level, it's a mischievous ploy to elicit a response (which obviously works), but at another, it's a chance to voice (and usually to exaggerate) a few real concerns.*

You say that Internet is well structured already, and that my problem with files is due to inexperience or front-end software, which it may be, but if something so simple as sending and receiving a file requires experience, then surely there's something wrong with the system, not the user? After all, how much skill should it take to post a letter? Life is far too short to become a guru in all areas that require guruism — I already have more manuals than I could read in a lifetime. A lot may be due to our use here of Compuserve/Netscape, plus the fact that we're Mac users in a sea of PCs, but in a properly-ordered world, these factors shouldn't go against us.

I can see from your credentials that the Internet is an important part of your life, so I'd expect you to know your way around, but the casual user can spend hours just meandering (my word for cruising!). As you say, speed increases are imminent, but one of my concerns is that the amount of data traffic will increase more rapidly than the speed of the system, which could result in an overall slowing-down. This must surely be true if people continue to talk about sending large chunks of audio and video over the system.

Even now, you say that you spend nearly all your time on the Net, and that in itself seems to suggest that things don't happen as fast as you'd like them to! Until a page of graphics can draw itself faster than the eye can see, there'll always be an element of stress and impatience built into the process. I don't know about you, but if something hasn't happened by the time the reverb from the keyboard click dies away, I feel that someone, somewhere, is wasting my time! Yet, frustrating as the Net can be, it still holds the key to information that can't readily be obtained by any other means, so you just have to develop a love/hate relationship and persevere. ❑

RAMming it home

I have a piece of information I'd like to pass on to your readers. If they (like me) have a sampler that takes 30-pin SIMMs (eg. EMU ESi32) and would like to upgrade their memory but are annoyed that a) 16Mb SIMMs are expensive (at least £420 plus VAT) and b) 8Mb SIMMs aren't available, they might be interested in a computer company called Technomatic (based in London, telephone 0181 205 9558, fax 0181 205 0190) who sell SIMM adapters that convert four 30-pin SIMMs (ie. 4Mb) into a single 30-pin SIMM (ie. 16Mb).

Since these cost only £35 (plus VAT) each and 4Mb SIMMs cost about £50 plus VAT each, this represents an immense saving. Note that you need one forward-facing and one backwards facing SIMM if you intend to use them in adjacent slots.

While I'm writing, I've got to take issue with Paul White's editorial in the May edition. If, by experiencing what PC users have to 'endure' he means cheap and easily available software, cheap peripherals and a competitive market, then welcome to the real world! If he means by 'Windows 95 equals Mac 88' that the PC is where the Mac was all that time ago, then it looks like we've just gone backwards almost a decade.

Paul White replies: *Thanks for the tip about the RAM expander sockets, though with RAM prices crashing to a new all-time low, perhaps this approach isn't as cost-effective as it was at*

Continued on page 10 ▶

WRH

••••64 VOICE POLYPHONY••••8 MEG OF ROM••••640 PROGRAMS••••61 NOTE KEYBOARD••••500 MIXES••••

Creativity Is Priceless. Now, It's Also Affordable.

Introducing The Alesis QS6

How much is your creativity worth? You really can't put a price on something so valuable. The powerful new **QS6™ 64 Voice Expandable Synthesizer** gives you everything you need to push your creativity to new levels. It's the affordable solution for musical inspiration.

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The QS6 has everything from realistic acoustic instruments to cutting-edge and vintage synth sounds, all accessible at the touch of a button. Its digital 16-bit linear non-compressed samples provide warm, clean, and incredibly accurate voicing for every performance. The onboard multieffects - reverb, chorus, flange, delay, rotating speaker effects and more - use the same advanced processor as our Q2™ Master Effects. Combine these effects with the massive sound library, and you'll create CD-quality mixes right from your synth. QS6's rhythmic/ sonic loops let your creativity groove just by holding down a single key. The semi-weighted keyboard offers velocity, release velocity and aftertouch for expressive playability. It's all packed into a tough all-metal chassis that will take the punishment when you take your show on the road.

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The QS6 offers a huge palette of internal sounds - 8 megabytes of sample waveforms, 640 Programs, and 500 Mixes - giving you thousands of timbral options to choose from. This sonic library can be expanded instantly by simply plugging in a 4MB or 8MB Alesis QuadraCard™, like our acclaimed Stereo Grand Piano card. Also, the QS6 includes Alesis' exclusive Sound Bridge™ software (for Mac and PC) which allows you create custom cards with your own sound files from your computer. This innovative technology guarantees that you'll always have access to new sounds.

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The QS6 uses the same advanced synthesis architecture as its big brother, the QuadraSynth Plus™. True 64-voice polyphony lets you assemble complex sequences and rich, stacked chords. Its 16 channel multitimbral Mixes and a built-in computer interface (also for Mac and PC) give you easy access to the world of MIDI sequencing, software and composition. In fact, we've included a free CD-ROM with the QS6 that's packed with extra sounds, killer sequences, and sequencing software to help get your creative juices flowing.

SERIAL INTERFACE
MAC
PC
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The QS6 is an instrument that was crafted to help you unlock your creative talents. Stop by an Alesis Dealer and start creating new music with the newest keyboard from Alesis.

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••••EXPANDABLE SERIAL DATA PORT••••GENERAL ••••ALESIS EFFECTS••••SEQUENCING SOFTWARE••••QUADRACARDS••••

••••EXPANDABLE TO 16MB••••RHYTHMIC GROOVES••••SOUND BRIDGE••••ALESIS E SOFTWARE••••QUADRACARDS••

Crosstalk

▶ Continued from page 8

the time when you wrote in.

I see that you couldn't resist biting back at my little PC dig, but I have to say that since getting the PC, the underlying horrors are far worse than anything I could possibly have imagined, and I've totally given up on trying to install at least three pieces of hardware. While it's true that there's lots of cheap software for the PC, most of the serious music software costs about the same as the Mac equivalent, and in SOS *we're discussing the PC as a serious MIDI/Audio platform, not as a word processor or games machine.*

The difficulties with PCs arise partly because of the multiplicity of possible operating systems and the vast propensity for incompatibilities and conflicts, but this pales into insignificance besides the trouble you can get into when installing hardware such as soundcards, MIDI interfaces and so on. At first I thought it was just me, but having spoken to several product specialists at various music software companies, they all confirmed that the nightmare is real, that plug and play usually doesn't, and that the very obvious and necessary page in the operating system that lists all the IRQs and assigned devices doesn't actually exist, so even if you know you have a conflict, you can't always figure out where or why.

By contrast, the Mac's plug and play system is so transparent that nobody even considers its existence — if you need to install a card, you plug it in, the computer recognises that you've put it in, and it works — end of story. On the rare occasion that something doesn't work, it's usually easy to track down the problem using a logical procedure. OK, it costs more than a PC, but it's a lot cheaper than going for therapy after having thrown your PC down a flight of stairs. Most people think insurance companies are reluctant to cover computers because of the likelihood of theft — but the real risk comes from violence done to the machine by a terminally frustrated and thwarted user!

Even so, in defence of the common good, I will persist with the PC, even with Windows 95 (which most people in the know hate with a vengeance) — but as yet, I remain totally unconvinced that the PC is anything other than a bottomless Pandora's box just waiting to pour out its troubles into an unsuspecting world. If you still beg to differ, perhaps you will allow us to give out your phone number to those readers who've just bought PCs and can't get any sense out of the machine, the manuals or the suppliers?

If anyone calls me, all I can tell them is — "Yes, it's a PC... they do that!" ❑

Tied up in tape

I have been a regular reader of *SOS* (when I can afford it... musicians! always broke!), and I find myself today in need of advice. I need to copy dozens of tapes from a DAT master — I have five tape decks and I am wondering if I should stick any kind of device in between the master player and the copy machines.

Alternatively, should I link all the copy machines in series in Record mode and copy that way? Is there anything I need to boost the signal to get the best possible quality? Please let me know what you think is best.

I also have two Tascam TSR8 tape machines. Can I link them together to make a 16-track setup? Do I need any sort of synchroniser between them? I have an XR300i unit without a manual (which I bought cheap, of course) — but the upshot is, of course, that I don't know how to use it 100%. I'm using it to sync my tape machine and Atari. Can you help?

Karim Benchaib
London

TASCAM
TASCAM
TASCAM

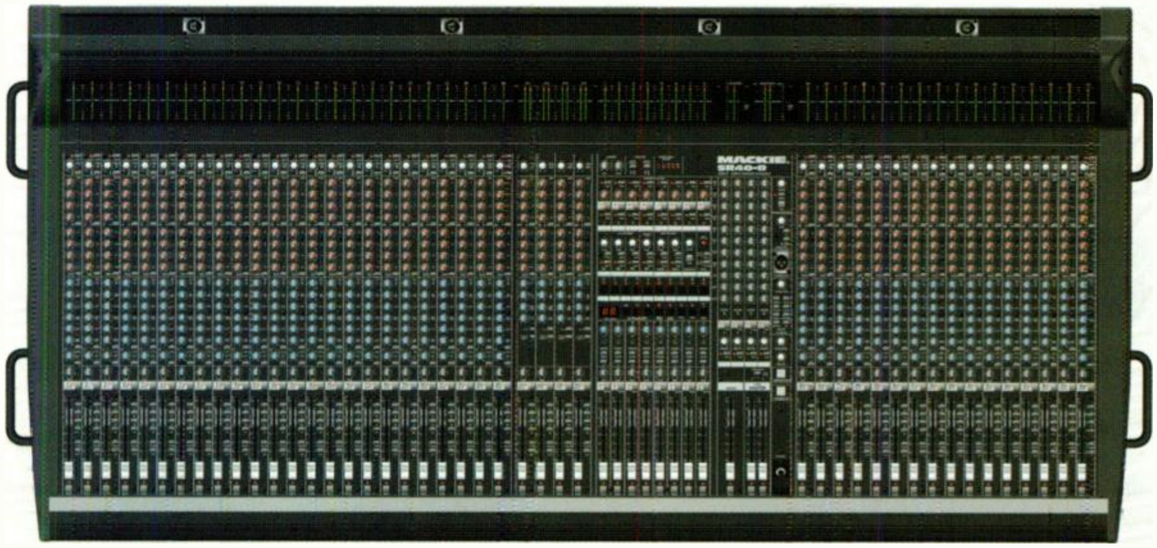
Paul White replies: *To answer the first question first: you should place a distribution amplifier between your master machine and the individual decks being used as slaves, though you can just parallel the outputs if you only have two or three machines linked together. Drawmer make a very nice distribution amplifier that doesn't cost a fortune — I'd suggest you give them a call for more details. I wouldn't recommend daisy-chaining the machines as the signal will almost certainly undergo deterioration. Drawmer Distribution can be contacted on 01924 378664.*

On the second point, I'm afraid that sync'ing two tape machines together is rather more complicated than simply hooking in a timecode unit, because there has to be some means of controlling the speed of the slave machine. On some machines, this is quite impossible, while on others, you need to install a synchronising card or use external synchronisation hardware. Timecode is recorded onto track eight of each machine and the synchroniser hardware keeps track of the slave machine's position relative to the master's position. If the slave falls behind slightly, the control system speeds up its capstan motor until perfect sync is achieved, whereas if the slave gets ahead of the master, it gets slowed down. This may sound as though the slave machine is constantly changing speed to stay in sync, which it is, but the changes are so small that you shouldn't be able to hear them.

With the TSR8s, the easiest option is to look for a used Tascam MIDIiser or a Tascam ATS500 sync unit. According to TEAC UK, these simply plug in, and you're in business. Failing that, the standard control protocol used in the TSR-series machines means that many industry-standard synchronisers may be used, provided custom leads are built to interface with the TSR8s. Unfortunately, few if any suitable systems are still in production, so your best bet is to find a knowledgeable used pro audio equipment dealer, who may be able to find you a suitable unit and make the necessary leads. Alternatively, it may be cheaper to sell your machines and buy a used 16-track model... ❑

SR40•8

NEW! Large-format 40x8x3 SR console. If you're impressed with its features...



...you'll be downright amazed at its price.

Never before has so much been so affordable. Using the automated manufacturing processes and design expertise that established our 8•Bus and SR Series, we've created a no-compromise, 40x8x3* LARGE-format live sound console.

With features like built-in digital muting automation, Left/Right/Center outputs, 12x4 matrix, 4-band EQ with swept Hi & Lo Mids and built-in meter bridge.

- **Center-mounted Master section** with 4 full-length "aux strips" including 4-band EQ, pan & trim controls
- **Independent L/R/center bus assignment**
- **On-board snapshot group muting** with external computer control capabilities
- **12x4 matrix** w/center, L & R input controls, matrix mute button + LED, matrix master level control, and matrix solo + LED
- **All inputs & outputs fully balanced** (except RCA tape inputs & outputs)
- **Master section** includes fader link L/R switch, center master fader, center solo + LED, L&R/L-R master level faders, L&R solo switches + LED indicators
- **8 Submix section bus strips** each feature 100mm log-taper faders, "Air" EQ controls, center & L-R assign switches, pan controls, mute & solo switches with LEDs
- **Stereo Aux/Tape Return section** includes level control, mute switch, solo switch + LED, monitor line out level control, monitor mute switch, global PFL/AFL solo switch & Mackie's famous Rude Solo Light LED
- **40* mono channel strips** with Mackie's renowned high-headroom/low noise discrete mic preamps, polarity switches & sweepable 30-800Hz Low Cut (high pass) filters at 12dB/octave
- **Mono channel strips include:** 60 dB range gain trim, individual phantom power switch and status LED, 8 individual aux sends, Aux 1-4 & 5-8 pre/post switches, 4-band equalization with 12kHz Hi shelving EQ, sweepable (500Hz-15kHz) Hi Mid EQ, sweepable (45Hz-3kHz) Lo Mid EQ, 80Hz shelving EQ, EQ In switch, 30-800Hz sweepable Low Cut (high pass) filter at 12 dB/octave and In/Out switch, constant power pan control, mute switch + LED, Submix 1-8 assign switches, L/R /center assign switches, 100mm log-taper fader, solo switch + LED 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, 10-unit 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? Is this true?*

WRH

shape of things to come

by Derek Johnson & Debbie Poyser

Stop Press: Latest Yamaha news

Yamaha held an 'open day' on the 1st of July to unveil several new products. *SOS* dropped by and returned with some interesting news...

YAMAHA
GUITAR MIDI CONVERTER
G50
001

G50 NEURAL NET MIDI GUITAR

Guitar synths, and in more recent years, guitar-to-MIDI converters, have never quite captured the imaginations of guitar players, largely because of less-than-perfect tracking and the conversion delays inherent in most systems. Yamaha's G50 uses an innovative new approach to the problem, though their own G1D hexaphonic pickup is required to get polyphonic pitch information from a regular guitar into the unit. A mono mode allows a standard guitar pickup to be used, providing only one note is played at a time.

Once inside the 1U box, the guitar signal is analysed using elaborate digital signal processing techniques. We're told that this is the first device of its type to use 'neural net' processing, and it's claimed that the result of this is faster, more accurate, more stable pitch-to-MIDI conversion, allowing any suitable MIDI tone generator or sampler to be used with virtually any guitar. Additional controller information can be derived from where the string is picked, and this can be used to control such effects as velocity crossfading or sound switching. Control changes may be sent directly from the guitar, and a number of performance parameters may be optimised to best match the system to the playing style of the user. Prices are expected to be £550 for the G50 and £149 for the G1D pickup, making £699 for the complete system.

VL70m PHYSICAL MODELLING SYNTH MODULE

When the Yamaha VL1 physical modelling synth first made an appearance (see *SOS* July '94), most people were seriously impressed by its performance, but less so by its elitist price. Now the same technology has been combined with a simplified user interface to create the monophonic VL70 module for under £500 (the price is expected to be £499)! Resplendent in its half-width rack box, the VL70 doesn't have the distinctive wood trim of its big brother, but it does have a WX interface socket, a breath controller input and full MIDI capability, as well as Macintosh Visual Acoustic editing software for creating your own hybrid virtual instruments. Needless to say, we can't wait to get our hands on one!

QY700 HARDWARE SEQUENCER

Though it bears the QY tag, the QY700 is something rather special — it's a hardware sequencer that thinks it's a computer-based package. Based around the same large 320 x 240 dot LCD screen as used in Yamaha's 02R mixing console, the QY700 sports a graphical interface that closely resembles that of current big-name software sequencers. In addition, there's a powerful 480-voice built-in XG format synth module, plus two MIDI output ports allowing 32-channel working. A staggering 3,000 preset auto-accompaniment phrases are on tap for use in jamming or composition, and any of these can be loaded in and edited in the same way as other MIDI data.

Up to 110,000 notes can be stored in the battery-backed up internal memory, and a PC-compatible disk drive drive allows sequences to be stored or GM files loaded. Synth patches may be edited from the screen, in much the same way as you would use a software editor, and you even get a mini keyboard with performance wheels. On top of that, there are internal effects, 32-track operation with 16 tracks per pattern, powerful editing functions, groove quantise, auto chord functions with a vast range of complex chord types, and the ability to create 99 user phrases. In all, this looks like a very appealing sequencer for those who want to combine the convenience and portability of a hardware sequencer with the graphical interface of a dedicated computer sequencer. There's even a piano roll edit screen, and with a 1/480 quarter note resolution, the QY700 should be as accurate as its computer-based cousins. At a projected price of £999, this really promises to be a one-box MIDI studio, and unlike some stand-alone units, it seems quite straightforward to operate.

YAMAHA
QY700
XG

MD4 MULTITRACK MINIDISC RECORDER

Multitrack MiniDisc recorders would seem to be like buses — you wait for ages, then three come along almost at once. Tascam's 564 is previewed on pages 32-3 this issue, and Sony's machine, which *SOS* saw at the 1996 Frankfurt Music Messe, is expected later in the year. Naturally, the third machine is the MD4 from Yamaha, which looks to be a straightforward replacement for the 4-track cassette multitracker, and will provide up to 37 minutes of digital recording (74 minutes of stereo), on a disk the size of an After Eight mint, thanks to ATRAC data compression.

Unlike tape-based systems, you get an MTC or MIDI Clock output without using up a track for timecode. An onboard tempo map facility makes life easy for MIDI Clock users, and there are locator points and basic copy/paste editing facilities, along with the facility to bounce all four tracks down in one go. All the tape-style facilities, such as varispeed and auto-punch in

WRH

SOS can be reached on CompuServe; our email address is 100517,1113.

Our full Internet address is 100517.1113@compuserve.com.

and out, are present, while sockets are provided for stereo buss In and all four audio tracks Out for when use with an external mixer is preferred. Yamaha envisage the MD4 as a practical and more reliable alternative to hard disk recording for adding a few audio tracks to a MIDI sequencer. The MiniDisc (or MD) data discs themselves are expected to be around £20 each, which makes it practical to store important recordings without having to create time-consuming backups. Regular MD recordings can be played back in the MD4, though MD4 recordings can't be played back in a regular MiniDisc player. Overall, the sound quality at our demo was very impressive, and although we suppressed an urge to run off with the unit on display, we will be bringing you a full MD4 *SOS* review at the earliest available opportunity.

P50m PIANO TONE GENERATOR

Yamaha's P50m is a half-rack module spin-off from the company's P-series electronic pianos, and is dedicated to producing classic acoustic and electric piano sounds. The front panel is designed for simplicity of operation, with slider control over equalisation. Six megabytes of compressed waveform ROM holds over 20 types of piano sound, including DX7 and CP80 samples. Built-in 3-band digital EQ, user-adjustable velocity response curves and over 40 effects types may mean that the redoubtable EMT10 may finally have a worthy contemporary competitor! A quick browse through the presets revealed a range of exceptionally clean and detailed piano sounds which are versatile enough to fit into just about any musical niche.

Yamaha are hoping to have all these products in the shops for early autumn, with the exception of the MD4, which will be available "very shortly". Naturally, *SOS* will bring you full reviews as soon as possible. *Paul White*

YAMAHA
VOICE
TONE
TUNE
UTILITY
P50m
DATA
EQ
LOW
MID
HIGH
PHONES

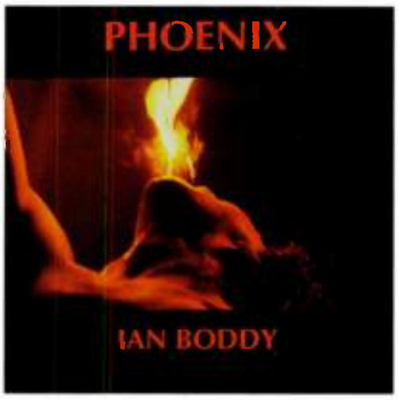
And now for something else...

ANDY PICKFORD
XENOmorph

The latest releases from Ian Boddy's Something Else Records include his own new album (*Phoenix*) and *Xenomorph* from Andy Pickford. Boddy's album isn't actually completely new; as fans will know, *Phoenix* was originally released 10 years ago on vinyl. The album has been digitally remastered, and the original five-track set is joined by a 25-minute long bonus track, 'The Purcell Set (Part 4)', recorded live at the Purcell Rooms, Queen Elizabeth Hall, London in 1986. Andy Pickford (see interview with Andy back in *SOS* July 1995) has produced nine new tracks for *Xenomorph*. The albums can be ordered direct from Something Else Records or from mail order electronic music specialists such as C&D Compact Disc Services, Midas Records and Neu Harmony.

Note also Something Else's new web page, whose URL is listed below.

A Something Else Records, PO Box 16
Consett, County Durham DH8 8YZ.
T 0191 373 7332.
F 0191 373 7334.
E boddy@selse.demon.co.uk
W http://www.demon.co.uk/SomethingElse/IanBoddy.html



Windows of opportunity for Logic Audio

Emagic have launched *Logic Audio* v2.5 for Windows 95, and UK distributors Sound Technology are making the software available for the special introductory price of £399. All the features of the Mac version of *Logic Audio* v2.5 are present, including virtually unlimited tracks, real-time reversible quantising, 960ppqn sequencer resolution, scoring and printing, and fully-integrated digital audio recording with the powerful Digital Factory DSP functions.

The software is optimised for Windows 95, and includes support for Video for Windows, 16-bit sound cards, and Digidesign's DAE for Windows. Note that there will not be a separate Audio Module, although owners of *Logic Windows* will be able to upgrade directly to *Logic Audio*.

A Sound Technology, Letchworth Point,
Letchworth, Herts SG6 1ND.
T 01462 480000.
F 01462 480800.

British Music Fair 96

SOS Special Offer

Here at *SOS*, we pride ourselves on keeping you informed of the hottest new hi-tech and recording products (just look at this month's exclusives: Tascam 564 MiniDisc Portastudio and DA38 digital 8-track; Alesis Nanoverb; the first in-depth review of Roland's MC303...). However, there's no substitute for seeing/hearing the very latest gear in the flesh and making up your own mind. That's why we've used our bargaining power to obtain low-cost entry tickets to the forthcoming British Music Fair. Now *SOS* readers can see all the hot new products before the trade does, sit in on gear demos, and even meet the *SOS* staff!

Saturday 7th September (10am-6pm) is a public open day at Earls Court, London, and entry price on the day is £7.50. However, readers can save a whopping 46% if tickets are purchased in advance from *SOS* (only £4 each). See coupon on page 223 to order. *Please note: all tickets will be despatched in good time before the show.*

We look forward to seeing you all there!

T 01480 461244.
F 01480 492422.

shape of things to come

***SOS* can be reached on CompuServe; our email address is 100517,1113.**

Our full Internet address is 100517.1113@compuserve.com.

Apple Mac: it goes to show...

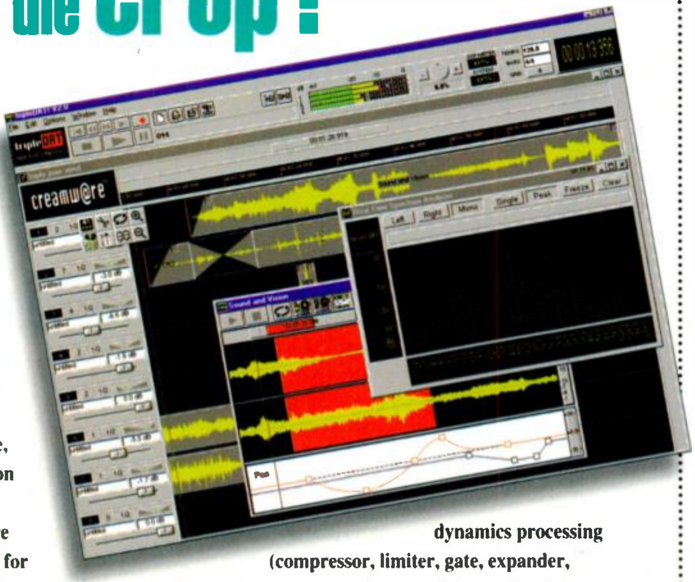
The many musicians who use Apple Mac computers in their studios might like to pop along to Apple Expo 96, taking place in the Grand Hall, Olympia, London, between the 6th and 9th of November. There will be exhibitors covering the full range of hardware, software, services, peripherals, and training for the Mac market, plus special features. These include an Electronic Imaging Centre; a Developers Village, showcasing the latest in software innovations from leading Mac developers; an Internet Centre with training demonstrations from experts, at all levels of experience; a Multimedia Feature demonstrating the business, education and entertainment applications of multimedia; various workshops, giving hands-on training sessions for selected Mac applications, at different levels of experience; and a conference/seminar program.

Entry to Apple Expo is free if you pre-register before the 18th October — if you don't register, there's a fee on the door. Call the pre-registration hotline number below to register. For more info, there's a web site at the address just below.

Apple
xpo 1996
6–9 November, Olympia London

T Registration Hotline
0181 984 7711.
W http://www.apple-expo.com.apple

TripleDAT: Cream of the crop?



German company Creamware, developers of the TripleDAT PC digital recording and editing system, launched v2.0 of the system during the recent Audio96 show. TripleDAT v2.0 comprises a hardware and a software component: the hardware is an ISA PC board which allows four channels of audio recording and four channels of playback, with stereo analogue and stereo digital S/PDIF in and out, a MIDI interface, and a Windows driver; a Plus version of the board also has AES/EBU interfacing. The TripleDAT software features audio workstation facilities for Windows 3.11/Windows 95, and backup software for streaming off the contents of the hard disk. Version 1 of the TripleDAT system was reviewed by *SOS* in September 1995; v2.0 brings significant additions, not least the provision of analogue I/O, which wasn't present before.

tripleDAT

Features of TripleDAT v2.0 include:

- Multitrack recording (with monitoring); real-time playback of 8-16 stereo tracks on four outputs; punch in/out; sync to MIDI timecode; full non-destructive editing; dynamic mixer window; real-time fades and crossfades; waveform view; and scrubbing.
- Signal processing including 4-band parametric EQ; dynamics processing (compressor, limiter, gate, expander, de-esser); a programmable reverb/room simulator; delays; a spectrum analyser; timestretching and pitch correction. Parameters can be adjusted and changes heard in real time if you have a 90MHz Pentium PC.
- CD-writing module to be released in September 1996 and free to existing users. This will enable TripleDAT to write Red Book-compatible CDs and will support almost all CD writers on the market.

After a period without official UK distribution, Creamware, whose system is already succesful in other parts of the world, have now settled on soundcard specialists Et Cetera; contact them for all further information concerning TripleDAT at the address below.

A Et Cetera, Valley House,
2 Bradwood Court, St Crispin Way,
Haslingden Lancs BB4 4PW.
T 01706 228039.
F 01706 222989.

SCV London have announced a price reduction on the recently-launched Marantz CDR615 and CDR620 professional recordable CD machines: the former will retail for £2344, while the latter (which is SCSI-enhanced and includes an RC620 remote as standard) will retail for £3519. The new prices have come about as a result of increased manufacturing levels.

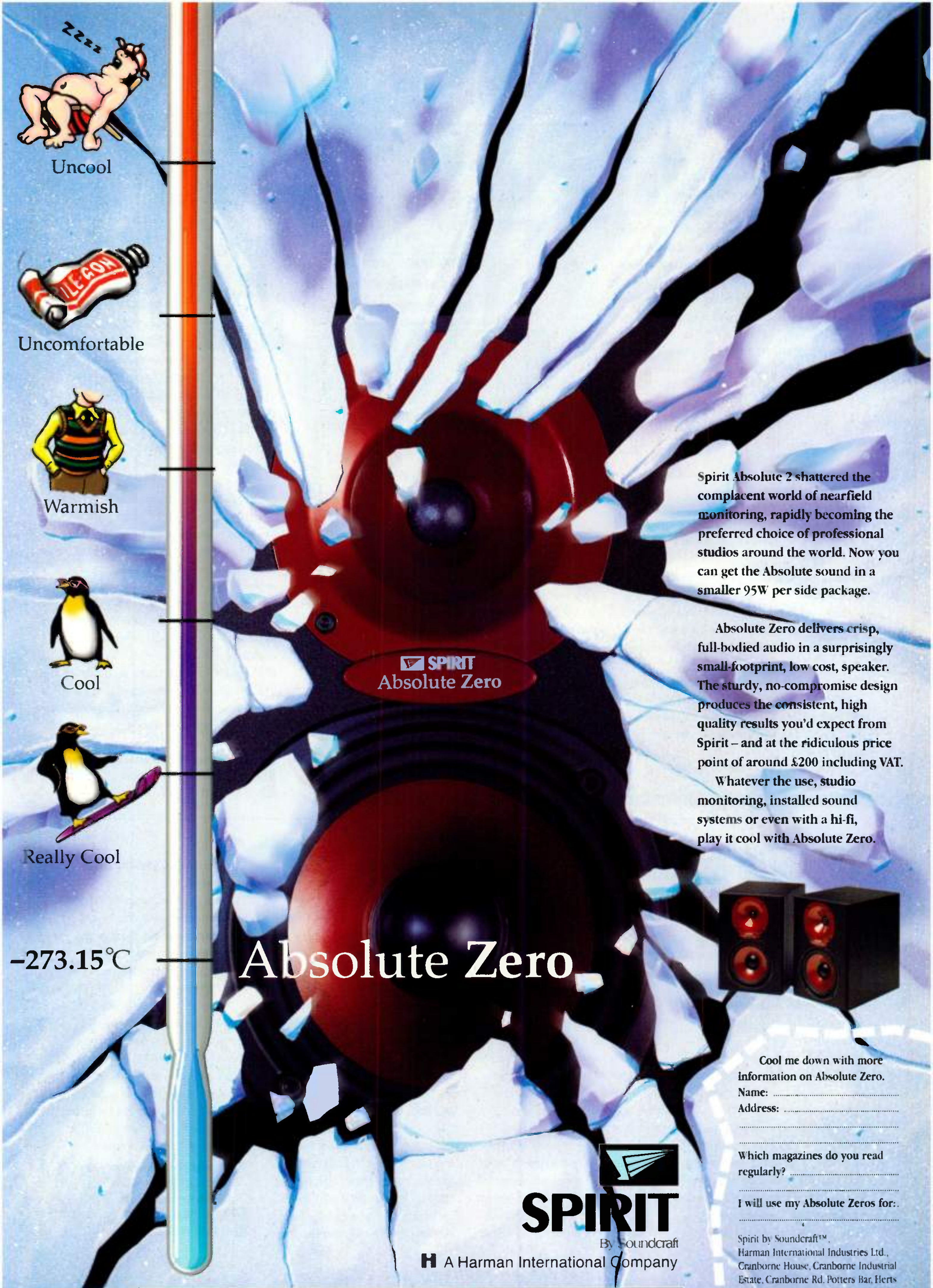
T 0171 923 1892.

The UK price of Sonic Foundry's *Sound Forge* PC audio editing software (reviewed in *SOS* May '96) has come tumbling down from £500 to £299.95, and the prices of *Sound Forge* plug-ins are apparently also set to plunge. The cut-down *Sound Forge XP* is also being, well, cut down from its previous price of £150 to £99.95. Finally, Sonic Foundry's UK distributors Arbiter plc are offering the public a free 16-page catalogue of all the products they handle — give them a call for details.

T Arbiter Group
0181 202 1199.

Academy award-winning film composer Hans Zimmer has taken delivery of two Fairlight MFX3 24-track digital recording/editing systems. Zimmer's facility needed 48-track capabilities, and he enthuses about the MFX3's controller. It "emulates the multitracks that I am used to operating. And best of all, there are no mice or other rodents to deal with."

T 0171 267 3323.



Spirit Absolute 2 shattered the complacent world of nearfield monitoring, rapidly becoming the preferred choice of professional studios around the world. Now you can get the Absolute sound in a smaller 95W per side package.

Absolute Zero delivers crisp, full-bodied audio in a surprisingly small-footprint, low cost, speaker. The sturdy, no-compromise design produces the consistent, high quality results you'd expect from Spirit – and at the ridiculous price point of around £200 including VAT.

Whatever the use, studio monitoring, installed sound systems or even with a hi-fi, play it cool with Absolute Zero.

Cool me down with more information on Absolute Zero.

Name: ....

Address: ....

....

....

Which magazines do you read regularly? ....

....

I will use my Absolute Zeros for: ....

....

Spirit by Soundcraft™,
Harman International Industries Ltd.,
Cranborne House, Cranborne Industrial
Estate, Cranborne Rd. Potters Bar, Herts
EN6 3JN England. Tel: +44 (0)1707 665000.
Fax: +44 (0)1707 665461

SPIRIT
By Soundcraft
A Harman International Company

http://www.spirit-by-soundcraft.co.uk

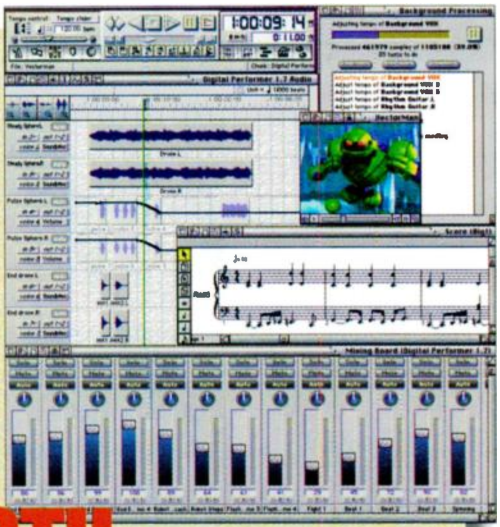
Perfect Pitch from MOTU

The award-winning *Digital Performer* 'MIDI + Audio' sequencer from Mark Of The Unicorn reaches version 1.7 with the addition of MOTU's 'PureDSP' technology. The upgrade allows time-scaling, transposition, and tempo changing of digital audio tracks without the tonal distortion at extremes which you often get with conventional audio pitch-shifting. *Digital Performer v1.7* includes the following features:

- PureDSP pitch-shifting, which allows the transposition of monophonic audio by as much as an octave without 'munchkinizing'.
- The SpectralShift feature which allows 'gender-bending' of vocal tracks (a male voice into a female voice, for example).
- Conventional pitch-shifting for polyphonic material.
- Integration of MIDI and audio features for time-stretching and transposing of audio and MIDI tracks together in one operation (using the Transpose command).
- DSP functions using PowerPC native code for faster processing.
- Background processing, which allows users to continue working (recording, editing, and playing back MIDI and audio data) during intensive audio processing operations.
- Time-stretching features which include: change overall tempo (with the program's main tempo slider or Change Tempo command), scale tempos to fit time, adjust tempo map from audio, and apply tempo map to audio.

Digital Performer v1.7 now also supports the new range of PCI-based digital audio systems from Digidesign (Audiomedia III, Pro Tools Project PCI, and Pro Tools III PCI, plus Pro Tools III (up to 48 tracks) and Session 8/Pro Tools Project using NuBus cards). Look out for an *SOS* review of this significant upgrade soon.

Digital Performer v1.7 costs £599, but you can upgrade from *Performer* for £249. Existing *Digital Performer v1.6* users will get v1.7 free, while v1.4 users can obtain it for £136. There's a special offer going for registered users of competing sequencing products, who can get *Digital Performer v1.7* for £295. Contact distributors Musictrack for further details, or to obtain a free demo CD of the DSP features of v1.7 — we've heard this, and it's pretty impressive.



A Musictrack, PO Box 4, Arlesey,
Bedfordshire SG15 6YE.
T 01462 733310.
F 01462 733390.

They're backing Bristol

Following the success of last year's Bristol Sound City event, another locally organised music showcase is to be held in October. Bristol Sound '96 will be organised by The Backing Group, a "self-help networking organisation for business people working in the entertainment industry" that was launched during Bristol Sound City. The group is looking for sponsorship for October's event: a range of "flexible sponsorship packages" will be available. The Backing Group are also launching a Musicians' Trade Directory for the South West; the directory will contain listings of people in the business, from managers and PA companies to recording studios and backing singers.

Also resulting from last year's Sound City event is the Bristol Association of Music, which performs a similar function to The Backing Group, but for musicians of all kinds. The Association aims to hold regular events which give members a forum to perform in front of a live audience, including invited A&R people; several bands have apparently already been signed as a result of appearing at these live music forums. Other functions of the BAM include organising exchange events with musicians from other cities, and negotiating good deals on hire equipment, tape duplication and other services for its members. BAM also provide a demo tape service which involves hand-picking three bands which are actively marketed to key record companies. Craig Williams of chartered accountants Hacker Young is co-ordinating the activities of both groups.

T Hacker Young 0117 973 8926.
E Craig@hckyoung.demon.co.uk
E CompuServe 100577,1244

Yamaha's sounds of the Internet

YAMAHA MIDPLUG

If you read last month's Shape Of Things To Come, you may remember that we brought you news of Yamaha's new *Soft Synthesizer*, which delivers "the essence of a PC soundcard" on a disk. Now we've heard that Yamaha have signed a worldwide deal with Netscape (the company behind the hugely popular *Navigator* Internet browser software), which confirms the use of their *MIDPlug* plug-in module, incorporating *Soft Synthesizer*, within *Navigator v2.0*. This will make real-time musical accompaniment of web sites possible without the need for a soundcard, or time spent downloading wave data (providing you have the right kind of computer!). The *Soft Synthesizer* uses MIDI data, which is far more compact than wave data, and, according to Yamaha, will allow "entire musical compositions to be embedded in a Home Page."

At this stage, it appears that users of current Power Macs, running System 7.5 or later, will need no additional hardware other than their computer to access music from sites created with *MIDPlug*. PC users with the right kind of computer (a 75MHz Pentium or better, though we have no further details as yet) may be able to use *MIDPlug* without extra hardware; otherwise, you'll need a 16-bit soundcard or a GM/XG compatible sound module. For both platforms, a minimum of 8Mb memory is required, but 16Mb is recommended.

MIDPlug provides MIDI File playback, with tempo control, start and stop, and transposition, 128 GM-compatible voices, eight drum kits, reverb, and 32-note polyphony. It supports Standard MIDI File formats 0 and 1. You can check out *MIDPlug* for yourself if you have a net connection: a free beta version is available for downloading from:

http://www.yamaha.co.jp/english/xg

Once you've downloaded the synth, Yamaha direct you to visit:

http://www.cyber-bp.or.jp/yamaha/sample/index_e.html

Doncha just love those snappy web addresses?

There are instructions (of a sort) for using *MIDPlug* in web site construction on the Yamaha pages, and we assume you'll have to have *MIDPlug* installed in your computer if you want to hear music playback from sites which use it, but everything is still a little fuzzy at the moment. More info as soon as we have it.

A Yamaha Media Technology
Division, Sherbourne Drive,
Milton Keynes MK7 8BL.
T 01908 366700.
F 01908 368872.

Time & Space launch load of Old Junk!

VINYLISTICS #2
MO' UNIQUE & RARE BUTTERBREAKS FROM DA BASEMENT OF "PHAT FABE" GET DA FOLLOW UP TO DA "BEST HIP HOP SAMPLE CD EVER !!"
Travelogue #1

Time & Space keep up their usual hectic release schedule with the launch of three new sample CDs this month. First up is *Junk Percussion*, the initial entry in the new Altered States series. The CD is filled with rhythms, textures, ambiences and hits, all generated by leading percussionist Roger Turner from everyday, ordinary objects. Turner has performed on an idiosyncratic collection of junk instruments at festivals all over the world, and this collection certainly adds something different to the average sample library.

T&S follow up the acclaimed *Vinylistics* sample CD with *Vinylistics 2* (surprisingly!), a collection of R&B, trip hop, hip-hop and half-time jungle loops. Going slightly further afield, *Travelogue* is a celebration of African ceremonial drumming, chanting, instruments, village noises, and "much more" — over 1000 samples in all.

All three discs cost £59.95 each, in audio CD format. For more info, contact Time & Space at the address below. Watch out for reviews soon in Sample Shop.

A **Time & Space, PO Box 306,**
Berkhamsted, Herts HP4 3EP.
T **01442 870681.**
F **01442 877266.**

education corner

OPCODE GOES BACK TO SCHOOL WITH SAE

The School of Audio Engineering's partnership with US software developers Opcode is to be launched later this year by '80s hitmaker Howard Jones. SAE's London school, which will see a £1 million upgrade in late '96/early '97, is the venue for a live *Studio Vision Pro* session, conducted by Howard and Opcode's European Product Specialist Jason Davies. The session will be open to the general public as well as to SAE staff and students. Opcode's *Studio Vision Pro* 'MIDI + Audio' sequencer (see review in *SOS* March 1996), *OMS* software (Open MIDI System), and *Galaxy* librarian program is to be installed in all 22 SAE schools and will form an integral part of SAE courses, including the popular multimedia production curriculum. We'll let you know exactly when the event is happening as soon as we know. In the meantime, contact SAE for further information.

A **School of Audio Engineering, Unit House, North Road, Islington, London N7 9DP.**
T **0171 609 2653.**
F **0171 609 6944.**

PRODUCER'S CHOICE AT ALCHEMEA

London audio school Alchemea continued its series of guest lectures and seminars from name producers recently with a week-long practical seminar from producer Julian Standen, whose credits include The Lemonheads, The Soupdragons, and The Smiths. The seminar involved students in working for a week with new London band Minibar, under Julian's production supervision. Further seminars are planned for 1996-97, and it's hoped that some will be open to the general public.

A **Alchemea, 2-18 Britannia Row, The Angel, Islington,London N1 8QH.**
T **0171 359 3986.**
F **0171 359 4027.**
E **101645.1103@compuserve.com**

BRAND NEW BA FROM BARNSLEY

Barnsley College has introduced a new BA honours degree in Creative Music Technology, validated by the University of Sheffield. The programme will run from September this year, and follows on from the college's HND in the same subject. Over three years, course modules will include recording techniques and acoustics, composition and arranging; musicianship; and multimedia; with a dissertation in the final year. Coursework will take advantage of the college's custom-designed 16-track studio, 30 *Cubase* workstations and 20 multimedia workstations.

Application is via UCAS, although there may be places available through clearing, starting in September — check the press. Further information is available from the College. Minimum entry requirements are two A-levels in relevant subjects or four merits in the final year of a BTEC ND; students with a relevant HND can directly enter the second year of the course, and if you've taken the college's foundation programme in music (which has broader entry requirements), you'll get a four-year degree at the end. Any practical experience with music technology, recording, computers, video, or other relevant areas will be taken into account.

A **Barnsley College, Old Mill Lane Site, Church Street, Barnsley S70 2AX.**
T **01226 730191.**
F **01226 216477.**

OPEN HOUSE AT SSR

The Manchester School of Sound Recording will be having one of its regular open days on August 3. Visitors don't need an appointment: just show up between 12 and 4pm, and you can meet the staff and students, and take advantage of the demos and seminars that will take place during the day.

SSR also note that they can now offer an officially-recognised qualification: they have recently acquired the status of a National Vocational Qualification asssessment centre in Sound Assistance Level II. The curriculum continues to expand, as do the school's facilities: an AMEK Big By Langley desk (with Total Recall and Virtual Dynamics) has been added recently, as have three Alesis ADAT XTs and a Digidesign Pro Tools system.

A **School of Sound Recording, 10 Tariff Street, Manchester M1 2FF.**
T **0161 228 1830.**
F **0161 228 3072.**

COATBRIDGE COLLEGE GET INTO THE SPIRIT

Coatbridge College in Glasgow has taken delivery of a Spirit Studio 24-channel mixing desk, for use at the centre of the college's new recording studio; the studio will be used for a new HND course to start next year. Music technology lecturer Martin Dewar:

"When looking for an automated mixing desk, the Spirit stood out from the crowd. It's excellent value for money, well laid out, user friendly and capable of delivering quality results." Ruggedness was also an issue: "It's a good thing the Spirit Studio is so tough. With so many students determined to break into recording, it has to be!"

A **Coatbridge College, Kildonan Street, Coatbridge ML5 3LA.**
T **01236 440266.**
F **01236 422316.**
T **Spirit by Soundcraft 01707 665000.**

Rane's new VP12 voice preamp/processor, for voice-over studios, broadcast and similar noise-critical applications, contains high/low-cut filters, de-esser, gate/expander, compressor, and two bands of full-range parametric EQ. Also new, the tamper-proof RPE228 stores 16 different EQ settings for clubs and other installations. It's programmed on installation via the supplied *RaneWare* software running on a PC or Power Mac, which can then be removed to prevent unauthorised alteration. Full details, plus a free download facility for the *RaneWare* program, are available on Rane's web site (address below), or from UK distributor Shuttlesound.

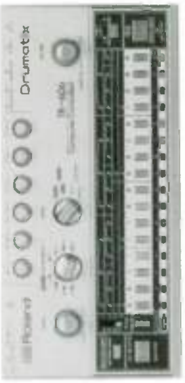
T 0181 646 7114.
W Rane Web site
http://www.rane.com

The Cornelius Cardew Composition prize is once more up for grabs. Entries for 1996 are now invited for a composition in one of three categories: Category A is for a piece written for the Apollo Saxophone Quartet (soprano, alto, tenor and baritone saxes); Category B is a composition for pianist Stephen Gutman; and Category C is a composition for any other instrumentation. The Apollo Quartet and Stephen Gutman will perform qualifying compositions on the workshop and judging day, but if you write in Category C, you must be prepared to provide the musicians on the day. Closing date for entries is the 1st November; performance of 10 chosen works and judging takes place in December. Contact the administrator, Brigid Scott Baker, for an entry form and full conditions.

T 01222 342329.
E ccprize@dial.pipex.com

Drumatix improvement

The modification possibilities of old analogue synths and drum machines seem to be endless: the latest mod comes from Analogue Solutions and concerns Roland's TR606 Drumatix drum machine. This unit was launched as a companion to the legendary (and now over-inflated) TB303 Bassline, but hasn't become anywhere near as collectible. Nonetheless, it has a character and sound all its own. AS's mod comes in the form of a box that connects to the TR606 with a multi-way cable and adds 13 pots that provide real-time tonal control over all the TR606's sounds. Main man Tom Carpenter is working on similar 'control breakout' boxes for Roland's CR78 and CR8000, Korg's KPR77, and other analogue drum machines. Considering the TR606 is not a terribly expensive instrument — at the moment — £99 for the control box seems like a pretty good deal. The mod can be user-installed, but since that £99 includes fitting by Analogue Solutions, why bother? Contact them for shipping details, which shouldn't be at all expensive.



A Analogue Solutions, 29 Horton Hill, Epsom, Surrey KT19 8SS.
T 01372 745494.
F 01372 745494.
W http://www.channel.co.uk/analogues/

Value added packs!

If you're on the lookout for new sounds for your sampler, Big Time Productions now have a range of disk packs in themed sets — for example, Bass Pack; Drum Loops; Guitars; Roland Synths; Digital Synths; Piano and Keyboard; Orchestral; and Ethnic, to name just a few. There are 21 packs in all, each pack containing 10 disks of samples, and they're available for Casio FZ/HS samplers, Ensoniq EPS, ASR and TS samplers, Kurzweil K2000, Akai samplers (excluding the S01), and ST/Steinberg *Avalon/Sound Designer* formats. At £25 each, the packs work out much cheaper than buying the disks individually from the Big Time catalogue. And if you want more than one pack, prices go down further — two packs will cost you £24 each, while 16 or more packs will cost only £18 each. Contact Big Time for full pack contents and quantity pricing details.

A Big Time Productions, 244 Furlong Road, Tunstall, Stoke-on-Trent, Staffs ST6 5UN.
T 01782 810611.

PC made to measure

Synwave Productions, a new company that specialises in the assembly of PCs for musical applications, can put together a *Cubase*-based 75MHz Pentium system with 1Gb hard drive and 8Mb of RAM for £2199.99 including VAT. The package will run straight out of the box, saving the user the irritation of installing and configuring the hardware and software. If you've got a PC that you'd like to use for music, Synwave can also help — contact them for details of their upgrade service.

A Synwave Productions, 78 Mount Road, Hastings, East Sussex TN35 5LA.
T 01424 439465.
F 01424 439465.

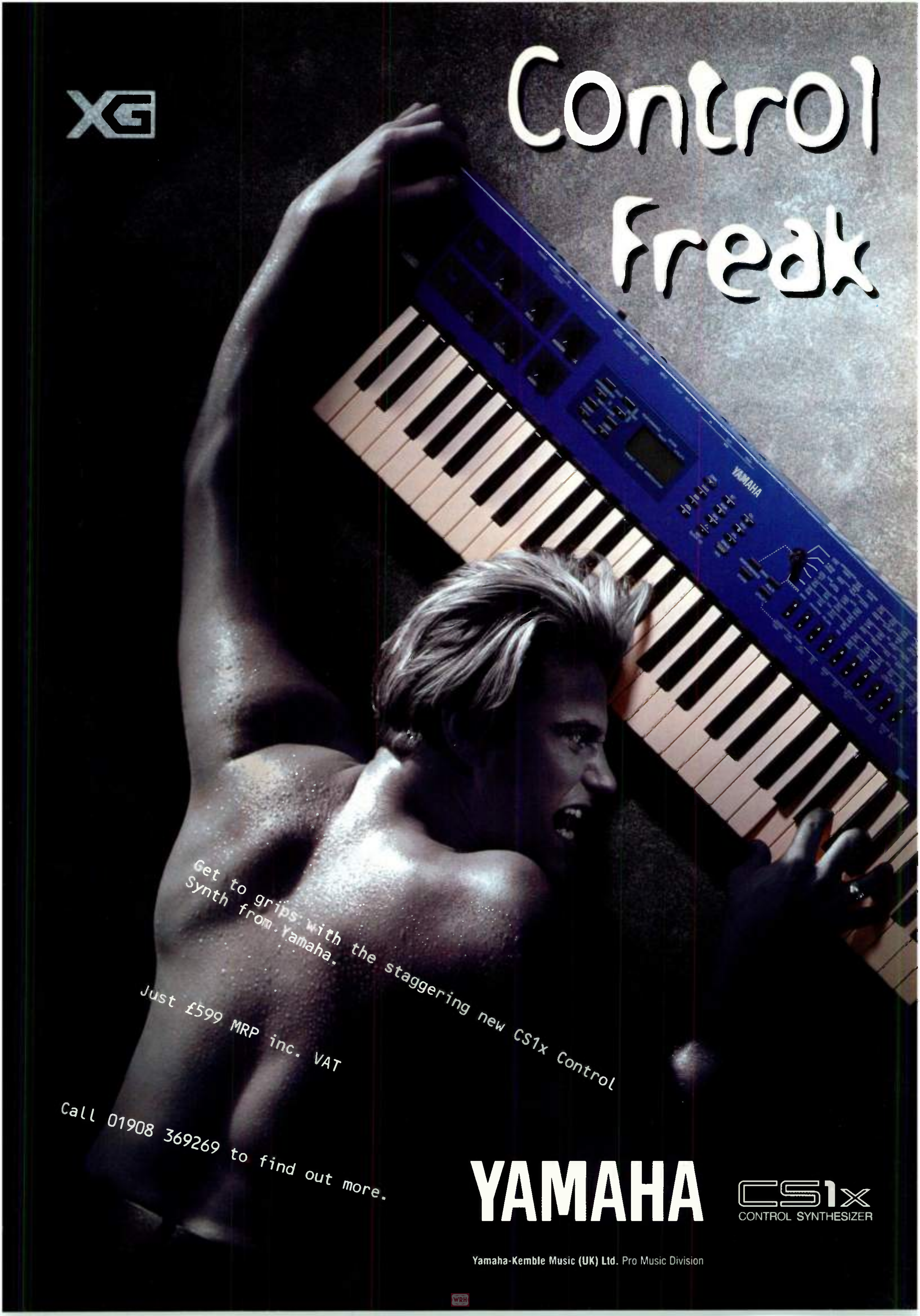
Korg Trinity gets three times better

Korg continue to deliver on their promise to expand the capabilities of the Trinity DRS series of workstations with the release of the second wave of upgrades for these powerful instruments:

- The HDR option (£599 including VAT and fitting) enables a Trinity to record audio direct to an external hard disk (which is not supplied) via a SCSI connector on the HDR board. A Trinity thus equipped is capable of recording up to two tracks at once and can play back four tracks at a time. Tracks can also be edited, with standard cut/copy/paste operations included. Dynamic changes in volume and panning are automated, and 2-band EQ and two aux sends to the Trinity master effects on each track are provided. The HDR option has two analogue inputs, SCSI, and S/PDIF digital I/O, which can be used not only for input and output, but also for backing up the contents of the hard disk.
- The PBS (Playback Sampler) option (£625 including VAT and fitting) features 8Mb of Flash ROM, into which samples and Multisounds can be loaded. Samples can be loaded from floppies or via SCSI — but only the latter if you already have the SCSI (more shortly) or hard disk recording option fitted to your Trinity. The PBS option enables the Trinity to read sample data in either Korg or Akai S1000 format, and once loaded, samples join the drum sounds and Multisounds within the Trinity. So that you've got somewhere to put all these extra sounds, the upgrade also bumps up the Trinity's quota of user Program and Combination locations to 512 of each, plus 24 drumkits — double what's on a standard Trinity. If you have the Solo board fitted, Solo Programs are expanded to 128. Naturally, as the upgrade features Flash ROM, samples are retained when the Trinity is switched off.
- The SCSI option (£399 including VAT and fitting) allows the Trinity to be connected to an external device such as a hard disk or CD-ROM drive, so you can load and save sounds, global and song data, and samples, if you have the PBS option installed.

We're hanging on for the MTT (Making The Tea) option...

A Korg UK Ltd,
9 Newmarket Court,
Kingston,
Milton Keynes MK10 0AU.
T 01908 857100.
F 01908 857199.


XG
Control Freak
YAMAHA

Get to grips with the staggering new CS1x Control Synth from Yamaha.

Just £599 MRP inc. VAT

Call 01908 369269 to find out more.

YAMAHA

CS1x
CONTROL SYNTHESIZER

Yamaha-Kemble Music (UK) Ltd. Pro Music Division

shape of things to come

TANGERINE DREAM
tangerine dream green desert
TANGERINE DREAM UNDERWATER SUNLIGHT

Tangerine time machine

Tangerine Dream fans will be happy to hear that Castle Communications have released 11 further re-issues of TD's Virgin Records' back catalogue — even if said fans have yet to recover from the financial trauma brought on by buying last year's re-issues. The CDs have been released in two batches with faithfully restored artwork. The first chronological set date from the early '70s, starting with *Electronic Meditation* (ESM CD 345), Tangerine Dream's debut album, followed by *Alpha Centauri* (ESM CD 346), *Zeit* (ESM CD 347), *Atem* (ESM CD 348), and *Green Desert* (ESM CD 349) — originally recorded by Edgar Froese and Chris Franke in 1973, but not released until 1986.

The next six CDs bring us into the '80s with *Pergamon: Live At The Palast Der Republik* (ESM CD 413), recorded during TD's historic televised concert as the first Western rock group to perform in the former East Berlin in 1980; *Poland: The Warsaw Concert* (ESM CD 365), recorded in 1983; *Le Parc* (ESM CD 364); *Underwater Sunlight* (ESM CD 366); *Tyger* (ESM CD 367); and *Livemiles* (ESM CD 368), recorded during Tangerine Dream's 1986 North American tour and their City of Berlin anniversary concert in 1987. All the music on the CDs has been remastered from original master tapes using Tadream Technologies' trademarked DQC system.

Watch out for Castle Communications' forthcoming Tangerine Dream five-CD retrospective boxed set, *The Dream Roots*, due later in the year, featuring remixed, re-recorded and unreleased Froese/Franke material.

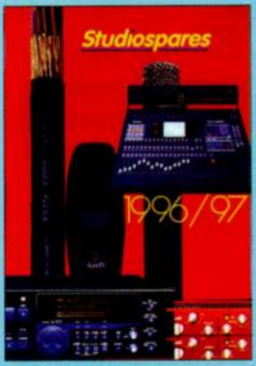
Jonathan Miller

Raper & Wayman have been appointed UK distributors for Apogee Electronics products in the UK. Apogee make an industry-standard range of analogue-to-digital converters, including the DA2000E and the AD1000 20-bit converters. Both incorporate Apogee's own UV22 Super CD encoding process and have a range of output and format conversion options.

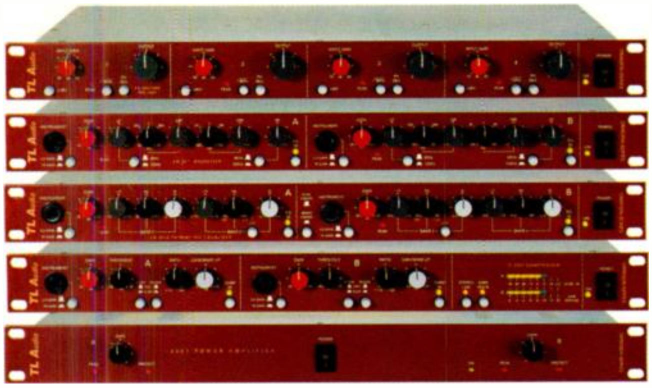
T Raper & Wayman
0181 800 8288.

The essential new catalogue from studio equipment and peripheral supplier Studiospares is now available. It's packed with gear ranging from mics, signal processors and headphones, to equipment stands, digital and analogue recorders, studio racking, and all kinds of wiring, cabling and connectors. Studio consumables from tape of all sorts to floppies, MiniDiscs, SyQuest cartridges, cleaning products, acoustics products, and much more, are also stocked. Everything is available with speedy delivery, usually next day. Call for your copy on the number below.

T 0171 485 4908.



TL Audio in living colour



Just as *SOS* review the Indigo 2011/2012 valve EQs (see pages 36-37 of this issue) manufacturers TL Audio launch a new addition to the Indigo range. The 2051 Mono Valve Voice Processor was debuted at the recent Audio96 show in London, and features a single-channel of mic preamplification, compression and EQ designed for high-quality vocal processing. Though the 2051 is designed primarily for vocals, the inclusion of line-level and instrument inputs means it can be used to treat any signal. Features include:

- Mic preamp stage with variable input gain, phantom power, phase reverse, and 90Hz high-pass filter.
- Compression section with variable control of threshold, ratio, and gain make-up, with switchable Fast and Slow Attack settings.
- Equaliser with 4-band shelving/peaking arrangement.
- Master section with output level control and 8-segment meter to read output level or gain reduction.

Two 2051s can be linked for stereo operation; just the one will cost you £703 including VAT. Grammy award-winning producer Tom Lord-Alge swears by the Indigo range, commenting that the 2011 EQ has given him "the ability to EQ with clarity rather than just tone — I find it very musical. With any problem sound I come across, I just patch in the 2011 and it enables me to add depth and clarity."

The Crimson range is TL Audio's answer to lower-cost studio processing. It's a solid-state rather than a valve range of units, but provides the same facilities as the Indigo range and is claimed to deliver "ultra-clean, easy to use processing and amplification". The line initially includes five units, with more planned for the future. Those five are:

- The 3001 4-channel mic preamp, featuring 48V phantom power, a 90Hz low-cut filter, phase reverse, peak LED metering, balanced XLR mic inputs, and XLR/jack line outputs.
- The 3011 2-channel, 4-band EQ, also featuring balanced XLR and unbalanced jack line inputs and outputs.
- The 3012 2-channel parametric EQ, which also has a mono mode to allow mono, 4-band operation.
- The 3021 2-channel compressor, featuring side-chain access for frequency-conscious compression, plus a stereo link facility.
- The 3041 2-channel power amplifier, providing 100W into 8Ω, with balanced XLR and unbalanced jack inputs, and convection cooling to avoid the need for a noisy fan.

The Crimson range will retail for £469 per unit, including VAT.

A **TL Audio, Letchworth, Herts SG6 1AN.**
T **01462 490600.**
F **01462 490700.**

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.

HARMAN INTERNATIONAL INDUSTRIES LTD., CRANBORNE HOUSE, CRANBORNE RD., POTTERS BAR,
HERTS, EN6 3JN, ENGLAND. TEL: +44 (0)1707 665000 FAX: +44 (0)1707 660482

Soundcraft
Ghost
A Harman International Company

Clavia Nord Lead on the up

Clavia's Nord Lead virtual analogue synth has been enhanced with a v2.0 ROM update, available for both keyboard and module versions. Interestingly, one of the enhancements is a set of 10 analogue drum patches for the 4-voice version of the synth; each patch holds a drum kit with eight different sounds configured in eight zones across the keyboard, and editable in real time. An expanded (12-voice) synth can hold 30 drum patches. Another new feature is an 'Echo' effect, available in the LFO2/Arpeggiator section. According to Clavia's brochure, the "echo will be influenced by the 'unique velocity programming' (morphing feature of the Nord). While the echo is fading, the sound will change accordingly." We hope that's perfectly clear! In addition, the upgrade provides more arpeggiator effects — for example, it's now possible to run arpeggiated notes randomly, and arpeggiator notes can also be transmitted over MIDI. A new filter (a notch filter in series with a low-pass filter) has been implemented, and some new MIDI features have been added. Octave shift is now transmitted and received, and aftertouch is received and assigned to LFO1, LFO2, OSC2, FM or Filter. An expression pedal can be assigned to the same functions, independently of the mod wheel. New Nord Leads will contain the v2.0 ROM, but existing owners will currently have to fork out £95 to get the upgrade; changing the ROM is a simple DIY job, though, and doesn't invalidate the warranty.

Clavia have also announced the availability of three PCMCIA cards full of new sounds; each card holds 297 single sounds and 100 performances, plus an extra 30 drum patches.

A **Key Audio Systems Ltd, Unit D, Chelford Court,**
Chelmsford, Essex CM1 3AG.
T **01245 344001.**
F **01245 344002.**

······

Plasmon CD-R cheapest yet

The cost of recordable CD continues to drop to ever more affordable levels with the launch of Plasmon's CDR4240 at just £540. The CDR4240 comes bundled with mastering, multimedia and backup software for Windows or Mac, and is aimed at a wide range of potential users, including those wishing to record audio. Four write methods are available: disc at once; multisession recording; track at once; and fixed and variable packet writing. The unit will also function as a standard quad-speed CD-ROM drive.

A **Plasmon Data Ltd, Whiting Way, Melbourn, Royston, Herts SG8 6EN.**
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F **01763 264444.**

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dynaudio lexicon dbx

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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!

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Although Waldorf are not associated with Focusrite in any way, we cannot deny that this Wave is red.

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We now offer a new custom range of Wave synthesizers with 76-note keyboards in four colour options - standard blue, red (as shown), Sahara and black. Totally unique sound.

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KORG | ensoniq | ALESIS | Steinberg | Studiomaster | Technics | Vestax | KURZWEIL | FATAR

Steinberg

Cubase For Windows 3.0

Steinberg has made the industry standard sequencer for as long as we can remember, beginning with Pro 24 on the Atari, and now that dominance has been continued on the PC platform.

Not satisfied with this success, Steinberg have upgraded all versions for the PC to version 3.0. It's host of new features include hard disc recording in all versions (the number of tracks limited only by the speed of your PC), pitch shift & time stretch, and on-line help. Of course, Cubase's other great features like Groove Quantise and the MIDI Mixer have all been retained. All versions are in stock now!

- *Hard Disk recording on all versions*
- *Industry stand sequencer*
- *On-line help*

CUBASE

CUBASE 3.0
£329
INCLUDING FREE MIDI INTERFACE

CUBASE SCORE 3.0
£449
INCLUDING FREE MIDI INTERFACE

CUBASE AUDIO XT 3.0
£1299
INCLUDING FREE AUDIOMEDIA 3 PCI

Cubasis & Cubasis Audio

Not ready to jump in at the deep end yet? Then Steinberg have created Cubasis especially for you. An entry level version of the program, it includes 16 tracks of the features that have made Cubase famous: the industry standard arrange page, simple cut and paste editing and much more. Cubasis Audio even integrates hard disk recording with an appropriate soundcard.

CUBASIS
£149
INC. FREE MIDI INTERFACE

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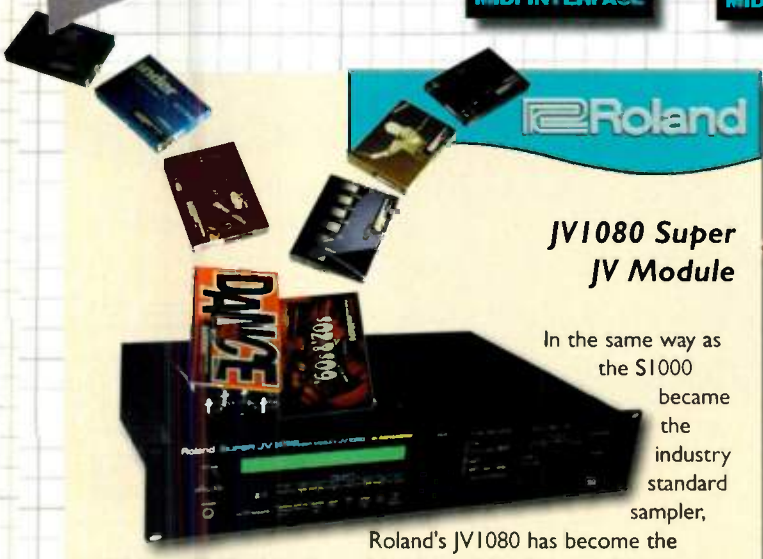
Roland



JV1080 Super JV Module

In the same way as the S1000 became the industry standard sampler, Roland's JV1080 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 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!

RRP £1199
£979
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RRP £1468
£1199
WITH ANY EXPANSION BOARD

Reno Portable CD-Rom Drive

MEDIAVISION

Are you making full use of your sampler? There are now a huge range of CD ROM discs stacked full of library available for virtually any sampler on the market. Each disc can hold up to 650 meg (the equivalent of about 500 HD floppies) and what's more, all the patch data has already been programmed! 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 while stocks last!

RRP £429
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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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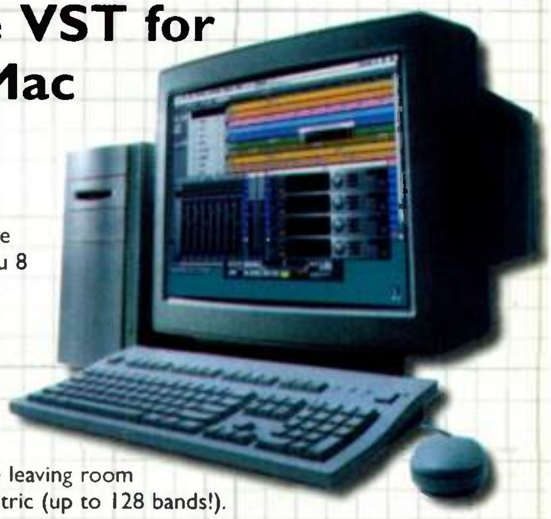
Steinberg

Cubase VST for PowerMac



Integrated sequencing and hard-disk recording has always been a great idea, but until now you've had to buy expensive extra hardware, or use the Mac's built-in audio. This might have given you 8 tracks or more but with only two outputs, there was no possibility of individual EQ and effects treatment.

Now Cubase VST redefines music on the Mac platform, and sets a completely new standard - not only can you record up to 32 tracks (Processor dependant), but it also has built in realtime effects and EQ. Effects include reverb, chorus, delay, echo and many more, with the plug-in architecture leaving room for huge future developments, and the EQ is fully parametric (up to 128 bands!).

What's even more incredible is that the VST technology is included in every version of Cubase from the standard version at only £329, through Score for those with more sophisticated printing requirements, to Audio XT, for use with digidesign hardware. Call us now for your copy or to book a demo. Bundles with Power Macs also available, please enquire.

- *Up to 32 tracks of Hard Disk recording*
- *Up to 128 bands of EQ*
- *Built in realtime reverb, delay & chorus etc.*
- *Pitch shift & time stretch*
- *Industry standard sequencer*
- *Ridiculous price!*

CUBASE VST
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DrumStation

novation

Someone had to build this eventually! Despite being discontinued for at least 10 years, Roland's TR-808 and TR-909 drum machines have remained indispensable popular classics ever since. Now, Novation bring you those classic sounds with the original editing parameters, and in the convenience of a 1U rack, with MIDI, and 8 outputs. Initial supplies will be limited and demand, high. We have been guaranteed a significant quantity of the first stock available. Call for further details.

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DTC790
Dat Machine

SONY

We have exclusively secured a small supply of the Sony DTC790 to bring you the 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!

TURNKEY EXCLUSIVE
£499
INCLUDING REMOTE

CS1x

YAMAHA

Here's another fantastic addition to this year's slew of equipment specifically designed for dance music. Not only does it look great, it sounds great too! As well as 480 XG format voices and 11 different drum kits, the CS1x also has 128 special performance sounds especially designed for dance and techno music. Front panel knobs allow instant access to crucial editing parameters like the filter, and 2 are assignable to anything you like. Round this off with top quality effects and an arpeggiator, and you have what has to be the best value keyboard of the year!

RRP
£599
NEW PRODUCT

Orbit
The Dance Planet

EMU

Emu have taken their wealth of experience in making modules such as the Proteus, Vintage Keys and Morpheus, combined it with the filters from the incredible Emulator 4, and with their usual innovation, come up with the Orbit - especially built for dance music.

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 !

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JOEMEEK PRO Channel
VC3

JOEMEEK Voice Channel

JOEMEEK Compressor

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 !

PRO CHANNEL	VOICE CHANNEL	COMPRESSOR
£299	£599	£1499
INCLUDING FREE CABLES	INCLUDING FREE CABLES	INCLUDING FREE CABLES

Macintosh

MIDI Bundles

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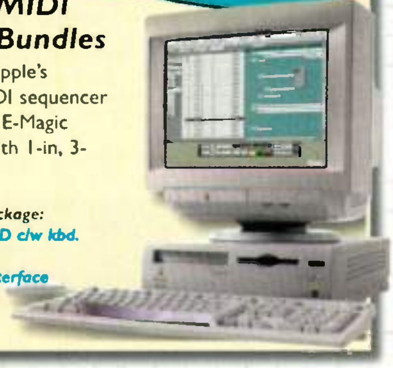

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- *14" Colour Display*
- *MIDI Sequencer + Interface*
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* CPU Apple B stock - full warranty

SONY

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 digital recording.

TCD-D8

NEW PRODUCT £549 NEW BOXED

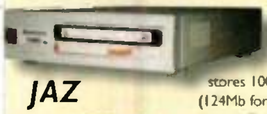
No other portable is available under £1499 - initial supplies will be very limited, phone now to reserve yours. The ultimate Walkman !

SyQuest & IOMEGA

ZIP

Removable disk drives

There was a time when hard disks were a luxury for sampler owners, but with the advent of the ultra cheap Iomega 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 stores 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 fx library and is ideal for many dedicated hard disk audio systems like the Emu Darwin or Akai DR series.



JAZ

EZ-135

IOMEGA ZIP	IOMEGA JAZ	SYQUEST EZ-135
£189	£569	£149
INC DISK & SCSI CABLE	INC DISK & SCSI CABLE	INC DISK & SCSI CABLE

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Focusrite
Green range

Focusrite

Focusrite have long represented the pinnacle of audio achievement, but sadly their products have always been out of reach for most of us. Now, specifically with the high quality project studio in mind, they have designed the Green range of processors. The first 3 products are the Dual Mic Pre, the Focus 4 band EQ with filters, and the Voicebox - this combines a mic/instrument preamp, compressor, de-esser and parametric EQ in a single unit - the ultimate signal path for digital recording! All 3 are on permanent demo at Turnkey.

DUAL MIC PRE	FOCUS EQ	VOICEBOX
£819	£929	£989
CALL FOR DEMONSTRATION	CALL FOR DEMONSTRATION	CALL FOR DEMONSTRATION

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

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.

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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**

ALEX
£389
INCLUDING **FREE** 15 DAT TAPES

REFLEX
£469
INCLUDING **FREE** 15 DAT TAPES

PCM80
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INCLUDING **FREE** ROM CARD

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Exclusive!

adat

Fostex CX8 New High Speed ADAT

The CX8 is built for Fostex by Alesis and is basically exactly the same machine as the new high speed ADAT XT. The only differences are the colour and the D-Sub (rather than EDAC) connector on the rear panel.

The new design features a die-cast chassis and as 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.

Turnkey are the exclusive U.K. suppliers of this machine, and are therefore able to bring it to you at an unbeatable price.

Why pay more?

- **Totally interchangeable with ADAT XT**
- **New 4 times speed transport design**
- **Absolutely unbeatable price**

RRP £????
£2195
PACKAGE DEALS AVAILABLE

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INC 1 GIG FIXED DRIVE

BUNDLE PRICE
£1999
INC 1 GIG JAZ DRIVE

BUNDLE PRICE
£2149
INC 1 GIG & FX BOARD

Roland VS880 Digital Workstation

Roland

It's an 8 track recorder (each with an additional 8 virtual tracks) and a 14ch digital mixer complete with automation. An 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 and value.

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NEW
Indigo Range

TL Audio

In the production of modern valve audio equipment, the success of TLA equipment has been unrivalled, from the best selling compressor (shown here), to the full blown valve mixer. For those of you who don't quite need the full functionality of the existing range, the new 1U high Indigo range has been designed specifically for your needs. Superb warm and fat valve signal processors at an affordable price. Models include a compressor, EQ, mic amp and overdrive unit. Entire range on demo at Turnkey for direct A/B comparison.

PRICES FROM
£699
CALL FOR DETAILS

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PEAVEY SAMSON APHEX Musicator DOD ZOOM

EMAGIC

LOGIC & LOGIC AUDIO NOW AVAILABLE FOR WINDOWS

00: 00: 47: 24. 22

Logic
Logic
Logic

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

LOGIC
FOR PC
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INCLUDING
FREE
MIDI INTERFACE

LOGIC
FOR MAC
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AUDIO
MODULE FOR MAC
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MIDI INTERFACE

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lexicon

Vortex

Vortex
lexicon

Despite the first digital effects units being developed almost 20 years ago, they have all followed a familiar path ever since, offering a conventional series of effects. The Lexicon Vortex breaks the mould in allowing effects to be morphed between in real time and in the process, creating new and previously unheard of effects. (This actually changes the effect algorithm continuously - it is not a simple cross-fade between effects) This unit is ideal for dance music, and anybody requiring out of the oridinary effects, and its real time nature make it an excellent choice for live performers such as guitarists. Effects are also affected by the input signal, so that dynamics can control various different paramters within an effect algorithm. Tempo can be tapped in to control delay times etc...Typical Lexicon quality can of course be taken for granted. Exclusive bulk purchase makes this huge reduction possible on the end of the line. First come first served!

- **Unique morphing of effects**
- **Typical Lexicon quality**
- **Superb realtime control**

RRP ~~£429~~
£199
EXCLUSIVE DEAL

SONY

PCM-800

PRO 8 TRACK DIGITAL RECORDER

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 now before stocks are exhausted!

RRP ~~£5249~~
£3499
NEW BOXED

PULSE

waldorf

Waldorf quality at a previously unheard of price! Their first venture into the burgeoning monosynth market has been universally acclaimed, and rightfully so. The Pulse's three oscillators provide some of the fattest sounds around, and it's modulation matrix allows a far higher degree of programming complexity than anything else in its range. Add to that the fact that editing any parameter sends out a MIDI controller and you have a fantastic all round performer. On demo and in stock now.

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£599
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YAMAHA VL1m & VL7

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Whilst we've always been well known for bringing you exclusive deals at knock-down prices, this is definitely the deal of the year!

Without doubt the most powerful commercially available synthesizers ever made, the Yamaha VL series have brought the first major break-through in synthesis technology since the advent of FM. Not only that,but Yamaha's implementation of Physical Modelling gives the most breathtakingly realistic acoustic simulations available as well as fantastically powerful lead and bass synth sounds.

Physical modelling takes a completely different approach to sound reproduction than any previous method. Rather than begin with inflexible samples or a simple oscillator, extremely powerful DSP chips simulate in real time characteristics of real instruments such as tube/string length, damping, absorbtion, lip/bow pressure, throat characteristics, tonguing and many others.
Once the basic (or not so basic !) sound has been created, it can then be passed through a powerful multi-mode filter section with resonance, harmonic enhancer, impulse expander, resonator and five-band fully parametric EQ with key-scaling abilities.

Finally, a 32 bit effects section based on Yamaha's top of the line SPX1000 unit provides up to 3 simultaneous effects processors,capable of flanging, pitch-shifting, reverb, delay, distortion etc.

If acoustic simulations aren't your thing, then imagine the virtually limitless palette of synthetic sounds the VL series can produce. In fact we have commissioned top programmers at Yamaha's R&D department to produce a "Dance and Techno" sound set which we're giving away with the units (these load via the built-in 3.5" disk drive).

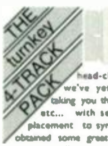
The VL-1m is a 3U 19" rackmount unit and is duophonic. The VL7 is a monophonic, 4 octave keyboard with velocity and aftertouch sensitivity, and comes bundled with the breath controller and expression pedal.

VL-7
RRP £2448
£699
WITH FREE BREATH CTRL + EXPR PEDAL

These prices represent 62% and 71% discounts from the RRP and offer a once in a lifetime opportunity to own a classic synth with real character. We have strictly limited quantities of the last ever units and orders will be fulfilled on a first-come, first-served basis. Buy now to avoid disappointment !

VL-1m
RRP £2399
£799
NEW BOXED

The UK 4 track Centre



Our famous 4 track pack includes everything you need to start making music: Maxell headphones, microphone with cable, chrome tapes, cables, head-cleaning kit and the best book we've yet seen on multitrack recording, taking you through basic track laying, mixdown etc... with sections of everything from mic placement to synchronisation and MIDI. We've obtained some great 4 track pricing AND for a limited period we will give you the 4 track pack (normal price £59.95) absolutely free with the units featured herein

PORTA 03 Mk2

only £199

INC 4 TRACK PACK

New version of a classic portastudio. Improved styling and metering (!)

RRP £229
£199
NEW BOXED

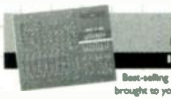
YAMAHA

MT50 Multi-tracker

INC 4 TRACK PACK

High Speed, record on all 4 tracks simultaneously., dbx noise reduction, 2 band EQ on each track, as well as auxiliary send/return.

RRP £389
£299
NEW BOXED



YAMAHA

MT8X PortaStudio

INC 4 TRACK PACK

Best-selling 8 track portastudio now brought to you at even better value by Turnkey features 3band EQ, separate cue mix, full LED metering insert-points, dbx noise reduction, individual tape/track outputs, 2 aux sends, double speed, logic controlled transport, auto punch-in/out, memory locators and cycle facilities.

RRP £1275
£899
NEW BOXED

FOSTEX

XR-3Multi-tracker

INC 4 TRACK PACK

High speed machine at £249 ! New auto-bounce facility and built in mic - ideal for 4 track recording on the move.

NEW PRODUCT
£249
NEW BOXED

KURZWEIL

MicroPiano

SPECIAL PURCHASE

The MicroPiano is the most highly regarded piano module on the market, featuring Kurzweil's breathtakingly realistic true stereo samples - 32 note polyphony means you won't suffer from note-stealing and the wide range of other keyboard sounds and strings make it useful in many other situations. Built in effects including very high quality reverb mean there's no need to tie up another effects unit. Strictly limited quantities at this price mean that stocks won't last long. Order today - you won't be disappointed !

RRP £599
£369
NEW BOXED

NOVATION BASS STATION

BUDGET MONO SYNTHS

If you need to get into analog synths on a budget, then the Bass Station rack or keyboard is for you. But this is no mere toy! Two oscillators, pulse width modulation, two LFO's and knobs that send out MIDI information make this a versatile sound creation tool, capable of a wide range of bass sounds and effects. The ideal addition to any MIDI setup!

FROM ONLY
£329
NEW BOXED

NEW, USED & EX DEMO

Access MATRIX Prog	£369	Oberheim OBMX2	£1799.95
Access MicroW Prog	£369	Peavey Spectrum Organ	£189
Akai SG01K	£299	Peavey Spectrum Syn	£359
Akai SG01P	£299	Peavey SpectrumBASS	£299
Akai SG01V	£299	Roland JV1080	£949
Alesis SG01K	£249	Roland MDC1	£349
Alesis DM5	£399	Roland MGS64	£399
Alesis SR16	£150	Roland MKS70	£649
Boss DR5	£249	Roland MOC1	£499
Boss DR660	£249	Roland MS1	£229
Dream GMX 1	£69	Roland MSE1	£499
Emu CLASSIC KEYS	£699	Roland MSV1	£349
Emu MORPHEUS	£899	Roland MVS1	£499
Emu Orbit	£739	Roland P55	£299
Emu Procussion	£645	Roland SC55ST	£365
Emu Proformance	£150	Roland SC88VL	£649
Emu Proteus 2	£810	Studio Elec SE1	£1526.33
Emu Proteus FX	£399	Technics SXWSA1R	£2199
Emu UltraProteus	£1139	WALDORF MICROWAVE	£1199
Emu Vintage Keys +	£799	Waldorf PULSE	£599
Kawai GMega LX	£129	Yamaha MU5	£179
Korg 05R/W	£349	Yamaha MU50	£299
Korg X5DR	£399	Yamaha MU80	£449
Kurzweil K2000KB	£1800	Yamaha QY22S	£479
Kurzweil KMP1	£299	Yamaha QY300	£549
Marion PRO SYNTH	£699	Yamaha QY8	£149
Novation BassStation	£289	Yamaha SU10	£299
Novation Drumstatn	£449		
Ob'heim Matrix1000	£499		

NEW, USED & EX DEMO

Fostex 380S	£799	Tascam 424MK2	£399
Fostex DMT8	£1199	Tascam 464	£699
Fostex XR3	£225	Tascam 488MKII	£899
Fostex XR5	£299	Tascam Porta 03	£165
Fostex XR7	£350	Tascam Porta 07	£289
Roland VS8F1	£340	Yamaha MT4X	£379
Tascam 424	£379	Yamaha MT50	£279
Tascam 424 mk2	£399	Yamaha MT8X	£699

TASCAM

424 Mk 2 PortaStudio

INC 4 TRACK PACK

A brand new version of the best selling 424 from Tascam, inventors of the portastudio. Features include 3 band EQ with a mid sweep, records to all 4 tracks at once, 2 indepdent auxiliary sends (1 switchable pre/post fade). Logic controlled 2 speed transport with built-in memory location points, DBX noise reduction, initial supplies limited.

NEW PRODUCT
£499
NEW BOXED

FOSTEX

DMT-8 digital multitracker

INC 4 TRACK PACK

The personal digital multi-track is here at last, and at a price you won't believe! 8 separate tracks of CD quality audio recorded to half-gig hard-disk (up to 12 minutes). Record up to 4 tracks simultaneously, jog-shuttle, sync to MIDI without losing a track. The 8 channel mixer accepts up to 4 mics, 2 band EQ and 2 aux sends. Separate outputs and S/PDIF optical output.

RRP £1499
£1399
NEW BOXED

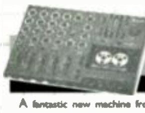
FOSTEX

XR5 Personal Studio

INC 4 TRACK PACK

Stunning new double speed Fostex machine with individual EQ, up to 3 aux sends and 2 stereo returns, 2 inserts & 4 sep. tape outs allowing use with an external mixer

RRP £420
£335
NEW BOXED



TASCAM

Porta07 PortaStudio

INC 4 TRACK PACK

A fantastic new machine from the makers of the Portastudio. Double speed, EQ on each channel, built-in dbx, 4 channel metering system

RRP £399
£339
NEW BOXED

F.A.T. FB-383

TB303 CLONE

Superb first product from new manufacturer Freeform Analog Technologies. The only authentic sounding TB303 clone, with MIDI. 1U rack with 1 knob per function, all the sound controls of the 303 are duplicated, Cutoff, Resonance, Envelope Mod, Accent, Tune and Decay. Waveform is continuously variable from square wave to sawtooth, and an auto tune button is included to retune the oscillator. Filter cutoff CV controllable (convertor box available only £69 if bought with FB383). The ultimate analog bass machine - this incredible price means these will fly out of the door! Turnkey Exclusive.

NEW PRODUCT
£199
NEW BOXED

WALDORF

MICROWAVE

TURNKEY FACTORY DIRECT EXCLUSIVE

The Waldorf Microwave has genuine analog synthesis including resonant filters. It has 16 oscillators, 8 part multi-timbrality and 6 individual outputs. Sweep through up to 64 different waves, controlled by LFOs, envelopes etc. Devastating bass, totally unique sound ! Also available on a trial basis, please enquire - once you've tried this, you won't want to go back !

SPECIAL
£1199
NEW BOXED

BOSS DR-660

BEST EVER DR. RHYTHM !

BOSS have been making Dr. Rhythm drum machines since the early eighties, combining value for money and ease-of-use with the latest drum and percussion sounds. The DR-660 builds on the success of the DR-550 Mk2, but offers 16 full velocity and aftertouch sensitive pads, 4 separate outs (unheard-of at this price), and 255 drum sounds including the best of TR808 / 909. The 660 also boasts the 'human feel' control first introduced on the R8 which allows velocity to control a real-time crossfade between several waveforms (for example, whereabouts the cymbals are hit). Process your sounds with on-board digital reverb and chorus - fully editable, with individual effect-send control for each drum sound

RRP £459
£299
NEW BOXED

NOVATION DRUM STATION

BUILT AT LAST !

Someone had to build this eventually! Despite being discontinued for at least 10 years, Roland's TR-808 and TR-909 drum machines have remained indispensable popular classics ever since. Now, Novation bring you those classic sounds with the original editting parameters , and in the convenience of a 1U rack, with MIDI, and 8 outputs. Initial supplies will be limited and demand, high. We have been guaranteed a significant quantity of the first stock available. Call for further details

NEW PRODUCT
£449
NEW BOXED

ACCESS

PROGRAMMER

FOR MATRIX 1000 OR MICROWAVE

There's no doubt that the Oberheim Matrix 1000 and Waldorf MicroWave deliver powerful analog sounds. However, when it comes to programming your own sounds, top producers have tended to go for older synths like the Minimoog and Super Jupiter, because their knobs and sliders make for easy creation of new sounds. The Access programmer gives you the best of both worlds - now you can freely experiment with your modern analog synth using the same intuitive front panel, and better still, record every tweak of a parameter into your sequencer.

SCOOP
EXCLUSIVE
£369
NEW BOXED

OBERHEIM

MATRIX 1000 EXCLUSIVE

Now almost 10 years old, and still sounding as fresh as the day it was released. The Matrix 1000 is essentially a Matrix-6 in a rack - 6 note polyphonic, 2 oscillators per voice, true analog VCF filters with 8 modes, "Matrix™" modulation with 20 sources and 32 destinations, raw gutsy analog sounds. Why 1000? The 1000 presets were generated by Matrix6 owners worldwide in reponse to a competition to find the best analog sounds on the planet. You're sure to find the perfect patch for virtually any application. Group mode allows chaining of up to 6 units to create a true monster! Fully editable via MIDI, Mac, PC or Atari editor (available for only £49)

FACTORY DIRECT
RRP £599
£369
NEW BOXED

Keyboards

ALESIS

QUADRASYNTH + PIANO

UNDER HALF PRICE !

Unbelievable clearance deal on this top of the range synth brings you a huge range of features and serious performance at a bargain price. The Alesis Quadrasynth Plus Piano features: 76 note synth weighted action keyboard, 64 note polyphony, a huge range of up to the minute sounds and large area of the ROM given over to top quality piano samples, the ability to download samples onto PCMCIA RAM cards, 4 simultaneous multi effects processorsbased on the Quadraverb 2, huge screen for easy editing and great overall styling. Limited quantity available - first come, first served!

RRP £1449
£699
NEW BOXED

HAMMOND

XB-2

B3 LIVES AGAIN !

If you need an authentic Hammond sound, there is currently only one place to turn: Hammond's XB2 has been specifically made to recreate the sound of the legendary B3, with 128 presets, 9 drawbars for easy programming, built in Leslie simulator, overdrive and reverb, nothing else comes close.
You can even connect a genuine Leslie via the 11 pin connector (reconditioned Leslies also available), and best of all, it weighs only 30 pounds! Exclusively available through Turnkey.

EXCLUSIVE
£1399
NEW BOXED

NEW, USED & EX DEMO

Alesis QS6	£599	Fatar Studio 900FC	£829.95
Ensoniq SQ1PLUS32	£899	Goldstar GMK 49	£129
Evolution MK10	£59.95	Hammond XB2	£1390
Evolution MK40	£99	Hammond XB3	£8630
Fatar CMS61	£229.95	Kawai K11	£399
Fatar Studio 1100	£1099	Korg PROPHECY	£999
Fatar Studio 1100FC	£1299	Korg Trinity	£2300
Fatar Studio 2001	£829.95	Korg Trinity PLUS	£2299
Fatar Studio 2001FC	£849.95	Korg Trinity PROX	£4300
Fatar Studio 49	£1099.95	Korg X3	£699
Fatar Studio 61	£109.95	Korg X5D	£689
Fatar Studio 610	£229.95	Kurzweil PC88	£1899
Fatar Studio 610+	£299.95	Novation Bass Stn R	£310
Fatar Studio 900	£599.95	Roland A30	£299

Sampling

TIME & SPACE

THE BEST EVER DR. RHYTHM !

We have two Time & Space Jukeboxes in store, each fully loaded with the current top 100 CDs. There are choices to cover everything from straight instrumental sounds through sound effects, to loops and breaks. We carry virtually the full range in stock and can also supply most disks in CD-ROM format for direct loading into your sampler. Come and check out the latest sounds today.

EMU

E64

COME FRO A DEMO AND HEAR THE DIFFERENCE!

64 note polyphonic. Uses the same operating system as the E-IV (new version includes around 15 different filter types). 16 part multi-timbral, 8 balanced outputs, SIMM memory, 2 SCSI ports, AES/EBU and SP/DIF digi I/Os.

WITH 8 MEG & HARDDRIVE
RRP £3297
£2348
NEW BOXED

EMU

ESI-32 + SCSI

V2.0 INCLUDING SCSI INTERFACE

Featuring 32 note polyphony, 4xpolyphonic, G-chip resonant filters, huge quality library, (Akai and EmaxII compatible) Time-stretch, doppler FX, parametric EQ, exciter etc...
All E-mu samplers come with free access to our enormous sample library (we have all the EIII library on CD-ROM) and excellent tech support (many staff are owners)

WEST END EXCLUSIVE
RRP £1199
£999
NEW BOXED

NEW, USED & EX DEMO

Akai EXM003	£109	Emu E64	£1999
Akai EXM006	£129	Emu ESI32	£899
Akai EXM008	£499	Emu ESI32 SCSI	£949
Akai EXM01	£99	Kurzweil K2500	£2799
Akai EXM3002	£199	Kurzweil SMP R	£893.99
Akai EXM3008	£549	Kurzweil SMPK	£893.99
Akai IB208P	£399	Roland DA400	£420
Akai IB301S	£99	Roland JS30	£850
Akai IB302D	£349	Roland OP760 1P	£330
Akai IB303T	£149	Roland S760	£999
Akai IB304F	£349	SIMM 1 MEG 30 PIN	£29
Akai MPC3000	£2799	SIMM 16 MEG 30 PIN	£499
Akai S1100	£1199	SIMM 16 MEG 72 PIN	£449
Akai S2000	£849	SIMM 4 MEG 30 PIN	£129
Akai S3000XL	£1499	SIMM 4 MEG 72 PIN	£129
Akai S3200XL	£3299	SIMM 8 MEG 72 PIN	£299
Emu E4	£4799		
Emu E4 Keyboard	£3499		

£1,800 OFF !

YAMAHA P300

MASTER KEYBOARD / 32 note polyphonic PIANO

The P300 combines an 88 note, master keyboard based on the industry standard KX88, with the best piano samples we've ever heard - identical to, and developed for the ground-breaking P500, (rrp £5,500, used by Chick Corea etc.)
32 note polyphonic stereo multi-sampled sounds through SPX990 equivalent editable multi-effects. Compre-hensive sound edit parameters including Microtuning, ADR envelopes etc. As many as four separate MIDI paths can be used to independently control external MIDI instruments. It also boasts four fully assignable MIDI controllers - 2 data sliders and 2 control wheels. You can connect any mix of 4 foot controllers, either momentary, toggle switch or continously variable pedals, and assign to almost any function including sostenuto.
Store up to 32 voice and MIDI settings in any desired order, using the performance / chain feature, MIDI merge, Local On/Off for individual path. 40 character backlit LCD and dedidated Help button make editing a breeze. 40w stereo amplifier and built-in monitor speakers with 2 x line-in. 5 band graphic and loads more - call for a brochure.
Unbelievable amount of hardware for the money. If you're contemplating a master keyboard or digital piano this year, get one of these before they all go.

SAVE £1,800 !
RRP £3199
£1399
NEW BOXED

ROLAND

PC 200-II keyboard

IDEAL ENTRY-LEVEL MIDI CONTROLLER KEYBOARD

Compact touch sensitive master keyboard offering full control over pitch bend and mod, data slider assignable to reverb, pan or any controller, sustain pedal input, transpose over 2 octave range, send patch & bank change messages. Check out our unique package prices with these modules .

PC200 PLUS PROTEUS FX
£649
NEW BOXED

PC200 PLUS AKAI VINTAGE
£399
NEW BOXED

PC200
£149
NEW BOXED

Roland A33	£399	Ultimate keybd stand	£119
Roland AX1	£249	Vitcon FK1000	£899
Roland EP 5	£239	Waldorf Wave	£6845
Roland EP3	£149	Yamaha CBX K3	£139
Roland EP7	£499	Yamaha CBXK1	£129
Roland JV 50 EX	£569	Yamaha KX5	£199
Roland PC200GS	£165	Yamaha P300	£3199
Roland Rap 10	£129	YAMAHA PF150	£1389
Roland RD500	£1699	Yamaha PF85	£949
Roland SPD11	£649	Yamaha QS300	£939
Roland XP10	£449	Yamaha SY45	£299
Roland XP50	£1349	Yamaha SY85	£699
Roland XP80	£1699	Yamaha VL1m	£899
Sequent. Prophet VS	£1199	Yamaha VL7	£699
Technics SXWSA1	£2499.99	Yamaha W7	£899

EMU E-IV DEALS

SUPER SAMPLER

EXCLUSIVE UK DEALER EXCLUSIVE UK DEALER

Our superb product knowledge and backup service have lead Turnkey to be chosen by E-mu as the UK's exclusive E-IV dealer. As if this 128 polyphonic sampler wasn't great enough already, version 2.0 software and a range of new extras have transformed the product. Version 2.0 features include 4 new editable 6 pole filter types (now 20), direct reading of Roland library as well as S1000, and the incredible SoundSprint technology from the E4K, allowing virtually instantaneous loading of sounds from disk. Also new are the FX board (RRP £329), giving 2 simultaneous top quality FX processors as in the E4K, and the 8 output board (RRP £799) giving an extra 8 balanced analog outputs, bringing the total to an incredible 16! Our bulk purchasing allows us to bring you these incredible deals -

E-IV 32 Mb
£3699
NEW BOXED

E-IV PACK
£6399
NEW BOXED

OUR E-IV PACKAGE:
E-IV 64 Meg, 16 outputs, built-in effects, Jaz drive, Apple CD600 4x speed CD-ROM drive and 16 CD-ROM library

ROLAND S760

WITH FREE CD-ROM DRIVE & DISK

MEGADEAL! - incredible new low price from Turnkey including free SCSI CD-ROM drive and disk. Everything you need to get started with plenty of usable library. Also available packaged with OP1 video/digital board at £1699, or with OP1 plus DA400 8-output convertor for £1999.

RRP £1899
£1399
NEW BOXED

PRICES INCLUDE 17.5% VAT
Uk mainland carriage £9.99

*We will beat any genuine quote from a UK or European dealer. We must be able to substantiate the quote and the goods must be available and in stock

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Authorised Dealer | Soundcraft | DRAWMER | MACKIE | Roland | SONY | TASCAM | FOSTEX | digidesign

EUROPE'S LOWEST PRICES GUARANTEED*

Outboard

VISCOUNT

EFX10 Studio Multi-effects

HALF RACKMOUNT EFFECTS

We've just received stocks of Viscount's entry into the fully professional effects market, and it sounds great !. The unit features audiophile sound quality delivered by 24 bit processors with 128x over-sampling Delta / Sigma convertors. True stereo -20/+4 dB connections. Realtime MIDI control, large backlit display, huge range of effects including reverbs, delays, chorus, flanging, pitch-shift, wah, phasing, leslie simulations, etc. . The price of £299 makes the EFX 0 probably the best value for money effects unit on the market - 7 day money back guarantee if not satisfied'

FACTORY DIRECT
NEW PRODUCT
£219
NEW BOXED

SPL STEREO VITALIZER

BULK PURCHASE

The Vitalizer is the Rolls Royce of enhancer / exciter processors. Using a significantly different process to other such products, the effect deals with the full frequency range and is substantially smoother and richer Also included is a "surround" effect which varies the width of the stereo field massive bulk purchase allows this unbelievable price - check one out now - we guarantee you'll be impressed.

RRP £569
£349
NEW BOXED

DIGITECH

TSR-12

FEATURES 'S-DISC' PROCESSING

With the introduction of the Studio Quad, Digitech have decided to stop production of the TSR12 as it is too expensive to make We have stock of the last ever units available at a bargain price Features include S-DISC processing, up to five effects at once including several different types of reverb, delays, chorus etc. Full MIDI spec allows realtime control of individual effect parameters Limited stocks only

RRP £399
£299
NEW BOXED

DIGITECH STUDIO QUAD

4 CHANNEL STUDIO EFFECTS PROCESSOR

At last - Multi effects as they should be! The new Digitech Studio Quad features not only their custom designed and ultra-powerful 'S-DISC' chip, but also 4 independent inputs and outputs, which using the built-in sub-mixer, can be configured as 4 mono ins feeding 4 effects processors, feeding 4 stereo outputs Huge screen, and new intuitive operating system make editing a breeze 20 bit convertors give greater than 90 dB signal to noise ratio. Effects include reverbs, delays, detuning, chorus, flanging etc. Hundreds of other features too numerous to mention. Very limited initial stocks, order now to avoid disappointment !

NEW PRODUCT
SHORT SUPPLIES
£499
NEW BOXED

Monitoring

ABSOLUTE 2

Studio Monitors by SPIRIT

PHONE FOR BEST PRICE

Here at last ! Stunning sounding and looking monitors from the UK's leading mixer manufacturer Incredible bass extension and power handling at a killer price . In stock now, come in and audition them ASAP !

RRP ~~£2-6-0~~
POA
NEW BOXED

CONTROL 5

JBL

NEW LOW PRICE

These classic monitors from JBL have been a standard in studios for several years and still stand up very well against more recent competition The solid build quality you can expect from JBL comes as standard and the ported design gives fantastic bass reponse Internal fuses help to prevent blown tweeters and a separate sub-woofer is also available Exclusive to Turnkey

RRP ~~£4-9-9~~
£249
NEW BOXED

PRICES INCLUDE 17.5% VAT
Uk mainland carriage £9.99

SEE PAGE 221 FOR REST OF AD

LA AUDIO 4G

HALF PRICE Exclusive Turnkey Deal

The LA Audio 4G is a high quality 4 channel frequency conscious noise gate incorporating fully balanced inputs and outputs, externally switchable Hi-Lo pass filters and a single ended noise reduction feature (SNR). This all adds up to a very versatile device which is suitable for use in all audio applications wherever noise reduction/gating is required.

RRP £399
£199
NEW BOXED

DIGITECH

Studio Twin

NEW MODEL - NEW MODEL

True Stereo, 99 Presets 99 users
46 kHz sample rate 18 bit, Internal PSU 1U / case slightly editable, Reverb, Multi-tap delay, Chorus, Flanger Phaser, Tremolo, Parallel effects processing using S-DISC chip, 2 digit display, MIDI program change

JUST OUT
£249
NEW BOXED

LEXICON Vortex

SPECIAL OFFER EXCLUSIVE

Despite the first digital effects units being developed almost 20 years ago, they have all followed a familiar path ever since, offering a conventional series of effects The Lexicon Vortex breaks the mould in allowing effects to be morphed between in real time and in the process, creating new and previously unheard-of 'effects (This actually changes the effect algorithm continuously - it is not a simple cross-fade between effects) This unit is ideal for dance music, and anybody requiring out of the ordinary effects, and its real time nature make it an excellent choice for live performers such as guitarists Effects are also affected by the input signal, so that dynamics can control various different paramters within an effect algorithm. Tempo can be tapped in to control delay times etc Typical Lexicon quality can of course be taken for granted. Exclusive bulk purchase makes this huge reduction possible on the end of the line First come first served!

RRP £499
£199
NEW BOXED

BEHRINGER Composer

WORKHORSE COMPRESSOR

A natural sounding and fully featured compressor at a give away price ! Built-in gate removes any unwanted noise, soft-knee action makes compression much less obtrusive, "auto" mode makes quick setup a doddle and side-chain access means it can also be used for de-essing etc.

RRP £349
£229
NEW BOXED

LEXICON Alex and Reflex

SPECIAL OFFER

If You're looking for a straight reverb unit, Lexicon have a reputation that's hard to beat ! These are the cheapest units to offer the famous 'Lex' sound - The Relfex has the additional benefit of dynamic MIDI, allowing real time control of multiple effects parameters. Huge discount at Turnkey !

RRP from ~~£399~~
POA
NEW BOXED

ABSOLUTE ZERO

SPIRIT

NEW NEARFIELDS

The latest additions to Soundcraft Spirit's monitor range are the Absolute Zero's For those of us with slightly less demanding monitoring applications, they make the ideal choice.

R R P
£199
NEW BOXED

OMNIPHONICS FOOTPRINT

Power Amplifier

FLYING OUT OF THE DOOR

Superb quality 75w per channel power amp from top studio amp manufacturer omniphonics. Balanced inputs, emergence cut-out and bridgeable to mono, 1U rack-mount case. These are flying ! RRP £399.

SCOOP
RRP £399
£279
NEW BOXED

CONTROL 1c

JBL

NEW LOW PRICE

These superb compact monitors (RRP £289) are ideal for accurate monitoring on a budget. Sturdy impact resistant casing makes them the only choice for location work. Bundle them with the Peavey PMA70 power amp for only

RRP ~~£1-9-9~~
£139
NEW BOXED

NEW, USED & EX DEMO

Alesis 3630	£175
Alesis MEQ230	£149
Alesis MICROVERB3	£165
Alesis MICROVERB4	£250
Alesis MIDIVERB4	£335
Alesis QUAD2	£499
AMEK 9098	£1099
Aphex 720	£1818
Aphex C2	£189
Aphex Easyrider	£189
APHEX-105	£399
APHEX-106	£399
APHEX-107	£549
APHEX-108	£269
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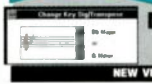
Computer Music



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Korg PHC11 & PHC12

Prophecy ROM/RAM Cards

If you think Korg have been neglecting their Prophecy monosynth in favour of the numerous Trinity add-ons they're producing, think again. GORDON REID heralds the arrival of two new Prophecy patch banks.

Anyone who has bought a Korg Trinity will be aware of the drain on a bank balance the purchase of the machine can instigate if you buy all the add-on options that have appeared since the machine's launch: ADAT interfaces, external SCSI ports, flash RAM, hard disk recording and editing — wonderful, isn't it? But until now, Korg's Prophecy, launched at the same time as the Trinity, seems to have been left behind. So, let's encourage Korg as they begin to redress the balance, and give a round of applause for two new patch banks for the Prophecy: PHC11, subtitled 'Analogue and Vintage Models', and PHC12, entitled 'Modern Models'. Both are available from Korg as either ROM or RAM cards, and will soon be available on diskette (TFD13 and TFD14, prices to be announced) for the Solo board installed in the Trinity Plus, Pro and Pro X.

PHC11 CARD

First on the menu are the 'Analogue and Vintage' sounds, and I'm going to find it hard not to list half the patches as favourites. There are some cracking synth basses, including three described as Classic Moog Bass — which they certainly are. The hard sync leads are also a treat, capable of punching though a mix and into the middle of next week, and some of these make excellent use of the Prophecy's ribbon — great for *Pictures At An Exhibition* fanatics. Then there are the lead patches... one so realistic that I checked that I wasn't playing anything through my MIDI/CV converter! But, as a class, my true favourites have to be the Soft Leads, many of which capture the warmth and spirit of a big analogue synth. Having said that, I shouldn't omit the sexy Comb filter sounds, nor the arpeggio patches, some of which feature polyrhythmic elements or long sweeps that extend the nature of the 'sequence' considerably.

Of course, there are a few duffers — especially in the SFX and Motion categories — but these are inevitable when anonymous programmers are second-guessing what *you* would do if you had the knobs of a big modular synth under your grubby digits. But before moving on, there's one final compliment to be dispensed: every sound in this bank is derived from the Prophecy's Standard, Comb, Modulation and (on just five occasions) VPM/VPM models. There isn't a reed, brass or plucked string model in sight or earshot. This, of course, is exactly as it should be. Well done Korg!

PHC12 CARD

The second bank of sounds concentrates more on the Prophecy's 'instrumental' capabilities. Of these, the solo brasses probably shine most brightly (although quite a few of these are too breathy, with too much delay and too much reverb), but there are other stars, including a smattering of good 'wave motion' patches, fat and squelchy basses, and modern percussion. But if there has to be a criticism, it's that too many patches are derived from the analogue models. Consequently, the card includes a whole bunch of Vangelis-esque, Emerson-esque and Tangerine Dream-esque patches that would sound much more at home in the Analogue and Vintage bank. Indeed, with nearly a quarter of the patches derived from the Standard analogue model alone (plus another handful from the Comb and Modulation models), there's a bit of a trade description problem here. Maybe the programmers weren't constrained tightly enough, or maybe it's impossible to stop people pretending that the Prophecy is an analogue synth.

MODERN MODELS
ANALOG&VINTAGE
PHC-12
PHC-11
KORG
KORG

So, did I hate 'Modern Models'? Not at all; many of the sounds are damn good. It's just that they weren't what I expected. For me, the 'Analogue and Vintage' card simply fulfils more of its promise. Call the second card 'Modern Models' and I'll give it 5/10. Name the same selection 'Mixed Models' and it'll get 7/10. See what I mean?

IN SHORT...

To summarise: these sounds won't be to everybody's taste. But if that's true for you, I can't imagine why you would want to buy a Prophecy in the first place. On the other hand, if you like the Prophecy enough to shell out nearly a grand for the synth itself, you're going to love these cards. So let's offer Korg another round of applause. On the whole, they've earned it.

pros & cons

KORG PROPHECY ROM/RAM CARDS £50/£89

pros

- Excellent recreations of many classic analogue patches.
- Good selection of fashionable basses and leads.
- Top-notch Prophecy sounds without the hassle of learning to programme.

cons

- Insufficient use made of the brass, plucked string and reed models.
- The plucked strings and reeds lack the quality of the best analogue patches.
- The log and other controllers could have been programmed more imaginatively.

summary

The Prophecy, while relatively difficult to programme, remains the cheap and reliable alternative to a room full of vintage synths and MIDI/CV converters. A further 128 classic sounds handed to you on a plate can only add to the instrument's appeal. Treat the brass, strings and reed sounds as a bonus.

SOUND ON SOUND

info

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Tascam 564

Digital MiniDisc Portastudio

Tascam revolutionised home recording with their cassette-based Portastudio, but haven't yet offered a budget digital version to compete with the likes of the Fostex DMT8/D80 and Roland VS880. Now their 4-track MiniDisc-based 564 is almost ready. PAUL WHITE gets a sneak preview...

Rumours of a MiniDisc-based Portastudio from Tascam have been circulating for well over a year now, but it's only in the last few months that the existence of the 564 Digital Portastudio has been officially confirmed. Presented very much as a tapeless Portastudio, but retaining most of the traditional Portastudio features and layout, the 564 is a 4-track recorder that uses relatively inexpensive MiniDisc MD data cartridges to provide 37 minutes of recording time — more than you get from a regular Portastudio running a C60 tape.

One of the concerns over the use of MiniDisc is the ATRAC data compression system used to squeeze audio information so that it will fit onto the likes of a MiniDisc cartridge — a lot of people seem to have made up their mind about it before even hearing it. The truth is that if you compare a stereo CD to a MiniDisc copy using a very good hi-fi system, some people *can* tell the difference, and apparently low-level detail such as reverb tails suffers the most. However, the effect is subtle, and in the context of multitracking, where effects are generally added *after* recording, it's arguable whether anyone could distinguish a project made on a MiniDisc multitrack from the same project made on a 16-bit linear recording system. In terms of frequency response and noise, MiniDisc is broadly comparable with 16-bit systems such as CD and DAT.

Before moving onto specifics, is there a future in 4-track recording when everybody else seems to be moving to eight? Tascam obviously think so, and apart from not losing a track to timecode (the 564 can generate MTC or MIDI Clock directly), it's also possible to 'bounce' material forwards to a new 'song' location. Working this way, you can record four tracks, bounce forward to two tracks, add two more tracks, bounce forward again and so on, up to a maximum of five songs per disc. Inevitably, a little quality deterioration will occur, as you're passing through the analogue mixer every time you bounce, but this will be far less serious than it is with cassette systems. What's more, you can also rearrange recorded material using a non-destructive playlist approach based on up to 20 markers per song. Playlists may be bounced forward to convert them to 'hard' data, and this hard data may then be mixed and bounced to yet another location. Apparently, Tascam's MiniDisc drive, as used in their MD801 stereo recorder, is the only drive with a fast enough seek time to allow this kind of non-destructive, multitrack playlist editing. Early versions of songs may be kept as fallbacks, or you can simply re-use the disc space and record over songs by bouncing backwards instead of forwards. Because of the bounce forward facility, you can always go back to your original tracks, remix them and bounce them forward again to replace your first attempts if you get to the end of a project only to realise that the snare drum wasn't quite loud enough!

THE HARDWARE

As pointed out above, the 564 is a logical evolution of the Portastudio, and apart from the absence of a tape transport, there's little clue as to the revolutionary technology under the covers. The disc slot is tucked away unobtrusively on the right-hand edge of the machine, and most of the front panel controls and functions are reassuringly familiar. However, as a concession to fashion, the designers have changed the colour to a light blue/grey.

The mixer section is conventional analogue, with four mic/line channels, two stereo channels with EQ, and two more stereo channels with no EQ. Channels 1 to 4 offer 3-band EQ with sweep mids while the first two stereo channels have 2-band EQ. Channels 1 and 2 have the further benefit of insert points.

Two post-fade effects sends are provided on all mono channels, and on three of the stereo channels. What's more, when you come to mix, inputs 1 to 4 can be used to route external signals to the Left/Right busses via the input Trim controls. Even-numbered channels are sent to the right buss, and odd-numbered channels to the left buss.

Another valuable feature is the provision of direct track outputs, so that you can mix via an external mixer if you wish. There's also a digital output, so you can pipe your mix directly to a DAT machine, though the bounce forward facility means that you could create and store your final stereo mix on the same disc as your multitrack work. This is obviously a great benefit for users who do not yet own a decent mastering recorder.

"...the 564 is a logical evolution of the Portastudio."

Full metering is provided for the four tracks and the Left/Right mix, and the familiar Portastudio cue monitoring system is used to set up guide mixes while overdubbing. A 2-line, 16-character

TASCAM
DIGITAL STUDIO 564
5-6
7-8
MASTER
STOP
PLAY
RECORD
CLEAR

LCD display provides the user with information and prompts, and a concentric shuttle/jog wheel arrangement makes it easy to locate specific edit points. The transport precisely mimics that of a tape machine (apart from the slow winding!) — you even get the +/-9% varispeed range expected by Portastudio users.

In a MIDI system, the 564 always acts as the master and can send out MTC or MIDI Clock, as well as responding to MIDI Machine Control (MMC). MIDI Clock is derived from a user tempo map which can have up to 32 tempo changes. When working in this mode, editing can be made to bar and beat locations as an alternative to absolute time positions if required.

Destructive editing functions include the usual cut, copy and move options as well as the ability to silence sections of recording, but an Undo/Redo function lets you go back a step if you make a mistake. You can record on all four tracks simultaneously if required, and the routing system follows the system of recording either from the stereo buss (allowing multiple inputs to be mixed), or direct from any of channels 1 to 4.

As with an analogue machine, there's a footswitch punch-in/out option, as well as auto punch-in/out and a Rehearse mode. In this mode, a marked section keeps on looping to allow you to perfect your punch-in — but a big advantage over analogue tape is that you can store up to five alternative versions of a punch-in, and then pick the best one.

SUMMARY

At the time of this preview, Tascam were still updating some of the features of the machine, but I was able to record material onto it and listen to the results. Those wary of data compression can rest assured that the side-effects are far more benign than those of most analogue tape noise reduction systems, and the subjective quality of the recording is far closer to that of DAT or CD than it is to analogue cassette, even if you ignore the benefits of extended audio bandwidth and low noise. What's more, punching in and out is quite glitch-free, something you can't say of analogue tape, and because the discs are designed for the storage of computer data, I would expect the data integrity to be better than digital tape.

By combining the simplicity of a traditional Portastudio with the sonic and editing benefits of a digital format, the 564 should appeal not only to musicians with a casual interest in recording, but also to the more serious user who wants to add a few audio tracks to a MIDI sequence without taking the integrated 'Audio + MIDI' approach. If the format has a limitation, it's that you can only record four tracks, but this is largely mitigated by the archivable recording media and the ingenious bounce forward facility. Furthermore, the fact that you can mix your stereo master to the same disc means that probably for the first time ever, you really *can* have a complete recording studio in one box.

Finally, although the price isn't fixed yet, it is expected to be around the £1000 mark, which enhances the desirability of the machine still further. There'll be a full *SOS* review of the 564 just as soon as we can bring you one.

info

£ Expected to be around £1000.
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Alesis Nanoverb

Mini Digital Effects Unit

This is the smallest and least costly reverb unit Alesis have ever produced. PAUL WHITE finds out whether you can mind the quality and still feel the width!

Alesis' last flirtation with mini reverb units was back in the days of their Microverb I and II, but since then technology has marched on, making it possible to build more flexibility into a smaller, cheaper box. From what I can tell, the Nanoverb runs similar reverb algorithms to those used in the Midiverb 4 (reviewed in *SOS* February 1995), and like the original Microverbs, it uses 16 preset effects as the basis for its repertoire. Unlike its ancestors, though, the Nanoverb is fitted with an Adjust knob which provides control over the most important parameters of whatever effect is currently selected.

THE LOWDOWN

Around the size of a fuzz pedal, the Nanoverb is a stereo-in, stereo-out processor with connections on unbalanced jacks optimised for -10dBV operation, though you can work at up to +10dBu output level before your headroom account becomes overdrawn. The inputs have a high (1MΩ) impedance, so that guitars can be connected directly to the inputs when necessary. For mono-in usage, the left input is normalised to the right input, but not vice versa.

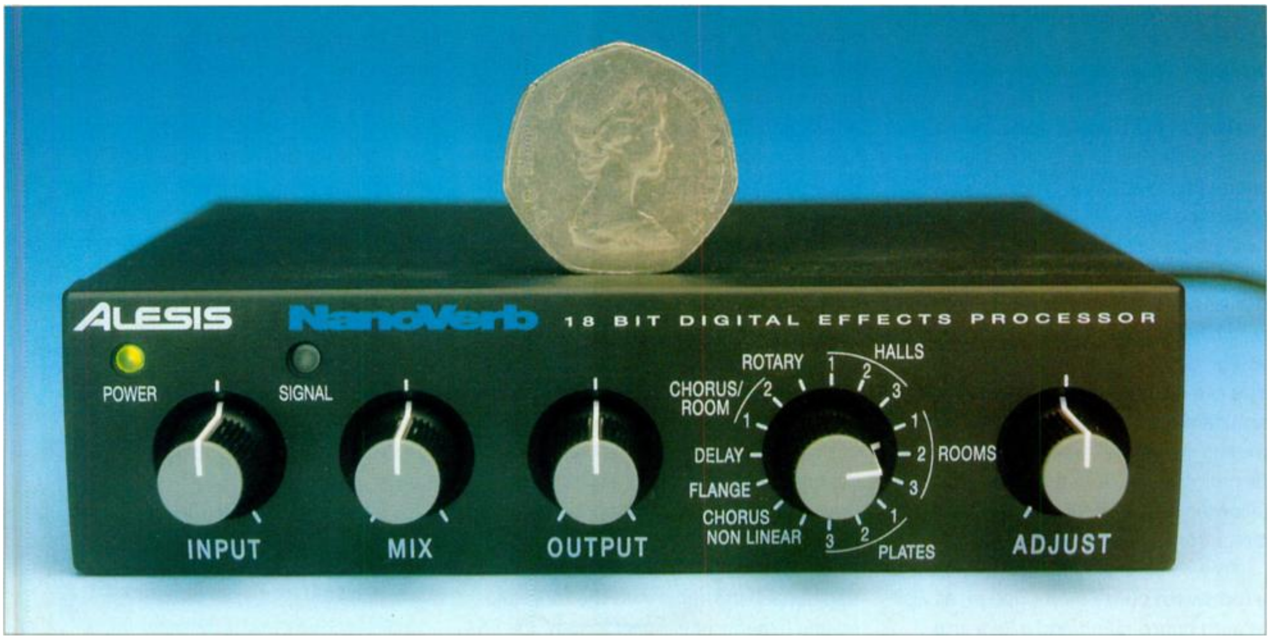
In reverb mode, the stereo ins simply pass the dry sound to the output in stereo, and the effects are generated from a mono sum of the two inputs in the time-honoured way. The chorus and flanger settings are, however, true stereo, with independent processing of the left and right channels. Metering is courtesy of a bi-coloured LED which shows green for nominally OK signals and red for clipping. For live performance, a rear panel footswitch jack accepts an optional, momentary-action bypass footswitch. Power comes from the familiar Alesis adaptor, and a front panel Power LED confirms the unit is up and running. Levels are set using the usual Input, Output and Mix controls with a 16-way rotary switch to select the preset effects. That just leaves the Adjust knob, which controls the main effect parameter. And that's all there is to it.

THE EFFECTS

Foremost, the Nanoverb is a reverb unit, but it also includes a few delay and modulation treatments (including two Chorus/Room combinations), all with an effects bandwidth of 20Hz to 20kHz and a 90dB-plus dynamic range, courtesy of the 18-bit, delta-sigma oversampling conversion system. There are three different Concert Halls, three Real Room presets and three Plates, all of which sound similar to their Midiverb 4 counterparts. The Adjust control sets the decay time to create an effect ranging from a slight ambience to a trailing cavern lasting over 30 seconds. Usefully, pre-delay is built into some of the presets.

Moving round another notch, there's a non-linear reverb preset, which provides the familiar gated sound with variable gate time. The chorus programs are also interesting in that the Adjust knob balances the rate and depth of the patch, so that as you speed up the effect, the depth is reduced appropriately. This produces a well-balanced chorus effect at any speed from a slow swirl to a brisk tremolo. Flange is variable in speed from a very slow sweep to a fast warble, and has a very aggressive character which works well on distorted guitars, harmonically-rich synth sounds, or vocals.

Delay is strictly mono, and has a fixed amount of feedback to create gently repeating echoes; the delay time — 1.27 seconds at maximum — is continuously variable, enabling you to match delay to tempo where required. Two variations on Chorus/Room utilise a fixed chorus effect combined with a variable decay reverb (one version includes repeat delays), while Rotary provides a passable simulation of a



pros & cons

ALESIS NANOVERB £169

pros

- Great reverb sounds.
- Operating systems don't come any simpler.
- True stereo chorus and flange effects.

cons

- Limited control is frustrating on some of the modulation effects, especially flanging.
- You have to be careful the weight of the leads doesn't pull the unit off the table!

summary

A super-sounding budget reverb unit that will allow anyone to add professional-sounding reverb to their recordings.

SOUND ON SOUND

rotary speaker, with rate switchable from a slow drift to a fast vibrato. The Adjust knob selects the fast or slow speed setting and the modulation rate ramps up or down over a period of a second or two, just like the real thing.

THE SOUND

What really counts is the sound, and the reverbs are particularly excellent. Given the low cost of the unit, they create a real sense of space and decay smoothly with no ringing or grittiness. All stand up to scrutiny very well and the tonal balance has been chosen to suit most applications, but my favourite is still Real Room, which sounds extremely convincing. This seems fuller and more dense than the halls, and has a more pronounced early reflection structure. For that vintage sound, the plates all work very nicely, with a good combination of edge and warmth. Plate 1 at maximum decay setting works almost like an infinite room patch, with little perceptible decay at all.

> "...the best-sounding budget reverb I've yet heard."

There's less circuit noise than from early Alesis reverb units, but I think the Midiverb 4 is quieter than the Nanoverb, and appears to have a slightly more 'open' sound. Even so, the subjective sound is very close.

The chorus effects are pretty standard, but suitably smooth and musical nevertheless, though the flanger suffers a little from inflexibility. You can change the rate, but the effect might be too strong for some applications, and there's no way to water it down by reducing the amount of feedback. Delay is fine, with just about the right amount of feedback, and although the rotary effect doesn't sound exactly like the real thing, it's very usable. Having a delayed speed change is a very nice touch on a budget unit such as this one. Finally, the composite chorus/reverb algorithms are useful general treatments for use on backing vocals, keyboard pads, guitars and suchlike. Though the Nanoverb isn't really a multi-effects unit, the two multi options provided are very useful in a wide range of contexts.

ALL IN ALL...

On balance, this is an excellent low-cost effects unit for somebody who needs simplicity and cost-effectiveness, but who doesn't want to sacrifice the quality of the effects. I think it's also fair to say that the unit will be more appealing to studio users than to live performers, because in live situations, you have to change the Adjust knob for each patch. It can also be awkward to see what preset you've selected unless you're looking square on to the front panel.

I'd go so far as to say this is the best-sounding budget reverb unit I've yet heard. If you want more flexibility or need MIDI control, then by all means save up and buy a Midiverb 4, but if what's on offer meets your needs, I don't think you'll have any qualms about the quality. SOS

info

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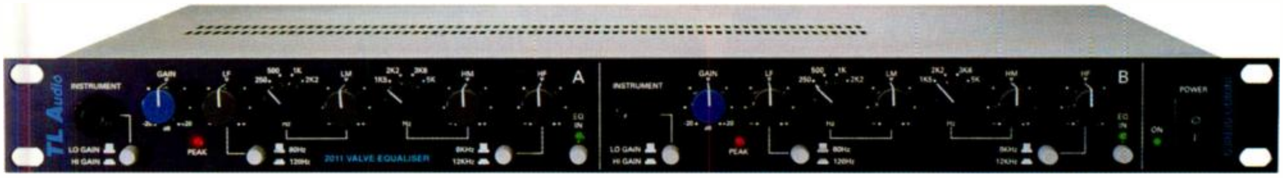
TL Audio 2011 &

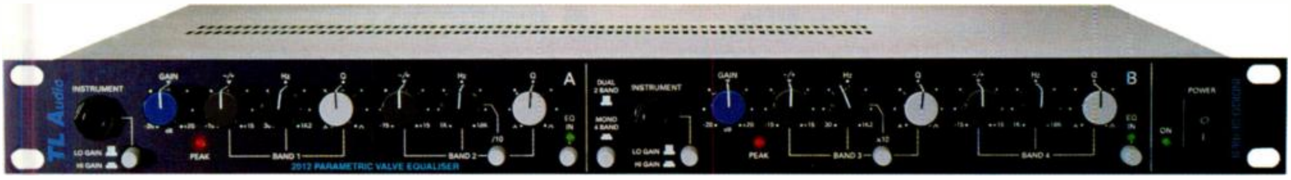
Indigo Range Valve Equalisers

PAUL WHITE casts a critical ear over TL Audio's new budget dual-channel valve equalisers to see if high quality really is possible at such a relatively low price.

TL Audio should need little by way of introduction for our regular readers — this small UK company have made a big impact building quality valve-based audio processors at a fraction of the cost you might expect to pay for an esoteric, American equivalent. Even so, they have their sights set on an even wider market, which is why they've launched the new Indigo series. By trimming away unnecessary features and scaling up for mass production, TL Audio have managed to make a further drastic price reduction while still offering the same basic quality of circuitry and performance. Indeed, much of the Indigo circuitry is identical to that in TL Audio's premium models.



The 2011 equaliser.



The 2012 parametric EQ.

The two models on review are both 2-channel equalisers, though the range also includes a 4-channel mic preamp, a 2-channel compressor and a 2-band valve overdrive unit.

THE EQUALISERS

Before exploring the features of the individual equalisers, it's helpful to look at what they have in common. Like the rest of the Indigo range, the EQs run on mains power, not external adaptors, and are fitted with both unbalanced jacks and balanced XLRs to handle the audio ins and outs. A further pair of front panel jacks accept high-impedance instrument sources with switchable sensitivity, and up to +/- 20dB of front panel gain control is available for level matching. All three input types may be used simultaneously, with the obvious proviso that there's no independent level.

The 1U cases are surprisingly heavy, and have ventilation slots in the side and top covers to help dissipate the heat from the valves. To help keep costs down, the same 4-socket valve circuit board is used in each model, which is why the 2-valve units are shipped with two empty sockets. Although the front panels are finished in indigo (hence the name of the range) with white and blue legend, the rest of the box is simply plated — presumably another cost-saving measure.

The EQ2011 is a dual, 4-band equaliser providing shelving high and low controls combined with two sweep mid-range controls, rather like the EQ you might find on a good mixing console. Directly before the input Gain control (which has a range of +/- 20dB) comes the Instrument input, an unbalanced jack with switchable Hi or Lo gain settings, the Hi setting being suitable for electric guitars and basses fitted with passive pickups. These will also accept high-impedance mics, but they aren't designed to replace a proper mic preamp. A Peak LED warns of excessive input gain.

A button switches the low-frequency shelving control from 80Hz to 120Hz and up to 12dB of cut or boost is available. A similar range of cut and boost is offered by the two mid-band controls where the low mid can be switched to operate at 250Hz, 500Hz, 1kHz or 2.2kHz, and the high mid can be set to 1.5kHz, 2.2kHz, 3.6kHz or 5kHz. The filter bandwidths of the mid controls are preset, and the high-frequency shelving control, which also has a +/-12dB range, operates at either 8kHz or 12kHz. Each channel has its own Bypass button with status LED.

pros & cons

TLA 2011/2012 £704

pros
- Attractively packaged.
- Attractively priced.
- Excellent sound quality.

cons
- Switched frequency settings on the 2011 are a little limiting if you're trying to target something specific.

summary
These valve hybrid audio processors offer excellent value without compromising on performance.

SOUND ON SOUND

The 2012 parametric equaliser follows the same kind of styling, and has the same input/output configuration, with the added bonus that both channels may be cascaded for use as a single-channel, 4-band parametric EQ (rather than as a dual channel, 2-band parametric EQ) if more control is required. In single-channel mode, the input feeds channel A and the output is taken from channel B, although output A remains active.

All four equaliser bands have the same +/-15dB cut/boost range, but the frequencies are continuously variable rather than simply switchable. However, bands 2 and 3 have switchable ranges (/10 and x10 respectively), to give them sufficient coverage when used in both 2- and 4-band modes. The Q of each section is variable from 0.5 to 5 and all the cut/boost controls have centre detents. A central button switches between 2-band stereo and 4-band mono operation, and separate Bypass buttons with green status LEDs are provided for both channels.

2012

IN USE

I tested both units with mixes, separate instruments, voice and electric guitar, and in all cases, the tonal quality was well-focused but without becoming abrasive. I found the parametric EQ the most flexible, even when I was working with only two bands per channel — but then I've never been a big fan of complex EQ anyway. The 2012 parametric virtually sings in the high registers, and handles bass sounds without letting them become too 'loose' or uncontrolled, even when significant amounts of boost are applied. For those who demand finer control, the 4-band mono mode delivers it with style.

Subtle use of this parametric EQ can add the kind of clarity and air to a mix that you normally have to turn to enhancers to achieve, and even when driven so hard that the clipping LED is on almost all the time, the sound remains clean and tight. Indeed, it's only when you crank the input gain way past danger level that you can coax any audible distortion from this unit. Tests with electric guitar also revealed sufficient tonal range to create a wide variety of clean guitar sounds, from mellow jazz to a sparkling edge.

Moving over to the 2011, I found this to behave much like a really good desk EQ, but I have to admit that I found the switchable frequency ranges just a little frustrating. I like to 'spin the dial' to tune into the right frequency spot, but here, you have to jump in steps of almost an octave at a time. Most of the time you can get what you want, and the choice of high/low shelving frequencies also helps enormously, but given the choice, I'd plump for the parametric every time. Overall, the sound is tighter and more detailed than you get from most mid-priced desk EQs, and the sound does have a warm, well-integrated classic feel to it.

SUMMARY

At just over £700 each, the Indigos are not much more expensive than most decent solid-state equivalents, yet TL Audio haven't compromised on sound quality in bringing this budget range to the marketplace. It's only when you compare a really nice EQ with an average one that you realise how much clarity you can lose. An indifferent equaliser leaves the bass end feeling slack and ill-defined while the top end becomes harsh or nasal. That doesn't happen with these units: the overall tone is reassuringly positive and very well behaved.

At the asking price, TL Audio have come up with a supremely attractive product line, and though the all-valve brigade might snipe at the hybrid design philosophy (see the 'High-bred Hybrids' box), it makes a huge amount of sense from a technical and financial point of view. If you've never used anything but the EQ on your console, you should give one of these units a try — I think you'll be surprised at the difference. SOS

HIGH-BRED HYBRIDS: THE INDIGOS' INNARDS

Though we talk about these TL Audio units as valve or tube products, they are in fact hybrid designs which combine solid-state circuitry with valve circuitry. Done properly, this provides the benefits of valve coloration as well as the low noise performance and inherent reliability of solid-state circuitry. It also makes manufacturing cheaper, which is why TL Audio's products are so competitively priced.

info

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Digitech VTP1

Valve Mic Preamp

Digitech's VTP1 seeks to outpace the competition in the crowded valve mic preamp market by offering built-in 4-band EQ and a digital output. PAUL WHITE sees how it runs...

Digitech's VTP1 is just one of a growing number of hybrid valve/solid-state products aimed at the serious end of the project studio market as well as at the professional user. Essentially, the VTP1 is a mic/line preamp, and as such, can be used for feeding high-quality signals directly to the inputs of a recorder, bypassing the ostensibly less sophisticated mic amps found in typical mid-price mixing consoles. A digital output also makes it possible to transfer the signal to a DAT machine or hard disk recorder without leaving the digital domain.

IN DETAIL

Packaged within the deliberately retro-style 2U rack case are two mains-powered mic/line channels, each with 4-band, semi-parametric EQ, and an 18-bit digital output stage available in both S/PDIF and AES/EBU formats. The analogue inputs and outputs are furnished on balanced XLRs, with 48V phantom power on the microphone inputs and post-EQ, balanced insert points for patching in external processors such as compressors. The line input also has an alternative balanced jack input, and inserting a jack disconnects the XLR.

The low-noise, solid-state mic preamp is transformerless, and phantom power, phase invert and a 20dB pad are all available on small toggle switches. A separate preamp is used to handle the line input, and a selector switch determines whether the mic or line input is to be fed to the valve gain stage via the Pre Gain control. This control sets how hard the valve is driven, while a Post Trim control attenuates the gain after the valve stage; the output stage level is monitored by a charming, circular moving-coil meter. Clip monitor LEDs are fed from four separate points in the signal path to warn if any one stage is being overdriven excessively. A low-cut shelving filter is also available, with an 12dB/octave response at 75Hz.

The two valves (one class A 12AX7 parallel triode gain stage per channel), are run at a stabilised 235V; lots of other valve equipment works by running the valves at a much lower voltage, but purists may argue, quite correctly, that the resulting sound isn't exactly the same as you get from a valve running at proper life-threatening voltages.

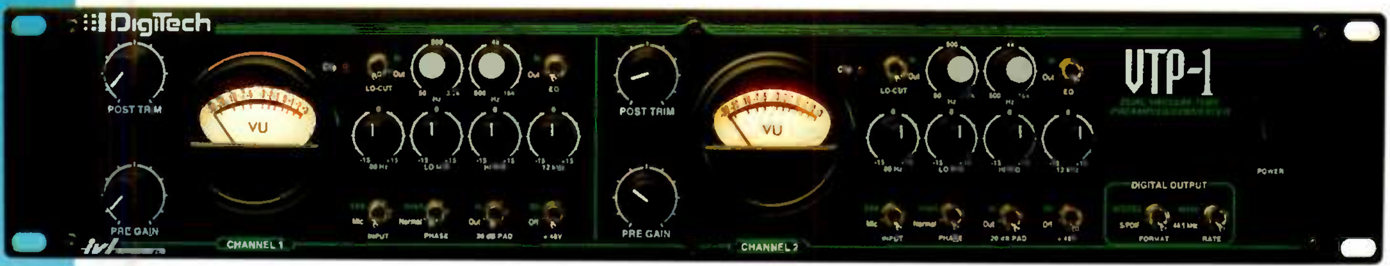
Switching in the EQ brings a 4-band equaliser into circuit, which the manual describes as 'semi-parametric'. Obviously the Americans have now changed our mother language to such an extent that 'semi' now means 'not', because what we actually have is the familiar 4-band EQ with two sweep mids and shelving high and low sections. All four bands provide up to 15dB of cut or boost, and the high and low sections operate at 12kHz and 80Hz respectively. Mid 1 may be swept from 50Hz to 3.2kHz, and Mid 2 ranges from 500Hz to 18kHz.

PERFORMANCE

With an equivalent input noise of -127dBu, the VTP1 is capable of an overall signal-to-noise ratio of better than 102dB (A-weighted), which is some 6dB better than from a theoretically-perfect 16-bit linear digital converter. The distortion is not particularly low at around 0.1%, but then that's the whole point of putting a valve in the signal chain — and by winding up the Pre Gain, you can get a lot more distortion than that if you want to! The line input has an impedance of around 20kΩ, so it's not really high enough to use as a DI input for electric guitars, though up to 26dB of gain is available for dealing with low-level signals. The mic input can actually squeeze 66dB of gain, which is more than enough to cover all normal eventualities.

> "As a mic preamp, the unit is very flexible."

Set to operate at modest tube drive levels, the mic preamp is clean and open-sounding, no doubt due in part to the wide bandwidth of the circuitry, which is only 3dB down at 40kHz. Switching in the EQ



pros & cons

DIGITECH VTP1 £1000

pros

- High-quality, flexible sound.
- Easy to operate.
- Built-in digital interface.

cons

- No limiter.
- No high-impedance input.

summary

The competition in the valve hybrid add-on mic preamp market is getting pretty fierce, but this unit has the benefit of a powerful onboard EQ and a digital output. Most esoteric mic amps are only worth considering if you do a lot of direct-to-stereo recording, or if the rest of your studio equipment is exceptionally good.

SOUND ON SOUND

THE DIGITAL OUTPUT

A toggle switch selects between AES/EBU (XLR) and S/PDIF (phono) output formats, while a second switch provides a choice of 44.1kHz and 48kHz sampling rates. In order to feed the digital signal into a DAT recorder or similar device, the recorder must be set to external digital sync, so that it will sync to the VTP1's clock. Most semi-pro DAT machines do this automatically when digital input is selected, but with hard disk systems such as Pro Tools, you have to remember to set Digital Sync to 'on', otherwise you end up with a recording full of clicks and glitches, as the two clocks drift in phase relative to each other.

shows it to be extremely positive, and while I've heard warmer EQs, this one gives the impression that it's not going to be pushed around. It's really very good for pushing an intransigent signal into shape, while at more modest settings, it works well for fine-tuning or sweetening.

Winding up the Pre Gain eventually causes the valve to operate in a noticeably non-linear manner. The trick is to set the amount of coloration you want by ear, then set the Post Gain control to give a sensible output level.

The digital output works perfectly well, so long as you don't allow the output stage to clip, but I can't help wondering if including a simple limiter might have made operation more foolproof, especially in live situations where maximum levels can never be guaranteed.

SUMMARY

There's no denying that the VTP1 does exactly as it says on the packet, though I missed not having a high-impedance DI input. As a mic preamp, the unit is very flexible, especially with the powerful on-board EQ, and though there's no limiter, the balanced insert points do provide the option to patch in your own compressor or limiter.

The provision of a digital output is perfect for recording to DAT or hard disk, but of course it isn't compatible with ADAT or DA88 recorders, where it would also be beneficial to have the option to pipe in signals in the digital domain. I suppose it's a bit unreasonable to expect ADAT and T/DIF interfaces as well as the more usual options, but the point has to be made in case anyone buys a VTP1 in the mistaken belief that it will plug straight into their modular digital multitrack tape recorder.

Whether it makes commercial sense to buy a VTP1 depends very much on the other components in your system, and on the type of work you're doing. Whatever people say about the input stages on typical consoles, most are surprisingly good, and any differences you achieve by buying an esoteric front end will be relatively minor, unless the rest of your kit is of really high quality; you'll need good capacitor microphones and a revealing monitor system at the very least. Similarly, if you're lucky enough to have tube microphones, it can be argued that there's little to gain by going through another tube stage.

If you do have a need for a quality preamp, then the VTP1 has a lot going for it. It's easy to operate, it looks classy, and it combines tonal warmth with transparency and the ability to interpret tonal detail. The digital output may or may not appeal to you depending on your system, but it's nice to have it anyway. If I could request more features, they would include a limiter, some means of metering the amount of valve drive and a high-impedance input, but other than that, Digitech haven't missed many tricks. SOS

info

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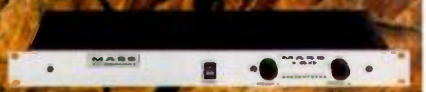

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Peavey Unity 500

14-Channel Compact Mixer

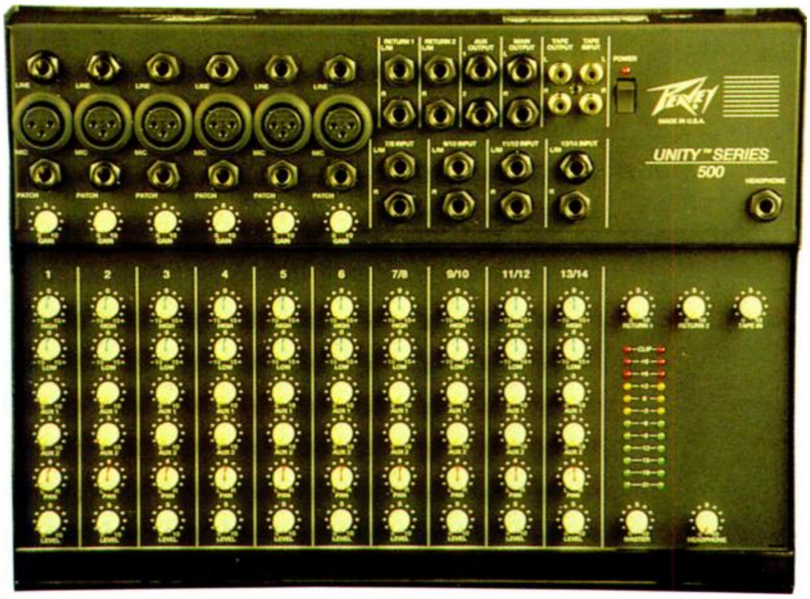
Mackie's enormously successful 1604 and 1202 mixers have inspired a fleet of imitations, all keen to get a slice of the action. Sound Engineer STEVE BRODIE checks out Peavey's take on the compact mixer concept...

Let's not be coy about this: if it wasn't for the Mackie 1202, the chances of the Peavey Unity 500 ever gracing the designers' drawing boards would have been remote indeed. Mackie certainly started something big with the CR1604 and its smaller brother the 1202, and manufacturers jumping on the compact mixer bandwagon today face the dilemma of whether to create complete Mackie clones or offer a different set of compromises whilst retaining the general ethos of the original. Examples utilising both approaches have followed in the wake of the 1202, and on the whole I feel that this form of plagiarism is no bad thing; it broadens choice and keeps manufacturers on their toes.

OUTSIDE APPEARANCES

My first impressions of the Peavey Unity Series 500 are of a serious mixer. The solid steel casing sports clear white legending, and the pots are rubber with a pleasing tactile quality, but can be pulled off rather easily. The top of the unit is a single steel sheet which is folded to provide a raised area at the rear for all the connectors, bar the power supply, while the lower area accommodates the controls. I was pleased to note that all the connectors looked substantial and securely fixed to the top panel, which bodes well for reliability as it will help prevent excess strain being put on the circuit boards from repeated reconnection.

All the audio connections are made on unbalanced quarter-inch jack sockets with the following exceptions. The mic inputs are on the usual XLRs, whilst the master outputs are on balanced jacks. I would have liked to have seen these on XLRs too, but at least they are balanced. Provision is made to connect tape inputs and outputs to the master buss via phonos. The insert points are conventional TRS-balanced jack sockets, but curiously they are labelled 'Patch'. It's staggering that an industry that can pull off a standardisation as complex as MIDI can't agree what to call a jack socket! The headphone socket is of course on a stereo jack, and I was delighted to see that power comes in on the rear of the unit via a standard IEC mains socket.



pros & cons

PEAVEY UNITY 500 £329

pros

- Good solid construction.
- Highly competitive price.
- Good sound quality.

cons

- Less flexible than some of the competition.

summary

Some 'quirky' design points don't detract from the fact that this is a mixer capable of top-quality performance at a remarkably low price.

SOUND ON SOUND

CONTROLS AND FEATURES

The first six mono channels are equipped with mic as well as line-level inputs, and 48V phantom power can be applied to all the mic inputs via a global switch on the rear of the unit. The remaining four channels can accommodate line-level sources only, in either mono or stereo. To begin with the mono-only mic channels, the channel strip commences at the top with the line-level jack socket, followed by the XLR mic input and the pre-EQ insert or Patch socket. Following this (still on the raised section of the top panel) we have the gain control. This is the only control to be positioned on the raised section, the two levels otherwise providing a demarcation between connectors and controls.

Moving to the lower panel, the EQ section comes next. This provides 2-band shelving filtering with 15dB of cut or boost at 50Hz and 13kHz. Two auxiliary sends are provided, both of which are hard-wired as post-fader, which does limit your options when creating separate mixes for performers. Beneath the auxiliaries, we find the Pan control, followed by the channel 'fader' which is actually a rotary pot to save space — a fair compromise.

All the controls are centre-detented at their unity gain point, or in the case of the EQ, in their neutral position, except for the Pan controls, which have no detent at all. It's all very well to make you aware of the unity gain points (and thereby encourage the use of good gain structure) with centre-detenting, but to then leave it off Pan is surely slightly perverse.

The line-level, stereo/mono channels

WRH

have an identical array of controls, but the connectors are quite different. There is provision for only two line-level jack sockets configured as a single mono input or a stereo pair: there are no insert points and no gain controls. The auxiliary inputs and outputs are located above these channel sockets. The sends are mono and the returns are configured for mono or stereo use. Next to these are the master outputs and the tape inputs and outputs on phonos, mentioned earlier.

The master section is rather basic, consisting of level controls for the aux returns, the tape inputs and the headphones. The master output level is governed by a single pot. Separate left/right controls are always preferable — but then smooth fade-outs would be impossible on two pots. Completing the picture are the 12-segment LED arrays on the master outputs, which peak when you are within 6dB of clipping.

PERFORMANCE

The sound quality of the Unity 500 is quite up to standard for making quality recordings onto DAT. During the review, I made some spoken word recordings with pleasing results. The simplicity of the control options mean that assuming your gain settings are sensible, excellent results can be achieved with a minimum of fuss, which could be a real boon for location recording jobs when setting-up time might be limited.

I would have welcomed some way to meter the input of a channel on the LED meters, so that I could be sure of my gain structure. In the absence of this, gain-setting is largely educated guesswork. This is a good example of how the Unity 500 could lose out to newer designs such as the upgraded Mackie 1202VLZ (reviewed in *SOS* February '96) which has pre-fade capabilities, along with several other useful features missing on the Peavey. I also have to say that I found the chosen EQ frequencies rather odd. Most manufacturers implementing a shelving 2-band EQ opt for 12kHz and 80Hz or perhaps 60Hz, but the 50Hz chosen for the LF seems a bit low (and a touch boomy to me), and the HF is a touch on the hissy side if you are heavy-handed with it.

On the one hand, I feel that my criticisms are a little churlish in light of the price of the Unity 500, which is rather less than much of the competition, but it seems to me that these are simply design decisions which would have little if any effect on the price. However, it has to be said that the Unity 500 does provide six excellent mic preamps. These are worth the asking price alone, and would certainly have cost rather more not so long ago.

If it has the features you need, the Unity 500 is worthy of serious consideration. If, however, you are less sure of your needs now, or of how your requirements might develop, you really should look at the competition. As I said at the start, a competitive market should work to the consumer's advantage. SOS

BRIEF SPECIFICATION

Frequency Response:	+0,-1dB, 20Hz - 22kHz
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EIN:	- 129dBV @ 150Ω
Crosstalk:	less than - 50dB @ 1kHz
EQ:	+/-15dB @ 50Hz and 13kHz shelving

Thanks to Thetford Music (01842 766325) for the loan of the review model.

info

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Aphex 661 Expressor

Single-Channel Valve Compressor

Famous for their Aural Exciters, Aphex continue to diversify. PAUL WHITE takes a look at the US company's new valve-based compressor.

Aphex have a solid reputation for designing and building innovative analogue signal processing products, and since their Aural Exciter, the company has gone on to build gates, mic preamps, compressors, limiters, and a number of other products, each of which has included some unique feature. The latest Aphex innovation is Tubessence, a low-voltage valve-based circuit that employs an ingenious solid-state feedback circuit to make the valve behave and sound as though it is being run at several hundred volts. Tubessence has been included in a whole range of products, including the 661 Expressor reviewed here.

APHEX 661
EXPRESSOR

FRONT PANEL TOUR

The 661 Expressor is a single-channel compressor which may be used on voice or instruments, and I get the impression that here is a compressor that wants you to know when something is being compressed! Anyone familiar with earlier Aphex designs may recognise the SPR (Spectral Phase Refraction) button just to the right of the Bypass button. SPR manipulates phase relationships in such a way as to enhance or clarify the bass end of a sound without using any EQ, but the effectiveness of the system depends very much on the signal you feed into it. Sometimes it sounds quite positive, while at other times it seems to do very little.

The compressor section is switchable for hard- or soft-knee operation, and the Easyrider section provides fast or slow auto operation, relieving you of the responsibility of worrying about ratios or what knee to choose [*dimpled? knobbly? — flippant Assistant Ed*]. In effect, Threshold functions as a more/less compression control, and that's all you have to deal with.

In Manual mode, the usual Threshold, Attack and Release controls are available, and the user has controls of both input and output gain plus Threshold level at all times. Status LEDs are fitted to all switches, and external side-chain access is via rear-panel jacks. A switchable low-cut filter is available in the side-chain signal path to prevent excessive amounts of gain reduction being triggered by low-frequency sounds. The signal inputs and outputs are electronically balanced, and are available on both jacks and XLRs, with a further TSR jack on the rear panel allowing two 661 Expressors to be linked for stereo operation.

After the compressor controls, there's the HFX section, which uses high-frequency expansion to help preserve brightness when a lot of gain reduction is being applied. The user has control over the HFX ratio, and the frequency above which HFX takes effect (2kHz to 20kHz). There's no separate bypass switch for this section, so if you don't want to use it, you simply turn the Frequency control fully clockwise.

Both gain reduction and input/output level metering is on LED meters, and there are switches for stereo linking and for Slave mode. When two units are run as a pair, the unit set to Slave mode responds to the control settings of the master unit.

STUDIO TRIALS

In testing this unit, I tried just about every kind of voice and instrument I could lay my hands on, and it handled them all without complaint. Easyrider mode was particularly impressive, especially on bass instruments and vocals, though if you really want to get things pumping, I found it best to use Manual mode, set a fast attack combined with a reasonably fast release, and pile on the gain reduction at a fairly high ratio using the hard-knee setting. If I had to characterise this compressor, I would say that it manages to make sounds punchy and upfront without compromising their original character. It doesn't make things sound muddy or squashed, and even without the HFX, the sound is quite transparent.

pros & cons

APHEX 661 £763

pros
- Very versatile.
- Warm, punchy sound.

cons
- Costly.

summary
- A good all-rounder, with lots of character for those prepared to pay the extra for something out of the ordinary.

SOUND ON SOUND

Adding HFX gives an edge to the sound that isn't dissimilar to what you might expect from an Exciter, even though the principle is quite different, and the SPR treatment at the bass end adds a subtle, rounded warmth to most bass sounds (though as mentioned already, there are some sounds on which it appears to make no difference at all).

SUMMARY

On balance, this is a very useful and flexible compressor, with just the right amount of character, though I feel it would have benefited from an expander section to keep the pauses clean. It is also quite an expensive unit when you consider that it's a single-channel device, and for less than twice as much, you could buy a dual-channel valve compressor (the Drawmer 1960, for example). Where the 661 Expressor scores is in its flexibility, the operationally simple Easyrider mode and the HFX enhancement. It is a competent and very pleasant-sounding compressor, with the quality of performance we've come to expect from an Aphex product. If you're in the market for something a little bit special, check it out.

info

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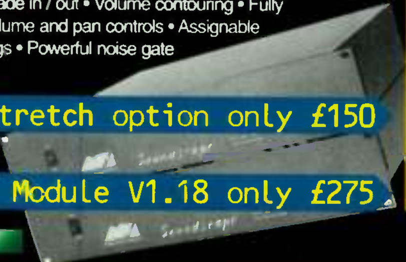

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Radio Free Internet

PIRATE RADIO ON THE INTERNET
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N SCAPE

Despite promises that the Internet will soon alter the way we make, promote, and sell our music forever, it would seem the revolution is yet to happen. Or is it? SIMON PRICE explains how the technology required to broadcast your demo anywhere in the world is almost within reach...

We've all heard about the Internet being the future of multimedia, and the new environment for the music and entertainment industries. So far, though, the Internet's version of multimedia — the World Wide Web — has been predominantly silent. True, we've been able to download audio files and play them back, but after you've tried it once or twice, you realise that the time it takes can be impractical — phone costs being a significant consideration for most people. As for the digital revolution transforming the music industry, it is true that record companies have been among the first to embrace the Net advertising boom, but the actual business of listening to and purchasing music is fairly unchanged. However, technology that allows you listen to audio live from the Internet is promising to be the next big step in the development of global communications.

SOUND *AND* VISION

Even if you are using a slow (14.4 kilobits/sec) modem connection, you can now receive live audio 'streams' from all over the world. This puts 'real-time' sound capability into the hands of practically all Internet users, providing some powerful opportunities. Imagine setting up the computer in your home studio as a live stream server. You would have the ability to transmit your music performances across the world, like the Future Sound of London have been doing (see interview in *SOS* August 1994). In other words, you can have pirate radio with a limitless transmission range, and without the police beating down your door. If you have a web site, instant-access sound adds a new dimension. Already, incorporating speech into web presentations has become a popular choice. If you have a web site promoting a band, you can add recordings of your music, with the potential for people all over the world to hear it.

Originally, the only way to add audio to a web page was to offer downloadable files. The result was that you had to wait as the file downloaded (taking much longer than the length of the clip), and *then* play it back from your hard disk. This is a departure from most people's expectations of multimedia. With a CD-ROM, for example, you click the mouse button, and almost immediately hear the sound sample or see the video. Similar results can now be achieved by using live stream technology alongside the web.

▶

FORMAT WARS

The three software products freeing people from having to download Internet-based audio before playback are *RealAudio* (from Progressive Networks), *I-Wave* (VocalTec) and *StreamWorks* (Xing). To use any of these products, you download and install 'player' software, which translates incoming data streams into digital audio.

As is so often the way in the music and computer industries, technological advancement has resulted in a format war. *RealAudio* was the first dedicated audio streamer, aiming at the modem user market. VocalTec's *I-Wave*, or *Internet Wave*, evolved from the same company's widely acclaimed *Internet Phone* software. *I-Phone* offers real-time speech transfer, and has stirred up phone companies worldwide with its promise of international calls at local rates. The battle between the two systems still hangs in the balance.

Progressive Networks have the head start, with a huge user base, but decided to price their server software at several thousand dollars. *I-Wave* is generally considered a superior product, and server software is free. This means that anyone with a web site can transmit live audio using *I-Wave*. The third option, Xing's *StreamWorks*, is a much more versatile product, designed with faster connections in mind, and with a focus on video broadcasting.

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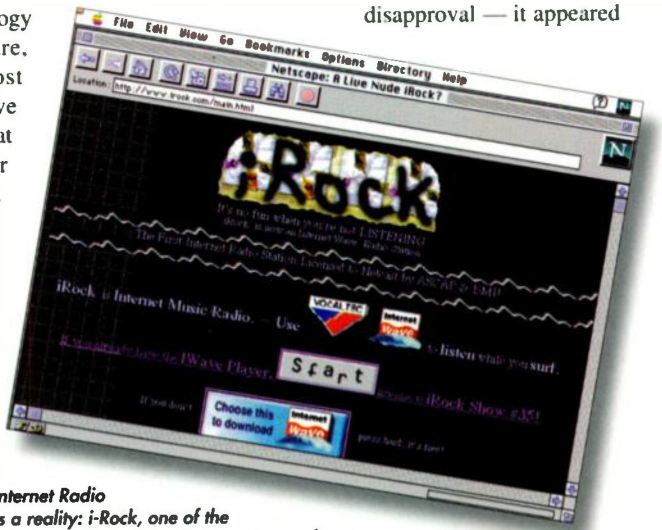
NETCASTING

Live streaming gets really exciting when it is used in conjunction with so-called 'multicasting' technology. This is the name given to the process of sending the same stream to multiple destinations over the Internet, thus introducing the Internet into the broadcasting arena. This development hasn't gone unnoticed by the traditional players (ie. TV, radio, cable and satellite companies), and over the last two years dozens of 'Internet radio' projects have sprung up. In America, NBC are broadcasting on-line via Xing Technology Corporation's *StreamWorks* software, while NPR and ABC are the most high-profile exponents of Progressive Networks' *RealAudio* (see the 'Format Wars' box elsewhere in this article for more on both these pieces of software). The biggest project is WRN (World Radio Network) which has two 24-hour live Internet feeds, relaying radio programming from satellite, cable and radio sources in 25 countries. WRN claim that by sourcing news from different continents and cultures, the listener is presented with varied, propaganda-free reporting.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Internet Radio is a reality: i-Rock, one of the stations run using VocalTec's i-Wave *software.*

Perhaps of more interest is the number of smaller, independent Internet radio stations. Individuals and small companies have always been able to compete on more even ground with corporations when it comes to WWW publishing. In terms of Internet radio, small projects such as i-Rock (music radio using VocalTec's *I-Wave* software — again, see the 'Format Wars' box) can rival the big cable companies. The relative lack of expense involved in Internet broadcasting means that for sheer variety of programming, large-scale media cannot compete. Theoretically, anyone with enough spare time and determination could set up and transmit from home. The analogy with pirate radio is a good one: people broadcasting what they want to hear. The difference is that you can transmit to anywhere in the world. Unfortunately, the software, bandwidth and technical knowledge required for multicasting aren't going to be common among individual users for a while yet. However, you only have to look at the proliferation of MIDI over the last 10 years to see that musicians can be willing to learn, use and pay for new technology.

The independent broadcasters are mostly run as a hobby, so there are no advertisers to pander to. Recently, HardRadio — a *StreamWorks*-based netcaster — suggested a small monthly fee to stay commercial-free. The feedback from the relevant mailing list circles was one of overwhelming disapproval — it appeared that subtle sponsorship was the preferred choice if funds were needed. One participant in the debate said "Put something unique and interesting on your feed and I may listen to it, but I wouldn't pay for it if Jesus Christ himself were delivering a speech."

THE FUTURE

So, are radio and TV companies on the brink of becoming obsolete? Definitely not for a long time yet. Despite the media coverage, the Internet is still in its infancy; the infrastructure is too weak to support the transfer of large amounts of continuous data. The large, established media companies will

NEVER MIND THE QUALITY, FEEL THE BANDWIDTH: LIMITATIONS

At the moment, audio on the Internet is a compromise. Current limitations of the technology, and the explosion in volume of traffic, mean that the bandwidth is being spread thinly. Assuming that the transfer rate is being limited to the speed of your modem (and unless you do your surfing in the early morning, while Stateside net users are asleep, even that can be considered generous) it will probably be 14,400 bits per second. Uncompressed, CD-quality stereo audio, on the other hand, weighs in at over 1.4 million bits per second. So the choices are either: download before listening and maintain quality, or play back live and use heavy data compression. Alternatively, you could lease a couple of ISDN lines, but unless you happen to live in Germany — where line rental is maddeningly cheap — the cost is prohibitive.

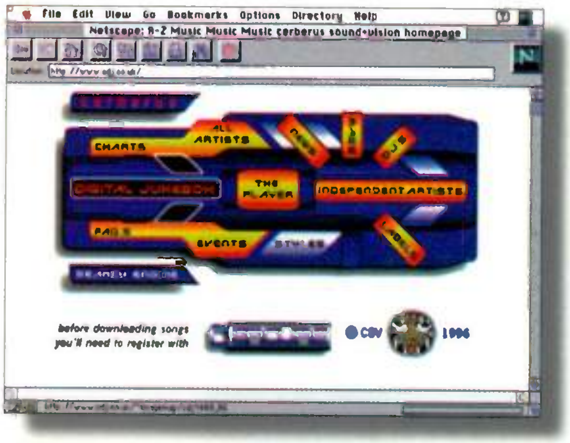
So far, the choice has been quality over speed, but software like *RealAudio* has managed to produce workable 'speed first, quality last' compromises. Ultimately, though, compression equals distortion, and for modem users, the audio received is of limited fidelity. Determining audio quality is something of a black art at the moment. Nothing, it seems, can convince the companies concerned to release details of their compression systems in anything other than vague terms. Progressive Networks say that 14.4kbaud modem users can expect "AM Radio quality", while VocalTec is claiming "Mono FM quality". More objective measurements prove elusive. In fact, one well-meaning email response assured me that *StreamWorks* provides "so-so" quality! To be fair, the situation is a little more complicated than it seems. Firstly, any distortion is going to be determined as much by network traffic, lost data and the user's soundcard as by the original compression. Secondly, flat figures like frequency response and dynamic range might be misleading, as it is likely that the compression algorithms will favour some areas of the audio spectrum over others. Subjectively, the bottom line is that if you're a modem user, you can get good results for speech, but poor quality for music.

be continuing with cable and the airwaves for now, because of their superior quality. The big changes will happen when the Internet's bandwidth problems are overcome (see the 'Limitations' box). The technology is waiting — it's the physical connections that need to be developed. The answer probably lies in collaborating with cable companies, who are already offering the sort of services promised by Internet live streaming.

Despite the boundaries set by bandwidth, the Internet has some advantages over other media. The nature of the network is such that it is indiscriminate about your physical location. A *RealAudio* stream can be accessed globally. Also, because the receiving device (your computer) is programmable, broadcasters using the Web can include much more than just audio, offering the potential for truly interactive radio (and later, TV). Interactivity is an area just waiting for innovation, and it is likely that the line between broadcaster and audience will become highly blurred in some applications.

As far as the music industry is concerned, the future is intimately tied in with the Internet. The record business is about selling data (music), and the Internet is going to be the world's primary infrastructure for moving the commodity of binary bits around. It's possible that we will change all our ideas about buying music. When live streaming becomes as cheap and common as standard WWW publishing, we may start 'renting' music; it may become more economical to listen to music live from the Internet for a few pence at a time than to buy a 'stored' version, ie. on CD or your hard drive. It is the consumer, though, that will determine what the future holds for music purchasing. The idea of buying physical copies of a recording appeals to most people. Nevertheless, the near future will probably bring a wider choice of ways to buy music — you can already download CD-quality music from companies like the UK-based Cerberus Digital Jukebox.

Ultimately, the implication of live streaming — as with many applications of the Internet — is an increase in the capability of individuals to 'get involved'. Over the past decade, the music industry has seen technology make it possible to affordably create professional-quality music at home. Live streaming technology is the beginning of the next step, which is the ability of individuals to broadcast that material globally. SOS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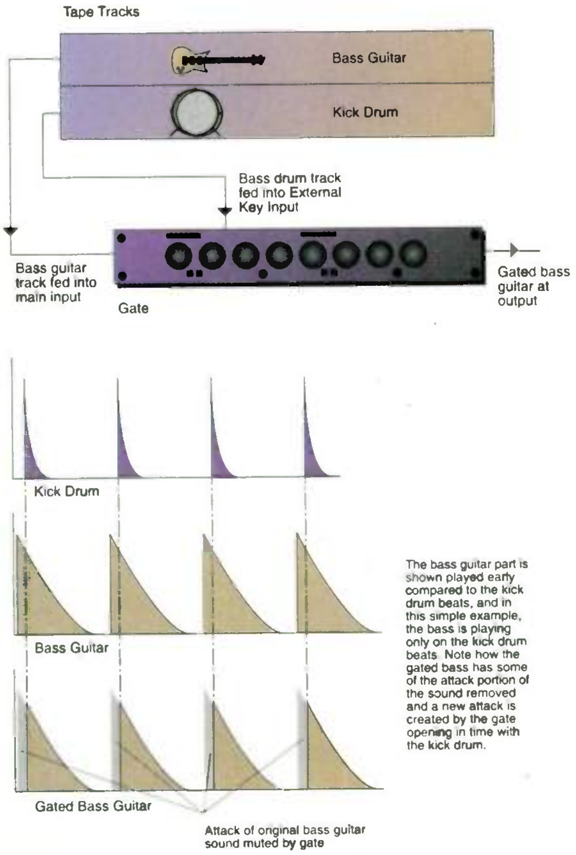
fixing the mix

PART 2: ADVANCED IMPROVEMENTS

Last month, PAUL WHITE looked at ways to tackle the noise and distortion that can spoil a mix. However, even a perfectly recorded mix can still sound terrible, and this calls for different tactics...

Sometimes, even properly-recorded tracks can add up to a less-than-sparkling final mix — in the past, I've been asked to remix material that's been well recorded, but somehow still doesn't seem to want to work.

Figure 1: A bass drum keying a bass guitar.


Tape Tracks
Bass Guitar
Kick Drum
Bass drum track fed into External Key Input
Bass guitar track fed into main input
Gate
Gated bass guitar at output
Kick Drum
Bass Guitar
Gated Bass Guitar

The bass guitar part is shown played early compared to the kick drum beats, and in this simple example, the bass is playing only on the kick drum beats. Note how the gated bass has some of the attack portion of the sound removed and a new attack is created by the gate opening in time with the kick drum.

Attack of original bass guitar sound muted by gate

In these cases, the problem usually falls into one or more of three main areas: the musical arrangement; the choice of sounds; and, most importantly, the performance itself.

ARRANGEMENT

There are no hard and fast rules as to what makes a good arrangement — getting it right is an art and you'll find some people can do it brilliantly, while others can't do it at all. Most of us fall somewhere in between! In pop music, arrangement can usually be sub-divided into the literal arrangement of the song components — verse, chorus, intro, solo, bridge, and so on — and the instrumentation used for each part. A good arrangement for a traditionally-structured pop song will be properly paced to create a sense of anticipation before a catchy chorus. The best way to test this aspect of an arrangement is to listen to a demo in front of critical friends. They won't need to *say* anything — you'll feel yourself squirming at any over-long links and solos or over-repetitive sections. Fixing this is usually a case of being ruthless and making every section of the song justify its existence — if it isn't needed, then shorten it or get rid of it altogether.

If you're dealing with ready-recorded material, you might think that changing its arrangement isn't an option, but now that basic hard disk editing is starting to appear as standard with so many sequencers, it is quite feasible to chop up a song into sections and then reassemble them in a different order without the joins showing. I do this all the time using Digidesign's *Sound Designer*, but you can do the same using something like Steinberg's *WaveLab* or *Cubase Score* 3.0 running on a Pentium PC with a soundcard, or with one of the other 'MIDI + Audio' sequencers. Providing you choose your edit points carefully, usually to coincide with a drum beat, it should be possible to make the end result sound as natural as the unedited version.

If you have a hard disk multitrack system, you may be able to transfer the whole song into it from the multitrack master tape; doing this will give you a lot more scope when it comes to moving ▶

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▶ parts around or replacing sub-standard parts with sections copied from elsewhere in the song.

INSTRUMENTATION

If there's a problem with the instrumentation of a song, you won't be able to completely reorganise this if you're remixing existing material (unless you've been given a clear brief to re-record parts), but you do have the option to use EQ to reduce the level of parts. You can also mute parts and, in the case of drums, there's sometimes the possibility of replacing sounds. If you have a copy of the sequencer file that accompanied the original recording, you may also be able to replace any MIDI instrument parts with different sounds.

EQ is a useful tool, because it enables us to thin out sounds that are taking up too much space in a mix. For example, an acoustic rhythm guitar used in a busy pop mix might benefit from radical bass cut, so that you end up with a thin sound, almost like a musical hi-hat in terms of its role in the music. Similarly, if a bass guitar is too boomy, you could try a combination of mid-range boost and low bass cut to harden up the sound. In many cases, the sense of aural clutter comes from two or more instruments playing at the same time and occupying the same parts of the musical spectrum. You can use EQ to minimise the degree of overlap by, for example, taking some top off a harmonically rich bass sound if it occurs at the same time as a mid-range pad or lead sound. Similarly, you might be able to take some bottom end off the pad or lead to provide even more separation. This kind of trick is often used to try to separate two similar-sounding electric guitars, though I have to stress that choosing suitable sounds to start with is invariably best. Using the side-chain filters on your gate is a very effective way of 'bracketing' a sound to make sure it doesn't stray outside its allocated section of the spectrum.

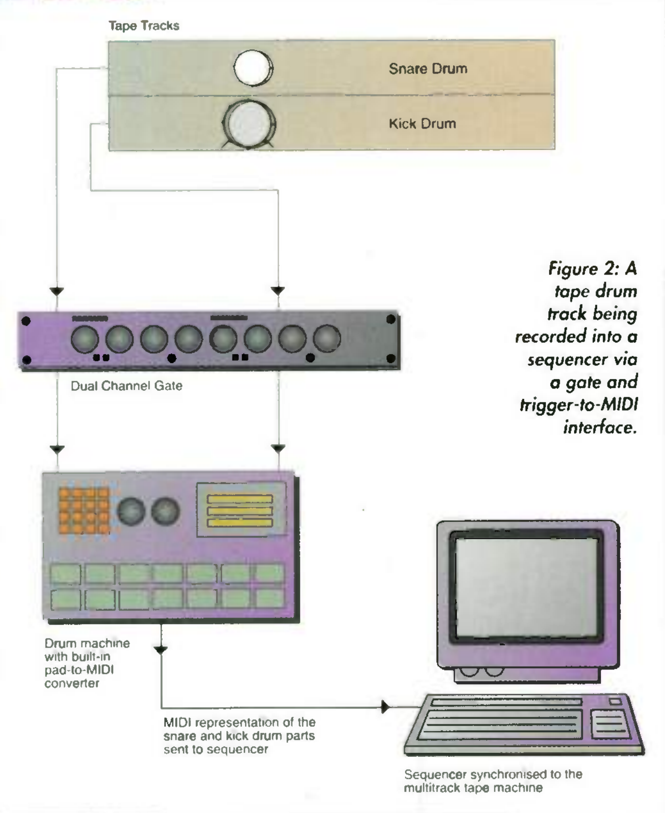
Tape Tracks
Snare Drum
Kick Drum
Dual Channel Gate
Drum machine with built-in pad-to-MIDI converter
MIDI representation of the snare and kick drum parts sent to sequencer
Sequencer synchronised to the multitrack tape machine

Figure 2: A tape drum track being recorded into a sequencer via a gate and trigger-to-MIDI interface.

> "Now that basic hard disk editing is becoming standard with sequencers, it is quite feasible to chop up a song into sections and reassemble them in a different order."

There are few rules to using EQ, other than to say that if it sounds good, it's OK, but in general, use cut rather than boost where possible, and avoid over-equalising natural sounds, such as lead vocals, unless you want to create a specific effect.

PERFORMANCE

Performance errors might include poor timing, poor tuning and even bum notes! There's only a limited amount you can do about any of these problems unless you have a powerful hard disk editing system and you're prepared to spend a lot of time experimenting, but there are a few tricks you can try using samplers and rack effects, that can help fix minor problems.

- **TIMING:** In a mix where some parts are played just slightly out of time, you may be able to tighten up the bass guitar and drums by using the bass drum to key a gate through which the bass track is being fed. You'll need to set the gate release time by ear, but at the very least, this patch will ensure that the bass guitar only comes in with the bass drum and never comes in before it. Figure 1 shows how this works.

Those with hard disk systems that include a 'quantise audio' facility may be able to reconstruct the offending parts to conform either to the sequencer quantise grid or to a grid taken from another piece of audio that was played correctly, but unless you're just fixing the odd part, this could take a lifetime. If possible, find a similar part elsewhere in the song that is played properly, then copy it and paste it in place of the faulty section — it's a lot quicker. Similarly, if you have a dodgy phrase in a guitar solo, see if you can edit it out to shorten the solo without ruining the musical feel. If you can't shorten the solo, repeating a phrase from elsewhere in the solo may work. ▶

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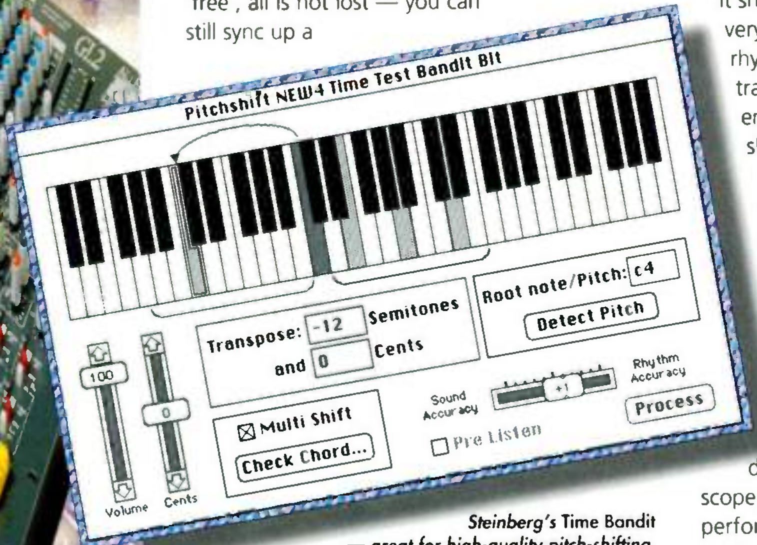
fixing the *mix*

If the drummer's timing is at fault and the drum kit is recorded on several tracks, you may be able to gate the bass drum and snare drum parts, then use these 'cleaned up' sounds to trigger an Alesis D4, DM5 or other trigger-to-MIDI-equipped piece of gear. This is the method often used to replace drum sounds with nicer-sounding samples — which is something you might want to do anyway — and if you first record the MIDI data into a sequencer locked to tape, you have the opportunity of moving offending beats around to tighten up the timing. If the sound was originally played to a sequencer click track, you'll be able to use the sequencer's own quantise grid, but if it was played 'free', all is not lost — you can still sync up a sequencer, tap in the tempo manually as the song plays, then use the re-bar facility found in most modern sequencers to automatically create a new tempo map to match your manual 'tap' track. You have to be a pretty accurate tapper to get this dead right, but once you've done it, you can quantise any MIDI data in the knowledge that it will be in time with your song on tape. Figure 2 shows a taped drum track being recorded into a sequencer via a gate and trigger-to-MIDI interface.



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Once you've got the relevant drum parts into the sequencer, you can decide whether to trigger samples taken from the original drum recording, or pick a new sampled sound altogether. Whatever you decide, keep in mind that the trigger-to-MIDI process takes a small amount of time, as does triggering a sample or drum machine, so you could end up with your triggered beat coming back a few milliseconds later than it should. The subjective delay will probably be very small, but it may be enough to upset the rhythmic feel. In this case, entering a negative track delay facility in your sequencer should enable you to get the timing back to where it should be.

- **TUNING:** If a track is slightly sharp or flat compared to the rest of the tracks in the song, you can shift it back to pitch in a number of ways. The simplest way is probably to use a pitch-shifter — even the cheapest models are virtually glitch-free when performing small shifts, though you may find some general tonal degradation from budget models. Hard disk recording systems offer slightly more scope; Steinberg's *Time Bandit*, for example, can perform very high-quality pitch changes, while *Logic Audio* has a very respectable pitch changer in its Digital Factory section. As a rule, the hard disk, off-line shifters produce much more natural results than rackmount, real-time units. Some of the latest 'MIDI + Audio' sequencers have very advanced facilities for pitch manipulation: in *Studio*

EMERGENCY WARD 10

What follows is the sequence of desperate measures I usually go through when a mix refuses to co-operate:

1 **Without using EQ or effects, set up a mono balance and get the mix sounding as good as you can. Once the mono balance is somewhere near, you can use the pan controls to create a stereo image.**

2 **Build up your mix from the rhythm section and make sure that bass and drums are working together before you add more layers. If the kick drum sounds limp, try triggering a sample and use this to augment or replace the existing kick drum sound.**

3 **If the result is obviously cluttered, see if you can drop one or more parts completely without losing anything musically important, or at least, see if you can drop the level. For example, a pad keyboard part might work at an almost subliminal level, whereas at a higher level, it would just swallow up all the space. You can also use the trick of turning off the top end of a track just while the part it's clashing with is playing (see box 'Hi-Energy EQ').**

4 **Another cause of cluttering is microphone spill between tracks. See if you can patch a gate into any tracks that are suffering excessive spill so as to keep them quiet when they're not actually contributing to the mix. It's surprising how much rubbish is picked up by the kick drum mic, so gating this track is a good first step. If you have MIDI muting, use it to keep all tracks silent when nothing is playing.**

5 **Use EQ to reduce the overlap between parts that conflict, but don't over-EQ vocals or critical acoustic instruments. EQ cut invariably sounds more natural than boost. A good parametric EQ is an essential tool for sweetening; console EQs are rarely flexible enough and budget graphics just sound nasty in this role!**

6 **If the guitar parts sound unconvincing, fizzy, or just plain gutless, try playing the track back through a guitar combo and then mic the result. You can either record this to a spare track or use it 'live' in the mix. The same applies to limp bass parts.**

7 **When adding effects, don't put on too much delay or reverb, because this is yet another way of losing all your space. As a rule, the more effect a sound has on it, the further back in the mix it sounds. If a sound needs reverb, try a shorter decay setting to keep the sound upfront.**

8 **An enhancer shouldn't normally be used as a salvage tool — they're designed to make good productions sound better, not to polish turds! But when the devil drives, it's time to fasten your seat-belt... A subtle application of excitement/enhancement can create a sense of space and separation, but piling on too much usually gives the mix a harsh edge (and brings up noise), which can be fatiguing on the ears. Combining gentle excitement with mid-range cut from a parameteric EQ sometimes produces more acceptable results than using an exciter alone.**

9 **If the mix sounds well balanced but is still lacking punch, try overall compression. You can also use a Vitalizer or good parametric to bring up the bottom end, but be careful not to make the mid-range muddy.**

10 **Finally, if you still have problems, take a rest before you start again — your ears will work better for it!**

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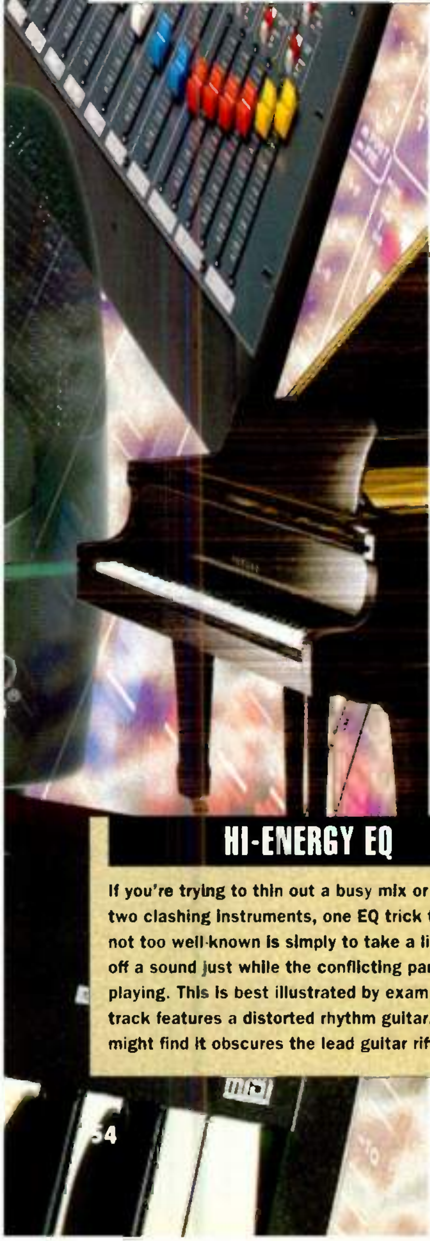
SOS

fixing the *mix*

▶ *Vision Pro*, you can convert a monophonic line to MIDI data, edit the MIDI data, and then use the edited data as a template to create a pitch-changed version of the original. *Logic Audio* also has some powerful audio-to-MIDI and audio manipulation features.

If the part in question is only slightly sharp or flat, you may be able to cheat by adding a pitch-shifted version to the original, to create a chorus effect. For example, if the track is 10 cents sharp, you could add a -20 cents pitch shift, which would create a doubling part 10 cents flat. When the two are played together, you'll hear a chorus effect centered around the correct pitch. Whether you can use this technique depends on the part at fault — strings or pads are usually OK, but other instruments or voices may simply sound wrong with added chorus. The further you have to shift the sound, the stronger the chorus effect will be.

SPL's Vitalizer offers enhancement based around EQ, but is capable of refreshing the parts of your mix that no ordinary EQ can reach!



If just the odd note is out of tune, you can use a stand-alone pitch-shifter unit with real-time MIDI control; a synth's pitch-bend wheel can control the amount of shift. If you can record the control data into a sequencer, you can tweak it until the tuning is spot-on. Because the tone may suffer when the signal is passed through a pitch-shifter, you may want to punch in just the offending notes or phrases and re-record the result onto a spare tape track.

STEREO MIXES

If you're asked to try to sweeten an existing stereo master, the main tools at your disposal are compression and EQ.

• **COMPRESSION:** Using a compressor on a complete mix will reduce the dynamic range and increase the average energy of a mix, but because this increases the average signal level, you might find that you squeeze all the space out of the mix, which is rarely a good thing. A compressor with auto attack/release settings is easiest to use, but if you only have a conventional compressor, try an attack time of between 10 and 20mS to allow transient sounds to get through. Setting the attack time too fast can result in a dulling of the sound on some models of compressor. Soft-knee models generally produce the most unobtrusive results, but the subjective difference between individual models seems greater than the difference between soft- and hard-knee variants. Valve compressors may also be used to add an overall warmth to a mix, and many engineers like to use valve processors at the end of a digital recording chain to inject a little warmth into the proceedings.

• **EQ:** Mixes can be made to sound louder and less cluttered by gently cutting the mid-range; this simulates the human ear's response at higher sound levels, while also reducing the presence of the mid-range sounds usually responsible for making a mix sound overcrowded. It's also common to treat a whole mix with an exciter to enhance high-frequency detail if the mix lacks brightness. I've still found no device more effective than the SPL Vitalizer, which uses a form of EQ to make mixes sound louder and cleaner, but it also has a harmonics control which adds the sonic 'fairy dust' at the top end.

> "Mixes can be made to sound louder and less cluttered by gently cutting the mid-range."

When processing a mix in this way, make sure you audition the result on several different stereo systems, including a car stereo, just to ensure your new mix will travel. I also favour checking mixes on headphones, as these seem much better at revealing low-level distortions than speakers.

AND FINALLY...

Every mix is different, so there are no absolute rules — only suggestions and hints. What I've presented here are tricks that I use myself and that I know are used by other engineers, but you should still bear in mind that any attempt at salvaging a sub-standard mix will come second best to re-recording the offending part. SOS

HI-ENERGY EQ

If you're trying to thin out a busy mix or separate two clashing instruments, one EQ trick that's not too well-known is simply to take a little top off a sound just while the conflicting part is playing. This is best illustrated by example: if the track features a distorted rhythm guitar, you might find it obscures the lead guitar riff, and the instinctive reaction is to pull down the level of the rhythm sound while the lead is playing. However, this might cause a noticeable drop in energy, so as an alternative, try simply backing off just the high-frequency EQ on the rhythm guitar sound when the lead is playing. This should provide more space for the lead guitar to cut through without sacrificing any low-end energy.

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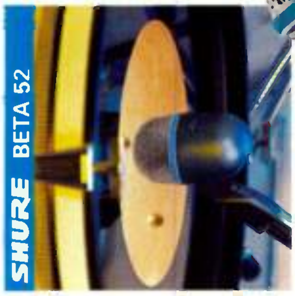

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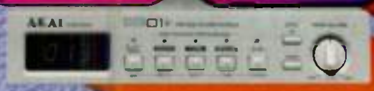

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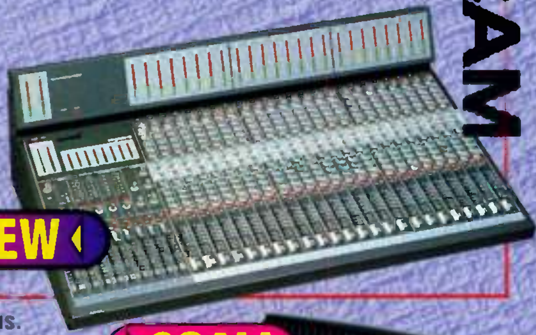

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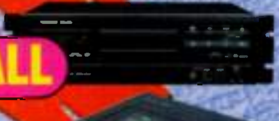

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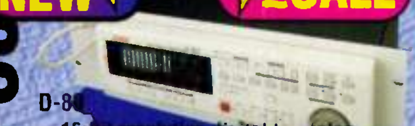

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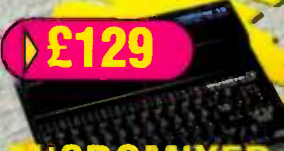

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Classic Capacitors?

ELECTROVOICE RE1000 • RE2000 • RE200 CAPACITOR MICROPHONES

Best known in the microphone world for their high-quality dynamic mics, Electrovoice are now hoping to raise their profile as a manufacturer of capacitor models with the release of three additions to their RE range. PAUL WHITE listens in.

The RE2000 in its shockmount.

Best known for their hi-fi and PA loudspeakers, US-based manufacturer Electrovoice have been building excellent microphones for many years — they were the first major company to come out with neodymium-driven dynamic models, and their RE20 dynamic mic is a studio classic. Even so, Electrovoice mics still tend to be associated more with live sound than with studio recording, largely because of the lack of a high-profile capacitor model in the range. Well, nobody can accuse their new capacitor mics of being low profile, and perhaps they're just what's needed to drive the EV flag further into the studio map.

THE RE1000

Looking exactly like the politically-correct interpretation of a 'proper' studio microphone, the RE1000 is a true capacitor model with a fixed, hypercardioid polar response. The frequency response is nominally flat, extending from 70Hz to 18kHz, and a gentle bass roll-off is built in to counter the proximity effect when used for close miking. A switchable high-pass filter with a 12dB-per-octave response comes in at 130Hz, and the transformerless electronics provide a sensitivity of 11mV/Pascal; no pad switch is provided. Operation is from phantom power in the 12 to 48V range. The mic output is muted for around 20 seconds after switching on while the circuitry stabilises.

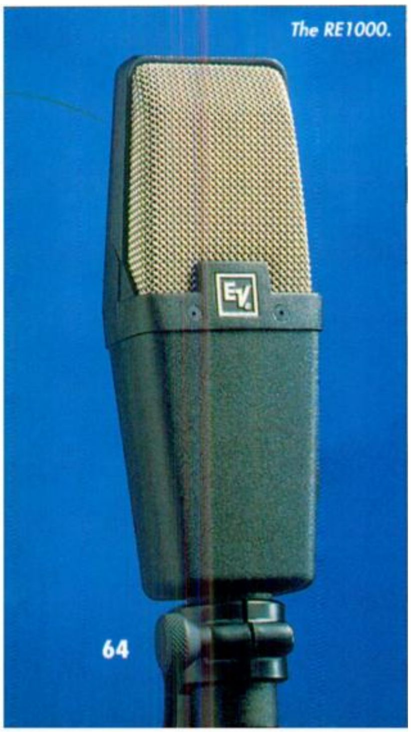
With an equivalent noise of 14dB SPL (A-weighted), this is a high-output, low-noise microphone suitable for both vocal and instrument recording. The diaphragm isn't quite as large as in most 'classic' studio mics, but EV claim their capsule geometry combines the high output level of the large-diaphragm capsule with the improved transient response of a smaller diaphragm. The capsule incorporates a very thin gold-sputtered diaphragm which is environmentally stabilised to ensure consistent long-term operation. Though I'm unfamiliar with the next term, the manufacturers describe the capsule as a 'short-D', high-efficiency unit where the rear electrode is made from gold-laminated ceramic, precision-spaced behind the diaphragm.

Cosmetically, the mic is finished in a business-like, textured black enamel, and features a rugged basket incorporating a two-stage pop filter. Accessories include a very nice hard-shell carry case and a stand clip. A shockmount is available as an option, but is worth the extra just for its looks!

THE RE2000

Unlike the RE1000, the upmarket RE2000 comes with a rugged shockmount and external pop shield as standard, all packed in a hard-shell carry case. Again, the polar pattern is fixed hypercardioid — unusual on a mic of this price — and the overall frequency response is virtually identical to that of its sibling. Visually, the mic in its cradle is just fabulous — check out the photo!

Weighing in at over twice the price of the RE1000, the RE2000 adopts the same basic housing and capsule, but aside from the obvious black grille mesh and the inclusion of a 10dB pad switch, there are major technical differences behind the scenes. There's a capsule heater to prevent condensation-related problems, and the electronic circuitry is driven from its own mains-powered, high-precision power supply. This liberates the designers from the restrictions of the limited current available from phantom power sources, and allows a much more sophisticated power supply design to be used with a view to bettering the noise performance of the already creditable RE1000. Regular phantom power may still be used, though this disables the capsule heater circuit. Sensitivity is almost double that of the RE1000, clocking in at 20mV per Pascal, and the equivalent input noise is 4dB better at only 10dB (A-weighted). The pad switch pushes the maximum


The RE1000.

SPL up to 148dB, and the output stage uses a high-quality Jensen transformer rather than the transformerless circuit of the RE1000.

The computer grade power supply takes the form of a compact plastic 'brick' and connects to the mic using a fixed 5-pin XLR cable. A fixed mains cable with a female IEC connector provides the power, and the signal cable splits out into a conventional XLR mic lead.

THE RE200

I was going to save this mic for a separate review, but for reasons that will become evident later, I decided to run the three models together. Designed for general-purpose recording, broadcast and sound-for-picture work, the true capacitor, cardioid RE200 is compact and neat, and can run from any phantom power source in the range 12 to 48V. An internal DC-to-DC converter ensures the optimum polarising voltage regardless of the phantom power supply voltage. The frequency range is quoted as 50Hz to 18kHz, and the response includes a deliberate presence rise, most predominant above 3 to 4kHz, to help deliver a detailed sound with a good transient response.

Finished in non-reflective beige, this little mic appears to employ a fairly large-diameter capsule, which is cradled in an AcoustiDYM shockmount, and utilises a gold-laminated diaphragm. I couldn't see properly just by unscrewing the grille, but the suspension did seem very soft and well damped. A stand mounting clip, foam windshield, and soft carry pouch are supplied with the mic.

The RE200 is intended for use with acoustic instruments and choirs, both recorded and live, and is also recommended for use with brass instruments. The reasonably high sensitivity of 10mV/Pascal makes the RE200 a realistic choice for acoustic guitars, and the equivalent noise is just 21dB SPL (A-weighted) — so you aren't restricted to working very close up all the time. There's no pad switch on this mic, but it can handle levels up to 130dB without clipping, making it equally suitable for percussion instruments.

THE MICS IN USE

The RE1000 turned out to be an excellent, flattering, vocal microphone with a great deal of warmth, projection and intimacy. Compared to some of my other large-diaphragm capacitor mics, the RE1000 had more of the mid-range punch associated with good dynamic models, but without compromising on transparency, and without any trace of the honkyness often associated with dynamic mics. Indeed, it reminded me of some of the valve models I've tried, especially when used up close.

Plugging in the RE2000 produced a little more level, as you might expect, and there was a slight difference in tone brought about by the transformer output stage which warmed the sound up even more, but the difference was very subtle. The RE2000 exhibited the same kind of sensitivity as my other 'name' capacitor mics, and the background noise level was low, as promised.

But the big surprise was the relatively inexpensive RE200 which, when compared to the RE1000, sounded very similar indeed, hence my decision to include it in the review — I wonder if they use a variation on the same capsule? There's slightly more presence from the RE200, as its frequency plot would lead you to expect, but the underlying warmth and thickness of tone is undiminished. I think the RE200, if used with a pop shield, would make an excellent vocal mic, as well as an instrument mic — although I admit it doesn't have the RE2000's looks .

The only criticisms I have of these mics are minor; the metal bodies of the RE1000 and RE2000 ring slightly when handled, and while you're unlikely to handle them while recording, I can't help wondering whether the bodywork picks up any appreciable amount of sound when used with loud sound sources. I also feel that variable pattern switching should have been provided for the RE2000, though the chosen capsule topography may preclude this option.

The RE200.

SUMMARY

All three of these mics deserve to be taken very seriously, and all have a thick, almost tube-like family sound; I feel they are mics you would choose for their character rather than for their impartiality. The RE200 and RE1000 offer very good value, and in its own exclusive way, so does the flagship RE2000, but I still feel that well over £2,000 is a lot to ask for a fixed-pattern mic. I'm also curious as to why the hypercardioid pattern was chosen as opposed to regular cardioid; I can see why hypercardioid might be useful live, but in the studio, it can actually be an inconvenience if the singer moves around much.

All three mics have good technical specs with the RE2000 showing a particularly low noise floor, but if you need a mic mainly for close vocals, then sensitivity and ultimate noise performance isn't as important as it might be if you're trying to record a choir at 20 metres. For a top professional studio with a big budget, the RE2000 is obviously the best choice, but for the project studio owner who doesn't need the pose value of the RE1000/2000, the RE200 delivers an attractive balance of cost and performance.

Inevitably, the caveat with microphones of character is that they will flatter some singers but may not work so well with others — which is why pro studios carry such a large stock of different mic types. If you intend to use one of these mics with a specific vocalist, then I'd suggest you try one before buying, but if you're after a warm, intimate sound that has the ability to cut through a mix, I think you'll like what you hear from these mics.

info

£ RE1000 £937.65; RE2000 £2320.63; RE200 £405.38. All prices include VAT; a price for the 325 shockmount for the RE1000 has yet to be set.

A Shuttlesound, 4 The Willows Centre, Willow Lane, Mitcham, Surrey CR4 4NX.

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pros & cons

EV RE1000/RE2000/RE200

£938/£2321/£405

pros
- Warm, intimate sound.
- RE1000 and RE2000 look great as well as having excellent technical specifications.
- RE1000 and R2000 supplied with very tough 'shell' cases.

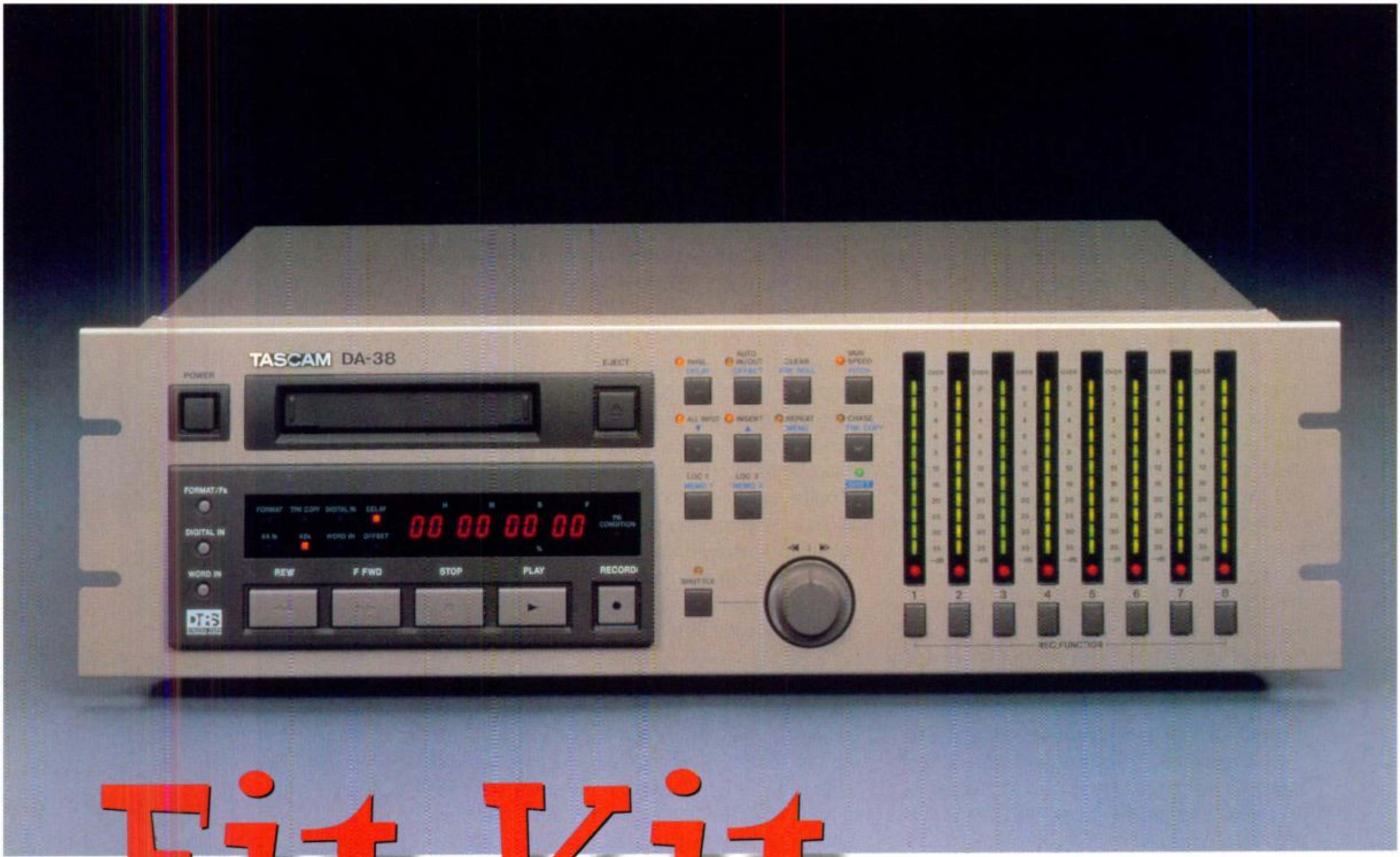
cons
- RE2000 is very expensive for a single-pattern microphone.

summary

The RE2000 may be the flagship, but I'd be more tempted by the RE1000 or RE200 on a purely value for money basis. All three mics share a common family sound, and it's one that I find endearingly flattering, especially on vocals.

SOUND ON SOUND

WRH



Fit Kit

TASCAM DA38 DIGITAL RECORDER

Can Tascam's lean, mean DA38 offer musicians more functionality than the portlier DA88 without compromising on quality — and give the Alesis ADAT XT a run for its money? PAUL WHITE investigates.

When the budget digital tape-based multitrack war between the Alesis ADAT and Tascam DA88 finally died down to a mere skirmish, Alesis seemed to come out top in the project studio music recording market while the professional post-production studios, on the whole, took the Tascam route. The reasons for this apparent demarcation are numerous, but price was obviously a major factor, and for the project studio owner, the lower street price of ADATs was obviously very attractive. The ADAT was also very musician-friendly when coupled to a BRC remote controller, although the Tascam's much faster spooling speed and longer recording time made it better suited to video-chasing than the relatively slow ADAT.

ENTER THE DA38

Since then, Alesis have launched the ADAT XT with its faster wind speed and improved front panel functions, but Tascam have taken a different approach; instead of replacing the DA88, they've built a lower-cost machine using the same underlying technology, and added certain features designed to attract the musician. These include a digital patchbay, allowing any input to be recorded to any tape track without repatching, and the ability to digitally copy audio data between tracks. What the DA38 loses is the ability to directly sync to external sources, though including a single DA88 in a multi-machine system will provide a means to do so. The DA38 is also less modular than the DA88, so whereas the former can often be serviced in the field by changing boards, the DA38 is more likely to have to be returned for servicing.

In common with the DA88, the 8-track DA38 uses 8mm video-style tape cassettes, and special formulations are now available optimised for digital audio recording. Up to 16 DA38s can be synchronised in a master/slave arrangement for multitrack recording (giving up to 128 tracks) — and the DA38 will also integrate seamlessly into existing DA88 systems with no compatibility problems. Like its big brother, the DA38 has a shuttle wheel for identifying precise points on tape, and there's an auto punch-in/out system with a Rehearse mode and user-selectable pre- and post-roll for musicians working alone. Punching in or out creates a very short crossfade, so there are no glitches, clicks or gaps. It's also now possible to copy material from one track to another internally, so you can, for example, compile a perfect vocal track by 'cherry-picking' the best parts from several takes on the other tracks. A small amount of track

▶

pros & cons

TASCAM DA38 £2999

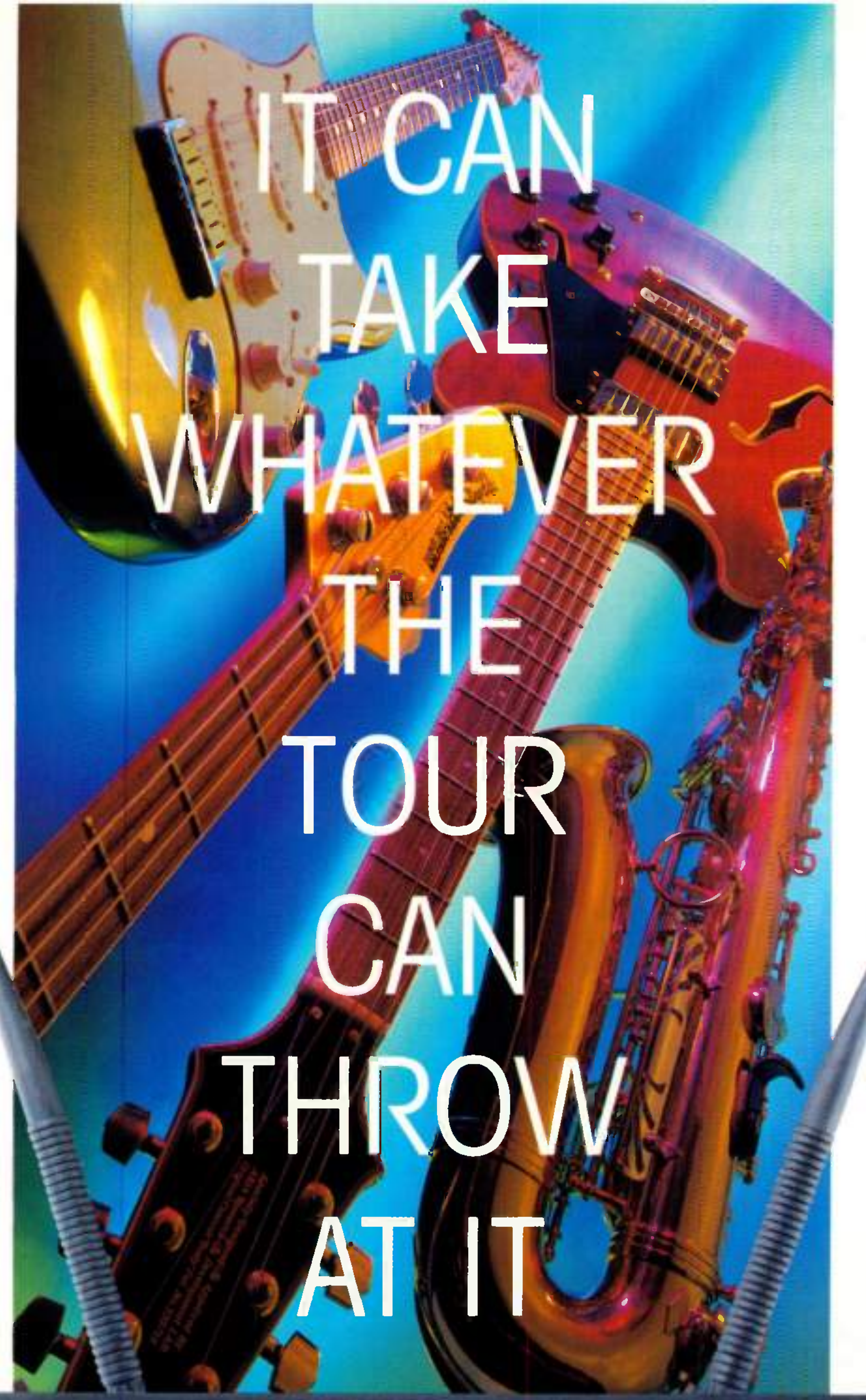
pros
- Fast, smooth transport.
- Excellent sound quality.
- Relatively inexpensive to add MTC and MMC via the optional MMC38.
- Internal digital routing and track bouncing.

cons
- Only two locate points.
- Can't be synchronised to external timecode unless connected as part of a DA88 system.

summary
Tascam have retained all the key features of the DA88 except external sync, and even added a few more musician-friendly functions, while significantly lowering the price.

SOUND ON SOUND

WRH



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Based on the hugely successful WMS 900 system (tours include Peter Gabriel, Rod Stewart, Wet Wet Wet and 1996's Simply Red dates), the WMS 300 is a total solution at a brilliant price with the handheld system starting at £869·00. Truly a radio microphone system to take anything a tour can throw at it.

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"The sound quality of the DA38 is up to the same very high standard as the DA88."

initiated from the transport controls, via a remote controller or footswitch, or via auto punch-in/out. The shuttle wheel is particularly useful for locating difficult punch-in/out locations by ear. As with the DA88, various monitor modes are available to ensure that you always hear what you need to hear at the multitrack outputs. These modes are: All Input, Auto Input, Insert and Shuttle. All Input monitors all inputs regardless of record status, while Auto means that track monitoring is from the tape in Play, but directly from the input in Stop, Wind or Rec Ready modes. Insert is effectively the same as Auto except that in Rec Ready or Play modes, the track output is monitored off tape until Record mode is entered, at which point the track output switches to monitoring the input. The ability to monitor off tape during recording is due to the DA38's 4-head drum layout. The outcome is much the same as using Auto Record mode on an ADAT — the monitoring switches from what you have on tape to the input signal when you punch into record, so you always hear the right signal over the monitors.

Shuttle lets you identify specific points by moving the tape back and forth manually via the Shuttle dial; the shuttling speed is variable from one quarter to eight times normal play speed, depending on how far you turn the dial.

USABILITY

Though it's quite a while since I used a DA88, the DA38 appears to have exactly the same feel, with a fast, positive transport, and seamless punching in and out. I don't think I'm wrong in saying that the Tascam DA38 and 88 shuttle faster than any comparable competitors by a significant margin. The front panel controls are clearly labelled and uncluttered, and though many of the buttons are dual-function, the alternate function is clearly labelled in blue and accessed via a latching Shift key. I found the footswitch punch-in and out option invaluable for recording guitar parts, and Tascam's little twist of using the footswitch to start the machine playing is actually quite useful.

I have no reservations about the sound quality of the DA38, which is up to the same very high standard as the DA88, and the metering is both positive and clearly visible. Monitoring is straightforward, and for most purposes it's easiest to leave the machine in Auto Input mode. Shuttle mode is very effective for locating precise points, and though the monitored sound is very 'chopped up' and glitchy, it's still easy to recognise what's going on.

Having front panel autolocate points is useful, but I feel that only two points is a little restrictive — something like 10 would have been more appropriate. Other than that, these work fine.

THE BOTTOM LINE

With a street price close to that of the ADAT XT, the DA38 is an extremely attractive machine [*just as SOS was going to press, we heard that the price of the ADAT XT has been cut by £500 to £2699 including VAT — Assistant Ed*]. However, the main factor affecting a purchase decision is arguably that of compatibility. If you work in an area where the DA88 is already prevalent, the DA38 assures you of full compatibility; but if you're operating in a sector of the music market where the ADAT format predominates, then you need to consider the ramifications. For example, how many projects do you carry through from start to finish, and how many do you either take over when they are part of the way through, or pass on to other facilities to finish? Having made that point, I know a number of project studio owners who use DA88s and who are supremely happy with the marketability of their adopted format.

Once these questions are decided, the issue becomes clearer, and if you have no requirement to lock your multitrack to external timecode, such as from a video machine, the DA38 offers virtually all the functionality of the more costly DA88 at a significant cost saving. Similarly, if you already own a DA88, a DA38 can be used as a slave machine, which retains the DA88's ability to sync to timecode, so the only remaining area of concern is that of ease of service. While a semi-pro musician can probably live without a machine for a few days while it goes away for service, the busy professional may find this situation less acceptable. Then again, you could argue that at this low cost, the professional could afford to keep a spare or two.

Whatever your feeling about the two major modular digital multitrack formats, the keen pricing of the DA38 means that you're no longer forced to make a choice of format entirely on the basis of price — the DA38 puts you in the position where you can make the right choice for the right reasons. Whichever way you look at it, this is a very serious machine for the money, and indicates an aggressive marketing thrust by Tascam to gain more ground in the music recording sector.

ALL OF A DITHER

The DA38 uses an 18-bit analogue-to-digital quantisation system, but records using only 16 bits, so the incoming data has to be reduced to a 16-bit format before it can be recorded. It is also possible to feed in audio at 24-bit resolution via the TDIF1 digital input, but again, this must be reduced to 16 bits before it can be used. If data is simply truncated by throwing away the least significant bits, the resolution of low-level signals is compromised, so a dithering process is used to maintain the dynamic range at the expense of a slight increase in low-level noise. Dithering may be disabled by the DA38 user if required, but in virtually all circumstances, dithered audio sounds better than undithered audio.

info

£ DA38 £2999; RC848 remote control unit £1199; RC808 remote control unit £129; RC30P footswitch £22. Prices include VAT. A price for the MMC38 MIDI Machine Control option has yet to be confirmed, but it is believed it will be no higher than £349 inc VAT.

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Northern

Bright young things creating heavenly pop:
(left to right) Steve Hillier, Sarah Blackwood, and Chris Wilkie.

Rising stars in the galaxy of pop music, Dubstar (Sarah Blackwood, vocals; Chris Wilkie, guitars; and Steve Hillier, keyboards and programming) have enjoyed a run of four Top 40 singles since last autumn, and recently watched their debut album, *Disgraceful*, go gold. They're on first-name terms with electronic smash hit overlord Stephen Hague (producer of *Disgraceful*, as well as various releases by New Order, Pet Shop Boys, Erasure, OMD, and so on), have already toured their brand of catchy guitar and synth-driven dub pop all around the UK twice, and enjoyed their first number one single (*Disgraceful*'s opening track, 'Stars' made it to the pole position in Israel a few months ago). They even released a cover of a song by a completely unknown band from the North-East of England about the savage robbery of an OAP's high-rise flat as a single. A guaranteed, resounding, sure-fire flop in the Boyzone-bedevilled charts of 1996, you might think — and yet Dubstar took 'Not So Manic Now' into the Top 20. Nothing, it would seem, can put a damper on their blazing run of success.

You might expect such triumphs to have gone straight to the head of chief Dubstar songwriter Steve Hillier, but as yet, he seems to have maintained a characteristically easy-going grip on the reins of his sanity — although he does seem

Lights

STEVE HILLIER • DUBSTAR

Newcastle-based Dubstar released one of the most successful pure pop albums of the last 12 months — and they made most of it using gear that wouldn't be out of place in many SOS readers' studios. MATT BELL gets sidereal with the band's programmer and main songwriter, Steve Hillier.

very pleased to be appearing in the pages of *SOS*, describing it as 'an ambition fulfilled'. As he and songwriting partner Chris prepared B-sides for the forthcoming Dubstar single 'Elevator Song' before departing on a European tour, he found time to talk at length about the band's Newcastle-based studio, and their attitude to modern music technology.

SETTING UP SHOP

When Dubstar signed their deal with Food Records in 1994, the band were given the funding to expand on the equipment they owned, and set up a compact studio in the centre of Newcastle. This happened towards the end of last year, after the recording of the delightful *Disgraceful*, although much of the equipment now situated in the studio was used in the making of the album. I asked Steve why the group had pushed for the studio, and how they had achieved it. "We decided very early to put new songs on every release we did, because people are paying four quid for every CD single, and it's not fair to play on people's like of the band, and give them four versions of the same song. The most cost-effective way to do this — and it does pay to have a head for the economics of this industry — was to equip ourselves with the means to record songs ourselves, rather than having to go into commercial studios. Although the record company financed this, it's now our gear. The way they look at it is that you need to have this equipment to get the job done; they had the choice of paying £10,000 for a load of remixes on each release, or spending six grand so that we could do own stuff. We can now do whatever we like, *whenever* we like, and we don't ever have to watch the clock."

The setup is simple, but effective (see gear list and the pictures elsewhere in this article), and allows the band to create release-quality masters — indeed, this is where they have recorded all their new material since the completion of *Disgraceful* (ie. the B-sides to all the singles from 'Not So Manic Now' onwards).

Steve: "All the synths and sequenced stuff comes into the Tascam MM1 keyboard mixer, and goes down to two channels on the Yamaha ProMix. All the live instruments and recordings come from the Alesis ADAT into the ProMix 01, and then we take everything digitally out of the ProMix into the Tascam DA20 DAT for mastering. It's pretty simple.

"Time is the scarcest resource you have in this industry. For that reason, so much of this gear is set up to *save* time: we've created a page in *Cubase* to give us instant access to all our instruments, for when we come to arranging a song. So if you want a bass sound, you go to MIDI channel 5 — that's set up ready for bass, and off you go. You do have to

▶

DUBSTAR STUDIO — MAIN GEAR

SYNTHS/MODULES
- Casio CZ101 keyboard synth
- Korg Wavestation SR module
- Korg M3R module
- Korg Mono Poly
- Roland JD800 keyboard synth (master keyboard)
- Roland Juno 60 keyboard synth
- Yamaha TX81Z module

SAMPLING
- Roland S760 with graphical editor

RECORDING
- Alesis ADAT
- Alesis ADAT XT
- Alesis BRC remote
- Alesis Midiverb effects
- Assorted guitar effects & pedals
- Tandy PZM mic
- Tascam DA20 DAT machine
- Tascam MM1 keyboard mixer
- Yamaha ProMix 01 digital mixer
- Zoom 9030 effects.
- Zoom 9050 effects

COMPUTING & SOFTWARE
- Atari 1040 ST
- Steinberg*Cubase*

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Bon Jovi
Bonnie Raitt
Bruce Springsteen
Crosby Stills & Nash
Doobie Brothers
Elastica
Hall & Oates
Hole
Jesus and Mary Chain
John Mellencamp Tour
Lenny Kravitz
Lindsey Buckingham
Natalie Merchant
Offspring
Pearl Jam
Pulp
Queensryche
Radio Head
Red Hot Chili Peppers
Roxette
Smashing Pumpkins
Sonic Youth
Soundgarden
Stone Temple Pilots
Suede
The Beach Boys
Yngwie Malmsteen
1996 MTV Video Awards

BUT WHICH ONE?

The above list indicates that the artiste and/or the artist's band and/or the artist's tour have used an Audix OM series microphone. It does not necessarily represent an official endorsement of the product or allegiance to the brand. E&OE.

Dubstar

spend a certain amount of time getting everything set up like that, but it's like an investment. As a result, we can record extremely quickly. Yesterday, Chris and I started on two tracks for B-sides. The songs were written, but the arrangements weren't done. We managed to do everything, apart from the vocals, in just five hours. So much of what you can get out of these machines depends on how you approach them, and this sort of setup is a breeding ground for creativity — but as it gets more complicated, all sorts of other issues come into play".

For this reason, the band were determined not to over-complicate their setup. Steve showed me around the studio, explaining how they had made the purchase decisions to equip their facility. "We had just one ADAT at first, which we bought when they were right at the end of producing that model, late last year. Then, when we wanted another one, they didn't have any more, so we had to get an ADAT XT. We had to get another, because the first one kept breaking down! The XT is a much better machine, though. We did the B-sides for 'Not So Manic Now' on the original ADAT, and the B-sides for 'Stars' on the XT, and the difference was incredible." With the record company funding them, I wondered why Steve had chosen an ADAT and not gone for a Tascam DA88, or a hard disk recording system. "The only thing that was better on the DA88 was that you had built-in SMPTE-to-MIDI conversion; and I realised that it was cheaper to buy an ADAT and a BRC, which gives you that. Also, we're often in different studios, or on tour, and to replace or repair an ADAT is easier than when you're using a format that isn't quite so established, like the Tascam.

Live 'Star: this rack is the heart of the band's setup, both in the studio and on stage, and includes their Roland S760 sampler, Korg Wavestation SR, M3R and Yamaha TX81Z synth modules, Tascam MM1 keyboard mixer, and Alesis Midiverb and Zoom 9030 effects.

A stellar tunesmith — dub pop master Steve Hillier.

"One of the main reasons we didn't go to computer-based hard disk recording was that I wasn't convinced that the technology was at the right kind of level to invest in. I heard a lot about *Cubase Audio* on the Atari Falcon, and it sounded fantastic — but the one thing that put me off was the idea that you'd do a take and then have to wait a certain amount of time for the files to update. I thought that what you would gain in malleability, you would lose in computer-related delays — not to mention all the time lost in potential crashes. I do think software like that is where we're all going end up *ultimately*, but I don't think now is the time, because the software aspects haven't been developed enough yet. If somebody came up with a hardware-based hard disk recorder that was as flexible as computer-based systems, that would be fantastic — but we don't have that yet. The Roland VS880 sounds interesting, but if *we* bought one, we'd be duplicating a lot of what we've got here — you get a mixer with it, and we wouldn't need that; we've already got the ProMix."

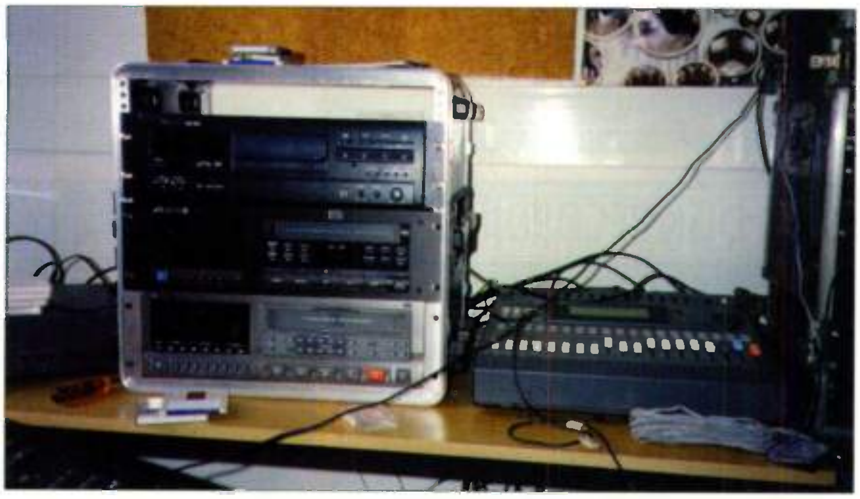
Asked whether it was the automation aspect of the ProMix that had attracted them, Steve agrees that it has been useful being able to make minute adjustments to the level of a track — particularly a vocal — and have the tweaks stored over MIDI: "If you want a vocal to sit in a mix, a lot of people will just stick a lot of compression on and leave it at that. But you can lose a lot of dynamic information that way, and also, there are musically valid times in a track where you want to tweak the level of a vocal. And, of course, you can set up *Cubase* to record the changes you make. It gets a bit confusing at times, but you can come up with some good results."

The price of the mixer was also seen as a bargain by the band. "When you consider what you get for the price — a 16-track digital mixer, two loads of effects, and three compressors — it works out much cheaper than buying the separate units! I've found it extremely reliable; in fact, of all the computerised things here, it's the only one that hasn't given us serious hassle."

A Korg Wavestation SR module was also purchased as the studio was put together, and as Steve explains, this was to make going live easier and less demanding on their gigging setup. "Part of the reason for buying that was that we were going on tour, and we had to have instant access to a load of

LIVE DUBBING

One of the Dubstar studio racks (the one containing the Roland S760, Korg Wavestation SR and M3R, Yamaha TX81Z, and Tascam MM1) also forms the heart of the band's live setup, together with the Roland JD800. The synths and sampler are all driven from a pre-programmed Yamaha MDF2 data filer. Steve: "We don't use DAT backing tapes; backing vocals, percussion and orchestral sounds come from the S760, while the Wavestation does the pads and the M3R handles the bass and piano. The TX81Z does the twiddly bits — reggae chords on off-beats, and so on. There's also a live drummer".



Dubstar record non-MIDI instrumentation and vocals on their Alesis ADAT (middle) and ADAT XT (bottom left), merge it with the backing from their MIDI instruments in the Yamaha ProMix 01 digital mixer (bottom right), and master the results with their Tascam DA20 DAT (top left).

pad sounds that didn't take up room in the sampler. It was more cost-effective to buy that than another sampler, or another ADAT for live use." On the sampling front, Steve nevertheless benefitted from the extra record company funding, being able to upgrade from his old Roland W30 to an S760, with the added luxury of the graphical editing option: "I got the S760 because I could then use all the W30 sounds I had without having to change the file format: I had a library of samples that I'd invested years of time in developing, and I decided that it really wasn't worth me spending a month converting all of the sounds when I could have been writing new songs. If you enjoy sampling a load of sounds you've sampled already, then great, cheers; but I think you could be putting your time to better use!

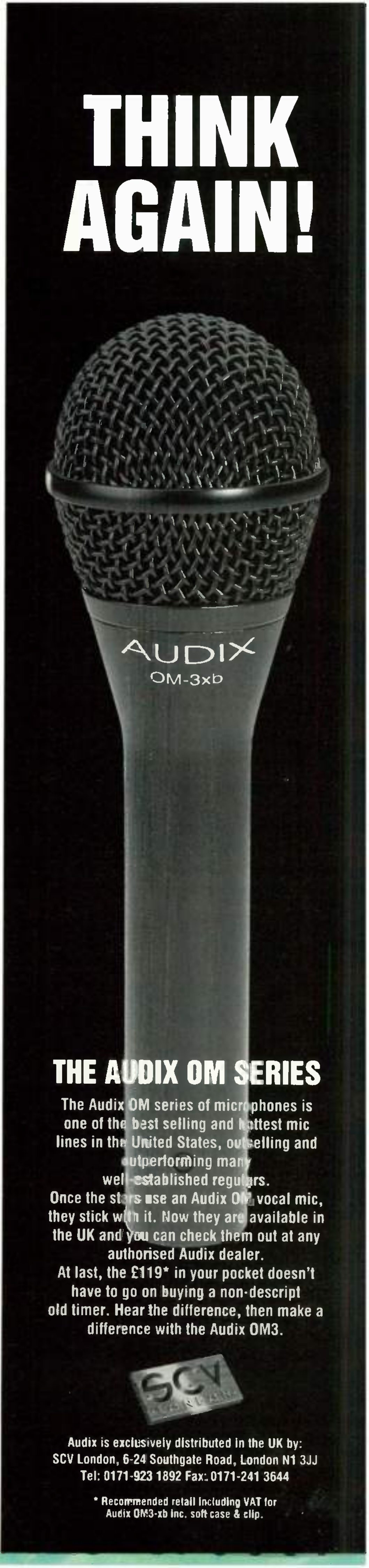
SITTING IT OUT: DEVELOPING TECHNOLOGIES

Steve: "Because our studio setup works well at the moment, I would rather stick with it for the time being, and keep an eye on how technology continues to develop. Recently, Chris was considering buying a VG8 [Roland's virtual guitar system], but I had this feeling that we'd be spending £2,000 on the first example of this new technology, when it was still at a very early stage. You can speak to people who've still got Yamaha DX1s — they were left with something that rapidly became totally obsolete after just a couple of years. Why spend £2,000 on what is effectively Roland's attempt at testing a new market?"

"The S760's graphical interface is absolutely essential if you're editing anything, or doing anything complex with MIDI. The S760 is a great machine, and again, very cost-effective. Even if you fully expand it, and get the video option and the DA400 multiple output box, you're only looking at about £2,500 for a top-flight sampler. The W30 was capable of some good things, too. At the start of 'Week In, Week Out' on *Disgraceful*, there's a pad sound, which was actually a sample of some guitar playing. It originally sounded like noise, but there was a slight pitched element to it as well, which we were able to bring out with the W30's resonant filter. There's loads of things you can do like that. The Roland S760 can really can be like an S+S keyboard if that's what you want, and if you have the application. Samplers have taken over the territory that synths *used* to occupy, and the things that are still being considered synths, like the Korg X-series half-rack units, are actually more like sample replay units now. You just use them because they give you instant access to a lot of great sounds."

YE OLDE FAITHFULS

As well as the purchases made when the Dubstar studio was set up, the facility also contains the workhorse synths and effects that the band owned previously. Most of these were used on the album *Disgraceful*, and have featured on many of the B-sides recorded at the studio. Some of the items go back several years, like Steve's Yamaha TX81Z. "I bought that before Dubstar. I had a Yamaha DX100, which I thought was excellent, and was in a band who were playing live all the time. I realised that all the moving around would wreck the keyboard eventually, and decided I needed a rack module. I was able to sell the DX100 and buy this TX81Z, which was essentially the same thing upgraded, for only about 20 quid more! It's a very, very useful machine; 8-part multitimbral, portable, and easier to program than the DX100 — you get all the ▶



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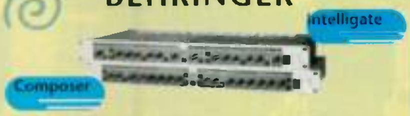

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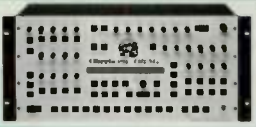

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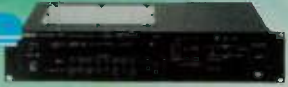

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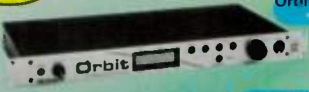

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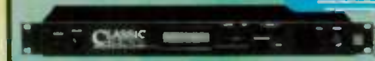

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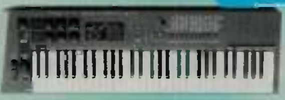

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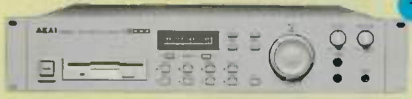

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waveforms displayed on the LCD! Also, I could dump all my DX100 sounds into it, so it was compatible with what I'd been using."

Nestling below the TX is an even older unit; an original Alesis Midiverb. Steve: "I bought that when I was still at school! You could change the sounds over MIDI, and I thought that was a good way of doing some dub stuff, by sending the drums through it and changing the sounds throughout the track. We could go and get something better now; but the Midiverb does the job! It's been on the recent B-sides; on the end of the song 'Excuse Me Father' [B-side to 'Not So Manic Now'], for example, and I defy anyone to say it's not good enough to use.

"The Zoom 9030 effects was bought for a similar reason, because that was one of the earliest effects units to respond to MIDI control messages. Also, you've got four control knobs to get to the sounds, and everything's displayed on screen; it's a very logical machine."

Steve still uses an Atari 1040 ST for sequencing. "I would like to move up from the Atari 1040 ST ultimately — I'd like to be able to use my computer for word processing and synth editing, and you can't get all of the latest editors for the Atari now. But I'm concerned with what's happening to Apple Macs at the moment, and I haven't heard *anyone* who's got anything good to say about going over to a PC! For the moment, I'm happy; I think *Cubase* for the Atari is great. I learned a lot of new things about it while we were in the studio doing *Disgraceful*, like how to use the Interactive Phrase Synthesizer; it's great for triggering breakbeats on jungle tracks, which I amuse myself by making sometimes. People keep going on about old analogue sequencers, like on the Roland SH101, and what you can do with them — but you can do all that from *Cubase*, if you can just get your head round it, and the fact that the ST display looks like somebody's plumbing..."

In the corner of the studio stand three other keyboard synths. Elsewhere in this article, Steve rightly laughs at the current widespread unthinking devotion to all synths analogue (see the 'Revival Schmival' box). Nevertheless, it seems he has a soft spot for the Korg Mono Poly. Perhaps it was because it was his first synth. "If you *are* looking for analogue sounds, I think that's the synth to get. You've got four oscillators, so you can do chords, oscillator sync, fat sounds — and delicate ones too — and you've got loads of modulation options. It's never let me down". Steve is also fond of his CZ101, which is one of his staple synths, providing him with many lead sounds, including the main organ riff on the hit single 'Anywhere', one of his favourite tracks from *Disgraceful*. "I could recommend this to anyone — it's so cheap. I got mine for £50 in '92." His Roland Juno 60, however, simply fulfils a function for him: "I used this live on the first tour; it was going cheaply, and I just wanted something to write on in soundchecks".

NO BLUES GUITAR, PLEASE — WE'RE DUBSTAR

Chris Wilkie and Steve Hillier shared a mutual liking for '80s independent music when they met. Guitar-based sonic sculptors like My Bloody Valentine, Throwing Muses, and The Durutti Column all had an influence on Chris's guitar style, and consequently on Dubstar, as Steve explains: "Chris is really into using the guitar in a way that doesn't follow the blues tradition — he's taken his lead more from the innovators of the '80s, making use of effects units creatively. In a way, he uses his guitar like some people use synths; the strings are like the oscillators, and then all the processing that comes afterwards shapes the sound. The other great thing with Chris is that it's not all machinery; a lot of it comes from his technique. He'll do swells with the volume control on his guitar, or he'll use an E-bow — there's a lot of that on the *Disgraceful* album. Many people assume some of those sounds are from synths, but if you're using guitars in that way, the sounds develop and evolve more than they do on a synth. There's a certain unpredictability to a guitar, and it's just not the same on something like a Wavestation.

"A lot of guitarists are wary of technology — maybe they think it will dilute their sound. Whereas from the outset, Chris has really embraced it. After all, it's only another colour to your palette — and you're the one in charge. You don't *have* to use it!"

SONGWRITING AND CREATIVITY

Steve clearly sees studio technology as a means to an end — a typical pragmatic quote during our conversation runs "When you're writing, your primary consideration has to be: does the music sound any good? Not to worry whether you've used a preset sound or not". And it seems this attitude has been part of the band's general approach to all levels of band work, from music-making to business dealings, from a very early stage. Asked, for example, about the trademark dubby basslines that grace much of the band's work, Steve cites these as an example of this philosophy at work. "A lot of people approach basslines as just something to fill out the bottom end, on just the chords' root notes. That's boring. For everything you put into a track, I think you need to ask yourself why it's there — and it would be a waste to just have a bassline on root notes. The bass commands a lot of your attention; you have an opportunity to do something that will strike people and which they'll enjoy, rather than just carrying the rhythm and filling out the bottom end of the frequency spectrum."

Top to bottom: Casio CZ101, Roland Juno 60 (left), and Korg Mono Poly (right). These knob-laden synths are great for the band's astral tweaks [that's enough star references — Ed].

Chris Wilkie's approach to guitar playing in Dubstar exhibits the same philosophy, Steve maintains: "Chris's attitude is that it's a cop-out to use barre chords, and cover them in distortion to give you that enormous sound, which gets you an immediate emotional response. He's more into playing melodically more interesting things, arpeggios and so on. As with the basslines, he tries to incorporate something that would work in isolation, rather than just something to fill out a song.

When he is programming MIDI backing, too, Steve maintains that you have to have a specific reason for doing anything. "Otherwise, you have no objective, and you end up with nothing at all. This applies particularly to using computers to write; if you don't have the end result in mind, you end up with nothing. If I approach a computer without an idea, I just get miserable because I can't come up with anything... I've *never* had inspiration from a piece of gear. It comes from other things: listening to other people, going to clubs — going swimming, even!"

And Steve finds an empty *Cubase* page a hindrance to creativity for another reason. "It

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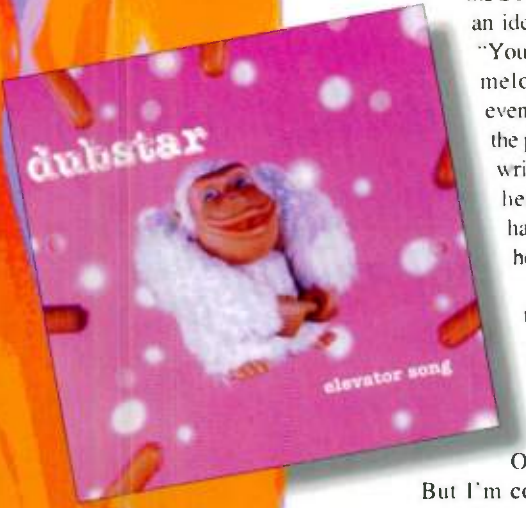
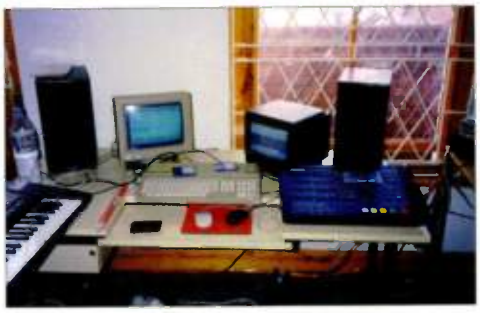
WRH

▶ doesn't keep you as focussed as something on a piano; you get bogged down with all the details. If you programme in some drums, it might take you, say, three minutes to create something useful. That's three minutes during which the guitarist can get fed up with hearing the same thing over and over, and maybe forget something... It is a different kind of discipline to being totally creative."



For these reasons, Steve does not approach his ST before he has at least the bare bones of an idea thrashed out on his acoustic piano: "You can come to a piano with a lyrical or melodic idea — or even *no* ideas, and eventually, something will take form. *That's* the point at which you go to the computer to write an arrangement. All *Cubase* does is help you out with that — and if you haven't got anything *to* arrange, it won't help. You have to have ideas."

Steve doesn't believe that this is just the way Dubstar work. "I'm sure lots of people will read this and think, 'well, that's all very well, but that's because *they're* doing conventional pop songs; verse-chorus-verse. I bet Leftfield, Orbital, and The Prodigy don't do that'. But I'm convinced that even those people — particularly Orbital — probably have certain ideas in mind when they sit down at the computer which are *equivalent* to our song structures, even if they then do most of their arranging in front of a screen; maybe they think 'well, I'd like to do something quite fast this time, and maybe this one should have some vocals in — I haven't done that for a bit. And I've got a load of guitar samples — I'll put those in somewhere...' They'll have the germ of an idea for the track in mind when they start."



More gear (left to right): Roland JD800 synth (extreme left), Atari ST running Cubase, monitor displaying Roland S760 graphical editor, Alesis BRC remote for ADATs.

RE-RECORD, NOT LEAVE TO STAY

Steve admits that doubts about the value of some sections of a song can cause major rethinks: "Often, we'll build up a track, and even get Sarah's vocals on it, before we realise that the song is 'arranged out'. We did a cover of an Astrid Gilberto song, 'A Certain Sadness', for the B-side of 'Not So Manic Now' which was a good example of this. It was originally going to be an stomping, dancey sort of number, and all the music was done — but then Sarah did her singing, and put down what I thought was one of the best vocals she'd ever done. We had to ask ourselves what the point was of covering up such an intimate vocal with a load of programming — and so in the end, we stripped the arrangement right down, and only brought the drums and everything in at the end, just to round everything off. That allowed the song to breathe much better.

"That's another problem with computers — it's a one-person job. You really need to be working in a band environment to have someone to say to you 'OK — but why have you got that stupid sound going all the way through it?' A lot of gratuitous programming which I could do if I was left to my own devices is taken out, because of how Chris feels — he doesn't like us to be known as a 'synth band'. And that's good, because it makes Dubstar a better thing."

To Chris's irritation, the comparisons between Dubstar and pure synth-based pop groups look set to continue; the music press never stop comparing the band to St Etienne or the Pet Shop Boys. As the conversation ended, I asked Steve how he felt about this: "We're in a particularly dry period for synthesizer-based *songwriting*, as opposed to just dance music, or '80s revival music that just sounds like Depeche Mode or Erasure. So I think journalists — and maybe the public — aren't used to hearing *songs* in a synth context; they go 'Oh, it's got synths and a drum machine on it — it must be the Pet Shop Boys'. I think that'll change — and if we can do anything to help that along, great." SOS

REVIVAL SCHMIVAL: STEVE ON TECHNO LUST

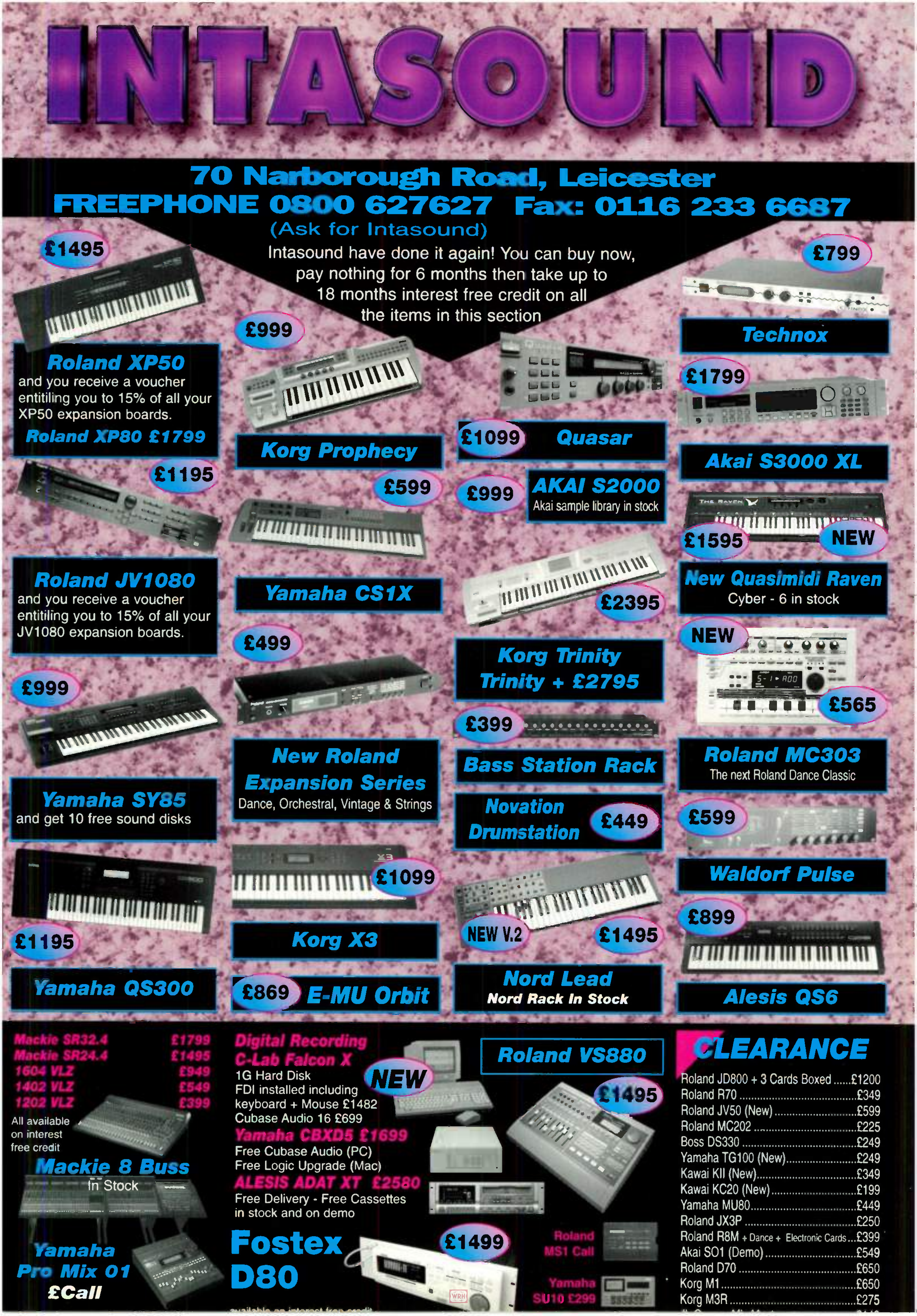
As you might expect from someone who considers himself primarily a songwriter rather than an equipment fanatic, Steve has little interest in the rise in popularity of analogue synths, and the use of too much technology for its own sake, and has been quite scathing on the subject in the past. Although more subdued when I spoke to him, he still gave the 'analogue revival' short shrift: "I think it's actually really unhealthy. What you have to remember as an aspiring keyboard player is that for all the people who become stars who talk about analogue stuff, there have been 10,000 analogue purists whose music meant absolutely bugger all! And the successful people haven't done well because they got an old Korg MS20 and found that the filter was really nice — it was that they had a good idea, they put the music together effectively, and lots of people enjoyed it. You wouldn't walk up to a Rickenbacker and think that the sound of that guitar would make your ideas into good ones.

"I think keyboard players, particularly, are prone to getting off on the toy aspect of so many of these machines. I bought our Zoom 9030 to use as a multi-effects unit when I used to play guitar. It has got weaknesses, but there are certain things that it does really well. Why would you want to spend £700 on another effects unit? Why not just keep it, use it for what it does well, and forget the fashion aspect of it? People waste a lot of money that way. The Korg M3R is one of the main things I use, but I've spoken to some keyboard players who say 'Oh, yeah, first-generation sample and synthesis — that's so '80s, man...'. But that's ridiculous! There are certain things it does really well — just like there are certain things a Rickenbacker will do well.

"I used to be a DJ, and got sent a lot of demo tapes. I could hear a lot of technology working on those for its own sake. That's useless — the only people it's interesting for is the other bands, who can then say 'oh, wow! That's a really interesting System Exclusive filter sweep — how did you do that?' Most people not only don't care, but will actively *dislike* what they will consider to be any 'muso' aspect to your electronic music."

Dubstar's remix album, consisting of material from Disgraceful *remixed by Steve Hillier and others including Way Out West and Biff & Memphis, was released on July 15. Their new single, 'Elevator Song' is released on July 22. A brand new album is planned for release before the end of the year.*

WRH



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HIP REPLAC

ROLAND MC303 GROOVEBOX

Roland once stated that they would never bring out a follow-up to their now terminally trendy TB303 Bassline. However, the success of other manufacturers' TB clones and the inflated price of the original have made them think again. DEREK JOHNSON & DEBBIE POYSER are proud to present the UK's first in-depth review of the new MC303...

Anyone determined to own those original tools of cool, Roland's TB303 Bassline, and TR808 and 909 Rhythm Composers, has to be determined *and* rich these days. You'd probably have to lay out a sum not unadjacent to £2,000 to secure all three — quite apart from the fact that they're tough to find in the first place, especially now that musicians in much of Europe, the States, Canada, and even Japan have figured out that they're desirable. Anyone who's sold a Bassline or 909 through *SOS*'s essential Reader Ads can confirm that German and Swedish buyers find distance no object when they're on the trail of these instruments.

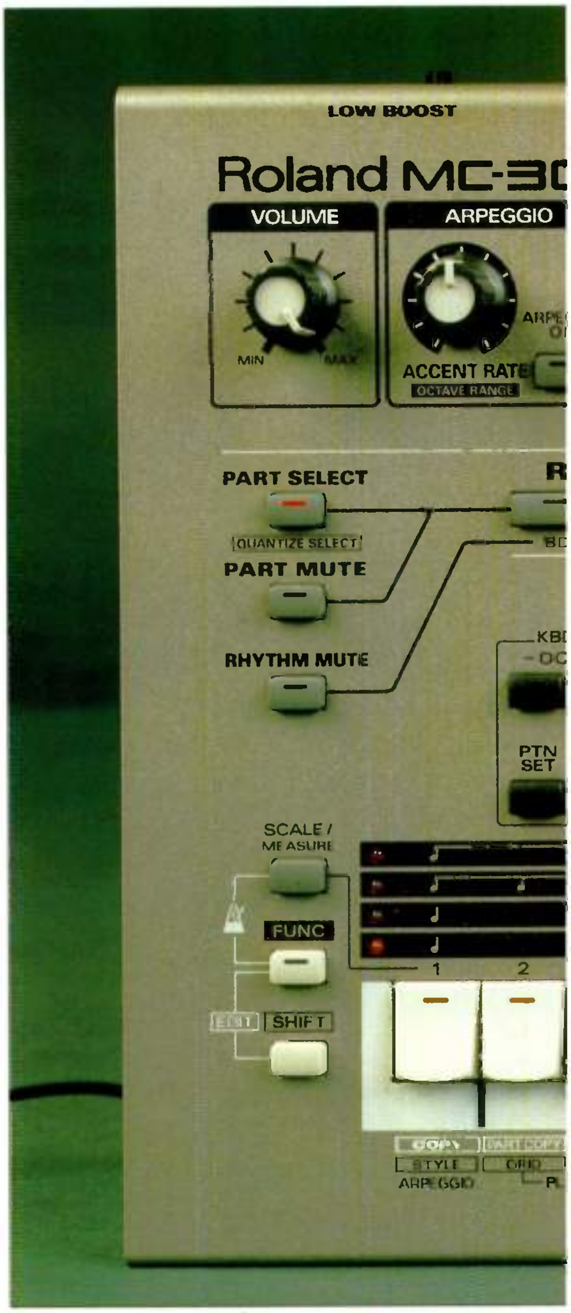
That seller's market could be about to suffer a bit of a blow, though: after years of saying that reproducing one or all of these items would be prohibitively expensive or pointless, Roland have finally released a digital, '90s answer which could become almost as hip as the originals. The MC303 hybrid sequencer/drum machine/synth module/arpeggiator has created a definite buzz in the dance world, and is already sought after, even before any significant press attention or retail availability.

WHAT IT LOOKS LIKE

Cosmetically, the MC303 Groovebox is right on the button (or should that be 'knob'?). Roland have cleverly stolen both the TB303's space-age silvery livery and the wedge shape of the Rhythm Composers for the MC, and the whole shebang has an appealing solidity, reinforced by the fact that its top casing is actually *metal*. It's a symphony in steely greys, blacks, and white, with rubbery, primitive-looking knobs, substantial little buttons with rounded corners and built-in LEDs, and clear, sober front panel screening.

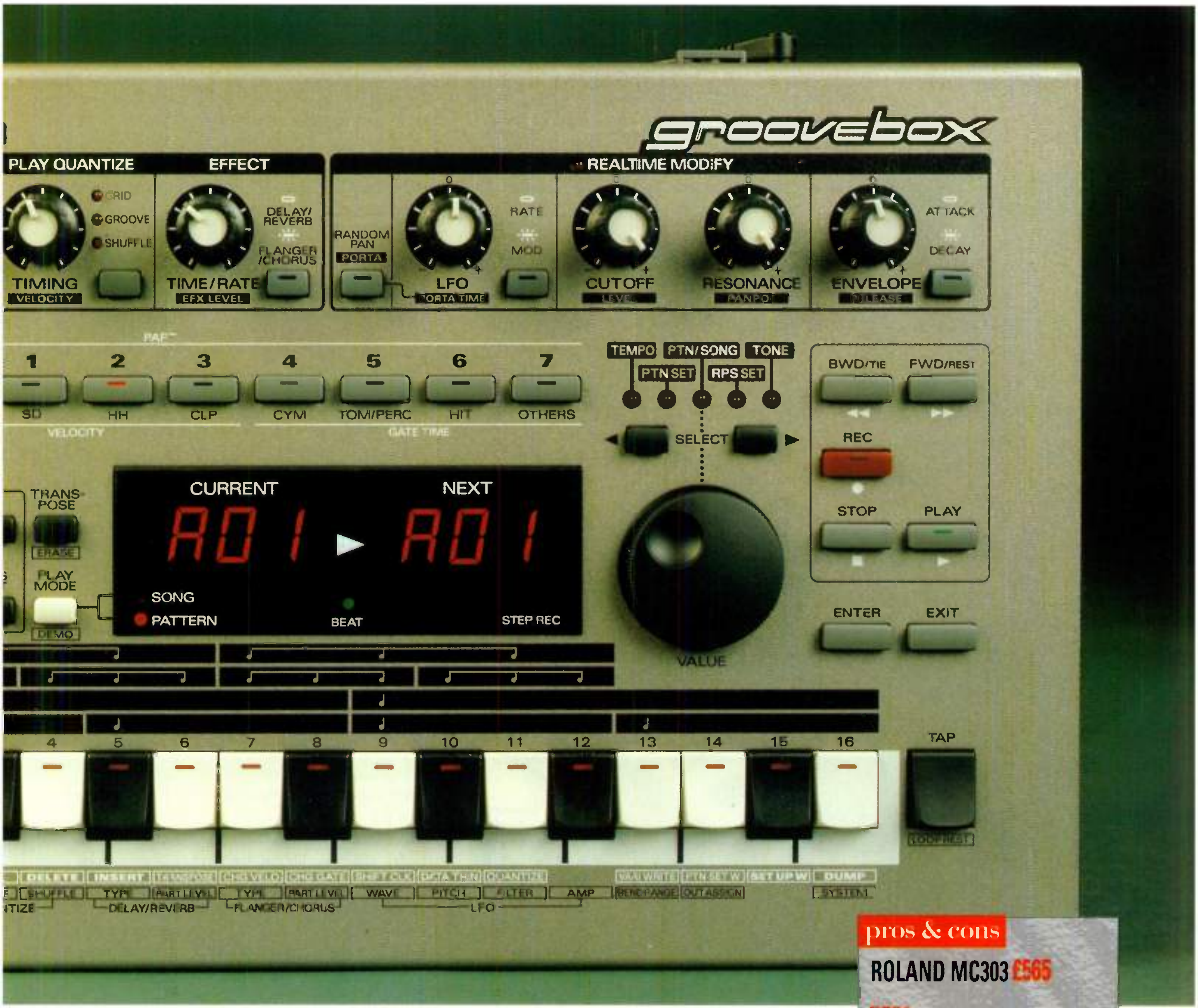
Most MC303 front panel controls do double or treble duty, which results in multiple layers of labels, and can be confusing at first. However, the labelling system is logical: editing functions accessed with the Shift button appear in boxed black type, while all global edit functions (Shift + Function) appear in boxed white type. The real-time control knobs have alternate functions, accessed with the Function button, and these are labelled with reversed-out black text. You soon begin to take this system for granted and navigate the multiple functions relatively easily. As there are so many buttons and functions, and the large picture on this page shows the front panel in such detail, we won't do the traditional front panel tour — instead, we'll deal with the various controls as they come up, which should be less boring. We will mention, however, that the MC303 has a total of 32 buttons, eight knobs, an alpha dial used for various selection functions, 16 black and white 'keys' emulating a section of keyboard, and a 6-digit LED display. There's none of your fancy graphic displays here — it's numeric information only, with the occasional cryptic mnemonic.

Back panel connections are relatively sparse, comprising MIDI In and Out, stereo outputs on jacks, a quarter-inch jack headphone socket, a pedal input, and a low-boost knob, which effectively beefs up the bottom end (like bass boost on a Walkman!). As expected, power comes from a 9V external power supply.



WOT, NO KEYBOARD?

You really could use the MC303 without a MIDI keyboard, playing and triggering with its black and white key switches, and no doubt some will. When you get frustrated with this method, an excellent partner for the Roland unit would be the Yamaha CS1x keyboard (our review of which follows this piece, starting on page 92).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SHUFFLE
TYPE
PART LEVEL
DELAY/REVERB
FLANGER/CHORUS
WAVE
PITCH
FILTER
AMP
LFO
DUMP
SYSTEM

EMENT

WHAT IT IS

There's a lot going on beneath that retro-trendy exterior:

- It's a 28-voice polyphonic sound module, with 448 sample-based presets. The sounds are editable in real time in a fairly basic way, with front panel knobs — you can tweak a simple envelope, filter cutoff and resonance, LFO, portamento, and set two effects for each sound. (The kind of control you get here, bar effects, is similar to what you would have with a real TB303.) However, a sound edited in this way can't be saved into a user patch memory, as you'd normally expect. Instead, the edited sound is saved as part of the sequencer Pattern it's used in, and the original preset remains unchanged.
- It's an 8-track, Pattern-based sequencer (one rhythm Part and seven normal Parts) with a capacity of approximately 14,000 notes, which allows real- or step-time note input. Each Pattern can be up to 32 bars long, and there are 133 preset (drum and instrumental) Patterns, and space for 50 user Patterns, plus 300 Variations. The latter are not really different Patterns, but references to the preset or user Patterns with different settings of mute buttons — you can mute elements of a Pattern with the MC303's eight Part buttons. Patterns are chained together into Songs, of which you can save 10 on board. Note-level editing of Patterns is possible, and quantising comprises corrective Grid quantising, plus Shuffle and Groove Template types. In addition, you can adjust quantisation 'strength' ▶

pros & cons

ROLAND MC303 £565

pros

- Completely self-contained dance music tool.
- Good sounds and excellent preset Patterns.
- Very well-specified arpeggiator.
- Spontaneous, immediate real-time Part muting and RPS sequencing.
- Effective real-time sound control.
- Looks superb.

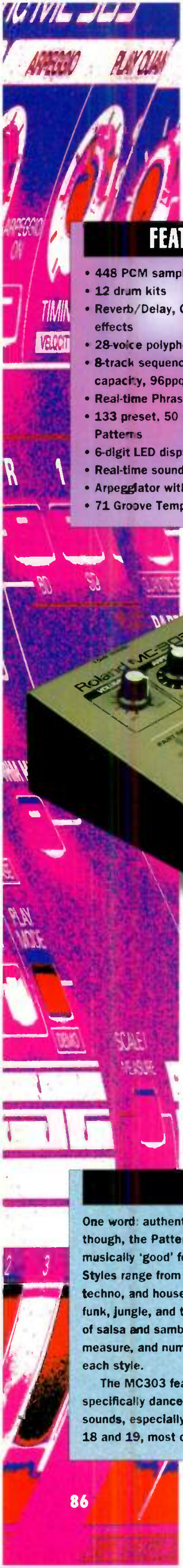
cons

- Doesn't transmit everything over MIDI, as you'd hope.
- No real user patch memories.
- Multi-layer user interface may be confusing for newcomers.
- No individual audio outputs.
- Only 50 user Pattern memories.

summary

The MC303 will walk out of the shops without any help from us — and it deserves to.

SOUND ON SOUND



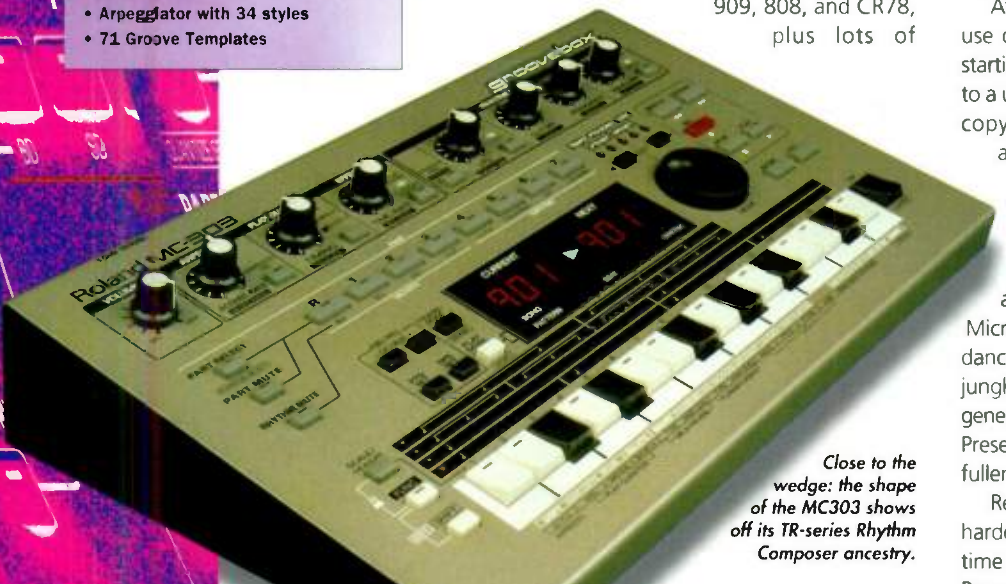
ROLAND MC303

FEATURES

- 448 PCM sample-based sounds
- 12 drum kits
- Reverb/Delay, Chorus/Flanger effects
- 28-voice polyphony
- 8-track sequencer, 14,000 note capacity, 96ppqn resolution
- Real-time Phrase Sequences
- 133 preset, 50 user, 300 Variation Patterns
- 6-digit LED display
- Real-time sound control knobs
- Arpeggiator with 34 styles
- 71 Groove Templates

▶ • It's a Real-time Phrase Sequencer (RPS), Phrases in this case being Parts (you can think of them as individual sequence tracks) nicked from MC303 Patterns, which are then assigned to the 16 black and white buttons. These are essentially for triggering and muting in real time, because they don't record as part of a sequence. Up to eight Phrases can be triggered at once, in addition to the eight Parts of the current sequence Pattern, and you can have up to 30 banks of 16 phrases each in memory. Note that Patterns can also be assigned to the black and white keys for real-time triggering.

• It's a drum machine, with a programming style that puts you in mind of a more sophisticated TR909, and with 12 kits containing sampled sounds drawn from the 909, 808, and CR78, plus lots of other general-purpose drum sounds and percussive effects.



Close to the wedge: the shape of the MC303 shows off its TR-series Rhythm Composer ancestry.

• It's a very refined arpeggiator, with 34 basic styles, including traditional single-note arpeggio types, plus complex sequence-type effects involving chords. There are also timing divisions which can radically alter the feel of an arpeggio, and a few other goodies, such as real-time alteration of octave range with a single knob.

• It's a 'traditional' 16-part multitimbral sound source for use with a sequencer. To access this mode, hold down the Play mode button while powering up the MC303. None of the front-panel controls, other than the volume knob, work in this mode, all control information coming via MIDI. Apart from drums being assigned to MIDI channel 10, this isn't a hidden General MIDI mode — the MC303 has emphatically nothing to do with GM, though we hear that its sounds are at least partly drawn from a highly-tweaked and augmented Roland GS set.

MAKING TRACKS

The best way to convey what the MC303 is like to use is to talk through creating a track with it. Many people start with a drum track, so that's where we'll start.

At the most basic level, you could simply make use of one of the MC303's preset Patterns as a starting point. But first, you need to copy the preset to a user location. If all you want is a drum Part, just copy that. You can customise the Pattern by applying a new quantise value, muting Parts (rhythm muting has its own function button, which turns the eight Part buttons into mutes for individual percussion instruments), or going into Microscope edit and adding or changing notes (more on Microscope edit later). There's a good choice of dance preset Styles — everything from trance to jungle, by way of trip hop and house — and the general quality is very authentic. See the 'Sounds and Preset Patterns' box elsewhere in this article for a fuller list.

Recording a rhythm Part from scratch isn't much harder. There are two modes to choose from: real-time input involves going into record, using the Record button in the sequencer transport control section of the front panel. The metronome starts ticking, and you choose the Part to be recorded, with the dedicated 'R' (Rhythm) Part button in this instance, then set up a range of Pattern parameters: tempo, time signature, Pattern length (up to 32 bars) and Part voice. Tempo ranges from 40bpm to 240bpm and can be controlled in real time by the Tap tempo key, but time signatures are rather limited (to 2/4, 3/4 and 4/4), with the emphasis on dance music, four-on-the-floor style — fair enough, given the MC303's orientation. ▶

SOUNDS & PRESET PATTERNS

One word: authentic. Sometimes, though, the Patterns seem almost too musically 'good' for the style of music. Styles range from trance, Goa trance, techno, and house, to hip hop, jazz funk, jungle, and trip hop, with a couple of salsa and samba Patterns for good measure, and numerous flavours of each style.

The MC303 features a lot of specifically dance-orientated synth sounds, especially in banks 1, 2, 4, 5, 18 and 19, most of them very good, very appropriate, and very well suited to real-time tweaking. However, everyone needs more standard sounds, and there are lots of these available too — pianos, organs, bells, guitar, brass, and lots of weird percussion. Some of these show their GM/GS provenance, right down to their names in the manual.

The manual takes the unusual step of naming its programmers and saying who programmed what. So when you're grooving to the excellent Goa trance set, you've got Masayuki Kurihara to thank for it! It's about time — musicians get their names on records, we get our names on our articles, but synth programmers are the unsung heroes of the music world. So come on down, Tokyo techno artist Masayuki Kurihara (Masa); American (we think) musician Ryeland Allison, who "makes electronics groove at the speed of sound"; Naoki Matsuura (GigBag) former session musician and currently Roland's director of SMF Music Data and Demo Song Productions; Shigeyoshi Kawagoe (Shige), Berklee College of Music graduate and now composer, arranger and MIDI programmer; Kazuhiro Terada (Terra), a member of techno and performance outfits Polaris and Techno Heaven, responsible for the MC303's "aesthetics and sounds"; and Kazumi Sagawa, a club performer with an outfit called White Room, who has recently had a 12-inch released on Bold Records.

If manufacturers told us more often who we have to thank for the neat stuff they make, we'd thank them more frequently!

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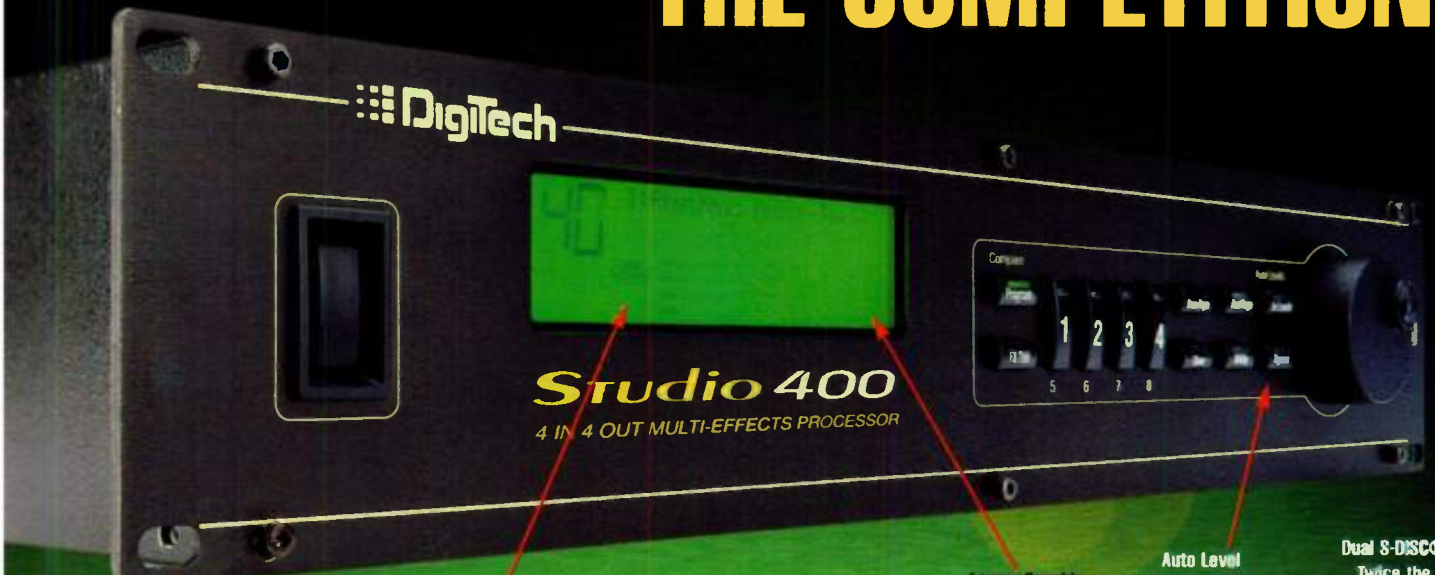
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D/A	20 bit 8X	16 bit	20 bit 64X	16 bit
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Freq Response	20-20kHz	2-18kHz	10-20kHz	2-16kHz
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ROLAND MC303

OPERATIONAL QUIRKS

Although basically stable, the MC303 has one or two non-fatal idiosyncrasies. When inputting Parts in step record, especially drums, other sounds sometimes trigger in error when placing hits — we regularly heard an open hi-hat hit when none was being input. These misfires aren't recorded, but they can be disconcerting.

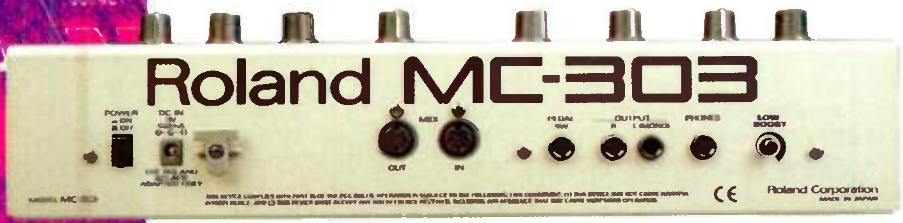
Also, if you mute Parts before going into step record, when you've finished, all the muted Parts will be unmuted again. Weird. The same thing happens following edit functions. On the knob front, twiddling the Quantise Timing knob occasionally causes a playback glitch, and when tweaking effect parameters, you don't hear the effect while you're moving the knob.

▶ Pressing 'Play' starts a 1- or 2-bar count-in (though recording can start the instant you press a note). Record your first pass, then the track continues looping as you add more rhythm parts.

Step-time recording utilises a '90s version of the interface offered by the 808/909. Hitting Play in step mode makes the LEDs on the keyboard pads flash sequentially at the selected tempo, and notes are input by pressing a pad at the desired position — bum notes are deleted by pressing the offending pad again. In a 4/4 Pattern, the 16 pads are equivalent to a bar's worth of 16th notes. To select another bar in a Pattern, use the 'FWD' and 'BWD' buttons — these move you one bar forwards or back. There's also a choice of 'Scales', the minimum unit of note that can be input. In addition to 16th notes, you can input 32nd notes, eighth-note triplets and 16th-note triplets, and freely use all four in one Pattern. Individual drum sounds are chosen by pressing Shift and the keyboard pad corresponding to the sound you want. Four velocity values are available; these have Factory settings, but you can edit them.

MELODIC PARTS

When you're satisfied with your rhythm Part, there are seven more sequence Parts you can use, for basslines, lead lines, or whatever — either from the presets or your own work. Recording melodic Parts is similar to recording rhythm Parts: in real time, it's identical, and in step time it involves techniques similar to, say, an MC202 MicroComposer. You choose a minimum step value with the Scale button, as in Rhythm Part recording, but in this case when you press a pad (or a note on a connected MIDI keyboard), the MC303 moves on one step — a 16th note, say. To input a longer note than the Scale value, press the 'BWD' button, which doubles as a 'Tie' button. To input a quarter note in 16th-note scale, for example, press the required note, followed by three presses of the Tie button. Rests are inserted with the 'FWD/Rest' button. As with the TB303 (and MC202), it's possible to input notes, note lengths and rests semi-randomly, which can produce interesting results. The MC303 differs from the TB303 and MC202 in that a note's length is defined when it's input (although you could edit this later); the older machines both allowed you to define note lengths as a separate operation. As with Rhythm Parts, there's a choice of four velocity values for notes, and in this mode, four of the Part buttons double as 'gate time ratio' buttons — they define how long the note will hold. Once again, these values are factory set, but can be altered. Chords can be entered in step and real time, and any sound tweaks you make with the knobs while recording are stored with the Part — excellent.



After the feature-stuffed control surface at the front, the back panel of the MC303 comes as a very slight let-down; there's no MIDI Thru socket, no CV/Gate outputs for easy connection to pre-MIDI gear (although this is an understandable omission), and no separate audio outs, as on the TR909. Shame...

Finished Patterns, preset and user, in any mixture, are chained into Songs; memory permitting, a Song can have up to 999 Patterns.

ARPEGGIATOR

For a bit of instant track creation, you might well choose to use the arpeggiator, since its output can be recorded into a Pattern — though it can also be used during Pattern playback. The MC303's arpeggiator is dizzyingly well-specified, far out-performing those found on most analogue synths. There's a choice of 34 styles (including unexpected styles such as Rhythm Guitar, Walking Bass and Reggae), but this number is really no limitation, since a variety of other facilities allow you to customise them almost beyond recognition:

- *Accent Rate* is tricky to explain; the manual describes it thus: "By modifying the force of the accents and the note lengths, you can change the 'groove' of the arpeggio". The effect is to shift the apparent emphasis on certain notes in the arpeggio.
- Easier to comprehend is *Octave Range*: this gives the arpeggio a range of up to three octaves in an upwards or downwards direction.
- The *Motif* setting determines the sequence in which the arpeggiated notes will be played; there are 34 options, but not all are available with all styles.
- *Beat Pattern* changes the location of accents and the length of notes; again, not all 73 beat patterns are available for all styles.
- *Shuffle Rate* is fairly self-explanatory: higher values add more 'swing' to the arpeggios.

As you can see, the number of possible combinations of settings is vast; you need never have the same type of arpeggio twice.

EDITING

Two types of sequence editing are available: Global and Microscope. Global operations affect whole Parts or Patterns and include change velocity; change gate time; shift clock (+/-99 clocks); quantise, which fixes the current quantise value for the whole Pattern, as set by the front panel Play Quantise controls; and transpose (+/-24 semitones). Transposition can also work on note ranges within Parts or Patterns, and is even available from the front panel as a 'real-time' control. This can be preset to a desired value and activated every time you hit the Transpose button. The manual makes much of this function, but some way of emulating the sequence/arpeggiator transpose function on an SH101 would have been much better, where you press a button followed by a note corresponding to the shift amount desired.

The Global options can be applied to one or ▶

GROOVE TEMPLATES

MC303 Groove quantise approaches the sophistication provided by software such as Steinberg's *Cubase*. 71 templates are provided, including 'normal', 'heavy' and 'pushed' dance, fusion, reggae, pops and rhumba, each with light and hard accenting and light and hard swing. In addition, there's a variety of exotic options including samba, salsas, quintuplets, and lagging triplets. The Timing knob adjusts quantisation 'strength' in percentage terms. When used with Groove Templates, this knob can also adjust the degree to which note velocities are moved towards Template velocities.

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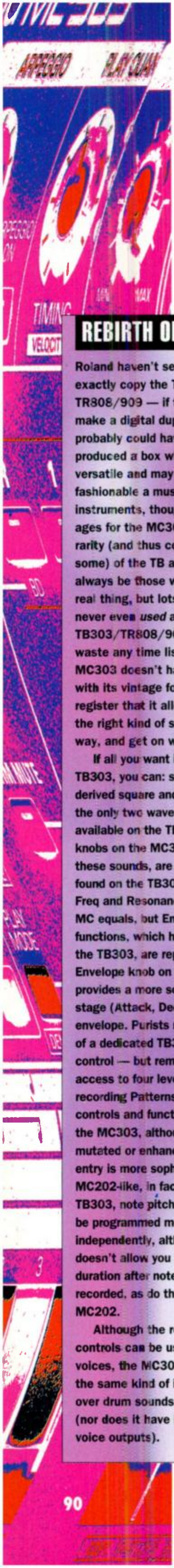

more Parts within a whole track — to give a rhythm Part a bit of a push while leaving the other Parts alone, shift it forward a little using Shift Clock. In addition, you can erase and copy Parts or Patterns, as well as deleting unwanted bars or adding blank bars.

At any time during step recording, you can access Microscope editing by pressing the Record button again. Here, you can move, modify and delete recorded notes, and insert new ones. While not as sophisticated as the Microscope mode on an MC50 (the MC303 hasn't got much of a display, remember), quite comprehensive note manipulation is possible. In Microscope mode, you can also create the slide effects (by adding portamento events) that are so important when trying to replicate a genuine TB303-style sequence. The result can be very convincing, but only with a TB303-like voice.

REAL-TIME PHRASES

Real-time Phrase Sequencing is a device found on other Roland instruments, including the XP50 workstation. As mentioned, Phrases are Parts borrowed from Patterns and assigned to the MC303's 16 black and white keys (you may borrow from preset or user Patterns, but not variation Patterns, since these, like Phrases, are themselves simply data references to Patterns). The Phrases can then be triggered however you like, up to eight at a time, for real-time embellishment of Songs. This is really only a Performance tool, as Phrases don't form a permanent part of a Pattern or Song, and don't output over MIDI. However, it's a very effective device, and great fun to use. Live, it would allow you to be very spontaneous, and of course you could record an extemporised RPS performance to tape or into an audio sequencer.

THE MC AND THE OUTSIDE WORLD

Though the MC303 easily lets you produce finished tracks without other instruments, it will also work as part of a MIDI system. For example, you can use the MC303's sequencing capabilities with sounds from another MIDI instrument by setting a Part (or Parts) in a Pattern to 'External'. This allows the Part(s) to be played by another synth or sampler, and you can also arpeggiate sounds from other MIDI instruments with the MC303's arpeggiator. Alternatively, you could use the MC303's sounds with a software sequencer, using 16-part multitimbral mode, where it acts like a normal sound module.

As mentioned earlier, the arpeggiator transmits notes over MIDI, so you can record arpeggios into an external sequencer. You might be hoping to record whole MC303 Patterns or Songs into an external sequencer, too. You can, but when you play them back using the MC303's sounds, two things happen. First, all the newly-recorded tracks in your sequence will play back on just the currently selected Part on the MC303 (if that Part uses a bass sound, the whole sequence will play back with that bass sound) and all the front panel knob tweaks will be missing, since they're not transmitted over MIDI. There is no solution to the second problem, but the first can be tackled by putting the MC into Sound Module mode, whereupon it becomes multitimbral, and the sequence plays back properly. All you need to do now is insert Bank Select and Program Change messages at the beginning of each sequence part, so that your desired sounds are selected.

You might have spotted that the MC has no MIDI Thru, a bit of an odd omission that could restrict where you can place it in a MIDI setup, though most people will probably get around this fairly easily. Finally on the MIDI front, you can dump the MC303's memory to a MIDI storage device, although this is rather slow.

Several current TB303 clone instruments feature a MIDI-CV interface to make it easy for people to use their old analogue gear with the newcomer — the Syntecno TeeBee, reviewed in *SOS* July '96, is one example, and it has a DIN Sync output too, for syncing pre-MIDI Roland drum machines or sequencers. The Novation BassStation rack also has a MIDI-CV interface and a CV/Gate input. You can't really criticise Roland for not providing anything similar, but it would have been nice to see them helping musicians integrate the MC303 with the pre-MIDI gear many of them will already have. Roland probably see the MC303 very much as a self-contained musical tool — which, to be fair, it is.

CONCLUSION

We've spent much of this review explaining how and what you can programme with the MC303. However, if you don't want to programme at all, you may never have to. Even if you can't play a note, you'll produce something worth listening to with the MC303 just by relying on the excellent preset Patterns. Chaining presets together and muting different Parts, as well as using the RPS and arpeggiator over the top of Patterns that are playing back, plus tweaking sounds in real time, all help to quickly and easily create something new from the material provided by Roland.

But this would be a bit of a sad way to spend your £565, since creating something *completely* new with the MC303 can be so rapid and spontaneous. The many tools provided by Roland, including the remarkably good arpeggiator, RPS, advanced Groove quantise options (see box), real-time knob sound control, and wide-ranging collection of current sounds, make it easy and fun to produce highly contemporary music in the dance (or simply dance-influenced) vein. It's not a TB303, TR808 or 909 — but it is a very well-designed '90s take on all three, which will surely be turning up on many a stage and in many a studio.

REBIRTH OF THE COOL?

Roland haven't seriously tried to exactly copy the TB303, or the TR808/909 — if they'd wanted to make a digital duplicate, they probably could have. Rather, they've produced a box which is much more versatile and may become as fashionable a musical tool as these instruments, though it would take ages for the MC303 to attain the rarity (and thus collectability to some) of the TB and 909. There will always be those who 'must have' the real thing, but lots of people have never even *used* a TB303/TR808/909, and they won't waste any time listing what the MC303 doesn't have when compared with its vintage forebears — they'll register that it allows them to make the right kind of sounds in the right way, and get on with the music.

If all you want is to mimic the TB303, you can: stick with the TB303-derived square and sawtooth sounds, the only two waveforms which were available on the TB303. The control knobs on the MC303, which then alter these sounds, are similar to those found on the TB303: the TB has Cutoff Freq and Resonance knobs, which the MC equals, but Env Mod and Decay functions, which have a knob each on the TB303, are replaced by a single Envelope knob on the MC303, and this provides a more sophisticated three-stage (Attack, Decay and Release) envelope. Purists may decry the lack of a dedicated TB303-style 'accent' control — but remember, you have access to four levels of velocity while recording Patterns. Other TB303 controls and functions are available on the MC303, although some are mutated or enhanced. Actual note entry is more sophisticated — more MC202-like, in fact — and as on the TB303, note pitches and durations can be programmed more or less independently, although the MC303 doesn't allow you to 'tap' in note duration after notes have been recorded, as do the TB and the MC202.

Although the real-time front panel controls can be used to treat drum voices, the MC303 doesn't provide the same kind of individual control over drum sounds as did the TR909 (nor does it have individual drum voice outputs).

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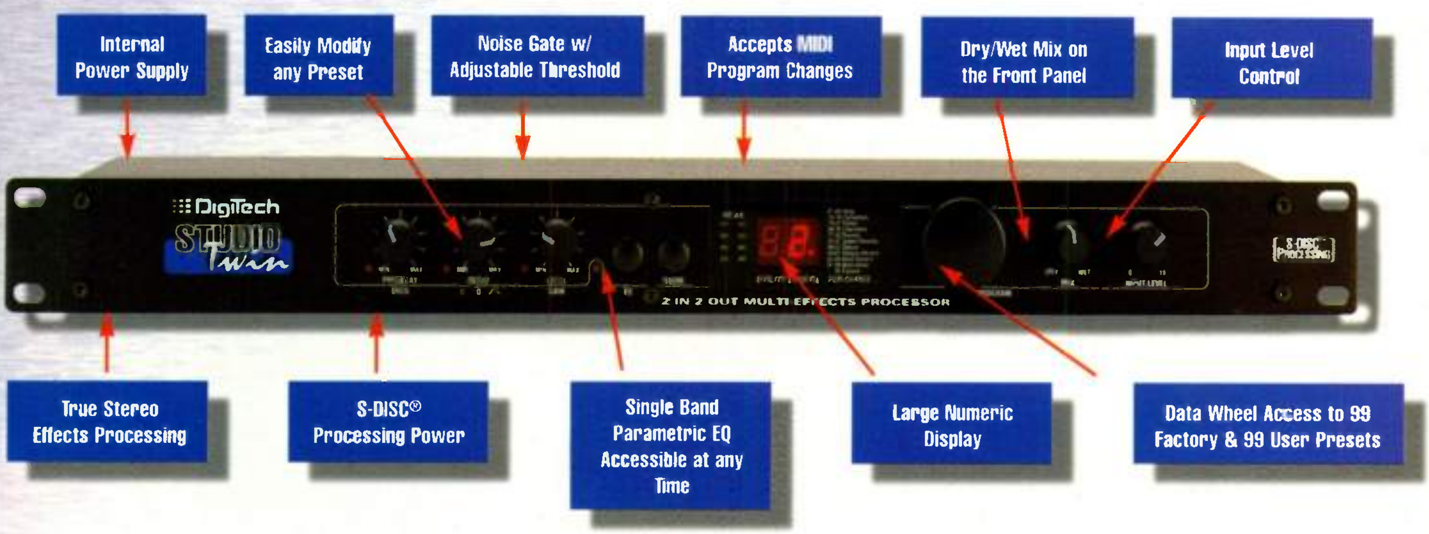
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WRH

Rhapsody in

YAMAHA CS1X CONTROL SYNTHESIZER

True, the name harks back to the CS-series synths of the '70s and '80s, but with their new CS1x, Yamaha definitely have their eyes set on the future. Critics ***DEREK JOHNSON & DEBBIE POYSER*** *analyse Yamaha's blue period...*

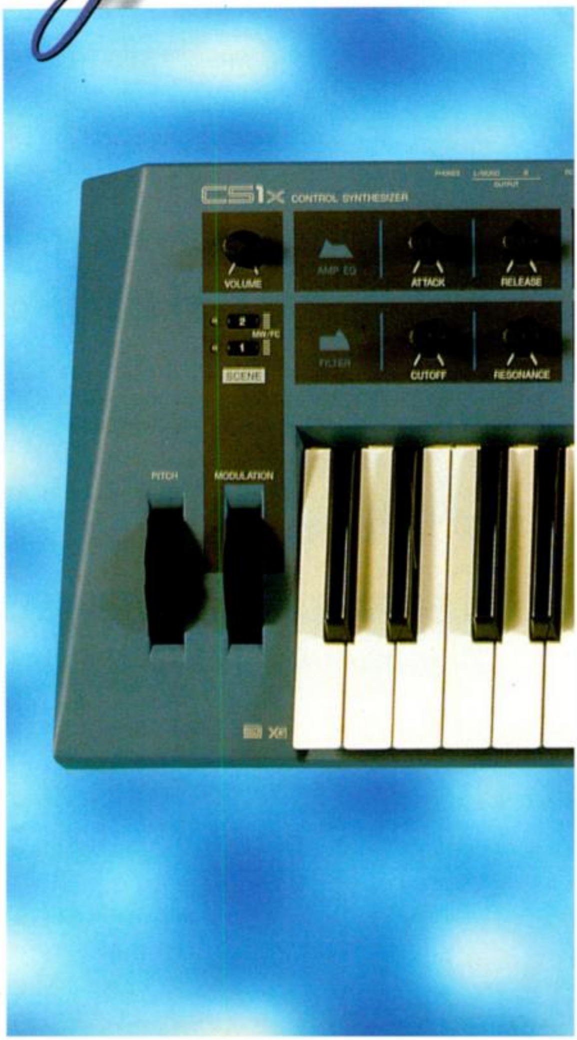
After years of practically ignoring the grass-roots revival of analogue synthesis and the demands of the market for the knob and arpeggiator-laden instruments of yesteryear, the major synth manufacturers are finally cottoning on to the fact that there's money to be made in supplying that demand. They're rather late in jumping onto a bandwagon that's already pretty full with the likes of Novation, Quasimidi and other small companies who responded to the trend some time ago. But better late than never...

You may have already read the review of Roland's MC303 Groovebox that precedes this piece (see pages 84-90). The MC303 can be seen as Roland's admission (at last) of the popularity of their TR909 and 808 drum machines, and their TB303 Bassline — and it looks like everyone's going back to their roots. Just as Roland have recycled the 303 from the TB303 and the MC from their MC202 microcomposer (also a hip second-hand buy), Yamaha have revived the venerable CS prefix from their '70s-'80s analogue synth line. The resulting stab at the dance market is the £599 CS1x, a sleek, good-looking keyboard synth which marries the kind of modern 32-note polyphonic, AWM2 GM/XG (General MIDI/Extended General MIDI) sound source we've come to expect from Yamaha with an additional 'Performance' synth section, a degree of real-time knob control, an arpeggiator, and a PC/Mac computer interface.

JUST THE KNOB

Aside from the fact that it's blue, the CS1x bears some resemblance to the Clavia Nord Lead (which, as you might remember from the May 1995 *SOS* review and front cover, is red). The 'knobular' section on the top left of the front panel is backed by a black-screened area which reminds one of the screened blue panel on the same area of the Nord Lead. The CS1x even has a sheared-off top left corner, similar to the Nord Lead's sheared-off bottom left and top right corners. The insides of the two instruments, however, are not similar. The CS1x is not an analogue synth, nor even a virtual analogue synth, like the Nord Lead. Without being critical of the synth in any way, it's more of a repackaging of existing Yamaha S+S (Sample + Synthesis) technology, with a dance market presentation.

The eye-catching case hosts a 5-octave, velocity-sensitive keyboard (but no aftertouch; the synth responds to aftertouch but the keyboard doesn't transmit it). The chunky pitch and mod wheels are on the left of the keyboard, and just above these is the collection of six knobs for real-time sound tweaking (labelled Attack, Release, Cutoff, Resonance, Assign 1/Data, and Assign 2), plus a volume knob and two buttons labelled 'Scene'. The small custom LCD has an accompanying set of six black buttons, used broadly for selecting sounds or parts of sounds, plus a Shift button and a yellow 'Arpeggio' button. Pressing Shift and Arpeggio together freezes the current arpeggio. Next to the display on the right is the numeric keypad, used for patch selection and naming, and for entering parameter values when editing, if desired. Finally, there's an editing 'matrix': a row of 10 small 'rocker' buttons, above which is an area of text labels relating to editable parameters in the CS1x's Performance mode, including arpeggiator functions and effects. A rotary knob selects between horizontal rows of parameters, and you zero in on the parameter you want to edit by tapping the rocker switch that lines up with it vertically. Once you've selected a parameter, you change its value using the same switch. Values can also be changed with the Assign 1/Data knob, which doubles as a data entry knob while editing, or with the numeric keypad. Finally, there's a group of four buttons used for selecting between the CS1x's two operating modes (of which more shortly), storing edits, and selecting Utility mode: here, you access master tuning, set Global



keyboard transposition (+/-36 semitones), select a keyboard velocity curve, set MIDI channels, set local on or off, and initialise bulk dumping of Performances to an external storage device.

The observant amongst you may spot a raised lip on the far right of the front panel. By *total* coincidence, this supports a Yamaha SU10 baby sampler, or a QY-series baby sequencer, as if it was made for the job. Either of these units, but especially the SU10, would make a very nice partner to a CS1x, making one wish that Yamaha had given the synth a bit of sample RAM.

Rear connections comprise stereo output jacks, MIDI In, Out and Thru, a computer interface socket, and three foot-controller sockets. There's also a quarter-inch headphone socket, and a mini-jack stereo input: this allows you to mix in another stereo source — a cassette deck or another synth, for example — and is ideal if you just want to jam by yourself.

The CS1x is extremely light; one reason for this could be that it uses the dreaded external power supply.

MULTI PLAY MODE

The CS1x has two operating modes. Its Yamaha provenance shows in its GM/XG sound source, accessible in what Yamaha call Multi Play mode. Using this sound source alone, you might not suspect that the synth was aimed at the dance market at all — there's the usual comprehensive array of AWM2 voices (think MU50), 480 in all, plus 11 drum kits, and three effects processors, offering Reverb, Chorus, and 'Variation'. The latter is a mixed bag of delays, distortions, rotary speaker effects, and so on (see the 'Effect Types' box for more details). Multi Play mode puts the CS1x into gear as both a controller keyboard and a multitimbral sound source for use with a sequencer. The GM/XG voices, happily, respond to edits made with the real-time control section on the front panel — which is similar in function to the real-time edit controls on Yamaha's SY85 (although on that synth, the controls take the form of sliders). Like the SY85, four of the knobs offer control over envelope Attack and Release and filter Cutoff and Resonance of a sound. The remaining two knobs are assignable, but are reserved for use by 'Performance' mode — more on this in a moment. Aside from these 'tweaks', which can nevertheless be very effective, there isn't much more you can do with GM/XG voices from the front panel in Multi Play mode; you can, however, change volume and pan settings, and set effects send levels. More detailed editing would have to be done via MIDI SysEx, as with most GM synths. There are no user memories for edits in this mode, either.

PERFORMANCE MODE

So far, so familiar. What's different about this instrument is its Performance section. This is basically a separate synth section with 128 dance-orientated presets (Performances, in Yamaha-speak) and 128 user memories for your own Performances — these are full of factory

▶

Blue

pros & cons

YAMAHA CS1x £599

pros

- Stunning value for money.
- Great looks.
- MIDI-clockable arpeggiator.
- Real-time sound tweaking.
- Three effects processors.
- Imaginative and appropriate presets.
- PC/Mac computer interface.

cons

- Arpeggiator doesn't transmit notes over MIDI.
- GM/XG side and effects only really editable over MIDI.
- Keyboard lacks aftertouch.

summary

Most criticisms pale into insignificance alongside this synth's long list of plus points for the price. Very appropriate for the dance market, and virtually guaranteed to be a hit.

SOUND ON SOUND

ARPEGGIATOR STYLES

- UpOct 1, 2 & 4
- DwOct 1, 2 & 4
- UpDwAOct
- UpDwBOct
- RandmOct 1, 2 & 4
- Techno A, B, C & D
- DAHouse
- SyncopaA & B
- Echo&Pan
- TekkEcho
- SweepLine
- PulseLine
- BassLine A, B, C & D

The time divisions available are: dotted quarter, quarter, dotted eighth, half-note triplet, eighth note, dotted sixteenth, quarter-note triplet, 16th, eighth-note triplet, and 32nd note.

settings, but they can be written over. This section is not truly multitimbral, though its Performances can be composed of up to four elements (Layers, as Yamaha call them), which can be used in a stack, or split across the keyboard — but all on the same MIDI channel. The raw material for the Performance Layers is contained in 12 banks of up to 128 voices each, which adds up to a huge number of sounds you can use to create new Performances. You could almost think of these voices as waveforms, although they each behave much as a preset synth patch.

The emphasis of the Performance section is on what you'd expect from the name — real-time Performance. In accordance with its 'real' synth feel, Performance synth sounds can be properly edited, parameter-access style, from the CS1x's front panel, as well as tweaked with the six real-time control knobs; the two assignable knobs which don't work in Multi Play mode can be assigned in Performance mode to any of 28 parameters per knob, which range from traditional synthesis parameters to arpeggiator tempo and mod wheel cutoff. You can also assign a volume pedal-type foot controller to a variety of MIDI Controllers.

Performance mode is really where the editing matrix comes into its own. It's not possible to start from a completely initialised patch, but you can comprehensively edit the CS1x's Performances from the matrix. There are 20 parameters common to a Performance as a whole, plus 40 parameters that can be set individually for each of the four Layers (see box 'Performance Synthesizer Parameters' for a list). For a synth in this price range, that's considerable editability and compares favourably in terms of sonic control and accessibility with more expensive instruments.

The CS1x's rear panel connections, including the PC/Mac interface.

The best programming strategy is to start with a Performance that's close to the result you're after, or you could set up a neutral 'initial' Performance — four Layers of simple sine waves, for example — and save it in the User bank. There is no convenient way to mute Layers during editing (as with an SY85, say), so fine-tuning individual Layers can be a little awkward. However, if you want to use the same settings for a parameter on all Layers in a Performance, simply press 'Shift' while editing the selected parameter.

Performance mode is also where the arpeggiator resides. This offers 30 arpeggio types and only works with Performances (including drum and percussion-based Performances), not with the GM/XG voices in Multi Play mode. Although 30 arpeggio styles doesn't seem like a huge amount, this is actually a comprehensive selection (see box 'Arpeggio Styles'), and a range of 10 timing sub-divisions is available, which can change the feel of a pattern completely.

> "The real-time editing knobs allow on-the-fly tweaking of the essentials of a sound."

An arpeggio's tempo can be set between 40 and 240bpm, or clocked from an external MIDI device. For a little more flexibility, it's possible to split the keyboard at middle C so that the lower half is arpeggiated while the upper half isn't, allowing you to play chords or melodies unimpeded. It's an odd thing, but arpeggiators have a vibe about them that other, more sophisticated, auto-accompaniment tools lack. And if you've been wondering, no, you can't define your own arpeggio styles, which is a shame.

HOW THE MODES WORK TOGETHER

Fortunately, the CS1x's Multi Play and Performance modes can work together to some extent, although you wouldn't really know it from the manual. In Performance mode, you can have 12 GM/XG parts from the CS1x (including drums on MIDI channel 10) playing via a sequencer, as a backing track, while you wibble, solo, and arpeggiate with the Performance section. Live, this would enable you to have a full-sounding backing while maintaining some performing spontaneity. In the studio, the same situation would pertain, but you could be recording your real-time wibblings into the sequencer too. Note that the arpeggiator does *not* transmit its arpeggios as individual notes over MIDI. It's essentially a playback device, and if you want arpeggios as part of a sequence, you have to record the chords you want arpeggiated (you'll be hearing them being arpeggiated, as usual, while you play) and then have the arpeggiator work on the recorded chords as they play back.

There's more overlap between the GM/XG voices and Performance mode when it comes to sounds. Performances, as mentioned, can be made up from sounds in the 12 banks of basic voices, but you're also allowed to make up Performances using GM/XG voices as the Layers. Once you've got the required GM/XG voice into a Performance, ▶

CS1X FEATURES

- 61-note velocity-sensitive keyboard.
- 4.5Mb waveform ROM.
- 480 GM/XG voices, 11 GM/XG drum kits.
- 256 preset, 128 User Performances.
- Three effects processors.
- Arpeggiator with 30 styles.
- Real-time sound control knobs and two Scene memories.
- 32-note polyphony.
- 16-part multitimbrality.
- PC/Mac computer interface.

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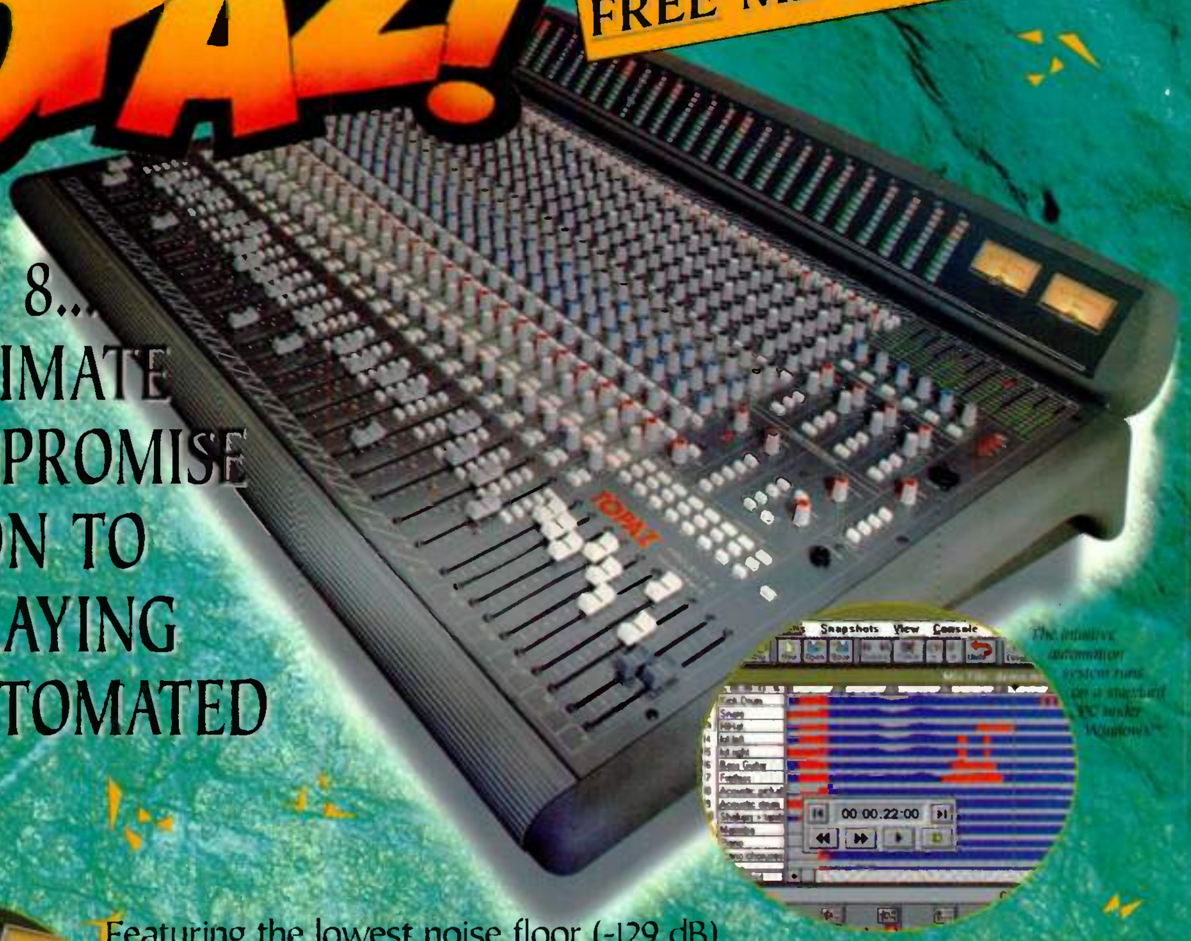

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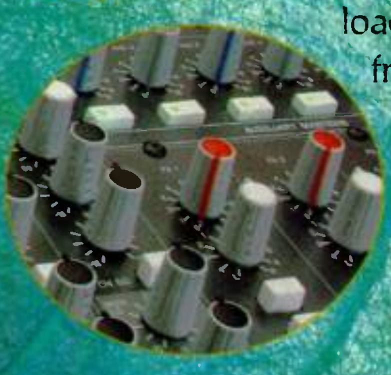

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you can use all the synth's editing facilities on it: if you really must edit and arpeggiate that GM Bassoon, you could make up a Performance using just that voice. So there are some links between the two modes of the CS1x, which is all to the good as far as sonic potential is concerned.

REAL-TIME CONTROL

The real-time editing knobs allow on-the-fly tweaking of the essentials of a sound — and that includes drum sounds. This facility is immediate, hands-on, and fun — and pretty close, in terms of feel, to using the control knobs of an analogue synth. It's also well-implemented, in that there is hardly anything in the way of digital 'stepping' when the knobs are moved: it only occurs slightly when you wiggle the Cutoff knob with the Resonance set full on. The knob tweaks are sent out over MIDI too, so you can record them into a sequencer. Some sounds respond better than others to real-time editing, because the knobs aren't transmitting absolute values but are providing a positive or negative offset to a parameter's current value — if a Performance is already pretty resonant, for example, you'll only be able to back off the resonance, rather than add more. As mentioned earlier, the four main labelled knobs, EG Attack and Release, and Filter Cutoff and Resonance, work on both Performances and GM/XG voices; you can save a Performance edited in this way by simply pressing the Store button, but you won't be able to easily store tweaked GM/XG voices — there are no memories on board for these. This is a shame, but you could put a tweaked GM/XG voice into a Performance and then store it in a Performance memory.

A neat addition to the CS1x's real-time control section is its 'Scenes'. These are two memories which store 'snapshots' of the knob settings for a Performance. You can store two differently-tweaked versions of a Performance and swap between them for predictable timbre changes, which is very useful and could be a good way to get out of a mess if you've wiggled too far... Each Scene button has an accompaning LED which lights when it's pressed, and when a Scene is selected, the editing knobs become inactive. If you press both Scene buttons at the same time, the mod wheel (or a connected volume pedal-type foot controller) crossfades between the two versions. Both the Scene and Scene crossfade functions are an attempt to recreate some of the real-time fun of analogue synthesis, and they work very well.

EFFECTS

The CS1x's three effects processors (whose sound quality is fine, by the way) provide a fairly comprehensive selection of treatments. Reverbs and choruses are the job of the first two, and the third, Variation, provides choruses and reverbs plus more unusual treatments. Variation effects are always 'insertion' effects, which let you specify which voice will be treated by the effect. The classic example used to illustrate this concept is the ability to put a distortion effect on an electric guitar patch without having the backing turn into Nine Inch Nails! The distortion in this example would be an insertion effect.

While the Variation effects are indisputably insertion effects in Multi Play mode, in Performance mode you can specify that all four Layers of a Performance are effected by the same insertion effect. If you have GM/XG voices playing as backing while in Performance mode, you can't use the insertion effect on the GM/XG voices.

Having said that the Variation effects are always insertion effects, we should point out that there is a way of making them behave as ordinary 'system' effects: you have to send the synth a MIDI Control Change message from an external device (a sequencer, for example). Likewise, MIDI Control Changes need to be used if you want to change effect types in Multi Play mode, which is a bit of a pain — the three effects default to Hall 1, Chorus 1 and Delay L,C,R.

Effect editability isn't really available on the CS1x: the Reverb and Chorus effects can't be edited from the front panel, although given the right piece of MIDI software, all parameters are accessible over MIDI — for example, reverb time, diffusion and LPF cutoff on reverbs. The Variation effects *are* fully editable from the front panel, but only in Performance mode.

In normal use, the Reverb and Chorus effects are accessed by a send control. Each Layer of a Performance has its own send level, which allows you to set the right amount of effect for each Layer. The same goes for Multi Play mode, where each part has its own send level. As noted above, Variation effects are always 'insertion' effects unless you tell them, via MIDI, to become system effects. As Insertion effects, they can either be on or off; when they're told to behave as a system effect, the on/off switch becomes a send level control.

SOUNDS

As already mentioned, the CS1x's GM/XG voices come from Yamaha's MU50 sound module (see review in *SOS* September 1995). It's a serviceable collection, with no real disappointments, and quite a few highlights, including the lovely harp and some brass and woodwind that's a cut above the rest.

What you'll be most interested in is the

EFFECT TYPES

REVERB
- Hall 1 & 2
- Room 1-3
- Stage 1 & 2
- Plate
- White Room
- Tunnel
- Basement

CHORUS
- Chorus 1-4
- Celeste 1-4
- Flanger 1-3

VARIATION
- Hall 1 & 2
- Room 1-3
- Stage 1 & 2
- Plate
- Delay L, C, R
- Delay L, R
- Echo
- Cross Delay
- Early Reflection 1 & 2
- Gate Reverb
- Reverse Gate
- Karaoke 1-3
- Chorus 1-4
- Celeste 1-4
- Flanger 1-3
- Symphonic
- Rotary Speaker
- Tremolo
- Auto Pan
- Phaser 1 & 2
- Distortion
- Overdrive
- Amp Simulator
- Mono 3-band EQ
- Stereo 2-band EQ
- Auto-wah

PERFORMANCE SYNTH PARAMETERS

COMMON (these apply to all Layers in a Performance)
- Arpeggiator type, tempo, sub-division
- Performance Level
- Reverb and Chorus type
- Variation type and parameter
- Performance name
- Pitch-bend range
- Modulation wheel pitch modulation, filter modulation and cutoff frequency
- Foot control filter modulation, frequency cutoff and variation effect parameter
- Portamento switch and time
- Control knob 1 parameter assign.

LAYER (these apply to individual Layers).
- Note shift
- Detune
- Key range low and high limit
- Velocity low and high limit
- Velocity offset and depth
- Control knob 2 assign
- Amplitude Envelope Generator attack, decay, sustain and release
- LFO amplitude, pitch and filter modulation
- LFO wave, speed and phase
- Filter EG attack, decay, release and sustain
- Pitch EG attack time and level, decay time, release time and level
- Voice bank and program
- Layer volume and pan
- Reverb, chorus and variation send
- Filter cutoff and resonance
- Poly/mono mode

Performance presets. Many of these have been programmed from brand new waveforms with the dance market in mind, and there's a good selection of analogue-sounding leads, basses and pads. The presets eventually give way to generic impressionistic, washy pads, but there's plenty to be going on with until you start programming for yourself. Favourites include User patch 11, 'Squelchy', a boingy, detuned, modulated, LFO-heavy sound that works especially well arpeggiated; User patch 17, 'Ethno', an instant Gamelan reminiscent of the soundtrack to the cult Japanese animation *Akira*; and User patch 31, 'Glassy', a sharp, chugging 3-'oscillator' stack that makes an instant track when used with the arpeggiator. Though S+S can't deliver quite the same power and presence as analogue, for a digital synth the CS1x's filter is pretty good, and most people won't find anything to complain about in its sounds: many of the presets show very imaginative programming.

> "It's an odd thing, but arpeggiators have a vibe about them that other, more sophisticated, auto-accompaniment tools lack."

CONCLUSION

Though the CS1x uses technology already employed in other Yamaha instruments, the whole is definitely greater than the sum of the parts. The arpeggiator and real-time editing controls are great fun, and the Performance section enables you to emulate a monotimbral analogue synth if you want to, while still being able to have a GM/XG backing. In fact, one gets the feeling that the GM/XG mode was almost an afterthought, as though Yamaha weren't sure that a purely Performance synth would sell in the '90s. The few negative points include the fact that the GM/XG side is relatively inaccessible without the intercession of MIDI SysEx, as is detailed editing of the effects. You can't define your own arpeggio patterns, and you can't select a waveform from scratch for editing — you always have to work from an existing voice. Finally, the arpeggiator doesn't transmit over MIDI, which would have been nice.

Having said all this, the CS1x is really superb value for money — look at what you get: a keyboard whose design makes it look as though it should cost rather more than £599, featuring a full GM/XG synth section, plus the Performance mode, arpeggiator, real-time editing, 32-note polyphony, three effects processors, one of which provides an insertion effect, and a PC/Mac computer interface. It's relatively simple to use, and the sounds will do you proud. In all, it's a highly desirable little instrument.

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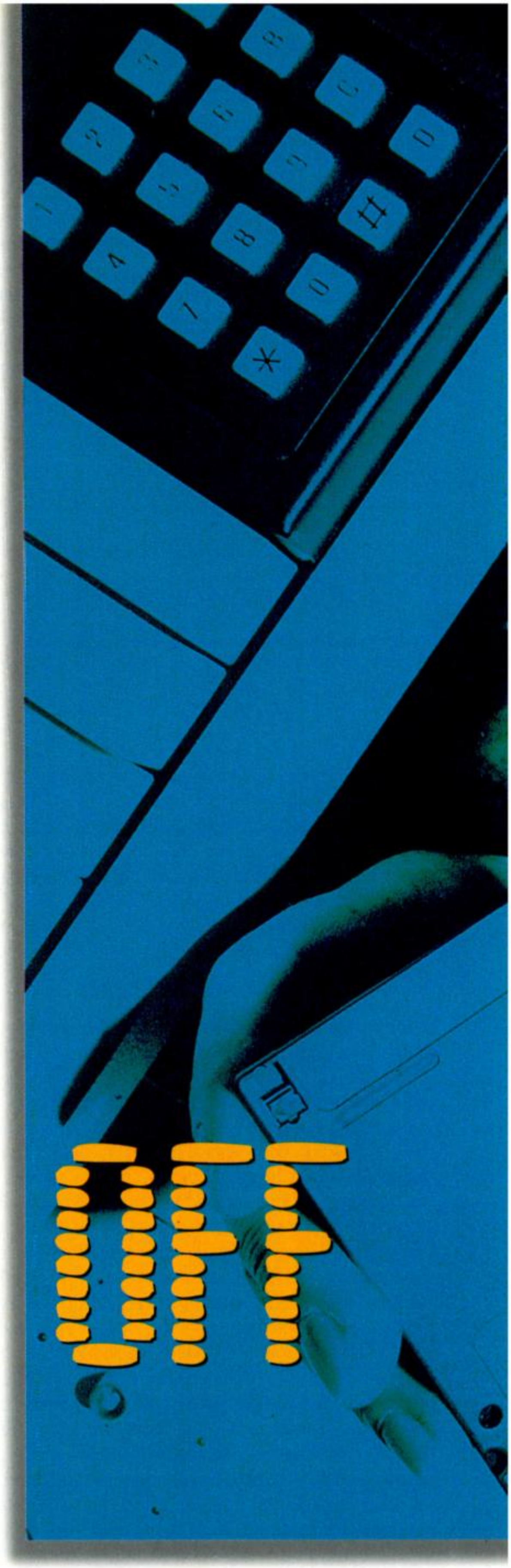
J JECZALIK • ART OF SILENCE

JJ Jeczalik, one third of '80s sampling pioneers Art Of Noise and erstwhile 'Mr Fairlight' has sold his Series III and bounded into the '90s with an Akai sampler and a brand new album of dance music. PAUL TINGEN finds out why no noise is good noise...

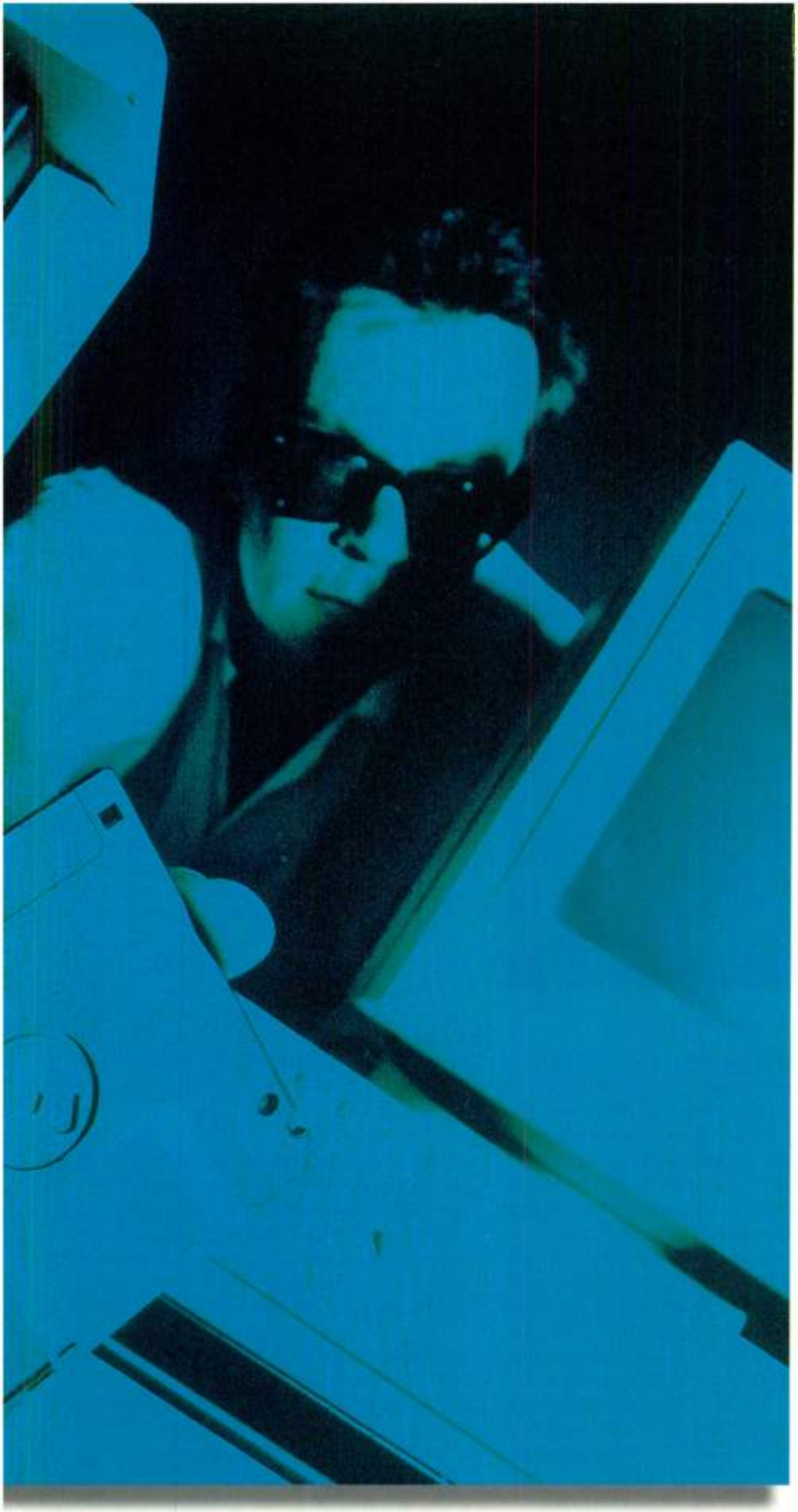


Jonathan Jeczalik is a man of extremes — in his musical life, his opinions, and his sense of humour. Take, for example, his involvement in some of the most noteworthy, heavyweight muso-sessions that this country has ever seen, featuring the likes of Kate Bush, Godley & Creme, Paul McCartney, Yes, and many, many others. Most of these sessions happened during the '80s, and JJ, as he is known in the music industry, was there to man the Fairlight — the pioneering Australian sampling machine that was sprung upon an unsuspecting world in 1979. Even though JJ had once studied clarinet and piano, he revelled in calling himself a "non-musician" at the time, stating that he was just "mucking about" with technology, and was proud of the fact that he couldn't tell an upbeat from a downbeat. JJ also professed utter disdain for studio holy cows like sound quality, openly pleased by the fact that samples made by the Fairlight Series I and II sounded as though "they were being put through a 100W Marshall amp", and maintaining that he sampled at 15kHz with the Series III, rather than the machine's standard 44.1kHz sample rate, to "make things sound dirty and distorted, and rock and roll."

It was with the same radical, punk-influenced outlook that he made his mark on the music of one of the most seminal hi-tech bands of all time: the Art Of Noise. Much of the weirdness and incongruity of Art Of Noise music was the result of JJ's disregard for musical and studio conventions. Art Of Noise transgressed many of them, going out on a limb with sonic innovations, and spreading their musical net over pastoral, ambient pieces like 'Moments In Love', to upbeat hits like their collaborations with Duane Eddy, in 'Peter Gunn', and Tom Jones, in their glorious reworking of the Prince song, 'Kiss'. JJ, meanwhile, gradually moved on as his musical career unfolded, mockingly calling himself "a man of some musical experience" when I last interviewed him in 1992 at his Monsterrat Studios in Berkshire. The name — typical of JJ's sense of humour — is a pun on the famous Caribbean AIR Montserrat Studio which was flattened by a hurricane in 1989.

LIFE AFTER NOISE

At the time of our last interview, JJ was playing around with various post-Art Of Noise projects, the illustrious ensemble having folded the year before. One of these projects involved one of the original Art Of Noise members, producer Gary Langan, and JJ didn't rule out the possibility that the third original member, Anne Dudley, would also return, thus sparking an Art Of Noise reformation. It was not to be, but now, four years later, one of JJ's many projects has finally borne fruit. This summer will see the release of a CD called *artofsilence.co.uk*, which is really a JJ solo album in all but name. It was recorded, mixed and produced by JJ in collaboration with well-known



engineer/producer Bob Kraushaar (who's worked with the Pet Shop Boys, amongst other name artists) at JJ's Monsterrat Studio, and features, true to form, some hair-raisingly extreme music. Yet completely contrary to what the name suggests, Art Of Silence is not an ambient version of Art Of Noise, but instead features lots of heavy-duty dance music. The track 'West 4' has already made inroads into the rave scene across the country, and other tracks feature lengthy and relatively tuneless explorations of relentless electronic dance beats. Just to throw in some contrast, the last two tracks, 'Fear No Malice' and the majestic 'Some Other Dream', explore some of the more melodic and ambient territory that the Art Of Noise was so well-known for. ▶

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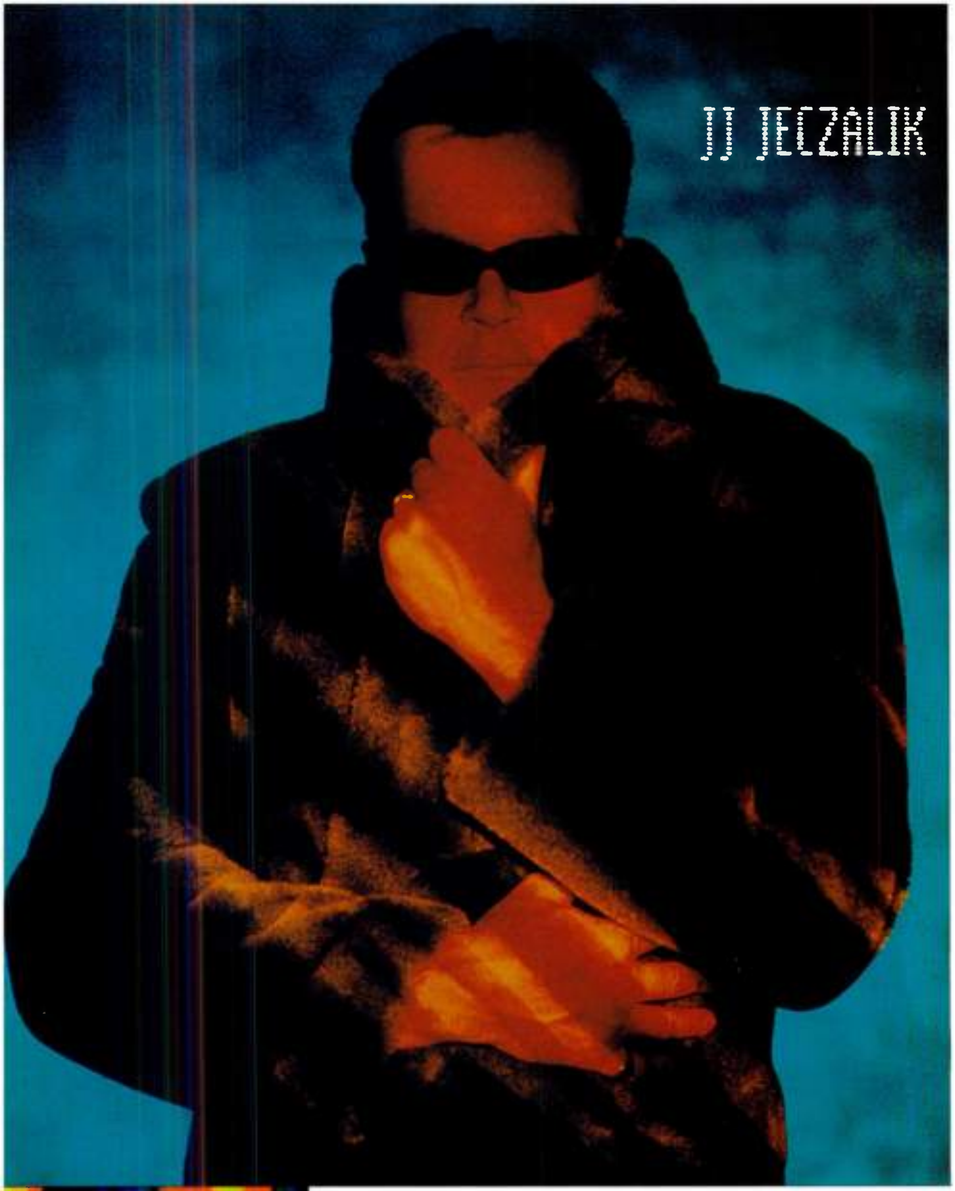

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ACID TEST

It appears that JJ has, true to form, taken a rather radical musical left turn — high time to find out what all this is about. One gloriously sunny June afternoon JJ sits down in the garden of a beautiful old English pub not far from his studio, ready to answer questions in his typically ebullient manner. It seems *artofsilence.co.uk* started as his attempt to come to terms with what was happening in the current dance music scene: "Initially, when the really high-energy stuff was prevalent, I couldn't relate to it at all. There wasn't anything that I liked. But about 18 months ago, when the bpms became a bit more understandable from my point of view, when grooves slowed down, I started to take a serious interest in what people were doing in the dance field. I tuned into Kiss FM a lot, and although I initially listened from a technical point of view: 'why is that working for them?', I eventually ended up really getting off on it.

"My brief for myself for this album was to turn it into a groove and theme-orientated album, the idea being to create a CD of dance music that I would enjoy listening to in the background at home. That was very much the acid test. The main influence is dance, but nothing too hardcore, nothing too seriously full-on. I can't handle that kind of stuff. And you must remember that this is not really such a great departure for me. Some of the early Art Of Noise tracks were big club hits in the States, so working in the club music field isn't that unusual for me. I'm also still using the same equipment and recording methods as before, so that hasn't changed either. What has been a surprise, and a very pleasant surprise, is the fact that it has become so popular in the clubs. There was no guarantee that it would. I was just making my own judgements about whether I liked things or not when I was making the music. But it's been very rewarding, and a lot of the promotional energy that has to do with the album is now directed towards club territory."

JJ was about to go off on a two-day rehearsal for a 4am gig in a Manchester club. Not the kind of stuff middle-aged fathers are generally supposed to be doing, but JJ was clearly having fun with it anyway, explaining how he, and album collaborators Eddie Kulak on keyboards and Paul Robinson on beats, will be playing against CD backing. The invitation to play in clubs came about because of the aforementioned clubland and vinyl success of the album's opener, 'West 4', a crafty collection of a relentless four-on-the-floor dance beat, full-frontal piano arpeggios and riffs, lush string themes, and general rhythmic synthesizer mayhem. JJ explained that the track, like all the tracks on *artofsilence.co.uk*, started life as a collaboration, in this case with keyboardist Blue Weaver, who is resident in Chiswick, London, postcode W4 — hence the title. Two other tracks, 'Fear No Malice' and 'Messenger Of Heaven', were started by JJ and Kulak, and the remaining tracks with Bob Kraushaar, with the exception of the magnificent, ambient 'Some Other Dream', which is the only track with real musicians as its starting point, and sees JJ playing keyboards with a session bassist, guitarist and drummer.

GIANT WITHIN

JJ is co-credited for keyboards on all the tracks on the album, and synth programming on most of them too. When reminded of his "non-musician" declarations of the past, he smilingly acknowledges that he's even graduated from the title "a man of some musical experience" now. Though stopping short of calling himself a musician, he observes that "when you spend enough time fiddling with keyboards, you get better. I feel more comfortable and more adept with keyboards, but still wouldn't call myself a keyboard player. There are thousands of people who are way better than me. It's not really where I'm at. But I played a good proportion of the stuff on the album." In the same breath he is keen to stress the collaborative nature of *artofsilence.co.uk*: "It wasn't just me. It isn't a solo album, it's me and my mates. But Art Of Silence is an ongoing thing and I'm the one point in it that's going to remain the same. So, for the next album, I'll be working with a whole bunch of other people."

Credit should be given where it's due, but the fact remains that *artofsilence.co.uk* is more JJ's brainchild than anybody else's. This is also exemplified by the titles and underlying themes of the album, which tell something of JJ's personal journey of the last few years. In typical JJ fashion they tell a story that juxtaposes markedly with the album's impersonal and mechanical dance grooves: it appears that JJ, for years the happy owner of a cynical sense of humour capable of mercilessly cutting through bullshit — and also people — has been touched by the positive-thinking attitude that underlies most of the current self-development movement. 'New Agey' themes and concepts are lurking closely beneath the surface, as implied by the copy of *The Celestine Prophecies*, James Redfield's barrier-breaking international New Age bestseller, that I spotted lying around in Monsterrat Studios. On the album itself, this feeling is evident from track titles like 'Who Are You?', 'Giant Below', 'Giant Above', 'Giant Within' and 'Messenger From Heaven'.

> "I like the fact that the Fostex B16 takes 10 minutes to rewind to the top of the track,because it gives you a 10-minute break!"

JJ explains where he's coming from: "I think I've changed. This album is as much about that as about anything. It has a lot to do with learning to rely on the inner self and inner balance, and learning to appreciate all the great things that are in the world, rather than stomping around and thrashing other people's efforts, or even thrashing your own, which is what a lot of people do. The poor opinion many of us hold of ourselves and others is often ego-related, and can be very damaging. So I try to view what I do and what people do in terms of how uplifting and how full of energy it is. You can't just come in arrogantly and say that something someone has been working on for months is a piece of shit. You need to be able to control yourself and look at yourself. So the album tells a story, with the 'Giant' trilogy being the centrepiece, of us getting in touch with the giant we all have inside of us, the ability to do many many things, and not be impressed by the seemingly threatening giants below or above us."

SILENCE SESSIONS

As already explained, most of the album was born of collaborations between JJ and other people. The sessions largely took place at Monsterrat, and were initially recorded to JJ's trusty Fostex B16 half-inch, 16-track tape recorder, which he regards as his "scratchpad." He has a typically incongruous reason for working with 16-track tape, rather than ADAT or hard disk: "The B16 is very venerable and reliable, and I like the fact that it takes 10 minutes to rewind to the top of the track, because it gives you a 10-minute break! You don't get time for breathers with all these hard disk recorders."

Sound sources used were JJ's trusted Fairlight Series III, plus an array of rented analogue keyboards, such as a Roland JX8P and JX10 Super Jupiter, Minimoog and Memorymoog, Oberheim Matrix 1000 and OB8, ARP Axxe, and a Roland TR909 drum machine. The material recorded onto the 16-track was assessed on its merits, and the good bits were sampled off tape, and/or looped or re-sequenced on JJ's Atari Mega 4 with *Logic* software. JJ comments: "I prefer working this way to recording everything into sequencers. When it's on tape it's physically there, you have something tangible to work with. The thing about sequencing all the time is that it's a bit of a ▶

SAMPLING AFTER FAIRLIGHT

Amazingly, after 16 years of faithful service, JJ recently sold his Fairlight Series III, having used it for the last time on the new album: "Someone made me an offer that I couldn't understand, and couldn't refuse. And the Fairlight was very big, consumed tons of electricity and was getting unreliable. When I was offered loads of money for it, I looked at what I'd done with the album, concluded that I was moving towards analogue synth sounds and away from samples, and decided that an Akai could do the job, and that I could invest the rest of the money into modules and synths." Thus JJ is now the proud owner of an Akai 3200XL, with 32Mb of memory and CD-ROM drive. In 1992 he complained about the fiddly little LCD screens on the Akai. Four years on he thinks the machine's interface is still a drawback, but has found ways of coping: "It's simply not ideal. But a couple of guys come in once in a while and give me tutorials. And I've also invested in *MESA* software so I can edit the Akai via my new Mac."

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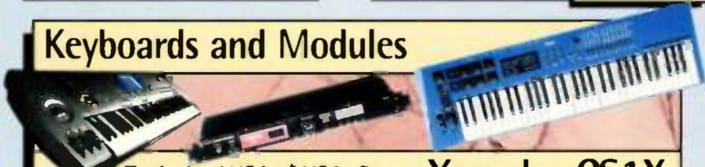

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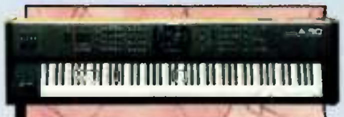

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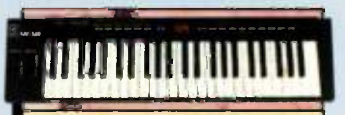

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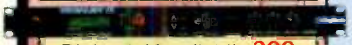

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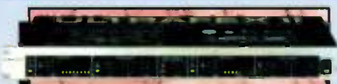

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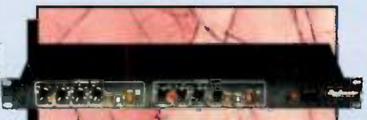

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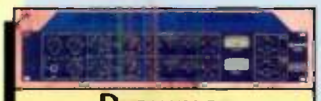

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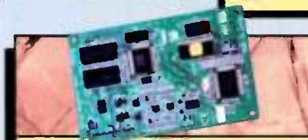

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Key: Ch = Chadwell · B = Barnet · C = Cambridge

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		Key			Key
Allen & Heath Saber 32, 16 buss, 6 auxes, 4 band EQ (2 sweeps), fully modular, 56 inputs with EQ and muting on remix, c/w stand	£4995	Ch			
Allen & Heath System 8:24	£1295	Ch	Seck 18:8:2	£ 699	Ch
Seck 12:8:2	£ 599	C	Bell MX8008	£ 299	C
Carlsbro Promix 12:2	£ 349	Ch	Carlsbro DMX16:2	£ 449	Ch
Studiomaster P7 16:8:2	£1495	Ch	Studiomaster 12:2	£ 199	Ch
D & R Stylus 40:4:2	£1299	Ch	Sansui MX12	£ 299	Ch
Phonic 1202A	£ 349	Ch	Soundcraft 12:2r	£ 349	B

Keyboards

Akai X7000	£ 399	Ch	Ensoniq Mirage	£ 299	Ch
Ensoniq SD1	£ 599	Ch	Roland VK100	£ 899	C
Roland XP10	£ 449	Ch	Roland JX3P	£ 399	C
Roland JX10	£ 599	Ch	Roland JX10 & PG800	£ 799	B
Roland JV35	£ 599	Ch	Roland JV50	£ 699	Ch
Roland D10	£ 399	C	Emu Proteus MPS	£ 599	B
Yamaha SY35	£ 349	C	Korg T3	£ 799	Ch
Korg X5	£ 469	Ch	Korg M1	£ 699	Ch
Korg Poly 800	£ 229	Ch	Korg DW6000	£ 299	Ch
Kawai K1 MkII	£ 299	B	Elka MK55	£ 299	Ch

Modules

Yamaha TX802	£ 499	Ch	Korg 05R/W	£ 349	Ch
Korg EX8000	£ 299	B	Gem S2R	£ 899	Ch
Voce DMI64	£ 299	Ch	Cheetah MS6	£ 299	Ch
Ensoniq SQR1	£ 399	B	Emu ESI32 Sampler	£ 799	Ch
Casio FZ10M Sampler	£ 599	Ch	Casio CSM-10P	£ 39	C
Kawai K1R	£ 299	C	Kawai K3M	£ 199	C
Roland MDC1	£ 349	Ch	Roland MVS1	£ 349	Ch
Roland MT100	£ 199	Ch	Roland SC55	£ 349	B
Roland D110	£ 249	Ch	Roland U220	£ 349	Ch
Roland U110	£ 249	Ch	Roland S770 Sampler	£ 849	B
Roland S330 Sampler	£ 499	Ch	Roland P330	£ 199	Ch
Roland JD990	£ 749	Ch	Roland CR80	£ 249	C
Roland SH1000	£ 199	C	Yamaha YS200	£ 249	C
Akai S1000 Playback	£ 799	B	Akai S01	£ 499	C
Akai S950 (1.5 meg)	£ 799	Ch	Akai S950	£ 699	B
Elka EM22	£ 149	Ch			

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Yamaha RY30	£ 249	Ch	Yamaha QX21	£ 79	Ch
Yamaha MDF-2	£ 269	C	Atari Megafile 44 HD	£ 199	C
Roland Octopad 2	£ 399	B	Oberheim Strummer	£ 79	B

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Akai MG14D (12 track)	£1299	Ch	Fostex M80 (8 track)	£ 599	Ch
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> "Sequencing is a bit of a movable feast: with a couple of clicks of the mouse you can transform the whole thing, which means that you never know exactly where you are."

movable feast: with a couple of clicks of the mouse you can transform the whole thing, which means that you never know exactly where you are. But with tape, you can relax a bit and think about what it is that you like about something. It's more solid. It's for the same reason that I always print out my email. I like paper. It's a different thing reading it inside a PC. And when you write, it's not until you print things out that you really see whether it makes sense, and what mistakes you've made. Likewise with tapes and sequencers."

JJ's main tool for re-sampling and looping material from the B16 was his trusted 1987 Fairlight Series III. The drums on the album are a mixture of programming on the TR909 and loops from the Fairlight, lifted off sources that he preferred to be vague about. Although virtually everything passed through the Fairlight at some stage, JJ emphasises that the TR909 was often run live during mixes, because it sounded better like that, whilst analogue keyboard parts that couldn't be sequenced, because of complicated filter manipulation, for example, were played live onto the B16: "A lot of the fun was twiddling knobs and exploring new areas — I'd never worked this much with analogue keyboards before. Because we switched a lot between Atari sequences and tape recording, and ran both in tandem during mixing, flawless synchronisation was essential. I used Emagic's Unitor in Monsterrat, with the Friendchip TCR1 timecode refresher. The latter is a great box. It regenerates timecode and sorts out all possible messes. I haven't had any problems with timecode since using the Friendchip."

GRUNGE

JJ's master keyboard for the *artofsilence.co.uk* sessions was the Technics KN550, a home keyboard with sounds that are "so bad, they become good". His preference for low-quality sounds has also long been exemplified in his dogged determination to stick to a 15kHz sample rate with his Fairlight, but this proved impossible for the Art Of Silence project, because he's upgraded his Fairlight for use with optical drives, and the new software doesn't have an option for 15kHz sample rate. JJ comments: "They called the software an upgrade, but as far as I was concerned it was a downgrade, because I now had to find other ways to emulate a lower-bandwidth effect. So I had some secret tools instead that gave me a similar effect. My main weapon was the Roland SDE2000 delay, which I'd set at twice the delay time so that the bandwidth was halved. This resulted in the required rock and roll grunge effect."

An Apple Mac computer has now replaced the Atari Mega 4 which was used on the album sessions, and JJ now runs the Mac version of *Logic* for sequencing. He explains: "The Atari with *Logic* was very reliable and worked well with my Soundtracs PC MIDI desk, operating functions like muting and program changes. It even had a very crafty flight simulator program on it that gave me a lot of pleasure! But in the end it became too slow, and *Logic* on the Mac is amazing. Things like drag and drop, copy, and being able to create an arrangement, moving things across the page left and right in a completely intuitive way, is just great. It's more intuitive than the Atari version, and I like the graphical representation and the colours."

MINI FAIRLIGHT

Any moment now, *artofsilence.co.uk* will hit the record shops, released on JJ's own Axiomattic label, housed within Permanent Records. The single, 'West 4', may or may not be climbing the charts when you read this: whether JJ's desire to cross over between the club dance world and the more mainstream charts will be fulfilled remains to be seen. The music on *artofsilence.co.uk* may be too biased towards dance for that to happen. However, there's one little detail about the CD release that should be of interest to many readers of this magazine, regardless of whether the music on it is their cup of tea or not: the first 2000 copies of *artofsilence.co.uk* will contain a "rather sexy" piece of sampling shareware for the Mac called *Sound Effects*, or *SFX*, on an accompanying 3.5-inch floppy disk. Those who cannot get hold of one of those first 2000 copies can download it from JJ's web site (see box '*SFX*: Share & Enjoy' for more details) for a registration fee of US$15.

Computer and multimedia technologies appear to be at the forefront of JJ's activities at the moment. Aside from his web site, he's also started an interactive production company and label called Touch Music Interactive with video director Will Oakley, that will be "looking at developing titles for CD+ and CD-ROMs." Having started work already on a second Art Of Silence album, JJ's activities appear to continue at a frenetic pace in various different areas. And whatever he does, whether good, bad or ugly, appears to be at the cutting edge. SOS

SFX: SHARE AND ENJOY!

The press release for *artofsilence.co.uk* explains that *SFX*, a shareware program that's being given away with the first 2000 copies of the album, allows "Mac users to sample any audio program, convert those sounds to the AIFF standard, and then use them in multimedia programs." It also adds that since it only takes up 170k of memory it can be stored as a utility program, can sample at any rate up to 64kHz, and at any resolution from 1 to 32 bits. JJ got excited about the program because *SFX* allows users to be their own DJ: "I found it on the Internet and was completely wowed by the thing, because it's like a mini Fairlight. But rather than costing $50,000 or something, it only costs $15 and you can get into fairly serious sampling from your desktop. My idea was that the album provides ambience and grooves as a backdrop, and that people can use this software, which also has a keyboard on the screen, to groove along and have fun." That explains the presence of the groove-only sections (some up to several minutes long) on *artofsilence.co.uk*.

JJ's web site also has facilities for people to download ever-changing selections of samples, and they can send over their *SFX*-treated 'remixes' of the album. Visitors to the web site (address below) will be able to hear these latest 'remixes'.

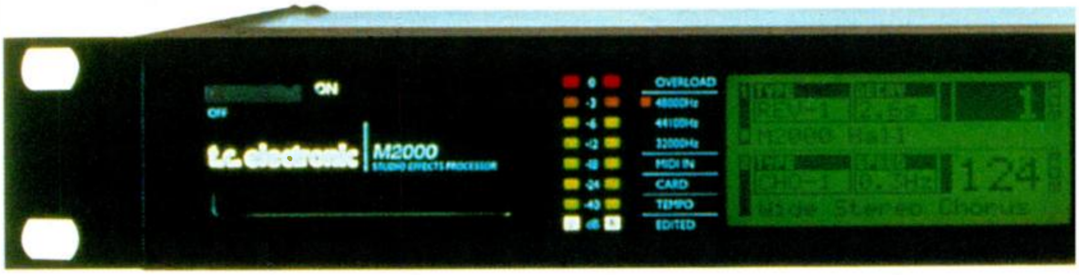
W http://www.art.of.silence.co.uk

WRH

Great Dane?

The M2000 takes much of the technology behind its Danish manufacturer's professional flagship, the M5000, and re-packages it with less flexibility but a much lower price tag. PAUL WHITE finds out whether it's barking up the right tree...

TC ELECTRONIC M2000 DIGITAL EFFECTS PROCESSOR



When it comes to effects units, everybody wants everything — we want ease of use, we want to be able to process more than one signal at a time with different heart-stopping effects, and we want it cheap. Faced with this seemingly impossible task, a unit which delivers two out of three isn't bad — but to find out which two, you'll have to read on!

TC Electronic have a well-deserved reputation for building serious professional effects with a long life and exemplary sound quality; the reason you don't see many TC reviews is that their best-known products, such as the 2290 delay unit, have been around for years, and are still bang up to date, thanks to TC's policy of software upgradability rather than planned obsolescence.

The M2000 is a mid-price effects unit benefiting from the technology that went into TC's flagship M5000 — a cursory glance at its features confirm that it's trying to muscle in on Lexicon's PCM80 territory. While the M2000 doesn't have the software flexibility of the M5000, the algorithms have much in common, and there's a memory card expansion slot to increase its potential.

ARCHITECTURE

Essentially, the M2000 can be considered as two separate effects engines in a single box, both of which feed a common stereo output. Each engine can generate a single, high-quality effect, and a number of routing options are provided so that the two engines can be used separately or in combination. A key feature of this unit is its very simple operating system, whereby a pair of up/down cursors are used to navigate through a vertical parameter list for each effect engine or effect combination, and parameter values are changed using a rotary data-entry wheel. The LCD window displays a plain text list of the parameters plus their numerical values while editing, or patch names for both 'engines' while in patch select mode.

Operation is simplicity itself, but even so, TC have emulated Lexicon's dual-complexity 'Go or Pro' operating system, so that you can decide whether you want access to just the most important patch parameters or everything you can get your hands on. There's even on-line help for inveterate manual haters — pressing the Shift and I/O buttons together brings up a concise help text relating to the currently-displayed functions.

One look at the back of the machine confirms its professional provenance — the audio ins and outs are on balanced XLRs, and there's a choice of AES/EBU or S/PDIF digital ins and outs for those determined to stay in the digital domain. MIDI In, Out and Thru sockets are provided for remote patch change, real-time control and SysEx data dumping, while a momentary-type pedal input provides a simple means of control for non-MIDI musicians.

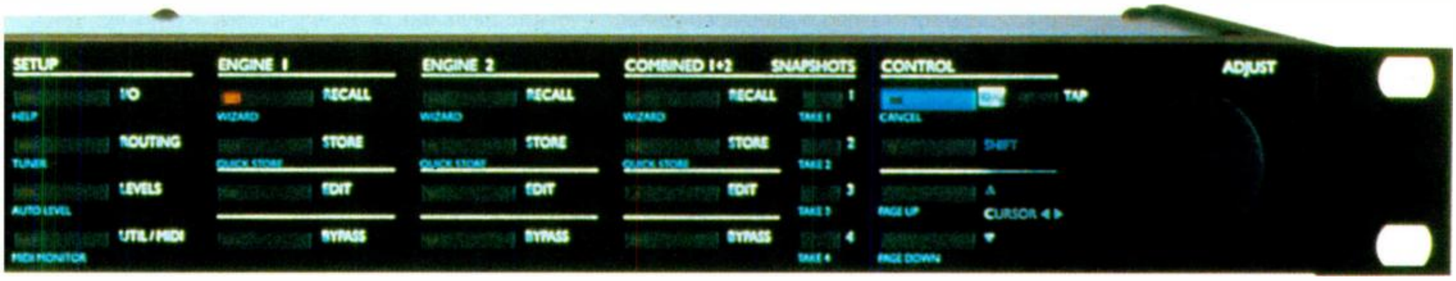
The analogue signal path is 20-bit, 64 times oversampling, providing a dynamic range of better than 96dB. Digital users can work at up to 24-bit resolution, with a choice of 32kHz, 44.1kHz, or 48kHz sampling rates. The frequency response extends from 10Hz to 20kHz within 0.2dB, and the total harmonic distortion is a mere 0.008% (1kHz, +10dB). Unusually, there's no physical input gain control, which I find rather unfriendly, but I guess it's all done in the name of keeping the technical specs as high as possible. You can change the input gain over a useful range via the parameter menu, and that includes adding up to 6dB of gain to the digital input, so if you're processing an under-recorded signal from DAT, you can bump up the level without having to go analogue.

The metering on the M2000 is better than you'll find on many effects boxes, with a 7-stage

WRH

peak meter on each input. A further row of LEDs indicates the sample rate, presence of a plug-in card, level overload, MIDI In, Tempo, and Morphing. The latter feature is a kind of smooth crossfade between the two effects engines, and so can only be used when single effects are required either side of the morph.

Initially, the front of this 1U-high box looks a little crowded in the button department, but a closer look reveals six columns of four buttons, each column having its own dedicated purpose. First comes the Setup column, which deals with I/O, routing, levels and utility items including MIDI setup. LEDs fitted to these switches also double as indicators for Help, the on-board tuner, auto level setting and the MIDI Monitor (see box 'Routing & MIDI' for more about these features).



The next two rows of buttons relate to effect engines 1 and 2 and are identical. Each engine has buttons for Recall, Store, Edit, and Bypass, all of which do pretty much as their names suggest. Buttons with the same functions make an appearance in the Combined 1+2 section, which deals with dual effects patches, and the next row provides four user-selectable snapshots, which may be used to provide instant access to any four combinations of effects. Finally, there's a row of buttons for 'control' functions, which includes buttons labelled Shift, OK, Cursor and Tap, and a rotary Adjust knob.

PATCH ORGANISATION

As delivered, the M2000 comes with 128 normal, or single-engine, presets and a further 128 combination presets that use both engines. A total of 256 user patch locations are also provided — 128 normal and 128 combination (a combination patch can include any two normal effects, plus level and routing data). Further patches can be stored on a Type 1 PCMCIA card with a minimum capacity of 64K. In common with most other digital effects units, there doesn't appear to be a way of using MIDI Bank messages to switch between the preset and user banks, or between single and combination programs.

The four snapshot memories each enable you to store whichever patch setup is current when the 'store snapshot' operation is executed, for later recall. This applies whether you're accessing two normal patches or one combination patch. All routing data is saved as part of the snapshot, and each of the saved snapshots can be recalled by a single push of any of the four Snapshot buttons.

Cans of beer these days might come with a widget, but the TC M2000 comes with its own Wizard. Wizard is one of those computer buzzwords for 'electronic helper', and Windows 95 users will probably be familiar with the term. The M2000's Wizard is simply a system of organising presets by tagging them with certain attributes, database style, so that you can group your effects by algorithm type, instrument and category (Gentle, Normal or Extra). You can search for a preset meeting your requirements by selecting from a list of alternatives in each of the three groups; the Adjust wheel then lets you scroll through the patches that have been shortlisted. The Lexicon PCM90 uses a similar system for categorising reverb patches.

Each patch features a dry/effect mix parameter, but when you're using the unit via an effects send and return loop, you're almost certainly going to want 100% effect without any of the dry signal. To make this easy to achieve, you can select 100% in the I/O page, or for live use, where you want to use the individual patch mix settings, you can select Mix. This is a simple but welcome idea that more effects units would do well to incorporate. The choice of analogue or digital input is also made on the I/O page, as are the digital data format settings. If you select analogue, both the digital and analogue outputs are 'dithered' to 20-bit. Selecting S/PDIF as the main output will cause the signal to be dithered to 16-bit for use with DAT machines and similarly specified systems. (Dithering, if you haven't come across it, is a process which involves adding a very low level of pseudo-random noise to a digital signal in order to reduce low-level distortion and extend dynamic range.)

The Level page allows the user to choose between +4dBu and -10dBv operation, and it's here that gain may also be applied to either the analogue or digital inputs. The range of digital gain is up to +6dB, as mentioned earlier, while the analogue inputs have a 24dB range on the +4 setting, and a 26dB range on the -10 setting. Like the Alesis Midiverb 4, the M2000 includes an auto gain mode, whereby the machine 'listens' to a few seconds of audio and then sets its own input gain, leaving around 6dB of headroom.

ENGINE ROOM

Editing single effects is most easily achieved by picking a patch which uses the algorithm you're interested in, then editing the parameters to suit your specific requirements. Dynamic morphing can be used with the Preset Glide routing option to fade from one effect into another, and the fade can be made dependent on the input signal level, using a conventional threshold approach. This allows, for example, a vocal treatment with a long reverb time to be used during pauses or quiet passages, with a shorter reverb taking over when ▶

pros & cons

TC ELECTRONIC M2000
£1639

pros

- **Superb sound quality.**
- **Friendly user interface.**
- **Can function as two independent effects units or be used for a single, combined effect.**
- **Professional digital interfacing.**

cons

- **Aside from the reverb, which offers plenty of variation, the effect topography is quite basic for a machine of this price.**
- **The pitch-shifter 'warbles' quite badly when used for any purpose other than detuning.**
- **Though the manual is admirably concise, and adequate for general use, it is short on information for advanced users.**

summary

Not the fanciest effects box around but certainly one of the best as far as sound quality goes, and probably one of the easiest to use. Lacks the sophistication for creating really off-the-wall effects, but handles bread-and-butter work in true gourmet style.

SOUND ON SOUND

the signal is above the threshold. The relative level of the two effects can be set by the user, as can the direction of the morph. Combination programs are always based upon two existing 'normal' patches, but the choice of routing options provides a reasonable degree of flexibility.

The algorithms themselves cover Reverb (Hall, Room, Plate, Ambience, and Gated); Chorus; Flanger; Delay; Phaser; Multi Pitch Shift (up to six voices); EQ; Tremolo; Stereo Spatial Control; and Dynamics, the latter covering compression, limiting, gating and de-essing. There are none of the fancy resonators found in Lexicon's PCM80 and no intelligent (auto-harmonising) pitch-shifting. I could find no menu for creating multi-tapped delays, and the EQ is a separate effects block, so you can only use it in conjunction with one other effect. In an ideal world, parametric EQ would be included in each of the effect algorithms; as it is, the tonal change you can access from within an effect algorithm is relatively limited.

The number of effect editing parameters available depends on whether you choose basic or expert mode, though from what I can see, the expert parameters always come further down the parameter list anyway, so there's little real benefit in not leaving expert mode on all the time — unless you're a real parameterphobe. As an example of what to expect in terms of numbers of parameters, Reverb offers 25 user-accessible parameters in expert mode, or just 10 in basic mode.

ROUTING AND MIDI

Up to six different routing configurations can be used within the M2000 — two serial and four parallel. These allow the effects to be used separately, either in mono or stereo, combined in series or parallel, or used in a true stereo mode where each channel is processed separately but with an identical algorithm. There's also a Glide option, which allows one effect to crossfade into another; both engines are used for this but you only hear one effect at a time, except during the crossfade.

The M2000 has two physical inputs, though for mono-in use, you should use only the left input. The stereo effects are routed to both outputs, except in dual mono and stereo modes, where the left and right signal paths are kept entirely separate.

In the MIDI menu, you can set whether your M2000 should respond to patch numbers 1-128 or 0-127, and there's a basic MIDI filter so that you can choose to ignore Controller messages if necessary. Patches may be backed up to or restored from a memory card, and you can also assign patches to a memory map, which can be useful for live players who handle all their patch changes from a master keyboard. There's also a security PIN number feature to prevent casual tampering with your patches, but if you happen to forget the number, you can still get into the system via the Reset page. Similarly, there's a very practical patch protection system which allows you to define the upper and lower limits of a block of patches to be protected. Any patches outside this block may still be edited as usual.

In the main body of the review, I mention the morphing function, which is really a crossfade between two effects. The MIDI/Util page is where you define the crossfade time, though crossfading only occurs when the Preset Glide routing option is used within a patch. The footswitch may also have different functions depending on how you set it up in the Util menu; it can bypass either engine independently, both together, or can be used as a tap tempo input device for tempo-related delay or modulation effects. Effect tempos may also be read from the incoming MIDI clock if required.

A nice feature of this unit is the MIDI Monitor, which shows all the MIDI data being received by the M2000 — including SysEx. For guitar players, there's also a handy chromatic tuner. Close inspection of the MIDI implementation chart shows that the M2000 can respond to MIDI Controller information, though this isn't mentioned anywhere else in the very concise manual that accompanies the machine. Controller 10 adjusts the mix level (if the mix hasn't been set to 100% globally), Controller 11 sets the output level, and Controllers 12 onward relate to the effects parameters in the order that they appear on the Edit page. While I'm all in favour of concise manuals, I feel that this one glosses over or omits much of the fine detail of the M2000, leaving the user to 'hack' his way through the advanced features. The on-line help mitigates this to some extent, but the limited amount of data you can put on a help screen is no replacement for a thorough manual.

> "The effects themselves are startlingly clean — one of the hallmarks of TC equipment."

CLEAN MACHINE

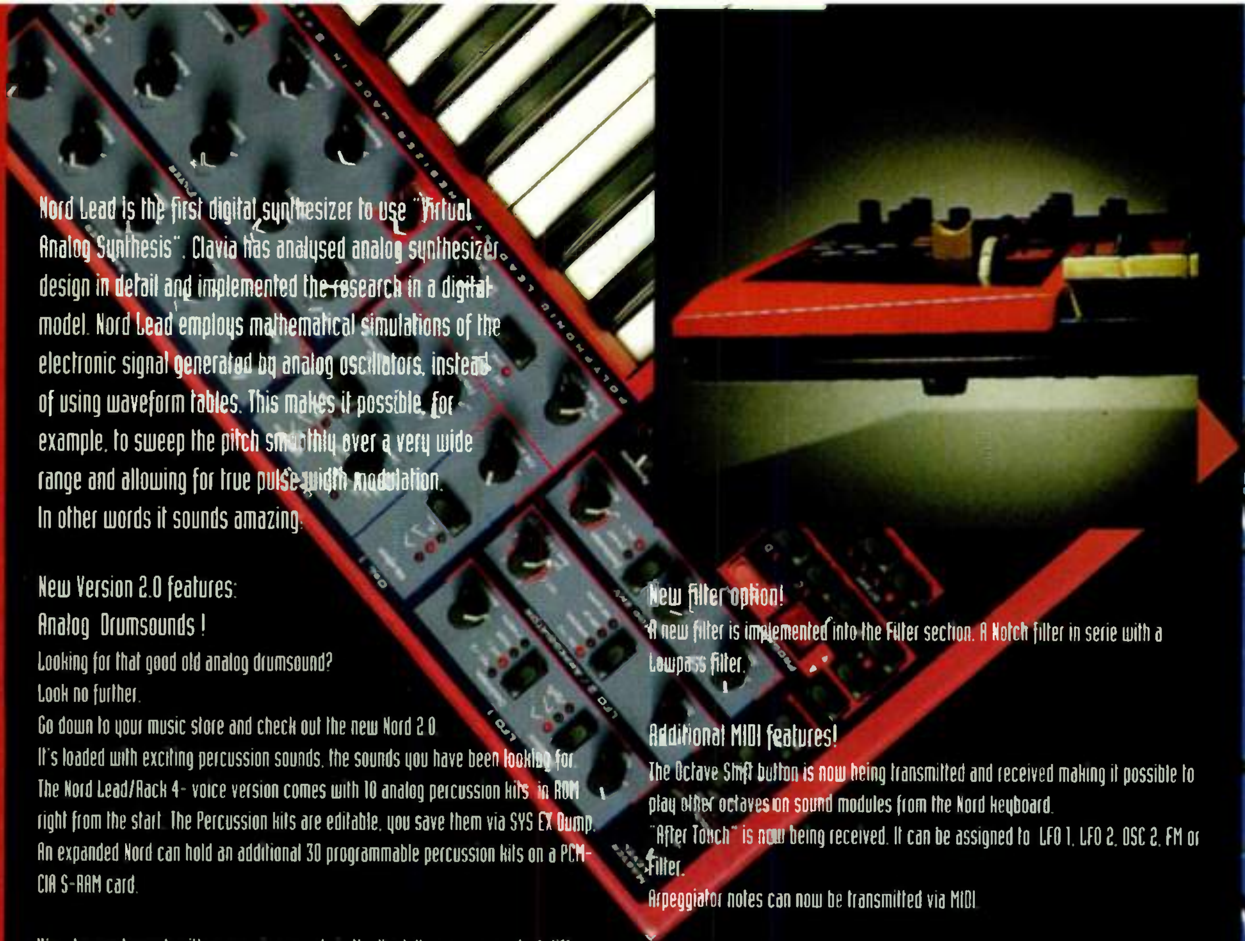
The effects themselves are startlingly clean — one of the hallmarks of TC equipment and to be expected. On an artistic level, they offer few truly new possibilities, but once again, the M2000's quality helps present familiar effects in a new light — except for the pitch-shifting, which is as 'yodelly' as any budget unit I've used. It works beautifully for detuning effects, especially the 6-voice detune, which creates a wonderfully warm, chorus-like effect, but ask it to shift by whole semitones and the result is pretty unusable except for special effects.

Reverb algorithms are perhaps the most subjective to assess, but in this instance, I had the opportunity to compare the M2000 directly with Lexicon's PCM80 and 90, which was very educational. The M2000 doesn't lose any ground on smoothness or noise performance, and on some of the longer reverb settings, the M2000 comes quite close to the PCM80. I don't think the M2000 quite matches Lexicon's ability to create the illusion of a convincing smaller room or hall, but the reverbs are still very good indeed, with a smooth and musical character.

The delay and modulation effects are as vice-free as you could want, and though you don't get such sophisticated routing, feedback and modulation options as in the PCM80, the operating system is undoubtedly more straightforward because of this — those who want instant gratification will probably approve. Personally, I think TC could have gone a little further, as all the effects are presented in a pretty basic form — there's no multi-tapped chorus, flanging has no frills, and the delay is simple, with feedback up to 1.2S. Filtering is included in the algorithms to provide roll-off in the feedback paths, for example, and the reverb algorithms include modulation, rather like Lexicon's Spin and Wander parameters.

The dual programs allow you to combine any two effects. In many cases, this will be a delay/modulation effect plus reverb, though you can combine two mod effects if you have a proclivity for that sort of thing. These programs work fine, though my comment about not being able to use two effects plus serious EQ still stand. You can also combine two reverbs, though the outcome isn't always what you might expect. Sometimes you achieve something that's subjectively greater than the sum of its parts, while at other times, the reverbs ring against each other, introducing an unnatural metallic timbre. Because ▶

nord lead V2.0



Nord Lead is the first digital synthesizer to use "Virtual Analog Synthesis". Clavia has analysed analog synthesizer design in detail and implemented the research in a digital model. Nord Lead employs mathematical simulations of the electronic signal generated by analog oscillators, instead of using waveform tables. This makes it possible, for example, to sweep the pitch smoothly over a very wide range and allowing for true pulse-width modulation.
In other words it sounds amazing.

New Version 2.0 features:

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Looking for that good old analog drumsound?
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It's loaded with exciting percussion sounds, the sounds you have been looking for.
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It's a breeze to work with percussion sounds in the Nord. You can use up to 4 different percussion kits of totally 32 sounds simultaneously on 4 MIDI channels. The percussion sounds are configurated in 8 different zones on the keyboard. The 8 different sounds can easily be edited in real time. When you use the Nord in a multi-timbral set up, you can assign a percussion kit to one MIDI channel and use the other three channels for basses, leads or pads sounds.

A lot of sounds to start with!

The Nord 2.0 comes with several great analog single sounds and exciting "Layers" saved in 100 new Performance factory programs. You'll find great sounds from the past, today and for the future programmed by international sound designers. By using the unique features of the Nord, the 4 slot configuration and the "Morph" function, they have created exciting pads sounds, awesome leads and monster basses.

Try the Echo!

A new feature in the Nord is the Echo effect. The Echo will be influenced by the unique "velocity programming" (morphing) feature of the Nord.

More arpeggiator effects!

It's now possible to run the arpeggiator notes randomly.

New filter option!

A new filter is implemented into the Filter section. A Notch filter in serie with a Lowpass filter.

Additional MIDI features!

The Octave Shift button is now being transmitted and received making it possible to play other octaves on sound modules from the Nord keyboard.
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both the dry and effected signals are digitised before being sent to the output, there is a very small propagation delay, probably in the region of a millisecond or two. This is far too small to cause any timing problems, but it does mean that if you forget to set the mix to 100%, the dry sound through the mixer will combine with the slightly delayed dry sound from the M2000, causing a phasey timbre. The manual warns about this and, to be fair, any device that digitises audio delays it by a small amount.

SUMMARY

I have to admit to being in two minds about this unit. Though it isn't the most sexy-looking effects processor on the market, I have to applaud its straightforward user interface and its exceedingly high audio quality. Having a high-resolution, professional digital output on a product of this price is fairly unusual, and 20-bit capability is even more impressive. Even so, the quoted dynamic range is only a little over 96dB, which equates to a theoretically perfect 16-bit system, and is only around 6dB better than most good 16-bit systems achieve in practice — a perfect 20-bit system could go as high as 120dB on paper. The reverb algorithms have to be commended for their smooth and natural character — they're overshadowed only by the big Lexicon units and even then, they aren't disgraced in any way.

I said I was in two minds about the M2000, because I can't help but think that the effects are all a trifle 'safe'. I'll admit that most of the time, you'll need bread-and-butter effects, and the M2000 delivers these as cleanly and smoothly as you could hope for, but a lot of potential creative power has been allowed to slip away in the quest for user-friendliness. I can't fault the M2000 for what it does, and its only physical shortcoming is the lack of an input gain control knob, but although the reverbs are excellent, the delay and modulation effects don't really excite me. Then again, no-one ever said that a first-class, professional tool has to be exciting — and the M2000 is without doubt a very professional tool. SOS

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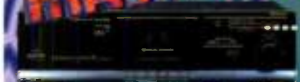

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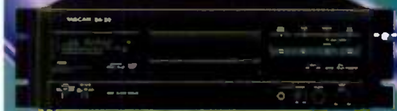

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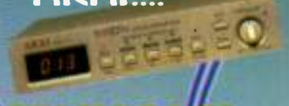

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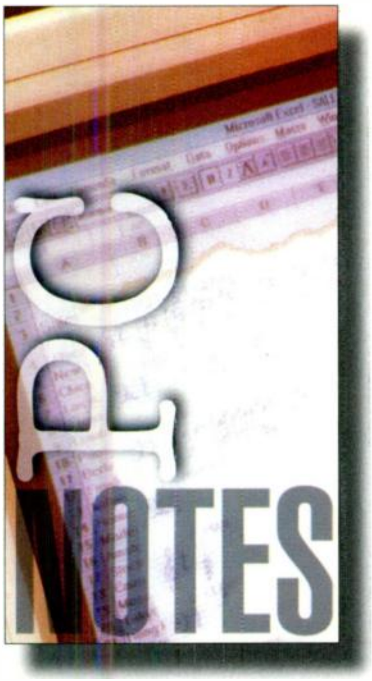


BRIAN HEYWOOD ponders some PC problems and waxes lyrical over the forthcoming Soundscape upgrade.

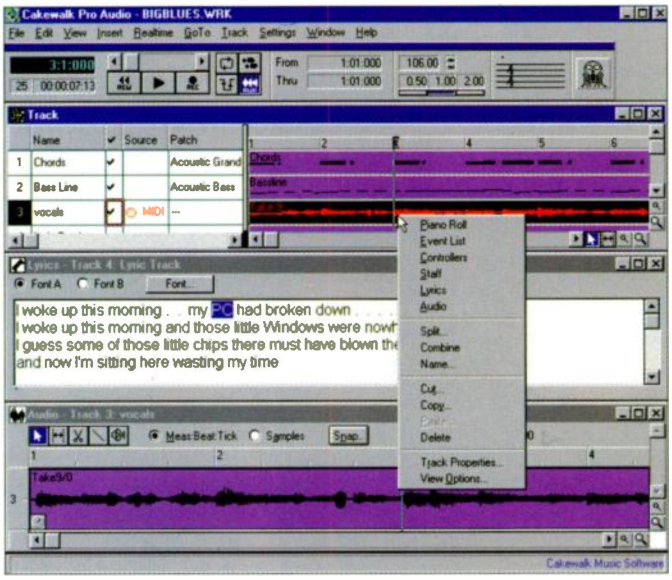
Preparing for the PC Therapy session at the recent Audio 96 show at Olympia brought to my attention the number of things that can go wrong when you're dealing with any system as complicated as a personal computer. If you consider the makeup of the average PC, with components sourced from all over the world — a mother board from Taiwan, hard disks from Japan or the US, a soundcard from Singapore, say, and so on — it's amazing that the damn thing works at all!

Apple Mac users have a slightly simpler life, due to the twin facts that their flavour of computer is more tightly specified — being made by a single manufacturer — and that there is less choice in the way of add-on hardware, so there is less potential for things to go awry. Even so, music users operating at the 'bleeding edge' of the technology still have problems when they try to use the computer in new or interesting ways. Maybe all this confirms the old computer biz saying that "if you make a system that even a fool can use, only a fool will want to use it".

The author hosting a PC Therapy session at the recent Audio 96 show.

CAKEWALK NOTES

I've been playing around with the new version of *Cakewalk Audio* (v4.01) recently and this highlighted to me some of the problems inherent in using the PC in an MPC-based audio system. Apart from the quality constraints due to the audio hardware — don't expect to get CD quality from a games soundcard — you need to consider the technical limitations of the PC as a purely audio platform. This is not a reflection on *Cakewalk*, which I found to be one of the best 'MIDI + Audio' programs I've come across to date (see the June issue of *SOS* for a full review).



	Name	✓	Source	Patch
1	Chords	✓		Acoustic Grand
2	Bass Line	✓		Acoustic Bass
3	vocals	✓	MIDI	---

I woke up this morning . . . my PC had broken down . . . .
I woke up this morning and those little Windows were nowh
I guess some of those little chips there must have blown th
and now I'm sitting here wasting my time

Cakewalk Audio.

The first point that occurs to me is that the audio software is held to ransom by the quality of the device driver software, and the hardware capabilities of the soundcard. For instance, I was running *Cakewalk Audio* with the original version of the Creative Labs Windows 95 device driver, which performed admirably for playback, but didn't allow *Cakewalk* to play any existing audio whilst recording a new track. I was also unable to isolate the line and/or microphone input for recording, which meant that I ended up with the backing track recorded on the vocal and guitar tracks. There are undoubtedly ways around these problems — new drivers, monitoring via external MIDI, and so on — but the point here is that the audio software authors have no way of predicting how a soundcard will behave, so are unable to give anything but the most basic help with these kinds of issues in the manual.

STAYING IN SYNC

Another big issue is that of synchronisation. If you need to synchronise your audio to picture (say, video) reliably, then the MPC audio system just isn't up to it. *Cakewalk* makes a valiant stab at the problem, but unless you're content with sudden tempo and/or pitch changes in your music/audio, it's not really up to scratch. This problem is due to the fact that the Windows MPC audio system has no way of explicitly synchronising audio (or video for that matter). The normal way of doing this is by tweaking the sample rate so that there are minute pitch changes in the audio output, but the Windows MPC API (Application Programming Interface) doesn't provide this level of control. The upshot is that if you need to synchronise to an external device, consider a professional system like the Soundscape SSHDR1 rather than relying on an MPC soundcard.

POWER STATION?

The last point you need to consider is whether your PC is powerful enough to stand up under the strain of playing multiple audio tracks. This might sound surprising, since even entry-level PCs are now pretty powerful machines. Unfortunately, the internal processor architecture of the PC is not ideal for handling audio data, which requires a large number of relatively simple operations to be performed repetitively on a large amount of data. This is why virtually all professional systems use DSPs (Digital Signal Processors), which are RISC processors optimised for signal processing.

The PC's hard disk sub-systems can also affect performance by either being too slow or by introducing unexpected delays while they re-calibrate themselves. *Cakewalk* could handle four simultaneous audio tracks comfortably on my DX2/66 with an IDE hard disk and ISA bus controller, while *Cubasis Audio* could only handle three on a DX4/100 with a VL-bus IDE hard disk, so obviously the quality of the software has a big influence on the overall performance of the system. You can usually

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WE SAY...

IT'S SAD that some mixer manufacturers resort to hype and long, technical sounding names to describe features that every self-respecting company has used for ages but doesn't shout about. This junk-food mentality only makes it harder for you to decide what's good and what isn't.

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FACT: SX's 8 Direct Outs are switchable pre/post fader so they are equally useful when recording in the studio or at a gig.

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FACT: SX's 3-band EQ with swept mid is a real "British EQ". Custom-designed controls at carefully chosen frequencies produce a warm, natural sound. A steep 18dB/Octave High Pass Filter effectively reduces low end muddiness.

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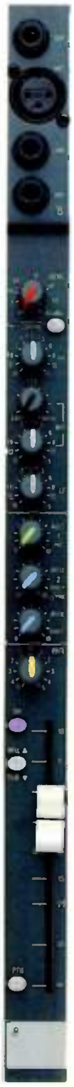
FACT: SX meets stringent EC RFI requirements so that RF emissions are minimal. CE



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▶ increase the number of tracks by reducing the quality of the audio — say, to a 22kHz sample rate from 44.1kHz — but this is a compromise you might not be prepared to make.

The bottom line is that you must be aware of the limitations of the PC as an audio platform, or take steps to eliminate them — for instance, by getting a fast Pentium with an AV-rated hard disk — when you decide to start using it as an audio workstation. The advent of integrated audio and MIDI applications is a great advance in the ability to make music on your desktop PC: just be careful not to get caught by the shrapnel of exploding device drivers or an over-enthusiastic salesman's promises.

SOUNDSCAPE NEWS

In last month's column, I mentioned that the Soundscape hard disk recording system was due to be enhanced towards the end of the year. Well, I've now received more details, and it looks even better than I thought. The upgrade comes in two parts: a DSP accelerator board called the SSAC1, and an external expansion rack called the SS8I01. The DSP card will fit inside the existing SSHDR1 rack unit, and improves the mixing and signal routing options, as well as boosting the real-time signal processing so that the equalisation and internal effects can all be performed in real time. The SSAC1 also incorporates a TDIF port that can be connected directly to a Tascam DA88 digital 8-track or Yamaha 02R digital mixer, and will provide an extra eight inputs and outputs to the Soundscape unit.

The TDIF can also be connected to the SS8I01 rack, which directly adds another eight inputs and outputs to the hard disk recorder. The converters are 20-bit, so quality won't be a problem, and there will be a connection compatible with the ADAT optical interface. The extra facilities will mean that the Soundscape SSHDR1 can be upgraded to have 10 inputs and 12 outputs, which, when used in conjunction with a DA88 or ADAT, gives a hybrid system with 20 tracks. For more information, contact Soundscape Digital on 01222 450120.

TEL-ME

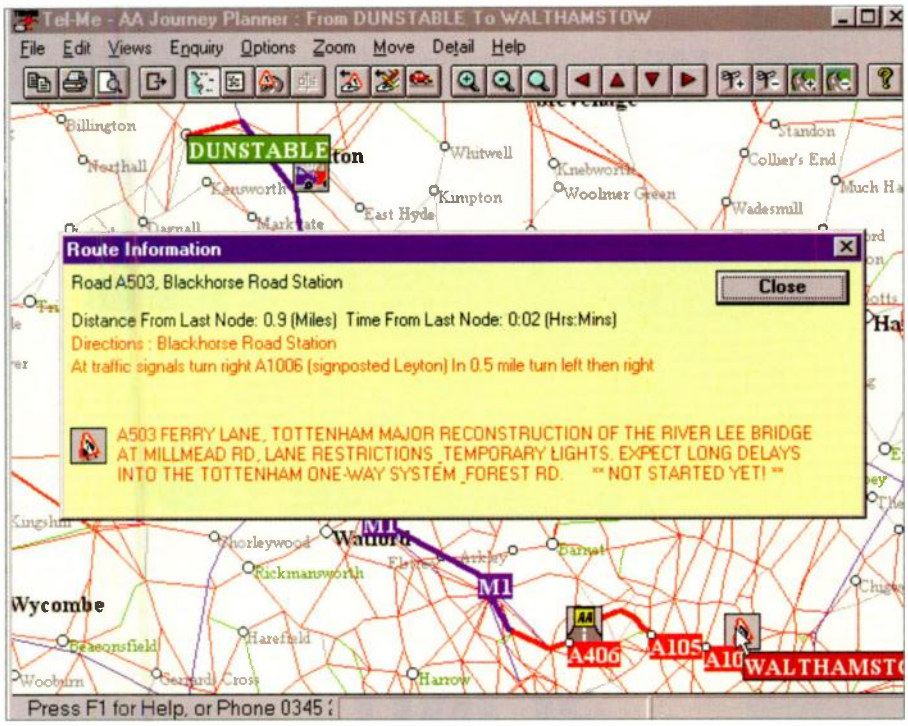
While the Internet revolution continues apace, some might find that the patchy nature of the information available and the congestion that sometimes occurs means that the World Wide Web is not the best way to take advantage of the Information Superhighway. A more reliable approach is to connect direct to an information provider such as PhoneLink, with their Tel-Me service.

Tel-Me is actually a set of 'gateways' which connect you to databases around the country provided by the likes of Thompson, the Automobile Association (AA), and British Telecom. These companies keep the databases up to date on a daily basis — or hourly, in the case of AA RoadWatch. The databases cover such topics as travel, company data and news, with the *Tel-Me* access software presenting a standard user interface so that you don't have to learn how to use each database individually.

While Tel-Me isn't specifically aimed at the music business, I can see how it could be applied: for instance, if you were arranging a booking or a tour, you could use the AA databases to generate an itinerary of how to get to the gig, with AA RoadWatch indicating any roadworks on the way. You could then use the Ordnance Survey section to print out a street map of the area around the venue, and you could even use the AA Travelogue database to select a hotel room. Other databases include Thompson Classified and Business Finder which you can use to find services and generate mailing lists, Press Association News and Weather information, BT's directory enquiries database, and British Railways train schedules. You also get an Internet mail address that allows you to send and receive electronic mail using the *Tel-Me* software.

The whole service is designed to be easy to use, is supplied in a 'shrink-wrapped' box that installs like any other type of Windows software package, and has a 24-hour help-line available — at local call charges, which is a nice touch. If you don't already have a modem, PhoneLink can supply a v34bis (28.8 Kbaud) modem which has the added advantage of bypassing the normal synchronisation delay, which could be significant since the software will only dial out to the external computers when it needs to access new information, thus keeping your online time — and telephone charges — to a minimum. If you only need the software, a single-user licence costs just under £60, with a monthly charge of around £12. The modem — a Pace Linnet 34fx — costs £176. Some of the databases also charge to access their information. In all, I was impressed by the usefulness of this service, which goes a long way to taking the frustration out of the online revolution. For more information, contact Tel-Me on 0800 991155. SOS

> "Audio software is held to ransom by the quality of the device driver software, and the hardware capabilities of the soundcard."



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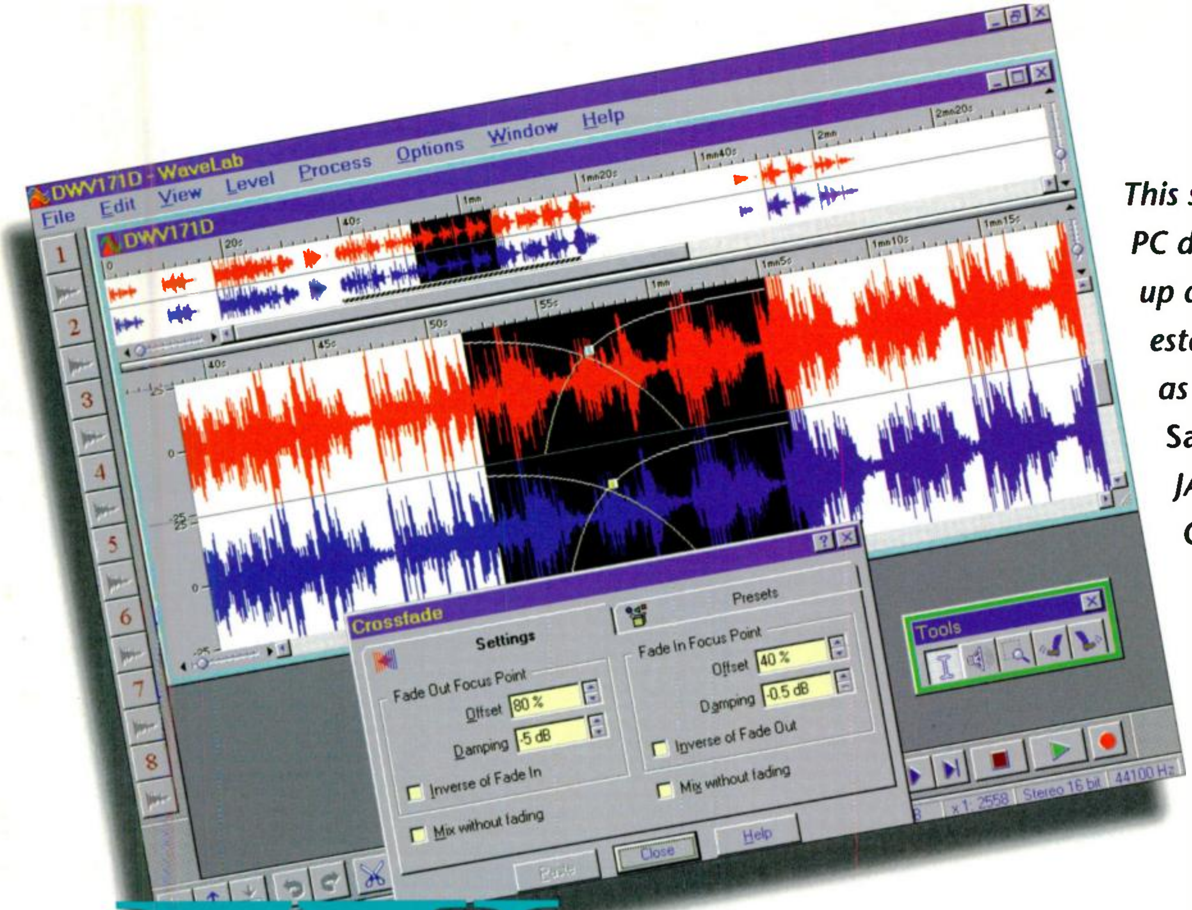

Crossfade

Settings

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☐ Inverse of Fade In
☐ Mix without fading

Presets

Fade In Focus Point
Offset 40 %
Damping -0.5 dB
☐ Inverse of Fade Out
☐ Mix without fading

Paste Close Help

This sophisticated new PC digital editor is up against such established software as Sound Forge *and* Samplitude Studio. *JANET HARNIMAN COOK assesses whether Steinberg have built on their status in the sequencer field with a successful PC wave editing program.*

Wave New World

STEINBERG *WAVELAB* V1.01 DIGITAL RECORDING AND EDITING SOFTWARE FOR PC

As the PC music juggernaut gathers pace, the proliferation of 'MIDI + Audio' sequencers and budget hard disk audio recorders continues unabated. Software-driven, and using soundcards within the PC, these programs offer a fantastic range of creative opportunites to the musician of today. But although they may be great multitrackers, the audio editing facilities of these programs may be rather basic, often restricted to simple cut, paste, volume and pan functions. To provide the missing editing power, Steinberg have launched *WaveLab*. To help you reach that elusive next level of refinement and control, *WaveLab* provides a bank of fast audiophile wave processors, including Timestretch, Chorus, Harmoniser and EQ with spectral analysis, all integrated into an easy-to-use, high-quality environment for all those tricky edits. If you're on a tight budget, you could just about use *WaveLab* as a stand-alone recorder for compiling albums or working on extended remixes, despite the limited playlist features — sadly, *WaveLab* is not yet the PC's answer to *Sound Designer II* on the Mac. For the multimedia developer, *WaveLab* provides fast, high-grade sample rate conversion and batch processing.

WaveLab is two program modules: a stereo digital audio recorder/editor/multi-processor, and the Audio Access database, a disk-orientated soundfile librarian. It works with any 16-bit, stereo, 44.1kHz Windows MME soundcard, both PC WAV and Mac AIFF file formats are supported, and *WaveLab* will edit Digidesign Session 8 files too. The program is also ideal for use with the current version of *Cubase*. Audio files from *Cubase v3* (see review in the July issue of *SOS*) can be directly imported into *WaveLab* for fine editing and processing, and *Cubase v3* audio segment boundaries are translated into *WaveLab* markers.

PACKAGE DEAL

The package consists of a CD-ROM and a clearly-written manual with comprehensive index and tutorials. The CD-ROM contains the program, *Cubase* information, and over 200Mb of wave files from Best Service, including some utterly gobsmacking drums and instruments from *New World Order Journeys 1 & 2* (watch out for a full *SOS* Sample Shop review shortly). Copy protection relies on occasional polite requests to insert the CD-ROM — so much more civilised than the ▶

pros & cons

STEINBERG *WAVELAB* £299

pros
- Exemplary editing environment.
- Excellent audio processing quality.
- Very fast.
- Audio database.
- Frequency analysis.
- Stable and reliable.

cons
- Needs at least a DX2-66 PC.
- No preview function or real-time processing.
- No EDL playlist or sampler support.
- No reverb or DDL.

summary

WaveLab is a powerful, classy program with a modest price tag, and will boost the wave editing power of most 'MIDI + Audio' sequencers and budget hard disk recorders.

SOUND ON SOUND

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The Roland A-90 Mother Keyboard is the most versatile master keyboard controller ever made. Not only does it offer some of the most comprehensive MIDI control facilities, four independent MIDI outs, eight keyboard zones, and up to 17 realtime controllers, but it can also be expanded with the VE-RD1 Piano Voice Expansion Board into an awesome quality stage piano. Featuring stereo grands, acoustic/electric pianos and many other newly developed waveforms, the Roland A-90 offers you the ultimate in flexible MIDI control and voice expandability.

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Roland

For further information on the new Roland A-90 & A-90 EX Mother Keyboards contact: Roland (UK) Ltd, Atlantic Close, Swansea Enterprise Park, Swansea, West Glamorgan SA7 9FJ.

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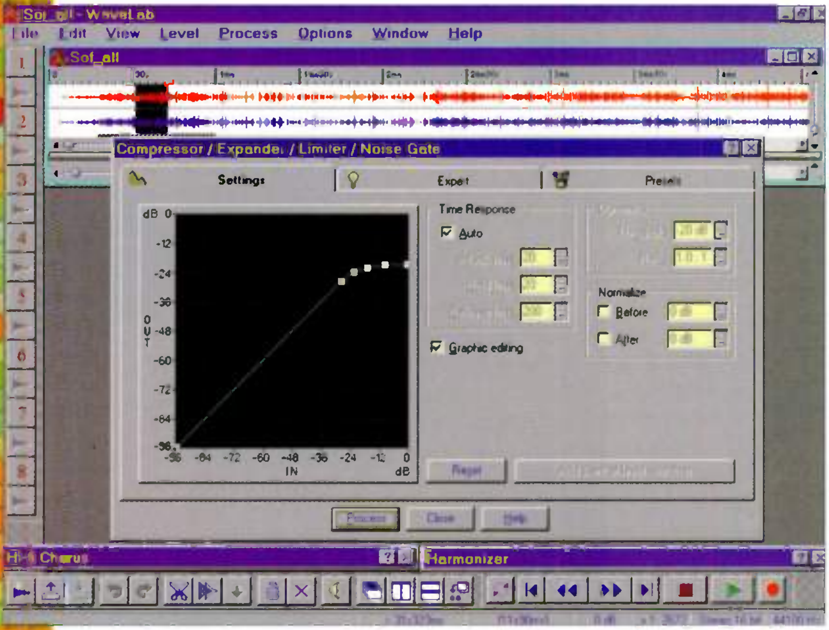
WRH

Steinberg WaveLab

▶ dreaded dongle! *WaveLab* has Windows Help and on-line contextual Help, and there's also 'Tips' Help, which pops up when you point to a screen icon, and describes its function. Tip of the Day consists of a Help box containing a brief explanation of a *WaveLab* routine or shortcut. All in all, it's a very useful set of reference and learning tools.

From the moment it boots, *WaveLab* looks special. Configurability is the name of the game.



Compressing audio using the onboard dynamics processor — here the compression curve is being edited graphically.

The colour of most text and graphics is user-definable and can be saved as a Style in the Options menu. Most windows have 'speed' menus, activated by clicking the right mouse button, which contain the most commonly-used functions — you can quickly switch between the units used for Time and Level measurement using the Rulers speed menu, for example. *WaveLab* also features a comprehensive set of key commands to help speed up operation. Multiple files can be opened and displayed, and you can save your workspace on quitting; when you next boot it up, *WaveLab* will automatically load WAV files and database information, and even recall a Toolbar position. Projects are the best way of working in *WaveLab* (unless you're doing only simple, one-off edits) and these also retain Snapshot and Marker information. All editing in *WaveLab* is non-destructive to your source recording, unless you choose otherwise.

GETTING TO WORK

The *WaveLab* Applications page contains the Menu and Status bars, wave views, Toolbars and, when open, the Audio Access database. The Status bar at the foot of the applications page displays wave cursor position, zoom factor, wave/selection length, and sample parameters. During processing tasks, progress times are also shown. Toolbars can be floating, or 'dragged and docked' along the sides of the application window. Toolbars may be hidden and recalled as desired, and transport functions have their own Toolbar, as does the Toolbox, which accesses selection mode, scrub, and the inevitable Steinberg kickers (nudge tools). The Control bar icons access the more common File and Edit functions.

The wave windows consist of two panes: the Overview and the Waveview. The Overview, as its name suggests, shows the whole soundfile, and is mainly used for information and locator functions. Clicking anywhere on the Overview locates the wave window cursor. To define the area of the file you wish to work with, you create a selection by dragging the mouse over the wave display. An area changes colour to indicate the selection. Selecting an area in the Overview defines the portion of the soundfile displayed in the Waveview window beneath.

The bulk of *WaveLab* activity takes place in the Waveview pane, where you can work on both channels independently, or on both, as a stereo file. Wave displays can be magnified or shrunk, using the horizontal and vertical zoom sliders found by the scroll bars. The zoom sliders can be dragged with the mouse, enabling you to view the whole file and to zoom down to one sample per pixel, if required. To avoid time lost scrolling around the file and changing magnification level, *WaveLab* allows the same audio data to be viewed in multiple windows. Each can have different ranges and zoom settings. In addition, each wave window can store eight 'Snapshots'. These are Waveviews containing range and zoom information, which can be saved, recalled, and overwritten. Instant switching between windows during playback is possible by clicking on the time ruler of an inactive window. This technique is useful for comparing audio — for example, when sorting between takes.

MARKERS

Markers are used as locators or section labels, and appear as inverted triangles on the Waveview measure ruler. They are created — during playback if you wish — by pressing Insert, and they can be repositioned by dragging, and even given names. You can view the Markers list by double-clicking on a time ruler or using [Control] M on the keyboard, and the list can be sorted by name or position, but curiously there is no provision to edit Marker positions numerically or to snap Markers to time. Positioning the mouse beneath the Marker icon makes the Marker name appear in a 'Tips' box. This system works reasonably well, but Marker names can only be seen one at a time. I would prefer a hideable Marker bar, containing all the Marker names, beneath the time ruler.

The wave cursor is located to the Marker position by double-clicking on the Marker triangle — this will even work during playback. If the Marker is not visible — for example, if it is outside ▶

DIY EDL

A Playlist, or EDL (Edit Decision List), determines the play order of tracks or part-tracks and is used in soundtrack work, CD compilation, and remix sessions. The EDL typically contains start and end times and duration information. At first glance, *WaveLab* does not have an EDL, but fear not — there is a way around this. Load your tracks into *WaveLab* as usual. Create a new blank wave window: this will be the master track. Copy your tracks in sequential order to the master track, adding markers denoting start and end points as you do so. Double-click on the time ruler to open the Markers view and sort by time. The start and end points of the tracks will be presented in order. Use the *WaveLab* editing tools to edit the list.

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Steinberg WaveLab

the wave window's current range — clicking on its entry in the Markers list produces the same result. Double-clicking on the waveform between two markers selects the audio between them.

Other navigation aids include the 'Go To' options accessed from the View menu or the Waveview speed menu. Clicking on the cursor field in the Status bar locates the Waveview to the current cursor position, and you can cue the audio by clicking on the Waveview time ruler. The Transport bar contains the loop selection, record and stop icons: clicking once on the Transport Stop icon locates the cursor to the start of the selection; clicking twice sends it to the beginning of the file. The numeric pad also contains locator functions, and you can position the cursor to an exact time by using 'Move Cursor to Position' in the View menu.

EDITING OPERATIONS

Editing in *WaveLab* is a joy — procedures are fast and well thought out. Simple edits can be made by drag-selecting an area in the Waveview. The Waveview speed menu offers options including Cut, Copy, Paste, Delete, Replace with Silence, Play Selection, Zoom Selection, Screen Elements and Colour Preferences. As *WaveLab* is truly multitasking, you can edit and process while looping playback. This allows you to quickly audition your edit and undo changes on the fly. Impressive stuff — although you do need a powerful computer for glitch-free playback during the more demanding edit processes, such as complex chorusing and harmonisation.

Sections of audio can be copied to a different position within the soundfile using drag-and-drop, and if you hold down [Alt] and drag, the audio will be moved rather than copied. To create a new wave window, all you need to do is drag your selection into the main application area. You can copy between soundfiles by dragging your selection into another wave window, although take care not to drop onto any selected audio, or you'll create a crossfade. Other basic edit functions include Trim, which deletes all audio outside the selection, and Insert Silence, which will place a blank section the length of the selection into the soundfile at the selection start point. You can also convert a mono file to stereo (and vice versa), and flip the channels of a stereo file.

With the 'Magnetise Bounds' command from the Options menu active, you can use a Marker as a snap point. Just drag the audio near to the Marker line, release the mouse, and the audio will be positioned at the Marker point. If Snap to Zero Crossing is active, *WaveLab* will automatically find the best place to create a glitch-free splice. Audio can be shunted to the beginning or end of the soundfile using the Prepend and Append commands. Another useful option is 'Multiple Copies'. With this, you can extend that killer drum loop to create a temporary working drum track — up to 1000 copies can be created in this way. Two sections of audio can be blended by copying one to the clipboard and then using a 'Mix' command to combine the two.

WAVE PROCESSING

WaveLab's wave processing functions divide into two main areas: level correction and effects processing. During processing, the Status bar shows task progress times, which were generally surprisingly fast on my Pentium 100 system. Once processing is complete, you can use Undo to return to a previous version. *WaveLab* has multiple Undo levels, and each level is consecutively displayed on screen. While this is invaluable, I would prefer an Undo history, listing edit operations with time and file details.

> "Editing in *WaveLab* is a joy — procedures are fast and well thought out."

WaveLab supports batch processing. This is a very powerful feature that enables you to process several files using multiple treatments in a single operation. You might use batch processing to correct DC offset (more shortly on this), or to normalise, compress and gate different takes from a recording session, prior to editing and assembling the final version. Beware, though — batch processing can be relatively time-consuming, even on a fast PC. Large files — especially using multi-stage processing — can take a long time. The best thing to do is organise your task list and go and make a cup of coffee.

The most often used Level functions are Change Gain and Normalisation. Change Gain adjusts absolute volume — that is, relative to the level of the audio itself — while normalisation adjusts volume level relative to 0dB, the threshold of digital distortion. Normalise is most commonly used to optimise the level of soundfiles recorded with low gain. Both Change Gain and Normalise dialogues also include a 'Get Peak' level option. The DC (Direct Current) Offset function, under the Level menu, allows correction of DC Offset problems, which are ▶

SYSTEM REQUIREMENTS

WaveLab v1.01 is a full 32-bit native Windows 95/Windows NT application and will not run under Windows 3.11. The recommended requirements are a PC with maths co-processor (386/486DX or Pentium) with a minimum of 8Mb RAM. In practice, I would recommend at least a 486 DX4 100, and the more RAM the better. As with all hard disk recorders, you need a fast, large SCSI or E-IDE (mode 4) hard drive. A CD-ROM drive is also required. Best performance will be achieved using the program in 256-colour mode.

You'll need to change the Windows 95 Virtual Memory settings in System Properties/Performance, from the Control Panel. Don't be deterred by the dire warnings — Windows 95 can sometimes be unnecessarily dramatic! Specify 20Mb minimum and between 20 and 40Mb as the maximum. The optimum size is two and a half times your amount of RAM. You can also save your *WaveLab* virtual memory configuration as a separate hardware profile in System Properties, should your *WaveLab* configuration conflict with other software.

Review System: Pentium 100 PC; 256K pipeline cache; 16Mb RAM; standard PCI video card; 17-inch monitor; Turtle Beach Multisound Classic soundcard for analogue; and DAL Digital-Only Card D.

ACCESS ALL AREAS?

***WaveLab* contains a proprietary database called Audio Access. With it you can catalogue, locate, audition or transfer to the *WaveLab* editor any soundfile you have stored on hard, removable or floppy disks and CD-ROM. You can organise your soundfile library into categories and groups, so that similar types of soundfiles from different sources are displayed together. For example, your Brass group may be sub-divided to include a trumpets section, which in turn may include riffs, loops, ensembles, single-note sets, and so on. You can use the database search facilities to sort and display files that meet criteria such as instrument, date, size, sample rate, length, or user keyword. Similarly, you can set filters to exclude files that meet defined criteria. As a means of getting to grips with WAV and AIFF files, the *WaveLab* database is great. But a large proportion of my digital soundfile library is on audio CD or DAT, and sadly there is no provision for these. However, Audio Access is a studio tool that will become increasingly useful as I transfer my old sample library over to CD-ROM and hard disk.**

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Forget you ever heard the term "MIDI mode". Working with the MR-rack is easy, because it's always ready to receive on 16 MIDI channels. And it's just as easy to set up splits and layers on a single channel.

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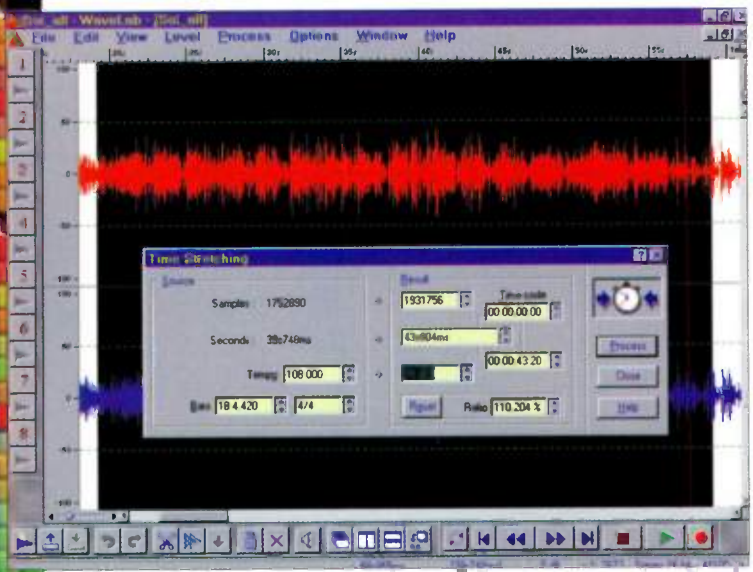
WRH

Steinberg WaveLab



Samples 1752890 → 1931756

Seconds 39s748ms → 43s804ms

Tempo 108.000

Bars 18.4.420 4/4

Time code 00:00:00:00

00:00:43:20

Ratio 110.204 %

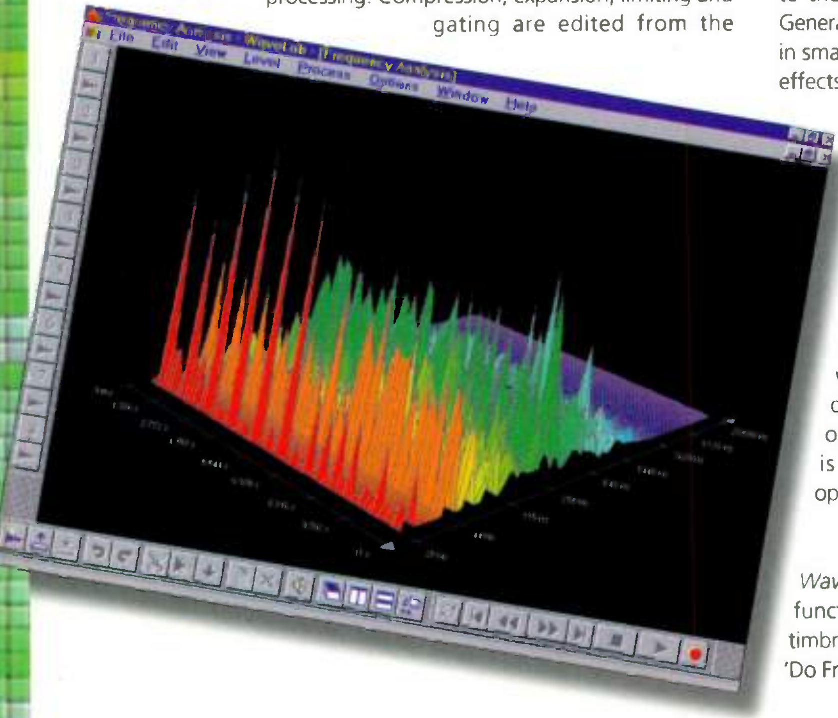
The Timestretch settings dialogue box.

most commonly experienced with soundcards and some DAT recorders, and can be heard as clicks at splice points, caused by mismatches between digital audio recording devices. The problem is part of the recording process and can be seen if the wave image appears off-centre from the zero level axis when you zoom into a quiet part of the soundfile.

The Level menu also includes Fades, and the Fade dialogue box contains two parameters: Damping adjusts the steepness of the fade, and Offset defines the point at which the fade reaches -6dB, or half the volume level of the soundfile. The Fade curve appears superimposed on the Waveview, with a small square representing the Offset focus. The review copy of *WaveLab* contained a bug that occasionally displayed the fade curves incorrectly, although processing itself was not affected.

WaveLab includes sophisticated dynamics processing. Compression, expansion, limiting and gating are edited from the Dynamics dialogue by adjusting the familiar envelope parameters of Attack, Hold, Release, Threshold and Ratio. (For a detailed look at compression, see Paul White's article in *SOS* April '96.) You can also use a graphic editing option, and presets have been included by those clever Steinberg boffins to emulate hard-knee, soft-knee and gated tube compression. There are some very fine algorithms at work here that added punch and body to test pieces I ran through the presets. The bass and lower mid frequencies were given enhanced depth and crispness, while the top sat more comfortably in the mix. Had I spent £400 on a dedicated rack unit that produced results of this quality, I would have been delighted.

The striking 3D Frequency Analysis window. Selected audio appears here as a 3D graph once it has been analysed.



The timestretch algorithms in *WaveLab* are amongst the most natural I have ever heard. Timestretch is most often used to slightly speed up a finished track to give it more 'wizz', or to synchronise two pieces of audio with different lengths or tempos. From the Timestretch dialogue, you can specify the degree of timestretch required as bpm (beats per minute), time, samples, ratio, or SMPTE timecode. It is usually on complex, wide-bandwidth recordings that the shortcomings of timestretch routines are most obvious. I chose a full-range mix of vocal, drums, bass and organ, with an original tempo of 108bpm. I shifted the material, whilst retaining its true pitch, first up to 120bpm and then down to 96bpm. Processing was surprisingly fast, and the quality of the results was impressive, with very little evidence of aliasing.

Pitch Correction allows you to change pitch, with the option of altering length. The *WaveLab* Harmoniser can create up to 16 shifted voices, which can be individually mixed for pan, level and pitch. The Harmoniser is also very useful for creating stereo from a mono source. If you use it subtly, you can avoid the 'munchkinisation' that occurs when simple pitch-shift devices are applied to the human voice and acoustic instruments. Generally, pitch-shift-type processing is best applied in small increments, except when used for special effects and synthesized sounds.

The Hi-Fi Chorus is tasty. *WaveLab* copies the source signal up to 100 times, and just as in a real chorus, each voice is slightly detuned and delayed. The results are very sweet-sounding. Parameters include number of voices, pitch variation, delay, dispersion, and intensity. Beware, though, if you do choose a multiple voice chorus: you may have to wait a long time for processing. Steinberg development, please take note: for short operations, *WaveLab* processing and Undo is fast enough, but for long, complex operations *WaveLab* needs a Preview function.

FREQUENCY ANALYSIS & EQ

WaveLab has a rather snazzy Frequency Analysis function which allows you to view audio by its timbral content. Having made a selection, choose 'Do Frequency Analysis' from the View menu. The audio is displayed as a 3D Fast Fourier graph, with amplitude represented by rainbow-coloured peaks and valleys. Right-clicking on the graph calls up a dialogue box from which you can change your viewpoint, choose a Linear or Logarithmic representation, or different colour options. I've always been fascinated by 3D FFT graphs and this one is gorgeous! From a more utilitarian angle, Frequency Analysis is a vital tool for identifying rogue frequency components in audio signals. The only small gripe I have is the lack of user presets. When using Frequency Analysis on a test piece, I identified a high-amplitude, sub-bass component at around 23Hz, which I'd failed to hear on my monitors when recording, because the frequency fell outside their accurate working range. Sometimes low frequencies like this can cause problems, so I wanted to hear the audio with the sub-30Hz band removed. Unfortunately there was no way I could do this using the *WaveLab* EQ (which has two shelving filters — high and low — and a parametric, wide-range mid band with adjustable Q), as 23Hz falls below the frequency of the parametric (50Hz-14.6kHz), and the fixed curve of the low-shelf filter (45Hz-2kHz) attenuated higher frequencies that I did not wish to alter. Similar difficulties arise at the other end of the audio spectrum, as the top filter has a fixed Q and a range of 2kHz-12.3kHz. For most purposes, the *WaveLab* EQ will be adequate, but the addition of low- and high-pass filters or a wide-band graphic equaliser in a future upgrade would be most welcome.

> "The more I use *WaveLab*, the more I like it."

CONCLUSIONS

So how does *WaveLab* compare with its rivals in the race for your money? Its processing power would certainly be enhanced with the more comprehensive EQ, multitrack facilities, and real-time preview functions of *Samplitude Studio*. And it would be great if *WaveLab* had the wide processing palette of *Sound Forge v3*, or the MIDI and SCSI sample dump, reverb, and EDL playlist tools that are part of both of these admittedly more expensive programs. I'd love to be able to escape the tiny edit LCD on my sampler, and I think it's a pity that *WaveLab* does not support MIDI or SCSI sample dump. However, *WaveLab* has unique features that *Samplitude Studio* and *Sound Forge* do not have (or which are only available as plug-ins): Frequency Analysis, batch processing, amazing user configurability, and the Audio Access database. In addition, there is an undeniable elegance about *WaveLab* editing and processing that no other PC software quite possesses. *WaveLab* just oozes quality, and is very, very fast. It brings the best out of Windows 95 and presents a clear and refreshing graphic user environment which, when combined with the flexibility and ease-of-use of the *WaveLab* editor, provides a high-quality workspace for the engineer. The more I use *WaveLab*, the more I like it. Highly recommended.

Many thanks to Michael, Simon, and Steve Peterson and the gang at Look Micros.

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Apple NOTES

MARTIN RUSS's terminal terminal finally gives up the ghost and after thinking long and hard about its replacement, he makes a surprising decision...

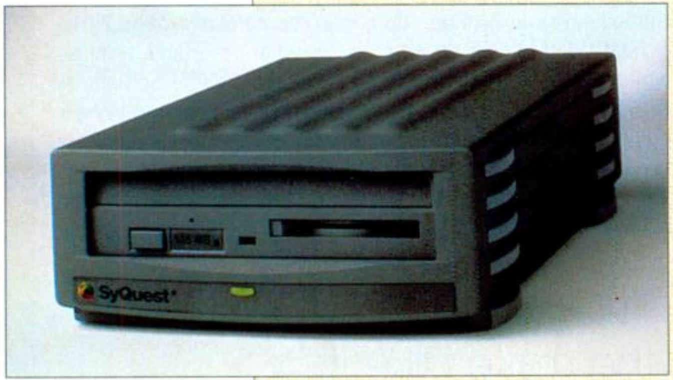
As you may remember from the last Apple Notes, my Mac IIsi was not well. In fact, just after I had emailed the text to *SOS*, the IIsi finally died. Rather than just 'freezing' at the wrong moment, it now refused to power up altogether. If I had minor hardware problems before, they were now major!

If you've never had a well-used computer die on you, you've probably never worried about what happens when you suddenly don't have it any longer. In my case, the IIsi held all my MIDI files, sequencer files, Apple Notes files, and lots of other work in progress — as well as the installs for the copy-protected music software. And it was now all inaccessible. The word for this situation might be 'disaster'.

But it wasn't. I don't trust computers, and I've always taken great care that everything I do is backed up, as I'm sure all Apple Notes readers already do! In fact, as I have mentioned before, I go one better than just backing up — I have a complete copy of the whole of my work area on a separate SCSI hard disk. The important files in the System Folder are backed up to a removable hard drive, since they don't change very often. But an exact copy of the main drive, which holds all my working files, is held on a partition called Main Backup on an external SCSI 850Mb drive. I use Symantec's excellent *CopyDoubler* utility program to rapidly copy across only those files which have changed.

TIP OF THE MONTH — BACKUP

Let the demise of my IIsi serve as a warning to you. Do a backup now, and seriously think about making a copy of your important files or folders onto an external hard disk. With hard disks at their current prices, having a copy of your current work is not going to be very expensive, and could save you a great deal of hassle. Alternatively, one of the new generation of removable hard drives (Jaz, Zip, EZ135) could not only be used to hold copies of your vital files, but also those ever-expanding patch and/or sample libraries.



SyQuest's EZ135 — now a useful (and removable) aid to archiving and backing up.

The last time I updated my Main Backup was the day before the IIsi died, so the worst scenario I faced was the loss of one day's work. As it was, *SOS* had my email of Apple Notes, and so I lost very little. All I needed now was a new Mac to connect to the Main Backup drive and get back to normal.

CHOICES

Last month, I speculated about the choices that were open to any prospective purchaser of a Mac for music and MIDI. They really boil down to these options:

- 68040 Macintosh with NuBus
- 68040 Macintosh with AV options
- PowerPC Mac with NuBus
- PowerPC Mac with AV options
- PowerPC Mac with PCI

The two 68040 Macs offer the widest scope for compatibility with old Mac software which runs under System 6 or earlier. Not all Mac users are willing to join the ongoing increases in complexity and size of the latest Systems, and choose to remain with some of the older but slimmer releases like 6.0.7, which was the last of the pre-7 Systems. I've heard some very convincing arguments against the burgeoning additions to System 7.5 (and onwards to MacOS 8) when you are using MIDI sequencers — but remember that for more mainstream applications, System 7 has many advantages.

The other advantage of 68040 Macs is their serial ports, where both can be used for MIDI purposes. The hardware changes that have been made to the serial ports on Power Macs have caused some problems with using both serial ports to input and output MIDI information. Of course, if you use AppleTalk (or LocalTalk) to network to another Mac or to connect to a printer, this can also seriously affect the operation of the serial ports, regardless of the type of Mac.

▶

APPLE NEWS IN BRIEF

• LIGHTS, CAMERA... MACTION?
During June, a team of Apple R&D evangelists stopped off in London and Milan to try to convince TV and media broadcast people that Apple have the hardware and software enablers to let them make programmes quickly and easily. New technologies like FireWire and DVD were on show, as well as "the newsroom of the future". Apple Notes was there (in London, not Milan!), and managed to get a sneak preview of the forthcoming *QuickTime* 2.5, which Apple said should be available by the time you read this. A full report on what I saw will follow in next month's Apple Notes.

• NETWORK COMPUTERS
The June Apple Notes featured my views on how a future network computer might bring music and musicians together. Now Apple, Sun, Oracle, IBM, and Netscape have announced a joint proposal to produce an open specification for exactly this type of device. The network computer specification seems to be exactly what it says, in contrast to Microsoft's SIPC (Simpler Interactive Personal Computer) which uses an acronym to hide a cut-down PC running Windows. Expect increasingly rabid crossfire from these two sides as the battle for the integrated Internet computer intensifies.

• TRACKERS
With the music world so focused on MIDI, it is not surprising that some developments in the computer world go almost unnoticed. With the huge increases in processing power and the improvements in audio I/O that have happened recently, an underground phenomenon may now be set to re-surface: trackers. Trackers, or Mod players, use the techniques behind wave-sequencing and sample replay to produce complex music from relatively simple components — they were popular on the Atari ST and Amiga computers, and have started to reappear in a significantly more versatile form on the PC and Mac, taking full advantage of the changes in technology. So, if you find someone producing music from a .MOD file, don't assume that it is a mis-spelling of .MID — it could be the start of the next big thing.

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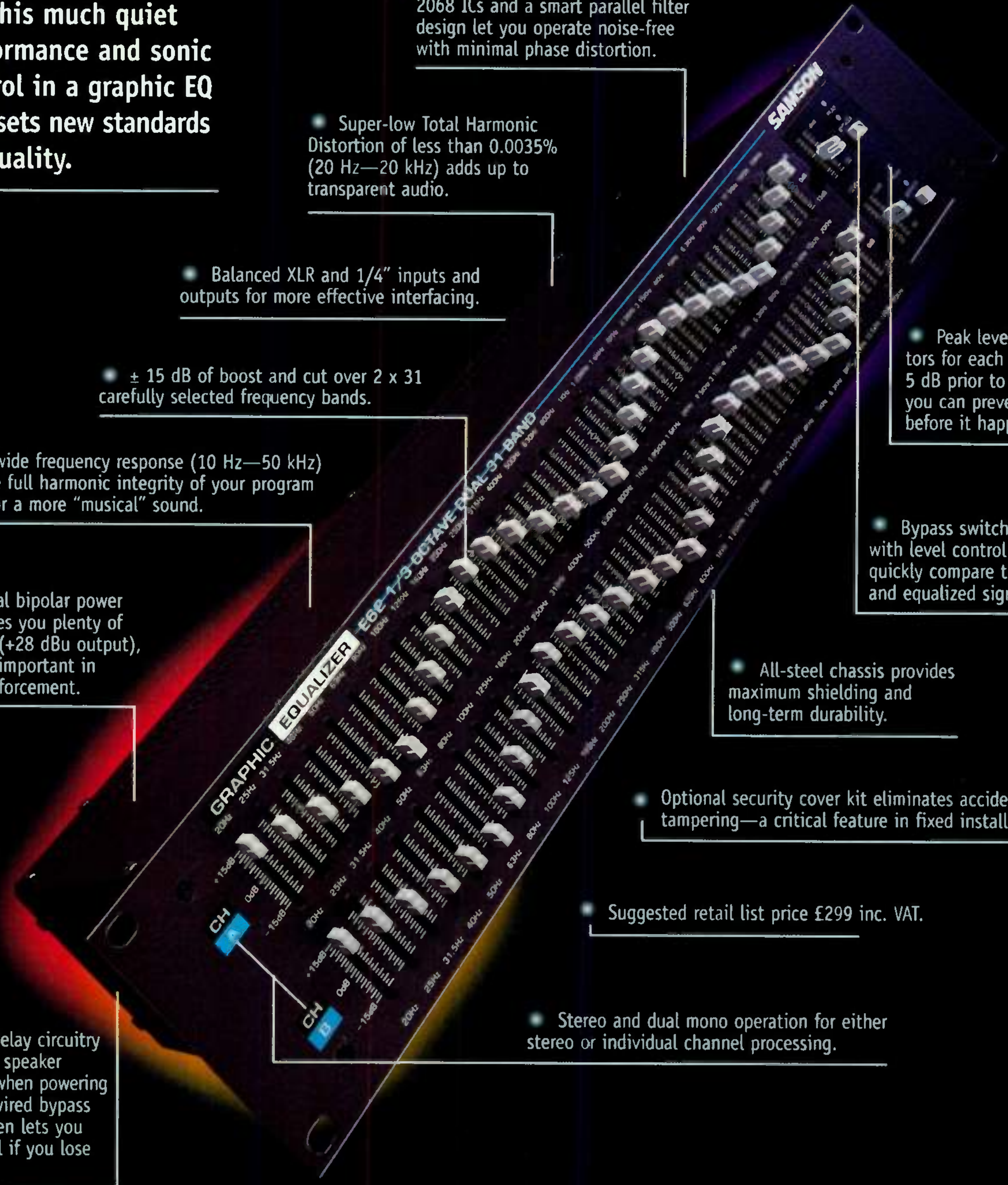

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Apple NOTES

THEY'VE GOT THE POWER

For Power Macs, System 7, or even System 7.5, may well be the lowest System which can be used. But the major consideration with Power Macs (and any PowerPC clones as well) is the expansion options: NuBus or PCI. The first generation of Power Macs had the familiar NuBus expansion buss, which first appeared in the 68030 Mac II series, and continued through the 68040 Quadras. Second-generation Power Macs have the newer PCI buss, which has the advantage of being widely used by many current computers and workstations. PCI replacements for familiar NuBus cards like those from Digidesign are beginning to appear — their recently-released Audiomedia III card (see the review in last month's *SOS*) is the first of many.

The AV options of the Power Macs include enhanced video capability, but also better audio input and output facilities than the ordinary Macs. Although using 16-bit AD converters and DA converters at 44.1 kHz, the actual performance is not felt to be quite up to CD quality, and the distinctly non-pro mini-jack connectors serve to reinforce this. More recent Macs have tended to hide their AV capability — generally the higher-numbered models have some AV facilities, but the helpful AV at the end of the name is no longer added.

Overall, the Power Mac range has seen a bewildering explosion of models in just a couple of years, which has made trying to keep up with them almost impossible. This seems to have affected Apple as well: under new leader Gil Amelio they are trying to slim down the range to just a few models, so perhaps a bit of welcome sanity will return. Even so, I don't think we will ever return to the halcyon days of the Mac II series, when for several years, the IIfx was the tops, and new models gradually filled in the gaps underneath it, all in a nice predictable way. Nowadays, ever-faster processors mean that the clock speed has become part of the name of the computer, as in the Power Mac 9500/150, and some manufacturers just use the processor type and clock speed, as shown by the Power Computing PowerWave 604/150.

THE MAC OS LEAGUE TABLE

PROCESSOR	CLOCK SPEED	EXAMPLES
PowerPC604	150	Power Mac 8500/150, 9500/150, PowerWave 604/150
PowerPC604	132	Power Mac 9500/132, PowerWave 604/132
PowerPC604	120	Power Mac 8500/120, 9500/120, Power 120
PowerPC601	120	Power Mac 7600/120, 8200/120, PowerCurve 601/120
PowerPC603	120	Performa 5320, 6230
PowerPC601	110	Power Mac 8100/110, 8100/110AV, Radius 81/110
PowerPC601	100	Power Mac 7500/100, 8200/100
PowerPC603e	100	Performa 5300, PowerBook 5300, Duo 2300
PowerPC601	90	Power Mac 7200/90
PowerPC601	80	Power Mac 8100/80, 8100/80AV
PowerPC603	75	Performa 5200+, 6200+
PowerPC601	75	Power Mac 7200/75
PowerPC601	66	Power Mac 6100/66, 6100/66AV, 7100/66, 7100/66AV
PowerPC601	60	Power Mac 6100/60, 6100/60AV
68040	40	Quadra 840AV
68040	33	Quadra 630, 650, 800, 950
68040	25	Centris 650, Quadra 610, 660AV, 700, 900
68LC040	33	Mac LC 575, Performa 630, Duo 280, PowerBook 190, 540
68LC040	25	Mac LC475, PowerBook 520
68LC040	20	Centris 610
68030	40	Mac IIfx
68030	33	PowerBook 150, 165, 180, Duo 230, 250, 270
68030	32	Mac IIvx
68030	25	Mac IIci, LCIII, PowerBook 145, 160, Duo 210
68030	20	Mac IIsi
68030	16	Mac SE/30 IIx, IIvi, Classic II, LCII, PowerBook 140
68020	16	Mac II, LC
68000	8	Mac Plus

The Mac OS League Table. The fastest models are towards the top, the slowest are towards the bottom. All positions are approximate and depend on how you measure performance.

CHECKING THE SPEC

The one thing that no-one ever seems to want to tell you is just how all these Macs compare to each other. Since I needed to have some idea of the relative merits of the major models, I compiled a league table. It shows a very rough ordering (I'm not infallible, and there has been some interpretation of the available figures) of the main Macintoshes and clones (see box 'The Mac OS League Table').

The computers in the middle area of the table may be most suitable for MIDI sequencing and patch editing purposes, whilst those towards the top may be more suited to hard disk recording and 'MIDI + Audio' purposes. You'll need to check on important details like NuBus or PCI expansion slots, the serial port(s), and suitability for specialised applications like MIDI or audio before you purchase, especially if you're considering a second-hand computer. The lower cut-off point typically recommended for current MIDI sequencers is somewhere around the Mac IIsi. For professional 'MIDI + Audio' usage, the nearer the top the better.

DECISION TIME

So what machine did I go for? After considerable thought, serendipity took over, and I was offered a Centris 610 at a bargain price — and I bought it! (Those PC Notes readers who were hoping that I would say that I went for a Pentium Pro PC running Windows 95 can stop reading now...) Why did I buy such a gloriously out-of touch machine?

The Centris 610 is one of the last of the 680n0 Macs, albeit not a 68040, with a NuBus slot (via an adaptor), should I ever need one. It runs all my ageing freeware and shareware, and it can run both serial ports at full speed to cope with the demands of my heavily-used Opcode Studio 5LX MIDI interface. It has enough power to cope with my current MIDI sequencing, and I'm still hesitating about adding audio tracks...

The Centris 610 is also small and neat, with the potential to replace the main board for a 6100 Power Mac board — assuming that there are still some upgrades hanging about when I get around to it. Best of all, it cost a fraction of what my IIsi cost three years ago, so I'm quite happy to have it as my temporary friend whilst I save for a Power Mac — and then I'll have a 680n0 *and* a Power Mac, so I can separate out the writing and Internet stuff from the music and MIDI work, which should result in a much simpler way of working.

Any readers with a humble 680n0-based Mac who feared that they were about to be ignored can relax for a while. I haven't abandoned the 680n0 processor — in fact, I now have a live one *and* a dead one!

WRH

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ROLAND D110 Tone Module	(U)	£ 175.00
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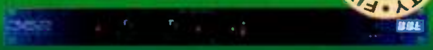

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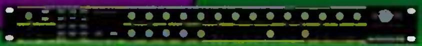

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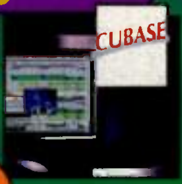

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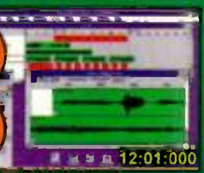

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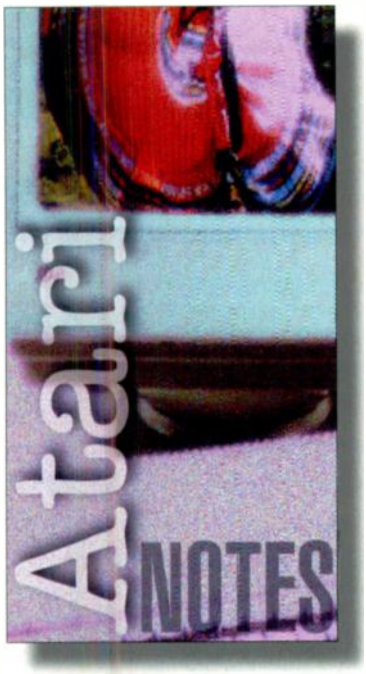


Atari NOTES

OFIR GAL brings news of a crop of software releases, from audio to graphics, which could enhance your Atari working environment...

A month has gone by since I got my first look at the Falcon MkX (see last month's column for my initial reactions) and I now have some hands-on experience of this new machine, which I hope to share with you in next month's column. I've actually spent the last few days producing various radio jingles for my band using *Cubase Audio* with the MkX.

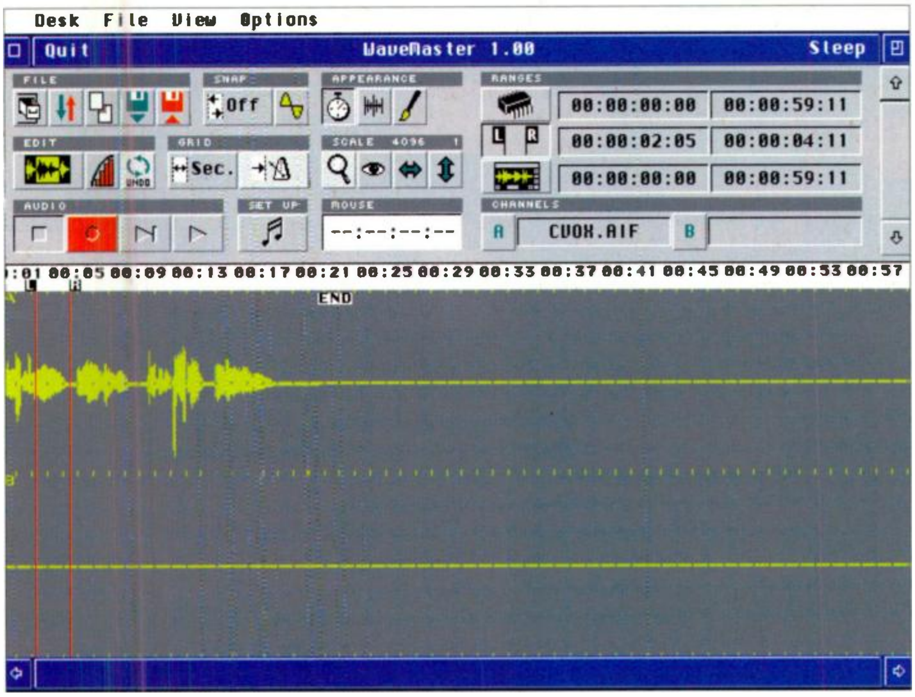
In the meantime, I'm pleased to report this month that quite a few new products and upgrades have appeared on the scene, most notably *Wave Master*, a new product from SoundPool.

FALCON AUDIO NEWS

Wave Master is a new audio editor for the Falcon that can be used as a desk accessory alongside *Cubase Audio* and other direct-to-disk applications. *Wave Master* can load and save AIFF, WAV, AVR and DVSM audio files, as well as importing sound directly from audio CDs. Its main use is for destructively editing audio files down to single-sample accuracy. Using a RAM buffer, all changes can be undone until you close the editor window, at which point the edited file is written back to disk. The program can also record audio directly, and it supports the various hardware options, like the FDI and FA8.

Memory permitting, two tracks can be edited together in *Wave Master*. Functions include normalise, fades, reverse play, sample rate conversion, and standard cut, copy and paste. The program features automatic zero crossing and also has various controls to allow accurate 'groove' editing. If you run it with *Cubase Audio*, all you need to do is close the *Wave Master* editor window and you can immediately audition the resulting edits in *Cubase*. *Wave Master* costs £129 from System Solutions (0181 693 3355).

CD Recorder Pro 2 for the TT and Falcon is also now available. It features a much improved interface, supporting drag-and-drop and on-line help. The program can write CDs in a variety of formats, including ISO 9660, Atari, and DOS, as well as mixed-mode and audio CDs. *CD Recorder Pro* even offers a backup to CD facility, utilising its multi-session capabilities. When used in conjunction with *Audio Master*, *CD Recorder* can produce audio CD masters. The program understands AIFF, WAV and AVR files, and burns Red Book-compatible audio discs. You can also audition the files directly from hard disk before burning the CD.



Wave Master is a sample-accurate audio editor that can work alongside **Cubase Audio** *for the Falcon.*

EMULATION UPDATE

A few days after submitting my column for the June issue, I received news of a new version of *MagiC* for the PC. The developers of the original *MagiC* and *MagiCMac* are about to release *MagiCPC* in the UK. Like the Mac version, *MagiCPC* is a complete operating system that runs alongside Windows 95, allowing you to run Atari programs on a PC. The Atari version of *Cubase*, like many older programs, does not run, but compatibility with programs like *Calamus* and *Papyrus* is reportedly good. The minimum recommended system is a Pentium 100, with 16Mb of RAM, running Windows 95. A UK release date is yet to be set.

CD Recorder has a built-in PQ data editor which allows you to set pre-emphasis and copy-protection status, adjust break time between tracks, and more. The program supports all Yamaha and Philips-compatible CD writers up to x4 speed, and it costs £229 from System Solutions (contact number as above).

ALTERED IMAGES

Positive Image is a new bit-map image manipulation program for the Atari range. It works with any image type up to greyscale and true colour (24-bit) images and therefore operates best on a TT or Falcon, but can still be used on a basic ST. The program claims full compatibility with all Atari machines and screen modes, and has GDOS/NVDI support for fonts and printing. In addition, *Positive Image* runs with any graphics card and works with *MagiC*. When running on the Falcon, the program uses the DSP to accelerate functions such as resizing, rotating, and some filters. It accepts a variety of file formats, including TIFF, JPEG, XIMG and TGA. The program enables accurate editing of images, allowing you to edit the RGB channels separately, and uses anti-aliasing when resizing images. An enhanced GEM interface features non-modal dialogue boxes, so you can access the menu bar at all times. *Positive Image* manages its own virtual memory, allowing you to edit large image files under tight memory conditions. Most frequently-used functions are available from a toolbar.

The program permits adjustment of image brightness, contrast, saturation, gamma and more. Standard filters, such as 'unsharp', 'mask' and 'blur' are pre-installed, as are full 8-bit masking facilities. The software is available for an introductory price of £65 from Floppyshop (01224 586208). SOS

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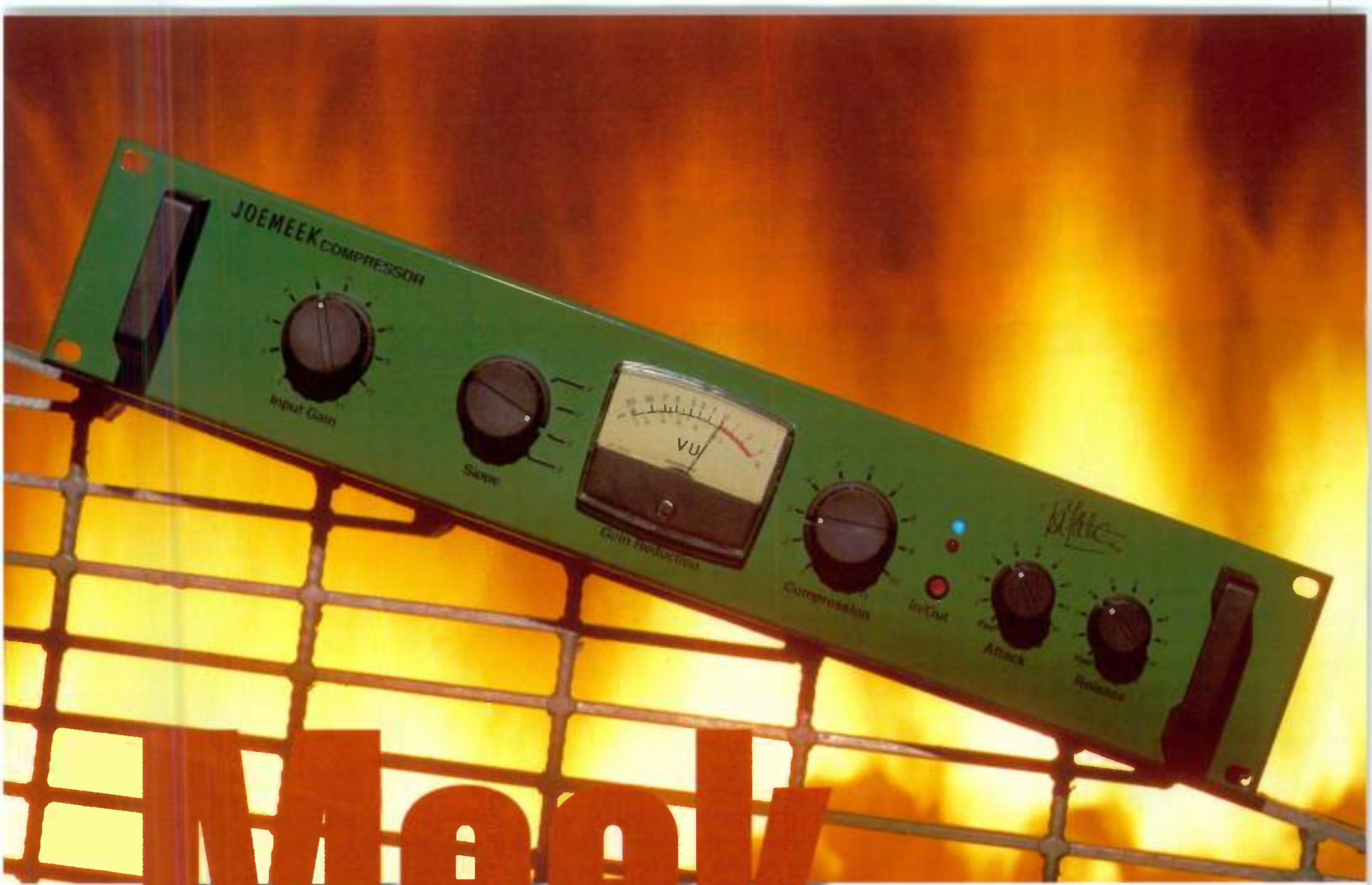

Meek but not Mild

JOE MEEK STEREO COMPRESSOR

PAUL WHITE studio tests the Joe Meek Stereo Compressor to find out whether nostalgia really is what it used to be...

Before his tragic death three decades ago, Joe Meek had a profound impact on the way music was recorded and produced in the UK. Nearly everyone remembers Joe for the instrumental record 'Telstar', which was a hit in the early 1960s, but he was also a technical innovator, and used to build his own studio gear in the bedroom of his home in Holloway Road, London. If you read the review on the Joe Meek Voice Channel in the September '95 issue of *SOS*, you'll know that some of Joe's old compressor designs have been brought up to date by engineer Ted Fletcher, who worked with Joe in the '60s.

The model reviewed here is based on Joe's classic photocell compressor design, but updated using modern low-noise components, and a new feedback circuit around the photocell and lamp to speed up the compressor's response time. As explained in the Voice Channel review, the original compressor design was rather unstable and apparently a bit of a pig to set up, so Ted has modified the control system to make the unit more predictable in operation.

All compressors create audible side-effects to a greater or lesser extent, and in a creative context, generous helpings of benign side-effects are what differentiate one compressor from another. The photocell design in the Joe Meek compressor affects the attack characteristics of transient sounds and vocals, making them seem more punchy than more technically 'correct' compressor circuits, yet the design also manages to retain the openness and transparency of the original sound, even when relatively high levels of compression are being used. This attribute means that the compressor can be used to add weight to complete mixes as well as to individual tracks.

HARDWARE

The Stereo Compressor is packaged as a conventional 2U rackmount unit, and all the cosmetic effort has gone into the chamfered front panel, with its refreshingly simple layout and chunky black knobs. The inputs and outputs are provided on both TRS jacks and XLRs, and are electronically balanced using Ted's own 'Superbal' system, which was first published in *Wireless World* nearly 20 years ago. The balanced outputs are 'floating', which means that if you ground one side to unbalance the signal, you don't lose half your signal level or compromise the signal quality. The maximum output level is 28dBu, which means that the unit is optimised for the levels found at most console insert points. Mains power comes in via the usual IEC mains lead, but there's no access to the compressor's side-chain and, strangely enough, no power switch.

The Joe Meek compressor uses a type of

WRH

soft-knee compression, so there are no hard and fast ratio numbers to worry about. Instead, the input Gain control is followed by a 4-position Slope switch, where position 1 equates to a fairly gentle style of compression, and position 4 is the most aggressive.

A suitably 'yellowed' moving-coil meter monitors the gain reduction taking place, while the Compression control adds gain to the side-chain circuitry, effectively adjusting the threshold value above which compression takes place. This control works on the basis that the higher the setting, the lower the threshold, and the more the signal is compressed.

Anyone who has worked with compressors will know that attack and release times make a considerable difference to the way the compressor sounds, and the Stereo Compressor has separate controls for both attack and release times, both calibrated from Fast to Slow, but with no actual time values printed on the dial, though the attack range is specified as from around 1.5mS to 10mS. At very fast attack settings, the photocell control circuitry overshoots, which means that there's a slight dip in level immediately after the attack, which is particularly evident if the maximum ratio setting (Slope 4) is selected. This kind of creative pumping adds drive and power to both vocals and more percussive sounds, and is probably the main reason this compressor sounds the way it does. Both channels are permanently linked for stereo operation and a single In/Out button applies a hard bypass, linking the input directly to the output. When the compressor is active, a blue LED shows; when it is inactive, a red LED lights.

The manual warns that the In/Out button might cause a click in some systems, particularly where the compressor is being used unbalanced (and most budget desks have unbalanced insert points), but as you're unlikely to switch the compressor in and out during a mix, this isn't really a problem.

The fixed stereo linking system means that if you want to use mono compression, you can use one side of the compressor only, but what you can't do is use both sides at once for independent processing of two mono signals — rather a pity, in my view.

PERFORMANCE

Like the Voice Channel, which is based on essentially the same compressor circuit, the Joe Meek Stereo Compressor has a very distinctive sound when large amounts of gain reduction are applied with high Slope settings. It's always hard to describe exactly what a compressor sounds like, but on vocals, you notice an increase in presence and richness, while excessive peaks and variation are brought under control in the usual way. The nearest commercial sound I can think of to compare this to is the well-known Phil Collins vocal sound where Phil uses some obscure old compressor to really hammer his voice. In purely aesthetic terms, this type of compression makes the voice sound more intimate and more confident, and although rather different to the much-vaunted valve sound, it does tend to lean in the same direction.

Due to the very simple control layout, the Stereo Compressor is very easy to use, although the lack of an Output Makeup Gain control means that you have to juggle the settings of the Input Gain and the Compression controls to achieve the desired output level. This isn't a problem, but what I do find very frustrating is that you can't switch the Gain Reduction meter to read the output level, which you can do on just about every other compressor on the planet — including the Joe Meek Voice Channel! Even a +4dB warning LED would have been useful. As it stands, the most practical way to work seems to be to operate the In/Out switch while setting up the controls, so that the peak compressed levels are subjectively similar to the bypass levels.

The fixed stereo format is obviously a limitation, as is the fact that you can't insert an equaliser into the side-chain for de-essing (although this is less of a problem). I can understand the lack of side-chain access on the basis that you would probably always want to use this compressor to create its own characteristic sounds, and not as a general-purpose gain reduction tool, but given the premium price of the Stereo Compressor, I don't think two sets of channel controls and a link switch would have been too much to ask for.

PUTTING IT TO THE TEST

Despite its relatively high cost, this compressor has a unique and very commercial sound which will no doubt help prospective purchasers justify the asking price. On rock and pop vocals it works magnificently, but it can also be used to great effect on sound sources such as acoustic guitar, bass guitar, electric guitar, percussion, and complete mixes or submixes. I made a DI'd fretless bass guitar recording (via an active DI box), and used the Stereo Compressor with the Slope control set to 3, which gave a very warm, tight sound that was instantly usable with little or no EQ.

Any criticisms are relatively minor: for me, the shortcoming that has the most effect on day-to-day operation is the lack of output level monitoring. At the end of the day, it all comes down to what this compressor can do for you, and how much you're prepared to spend. If you like the effect of heavy compression, the Joe Meek Stereo Compressor has to be one of the more 'characterful' units around. It's a bit like choosing a large-diaphragm capacitor mic, really — you have to pick one that suits what you do, and you can't make the choice based on spec sheets alone.

So far, the reaction to the Joe Meek range seems to have been very good, with Ted Fletcher working very hard to keep up with demand, but I would always recommend you hire products like this for a day or so to try out on a variety of your own sounds before you decide whether or not to buy. Personally, I liked the sound of the Joe Meek box very much. It's certainly not a compressor you buy for routine gain control jobs — it's most *definitely* an effect.

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pros
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cons
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summary

The Joe Meek Stereo Compressor has a powerful, compelling sound that works particularly well on vocals and electric instruments.

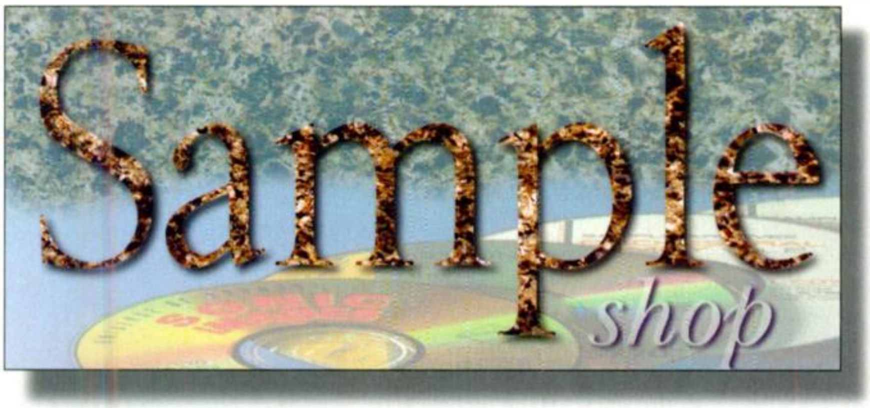
SOUND ON SOUND

GREEN MACHINE

Like the other Joe Meek units, the Voice Channel and the new Pro Channel, the Stereo Compressor is seriously green. Legend has it that the original Ted Fletcher prototype was hand-sprayed using the only can of car paint that happened to be available, and the response at its first showing was so positive that Ted decided to stick with it. Now the green panels are sprayed by a car specialist, and hand-polished to give the kind of finish normally associated with quality cars.

SPECIFICATION

Maximum Gain	20dB
System Noise	Typically better than -94dBu 20Hz to 20kHz
Distortion	within 0.004% from 100Hz to 10kHz except at low frequencies, where the distortion will (quite properly) increase if fast release times are used.
Freq Response	Nominally flat from 5Hz to 30kHz
Crosstalk	Better than -60dB at 10kHz
Input Impedance	20kΩ
Output Impedance	100Ω



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CARMICHAEL'S CRUNCHY NUT DRUM LOOPS

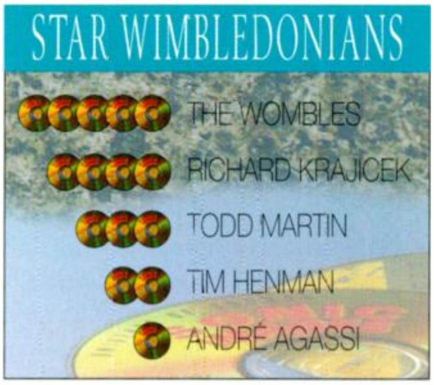
(AUDIO CD)

Many people may believe that the world needs another drum sample CD just as much as it needs another Pamela Anderson movie, but *Jim Carmichael's Crunchy Nut Drum Loops* presents itself as a worthy addition to the plethora of rhythm CDs currently available. Having provided the drums for the likes of bands like K-Creative and the chart-topping Freak Power, Jim Carmichael has turned his attention to a CD packed full of his funkiest drumming performances. This 99-track Audio CD is arranged into five distinct categories, namely: 'Live Soundcheck Loops', 'Mono Compressed Beats', 'Studio Grooves', 'Basement Cellar Beats', and 'Single hits & Percussion Samples'. Each CD track contains between one and five different drumming styles.

A good number of these styles appear to be in the form of a drumming 'song' complete with fills, rolls and variations on a rhythmical theme. These have then been chopped up into easy-to-manage sections of between one and four bars in length. This approach enables the user to sample, for instance, three or four different sections at roughly the same tempo, to provide colour and variation throughout a track. I say *roughly* the same tempo because as we all know, any instrumentalist is inclined to speed up and slow down slightly according to the part that is being played at the time. Some of these variations can be quite pronounced — as much as four or five bpm throughout the performance — but the producers see this as essential to the feel of the CD, and so have sensibly provided the bpms for each loop.

The emphasis of the playing is firmly on funk, although hip hop and more conventional rock and blues-style influences are also touched upon. This is certainly high-grade, toe-tapping stuff — the kind of loops that encourage you to experiment with track-building from the drums up, as opposed to trying to slot a loop into an existing musical framework. The kit sound varies between different sections, from dry and mono, to sometimes harshly ambient with additional effects. The biggest disappointment, for me, was the seemingly small attention to stereo detail across the loops. Indeed, one of the largest sections on the CD proudly proclaims that it is full of 'Mono Compressed Beats'. This, I feel, is something of a shame. The drumming performances are packed full of life and energy, and the overall kit sound is great, but it all sounds a bit one-dimensional in mono. Given that the emphasis of this CD is on a 'natural funk feel' many of the loops could have been so much, er... *crunchier* if more time had been spent on the stereo placement of drums within certain loops.

The small selection of individual drum (and a few percussion) samples provided at the end of the CD are a welcome inclusion, enabling you to create and adapt your own drum loops. Gripes aside, *Crunchy Nut Loops* stands up well against its competitors. Jim Carmichael is clearly a talented and funky guy with the ability to turn your sampler into an all-singing, all-dancing breakfast time of delight. In a world of dry quantisation and electronics, it's refreshing to hear a drum kit handled with such feeling. Check this one out — you might be bowl'd over! *Paul Farrer*



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SWINGING

(MIXED-MODE CD)

Do *not* play track 1 on your CD player. Especially when wearing headphones with the volume turned up! OK, so it *does* say in the liner notes that track 1 is a CD-ROM partition, but I missed this particular public health warning. I decided to return to track 1 once my ears had recovered from the shock, and checked out the audio samples first.

Tracks 2 to 33 contain swingbeat loops, all of which are programmed using pretty standard drum and percussion samples. Each track contains one basic feel over many bars, with several (usually pretty tame) variations and fills. The sequencing seems to have been quantised to a percentage swing feel, and the loops sound somewhat mechanical compared to a decent drummer's playing and/or sequencing. This is not so much due to the quantising as the 'one-sample' nature of most of the voices. Not much velocity-to-filter cutoff/sample start or sample-switching is evident, and these are the classic ways to generate movement when programming drums and percussion (not to mention just about everything else). Tempos hover around the 100-110 mark, with a few exceptions. The use of echo to generate detail on some loops is possibly a mistake: with swung tempos, application of n/16ths echo (where n is an odd number) messes up the rhythm, unlike with straight quantised beats, where it invariably sounds great (there's a little tip for you programmers who still haven't cottoned on to the 3/16 trick). Tracks 21 & 22 (with good use of slurpy reversed reverb/samples) were among my favourites from this set.

Loopism's Present
Swinging

Tracks 34 to 43 contain various tones, all pitched at middle C, including pianos, organs,

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D
E
F
G
H
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Verse 2
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Bridge
Solo
Ending
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New Song
Song Playlist
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Bank (A-H)
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horns, guitars, synth swells, strings, and voices. Some of these are a bit glitchy, so file under cheap and cheerful, but also useable. Tracks 44 to 75 then repeat the loops again, this time in mono — and that's your lot. So without further ado, I headed back to the CD-ROM partition.

A Readme file explains how to decompress the .SBK files for AWE32 PC soundcards and the standard .WAV files on your PC (these supposedly duplicate the CD's audio data, though I did discover three extra intro loops not present in the audio CD section) — you just create a folder on your hard drive, drag the compressed data in, and double-click on the folder). It is not necessary to run *Install* for any of D-Zone's data, but you do have to do this if you want to try out any of the demo software included on the CD-ROM: the wave editor *Cool*, plus *Cubasis* and *SAW*, as well as a game, the medieval *Doom*-clone *Heretic*. I loaded some mono .WAV files into *Cubase Audio* satisfactorily. Be warned, though — hard disk playback is fine for loops, but useless for tones, which have to be sampled and mapped over the keyboard before they can be played.

The RAM- or disk space-conscious among you should note that in compressed form, each of the 10 AWE32 soundbanks take up around 5Mb, while each of the 30-odd loops consume 0.5Mb; you also need to add about another 50% for the .WAV format files. Unpacking (which you have to do before you can audition a sound) approximately doubles the file size again.

In conclusion — I've heard more exciting and arresting swingbeat loops on some older American products, but these were more expensive, and didn't include any PC-ready swingstation data. All in all, this is an OK intro to swingbeat programming for all you 486 owners out there with an AWE32, but in my opinion professionals need not apply. *Wilf Smarties*

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SAMPLE MATERIAL

(AUDIO CD)

The title may appear non-committal, but is in fact a well-concealed way of telling us that this CD is the work of seminal producer Bill Laswell and his Material project — the title should really be an instruction: *Sample!* by Material. Bill certainly lives up to his reputation — there's nothing half-hearted about the material on this CD. The first nine tracks contain 96 different ambient textures and effects which range from *Alien*-type spacey filtered noise to heavily-treated natural sounds, including dripping water, voices and machine noises. Most of these are the type of thing you'd use as they are, rather than assigning them to keys and trying to play tunes on them, but some will need looping to achieve the required length. Many of the ambient sounds are designed as one-off spot effects, and some are hugely atmospheric.

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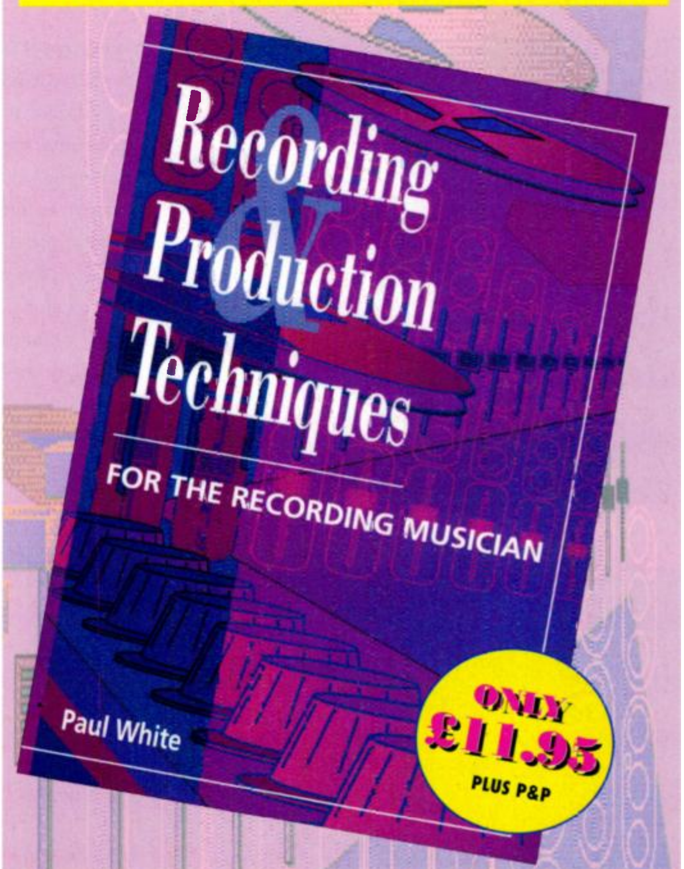
After 'Ambience' comes a brief flirtation with the elements in the form of 'Birds', 'Rainforest' and 'Traffic', before launching



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into various loops and grooves, many with an earthy, ethnic feel. Most of these could provide the basis for really effective chill-out tracks; the recording quality and application of effects is first-rate. Even when the collection strays back into techno rhythm territory, the use of ethnic and/or heavily-processed sounds lifts the loops above the commonplace. Rap enthusiasts will love the 'Street Grooves', while old hippies like me should find the numerous tabla loops somewhat more appealing! The 'World Grooves' are also wonderfully organic, and feature clay drums, talking drums, surdo, congas and so on. Also very practical are the 'Top Loop' percussion parts, which are single instrument rhythms designed to be overlaid on existing rhythms — just the thing to bring life to a drum machine backbeat. Instruments include bells, shakers, tambourine, and cabasas.

'Bass Loops' and 'Bass Licks' come next, and again there are numerous examples to choose from. Some are played a little too wimpishly for my taste, but others are really good, especially the fretless, slap and heavily treated examples. 'Bass FX' are mainly hybrid electronic/acoustic sounds while the 'Guitar Loops' contain funky wah-wah riffs, rockabilly licks, skanky chords and a whole load of other stuff — but no heavy metal! Pleased?

Every time I think I've reached the end of this collection, another page turns up — there are 'Clavinet Licks/FX', 'Organ Licks', 'Synth Licks' and even 'World Licks' (I don't know quite how you play a world — where are you supposed to fix the strap?). These actually include flutes, pipes, Tibetan throat singing (or is it the roadies at barf time?), Indian drones, Arabic market sounds and various African-style improvised percussion. Some of these are quite superb, especially the Arabic flutes and Indian tamburas. And yes — there's some digeridoo in there!

The 'Kaos FX' sound like the *SOS* office at deadline time while someone is digging up the road outside during a hurricane, and you get around 60 of these to choose from, few of which, it has to be said, are entirely relaxing [you astound me — Assistant Ed]. After this, the 48 'Scratch and Tape FX' and 'Tape Start Hits' sound positively tranquil, as do the heavily echoed Dub Hits. The collection draws to a dignified close with a huge selection of treated drum hits, featuring standard kit and electronic drum sounds, plus all the ethnic drums, gongs and sproings used elsewhere on the disc.

In all, this disk contains 71 tracks with 12 samples per track, the majority of which is first-class both artistically and technically. For anyone interested in soundtrack work, or in exploring modern dance rhythms using ethnic sounds, this disk is a must. It's one of the best collections I've heard so far, and the amount of stuff you get for your money is unbelievable. *Paul White*

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VOLUME 1: THE BEST OF EVERYTHING

●●●●

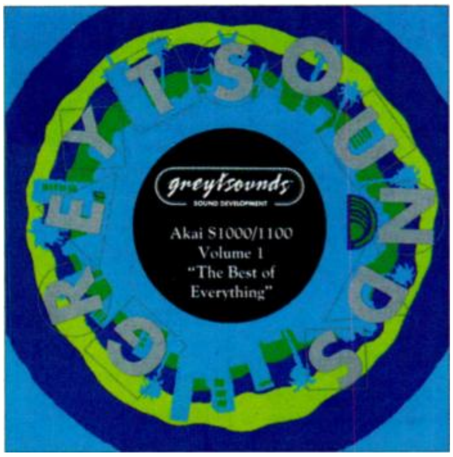
(MULTI-FORMAT CD-ROM)

As the name implies, this CD-ROM (available in the Kurzweil K2000, Akai S1000, Ensoniq ASR10, Emu EIII *and* Digidesign SampleCell formats) covers a broad spectrum of sounds, virtually all of which are single or ensemble instruments. The vast majority of samples on the Akai-format CD-ROM reviewed here take up less than 4Mb of memory. In fact, only one exceeds 8Mb in size, making this a very attractive disc for those who haven't yet managed to buy all that extra RAM they've been promising themselves. Indeed, at least half the stuff on this disc will run happily on a basic 2Mb machine.

After kicking off with a vast selection of drum and percussion material, including the inescapable TR808s and 909s and the early LinnDrum, the collection makes a thorough sweep of classical orchestral instruments before launching into acoustic and electric guitars, and then older keyboards such as Farfisa organs, Fairlights, Synclaviers, Mellotron strings and numerous early analogue synths. There are also more up-to-date synth patches from Moog, Emu, Roland (including the TB303), Yamaha, and Korg's Wavestation and M1.

The synth vein continues with some lovely wavetable-type textures, more excerpts from Oberheim, Roland and Moog, and finally, a return visit to the land of drums and percussion including orchestral percussion, gongs, cymbals and yet more drum machine samples from the Alesis HR16, Roland's R8 MkII, and Akai's XE8, to mention just a few.

The wide variety of material makes this an ideal first CD-ROM for the new sampler owner who wants access to as wide a range of instrument sounds as possible — and taking into account the modest memory requirements for most of these samples, the quality is surprisingly good. I think this disk could only have been bettered if it had included a few more bass guitar sounds and perhaps a few ethnic instruments to round off the set. Then again, there's so much on it already that it would be churlish to complain! *Paul White*



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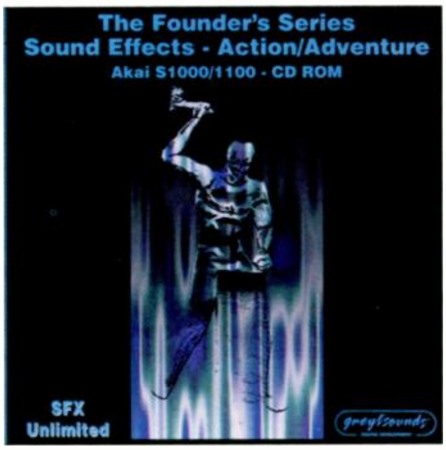

SOUND EFFECTS — ACTION/ADVENTURE

●●●

(MULTI-FORMAT CD-ROM)

This CD (available in Akai S1000, Digidesign SampleCell and Emu EIII formats) is devoted entirely to sound effects, many of which are recordings of real-life backgrounds, and which have apparently been used in a variety of blockbusting Hollywood films, such as Hitchcock's *Rear Window* and *Vertigo* and also *Superman — The Movie*.

The CD's title suggests action and adventure, and of course you do get that, with nicely-recorded helicopters, explosions, guns, car chases, ambulances and so on. However — and somewhat oddly, in view of the title — we're also treated to the thrills of dining out, the indescribable tension of the coffee shop, a swimming pool, a shopping mall, a bubble bath, and even the horrors of bowling! There are also a few industrial sounds, animal noises, fireworks, the obvious weather and water examples, and an assortment of transport, ranging from a bicycle to an aircraft carrier! Foley sounds, such as footsteps, are also well catered for, making this a very workmanlike, if not exactly radically different collection. If you're making a James Bond radio play, this disk might be a good place to start. *Paul White*

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Digital DIY

DIGITAL TECHNOLOGY AND THE MODERN MUSICIAN

PART 2: In this second article on digital music production, CLIVE WILLIAMSON looks at how musicians can use computer technology to get their work from a DAT tape to the final product — the CD.

It never ceases to amaze me that so many diverse functions can be carried out by just one computer in a studio. Inside one chameleon CPU there's the potential to edit digital sound, burn recordable CDs with PQ coding ready for glass mastering, manipulate and process digitised colour images, design covers for albums, and promote those albums with the help of business software and the Internet. The exciting fact is that the downward spiral in the cost of digital equipment places all this within reach of the average musician. So far, I've prepared four Symbiosis albums for release on CD, and hopefully, through this article, I'll be able to pass on some of what I've learned — and am still learning — to those of you who want to venture into the areas of digital mastering, burning CDRs, and desktop publishing for your own albums.

DIGITAL MASTERING

Last month, I described the digital evolution of the Symbiosis studio, and explained some ways of achieving the best recordings using MIDI and the Alesis ADAT system. The next step is to compile the mixes to make the best possible product on CD. Very early on, I decided that the ideal way of doing this was to use the Digidesign Sound Tools system and *Sound Designer II* software, which at that time was only available on the Apple Mac. I was already using a Mac IIcx for desktop publishing and word processing, but I had stayed with an Atari for MIDI sequencing on *Notator*, so adding a Sound Tools card to the Mac marked the point where it first crossed over into the recording environment. I have now upgraded to a Power Mac and Audiomedia II, but *Sound Designer* is still going strong, especially now that it gets support from software manufacturers other than Digidesign.

When I master a new album, I begin by assembling all the best takes from DAT tape onto a 1Gb AV hard drive, importing each one into *Sound Designer* through the co-axial digital input of the Audiomedia card, and noting the peak level on the meters as I do so. I record all the tracks for the CD at 44.1kHz, so there is no need for sample rate ▶

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conversion. The resulting files are saved in *Sound Designer II* format, which seems to have become the *de facto* standard for Mac digital editing. The basic task is to tidy up each track by setting the right amount of silence before the audio starts, fading each track in and out (so that the CD doesn't have any abrupt changes in noise levels between the music), then making any necessary gain alterations so that the whole album sounds balanced.

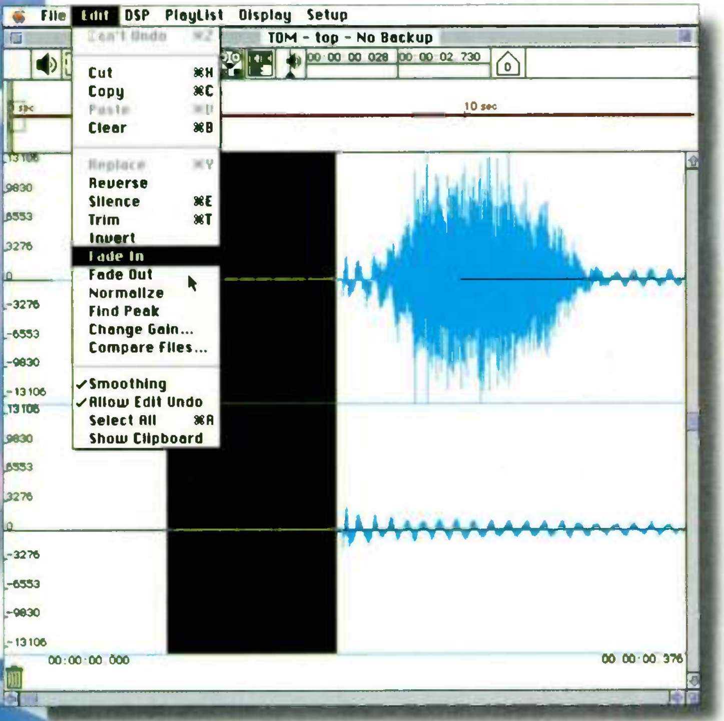


Figure 1: Sound Designer's *Silence, Fade In and Fade Out editing functions are invaluable when preparing tracks for a CD master.*

At this stage, it's sometimes useful to take the opportunity for a good listen to each track, to assess whether any EQ or further processing is necessary. There may be hum present, which can be digitally 'notched out', or the track balance might be offset. There are a number of sound processing tools in *Sound Designer* which can take care of these problems, but lately I've been using some of the excellent Waves plug-ins to do these jobs — and more — because they extend the capabilities of *Sound Designer* and have a very good user interface too! My favourite Waves modules are the *S1 Stereo Imager* which can enhance and shift stereo images, the *Q10 Parametric EQ* (with its excellent on-screen graphics and highly musical results), and the *L1 Ultramaximizer* for gain increase with minimal side-effects using peak limiting.

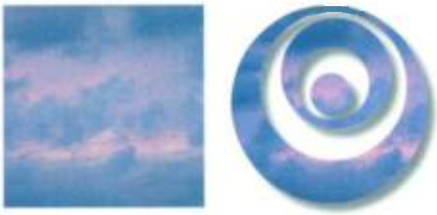
Once the final processing has been applied, I delete any unwanted silence at the start of each file, but leave at least 170mS before the first audio on each track. Older CD players need about five frames to unmute after seeing the index point of a CD track, so it is safest to allow about 70mS of silence on each track before the audio, to avoid clipping the music. As the output from our mixing desk isn't completely silent, I always 'edge in' the atmosphere over the remaining 100mS before the audio, using *Sound Designer*'s 'Fade In' option (see Figure 1). For our ambient pieces, I sometimes add an extra half-second of silence, so that they begin after a suitable pause, but a fast start is better for up-tempo music, or anything that is likely to be played frequently on the radio. (DJs don't like to be kept waiting to hear things!) Finally, I delete any unwanted silence at the end of the track, and use *Sound Designer*'s 'Fade Out' to the end-point. This prevents any abrupt changes in the low-level atmosphere between tracks.

THE DIGITAL BALANCING ACT

The *MasterList* utility for *Sound Designer* is very useful for the next stage in the CD mastering process: working out any level adjustments needed to make the album easy to listen to. I import all the tracks into *MasterList*, then audition them in the context of the whole album, paying particular attention to the changeovers between ▶

COMPUTER GRAPHIC DESIGN TIPS

- **Editing digital images takes lots of RAM and hard disk space: ideally, allocate space on a second 'scratch' disk to speed up work in *Photoshop*.**
- **A graphics tablet with a pressure-sensitive pen makes short work of retouching in *Photoshop*, and is great for creative artwork in programs like Fractal Design's *Painter*.**
- **Colour images for CD and cassette covers are large (typically 20Mb and 10Mb respectively) so you need some sort of removable media to transport files to and from your image bureau.**
- **To keep bureau charges down, use *Photoshop* to prepare any digital images to print at the actual size of the finished artwork, and convert scans and PhotoCDs from RGB to the CMYK format if necessary.**
- **Images should be prepared to approximately twice the resolution of the final films: for example, 300 lines per inch (lpi) for 150lpi-resolution films.**
- **Images often need to have their contrast reduced to compensate for the spread of ink, known as 'dot gain', when printing.**
- **Images should 'bleed' over the final dimensions of your sleeve to allow for variations in cutting out or 'finishing' the covers.**
- **Remember that the CMYK process can only reproduce a fraction of the colours you see on screen, let alone all those in real life.**
- **Don't trust the colours you see on the screen: get proofs to help you calibrate your system, and if possible, specify 'spot' colours in your design from the industry-standard Pantone colour swatch.**
- **Don't use too many typefaces in any one design — it can look cheap!**
- **Check all spellings, and have as many people as possible look at your proofs for mistakes.**
- **Have a colour proof (Cromalin) made of your final design. Make sure you are absolutely happy with it before sending it to the printer, as it is like a contract between you.**
- **Watch out for poor registration of the four colours, over- or under-inking, inaccurate colours, or poor ink density in the printed results.**



Manipulating digital images in Adobe Photoshop*: the cloud image on the left is 'as-it-comes' from a Kodak* PhotoCD *made from a slide taken by Clive Williamson. The logo on the right is the result of optimising the image for print, then blending it with a curved design made in Adobe's* Illustrator *software. The final drop shadow is an effect made in* Photoshop.

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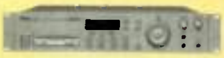
Akai S2000



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IFC Price = £449
deposit = £49
10 months @ £40

Digitech Studio Quad

IFC Price = £499
deposit = £55, 12 months @ £37

	Deposit	Payments	Total
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Fatah Studio 900	£73	12x£48	£649
Korg X5 DR	£99	10x£50	£ 599
Korg X5	£99	12x£54	£747
Korg X5D	£99	10x£70	£799
Korg I3 Prophecy	£99	10x£90	£999
Novation Bass Station Rack	£49	10x£35	£399

	Deposit	Payments	Total
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Roland XP50	£199	18x£72	£1499
Roland MGS64	£99	10x£50	£599
Tascam 488 MK11	£199	10x£90	£1099
Yamaha MT8X	£199	10x£80	£999
Yamaha W5	£157	18x£69	£1399
Yamaha W7	£120	18x£60	£1200

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Yamaha SY85	£99	18x£50	£999
Yamaha PFP-150	£189	18x£95	£1899
Yamaha MU50	£49	10x£35	£399
Yamaha MU80	£79	10x£55	£629
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Korg DRV 2000	£199
Kawai K4R	£299
Novation Bass station	£249
Peavey DMP3 SE	£899
Roland Juno 6	£329
Roland RD250	£599
Roland D110	£169
Roland D20	£399
Roland D50	£399
Roland R5	£199
Roland M160	£399
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Yamaha TG300	£269
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COMPUTER HEALTH & SAFETY

People in music studios tend to forget, but it's best to take note of EEC guidelines for the sustained use of computers:

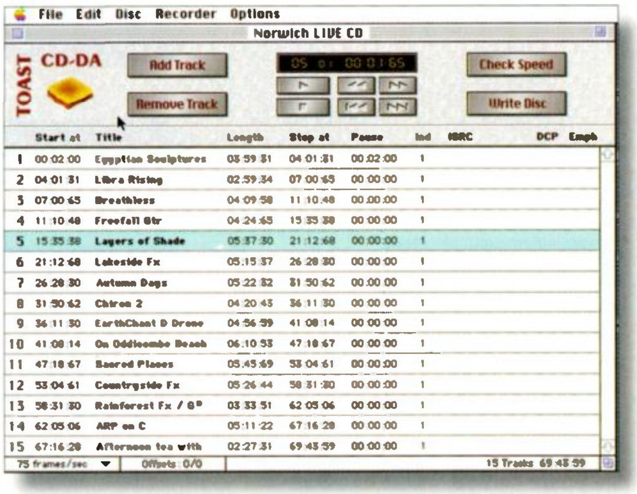
- **Take frequent breaks from working at the screen.**
- **Try to use a modern monitor with low static and elecromagnetic emissions.**
- **Use a sharp screen with a high refresh rate and no strong reflections from windows, doorways, or lights in the studio.**
- **Avoid viewing your computer screen under neon lighting.**
- **Sit comfortably at the computer, and move about during rest periods.**
- **If you use an old colour monitor with high electrostatic emissions, consider placing an ioniser nearby to neutralise the effects.**

▶ them, and reducing the level of any tracks that seem too loud. The *MasterList* software only allows subtractive level changes, and chops off the quietest data to achieve the drop in volume, so if you're thinking of exporting a file from the Mac back to DAT tape, it's best not to do it at this stage. You would be losing vital details of the music!

The trick is to use *MasterList* in reverse. If, for example, you have tracks at -4dB, -6dB, 0dB, and -1dB, the ideal solution (if you think the -6dB track is already at — or near — peak digital level), is to add the greatest difference between tracks (ie. 6dB) to the displayed levels to obtain the actual change that needs to be made to each soundfile (+2dB, 0dB, +6dB and +5dB). In practice, it may not be possible to increase the levels by this much (and this is where your notes on the peak levels from each track come in handy!) so you may have to compromise the gain increases you apply — and actually reduce the level of track two — but the point I'm trying to make is that it is much better to increase the level of tracks, since reducing track levels also effectively reduces the maximum digital resolution. It's also important to realise that using *Sound Designer*'s 'Change Gain' function is a better way to make reductions in level than using *MasterList*, because the samples are all mathematically rescaled to fit the new (smaller) dynamic range, rather than being thrown away.

Another approach would be to normalise each track, then reduce the gain of any that seem too loud, until the album is balanced, but this could mean processing the data twice for nearly every track, and I can't help feeling that it would introduce more errors. (An interesting way to allow extra gain in a track using *Sound Designer* alone was pointed out to me by producer and keyboard player Guy Jackson, who uses the 'Find Peak' command in percussive tracks and then reduces just that peak by a few dBs, giving more headroom in the file as a whole.)

Once the level changes have been worked out, I save the *MasterList* file and leave the program, then apply the 'Change Gain' command to the relevant tracks in *Sound Designer*. Then I can go back into *MasterList*, re-open the list, and check through the comparative volumes again, this time with the gains all set to 0dB. For our first CD, *Lake of Dreams*, I added musically-correct inter-track gaps in *MasterList* at this stage, then played the list out to DAT and sent the tape for production in Germany. Nowadays, using our own CD-ROM recorder with the Mac, I replicate the *MasterList* running order in Astarte's *Toast CD-DA* software, and set the inter-track pauses there before burning a CDR master.



	Start at	Title	Length	Stop at	Pause	Ind	ISRC	DCP	Emph
1	00:02:00	Egyptian Sculptures	03:59:31	04:01:31	00:02:00	1			
2	04:01:31	Libra Rising	02:59:34	07:00:65	00:00:00	1			
3	07:00:65	Breathless	04:09:58	11:10:48	00:00:00	1			
4	11:10:48	Freefall Gtr	04:24:65	15:35:38	00:00:00	1			
5	15:35:38	Layers of Shade	05:37:30	21:12:68	00:00:00	1			
6	21:12:68	Lakeside Fx	05:15:37	26:28:30	00:00:00	1			
7	26:28:30	Autumn Days	05:22:32	31:50:62	00:00:00	1			
8	31:50:62	Chiron 2	04:20:43	36:11:30	00:00:00	1			
9	36:11:30	EarthChant D Drone	04:56:59	41:08:14	00:00:00	1			
10	41:08:14	On Oddicombe Beach	06:10:53	47:18:67	00:00:00	1			
11	47:18:67	Sacred Places	05:45:69	53:04:61	00:00:00	1			
12	53:04:61	Countryside Fx	05:26:44	58:31:30	00:00:00	1			
13	58:31:30	Rainforest Fx / G°	03:33:51	62:05:06	00:00:00	1			
14	62:05:06	ARP on C	05:11:22	67:16:28	00:00:00	1			
15	67:16:28	Afternoon tea with	02:27:31	69:43:59	00:00:00	1			

75 frames/sec ▼ Offsets : 0/0 15 Tracks 69:43:59

Figure 2: Symbiosis use Astarte's Toast CD-DA *software (see page 148) to burn CDRs complete with the PQ encoding necessary for glass mastering. P codes tell the CD player when audio data is present, while Q codes describe the track and disc running times, copy prohibit, emphasis and catalogue information. These codes are not added by a normal audio CDR recorder, so you have to use a computer-based CD-ROM writer with software like* Toast *for your disc to be a suitable master to work from.* Toast *recognises* Sound Designer II *files and regions, so you can set track indexes in the middle of segued music if you divide it up into regions in* Sound Designer *first!*

THE ADVANTAGES OF CDR

Symbiosis invested in a Yamaha CDE100 Recordable CD-ROM drive a year and a half ago, and although prices have dropped since then, I'm still glad we did. Being able to burn our own CDs gives us tremendous freedom in many ways. We can create a new set of backing tracks the night before a concert, or make our own 'white labels' to give to DJs. We can back up vast quantities of data easily, and — most important of all — we can try out a new album before we send it away to be duplicated! This gives our mixes a chance to breathe. We can check them on different hi-fi (and lo-fi) systems, watch for level and timing problems, and easily re-order the tracks to find the ▶

FEATURED SYMBIOSIS EQUIPMENT

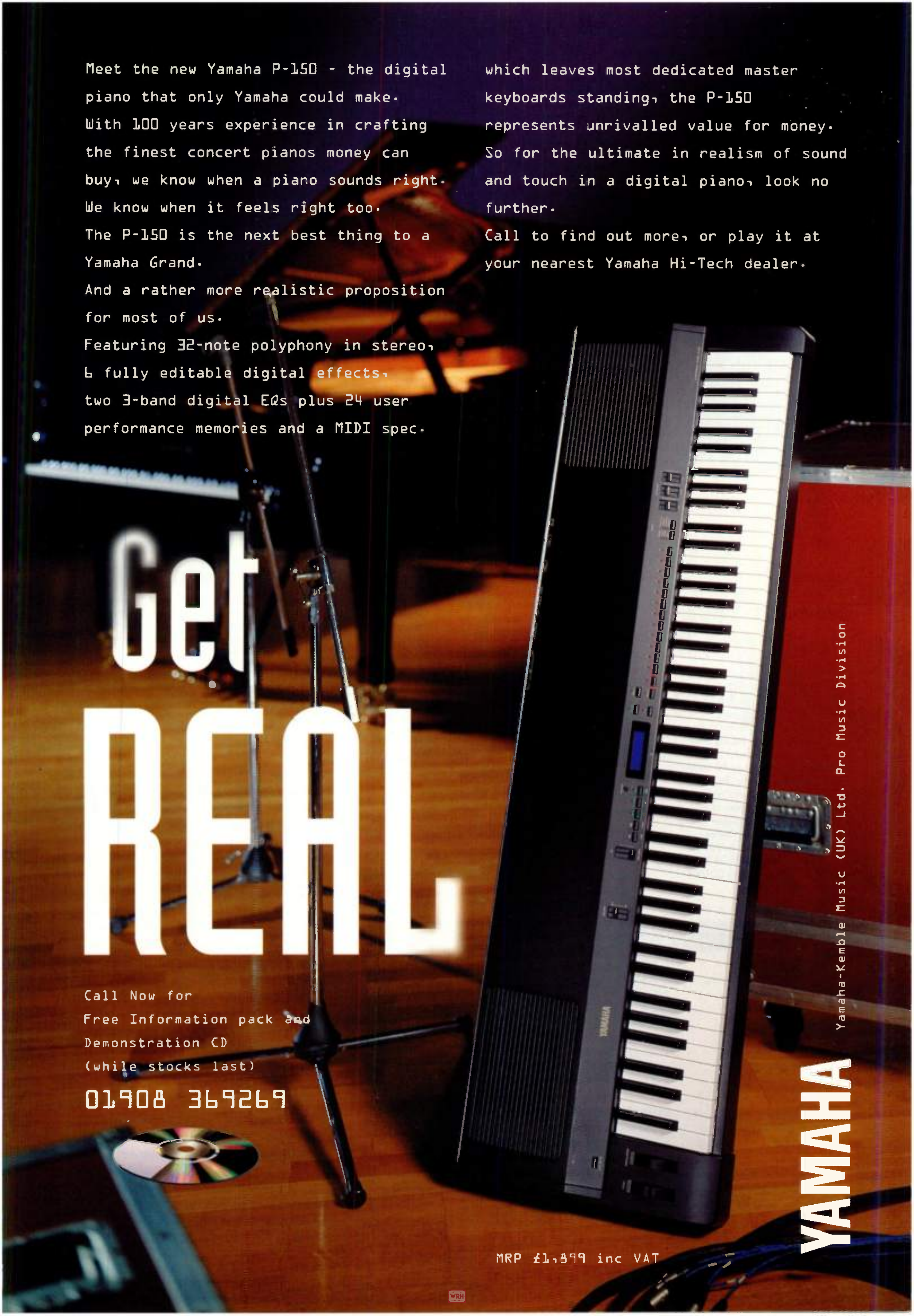
BASIC COMPUTER SYSTEM
- **Apple Power Mac 8100/80 AV**
- **Apple CD-ROM drive**
- **NEC MultiSync 5FG colour monitor**
- **Quantum 1Gb AV hard drive**
- **SyQuest 44/88 removable hard drive**
- **Yamaha YSTM10 multimedia speakers**

DIGITAL EDITING
- **Alesis AI-1 interface**
- **Alesis Quadraverb 2 effects and**
- **ADAT digital recorder**
- **Digidesign Audiomedia II card**
- **Digidesign *Sound Designer II* software**
- **Emagic *Logic Audio* software**
- **Marantz CD52SE CD player (with digital o/p)**
- **OSC/Macromedia *Deck II* software**
- **Sony DTCA8 DAT**
- **Sony DTCD7 DAT**
- **Waves software plug-ins (*S1, Q10, L1*)**

CD RECORDING
- **Yamaha CDE100 Recorder**
- **Astarte Toast CD-ROM Pro**
- **Astarte *Toast CD-DA* software**

ALBUM COVER DESIGN
- **Adobe *Photoshop* software**
- **Adobe *Pagemaker* software**
- **Adobe Postscript Fonts**
- **Adobe *Illustrator* software**
- **Epson GT9000 Scanner**
- **Fractal Design *Painter* software**
- ***Quark Xpress* software**
- **Wacom ArtPad II**

PR/MARKETING
- **Claris *Filemaker Pro* software**
- **Global Village Teleport Platinum Modem**
- **Kodak PhotoCDs**
- **Kodak ColorEase PS Printer**
- **Macromedia *Director* software**
- **Microsoft *Excel* software**
- **Microsoft *Word* software**



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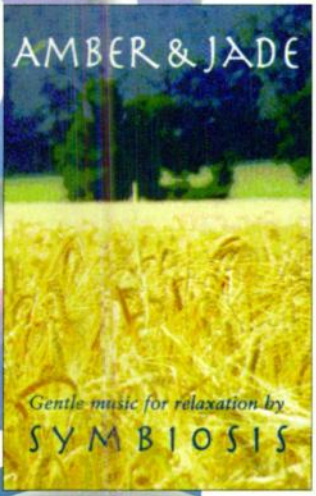

To compile Amber & Jade*, Clive segued 18 mixes from DAT using* Deck II *software. Four* Deck *tracks were used in two stereo pairs, allowing each piece of music to be overlapped with the last using time-slipping. The album 'master' was generated as a continuous 74-minute stream of music using the 'Mix to Disk' command, then index points for the CD were made by opening the resulting file in* Sound Designer II*, and selecting each piece as a Region. Those Regions were imported in the correct order into* Toast CD-DA *to burn the final CDR on a Yamaha CD100E writer for production.*

▶ best playing sequence. Adding CDR to our digital studio has revolutionised the way we make albums, primarily because it lets us correct our mistakes before they go to the factory.

Now, when we're happy with a Symbiosis album, I make a master disc from the *Toast CD-DA* software (see Figure 2 on page 146), complete with the PQ codes, and send that to the manufacturer, saving about £200 on the cost of the first CD run. A growing number of CD manufacturers are able to work directly from a Recordable disc, and although I suspect that error rates could be slightly higher when mastering this way, it certainly is a convenient — and basically cheaper — way to go. *Toast CD-DA* lets you decide on the pauses and copy protection, and select whether any tracks need to be replayed with de-emphasis. If you're registered with the right people, you can also record a barcode on the disc, and details of any ISRC codes for individual tracks, which could help make sure you receive PRS payments from airplay.

One word of warning to potential purchasers of a CD-ROM writer: burning a CD is probably the most demanding thing your computer can do, since you need very high sustained data transfer rates through the computer and over the SCSI buss. So you need to check carefully that your computer and hard drive(s) are up to the task before investing in a CD-ROM writer, especially if you're hoping to make discs at 4x speed!

ALBUM COVERS — THE FINAL FRONTIER

Most computers that are powerful enough to do hard disk editing can easily be upgraded with the right software for DIY sleeve design. But having the right tools and knowing how to use them properly are two different things. The trick here is to know your limitations. I've been very lucky in that some of my best friends are graphic designers, so I've had the chance to learn first-hand the techniques involved in scanning and preparing images, typography and colour printing.

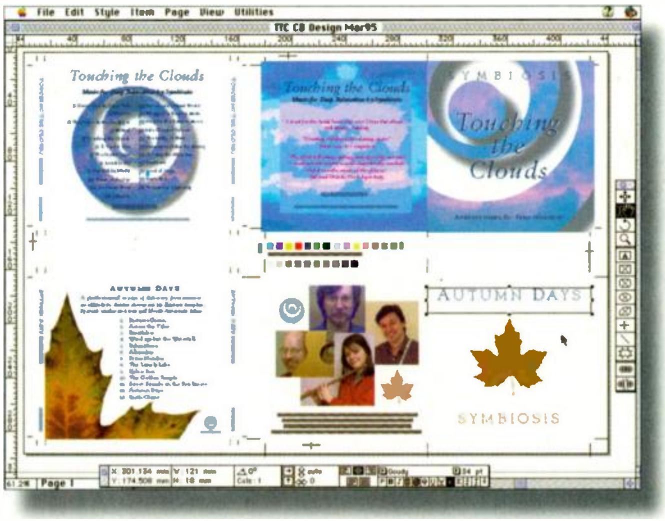

***Figure 3:** This screenshot from the Mac shows the full-colour artwork from two Symbiosis CDs assembled on a desktop publishing package. The page, which is slightly larger than A3 size, includes cut and fold marks, printer's colour bars, and cross-hairs for registering the four separate plates that will be used to print the Cyan, Magenta, Yellow, and Black inks.*

A printer needs a set of four special lithographic 'films' to recreate an album's artwork in full colour, so you'll need to design your sleeve using desktop publishing software that can be used to produce these films. The current versions of *Quark Xpress* and *Adobe Pagemaker* are both suitable. These programs are able to split, or separate, the colours in your on-screen design into their component parts in just four colours: the three secondary colours cyan (bright blue), magenta, and yellow, plus black. These 'separations' — known as CMYK, or 4-colour separations — are printed onto sheets of photographic film like giant negatives, and sent to the printers to make the printing plates (see Figure 3, above).

Artwork and photos have to be digitised to be included in your design. This can be done either by professionally scanning at an image bureau, or more economically with the Kodak PhotoCD system. Ideally the images should be retouched and adjusted using a trained eye and Adobe's excellent *Photoshop* software (available for Mac or PC) to optimise the final print quality. Another important factor is typography: you need to install typefaces on your computer to use in the designs, and these sometimes need fine-tuning by hand to get the best letter-spacing. In addition to the colour elements of the album cover, extra films are usually required for the black and white print inside the booklet, and for one or two colours to be screen-printed onto the CD itself, so the whole package is quite complex, and certainly isn't

SYMBIOSIS DISCOGRAPHY

Tears of the Moon	SYM2001 (cassette only)
Song of the Peach Tree Spring	SYM2002 (cassette only)
Touching the Clouds	SYM2003 (90 minute cassette); SYMCD2003 (72 minutes CD)
Atmospheres	SYM2004 (cassette only)
The Inner Voice	SYM2005 (cassette only)
Lake of Dreams	SYMCD2006 (CD compilation)
Autumn Days	SYMCD2007 (CD); SYM2007 (cassette)
Amber & Jade	SYMCD2008 (CD); SYM2008 (cassette)
Also on:	
Lucid Dreaming	NAMA 2001 (CD compilation)
Angels! Angels! Angels!	by Denise Linn (music by Symbiosis with Nick Magnus)
Phoenix Rising	by Denise Linn (music by Symbiosis with Nick Magnus)

A cross-section of atmospheric and ambient music by Symbiosis can be heard on the 78-minute CD *Lake of Dreams*, available for £11.95 including p&p from: Symbiosis, PO Box 2000, Richmond, Surrey TW9 3JH. Tel: 0181 948 5880 (10am-6pm, Mon-Fri); Fax: 0181 255 7102.

DIGITAL EDITING & MASTERING TIPS

- **Don't lose bit-depth when mastering: mix as close to the maximum digital level as you can.**
- **To avoid losing detail in a digital editing system, rather than changing gain or EQ several times, go back to the original and try to make changes in one go.**
- **Programs like *Deck II* can help with overlapping segues, or making changes in level using MIDI faders.**
- **Always use the dither option in *Sound Designer II* to prevent low-level quantising errors.**
- **Keep a dust-free environment (as far as possible) to avoid 'shadows' when burning CDR discs.**
- **Listen through any DAT or CD master for errors before sending it to be duplicated.**
- **Note the time and details of any known unremovable glitches in a master and send a report with the DAT tape or CD to be duplicated.**

something to undertake lightly. Once you get the hang of it, though, it's exciting and satisfying.

I could fill this entire issue with details about the printing process, but they won't let me, so try to get hold of the booklet that comes with *Pagemaker* (the *Print Publishing Guide*) which gives a good overview of the process. The most important thing to remember about an album cover is that often it is the first way people encounter your work. After all the effort that goes into making the music, it's vital that a record should look as good as it sounds, so budget for a good sleeve right from the start.

COMPUTERS AND YOUR BUSINESS

If you still have any time or energy left after making the music, burning the CD and maybe even designing the cover, remember that the computer sitting in your studio can also be a great help with your business activities. In the Symbiosis studio, our Mac runs Microsoft's *Word 6* for letter writing and contracts, Claris *Filemaker Pro* for invoicing and a customer database, and all the DTP software is also used to design fliers and catalogues. A very useful addition to the system has been a Mac-compatible modem, which lets us fax directly from the computer, and has opened up the possibilities of electronic mail and marketing via the Internet. We're planning a web site to let people find out more about the group and our albums, and even to hear extracts of our music. Ideas, hardware and software change all the time: we were excited by the possibilities of releasing CDs with a data track, combining graphics, photos, text and videos with our music using Macromedia's *Director* software. However, I now think that a web site would offer greater possibilities for interaction, so that's our preferred multimedia route for now.

CONCLUSIONS

Technology today puts musicians in a unique dilemma: we have to juggle our time making music with the time needed to acquire new computing and recording skills and to promote our work. If we can learn to balance all three elements, then computers really could help us to open a lot of doors. We also need to take time to make the right choices about when (and if) we should buy attractive new hi-tech equipment, and above all, try not to get upset with equipment that doesn't work as it should — nothing kills the muse quite like Techno-Rage!

Thanks to Adobe Systems, Leading EdgePR, Macromedia and Sound Technology for their help in preparing these articles, and special thanks to Della Drees, Micheline Mannion, and Brian Whitehead for their invaluable design advice and assistance.

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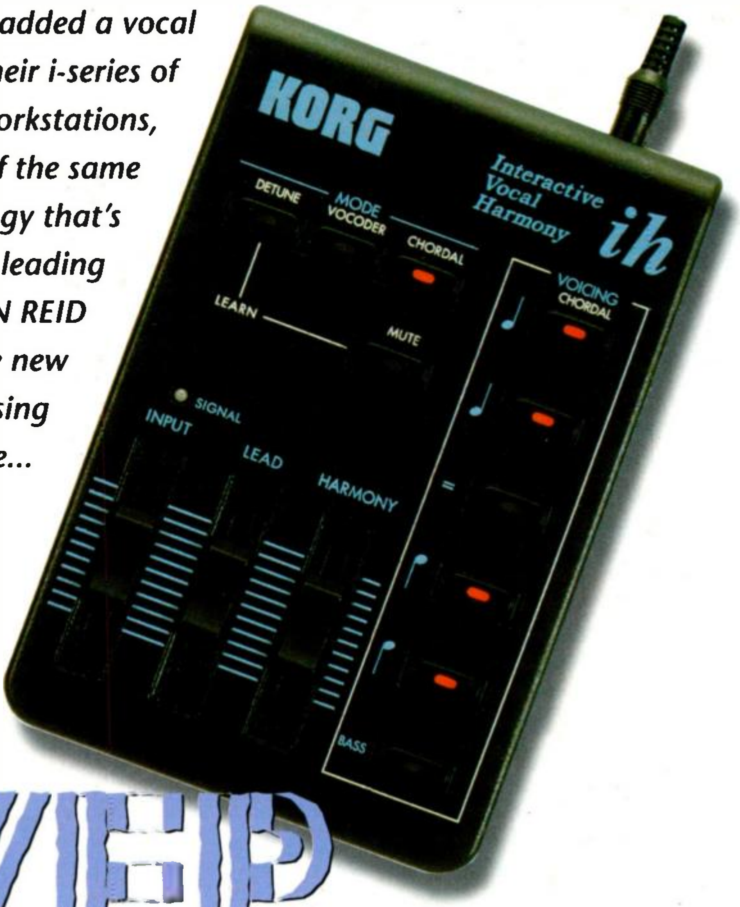
IN THE STICKS

Korg have added a vocal harmony generator to their i-series of intelligent arranger workstations, taking advantage of the same harmonising technology that's behind Digitech's market-leading Vocalist series. GORDON REID finds out whether the new unit has anything surprising up its sleeve...



VOX CLEVER

KORG ih INTELLIGENT HARMONISER

Korg have broken all sorts of new ground in their time, producing weird little monosynths, ridiculously over-endowed polysynths and, more recently, the most innovative series of workstations yet released. Occasionally they have turned their hands to other types of product, and recent forays into the field of guitar and keyboard effects units have been particularly successful.

Despite this, they have never before marketed a vocal harmoniser. I say 'marketed' because Korg did not develop the ih. That credit belongs to IVL Technologies, a company with a history of developing digital effects for other companies (see the IVL interview starting on page 178 of this issue). Perhaps best known for guitar processors, IVL are also responsible for the Digitech VHM5 Vocalist (reviewed *SOS* October 1991), Vocalist II, Studio Vocalist (reviewed August 1995), and MV5 MIDI Vocalist (reviewed July 1996), all units which, like the ih, offer a variety of vocal harmony generation facilities. So can we expect anything different from the ih, or is it a re-packaging of an existing development within another manufacturer's box? We shall see...

SETTING UP

The first thing you notice about the ih is that it's beautifully packaged — both in terms of the cardboard surrounding it, and in terms of the unit itself. Eschewing a conventional rackmount format, the ih is no more than 7 x 5 x 2 inches in size, and designed to sit on a flat surface, such as the top of a keyboard. Indeed, Korg state that the ih is "designed to be used with any i-series workstation", although whether they let their own developers in on this is debatable: the ih will sit happily on an i1 or i2, and squeeze onto the edge of an i3, but as for the i4S and i5S — forget it: the speakers take up all the available surfaces.

Connecting the ih is straightforward: plug in the external power supply, a MIDI In cable, one or two quarter-inch jack output cables for mono or stereo use, and you're ready to go. You'll also need a low-impedance microphone with a balanced XLR output for the vocal input. Hang on a moment... where's the quarter-inch jack input for unbalanced microphones and/or instruments? Why anybody should design a box without a quarter-inch input is a complete mystery to me. After all, most live bands use unbalanced microphones, the cabling in a project studio is based almost entirely upon jack plugs, and the ih and i-series end of the market is unlikely to be into expensive XLR-based equipment. Since the ih only accepts signals through this XLR socket, I hereby award Korg the honour of the leaky welly.

Moving on, there's also an input for a 'mute' foot pedal. This duplicates the action of the top panel's 'mute' button by cancelling the generated harmonies without affecting the original signal. Finally, there's a MIDI Out (the ih broadcasts every front-panel control change over MIDI) and MIDI Thru.

CONTROL ZONE

The ih has just 13 controls. Three of these are faders — marked 'Input', 'Lead', and 'Harmony' - which adjust the level of the input signal, the output volume of the original signal, and the volume of the generated harmonies. There is a dedicated 'clip' LED for the input level control. ▶

pros & cons

KORG ih £399

pros

- The cheapest unit of its type yet produced.
- Well built and attractively designed.
- Simple to use.
- High-quality, glitch-free harmony generation.
- Clear manual.

cons

- Too many facilities hidden in MIDI implementation charts.
- No quarter-inch inputs.
- Lacks facilities compared to its competition.
- Setup mode is arcane.

summary

If you're after a very simple unit to sit on top of a home keyboard or workstation, the ih could fit the bill. But if you can afford an extra £50, and are not averse to a rackmount unit, the MIDI Vocalist might be a better investment.

SOUND ON SOUND

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STUDIO VOCALIST

DigiTech
STUDIO Vocalist
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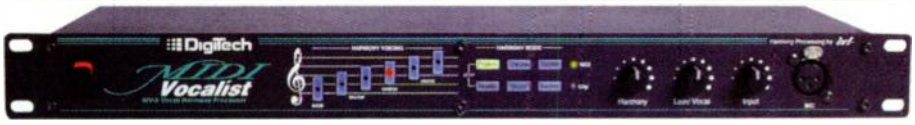
MIDI VOCALIST



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- **Major 7th**
- **Major 7b5 ***
- **Major 7sus4 ***
- **Minor**
- **Minor 6th ***
- **Minor 7th**
- **Minor 7b5**
- **Minor Major 7th**
- **Dominant 7th**
- **Augmented ***
- **Augmented 7th**
- **Augmented major 7th ***
- **Diminished**
- **Diminished Major 7th ***
- **Suspended 4th**
- **Suspended 2nd ***

*** Not found on the Digitech MV5 MIDI Vocalist. Suspended 7th is found on the Digitech, but not on the Korg ih.**

▶ The other 10 buttons (with built-in LED indicators) control all other aspects of the unit's operation. Six of these ('Bass', 'Unison', and two each of 'Above' and 'Below'), select the type of harmony the ih will generate. The others allow you to configure the unit and select the harmony mode desired.

Before starting, you'll need to enter 'Learn' mode. This allows you to select the MIDI channel to which the unit will respond, set whether the ih will respond to the whole keyboard or from zones above or below a split-point, and define the power-up defaults for the modes and voicings. Simultaneously pressing the Detune and Mute buttons accesses this mode, and the current harmony mode and voicings immediately become the defaults. You then press a note on any MIDI channel to tell the ih that that is the desired channel. In addition, you can press and hold the note you want as a split-point, provided you press a second note to tell the ih whether you want it to respond to the region above or below that point. Unfortunately, the moment after you enter Learn mode to change the split, you realise that you've blitzed your defaults and replaced them with the current settings. Worse still, setting the MIDI channel from the front panel is tortuous, and setting the split-point and zone from the front panel is impossible. While it saves money by eliminating cursor keys and a display, this is not a good system.

If you have any knowledge of the Digitech MV5 MIDI Vocalist, you'll have an intense sense of *déjà-vu* by now, and with good reason. You press different buttons to enter Learn mode, and the Digitech doesn't store power-up defaults, but otherwise everything is much the same.

DETUNE MODE

The first harmony mode is Detune mode, selected by pressing the 'Detune' button alone. This fattens vocals by generating voices with a slight pitch shift rather than by generating genuinely new notes. There are three sub-modes:

- 'Light' takes the original vocal and adds two voices detuned by +/-7 cents.
- 'Heavy' takes the original and adds two voices detuned by +/-12 cents.
- 'Combined' adds all four of these simultaneously.

Again, this is identical to the Digitech, even to the extent that both the ih and the MIDI Vocalist also offer two extreme sub-modes accessed via MIDI Controllers, though you can't select these from the front panel. Unfortunately, Korg have hidden this information deep within the MIDI implementation charts at the back of their manual.

VOCODER MODE

Next comes Vocoder mode, although it's not a true vocoder because you can't use an external signal as the 'carrier'. Nevertheless, you can create vocoded melodies and harmonies by playing up to four notes on a MIDI keyboard while singing into the microphone. Unfortunately, this is where the XLR input comes unstuck, because some of the best uses for a vocoder involve treating non-vocal signals. Well, to be fair, you'll be alright if you've got a keyboard or module with balanced outputs (few and far between), but if you only own keyboards that offer unbalanced quarter-inch outputs, you're out of luck.

Plus points (and again identical to the Digitech MIDI Vocalist) are the MIDI Controllers that allow you to select or cancel velocity sensitivity, transpose the vocoded signal by +/-3 octaves, and auto-transpose the vocoded signal to the pitches nearest the sung signal.

> "The ih's chordal harmonies are produced cleanly and with a minimum of glitching."

CHORDAL MODE

The last mode is Chordal mode. This is the one that takes the note information from a MIDI signal, derives recognisable chords (see box 'Harmonising Facilities') and then generates a suitable harmony when you sing into the microphone. The ih can't cope with every chord type, but it will make a 'best guess' if a cluster is not recognised, so unless you're into some very strange harmonies indeed, you'll not go too far wrong.

The chords themselves are derived from the keyboard zone selected, and notes played outside this zone will not be recognised. Surprisingly, the 'lower' and 'upper' scanning modes are different from each other. 'Lower' will interpret single notes as root major chords, while dual notes will offer less basic chords. If no split point is set, or if you select the 'upper' mode and play above the split point, you must play at least three notes before the ih will attempt to recognise a chord. This can be very useful when you're using a single keyboard ▶

THE MISSING MODE

The ih, while so similar to the MIDI Vocalist in other ways, lacks the Digitech's fourth, 'Scalic', mode, the one that adds harmonies conforming to the major, major raised 5th, major lowered 5th, major 6th, dorian, minor, harmonic minor, diminished, and whole-tone scales. I mention this because, in addition to its obvious value for soloing, this is the only MIDI Vocalist mode with pitch correction. (With correction on, the close and mid harmonies above and below the original pitch are locked to semitone intervals, while with correction off, they can assume any pitch, which is ideal for glissandos and other vocal effects.) Lacking scalic mode, the ih has no pitch-corrected mode, and an important facility is lost.

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BRIEF SPECIFICATION

System:	**IVL 'Virtual Vocals'**
Max. number of voices:	**4**
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Microphone input:	**XLR balanced**
Outputs:	**2 x quarter-inch unbalanced**
Sampling:	**16-bit linear, 31.25kHz**
Frequency response:	**30Hz to 11.5kHz +0.5/-3.0dB (processing)**
Signal to noise ratio:	**90dB**
Power Supply:	**External, 12V DC, 300mA**

to play melodies, harmonies, accompaniments, and generate chordal information for the ih's backing vocals.

The six voicing buttons on the front panel allow you to select the global nature of the added harmonies. The boring one is 'Unison', which adds an unshifted voice for a straightforward doubling effect. Far more interesting are the four 'intelligent' voices: Close Above, Close Below, Mid Above, and Mid Below. These 'sing' the harmonies derived from the incoming MIDI information, tending to stay on the 3rd, 5th, and 7th intervals of the chord. Even intervals are rarer, but do occur.

The sixth button is 'Bass'. This generates a bass voice singing the root of the chord, and is very useful for generating inversions and harmonies where a chord resides over an unexpected root.

Having now run out of buttons, the ih again shows its MIDI Vocalist heritage, because you can enable a seventh chordal 'voice' over MIDI. This is 'Far Above', which adds a high treble harmony. Both Korg and Digitech have omitted this voice from the front panel, although at least Digitech have described its use in their manual. I only found it buried deep in Korg's MIDI implementation charts because I expected it to be there, and went looking for it.

AUTOMATION & THE I-SERIES

The ih has a few more tricks tucked away, the first of which is automation. The module broadcasts every panel adjustment from its MIDI Out, and these MIDI messages can be recorded by a sequencer. The MIDI data can, of course, be edited to create new effects that would be difficult to obtain from playing with the panel itself, and the most interesting of these is punching voices in and out of the mix at high speed. A real choir can do this, so why shouldn't you?

In addition, the ih will accept chords from most i-series keyboards and modules, substituting the keyboard's backing sequences and arrangements for its own chord derivations. Finally, the ih responds to a number of MIDI Controller messages: #7 (Volume) increases and decreases the volume of the generated harmonies only; #1 (Modulation) overrides the default amount of vibrato; #64 (Damper) sustains the harmonies in Vocoder mode only; and Controllers 16 to 19 select mute on/off, vocoder mode, chordal mode, and detune mode respectively.

> "The ih will accept chords from most i-series keyboards and modules, substituting the keyboard's backing sequences and arrangements for its own chord derivations."

HOW DOES IT SOUND?

In practice, the ih works well, with the generated voices panned left and right for a full stereo image, and a fixed pitch-bend sensitivity of +/-2 semitones which allows you to bend harmonies up or down to the desired pitches. Unfortunately, the voices are always clones of the original, whereas the 'Gender' function on Digitech's Studio Vocalist allows you to create a mix of male and female timbres for a far more interesting sound.

Judging each mode in turn, Detune works well, and there's very little else one can say about it. Less appealing is the Vocoder mode, not because it doesn't work well (it does) but because the sonically identical Digitech MV5 offers a balanced input, thus making it more useful by far. Still, if your objective is simple vocoding, the ih will do the job. The Chordal mode also works well, clearly showing its IVL heritage. I didn't have a Studio Vocalist or MIDI Vocalist at hand for immediate comparison, but even so, I could detect no significant differences between the units. The ih's chordal harmonies are produced cleanly, and with a minimum of glitching.

CONCLUSIONS

IVL's technology has made the company dominant in this area and is now marketed in several different forms — Digitech's MIDI Vocalist was just a cut-down Studio Vocalist, and Korg's ih appears to be a cut-down MIDI Vocalist. So let's look at what your money will buy you.

First take the £399 ih, and add back the scalic mode it lacks (see box 'The Missing Mode') and the quarter-inch input. Also (and this is the single area in which the ih improves upon its rival) remove seven of the recognised chord types in the ih Chordal mode. That gives you the basis of the £449 MIDI Vocalist. Now add back the Gender function, 'Scoop' (which causes a generated harmony to slide up to the desired note), and delay. Next, restore two more modes — Pitch Correction and Chromatic Mode — a de-esser, and a rumble filter. Finally, add back a full set of memories, styles, and song modes, which allow you to create, store and recall harmony styles and arrangements. Voilà! The £995 Studio Vocalist.

So where does that leave you? On one hand, and notwithstanding the extra chord types recognised, the ih has lost a lot of power and flexibility when compared to the MIDI Vocalist, which costs just £50 more (though the MIDI Vocalist was itself not great value for money when compared to its predecessor, the Vocalist II). On the other hand, the ih does, without fuss or frills, what it was designed to do. Notwithstanding the ghastly Learn mode, it's simple to use, and will generate satisfactory results for even the most challenged technophobe. Not least, the sound quality that makes the Digitech Vocalists so desirable hasn't been sacrificed, and no doubt this is what matters most.

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The Ozric Tentacles: (l-r) John Egan (flute), Seaweed (in the tree, keyboards), Ed Wynne (multi-coloured sweater, guitars, keyboards), Zia (behind Ed, bass), and 'Rad (drums, right).

Photo Jayne Boldy

Five Go Mad

With a new studio album set to take their unique brand of instrumental music to the top of the charts, Ozric Tentacles are arguably the most successful truly independent band in the UK today. JONATHAN MILLER met leader Ed Wynne at their Somerset studio.

ED WYNNE • OZRIC TENTACLES

Ozric Tentacles is a carefully blended product. The ingredients have been selected from the furthest corners of the mind, resulting in the delicious mixture contained within. Ozric Tentacles can be enjoyed on its own, or in endless combinations. Our research shows, however, that the addition of a smirk and a pinch of salt will facilitate your full appreciation...

Reading the above quote, you could be forgiven for assuming Ozric Tentacles are some kind of breakfast cereal and, in a sense, this is not so far from the truth. It's common knowledge amongst hardcore fans of 'the Ozrics', that the band named themselves after an imaginary breakfast cereal in a 'herbal tea'-induced state of altered consciousness at a Stonehenge free festival back in 1983. Imaginary cereal names that fell by the wayside included Desmond Whisps, Malcolm Segments and Gilbert Chunks!

GOOD MORNING BRITAIN

This fixation with the first meal of the day has since come full circle with 1993's *Vitamin Enhanced* limited-edition, six-CD boxed set — the source of the introductory quotation — which bears an uncanny resemblance to products of a well-known

in Somerset

cereal manufacturer, although press rumours regarding its withdrawal for fear of legal litigation were unfounded. To set the record straight, the daughter of a Kelloggs UK lawyer bought a copy, prompting a letter to the band, by which time the offending item had already sold out.

Eating habits aside, Ozric Tentacles' esoteric choice of track titles — such as 'Synth On A Plinth', 'Fetch Me The Pongmaster', 'Shaping The Pelm' and 'Dance Of The Loomi', further reflect their healthy sense of humour. Yet this doesn't detract in any way from the dedication with which they've pursued their craft over the last 12 years, selling over a quarter of a million copies of their eight 'proper' albums in the UK alone since their heady free festival days — not bad going, considering that they were still issuing home made cassette-albums, complete with crude artwork, as late as 1989.

These tapes blueprint the instantly-recognisable Ozrics sound of late, and given that demand was so great that third-, fourth- and even fifth-generation copies soon began to circulate, it is perhaps inevitable that they would eventually attract record company attention — their debut album *Pungent Effulgent* being released on ex-Hawkwind member Dave Anderson's Demi-Monde label in 1989.

However, this liaison proved short-lived, and subsequent albums have since been released on the band's own label, Dovetail, the logo of which is a dovetail joint — a subliminal emphasis on *joint*? Ironically, Hawkwind recently approached Dovetail with a view to being signed, to no avail.

In April 1993, the Ozric Tentacles' crossover album *Jurassic Shift* crashed straight into the UK album charts, selling over 50,000 copies in the process and forcing a previously non-committal music press to sit up and take notice. The group were finally elevated from quirky festival band status to that of respected and influential musicians.

As principal composer and producer, 35-year-old guitarist and keyboard player Ed Wynne is the man at the helm, ably assisted by bassist Zia, flautist 'Jumping' John Egan, keyboard player 'Seaweed', and drummer 'Rad. The last two are now filling the musical shoes left by Ozric stalwarts Joie Hinton and Merv Pepler, following their departure to concentrate on their techno offshoot Eat Static. But as the nucleus of the band, Ed is the obvious choice to aid me in unravelling those tentacles...

A MILLER'S TALE

Arrangements were made to meet at Ed's country residence, a former water mill which happens to house a 24-track studio. Having successfully followed the mug-proof instructions, I found myself at The Mill studios in darkest Somerset, a picturesque building almost completely obscured in ivy and set in idyllic surroundings.

The Mill's original mechanical workings have been retained, since it is a listed building, and protrude into the studio's spacious live room. Comfortably ensconced in the adjoining control room, I confess to experiencing difficulty in concealing my envy as Ed recalls The Mill's transformation into a working studio.

"We've been here for just over four years now and designed the studio ourselves using local tradespeople from the village and a few friends to help with the conversion work. Some of the building was pretty derelict. It hadn't been lived in for about a year and a half.

"The floor has about six different layers of barrier mats, rubber and levelling material. The drum booth has a separate flooring to the rest of the place, although it's the same construction. The wall around the booth has a wall cut into it with a gap of about a centimetre so that the sound doesn't travel across the floor from the drums. With all the doors closed, we could just about manage to keep Merv quiet, which was brilliant, as he's the loudest drummer I've ever worked with!"

ACOUSTIC MODELLING

Practically no outside professional assistance was sought — even for the notoriously tricky aspects of studio design: "We were planning to get some people in to help with acoustics, but they said they were going to charge us £5,000 just for consulting them! You don't need to worry in an old building like this, because there's usually no parallel walls. The walls are about a foot and a half thick, so it was just a case of sorting out internal sound-proofing, which is fairly obvious — things like double-glazing the windows and putting rockwool between walls. It seems to work really well."

That said, The Mill had its fair share of teething troubles: "*Jurassic Shift*, the first album we recorded here, was strange, because it was a totally new setup and the studio hadn't really been tried and tested. When we set the drums up for the first time and put all the mics in the right place, it didn't sound too good when Merv started playing, so initially there was a lot of experimenting. Consequently, the album took quite a while to record, the deadline started approaching very fast, and it all became a bit of a panic towards the end."

CHOOSE YOUR GEAR

Having gained an insight into The Mill's construction, I asked Ed how he set about equipping it: "The only things I had to get were the speakers, the desk, and the 24-track. We got incredibly good deals on all of them through a friend with studio and hi-fi connections. The speakers [Tannoy DMT15s] were cheaper than they should have been, and still hadn't been released when we got them. Tannoy were interested in finding out what we thought and sent down some prototypes, so I said, 'They're great — you're not having them back!'"

▶

THE MILL STUDIO EQUIPMENT LIST

PROCESSING:
- Aphex Type C Aural Exciter
- BBE Sonic Maximiser
- Boss SE50 effects
- Digitech Time Machine
- Drawmer DS201 noise gate (x2)
- Drawmer DL241 compressor
- Lexicon PCM70 reverb
- Roland SDE330 dimensional delay
- Yamaha SPX90 effects

MIXING:
- Trident T24 desk (32:24:2)

RECORDING:
- Otari MX80 24-track
- Tascam DA30 DAT
- Tascam 32 2-track

MONITORING:
- AKG LSM50 (50W) nearfields
- Tannoy DMT15 (400W RMS) main

MICROPHONES:
- AKG D112
- AKG C451E
- AKG C747
- AKG clip-on drum mics (set)
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In choosing The Mill's Trident T24 console, Ed consciously steered clear of automated mixing: "We did it with our *Strangeitude* album, and it took a lot longer. I think it's a concept of continually polishing until you have the perfect mix, whereas with manual mixing there's a normal take or a good take. If you get a good take, where you've done something a little bit naughty or mad, it's sometimes more interesting. Little mistakes can happen which can be beneficial in the long run."

The forthcoming album resolutely remains an analogue recording made on the Otari MK80 24-track. Ed is something of a traditionalist, avoiding the temptation of going digital with the advent of popular mediums like the Alesis ADAT and Tascam DA88: "They're only 8-track, and I use 12 tracks for recording the drums alone! I know they can be chained, but I'm still a little suspicious of this. I often do things like splicing and editing tape which you can't do on these digital machines. I suppose you could with something like Digidesign's Pro Tools, but then you're talking about loads more money, and it turns into a situation where you have to have a computer screen in the studio, which does my head in!"

STUDIO TALK

Ed's reasoning behind the decision to build the studio was to save money in the long term: "I wanted a studio almost as soon as I could talk! I started with 4-track, went to 8-track, and thought of going 16-track, but then it occurred to us to go to 24-track, as we were moving house anyway and had a bit of money. So instead of paying for studio time, it was seen as a kind of investment. *Jurassic Shift* cost the price of a 24-track studio, but from then on, every album only costs the price of four or five reels of tape. It's well worth it, providing we carry on doing it and people keep on buying our records. Now it's just about paid for itself."

Ed went on to reveal how he records a typical Ozric Tentacles track: "It depends whether it's sequencer-based or band-based. If it's to do with the band, I start by setting the drums up, getting them to sound pretty posh and plugging everyone else in — at least drums, bass and myself on either keyboards or guitar, just to guide it. We then spend a couple of days just messing about, with a DAT player handy to capture anything that sounds good, and something usually emerges from that.

"Or I'll go about it very logically and do a sequencer-based thing, putting down MIDI codes and structuring everything. I enjoy both methods and quite like combining the two, because 'Rad's good at playing along to click-tracks."

MUSIC OF THE MIND

It's been said that, musically, Ozric Tentacles "have formulated an updated strand of progressive rock for the rave generation, combining all the quirky melodrama and advanced musicianship of 1970s fusion with the spacey, dance-floor Nirvana of the '90s."

Bearing in mind that Elvis Costello once said talking about music is like dancing about architecture, Ed bravely attempts to define his musical vision as, "instrumental music for the expansion of the mind, if that's what you want. I suppose there's a general light-hearted message about feeling all right. It's not trying to dig down into the depths of what is going wrong in the world, but just giving people a little bit of relief from everyday life."

Translating this philosophy into music can take many forms: "Sometimes I'll be wondering around doing day-to-day stuff and tunes will just appear in my mind. If I'm lucky, I'll get them into a sequencer or onto tape to remind myself of it and that can spark things off. Buying new synthesizers or samplers, hearing new sounds and thinking, 'that'll make a good intro' is another way.

"Often, we'll all get together in the studio with no ideas other than to jam and see what forms. At the early stages, we try not to have too much of a concept of the completed track, and at some point it will be finished when a form has developed."

The Ozrics' free festival circuit days and regular touring has undoubtedly benefited them in terms of jamming, "almost to a telepathic level — we can sense something's about to happen and we've got a pretty good idea what it's going to be. If somebody starts leading in a particular direction we can all clock on to that — and hopefully, it'll sound intentional!"

OUT TO LUNCH

Amazingly, if any band member makes a mistake, the unwritten rule is that they repeat it and take it as a starting point for whatever might happen next: "I certainly do it on the guitar. If I do something that sounds really 'out to lunch', I'll do it three or four times, just to let people know it's a mistake.

"When we're in the studio and this happens — say the drummer drops a beat and it sounds really odd — as often as not we'll actually use that, and ▶

OUTBOARD AND OVERBOARD

A quick glance at The Mill's outboard rack reveals Yamaha SPX90, Lexicon PCM70, Roland SDE330, and Boss SE50 effects, plus an Aphex Aural Exciter and Drawmer gates — not a great deal of processing, bearing in mind that the studio is used for final mixdown. I correctly assumed that Ed compensated by recording parts with effects already applied: "I have stereo pairs, groups of maybe two or three where, for example, I'll spend a couple of days mixing all the synthesizers onto specific tracks with their complete effects and stereo placing. Basically it's like pre-mixing, so when you come to finally mix the track, it sort of happens before your eyes. That's why it sounds like there's a lot more gear than there actually is, because we're sometimes using reverb units four times on different stuff."

Photo: Jayne Boldy

The Ozric rack, plus other Mill gear: on the left, the Otari 24-track remote, on the right, the Trident T24. The contents of the centre rack include a Yamaha SPX90 effects processor, Lexicon PCM70 reverb, a Roland SDE330 Dimensional Delay, no less than three Drawmer gates, a Boss SE50 effects module and a Tascam DA30 DAT machine.

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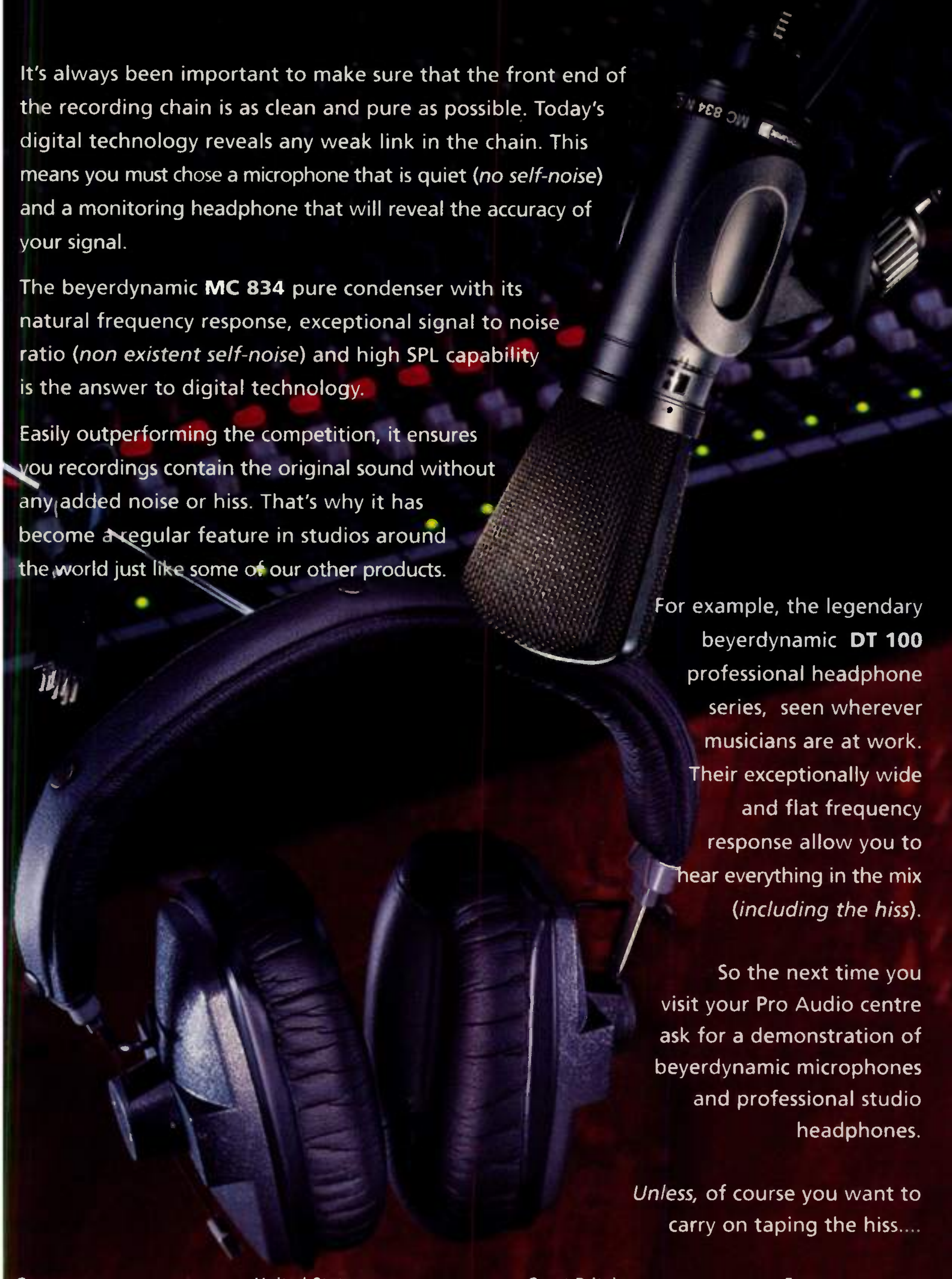

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Photo: Jayne Boldy.

The Ozrics at The Mill, checking out a mix.

spend ages learning exactly what mistake he made and fit overdubs to it, just to create something really strange. If he goes so completely out of time that it's impossible to overdub onto, then we get the analogue synths out and trigger various sounds from the drums, so we at least get some sort of synthesized something exactly in time and it ends up sounding like a really clever bit of music! I think it's similar to the Persian carpet makers who always leave one little mistake in their pattern, just to give it a bit more character.

"Each new track has to be interesting for us with some new twist in it, otherwise we wouldn't bother, but there are very few rules — anything goes as long as it works journey-wise with a nice shape to it, enlarging and tapering off to a conclusion."

TADPOLES AND KOTOS

Ed is not the first member of the Wynne family to experience success in their chosen vocation. His father is the sculptor responsible for the 'interlocking hands' emblem that appeared on a special edition of the 50p coin, still in circulation today. This artistic talent must have rubbed off on his son, since it becomes obvious that Ed is a gifted performer when listening to any Ozric Tentacles track. His initial entry into the musical arena, though, did not bode well for the future.

"My parents sent me for piano lessons when I was seven or eight years old, but I couldn't make head or tail of reading music — the bloke gave up, threw his hands up in despair and said I was the most totally unmusical person he had ever tried to teach! I carried on, but I was just into writing stuff, playing about on the piano and not learning his horrible little tunes with dots to read. This just seemed like a hassle when I wanted to get on with playing. I still can't read sheet music. It just looks like a load of tadpoles sitting on a fence!"

Fortunately, Ed was not put off by his music teacher's comments and has since spread his musical wings beyond the realms of 'ivory tinkling' — on the *Jurassic Shift* album he is credited with playing koto and has an interest in ethnic musical instruments dating back to his extensive travels in Thailand.

"I love travelling and find it a very inspirational thing to do. I took some portable recording equipment with me to Thailand to record jungle and nature sounds, which I've used a lot in various bits of music. I've run out of jungles, so I need to go back to somewhere that sounds nice and collect a few more — with a DAT machine this time!

"I almost prefer ethnic instruments to Western ones. The koto's great because it's basically like a harp — an oblong board with strings going across it and one bridge for each string which you can slide up or down, creating any scale or tuning you want. So I just tune it to the track, roll about on it and it sounds amazing — although probably not to Japanese people!

"There's a track called 'Kick Muck' on the *Pungent Effulgent* album with a shanai solo that I played on a Thai version of the instrument. Basically, it's a reed with a pipe and a bell at the end with a few holes in it, so you just blow it and waggle your fingers about a bit, suss out what scale the track's in, varispeed it to the right pitch and go for it!"

SYNTH ON A PLINTH

Ed once described himself as a creator of "keyboard textures" and there are some magnificent atmospheric sounds and passages to be found lurking on Ozric Tentacles recordings. A sizeable collection of electronic instruments has been amassed to assist in fulfilling this role.

"I've recently had my Roland D50 seen to. It came back all clean and nicely polished, with all the gaffa tape marks removed, so I've been getting right back into that and it's the most astonishing synth, sound-wise. The D50 and the Korg Wavestation are my two most favourite synths in the whole world — apart from the Waldorf Wave.

"We expressed an interest in the Wave before it was available, so they let us borrow a prototype for a couple of weeks. I was a little shocked at its size, but the sounds it made were like nothing I've ever heard before, so I recorded a few onto DAT and spun them in on a couple of tracks on the *Arborescence* album. There's one track which starts with a very low mumbling, grumbling-type sound — that's the Wave being its usual mad self! I went through all its sounds and came across nothing normal. You play a chord and hear a little grunt in one speaker whilst a kind of whistle moves across the other over a sizzling, distorted voice — like a radio cracking up in the background — with all this other ambience whizzing about! I don't know if it took off particularly well, because it just seemed like a synthesizer for loonies to me!"

More recent acquisitions on the keyboard front include a Novation BassStation (reviewed *SOS* July 1994 and July 1995), which Ed sees as a kind of "MIDIfied Pro One", and the Korg Prophecy, "which is an absolute joy — one of the most amazing synths I've ever played, to be honest. A testament to its versatility is that I can now just take the Prophecy out live instead of the Pro One, which was my basic effects machine."

STOP PRESS!

After this article had been written, Ed Wynne relented to 10 years of peer pressure and splashed out on a 75MHz Pentium PC, running Steinberg's *Cubase*. Ed didn't pay for the software, though — he accepted it in lieu of payment from techno pioneers The Future Sound Of London, who used a few Ozric Tentacles samples in some of their work. And once the system was up and running, Ed's former reservations took flight: "It's such a joy to have it all visual. I had a Kawai Q80 hardware sequencer before, but that was all about holding numbers in the mind. Basically, something that took me two weeks before now takes two days. I might upgrade to *Cubase Audio*, but the point is I've got a 24-track studio all synced up by SMPTE — it's almost as if I've got *Cubase Audio* already.

"When I get the stuff together on *Cubase*, I usually put it onto tape. I know that's a waste of tracks, but I don't completely trust *Cubase* yet. Most people sync their sequencers so they can continue to programme stuff as they go along, but I really like to know it's on tape. Then I can bounce it around and do my thing."

Photo: Jayne Boldy

Ed Wynne at The Mill. The new Pentium PC running Cubase is on the right of the picture. Below the computer keyboard is Ed's trusty Roland S760 sampler. The Trident T24 desk is visible on the right, and the Korg Prophecy and Wavestation can just be made out behind him.

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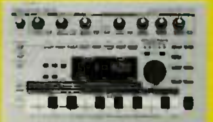

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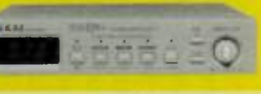

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PARLEZ-VOUS JAPLISH? — ED ON SAMPLERS

"The Roland S330 has been my main sampler for the last four years, but recently it started talking to me in 'Japlish' — numbers, plus Japanese and English jargon — so I thought it was time to replace it with an S760. The S760 is an astonishing machine — the stuff you can do to the sounds is really outrageous. I had one sound which kept me amused for two weeks just playing about with the looping and the filtering alone. I love the timestretching facility and I'd like to thank the manufacturers for inventing it. I've been told that I need to get a magneto-optical hard drive because I'm pissed off with having to load floppy disks all the time. I think Roland ought to give you studio time for every disk you load up, because it takes so bloody long!"

▶ Not that Ed is about to put his beloved Sequential Circuits analogues out to pasture just yet: "They're getting on a bit and are a little unstable for live use, so they stay in the studio now, but I don't think I could make a track without my Pro Ones. They're on almost every single piece of music that I've ever done. All the bubbly sounds like the resonant swoops and what we call the 'waterfalls' — a kind of fast, cascading series of relevant notes — are Pro Ones. Pretty much all of the repetitive step-time sequences are still done on the internal sequencer. They're also good for bass drones and we still use them for lead synth sounds. I've often had to put a recorded bass drum into the Pro One's audio input to filter it and make it more 'clicky.'"

CALLING OCCUPANTS

Ozric Tentacles' instrumental musical style naturally interacts with visual accompaniment, as can be seen at their concerts with the ever-popular Fruit Salad light show, and would be ideally suited to television and film soundtracks. Given that bands like Tangerine Dream successfully carved themselves a niche in this lucrative area, I wondered if Ed has considered following suit.

"For sure. It's very comfortable because you just sit at home enjoying yourself! I've done music for various archaeological programmes for Channel 4, starting off with one about Egypt a few years ago. I did some ethnic, flutey stuff, with Pro Ones all over it, as usual. It was pure luck that I got involved. Someone suggested to the director that I should do it, but he already had two other people in mind. I gave him a tape anyway and he listened to all three of us without knowing whose tape was whose and thought mine was best, so I got the job. That was great, because it gave me a foot in the door, and they do pay well. One of the commissions enabled me to buy my 8-track setup and also financed my trip to Thailand, so it was quite nice while it lasted."

Observant 'fans' of the childrens' TV show *Byker Grove* masquerading as *SOS* readers may be under the impression that Ed's television connections have not entirely been severed — and, to a degree, they'd be right. Here the Ozrics are credited with additional music — mercifully not the title theme — for which they receive no payment whatsoever. There is, however, method in their madness: Sam Muir, who runs the Newcastle-based Audiophile Company responsible for the show's post-production, also happens to be something of an electronics wizard, playing a role in developing Roland's latest RSS (Roland Sound Space) 3D processing system.

Ed takes up the story: "He's said he's going to give us one, which will be amazing! It can interface with a computer, so you can graphically draw what is happening to the sound, which could be quite useful."

No doubt Ed will put the device to good use: "I'd love to do a soundtrack for a space film about going to other planets, so if anybody wants one, then please give me a call, because I haven't done any recently!"

Back on Earth, it would appear that Ed does very little outside his musical activities, as evidenced by the sheer quantity of Ozric Tentacles material currently available — but he protests "I do try and get outside for half a day when it's sunny to avoid 'studio tan' syndrome." But even when outside, Ed takes a Yamaha QY20 pocket sequencer for those awkward occasions when musical inspiration strikes. Our meeting drew to a conclusion as he played some new tracks in their infant QY20-state, already sounding very impressive.

There are currently unconfirmed plans afoot for an Ozrics single — their second in a 12-year recording career: "Maybe we'll do a more traditional thing this time and get friends like Eat Static in to do some remixes. I'm planning on doing an album with Merv [*ex-Ozric, now of Eat Static*] under the guise of Nodenn Idtun — a completely synth-oriented thing I once did with Joie [*Merv's partner in Eat Static*]. We brought out one tape and played the odd ambient gig, then Merv joined us and it became a free-style experiment". Meanwhile, aside from the uncertain single, work has already begun on the next Ozrics album, which is due for release in the late Autumn of this year, followed by a UK tour. Given his prolific nature, I wouldn't be surprised if Ed composed the majority of the next album on the morning of my visit! SOS

OZRIC TENTACLES DISCOGRAPHY

The catalogue numbers below refer to the CD versions of all Ozric Tentacles albums which are currently available through Dovetail Records, although the original year of release is listed.

Those highlighted with an asterisk were originally issued as cassette albums and can still be ordered in this format direct from Dovetail Merchandise — see the adress given at the end of this piece. Quoting Dovetail themselves, they "are available on CD from all good record shops and quite a few rubbish ones." Together they formed the *Vitamin Enhanced* boxed set, which is now sold out.

All other albums are available on cassette, LP and CD. 'Sploosh' is the only Ozrics single to date, should you be lucky enough to find it. *Afterswish* is a double compilation album of tracks taken from the cassette albums, together with previously unreleased material.

TITLE	CATALOGUE NO.	YEAR
Erpsongs *	DOVE OT 1	1984
Tantric Obstacles *	DOVE OT 2	1985
Live Ethereal Cereal *	DOVE OT 3	1986
There Is Nothing *	DOVE OT 4	1986
Sliding Gliding Worlds *	DOVE OT 5	1988
The Bits Between The Bits *	DOVE OT 6	1989
Erpland	DOVE CD 1	1990
Pungent Effulgent	DOVE CD 2	1989
Strangeitude	DOVE CD 3	1991
Afterswish	DOVE CD 4	1991
'Sploosh'	DOVE ST3	1991
Live Underslunky	DOVE CD 5	1992
Jurassic Shift	DOVE CD 6	1993
Vitamin Enhanced	DOVE BOX 1	1993
Arborescence	DOVE CD 7	1994
Become The Other	DOVE CD 8	1995

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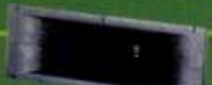

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'...the Philips exhibited excellent dynamics and a beautifully seamless sound that caught the air and space of the hall, subjectively far superior to when it was recorded from either analogue or 16 bit CD. ...All in all, I was seriously impressed with the DCC's'. ***Hi-Fi World***

'In contrast to the two MiniDisc (MD) machines, the DCC sounded bold and vital, and ultimately more engaging - there was more going on, giving the aural senses more of a workout. The treble sounded clean and crisp, without the fried-eggs quality of the MD recorders, but with plenty of detail and a more palpable sense of presence. ...the mid-band was similarly more vital and engaging. The Philips was much more consistent than the others, with none of the rather crudely-drawn quality that becomes apparent on MD when the music turns stressful...by far the best sounding of the three'. ***Hi-Fi Choice***

Happiness is picking winners

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INTRIGUED? NOW READ ON...

In recent years, effects units have increased in audio bandwidth from around 12kHz to the current norm of 20kHz — but you don't need anything like a 20kHz bandwidth to create a decent reverb. Analyse a real-life concert hall, and you'll find that little is going on above 5kHz — and even in a live room with stone or tiled surfaces, the reflected sound is noticeably warmer than the original dry sound. This is borne out when you check the parameter values relating to some of the classic Lexicon reverb patches — only the obviously unnatural reverbs have very wide bandwidths.

Plug in any budget reverb, and you'll probably find the designers have tried to impress you by creating long, bright, spacious effects where the early reflections fly around like shrapnel. This is fine where you want such an effect, but real rooms, halls and plates just don't behave like this. Early reflections don't sound like ripping cloth and reverb tails don't sound like escaping steam — and even if the effect is artistically pleasing sometimes, it can really mess up the sound you're trying to process unless you really know what you're doing. Vocals become unintelligible and harsh, drums sound as though they're accompanied by a hail of arrows slamming into a wooden door, and guitars just become edgy and cluttered. Switch to a more natural-sounding reverb, and the original voice or instrument appears in its own three-dimensional, virtual space, with the reverb playing more of a supporting role. I suppose it's rather like lighting a theatrical scene — you could use a hard white spotlight that looks like the inside of Mr Spielberg's fridge, but if you're after a natural effect, then a softer, warmer light will work better.

It's all very well knowing what a natural reverb sounds like, but how do you coax that from your own effects unit? I decided to spend a few hours experimenting with my Alesis Midiverb 4, and I came up with quite a few interesting patches that were worryingly similar to those produced by far more expensive units. I'm not going to say that you can make your budget unit sound like a Lexicon ▶

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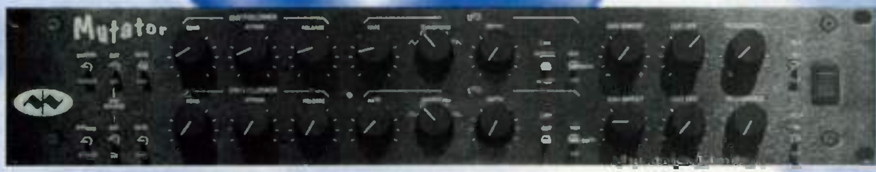

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IMPROVING THE SOUND OF YOUR REVERB

PCM90 — that would be raising unfair expectations (in my opinion, Lexicon still have a clear lead in this area) — but it's often possible to come far closer than some budget reverb presets suggest. The idea behind this article is to dissect some of the more popular reverb types, and see how the key parameters can be adjusted to optimise them. Although I used a Midiverb 4, the same techniques can be applied to virtually any programmable effects unit with a fair degree of success.

PLATE REVERBS

Plates are often considered to be very bright because of the mechanical properties of sheet metal, but in reality, it is usually necessary to add a lot of EQ to a real plate reverb's output to subdue its metallic overtones, and make the sound warmer and less cutting. Plates also produce a very dense reverberation because of their small physical size (the reflections build up in complexity very quickly), and for the same reason, there are no really well-defined early reflections. The reverb time of a typical plate is usually around three to four seconds, though a shorter decay time can be obtained when necessary by applying subtle mechanical damping.

ALESIS
MidiVerb 4
PROG
UTIL
STORE
INPUT
OUTPUT
EDIT
A
B
C
D

To emulate a warm plate with my Midiverb 4, I chose a basic plate algorithm, with a decay time of 2.7 seconds, low-frequency damping at 100Hz and high-frequency damping at 10kHz. Density and diffusion were set to maximum, and no pre-delay was used. Most importantly, the low-pass filter was set to 5kHz and Swirl was set to around 10. Swirl is a little like putting chorus on the reverb — if your effects unit doesn't have it, you can add a little gentle chorus before the reverb, or miss it out altogether. Note that the values given aren't exact, as the Midiverb 4 parameters increment in rather weird steps.

VORTEX
01
lexicon

If you have a machine with very little parameter editing (such as a Lexicon Alex), you can feed your reverb returns through a pair of mixer channels and use the EQ to roll off a little top end. Listen to the reverb as you adjust the EQ, and try to get to the point where the roughness created by the individual reflections just disappears. This particular patch works well with percussion, piano and acoustic guitar, though it is by no means limited to these. Try using the same parameter values with Room rather than Plate algorithms — sometimes you can get a surprisingly good alternative result.

VOCAL AMBIENCE

This patch is designed to provide an intimate 'club' feel, with a fairly short decay time. It works well with jazzy vocals, but can be used to place just about any instrument in a smallish, live environment. Here, the decay time is around 1.7 seconds, with both the Diffusion and Density set to 75%. There should be no pre-delay, the low-pass filter should be set right down at 3.5kHz, and the high-frequency damping should be at 6kHz. The basic reverb algorithm should ideally be some kind of room; I used the Midiverb 4's Real Room with just a hint of Swirl.

DRUM ROOM

The drum room has similar characteristics to a plate, except that it is based on the Real Room algorithm, and is slightly brighter. Once again, set the Diffusion and Density parameters at maximum, and use no pre-delay. This time, the reverb time is 3.0 seconds and the high-pass filter should be set to 7kHz, with the high-frequency damping at around 5.5kHz. If you have a low-frequency damping parameter, this can be set to around 300Hz, but it doesn't matter too much if you don't have one. If Swirl is available, this can be set to suit your taste somewhere between 25 and 75%. The result is a warm but quite articulate room effect, with a 'woody' sound eminently suitable for drums and percussion.

CHORAL ROOM

This is a good room for choral recitals, and has a medium decay time of 2.5 seconds to prevent the sound from becoming too spread out. A pre-delay of 20 milliseconds helps introduce a sense of room size, but the first reflection level is kept at zero. I usually find that with pre-delay values of less ▶

CONFUSED?

If you're new to the world of effects processors and reverbs and are unfamiliar with some of the terms employed in this article (early reflection, plate, high-frequency damping, pre-delay, etc) check out Paul White's article 'All About Reverb' from the September 1993 edition of *SOS*. Back copies of this issue are available from *SOS* priced at £2.50 per copy, plus £1.25 UK postage, £5 overseas.

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▶ than 20 milliseconds, having an audible first reflection just makes the sound phasey and unnatural. Density and Diffusion are back up to full on this setting, but the low-pass filter is right down at 3kHz to keep the room warm. High-frequency damping is set at around 6kHz, and Swirl is again optional. The result is a very convincing hall effect, which can be used to underpin choral vocals or backing vocals without overpowering them. If you listen carefully, you can hear the sound bouncing off the wood panelling and plaster alcoves!

RV-70
123
BOSS

BRIGHT CONCERT HALL

Take the previous patch, extend the reverb time to 4 seconds, increase the low-pass filter to 6kHz, drop the high-frequency damping to 4.5kHz, and you have a typical concert hall patch, which is great on classical sounds, pad synths, string pads and solo acoustic instruments. Swirl can be added for more shimmer, and the decay time can be increased further for New Age music. This is a very useful stock patch, which can be quickly tweaked to suit a number of requirements.

POP VOCALS

Yet another refinement of the basic hall patch is to brighten it up even more for use with pop vocals. Even though this is quite a bright reverb, the low-pass filter is still only set at 7kHz, and the high-frequency damping is at 6.5kHz. Pre-delay can be varied from nothing up to about 80 milliseconds, but the first reflection level should be kept down to zero. Reducing the Density and Diffusion parameters to between 50 and 75% makes the early reflections more discernible, adding interest to vocal sounds. Swirl is optional up to 50%, and, like the other patches where low-frequency damping isn't mentioned, none is necessary, unless you feel the reverb tail is getting a little boomy. Personally, I find rolling some bottom end off the reverb return channels is usually more effective in curing this.

SMALL ROOM

My final patch is based on a Plate algorithm, and has a short decay time combined with a bright decay and a prominent first reflection to create a slight thickening effect. The decay time is around 1.6 seconds, with maximum Diffusion and Density settings, while the low-pass filter is right up at 10kHz to keep the first reflection fairly bright. The high-frequency damping is set at 4kHz to stop the reverb tail from being over-bright, and a pre-delay of between 12 and 50 milliseconds may be used, depending on how obvious a doubling effect you want. The low-frequency damping is set at 100Hz, though a little low end roll-off on the reverb returns will do just as nicely. This patch creates a small room sound, but with an enhanced sense of space. It is reasonably lively, and useful for vocal thickening or adding depth to solo instruments.

SUMMARY

The outcome of this brief spell of research is that a great many preset reverb patches are too bright to be useful, and only end up confusing a mix. Even a modest reverb unit sounds more natural with a little top end rolled off, and if you have access to low-pass filter and high-frequency damping parameters, you can make vast improvements to existing patches very easily. The brightest patch I've described in this article has a low-pass filter frequency of 10kHz — so remember that you don't need a 'DC-to-light' frequency response to get realistic-sounding reverbs!

With very cheap effects units, using the desk EQ rather than the patch parameters can help the overall sound quality, because any top cut applied after the effect will also reduce the noise produced by the unit. It also pays to take a set of parameters and apply them to a different algorithm to see what happens — for example, a room patch can smooth out a plate patch, while an ambience patch might make a hall patch less dominating.

Another important thing I've learned is that if you have a decent reverb unit, there are very few parameters you really need to change in order to get close to the sound you're after. In most cases, you just need to pick the basic algorithm, set a suitable decay time, and then juggle with the high-frequency damping and the low-pass filter. Everything else is pretty much secondary, though you'll probably want to adjust the pre-delay as well.

My experiences have shown me how good budget reverb units can sound; the big names definitely have the edge on overall quality, realism and flexibility, but the little guys aren't nearly so far behind as the huge price differential might have you believe. As in so many areas of life, the law of diminishing returns holds true — in this case, the law of diminishing effects returns!

TILED ROOM

This is a short ambience setting, similar to the Vocal Ambience patch (see separate box), except that the decay time is pulled right back to 1 second and the Diffusion and Density should both be down at 30% to add more coloration. Both the low-pass filter and the high-frequency damping are set to 5kHz, and Swirl can be added up to 50%. As a rule, adding Swirl (or chorus) on the input is OK for most sounds, but may produce an obvious chorus effect when used with piano or similar instruments. If the modulation becomes noticeable, reduce the amount or remove it altogether.

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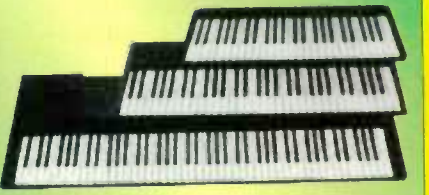

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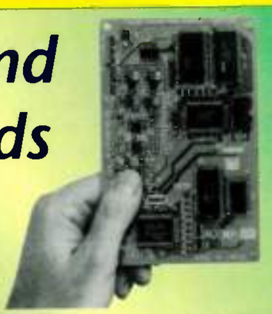

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PitchCraft

The pitch-shifting and harmonisation facilities available in the Digitech Vocalist series have been widely acclaimed as the most natural-sounding on the market. PAUL WHITE talks to Fred Speckeen of Canadian company IVL Technologies, who are behind the Vocalist and other pitch-shifting technology.

FRED SPECKEEN OF IVL TECHNOLOGIES

The Digitech Vocalist series of intelligent, vocal harmonising pitch-shifters occupies a unique place in the hi-tech music market, but it's not commonly known that the pitch-tracking and shifting technology at the core of these products comes from Canadian company IVL Technologies. Fred Speckeen, their Vice President of Music/Pro Audio Products, visited London for a few days recently, and I was lucky enough to be able to secure an interview.

IVL HISTORY

Phil Scott, who was one of the original founders of IVL and is still the President, used to be a professional psychologist, and in his spare time also studied the flute. When his flute instructor told him about intonation and how important it was, Phil decided to look at existing tuners to see if there was some way to get real-time visual feedback of pitch. Tuners tend to track rather slowly, however, so Phil decided to work on the problem himself. A friend at a telecommunications company in Canada put him in touch with Brian Gibson, and in 1983, Phil and Brian started IVL in Victoria, British Columbia. Their first product was the original Pitchrider 2000, which had an LED display on its front panel to indicate what pitch was being played, and whether it was being played sharp or flat. The pair then took the 2000 to the NAMM music industry show at about the same time that MIDI had arrived on the scene, and it soon became evident that there was interest in pitch-to-MIDI conversion for non-keyboard playing musicians. This launched the Pitchrider series and later the 7000, which was the guitar version of that product.

After Fred Speckeen had filled me in on the company's background, we began chatting about IVL's technology and its future direction.

FAST PITCHING

Has the company pursued guitar-to-MIDI conversion any further?

"We have had enquiries, and we could do a much better job today than we did then, but guitar synths have never been big sellers. Vocal harmony generation seemed a more logical way to go."

Without telling your competitors too much about your process, how does your pitch-shifting system differ from all the other pitch-shifters on the market?

"Where we differ is in our implementation of pitch recognition. It's a digital system that's faster than traditional methods of pitch-tracking. Pitch-shifting is a different type of technology to pitch-tracking, but you can improve your pitch-shifting if you know what the original pitch is — if you know what the pitch is, you know what the wavelength is, and knowing this, you can set the splicing points to give the minimum of artifacts. When you're dealing with a monophonic source such as the human voice, the quality of shifting is far smoother than can be obtained using a conventional system that doesn't take account of the input pitch.

"Our system can determine pitch in about two cycles of the signal, depending on the transients. No single technique works in all circumstances, so we use a hybrid approach that looks at a variety of signal features and statistics, before coming up with a pitch determination. In the pitch-to-MIDI days, we experimented with systems that would spit the pitch out quickly, then we'd keep on correcting it over time. The advantage of the way the Roland MIDI guitar system seems to work [*where the pitch detection and sound module are all in the same box —Ed*] is that you can read a transient before you know what the pitch is, and you can trigger a non-pitched percussive tone out of the sound module. Once the pitch has been established, you can then crossfade into the pitched sound and the human ear won't notice."

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THE DIGITECH CONNECTION

"The company pursued pitch-shifting when John Johnson, President of Digitech and DOD Electronics Corporation, suggested we ought to try designing an intelligent pitch-shifter at a far lower cost than the Eventide systems that were currently around. That's when our relationship with DOD started."

At this stage, then, you were taking the old 'chop and loop' system of pitch-shifting but adding the refinement of intelligent looping to minimise glitching?

"That's right. There was no thought of vocal processing at this stage. However, as we were tracking the pitch of the original input, we could ask the user what key they were playing in, then generate musically meaningful harmony based on what they were playing. Traditional pitch-shifters could only shift the pitch by a fixed number of semitones. Immediately, we had a volume-selling product."

Do you design circuitry for Digitech, or do you build the whole product?

"We design and manufacture completely in Canada, but that design process includes much consultation with professionals, Digitech and its distributors, and others around the world. We also prepare manuals and technical documents, and work closely with Digitech on marketing materials, training and trade shows. It's a great partnership."

The really big step must have been your vocal processing system, which manages to shift vocal pitch without making the result sound too much like Mickey Mouse. How did that evolve?

"We were analysing warranty cards coming back from owners of the Digitech IPS33 [*reviewed back in* SOS *May 1989 — Ed*], and a number of people were using them primarily for creating background vocals. Brian Gibson looked at the problem of making the voice sound more natural — up to then, we'd been pitch-shifting in the usual way, by effectively speeding up or slowing down the sound, so it sounds as though your head's getting smaller when you increase the pitch. The new method worked extremely well for voice and also seems to work nicely on instruments like sax. In 1991, we introduced the Digitech VHM5 — a 5-part vocal harmony processor [SOS *review October 1991 — Ed*]. It was an immediate hit and has received a number of awards, including a TEC Award from the AES."

Digitech's award-winning VHM5 — an instant hit in 1991 thanks to IVL's novel approach to harmony processing.

I guess you had two main technical problems — optimising the pitch-tracking to work with the human voice, and processing the shifted sound in a way that sounded natural. There's lots of talk now about systems using phase vocoding, regular vocoding and formant correction — formant filtering and so on. What approach have you taken, and how does it differ from what your competitors are doing?

"I think we have a novel approach. The basic problem is that with traditional methods, you get the chipmunk effect, because as the pitch moves up, the head and body seem to get smaller. Our technology moves the pitch but keeps the body the same size. Because our goal was to make affordable products that produce the harmonies in real time, we didn't choose complex frequency-domain analysis/resynthesis methods. Instead, we turned to our pitch recognition expertise and implemented pitch-synchronous techniques that let us do all the processing in the time domain. Doing this in real time takes an amazing amount of processing, and accomplishing that using inexpensive hardware is very difficult. Since the company has always been in the music industry, whenever we look at a new product, the first thing we consider is the price. Apparently this is a ▶

GENDER BENDING

I can imagine that working off-line, you can perform correlations on whole sections of audio to identify and strip out vocal formants, but in the case of a real-time system like yours, you have to make some assumptions about the character of the voice being processed.

"Yes, this is particularly an issue with voice transformations. With the Digitech Studio Vocalist we have added gender changing, where you can switch the apparent sex of the shifted voices."

This opens up a lot of interesting new avenues for future development, not the least being the ability to rebuild the formants of your voice to imitate well-known singers. I spoke to Eventide many years ago and suggested that a plug-in card that enabled Elvis Presley to sound like Bob Dylan (or more impressively, Bob Dylan to sound like Elvis Presley!) wouldn't be out of the question. Aside from the legal implications, is this something we should expect to hear more of in the near future?

"With regard to vocal characterisation, our first implementation is on the Studio Vocalist, and we've been pleased with its utility — in fact we have a demo CD available from dealers where you can hear the effect for yourself. We're pleased with this first step. The kind of thing you're talking about, though, is *very* demanding technically, but as with all aspects of our products, we are constantly looking for ways to further increase performance."

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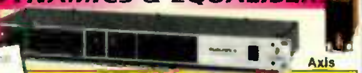

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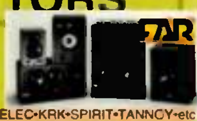

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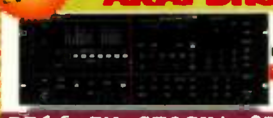

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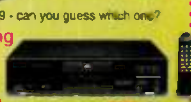

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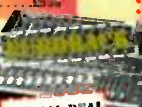

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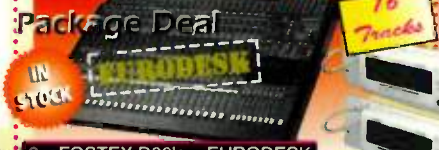

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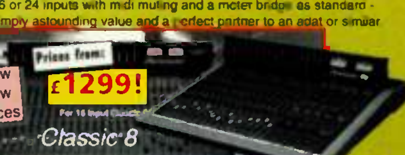

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"That's a very good place to be for us. They are good people, a very strong company, and the distribution network is superb. A new product can be in over 80 countries in 60 to 90 days, and our distributors are very helpful as we develop product definitions, making sure we get the right features at the right price."

DIRECTIONS

Are there any other directions that interest you?

"As you may know, we have established two divisions within IVL, and we're broadening our markets quickly. The two divisions are Music/Pro Audio and Multimedia/Consumer. What's interesting is the synergy we're finding between the two divisions, and it's feeding both our core technology base and our creativity in product design. The Multimedia/Consumer division is actively supplying the commercial Karaoke market in Japan. There, Karaoke music is essentially being supplied as MIDI Files, which can also contain information about key settings, allowing us to integrate our technology for real-time vocal harmony. We have a number of integrated and stand-alone products which use that technology, and our customers now hold around 70% of the market share in Japan. Our primary customer is Yamaha Corporation who, as you know, is a major player in the music and pro audio industry, and we're exploring future ways to partner together. Interestingly, Roland is another player in that market. Similarly, we are opening the Korean market, and will ship our first products in June. The Korean market is also predominantly MIDI-based, so we see great potential. In addition, we have Chinese partners who supply a stand-alone, non-MIDI harmony box to go with VCD players, VHS Karaoke players, and CD players. Karaoke is a very big market throughout Asia.

"In the music/pro audio area, we're committed to improving harmony generation, plus a number of other things that you can do with the voice. In particular, we are focusing much effort on expanding a forthcoming line of hardware processors, the Digitech Vocal Solutions. It's interesting what we've learned about the singing voice during our research. From what we have learned about the weaknesses people have with their voices, and the challenges of capturing great live and recorded vocals, we think that we can apply some unique solutions to improve both live and recorded singing."

> "It's interesting what we've learned about the singing voice during our research. We think that we can apply some unique solutions to improve both live and recorded singing."

Might this include things like minor, real-time pitch correction?

"That would make a lot of sense, and its first pro audio implementation is in the Digitech Studio Vocalist. In addition to pitch aspects, we have also learned a lot about the harmonic content of the voice, and we think we have identified things we can do in both the analogue and digital domain to improve voice quality."

KEY POINTS

To make your machines work in real time, it's often desirable to have an input of MIDI chord data, but if you're in a band without a keyboard player, this may not be practical. What can you do for these people, other than allow them to dial in a stock key and hope for the best?

"Purely diatonic harmonisation may work around 50% of the time, but in the Studio Vocalist there are a number of scalic harmony styles that help cover songs that are based on mixed scalic modes. Still, songs with multiple key modulations are a problem when you don't have the advantage of MIDI control or our automatic MIDI chord recognition. To handle this in a non-MIDI environment, the original VHM5, Vocalist II, and Studio Vocalist each have something called Song

IVL PRODUCTS

IVL MULTIMEDIA/CONSUMER DIVISION
- Coda Vivace instrument and vocal music education modules
- Giganetworks karaoke voice processor
- Taito Voice Champ (stand-alone vocal processor)
- Xing Multistation harmony adapter and multimedia terminal
- Xirlink Magic Mic (stand-alone, non-MIDI processor)
- Yamaha/DK DAMII commercial karaoke system

IVL MUSIC/PRO AUDIO DIVISION
- Digitech Studio Vocalist vocal harmony processor (review *SOS* August '95)
- Digitech Vocalist II vocal harmony processor
- Digitech MIDI Vocalist vocal harmony processor (review *SOS* July '96)
- Digitech VTP1 dual-channel tube preamp (review elsewhere in this issue)
- Digitech RPM1 rotary speaker emulator (review *SOS* February '96)
- Digitech Studio 5000 instrument harmony processor (review *SOS* August '95)
- Digitech Whammy II and Bass Whammy pitch-shifting pedals
- Korg ih vocal harmony processor (review elsewhere in this issue)
- Zeta Systems violin-MIDI converter

DigiTech
MIDI Vocalist
MV-5 Vocal Harmony Processor
HARMONY VOICING
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List, which allows you to specify the harmonies in the order you will need them, and then trigger them from a footswitch as they change. Although designed for the live acoustic musician, I know of a few producers who actually run the Studio Vocalist this way in the studio."

I would imagine one solution would be to build a machine with an off-line learn mode. You could either sing it a melody, play it a melody, or feed it a MIDI File for a song, and it would be able to deduce the type of harmony required. You could then save that harmony template as a preset and make further manual edits if the resulting harmony wasn't quite right. This would surely be more musician-friendly than programming.

"We have a number of ideas to make the process more musician-friendly, and what you suggest would certainly be possible."

What sort of wish lists do your end-users have?

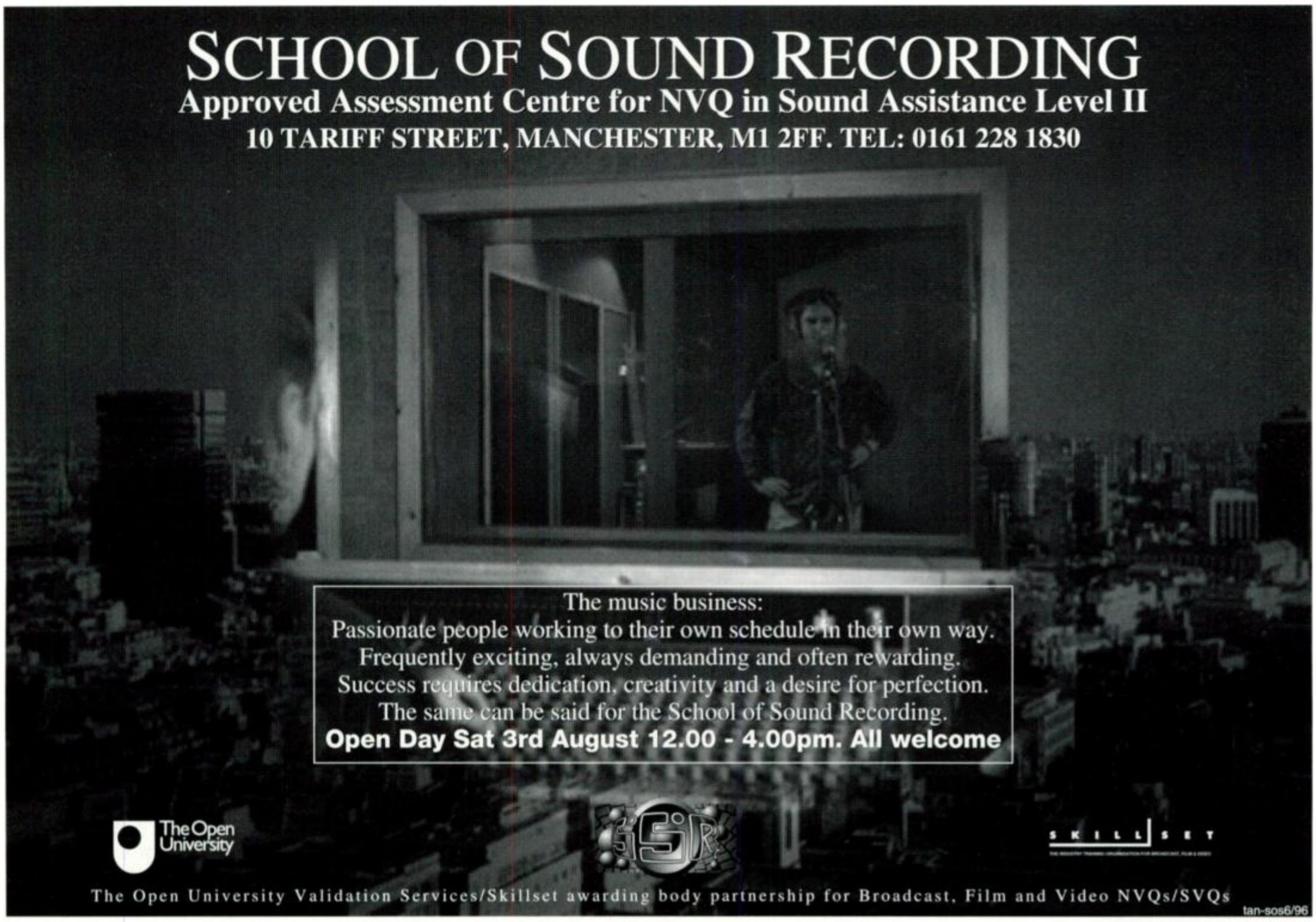
"There are many things our customers want, but overall they want products that help them get on with the creative process. Our challenge is not only bending technology to meet these needs, but also bridging left-brain, digital technology to creative, right-brain users."

Obviously, you have to make the most of your technological strengths, and it would seem that with your expertise, you could do a lot of other interesting things.

"There are lots of things you can do with this technology — and when you analyse pitch, you get a lot of other information as well. If you make a list of the things you can extract from pitch analysis, then map that against a whole range of parameters you can control, things start to look very interesting. We have lists of all kinds of potential products, but what we come back to is — what's our focus? What are we best at and what do our customers need? If we take our attention away from the vocal market, we run the risk of losing that market. We also have to decide how we focus our pure research for future products."

Presumably your technology also has further implications in the guitar and other markets...

"We are still in the guitar market — our Whammy Pedal has been called 'the wah-wah pedal of the '90s' — but it really comes down to focus and price versus performance. We can direct our pitch-shifting, pitch-tracking and other technologies in a number of directions. The reality is that there are far more possibilities than we can possibly tackle, so we're always trying to make the right decision." SOS



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PERSONAL MUSIC ASSISTANT

Is it a Filofax? Is it a Stylophone? No... it's Roland's answer to Yamaha's portable music Walkstation family. Faster than a speeding bullet, DEREK JOHNSON & DEBBIE POYSER apply their X-ray vision to the new PMA5...

SMALL OBJECT OF DESIRE

ROLAND PMA5 PERSONAL MUSIC ASSISTANT

Before Sony developed the Walkman, no-one knew they needed a tiny, portable, personal radio-cassette. Before Yamaha developed the Walkstation, no-one knew they needed a tiny, portable sequencer with built-in sounds. Both products filled a niche that no-one knew existed, and in Yamaha's case, the company created a new category of musical instrument — the mobile musical notepad. Such was its success that several new generations and spin-offs followed, and amazingly, Yamaha have had the field all to themselves for the best part of five years. The company you'd have expected to see leaping into action, Roland, was surprisingly quiet.

Five years down the line, Roland have hit back with a vengeance. We've waited a long time for the Roland answer to the Yamaha challenge...

TAKE IT AWAY

Bearing a striking resemblance to one of the latest generation of notepad computers designed to be used with a stylus, the PMA5 Personal Music Assistant comes wrapped in a smart black vinyl Filofax-style cover, which protects it when not in use. In fact, when it's closed, you'd think it *was* a Filofax, and it's just as easy to carry about. The slim silver pen-like stylus slots perfectly into a channel in the PMA's 'spine', and is used to access all the PMA5's functions via its touch-sensitive LCD display. Roland make much of the fact that only the supplied stylus is suitable for use with the display, yet it would be stupidly easy to lose — why not anchor it to the main unit with some kind of cord, as on the good old Stylophone?

Main connections — MIDI In and Out, a mini-jack Stereo Line Out/headphone socket, and a 9V ▶

pros & cons

ROLAND PMA5 £445

pros

- Innovative design.
- Intuitive interface.
- Versatile — doubles as sequencer and GM/GS sound module.
- Good value, especially considering the above point.

cons

- No backlighting on display.
- Playing notes with the stylus takes some getting used to.
- An audio input for jamming along with Styles would have been nice.

summary

Mobile music, late '90s style, the PMA5 combines well-thought out sequencing features, a respectable sound source, and a hi-tech interface in a package you won't be ashamed to be seen with.

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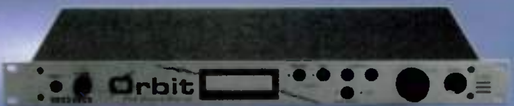

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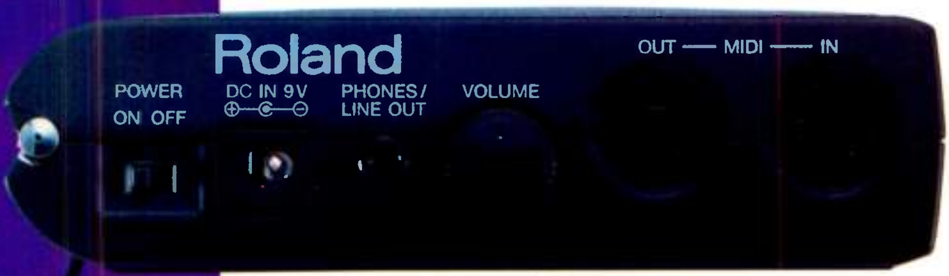
ROLAND PMA5

▶ power-supply socket — are located along the top edge of the unit. No power supply is provided, but you do get six AA batteries, with a life of about five hours. There's a socket for a start/stop footswitch, also on a mini-jack, on the side, where you'd expect the edges of the pages to be if the PMA5 really was a Filofax. As a piece of design, it's cute, clever, and covetable.



The PMA5's rear panel. The computer port is out of sight on the side of the unit. But if you can use the PMA5 as a MIDI interface, why is there no MIDI Thru socket?

In contrast to Yamaha's QY-series Walkstations, the PMA5 is not covered with buttons. The Roland approach is to let the display (measuring 64 x 83mm, more than half of the PMA5's front surface) do it all. It shows various text labels and graphic devices which select different functions when pressed with the stylus.

Inside the PMA5 is a General MIDI/GS sound source featuring 306 instruments and 16 drum sets, plus a sequencer offering four auto-accompaniment 'backing' tracks and four 'melody' tracks (for the user to enter his/her own musical ideas). The GM/GS synth is actually 16-part multitimbral, and can be used simply as a sound module when connected to an external sequencer or MIDI keyboard. In this mode, you'll be able to access all 16 parts. When used with its internal sequencer, however, it's effectively only 8-part multitimbral, because the sequencer has only eight tracks.

The sequencer's backing tracks come courtesy of Roland's 'Intelligent Arranger' technology, and can make use of 100 preset 'Styles', each up to eight bars long, though when you count the associated variations (six per Style, including intros and fills), there are more like 600 individual patterns, which can be mixed and matched to your heart's content. You can also create and save your own Styles — 200 slots are available for these. There's room on board for up to 20 Songs too, with a limit of approximately 21,000 notes for the lot. When you've assembled a track from the options on offer and your own input, you can put a gloss on it with the built-in digital effects, which include reverb and chorus.

The PMA5 also has an integral Mac/PC computer interface, and an optional 'PC Communication Kit' is available, which allows you to transport song and sequence data between the PMA5 and your computer sequencer. You might load a PMA5-generated sequence into your computer for detailed editing, or move data in the opposite direction, for easy gigging, for example. The PMA5 can naturally be synchronised from, or sync to any MIDI timing reference. Something else to note is that the comprehensive MIDI implementation info at the back of the manual seems to indicate that the PMA5's sounds will be editable over MIDI, in at least as much detail as the average Roland Sound Canvas module.

One drawback when using the PMA5 as a MIDI interface with a Mac or PC is that it lacks a MIDI Thru connection: it's possible to use an external keyboard to play the PMA5 and input notes into sequencing software, but MIDI data coming back from the software won't go any further than the PMA5. So you won't be able to use your MIDI keyboard's own sounds, or any other connected sound modules, when using the PMA5 as a MIDI interface.

TOUCH & GO

The PMA5's touch-sensitive graphic LCD is your window on its inner workings, and in some ways it behaves like a computer sequencer. The transport bar at the bottom of the display mimics the transport bars used by many modern computer sequencers, with the usual sequence of Start, Stop, Fast Forward and Rewind controls. In addition, however, there's a set of soft buttons:

- **Mix** accesses a virtual mixer page.
- **EFX** takes you to the effect edit page.
- **Mute** opens a Mute/Solo page, where you can mute or solo parts in both Styles and Songs.
- **Loc** allows you to jump to one of two user-defined Markers, and loop songs.
- **Edit** takes you into edit mode.
- **Step** accesses Step Record mode.

Finally, there are two parameter increment/decrement arrows, and a horizontal 'Ad Lib' bar: while a Song is playing, you can wiggle the stylus across this bar for an improvised solo that's always ▶

ROCK THE HOUSE: PRESET STYLES

Assessing the preset Styles provided by auto-accompaniment instruments is always subjective — what's wonderful to one person may be irritating or boring to another. The PMA5's collection is, for the most part, quite acceptable, with nothing too off-base. The selection is certainly varied: everything from Rock, Ballad and AOR to Techno and Jungle, by way of Foxtrot, Tango and Wiener Waltz, whatever that is. Roland have to sell this baby all over the world and to all types of musician, so this accounts for some of the eclecticism of the Styles. It almost goes without saying that all are well-played, though there is some stiffness, and some of the Styles are *too* well-played, or too 'nice', to feel really authentic — the House and Jungle Styles, for example, amongst others.

Preset Styles aside, the creative mobile musician could see the PMA5 as a phrase-based sequencer (get to grips with those user Styles!), with an additional four overdub tracks — in fact, this is the way the sequencers on most Ensoniq synths and workstations behave. You are limited to 8-bar phrases, however, and the more user Styles you programme, the less memory is available for finished Songs (and vice versa), since the PMA5's RAM is shared between the two.

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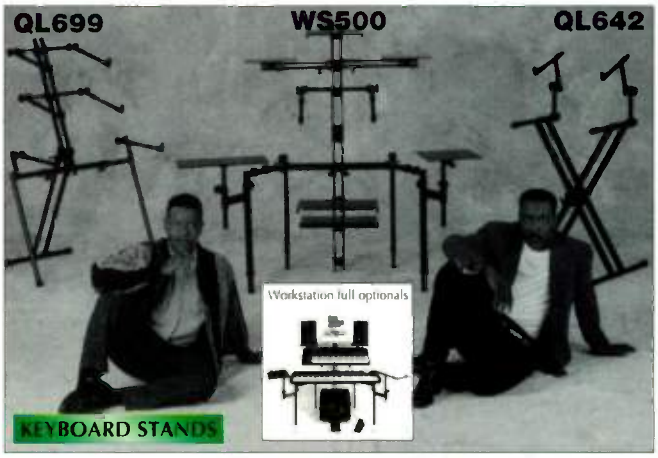

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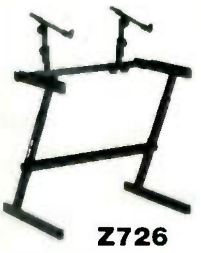

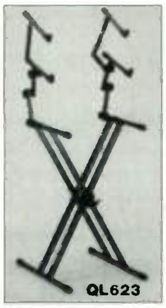

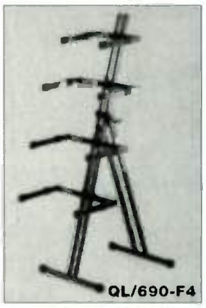

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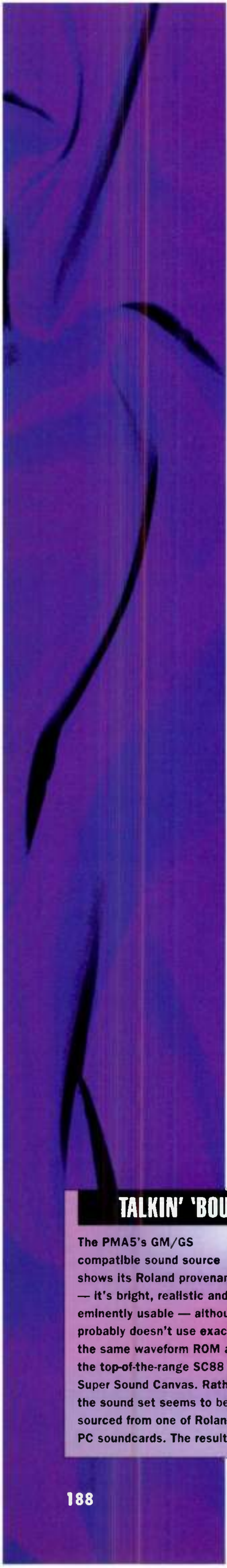

in tune with the Song's or Style's chord progression. Nice idea, but in practice, results are, shall we say, odd.

Across the top of the display are various legends: in the top left corner is a number, which, depending on what you're doing, can refer to the current Style, Song, or Measure within a Style or Song; next right is 'Song' (pressing this selects Song mode), and under it are labels for selecting the four user Sequence tracks; next is 'Style' (selects auto-accompaniment pattern mode), and under this are labels for the four Style tracks; the 'Utility' label selects Utility mode; and the 'MIDI' label does the same for MIDI mode. Under the latter two labels are two legends for selecting the Chord track (defines the sequence of chord changes for a Style, or a sequence of Styles in Song mode), and the Style track (used in Song mode to chain Styles to produce a finished backing).

The middle of the display is dominated by a graphic keyboard — used, obviously, to input note data for Styles and Songs — which can be shifted three octaves up or down to increase its range. The keyboard also has a little graphic above it to indicate velocity. You use this to set up the keyboard's velocity output — the display may be clever, but it's not clever enough to be velocity sensitive. Under the keyboard is a 'Message' area filled with descriptive text, the wording of which depends upon what you're doing at any given time: it's here that you'll find Style and Song names, editing parameters and their values, and so on. This section of display isn't anywhere near large enough to show all available parameters and display options: manoeuvring around the system involves touching the stylus to the arrows that appear to the left and right of the display from time to time. This moves you from parameter to parameter when editing, and to the different modes when using and editing Styles and Songs. If there's no arrow, you can't go any further. An 'Enter' button appears when parameters are being changed: you have to press this to confirm edits you've made.

> "Almost anyone, musician or not, could produce release-quality backing tracks or instrumentals with this machine."

TALKIN' 'BOUT SOUND GENERATION

The PMA5's GM/GS compatible sound source shows its Roland provenance — it's bright, realistic and eminently usable — although it probably doesn't use exactly the same waveform ROM as the top-of-the-range SC88 Super Sound Canvas. Rather, the sound set seems to be sourced from one of Roland's PC soundcards. The result is a quality collection of sounds, although the samples seem curtailed when compared to the best that Roland can offer. Highlights include acoustic guitars, drums, pianos and basses; lowlights include woodwind and brass, which are rather distracting when they turn up in preset Styles.

The dual effects — chorus and reverb — are once again drawn from the Sound Canvas family, although both types include a variety of non-reverb and non-chorus effects. The reverb effect offers three rooms, two halls, plate, delay and panning delay, while the chorus effect offers four choruses, feedback chorus, flanger, short delay and short delay with feedback. The quality is good, and helps to add the final touch to your work.

PMA5 FEATURES

- **8-track sequencer, with four Style tracks (preset or user) and four 'melody' tracks.**
- **100 preset Styles, with six variations per style.**
- **User memory of up to 200 User Styles and 20 Songs.**
- **Touch-sensitive graphic LCD/stylus interface.**
- **GM/GS sound source, with 306 Instruments, 16 Drum Sets**
- **Maximum 28-voice polyphony.**
- **16-part multitimbral sound module mode.**
- **Built-in digital reverb and chorus.**
- **Mac/PC computer interface.**

YOU CAN'T STOP THE MUSIC, NOBODY CAN STOP THE...

The hierarchy of the PMA5 is harder to explain than it is to use. The following description of Song creation with the PMA5 should clear up any confusion:

- There are 600 Preset and 200 User Styles, each of which is up to eight measures long and is made up of four parts: Drums, Bass, Accompaniment 1 and Accompaniment 2.
- Six tracks are used to create a finished Song: the Style track (which itself contains four tracks, remember), the Chord track, and four Sequence tracks.
- Use the Style track to select and chain Preset or User Styles to make up a Song's complete backing.
- Then, with the Chord track, assign chords to the Styles chosen for the Style track.
- Once your backing track of Styles and Chord progressions is finished, you can overdub up to four personal Sequence tracks, which, as with the tracks in a 'normal' sequencer, can last the full length of the Song if you like.
- In addition to the basic Style/Song hierarchy, the PMA5 also provides a graphic virtual mixer, for altering the volume, pan position, reverb and chorus send level for each part, as well as a separate page for customising the reverb and chorus effects.

Recording of Styles and Songs can be in step time or real time, and results can be comprehensively edited after recording, with all the facilities you'd expect from a hardware sequencer. Individual notes ▶

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▶ and events are edited in step time, and the display is deployed quite neatly to give you a reasonable graphic idea of what's going on. In addition to note data, you can edit controller information, tempo, pitch-bend, program change, and velocity information. In Edit mode, you can take advantage of sophisticated track manipulation options, including transposition, track merging, copying and erasing measures, and so on. You can even quantise a sequence, with a resolution anywhere between quarter-notes and 32nd-note triplets. An especially nice point is that a varied range of time signatures can be selected: if you fancy working in 7/4, 11/8, or 13/16, no problem.

ROAD TEST

The PMA5's display, which is similar to those that have been appearing on some consumer electronics remote controls as well as notebook computers, is a mixed blessing. On the plus side, it takes no time to get used to touching and dragging your way around the system, and the interface is more intuitive than the tiny buttons and limited displays found on similar products. The stylus/touch LCD interface means that some PMA5 functions are especially easy to access. For example, virtually all parameters can be changed rapidly by touching the number you want to change with the stylus and dragging the stylus up or down the screen. In the same way, modulation or pitch-bend can be added to notes by playing the note with the stylus, then dragging the stylus up or down. This is great fun. On the minus side, a lack of display backlighting means that readability is quite poor in certain lighting conditions — this could be a downer on stage. We also wondered whether the display might eventually suffer from constant jabbing with the stylus, though when asked about this, Roland say that if you just use the supplied stylus (and *not* a biro), the display should be quite hard wearing.

> "As a piece of design, the PMA5 is cute, clever, and covetable."

Putting a Song together with the PMA5 is perfectly straightforward if you have used a sequencer before. Once you understand the relationship between the Style track and the Chord track, you can be stringing together convincing 'cheat' backings in no time, then overdubbing your own four tracks to produce a final result that's hopefully a little more original. If you're used to computer sequence editing on a monitor, you should be aware that editing sequence data on a display this size is slower and more laborious in comparison. However, you get used to the limitations surprisingly quickly, and in fairness, Roland have implemented editing jobs very well considering what they had to work with.

This may be a fairly trivial point, but the PMA5's cover opens the opposite way to what you'd expect (imagine opening your personal organiser: that's the way the PMA5 *doesn't* open). This means that the cover flap interferes slightly with the operating hand of a right-handed person. It's hunky-dory for a left-hander, though — which is fair enough, given what a raw deal southpaws usually get. Note that the cover can be removed completely with the aid of an ordinary screwdriver, or even a 5p piece (we tried it — nothing's too much trouble for you lot).

A TOUCHING CONCLUSION

Many musicians (and non-musicians) will have their breath taken away by the impact of some of the PMA5's built-in Styles, coupled with its pleasing sounds. Almost anyone, musician or not, could produce release-quality backing tracks or instrumentals with this machine, with little of their own input — and no doubt some will. Using the PMA5 like this, however, would be little better than carefully filling in a painting-by-numbers kit and then passing it off as your own. One wonders what motivates the people who provide the preset Styles to give away their ideas (actually, they're probably starving artists, like the rest of us...). Our fervent hope is that people use machines like this to provide a convincing framework for their compositions, which they then take to their band or into their home studio for recreating in a more personal and original fashion. Then again, we also hope for World Peace and an end to starvation...

Setting aside the moral ambiguities for the moment, though, you have to applaud Roland for the PMA5's sexy, "I want one" packaging, ingenious and usable interface, logical operating system, good sounds, effects, and instant usability. The PMA5 is a music-on-the-move tool for when you're out and about, a hardware sequencer for home use if you don't already own a sequencer, and a 16-part multitimbral sound module with built-in effects. Even people with fully-equipped studios don't say no to an extra sound module, and that's what the PMA5 is when you don't need its sequencing and auto-accompaniment functions (although the PMA's PC/Mac MIDI interface is of limited usefulness in the latter situation). Looked at in this light, it's very good value for the money.

The portable music notepad may have been Yamaha's idea, but Roland have certainly put a new and contemporary slant on it. SOS

INSTANT HARMONY: PMA5 CHORDS

Although only 11 chord types are immediately accessible from the virtual keyboard when in Chord mode, a total of 26 types of chord are actually available for use with PMA5 Styles: Maj; M7; M9; 7; 7/b5; 7/13; 7/b9; 7/+9; 6; 6/9; m6; m6/9; 9; add9; madd9; mM9; m; mM7; m7; m7/b5; m7/b9; dim; sus4; 7sus4; aug; aug7.

The full range is available by touching the stylus to the chord type in the main display (not the keyboard), and dragging in either direction until the desired chord is selected. When you touch and change a chord or its type, the chord sounds, giving you audio proof of your choice.

info

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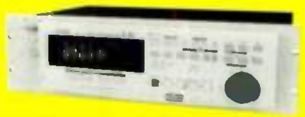

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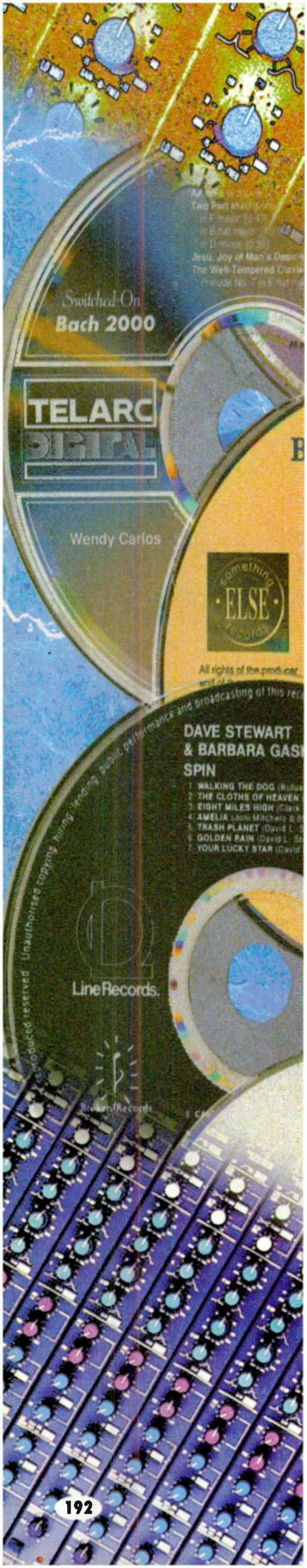

How to become a Record Prod

PART 8 — THE BUSINESS OF MUSIC

If you want to make a living as a producer, masterminding great recordings is not the end of your obligations. You'll have to deal with lawyers, managers, and the business end of record companies — all in the interests of finding work, and ensuring you're paid for it! DAVID MELLOR invites you into his parlour...

Think of the music business as a spider's web. All around are dotted the carcasses of unwary flies, some formerly fat and juicy, others so small that they were eaten up and spat out in an instant. The flies in my metaphorical web are musicians, songwriters, arrangers, producers, managers, A&R people, record company executives, music publishers, record, cassette and CD manufacturers, pluggers and marketers, DJs, radio stations, record shops, royalty collection agencies, and others. That pretty well covers the whole of the music industry (except the music journalists, who are far too agile ever to get trapped!). So what kind of beast is it that sits at the centre of the web, growing fat at the expense of all the other poor creatures who have no option but to succumb to his deadly embrace? The music business lawyer, of course!

LET'S BE CAREFUL OUT THERE

You may have realised this already, but nothing happens in the music business without a lawyer as the go-between in the transaction. A few enlightened souls have discovered that it really is possible to do business on a handshake between honourable people, but for the vast majority, the only way is the legal way. A record producer will definitely need to have a music business lawyer to examine his contract with a record company. The consequences of not doing so could be dire, from a potential loss of all royalties (royalties are often known as 'points' in the business, points being a percentage of sales revenue) through to responsibility for budget overruns and possibly even worse. Thus advice from a specialist music business lawyer is pretty much a necessity.

In the past, record companies have dreamed up all kinds of schemes for protecting their own interests against the interests of the creative people who actually *earn* the money. Although there seems to be a much more responsible attitude developing in the

REPRO — THE PRODUCERS' 'TRADE UNION'

RePro has grown out of The British Record Producers Guild, which was established to give producers a unified voice in the music and recording industries. Current full members include Gus Dudgeon, Steve Lipson, Steve Levine, Rupert Hine, Chris Kimsey, Gary Langan, Hugh Padgham, Phil Wainman, Muff Winwood and Alan Winstanley. The President of RePro is Sir George Martin and the Chairman is Robin Millar. I spoke with Vice Chairman Peter Filleul.

• REPRO ACTIVITIES

"RePro is a trade association which represents the profession of recording producers, sound directors and engineers. We provide them with a quarterly newsletter and usually about five forum meetings a year. We produce an annual A&R guide, a budget guide, and we are about to provide a legal guide which will advise them about producer contracts. We have three hotlines to professionals who provide free advice, usually up to about an hour's worth, ranging from legal advice

Full RePro member Steve Levine.

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record companies these days, all the old clauses are pre-loaded into their word processors, ready to be dropped into a contract. One old favourite trick is known as 'cross collateralisation'. This typically would allow a record company to offset profits earned on one album against losses made on another. Suppose as a producer you made two albums with a band. The first sold well, but the other bombed. If cross collateralisation was allowed, there would be no overall profit, so your points would add up to zero. If your contract, however, specifically disallowed cross collateralisation, as it should, then you would receive all the royalties you were entitled to on the first album, while receiving nothing for the second (because you didn't do your job properly, did you?). The funniest thing is that, despite my opening paragraph, the lawyers aren't the bad guys — it's all the people who have tried to screw each other (financially, I mean) throughout the entire history of the music business since year zero. Despite many people's current best intentions, this tradition of distrust means that almost every word has to be inscribed on parchment, signed and sealed, and whether a project succeeds or fails, the lawyer always benefits.

ucer

MONEY GO ROUND

Money, in the music industry, is made from the exploitation of copyrights. 'Exploit' in this context is a good word; it means that your work is being promoted well and is generating revenues. There are three basic types of copyright involved here: in a musical work of any kind there is a *performing right* and a *mechanical right*. The performing right means that the owner of the copyright can allow performances of the music to take place, whether live or recorded, in return for a fee. The mechanical right means that the owner of the copyright can allow the music to be recorded, and copies of that recording to be made and sold, once again for a fee. The third copyright is one that exists in the actual *recording* of the music rather than the music itself, and once again, owners of this copyright can allow the recording to be performed or broadcast in return for a fee. There are other copyrights involved in music, such as a musician's right in his or her own performance, but we'll stick to basics.

As a producer, you will not be entitled to any of these copyrights. The performing and mechanical rights belong to the writer or his publisher, and the rights in the recording belong to the record company. (Of course, if you helped to write a song, then you will be entitled to a share of the performing and mechanical royalties). It is important, however, that you understand these methods of generating income, because your livelihood will be very closely linked to them. At the moment it is virtually certain that your income as a producer will come from a combination of a flat fee and points. (Some producers, particularly remixers, only get a fee, with no points). The points will be a percentage of actual sales of records, cassettes and CDs. The more the record company sells, the more you'll earn. If you consider that a top producer may be on something like three points, and a top act can sell millions of copies worldwide, you can estimate for yourself how much you could make when your production career really takes off!

The only snag with this arrangement is that sales are only one way in which recordings can be ▶

Full RePro member Rupert Hine to the right of Sting.

to accounting and financial advice. We can provide various discounts on equipment, which are very useful for people starting up. And of course we provide representation of the profession within bodies that are discussing the development of the music industry. Also, our members become associate members of the APRS (Association of Professional Recording Services) so they can attend meetings arranged by the APRS, which are usually more technically biased."

• MEMBERSHIP

"There are two main categories of membership: Full Membership and Associate Membership. Full Members must be recommended by other Full Members and would probably be those who have been around in the industry for a while and have a CV. We would stop people becoming Full Members if they were only part-time producers, for example. But if you are involved in the industry at almost any level, straight out of college even, or if you are going in as a tape op, you can become an Associate Member. We believe it is important for people starting off in the industry to have access to those who have been in it longer. Then there are Overseas Associate memberships, which have exactly the same benefits as Associate membership, except that you can't become a Full Member of RePro. There is another special category of APRS Engineer membership for engineers who work for APRS studios. Freelance engineers can join as Associate Members. The only real differences between the categories is that Full Members have a vote and are entitled to take part in certain events, such as when a prestigious console manufacturer wants to talk to people who are likely to be working on an SSL or Capricorn rather than those that are working in home studios."

• KEY ISSUES

"Income is always a prime concern. We are currently working to acquire performance income through various routes. We are also always concerned with technology and how that is developing. We are the people who are at the sharp end of the new recording technologies. The way that technology is moving so quickly means that very often problems are foisted on the record producer which should not be his problems at all. As far as the profession is concerned, we are becoming more and more involved in all kinds of areas throughout the industry because we believe that the producer is the most pivotal person in the whole process of making the products that allow this industry to survive. We have a very important role to play in the way the industry develops in this extraordinary transitional period during the digitisation of the industry. The implications for revenue streams when sales are made by transmission are profound, and the way that the entire industry is financed may change. We want to make sure producers will be involved in this change and properly compensated for the increasing role they will be playing."

RePro President Sir George Martin (right), with EQ and mixer designer George Massenburg.

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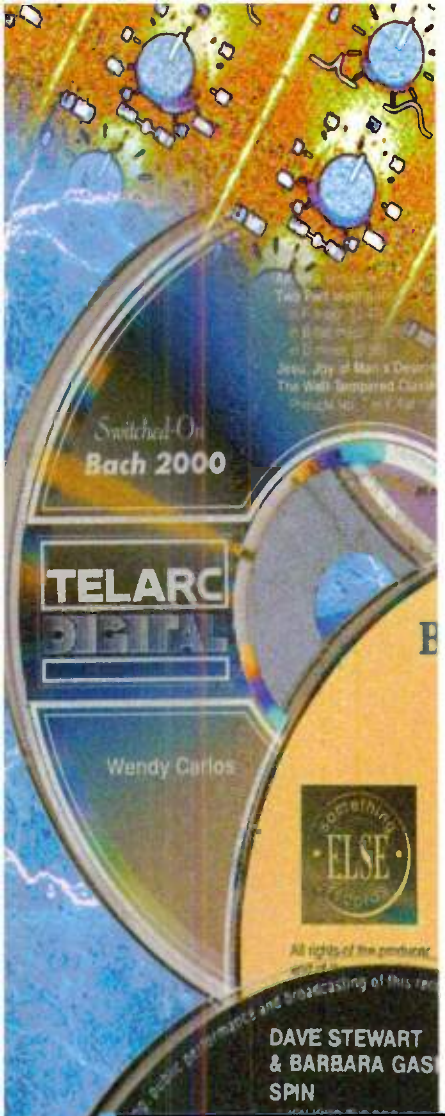

How to become a Record Producer

exploited. Performance royalties are a major component of any songwriter's or composer's income, in some cases making mechanicals look meagre in comparison. But do producers get points on performances of their work? They do not. This is a major issue in the music world since, despite a recent upturn in sales, many people think that performance royalties are going to become the number one income generator for the entire record industry. Although you may be very keen to buy the latest CD by your favourite act right now, how will you feel about going to the trouble of buying a physical object when you can have the music delivered to you directly via the information superhighway, at the cost of maybe a few pence a play? Actually, that's still very much a debatable point, but producers certainly do have to debate it now, rather than waiting until their sales have declined into oblivion before they do anything about it.

MANAGEMENT

You may be a brilliant musician, writer, engineer or producer, but:

- Are you also a brilliant self-publicist, able to charm your way into A&R departments and get to work with the top acts?
- Can you be bothered to attend lengthy meetings with your lawyer, making sure that every last comma in the contract with the record company is in the place most favourable to your interests?
- Do you want to break off work every time the phone rings, in case it's someone really important that you have to talk to?
- Do you think you could check a record company's books to make sure that your points have been correctly calculated, and that funds haven't been siphoned off in a manner not allowed by your contract?
- Do you think it's worth paying 20% of your income to make sure all these things are properly and professionally handled, leaving you free to get on and produce?

Any sensible person will know the correct answer to the first four questions. The answer to the fifth is yes, because even though giving up 20% of your hard-earned production fees and points seems like a high percentage, at least it's a percentage of something. Without a good manager, you may be able to console yourself that you are keeping 100% of your income, but it may just be 100% of no income at all! Your manager may even, through his music business-aware accountant, be able to recoup much of that 20% by making savings on your tax bill!

To become a record producer, you're going to have to be able to promote yourself in the early stages before you have established a track record of any kind. You won't find it difficult to find a band to produce, or a singer to work with, because producers have the natural ability to get on well with musicians, and they are the kind of people that musicians instinctively trust. I have to say that if you don't think you are this kind of person, you're going to find it difficult to become a record producer — although domineering, autocratic producers are not entirely unknown in the industry! Selling yourself to a record company isn't going to be quite so easy, but if you're doing good work, the opportunities are there. Once you have produced a few records that have sold reasonably well, then you are in a position to approach a manager.

Once you have made an agreement with a manager, whether it's a handshake deal or a formal contract, the manager will make sure that A&R departments are aware of you and the type of music you work with. Your manager will keep his finger on the pulse of the business far more firmly than you would have time to do, and he'll know which acts are planning recording projects, and whether they are shopping around for a new producer. If an A&R manager becomes interested in you, then he will enter into a lengthy three-way discussion between

THE MANAGER'S VIEW: STEPHEN BUDD

Stephen Budd is a manager specialising in producers, engineers and remixers. His roster features Mike Hedges, Gus Dudgeon, Martyn Ware, the Rapino Brothers and many others. Their collective credits are *far* too many to mention!

The producer's friend — manager Stephen Budd.

• WHY A PRODUCER NEEDS A MANAGER

"Producers are not necessarily the best people to go after gigs themselves. They tend to be a little shy about pushing themselves forward. On a marketing level, there needs to be someone on the ground who can go and find out who's doing what and where, which bands have signed to which labels, which labels are hot, which bands are not. Then I try to market that producer to A&R people or artist managers so that their name is on the top of the pile.

"Reason number two is that producers find it difficult to negotiate deals. It's very difficult to estimate your own value — it's a very personal issue. Producers are not always as clued in as they could be as to what their value is in the marketplace. Sometimes they over-value themselves. More often than not they under-value themselves. My job is to create maximum income for producers, playing a delicate role without undermining them or losing the gig for the sake of it.

"The third thing is that a good producer should be working a lot of the time. If they are not, and they *are* good, they are probably not being represented properly. If they are in the studio all the time, the last thing they want to do is answer the phone every 10 minutes to sort out scheduling and budgeting for the next project. Scheduling for somebody like Mike Hedges, who has just had a massive hit record, is horrendous. Every five minutes someone comes on the line with a great act that you would love to work with. It's very difficult to say no, but you're having to juggle with so many different elements: artist's time, producer's time, studio availability, engineer's time, the next artist the producer is going to work with...

"Lastly, somebody needs to be there to liaise on the money front, working out how much the record company can afford, setting a budget that works for both parties, and making sure the record comes in on budget. That is a job that requires diplomatic skills. All of these elements come into play: marketing, negotiation and project management — these are the key reasons why a producer needs a manager."

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"In the past, record companies have dreamed up all kinds of schemes for protecting their own interests against the interests of the creative people who actually *earn* the money."

How to become a Record Producer

▶ himself, your manager and the artist's manager. You will be relieved of all the nit-picking business details, so that you only have to discuss the strictly musical aspects of the forthcoming recording. If the record company thinks you are the right man or woman for the job, then your manager will negotiate your remuneration. Your manager will have a good idea of your current market value, and of how much the record company is likely to be willing to pay. You will get a better deal by going through a manager simply because he knows the business. If you think you might consider doing the negotiating yourself, pause for a moment to imagine how good a record producer the manager would be!

When the project gets under way, you will need to devote your entire attention to it during virtually all of your waking hours, for a period of possibly two months or more for an album. Without a manager, how would you find time to line up your next job? It just isn't possible. Everyone in the industry has their own schedule — the record company has a certain number of releases to make, certain types of music sell better according to the time of year, the band has touring commitments, and you've booked two weeks in Bognor in the middle of August! Juggling all of these is a full-time occupation — your manager will let you get on and produce great music, which is probably all you ever wanted to do.

COLLECTING THE CASH

When the recording is finished, in the shops, and at the top of the charts, you will be able to sit back and count the money flowing in. Or will you? Collection agencies like the Performing Right Society, the Mechanical Copyright Protection Society and Phonographic Performance Limited look after virtually everyone's interest apart from the producer. The producer is paid according to what is received by the record company, after whatever deductions are specified in the contract. No reputable record company would intentionally pay a producer even a penny less than he was entitled to in the contract (although they might haggle over even these tiny amounts during the negotiation), but the complexity of the music retail industry means that opportunities for making large accounting errors exist in abundance. Any music business contract should include a clause stating that an independent accountant can be appointed to inspect the record company's relevant books and paperwork to make absolutely sure that no errors are made. This will keep the record company on their toes, and ensure that every last penny goes to its intended recipient.

BECOMING A RECORD PRODUCER

Since this is the final instalment in the series, I suppose I should actually tell you how to become a producer, since you've been waiting so long! For your benefit, I have distilled the information I have obtained from top producers into a simple list of instructions:

- If you want to learn how to produce, just get in a studio and do it. You can learn a lot from books, your regular copy of *Sound On Sound* and recording courses, but you can only really learn how to produce by working in a commercial studio.
- To become a producer through the engineering route, get into a good recording studio by writing lots of letters to every studio you hear of. When you have written to them all with no success, wait three months and write again. You may have to write hundreds of letters to get one interview.
- To become a producer through the musician route, get in with a band or other musicians who are regularly recording in good studios. Observe everything and learn.
- Approach a band and offer them studio time at your expense, with an agreement to share in any profits, of course. When you take the recordings to a record company, make sure the A&R manager knows that you are the producer and it is you that has made the band sound great. Liaise with the band's management and try to get them to share recording costs.
- Find a singer and arrange and produce the instrumental backing, preferably in a professional studio. Take the tapes to a record company, or use them to get professional management for the artist. Record companies prefer acts who already have management.
- Make a recording and release it yourself on your own label. If it sells a couple of thousand or more, it's enough to make a record company take you seriously.
- Once again, just do it!

So that's it. How to become a record producer is no big secret. If you have talent and determination you can start to become one today by saving some money towards your first session in a pro studio with a pro engineer. At this very first session, you will indeed be a producer and you will be doing exactly the work that a successful record producer does. How far you get in the business is up to you — only a very few can carve out a successful, continuing career. But when you do achieve recognised producer status, make sure you write to me via *Sound On Sound*. You don't have to thank me because I haven't done anything except to point you in the right direction. Send me a copy of the record or CD and I will have the satisfaction of knowing that I played a very, very small part in its creation. You will have the satisfaction of achieving something that is the ambition of probably hundreds of thousands of people the world over, with an interest in recording music. You will have become a record producer! SOS

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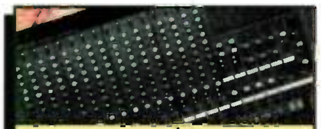

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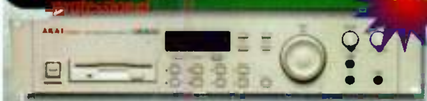

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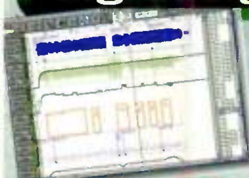

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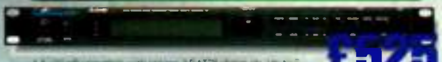

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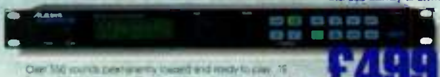

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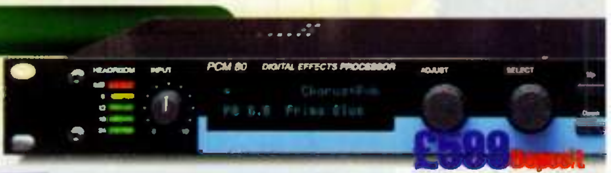

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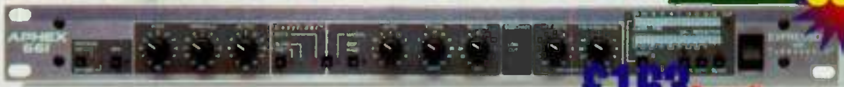

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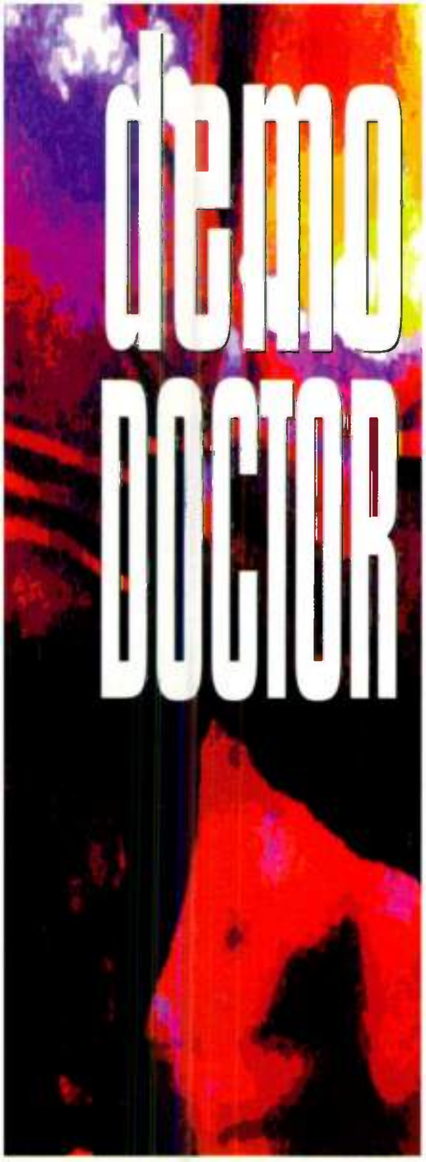

demo DOCTOR

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ONZ

Recording Venue: Home.
Recording Equipment: Tascam 38 8-track, Soundcraft Spirit Folio mixer, LA Audio compressor, Behringer Dualfex enhancer, Alesis Midiverb reverb, Sony DTC690 DAT.

This demo kicks off promisingly with a good open kit sound; there's a modern clang to the snare which I especially liked. Drummer Tim Denman also handles the tempo and the laid-back feel of the country-rock sound very well. The style of the music is emphasised by the backing vocals, acoustic guitar, mandolin, and Eagles-type bass line, but sonically, the recording seems to have lost clarity in the upper mids somewhere along the line. It's surprising that the Behringer Dualfex hasn't been used in post-production to pep up the upper mids and high-frequency content of the sound.

The mandolin is given a fair airing on the second song, 'In the Movies', and really enhances this boogie/funk workout. It plugs the gap above the guitars and the cymbals nicely, as the guitars don't themselves have much treble. And while we're talking guitars, the lead guitar should really have been mixed louder on this track. I notice that it has a lot of natural room sound on it, and that would have sounded great cranked up in the mix!

The final song is a well-worked ballad with thin, spiky, clean guitar, smoky bar-room drumming — exactly the right amount behind the beat — and fine vocals. Onz sound like they're a great bar band, but they also have something extra: really good musical feel, which is something that's in short supply these days. ❑

CRASH TV

top tape

Recording Venue: Home.
Recording Equipment: Fostex R8 8-track, Seck 18:8:2 mixer, Drawmer DL221 compressor, LA Audio compressor/gates, SPL Stereo Vitalizer enhancer, Electrovoice Sentry 100A monitors, Yamaha SPX50D effects, ART Multiverb effects, Korg SDD330 delay, Shure SM58 mic.

CRASH TV
SLIPSTREAM FISH

Interesting CD title, *Slipstream Fish*, though I'm not altogether sure what it means! Crash TV have been circulating this four-track CD to record companies and distributors. Their influences range from techno to thrash metal and pop, and their aim is to infiltrate the Indie club/pop scene. The lads found that it was cheaper to hire the gear in than go to a cheap studio. This meant that they could have total artistic control and access to the recording equipment 24 hours a day. So now they've only got themselves to blame!

But they've come up trumps. This is everything good British pop should be. Beats you can dance to, energetic and abrasive guitar, vocals with a slight twist of irony in the delivery, and no transatlantic rock influences. 'Daydream', the song that opens the CD, has all this plus some good production ideas. The very mono-sounding 'wall of guitar' verses open up to an anthemic chorus, and the guitar sits well over the hip-hop beat, with that clanging British guitar sound and not too much overdrive. What a surprise to find that all the guitars were recorded through a Marshall practice amp! Vocals are treated to heavy EQ but otherwise remain dry and upfront in the verses, giving a tense feel that is relieved during the more open choruses. Even the dance mix is worth a listen. Great stuff! ❑

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demo DOCTOR

PETE SWANSON

Recording Venue: Home.
Recording Equipment: Apple Mac IIci running Opcode's *Studio Vision* sequencer, Panasonic SV3700 DAT, Alesis 3630 compressor, Alesis MEQ230 EQ, Quadraverb and Midiverb II effects, Lexicon Alex effects, ART DRX 2100SE effects.

Submitting a tape all the way from Centreville, Virginia, USA, Pete shows that *SOS* is going places and the Demo Doctor column is generating interest across the pond! The tape is instrumental, some of it of a fairly experimental nature. Pete takes a live '911' conversation (emergency call in the US) that is very funny and filled with "all sorts of colourful language". To this he has added a backing track. The sound quality, as I would expect from the equipment list, is excellent. However, as we all know, it's not just the gear, it's what you do with it, and Pete seems to have command of the situation. The track in question, 'Old Joe', features a funk workout and some sampled female vocals behind the telephone call. The story of a deer that bit old Joe on the neck, and his subsequent biting by a deer-hunting dog provides some amusement. Especially as he's now trapped in the phone box...

'Strange Lands' is the title of the main instrumental composition on the tape. I guess it's a journey through different musical styles, varying from an Eastern flavour to something of a rock workout, with some excellent guitar samples, played appropriately. In fact, the standard of mixing and writing is high for all the compositions, and I'm sure that Pete could get work in TV and film on the strength of this demo, should he choose to. ❑

CON MEEHAN

Recording Venue: Soundback International Studio, Ipswich.
Recording Equipment: Alesis ADAT digital 8-track, Studiomaster and Mackie mixing desks, Tubetech and Joe Meek compressors, Klark Teknik and Lexicon reverbs, Neumann U87 mic.

Con Meehan
Midsummer
Common

The last time Con Meehan got a review in *SOS* was in 1993: at that time, the songs of the ex-pat Irishman received a good reception, but the mixing was a little suspect. This time around, the songs sound just as strong, delivered with the same level of commitment, and the mixing has improved.

Con's vocals glide over the top of the first song, 'For Real', and are joined by a female vocal harmony for much of the song. The (unnamed) backing vocalist must be used to singing with Con, as the harmonies are tight both in terms of timing and dynamics; this always makes it easier to produce a good vocal mix. This combined vocal proves to be a major plus point for all the songs on the demo — especially where notes are bent and slid in harmony and vibrato is matched. Not that much reverb is used on the vocals, which are upfront (where they need to be) for this narrative style of songwriting.

Con has elected to use piano as the driving force for the first two songs, where the last tape relied on acoustic guitar for this role. I think it's a good move — the sound is unfussy and placed well in the mix. Often, engineers seem to go for over-bright piano sounds, which makes it difficult to place instruments just above the piano in the mid range of frequencies. On this recording, the acoustic and electric guitar sounds have been chosen for their richness in upper-mid harmonics, to enable them to sit above the suitably weighty piano.

This is a nice set of songs, showing an improvement in mixing. My one criticism would be that the songs all seem to have roughly the same tempo, and so by the third one, the listener is looking for something different to break up this dynamic level. ❑

INTERFERENCE

Recording Venue: House in Acton, London.
Recording Equipment: Fostex E16 16-track, Alesis D4 drum module, Atari computer running Steinberg *Cubase*.

Interference are a band unafraid to show their influences and then, well, interfere with them! From the opening guitar line on the single song on this demo, we're in Talk Talk territory, and those guitar melody lines with a splash of echo are also reminiscent of Tears for Fears, though they are not mentioned as an influence. The guitar sound itself is a bit edgy in the upper mids, and is obviously DI'd or run through a dodgy digital overdrive. Nevertheless, the echo serves to smooth out the sound a bit, and guitarist John Furnival gets away with it both on the melody lines and in a tasteful solo.

INTERFERENCE
death
mellow
SEXY?
WHAT'S WRONG

The vocals are a different matter, being very '80s in character and more Depeche Mode than Scott Walker. Singer Darren Blackwood has that touch of melancholy which seems to characterise many productions from that era. In all fairness, the band recognise that they have a dated sound but that seems to mean very little now — just listen to Ocean Colour Scene!

Some comment is made in the letter about the keyboard sounds being too thin, but I can't really agree. The DX7-style bass keyboard has plenty of weight without causing any problems with rumble, the warm pad keys sit well with the bright strummed acoustic, and the sequenced chord loops have to be thin to cut through the wall of pad guitar and keyboard. If anything, the whole top end of the mix sounds a bit fizzy to me, and is definitely better with the Dolby switched in (no noise reduction information is provided). ❑

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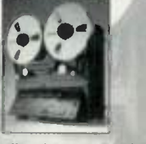

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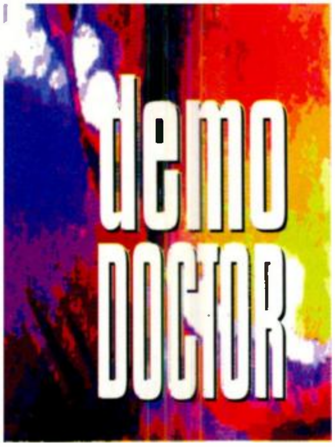


▶ QUICKIES

DISCOVERY are a band I reviewed back in May 1994 who are still together! It also seems that they have taken my advice, mixing the vocals louder and removing the loose brass synth parts altogether. The resulting new tracks and remixes are improved, with producer Steve Gilbert paying more attention to the pitching on singer Tiffany's youthful vocals. Choruses could be improved by double-tracking the voice and adding harmonies, using the band's FZ1 for sampling and flying in sections if necessary.

DISCOVERY
TRIED

D FILE are Gavin Hardcastle and Ian Bradley, and they've produced a generous hardcore slap in the face here. Even so, it draws heavily on what I would say is a rock background. Gavin's vocals and vocal treatments come across really well, varying from heavily EQ'd and distorted lines to dry, upfront sounds. Strangely, the modulated vocals and backwards reverb are reminiscent of old rocker Ian Anderson! The second song turns out to be an acoustic number with some more of those excellent vocals. A fine talent at underpinning the melody line with a tight lower harmony makes Ian Bradley a lot more than your average programmer. It sounds as though the two have been working together for some time and are comfortable with their working arrangement — no uncommitted other band members to deal with!

INITIATION

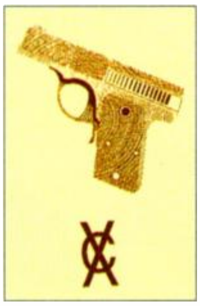
ASPIRE are based in Blackpool, with musical interests in the dance music area, but they aim to try different styles too. The material is firmly placed at the commercial end of the dance market — and not that far removed from the more commercial aspects of Kevin Saunderson's work. Mellow strings back female vocals floating over a standard dance beat for the first number. The second song, 'Release', is far more club-orientated and nods towards House without getting cheesy — could be a hit if given the right backing and a more upfront remix. You could definitely make more of the rhythm track on this one by bringing it up in the mix. Adding extra vocal effects and making the stereo panning more obvious on the backing would also help. All the sounds are good and the arrangement works — perhaps a good compressor and enhancer could add punch and spice to what is already there.

GUY THOMAS declares that his demo "seems popular with a diverse audience". In fact, it's well recorded and programmed ambient music which has already had an airing on Kiss 100 FM. Some really interesting phased stereo effects in the opening minutes catch the attention immediately; whether Guy is being clever with the mixing or it's just the phase effect, I can't tell. However, some of those keyboard sounds definitely appear 3D, reaching out to grab the listener's attention. On the more mundane side, the usual slow comb-filtering treatment is applied to the full-bandwidth style keyboards. This provides a backdrop for the occasional melody sections, sound effects and looped sequences — all of which segue nicely from one part to another. The demo is a little thin in the upper mids as a result of the sounds chosen and the digital synthesizers used, but nothing untoward. A good tape.

SIRIUS B's tape definitely has leanings towards techno, with mysterious synth melodies and chords on the first track, 'Alpha J2'. Yet it was the second title that really intrigued me. 'Mayonnaise' turns out to be a little more vinegar and spice than the title suggests, providing a buzzing synth and fast-attack, short-release percussive synth flavour. This is backed up by a low-mix, mellow, oil-and-egg foundation — almost subliminal, really. The sharp, percussive snare jabs at the senses with lemon juice and mustard precision — it's all a matter of taste, really! Sirius B can also tackle ambient with some success, taking the thick, mellow, suspended-chord approach and adding rainforest-style noises placed well down in the mix to tickle the senses.

SIRIUS B
Victims Of A
Mass Hallucination

CITIZEN X are Ian George and Danny Brien, who take on the pop market with songs heavily influenced by Erasure. It's all there — the pauses after the choruses, the echoed chords occupying the high-frequency end of the mix, and the general high-energy feel. This is good-time, have-fun pop, and it's also well sung, although the sleeve notes don't tell us by whom. Occasionally, too much reverb has been used on the vocal, and in some ways the result is a very '80s-sounding production. My only doubts about the sonic integrity appear on the second song, which seems very thin and phasey in the upper mids. Sometimes cassettes recorded with the wrong bias can produce this effect, but equally it could be the result of over-equalisation or over-enhancement. The better quality of the first and third tracks lead me to believe that the second has been overcooked.



PETER ORD's intriguing track title, 'Hedgehogs in Space', made me want to listen to this tape. It turns out to be a bit of a muso workout, based around some decent piano playing and fine chord voicings. Unfortunately, the piano isn't really mixed loud enough, which is a shame, as it sounds like a decent enough upright. Peter does seem to have gone over the top with the drum effects, especially where the echoed snares jump out of the mix, far louder than the original hit. On the other hand, there are occasions during this mix where sounds should really have been brought forward — a synth break midway through the composition struggles to be heard, for example. On the upside, the drum programming is generally of a high quality, although I would have chosen more ambient-sounding toms for the Alesis SR16 kit.

Alison
Bentley
Quartet

ALISON BENTLEY QUARTET: Few recording details are given for this CD, but it sounds expensive! All the players are excellent jazz session musicians who have toured extensively, and the quality of the playing is superb! Alison herself sings and has composed all the pieces on the album. However, as this is jazz, you can hear that the musicians were allowed a fair amount of space for their own input. From the liquid piano of the opening number, 'Fairly Normal', to the duet of voice and sax on 'Harlequin Cat', the standard of playing and singing is very high. Alison's voice sounds superb, whether she is tackling the twists and turns of a complex chordal arrangement or scat singing. Overall, the album sounds good, with the natural feel you need for jazz recordings. Effects are kept to a minimum, and there are some nice open kit sounds, incorporating the natural ambience of the room. ❑

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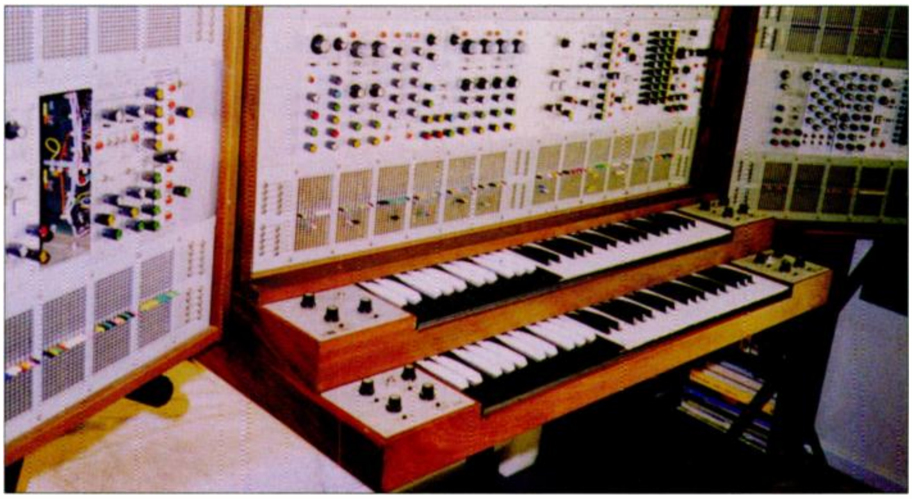
Close Encounters of the ARP Kind

ARP 2500 MODULAR ANALOGUE SYNTHESIS SYSTEM

The ARP 2500 is so rare that most of the existing examples are in private collections. Though few of us will ever get to play with one, the story of this modular monster remains fascinating. Lucky 2500 owner ROBERT ALEXANDER relates the tale...



Pictured is the extremely rare three-cabinet 2500, with a total of 23 series-1000 function modules. It was purchased in 1995 from its original owners, who used it when composing the soundtracks for the films **Rollercoaster *(1977) and* Friday the 13th *(1980). Samples of the synth were used on* The Lawnmower Man *(1992). 1000 Series Modules in the system: Left Wing Cabinet: 1047, 1016, 1005, 1036, 1050 (5); Right Wing Cabinet: 1006, 1046, 1045, 1027, 1036, 1002/230 (6); Main Cabinet: 1004p, 1023, 1033, 1006, 1023, 1023, 1005, 1016, 1050, 1027, 1047, 1002/230 (12). The instrument has two 3222 keyboards, dates from 1972, and is jointly owned by the author and his brother, Simon.***

Probably best known for its brief 1977 appearance calling to the alien spaceship in the Steven Spielberg sci-fi classic *Close Encounters of the Third Kind*, the ARP 2500 dates from a time when synthesis was an art form which nevertheless required you to have a degree in physics to stand any chance of comprehending what was going on! Because they are so rare, very few people have ever had the chance to see a 2500, so unfortunately it is not often listed among the 'classic' synthesizers — that accolade usually goes to the smaller, much simpler ARP 2600. Total production numbers of the 2500 were probably as low as 100 worldwide, and maybe no more than 12 were sold in the UK, making it an exceptionally rare instrument. Rarest of all are examples with so-called 'wings', additional cabinets at the side of the main instrument which make the overall synthesizer truly enormous in size.

SOUND: THE FINAL FRONTIER

The 2500 was designed in 1969 by former NASA engineer Alan R Pearlman (hence ARP) who was responsible for amplifier design on the Gemini and Apollo space programmes. When the instrument was commercially launched in 1970, it was an enormously complex undertaking, combining all the features of the Moog modular series that was available at the time, plus a lot more. Where it differed was to allow the musician *every* possible combination of choice in sound creation within a matrix system, rather than using the more familiar patch cords (see the 'Matrix Switching' box for an explanation of this system).

Several variations of the 2500 were made, by far the most common of which was the single large cabinet configuration (model 2515) with a single keyboard. Additional, smaller 'wing' cabinets (model 2508) with a second keyboard were optional, with the 2500 able to continually add these on as required. An even rarer example of a triple cabinet (model 2524) exists, but very few were ever made. This would bring the full complement of modules in three cabinets to 31 'function modules' — 15 in the centre cabinet, with eight in each of the wings (this includes power control modules) — plus two 61-note, 5-octave keyboards.

FUNCTION JUNCTION

ARP offered 2500 owners a combination of 1000-series function modules for the two cabinet types available, the choice obviously determined to some extent by synthesis basics — VCOs, VCFs, VCAs, and so on. Beyond that, each instrument was custom-made for each owner, depending on their requirements and budget. The units available were:

• 1002/230:	Power Control Module
• 1003a:	Dual Envelope Generator
• 1004-T:	Single Oscillator Module
• 1004r:	Single Oscillator Module
• 1004p:	Single Oscillator Module
• 1005:	Modulator Amplifier
• 1006:	Filter Amplifier
• 1016:	Dual Noise/Random Voltage Generator
• 1023:	Dual Oscillator Module
• 1026:	Preset Voltage Module
• 1027:	Clocked Sequential Control Module
• 1028:	Sequencer Slave Module
• 1033:	Dual Envelope Generator
• 1036:	Sample & Hold/Random Voltage Circuit
• 1045:	Voltage Controlled Voice
• 1046:	Quad Envelope Generator
• 1047:	Multi-mode Filter/Resonator
• 1050:	Mix Sequencer

The 2500 was a natural rival to the Moog modular systems. These mostly used 921-series VCOs that tended to overheat, causing a drift in pitch. This necessitated constant re-tuning, one of the major setbacks when taking early synthesizers on stage. The ARP did not have this problem, and even Bob Moog himself had to admit that ARP oscillators were superior to those on the Moogs. This stability gives a clarity of sound that is different from any Moog: it is richer, warmer, fatter — any number of adjectives — but essentially different. The rivalry between the two manufacturers would eventually lead to the synthesizer itself being referred to as a 'Moog' or an 'ARP'.

ARP VCOs are quoted in the specification section of the manual as having an output frequency of .03Hz-16kHz, voltage-controlled over 10 octaves — a rather optimistic set of figures. However, the 1004 variants and the 1023 do seem to respond over an enormous range, and each has five waveform characteristics — sine, triangle, pulse, sawtooth and square. The 1004-T has a toggle switch to invert the waveforms.

KEYBOARD CHOICE

The choice of 3000-series 5-octave keyboards for the ARP 2500 was equally complicated. ▶

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MATRIX SWITCHING

On each of the 2500's cabinets, above and below the function modules, there are matrix switches of 10 x 20 switch position points (on very early models, the matrix switches were only above the modules). In total, this could give the musician with a full three-cabinet configuration a possible 9,600 matrix points *for each sound!* In practice, this meant that the ARP 2500 had potentially more sound variations than any musical instrument that came before or after it — until Yamaha's DX7 came along in 1983.

In their simplest form, the matrix points allow patching from the output of one module to the input of another. The switches on each module are divided into groups of 10 sliders, which can be moved up or down vertically to line up with any one of the 20 horizontal lines. The spaces between switch points are 'off' positions. In order to connect all the modules, the 20 horizontal lines act as busses, making an electrical connection the entire length of the cabinet with any slider positioned on that line.

Both black and white keys were used in various octave combinations (the colour of the keys of the lower octave or octaves were sometimes reversed, with black keys where you'd expect to see white, and vice versa), each of which could be assigned voices, dependent on which 1000-series function modules were installed. The 4-figure keyboard model number is in fact a code relating to the layout of the keyboard: the first digit, '3', means 'keyboard'; the second digit refers to the number of black octaves it has; the third digit refers to the number of black voices it has; and the fourth digit refers to its number of white voices. So a '3112' keyboard would have one black, single-voice octave, and a two-voice white section. In all, 3001, 3002, 3112, 3212, 3221, and 3222 models were made, and in the last four of these, the two sections of the keyboard were completely independent. The 3001 and 3002 keyboards, as the code suggests, had no black octaves.

INSTRUCTIONS *NOT* SUPPLIED

Once all the module and keyboard choices were made, the musician was then faced with the somewhat daunting task of getting a sound out of the instrument. This can be complicated by the fact that the manual for the 2500, whilst explaining what synthesis actually is (in a rather quaint chapter with little diagram drawings that look like doodles at the side of the page) does *not* explain how to go about making a sound! It is usually at this point that musicians begin to appreciate just what the lesson in synthesis is all about.

Programming the ARP 2500 is not for the faint-hearted. In order to get anything (and I mean anything) out of this device, it is essential that you have a grasp of the basic concept of analogue synthesis and its structure. Sound creation with modular synthesizers is a time-consuming labour of love. This does, however, make it all the more rewarding when, after several hours of work, you end up with a sound that is literally unique — nobody has a sample of it, because it has probably never been created before — and you did it!

SEQUENCING STEPS AHEAD

When the 2500 is powered up it looks magnificent (something like one of those control panels that you used to see in *Thunderbirds* or *Captain Scarlet*) with loads of flashing coloured lights. The sequencer is no exception, with a row of 10 green lights adjacent to three rows of coloured rotary potentiometers. Analogue sequencing was almost unheard of before Alan Pearlman came along, and today some of his later, dedicated ARP sequencers are among the most sought-after and prized of all analogue musical instruments.

Basically, the 1027 Clocked Sequential Control Module will allow a 10-step sequence to be programmed from three input signals and sent to three output signals. This means that up to 30 notes can be sequenced in three separate groups of 10 notes per 1027 function module. As the sequence is started, the steps are indicated by the adjacent green light flashing on.

Tempo is controlled in two ways: internally or externally. Internal clocking is via a black rotary knob labelled 'rate', and this can be set to steps of 20 'clocks' per minute at the slowest rate, up to 400 'clocks' per minute at the fastest. External clocking is split between trigger input mode and gate mode. Should you require a sequence of less than 10 steps, a sequence reset button is provided. This automatically cuts the sequence at the step required and loops it back to the beginning.

FAMOUS 2500 USERS

- **PETE TOWNSEND: "Mine plays six notes at once, can have 20 sets of preset control voltages available, six audio signals mixed and instantly usable at various levels. The most incredibly subtle tone colours can be produced using the multimode resonator in conjunction with a normal filter, and the sequencer will provide exhilarating cascades of arpeggios."**
- **JIMMY PAGE: "It's a fabulous instrument capable of translating literally any sound you can hear in your mind into a reality. It is a joy to own."**
- **HUGO MONTENEGRO: "We used the ARP extensively on our first quadraphonic record for RCA. Whatever sound you want, you can get — it's that simple." *(Hugo Montenegro was responsible for RCA's first quadraphonic recordings.)***
- **GERALD SHAPIRO: "The ARP synthesizer is unquestionably the finest studio instrument that I have seen." *(Gerald Shapiro of Brown University, USA, was one of the foremost contemporary lecturers on synthesis.)***

Other famous 2500 users include Wendy Carlos, Vince Clarke, Tony Banks, and Jean-Michel Jarre.

Today, most of these functions would be found on reasonably cheap synthesizers or workstations, but in 1970 they were a revelation that would have been considered electronically quite impossible just a few years before. The 1027 is a beautifully-designed piece of hardware, and would be copied many times in the years following its release.

WEIRD SCIENCE

There are many features on the ARP 2500 that are not possible to explore in any depth in an article of this size. Learning to programme an instrument such as this would require a book, many hours of time, and enormous patience. In many ways, despite its amazing sound possibilities, this was the biggest problem with the instrument — it was too hard for most musicians to get to grips with, and eventually the demand for a synth that was easier to use forced Alan Pearlman to develop the ARP 2600 (1971-1978) and later the ARP Odyssey (1972-1981). This meant that most of the ARP 2500s that were sold ended up in university science departments (rather than music departments!) as examples of the potential of analogue synthesis.

CONCLUSION

The ARP 2500 is undoubtedly one of the most important electronic musical instruments ever made. It was also Alan Pearlman's folly, costing too much to build and buy, being far too complicated to programme (unless you just happen to have worked for NASA), and quite enormous in size. And yet, this instrument is accorded a place in synthesis history that is unparalleled. Its status is reflected by the fact that to buy a 2500 today (assuming you could find one) would set you back somewhere in the region of £15,000 — perhaps even as high as £20,000 for a system with wings and a full complement of modules and keyboards.

The 2500 allows the creation of unique sounds with a power and vibrancy that no other synthesizer can get close to. Because so many variations are possible, you *never* run out of surprises when creating new sounds. Perhaps that's the fascination of an instrument that is fast approaching 30 years of age: the sounds it produces are as new and current now as the day it was first conceived.

It's rumoured that the Science Museum has a pristine-condition 2500 kept in the basement as an example of the genre 'electronic synthesis' — not a Prophet 5, not a Jupiter 8, or even a Minimoog, but an ARP 2500. SOS

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FOSTEX M80 8-track, vgc, £590 ono; two Fostex 2-5M looms, £49; XRI XR300 SMPTE/MTC synchroniser, £90 ono. £700 the lot. ☎ Luke 01252 710244 (Farnham).

FOSTEX M80 8-track, £650; Spirit Folio 18;2, £280; Pentium 100 16Mb, 1.1Gb hard drive, monitor, quad CD etc, £950. ☎ 01736 68253.

FOSTEX R8 8-track, good condition with looms, box and manual, £800. ☎ 01223 234850.

FOSTEX R8 with MTC1, still boxed, immaculate condition, genuine sale, never used, with remote extension, £1000 ono. ☎ Martin 0181 251 8844/0956 977264.

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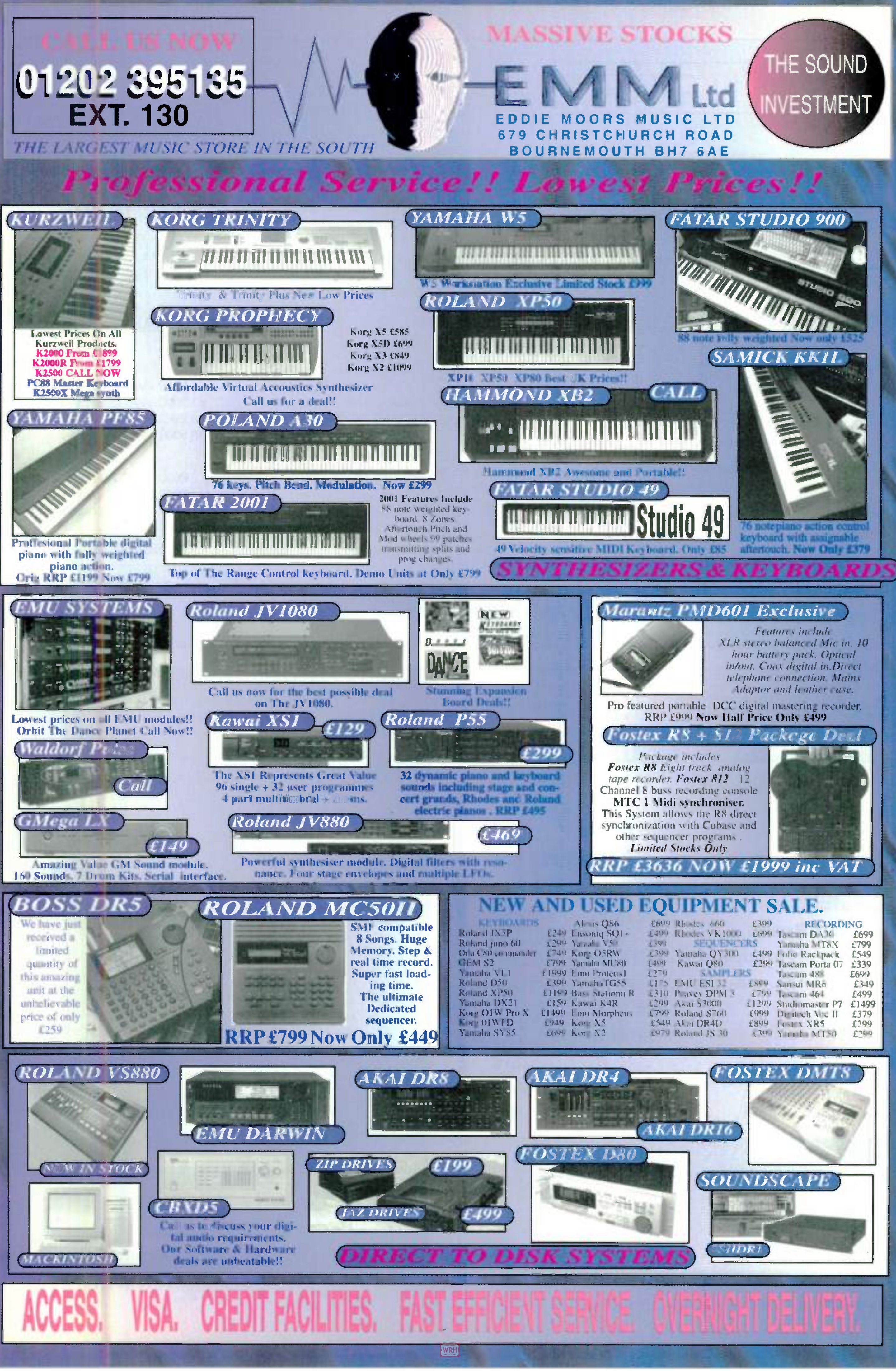

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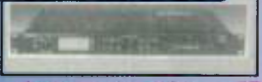

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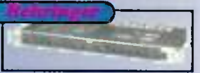

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AKAI S2800 sampler, £900; Korg 05RW sound module, £310; Yamaha DX11 FM keyboard, £260; Roland TR606 drum machine, £110; all excellent condition with manuals. ☎ 0113 2783173 (Leeds).

AKAI S3000XL 18Mb, EB16 effects, £1850; Spirit Folio 12:2 mixer, £275; Syquest EZ 135Mb removable hard drive with 13 disks, £300. ☎ James 0181 980 9262.

CASIO FZ1 boxed, excellent condition, £400. ☎ 01203 714209 (Coventry).

CASIO FZ1 flightcased, vgc, £460 ono. ☎ John 0141 423 1106.

CASIO FZ1 vgc, many discs, plus manuals, £500; Casio VZ10M, £200; TR707 classic house drums, TR727 Latin set, manuals PSUs, £100 each, £175 pair. ☎ Rob 01245 472758.

CASIO FZ1 sampler keyboard with large library, £500; Sony DTC690 DAT player, £425. ☎ Mark 01922 616244 (West Midlands)

CASIO FZ1 keyboard sampler,with memory expansion, boxed, manuals, library, £700. ☎ Stephen 0181 549 6975.

CASIO FZ10M 16-bit sampler, resonant filters, library, £650 Kawai MX16 DNR desk, £200; Atari 1040ST plus monitor, £200; Casio CZ1000, £90. ☎ Kevin 0181 292 5901.

CASIO FZ10M rackmount, 2Mb, eight outputs, excellent filters, manual, extra software, massive 300Mb ambient techno library, reluctant sale, £575. ☎ Steve 01753 814230 eves.

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CHEETAH SX16 sampler, eight outputs, reads S900/950 disks, £290, Cheetah MD16 drum machine, £50; Yamaha CS01 monosynth, £60 ☎ Martin 01472 362792.

EMU EMAX 2 keyboard sampler, £600; Ensoniq EPS keyboard with 2x memory, £400; Boss DS330 Dr Synth sound module, £120, Roland R5, £120; Roland TR505, £80; Roland TR606, £70. All in mint condition. ☎ Martin 01543 672907.

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EMU EMULATOR 3 keyboard with custom-built flightcase, absolutely immaculate condition, serviced only by Emu-approved service engineers, includes Ricoh optical drive with 1800Mb library, offers ☎ Keith 01444 831504.

EMU ESI32 8Mb RAM, SCSI, V2 0 operating system, home use only, £1100. ☎ 01452 371525

EMU ESI32 16Mb RAM, SCSI, 540Mb external drive, 540Mb internal drive, CD ROM drive, library, £1990 ono. ☎ Steve 01908 263400.

EMU ESI32, £860; Akai S01, £450; Phonic PMC802B 8-track mixer, £200, Yamaha FX550 effects box, £200; Alesis SR16 drum machine, £150. All in excellent condition ☎ Andrew 01772 201542.

EMU ESI32 stereo sampler, 2Mb RAM, 730Mb hard drive, SCSI interface, £850. ☎ Richard 0973 763925.

ENSONIQ ASR10 keyboard sampler, 16-track sequencer, superb internal effects, expanded to eight outs, good condition with manuals and library, £1450 ono ☎ 0161 286 6585

ENSONIQ ASR10 sampling workstation, boxed with manuals, 50+ disks, perfect condition, 9 months old, reluctant sale, £1200. Wanted: Seck 18:8:2, £550, Roland R8 Mk2, £370, Quadraverb, £170. ☎ 01280 814385.

ENSONIQ EPS16+ powerful sampler, synth, sequencer and effects, as new, offers or swap plus cash for Kurzweil K2000 with sample option. ☎ Kristian 01273 205863 (Brighton).

ENSONIQ EPS16+ workstation, good condition, £700. ☎ Elliot 0131 346 2704 (Edinburgh).

ENSONIQ EPS16+ sampling workstation eight outputs, 2Mb memory, Waveboy FX disc, large library, £800; Akai ME80 MIDI patchbay boxed, unused, £150. ☎ 01273 327889.

ENSONIQ MIRAGE sampling keyboard, with disks, manuals & advanced sampling software. In need of love & attention, £100 ono. ☎ Steve 0171 209 3860.

PEAVEY SP/SX2 stereo sampler, 16 note polyphony, four outputs, expandible with SIMMs and has digitally controlled oscillators and filters, £450 ☎ Paul 01202 398537 (Bournemouth).

PEAVEY SX sample expander, works with Peavey SP or any MIDI sample dump keyboard, such as Yamaha SY85 etc, with power supply, £110. ☎ 01933 678608.

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ROLAND DJ70 sampler, the guts of the classic S750 but easier to operate, load while play function, vgc, £700. ☎ Nick 01432 266752

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ROLAND S10 sampling keyboard. Good condition, including some Roland library discs, blanks and manual, £225. ☎ 0121 449 4857.

ROLAND S760 10Mb upgrade, £999; Roland D110 module, £160; Yamaha TX81Z module, £110. ☎ 01363 866105.

ROLAND W30 sampler workstation, 100 disks, flightcase, £595 ono. ☎ Paul 01722 339084 (Salisbury)

ROLAND W30 sampling workstation, 16-track sequencer, eight outs, manual and library, flightcased, £800 ono. ☎ Lee 01785 840774 (Stafford).

COMPUTERS & SOFTWARE.

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ATARI 1040 ST plus monitor, £200. ☎ Kevin 0181 292 5901.

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ATARI 1040 STE, 2Mb, monitor, Steinberg Cubase, plus manual, second disk drive, MIDI leads, £250. ☎ 0191 261 1255 before 6.30pm, 0191 226 1498 (Newcastle).

ATARI 1040 STE £99. ☎ John 0973 310645

ATARI 1040 STE, 4Mb, plus Amitar hi res, low radiation, monitor, both 12 months old, £350. ☎ Andy 0191 273 4424 (Newcastle).

ATARI 1040 STE, 1Mb, plus SM124 hi res monitor with C-Lab Notator and Steinberg Synthworks, all with manuals and dongles, exc cond, £200, Yamaha CX5, manuals, £50 ☎ Tom 01206 072425, 4-11pm

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ATARI 1040 STE plus SM124 hi res monitor, home use only, £275. ☎ John 01234 824168 (Bedford).

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ATARI BOOKS Compute's ST Programmer's Guide, The Atari ST Companion by Jeremy Vine, Working With the Atari ST by David Lawrence & Mark England. £6 each, £15 for all three, plus postage ☎ 01354 695239.

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ATARI ST 2Mb RAM plus Hybrid Arts EZ-Score notation software, £100, 720K floppy drive, suit Atari, £10. ☎ Keith 01484 665885 after 6pm.

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ATARI STE 4Mb, boxed, good condition, £175 ☎ Richard 01305 782554 after 6.30pm.

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EMAGIC LOGIC for Atari, £200; Unitor 2, £175 Falcon 030 4/60 plus 32MHz accelerator, remote keyboard, Blow Up, and System Solutions modification £650. ☎ John 01344 750959

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MUSIC QUEST MQX32M MIDI card with SMPTE, brand new, bought in error, £129 ☎ Paul 01302 538304.

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SEQUENCERS

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ROLAND TR505 digital drum machine with manual, £60 ono, Yamaha QX21 digital sequencer with manual, £55 Both vgc, offers ☎ Adam 0121 313 0477.

ROLAND TR626 rhythm composer, good condition, £150 ono. ☎ 01453 545032 (Gloucs)

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FENDER ULTRACHORUS amp, 1 year old, never gigged, £400 ono ☎ 01268 288286

KENTON PRO2 dual channel MIDI-CV converter with Hz/V,£159 ☎ Lee 01425 672613.

KORG G4 rotary effects simulator, only one month old, very little use, immaculate, £250, Peavey HiSys 2 speaker cab and Peavey KB400 mixer/amp, well-used but vgc, £350 ono ☎ Paul 01939 232489.

MARSHALL 6100 anniversary amp, 100W, three channels, MIDI, 4X12 speaker cab, £1000; Audio Technology 3312 professional monitors, new, £500 the pair ☎ 0181 992 0801

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 ☎ 01354 695239

QUIKLOK 3-TIER KEYBOARD STAND, very sturdy, large keyboard flightcase, two 16-way quarter inch to XLR looms, Quad 405 amp, JBL TLX9G1 speakers, Tannoy DC100 speakers with brackets, loads of cables and patchbays, all must go. ☎ Keith 01444 831504.

ROLAND 707 guitar synth plus GR300 synth, £350, Meistro valve Echoplex, £500, Fender tweed Bassman reissue combo, £550 ☎ Andy 01222 493528

ROLAND CPM120 mixer amp, £130, Roland CR78 drum machine, £250, Great British Spring, £50; AKG 6-way phantom power unit, £100, seven M&M graphic EQs, £20 each Various trolleys and other studio equipment. ☎ 01904 653518

ROLAND GS expansion board for JV1000/JV90, £140. ☎ 01734 882079 Reading

RACKS, brand new, 12U high with locking doors, very sturdy, £40 each ☎ Justin 01784 432385

SHURE MIC CARTRIDGES four, brand new, fits Unidyne series, excess to requirements, £65. ☎ Brian 01534 485089.

SORABJI two rare, out of print books by eccentric composer. 'Around Music', 1932, 'Mi Contra Fa' (in wrapper), 1937 Both clean, complete. Serious offers ☎ 01354 695239

STUDIO RACK 13U with locking door, very sturdy, £40 ☎ Justin 01784 432385

YAMAHA G10 MIDI guitar, £475 ono; Alesis MMT8, £95 ono; Kawai Q80 sequencer, £220 ono Kawai MAV8 MIDI patchbay, £40 ono, Korg T3EX PCM effects disk set, £40 ono. ☎ 01494 523096 (Bucks)

YAMAHA WX11 wind synth plus WT11 sound module, cost £550, absolutely mint, played one hour, £375 ono ☎ Mike 01302 851249

PERSONNEL

ATMOSPHERIC ORIGINAL melodic, immaculate instrumental tracks wanted for new age releases Al tapes listened to, SAE for return Dream Machine Music, PO Box 84 Waterlooville, Hants PO8 OFX

ENGINEER/PROGRAMMER wanted to wire Aces desk to rare Cadey valve 2-inch machine. Experience, details please. ☎ 01932 893243 (London E1).

SEMI SKILLED SOUND ENGINEER from School of Audio Engineering is looking for part time or full time studio work around London area ☎ Anthony 0976 268820.

SOUL BAND need keyboard player. Your commitment will pay off with hard cash Surrey/Hants borders area. Want more details?. ☎ Andy 01252 317441, Derry 01483 234996

TRANCEMISSION RECORDINGS requires innovative talent, all dance styles considered. Submit demo and info to Trancemission Recordings PO Box 4314 6202 VA Maastricht, The Netherlands (Please enclose IRC for sure reply).

WANTED

2MB SIMMS 30-pin for Roland S750 sampler I'm desperate! ☎ Jason 0116 285 4547 Leicester

AKAI S3000 8MB BOARDS Promix 01, VS880 inc FX, Fostex D80, all must be excellent condition ☎ Andy 01482 448674

AKAI S3000XL Zoom 9050, Art SGE, Vocoder, Korg Prophecy, Drawmer DF320 N/F, Korg MS20, Panasonic 3800, DBX263, Sennheiser MKH816, TC2290, DI box, Neve EQ modules ☎ 0114 2787767 (Sheffield)

ALLEN & HEATH GL2 wanted, willing to pay around, £500 ☎ Justin 01784 432385

BOSS MICRORACK RAD10 19-inch rack shelf (2 required) or BMR5 micro rack unit Cash waiting for right price ☎ 01354 695239

BOSS DE200 rack ears wanted are there any left anywhere? Cash waiting for right price ☎ 01354 695239

CAN ANYBODY give me advice on MIDI equipping a Hammond Tonewheel organ C3? I have electronics experience but would like outside advice. ☎ 0191 5844329

ELECTRO-HARMONIX PRODUCTS Univox-Micro Rhythm 10, Roland SH09, SH1, MC202 Synare III Drum ☎ 0121 420 3295 eves & weekends

EMS SYNTHI HI FLI effects unit, cash waiting. ☎ Lawrence 0115 922 5401

ENSONIQ ESQM will pay, £350 or swap for Ensoniq ESQ1 plus, £50 ☎ Mike 0115 9781132 (Nottingham)

KORG BX3 ORGAN must be in working order or easily repairable, external appearance not too important, will consider two CX3s ☎ 01642 558756

LEXICON PCM70 PCM80 or Reflex effects unit wanted Cash waiting ☎ Paul 01302 538304

MONITOR FOR MAC, any size considered, plus extended keyboard, cash waiting ☎ 01354 695239.

OBERHEIM OB1 will pay £300, Moog Prodigy, £150, Casio DA7, £300; Korg KPR77, £50, SH101, £16, TB303, £350 All items in good condition please ☎ Ian 01432 266752

ROLAND BASS for GR33B floor unit, or GR707B pickup, and any old funky pedals ☎ 0181 693 4859

ROLAND D70 sound cards, Roland original PCM cards and associated patch cards preferred, including PN-D70, SL-D70, SN-SPLA, and SN-U110 series ☎ 01242 528241

ROLAND GR09 guitar synth with GK2 pickup ☎ Brian 01534 485089

ROLAND JX8P with PG800 programmer, cash waiting for right price ☎ 01843 587098.

ROLAND PG800 programmer for JX10 and JX8P, Roland PAD 80, Octapad II, cash waiting ☎ Kriss 01787 278614

ROLAND R8M drum module in good condition with manuals, cash waiting for sensible price ☎ 01582 769112

ROLAND SH101, MC202, TB303, TR808, TR909, JD800,Juno 106, etc, Cubase Audio, sample editor for PC, Moog, Sequential, etc Anything considered - no dealers ☎ 01252 375025

ROLAND SYSTEM 100M whole system or modules; Roland MC4 or MC8, Roland MSQ700, 16-track open reel ☎ James 01484 865137

ROLAND TR727 drum machine ☎ Nick 01753 604754 (Windsor)

ROLAND TR909 drum machine, will pay £600, TR808 £300, TB303 pay £400, Oscar pay £450, Wasp pay £150, Jupiter 8 pay £600 ☎ 0114 248 2760 eves

ROLAND U110 U220 cards wanted, particularly Super Strings and Orchestral Wind; Korg M1 Orchestral 3 card ☎ Russ 01724 847152

SEQUENTIAL PROPHET 5 owners manual wanted would prefer REV 3.3 version but anything will do, original or photocopy If you can help ring ☎ 01274 620004.

SHOCK MOUNT WANTED for Audio Technica AT4050 mic, Wave Boy disks, CD ROM drive and optical drive for Ensoniq ASR10 sampler ☎ 0589 831458, 01375 856501.

STEINBERG CUBASE on the Mac II ☎ Sam 0181 840 1057

TECHNICS DT50 drum machine ☎ 0191 422 1765

YAMAHA TG500 module wanted cheap ☎ 01354 695239

AKAI | MACKIE | E-MU SYSTEMS | YAMAHA | TANNOY | DENON | AKG | DigiTech | EMAGIC

EUROPE'S LOWEST PRICES GUARANTEED*

2 Tracks

SONY
TCDD8

LIMITED STOCKS

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 48 and 44.1 kHz recording. Initial supplies will be very limited, phone now to reserve yours. The ultimate Walkman !

NEW PRODUCT £549 NEW BOXED

SONY
DTC790

DAT PRICE CRASH

We have exclusively secured a small supply of the Sony DTC790 to bring you the 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. Also available with Digicon SCMS stripper for only £599. Another DAT exclusive from Turnkey.

SCOOP RRP £899 £499 NEW BOXED

NEW, USED & EX DEMO

Aristar karaoke	£49	Sony DTC790	£499
Denon DCD315	£149.99	Sony DTCA8	£849
Denon DCD625	£199.99	Sony MDS302	£479
Denon DCD715	£234.99	Sony MZR3	£399
Denon DN770R	£529.99	Sony TCDD10 PRO	£3379
Denon RMK	£46.94	Sony TCDD7	£399
Fostex D10	£2696.63	Sony TCDD8	£499
Fostex D5	£749	Sony WMD6C	£349
Marantz PMD320	£433.58	Tascam 102MKII	£249
Marantz PMD321	£511.13	Tascam 112MK2	£599
Marantz PMD502	£499.38	Tascam 202MK2	£349
Marantz PMD510	£703.83	Tascam CD401MKII	£775
PanasonicSV3700	£1643.83	Tascam DA20	£599
PanasonicSV4100	£2579	Tascam DA30 mk2	£999
Philips DCC170	£249.99	Tascam DA60	£4463
Philips DCC951	£279.99	Tascam DA88	£3200
Revox B77	£2499	Tascam SYD6	£504.08
Sony DTC1000ES	£549	TEAC V375	£99
Sony DTC60 ES	£799	TEAC W416	£99.95
Sony DTC690	£627.16		

P. A.

ELECTRO VOICE
SX200

300 watts

The latest incarnation of the classic Stage 200 full range PA speaker 300 RMS power handling in an incredibly compact design. 1 x 12" woofer plus wide dispersion horn. Makes an ideal portable system. Limited stocks available (bundled with Powerstation £2149.)

RRP £1399 POA NEW BOXED

Multitracks

EMU
"DARWIN"

INC. 1GIG HD

8-track stand-along random access recorder that features jog/shuttle, MIDI Machine Control and MIDI Time Code, S/PDIF as standard as well as 4-in, 8-out balanced connectors. Options include ADAT digital interface, SCSI port for computer hook-up, sync card for additional units, 4 extra analog ins etc..

NEW "DARWIN" £3199 INC. 1GIG HD

DIGITAL
8 TRACKS

LARGE STOCKS

We will not be beaten on price or service. Akai, Fostex, Tascam, Sony and Alesis all in stock and on demonstration.

FROM ONLY £2195 NEW BOXED

NEW, USED & EX DEMO

Fostex 380S	£799	Tascam 424MK2	£399
Fostex DMT8	£1199	Tascam 464	£699
Fostex XR3	£225	Tascam 488MKII	£899
Fostex XR5	£299	Tascam Porta 03	£165
Fostex XR7	£350	Tascam Porta 07	£289
Roland VS8F1	£340	Yamaha MT4X	£379
Tascam 424	£379	Yamaha MT50	£279
Tascam 424 mk2	£399	Yamaha MT8X	£699

PRICES INCLUDE 17.5% VAT
Uk mainland carriage £9.99

*We will beat any genuine quote from a UK or European dealer. We must be able to substantiate the quote and the goods must be available and in stock

PHILLIPS
DCC951

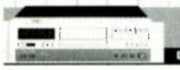
18 BIT

DIGITAL dcc COMPACT CASSETTE

DCC now has 18 bit sampling at 48 kHz with advanced data reduction techniques The DCC951 is a full-size machine in a sturdily built case. It features Philips new Turbo drive high speed mechanism, title recording, full indexing & location facilities, SP/DIF ins and outs, full remote, plays analog cassettes with Dolby B & C noise reduction, auto-level optimisation and microphone input. Portable DCC170 also available at £249. Unbelievable deals exclusive to Turnkey. Sound-on-Sound say

"Digital compression makes little or no subjective difference to the recorded result. In fact recordings sound frighteningly similar to DAT" .... Check one out today!

RRP £349 £249 NEW BOXED



FOSTEX
D5

DAT PRICE CRASH

Exclusive scoop purchase on a genuine professional machine brings quality within reach of the rest of us. Now that Sony's domestic machines are discontinued, this is one of the cheapest DATs around, but just look at the spec list. 19" rackmount, 44.1 kHz analog recording SCMS-free operation, error detection indicators, balanced ins and outs on XLRs, AES/EBu professional digital connections as well as all the usual DAT features from the makers of the indsutry standard D20B timecode machine. Huge reduction

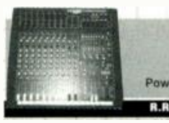
RRP £1299 £869 NEW BOXED

TASCAM
DA20

19" RACK DAT

If you need a 19" rack mount DAT machine, they don't come any cheaper than this! But that's not at the expense of a quality machine: reliable tray-loading mechanism, The SCMS is switchable in or out. Both analog and digital recording at all 3 sample rates and coaxial SPDIF in and out. High sound quality is guaranteed by 1-bit DAC playback Special'Table-of-Contents' feature.

RRP £799 £679 NEW BOXED



SPIRIT
Powerstation PA mixer

R.R.P. £1299, £CALL

Another winner from Soundcraft, their first entry into the powered mixer market is sure to be a success. Based around the well-known Folio 12, and also featuring a 2x300w amplifier, dual 7-band graphic and a built-in Lexicon Alex! Check out these amazing package deals :

Powerstation + 2 x JBL MR825	£1749
Powerstation + 2 x Peavey Hisys2	£1699
Powerstation + 2 x JBL M330	£1999
Powerstation + 2 x Bose 802	£2299

Add 4 SM58s + stands, spker stands and cables for £499 !

SONY
PCM-800

PRO 8 TRK DIGITAL

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 now before stocks are exhausted !

RRP £5349 £3499 NEW BOXED

XRI SYSTEMS
XR300 EXCLUSIVE

Long the synchroniser of choice in professional studios, we now exclusively bring you this industry standard unit at an unheard-of price. Features include true SMPTE at all standard stripe-rates, MIDI clocks / Song Pointers or MTC for compatibility with all MIDI sequencers. Large LED time-code display. Merged MIDI input. Straight-forward operating system. Full 19" rack unit.

RRP £299 £159 NEW BOXED

See the rest of our ad on pages 22 - 30

Mixers

SOUNDCRAFT
SPIRIT STUDIO

OUTSTANDING OFFER on 16 or 24 CHANNEL DESKS

Almost everyone involved in music production at some stage dreams of owning a Soundcraft console - The legendary sound quality, reliability and ease-of-use, means that a Soundcraft equipped studio must be taken seriously. The SPIRIT Studio range represents a minor miracle, produced in Britain using the world's most advanced production technology and revolutionary manufacturing techniques to bring you Soundcraft quality at a previously unimaginable price/

Just take a look at the spec : 16 or 24 channels (inline providing 40 or 56 inputs at mixdown), legendary EQ, (4 bands with 2 sweepable mids and shelving high and low band), patented IC pre-amps with individually switchable phantom powering, 6 true auxiliaries etc. etc.

With top artists like M people and Portishead joining the impressive list of users, there's no reason to miss this unrepeatable opportunity to invest in on one of the few pieces of music technology that has really made a difference

RRP £1499 £1189 NEW BOXED

RRP £1999 £1589 NEW BOXED

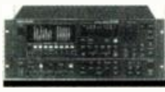
SPIRIT FOLIO
Small mixers by Soundcraft

AVAILABLE IN 10 or 12 CHANNELS

3 band mid-sweep EQ, 2 auxiliaries (1 switchable pre/post fade) professional grade Neutrik connectors, superb clean signal path and compactness make them unbeatable value for money, phone for unbeatable price!

NEW, USED & EX DEMO

Alesis MATICA500	£499.99	Fender PX2216D	£1737.83
Alesis MATICA900	£649	Fender SIDEKICK	£99
Amcron Powerbase 1	£249	Fender SPL118S	£550
Bose 502	£1215	Fender SPL215S	£825
Bose 502P	£1399	Fender SPL2912	£642
Bose 802	£1756.63	Fender SPL2915	£737
Bose 802 (pair)	£1069	Fender SPL6000	£574.58
C Audio RA2001	£1218.48	Fender SPL9000	£750.83
C Audio RA3001	£1339.5	Fender SPLM300	£421.83
C Audio ST400	£703.83	Fender SR4150	£379
Dynamix 12" PA Cab	£89	Fender SR6300P	£469
Dynamix DPA400	£199	Fender SR6520P	£599
Dynamix Powered PA Cab	£149	Fender SR6520PD	£734
Dynamix Spkr Control	£19	Fender SR8300P	£549
Ev S200x (pair)	£899	Fender SR8520P	£699
EV S200XEQ	£369	JBL 8SR	£429
Fender 110ELC	£129	JBL EON15	£999
Fender 112ELC	£146	JBL M330MKII EACH	£703.83
Fender 115ELC	£164	JBL M350MKII EACH	£821
Fender 8520PD	£808	JBL M355MK2 EACH	£763
Fender ESPL3001	£319	JBL MR825	£680.32
Fender ESPL3002	£499	JBL SR4715A	£1244
Fender ESPL3801	£329	JBL SR4726A	£1526
Fender ESPL3802	£550	JBL SR4733A	£2032
Fender LX1504	£289	Kam GM50	£99
Fender LX1506	£349	Kam KCD850	£399
Fender MX5200	£366.6	Peavey CS1000X	£799
Fender MX5216	£1820.08	Peavey CS400X	£569
Fender MX5224	£2348.83	Peavey CS800X	£649
Fender MX5232	£2995.08	Peavey EUROS1PM	£279
Fender PCN2	£374.83	Peavey EUROSY1M	£180
Fender PCN4	£468.83	Peavey EUROSYS1	£124.5
Fender PX2208	£1232.58	Peavey EUROSYS1PM	£294.5
Fender PX2208D	£1408.83	Peavey HiSys 2XT	£349.5
Fender PX2212D	£1585.08		



AKAI
DR-16

INC. 1GIG HD

First there was the DR4, then the DR8, and now Akai bring you 16 tracks of no-nonsense hard disk recording in a single box! 8 inputs and 16 individual outputs are provided making it perfectly suited for full blown multitrack recording. Amongst the options available is a video output board to give a full colour display of all the tracks, which makes editing a breeze. Buy now from Turnkey and we will include a free 1 gig hard drive!

NEW DR-16 £3699 INC. 1GIG HD

Mics

AKG C3000
Large Diaphragm Mic

INC FREE BOOM STAND

The C3000 uses all of AKG's experience in building large diaphragm mics such as the C12 and C414, but by using modern manufacturing techniques, and only offering two patterns (cardioid and hyper cardioid), the price has been kept to a minimum. Its open sound and superb frequency response make it ideal for vocals, as well as sounding great on a variety of other instruments

RRP £399 £299 NEW BOXED

GS-1
by Allen & Heath

NEW LOW PRICE

Incredible amount of mixer for your money! The GS1 not only has 8 busses, up to 32 inputs and MIDI muting, but the price even includes the meter bridge! Three band EQ with a mid sweep, MIDI Machine control and MIDI learning abilities, XLR mic inputs which can double as balanced line inputs, full length Alps faders and PFL. A good clean signal path can be taken for granted from Allen & Heath, but a continued supply of GS1's at this price can't - order now to avoid disappointment!

RRP £1174 £699 NEW BOXED

NEW, USED & EX DEMO

A&H GS1	£599	Sndcrft Ghost24	£4347.5
AUDIO LOGIC SC610	£69	Sndcrft Ghost24E	£3642.5
Behringer Eurodesk	£1799	Sndcrft Ghost24EXMB	£575.75
FOSTEX 2016	£406	Sndcrft Ghost24EXST	£423
FRONTLINE 8:2	£99	Sndcrft Ghost24MB	£634.5
Mackie 16	£2875	Sndcrft Ghost24ST	£428.88
Mackie 24	£3590	Sndcrft Ghost32	£5170
Mackie 24E	£2749	Sndcrft Ghost32MB	£740.25
Mackie 32	£4395	Sndcrft Ghost32ST	£440.63
Mackie BRIDGE16	£649	Sndcrft LIVE3/12	£1173.83
Mackie BRIDGE24	£699	Sndcrft LIVE3/16	£1432.33
Mackie BRIDGE32	£799	Sndcrft LIVE3/24	£2090.33
Mackie CR1202	£230	Sndcrft LIVE3/8	£868.33
Mackie CR1202VLZ	£349	Sndcrft LIVE3EXP	£683.85
Mackie CR1604	£550	Sndcrft Powerstation	£1367.58
Mackie LM3204	£899	Sndcrft Protracker	£785.45
Mackie MBE	£799	Sndcrft RACPAC	£925.84
Mackie SC 8 SIDECAR	£269	Sndcrft SpiritAuto16	£3739.85
Mackie SR24•4	£1495	Sndcrft SpiritAuto24	£5471.9
Mackie SR32•4	£1999	Sndcrft SpiritAuto32	£6607.97
MIDIMAN minimixer	£69	Sndcrft SPIRLC16	£1839.58
NICHE audio cntrl mod	£99	Sndcrft SPIRLC24	£2420.5
PHONIC 6:2	£89	Sndcrft SPIRLC32	£3291.88
PHONIC BKX 8800	£169	Sndcrft SPIRST16	£1099
PHONIC MM122	£249	Sndcrft SPIRST24	£1400
Samson MIXPAD9	£169	Sndcrft SPIRST32	£2783.58
Samson MPL1204	£449	Soundcraft Folio 10	£299
Samson MPL1502	£239	Soundcraft Folio 12	£349
Samson MPL2242	£499	Soundcraft Folio 4	£849
Sndcrft DC2000 24	£16790	Soundcraft Power Station	£899
Sndcrft DC2000 32	£21138	Soundtracs MACRO14	£429
Sndcrft DC2000 32pb	£24057	Soundtracs MAXI24	£1699
Sndcrft DC2020 32	£23408	Soundtracs MAXI32	£2290
Sndcrft DC2020 32pb	£27600	Soundtracs MINI12	£323
Sndcrft DMix500	£882	Soundtracs Topaz32	£4228.83
Sndcrft Folio 10:2	£300.02	Spack XTRAMIX	£2999
Sndcrft Folio 12:2	£325	SRes NEM 24.2	£149
Sndcrft Folio 12:2R	£446.58	SRes stage mix 8:2	£199
Sndcrft Folio 4	£1209.04	Stdmstr Diamond	£502
Sndcrft Folio LITE	£220	Stdmstr Diamond	£338
Sndcrft Folio SI	£540.07	Stdmstr Diamond 12:2	
Sndcrft Folio SIRACK	£540.07		
Sndcrft Ghost16MB	£528.75		
Sndcrft Ghost16ST	£423		

FOLIO SX
Multitrack recording console

BRAND NEW DESIGN

Brand new mixer from the superb Soundcraft Spirit range - call for details.

NEWPRODUCT £599 NEW BOXED

FOSTEX
MIXTAB package

UNDER HALF PRICE

This has to be the best value mixer on the market! Fostex's DCM100 is a fully MIDI controllable rackmount mixer with 8 stereo inputs, 2 aux sends, 2 band EQ, mute, pan and level. An additional 2 stereo aux returns and a stereo master/sub input give a maximum of 22 inputs. This alone would be incredible value for money, but the MixTab also gives hardware control of every function of the mixer via MIDI. The MixTab can store up to 100 snap-shots of all the parameters of the mixer, and multi-colour LEDs allow resetting of all the hardware controls to the current position. MIDI output from the system can be recorded into any sequencer giving totally automated mixing and recall - come back to exactly the same mix weeks later! Cubase and Logic maps also available Under half price (Total RRP £779) Very limited quantities - last units ever! .

RRP £779 £299 NEW BOXED

TM1000
Condensor Microphone

EXCLUSIVE SCOOP PURCHASE

Using over 40 years of experience in selling microphones, Turnkey have specified the TM1000 condenser mic to be built by Audio-Technica, makers of the legendary ATM4033. The TM1000 has a flat frequency response from 30 Hz all the way up to 21 kHz ±3 dB making it ideal for vocals and instruments with delicate harmonics such as acoustic guitar, piano etc...Built-in pop-shield, battery power means no phantom supply required. On/off switch, all metal casing.. We think it's the best recording mic under £200, if you don't agree, we'll take it back against any other mic with 14 days. Price includes heavy duty clip

TURNKEY SPECIAL RRP £299 £119 NEW BOXED

Guitars

YAMAHA
PAC 112Pacifica

LOWEST PRICE EVER

The Yamaha PAC112 was voted Number One budget guitar for the past two years. Massive bulk purchase makes this unbelievable value for money. Order now to avoid disappointment

PRICE CRASH RRP £199 £159 NEW BOXED

ZOOM
4040

FX PEDAL BOARD

Megadeal on top quality FX pedal board features include 25 digital and analog effects, 6 effects simultaneously plus compression and ZNR noise reduction. Built-in expression and volume pedals, MIDI out, built-in tuner, 80 patches, switchable input gain, buy now while stocks last !

RRP £379 £239 NEW BOXED

MARSHALL
DRP1

DIRECT RECORDING PRE-AMP

The Marshall DRP1 makes getting a fantastic sound through any system a cinch. Now you can have Marshall tone straight through a PA, studio monitors or direct onto tape (it also makes a great headphone practice amp. Controls include pre-amp volume, gain boost, bass, middle and treble, master volume and line-output level A n LED indicates battery stength (unit can also be mains powered by a DC adaptor) These units are the last ever - incredible price

RRP £109 £49 NEW BOXED

GUITARS - 0171 379 6766

NEW, USED & EX DEMO

BOSS ME8	£275	Heartfield Dr. Bass	£299
Crate G40CXL 2CH	£199	Korg DTR1	£139
Crate G40CXL 2CH	£199	Korg DTR2	£89
Crate G60XL combo	£199	Marshall 8080	£329
Digitech BP10	£46.88	Reuter 2400	£169
Digitech RP5	£299	Rickenb360	£1179
Epiphone Les Paul	£369	Rickenbacker 360	£769
Fender 4X12 cab	£149	Roland GI10P	£499
Fender Jap Strat	£399	Roland GP100	£739
Fender USA Std Strat	£799	Squier LSG 15W AMP	£79
Fender USA Strat	£599	Squier Prec.Bass	£199
Gibson ES335	£1499	Squier Strat	£129
Gibson LP Classic +	£1649	Trace Road 1X12 Combo	£349
Gibson LP EB	£1099	Yamaha diversity sys	£99
Gibson LP Stnd+	£1899		
H + K Tubeman	£199		

D. J.

KAM GM50
Sampling DJ mixer

SPECIAL OFFER

End of line clearance deal brings you this digital sampling mixer at an unbelieveable price. Features include 2 line inputs, 2 phono inputs, XLR mic input with talk-over auto-ducking feature. Removeable cross-fader, dedicated monitor fader and digtial sampler with large stop-start button. Main channels feature 110 mm proline faders and master section has 10 LED meters
Starter pack with 2x KAM DDX380 direct drive decks, stanton carts and headphones - £649

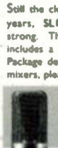
RRP £229 £99 NEW BOXED

TECHNICS
SL-1200 Mk2 / 1210

MEGA DEAL

Still the club standard after many years, SL1200s are still going strong. This incredibly low price includes a free Stanton cartridge. Package deals available with many mixers, please call to enquire.

RRP £629 £399 INC CART



ATM4033
by Audio Technica

EXCLUSIVE SCOOP PURCHASE

For years the Neumann U87 dominated the large diaphragm condensor mic market, but at a price. That was until the advent of the Audio Technica ATM4033. For about one third of the price, it offered superb sound quality - sparkling vocals and acoustic guitars, and all the kind of qualities you would expect from this kind of mic. Now Turnkey have secured a quantity at a new unbelievable price, which even includes the shock mount. If you're in the market for a serious microphone, you can't afford to pass this one by! This price available on current stocks only.

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WIN

SPIRIT Folio SX Mixer & Spirit Microphones

Since the Frankfurt Musikmesse there have been continual calls for Spirit to submerge another of its Folio SX consoles in the now legendary stunt-fish tank. Although the Spirit posse are not prepared to do it again, they do have a soaking wet competition giving you the chance to win a Folio SX together with a VMO1 and IMO1 microphone.

For those of you that missed the review in the July issue of *Sound On Sound*, the SX (worth £611) is a 20 input, 4 buss mixer, ideal for recording setups or PA applications. Features include 3-band EQ with swept mid, 3 auxiliaries and direct outs on every channel (switchable pre- or post-fader) allowing use in either recording or live situations. Being a particularly generous manufacturer, Spirit have also decided to add one of its VMO1 dynamic vocal mics and an IMO1 instrument mic, worth £130, to the prize package, leaving you requiring only an amp or speakers for your own instant setup. All you have to do to enter is answer a few simple multiple choice questions, dream up a tie-breaker, and post your entry to reach us by **Friday, 6th September 1996.**

Prize kindly donated by Spirit by Soundcraft. Tel: 01707 665000.

the small print

1. Only one entry per person is permitted.
2. Employees of Sound On Sound Ltd, Spirit by Soundcraft and their immediate families are ineligible for entry.
3. No cash alternative is available in lieu of the stated prizes.
4. The competition organisers reserve the right to change the specification of the prize(s) offered.
5. The judges' decision is final and legally binding, and no correspondence will be entered into.
6. No other correspondence is to be included with competition entries.
7. Please ensure that you give your DAYTIME telephone number on your entry form.
8. Prizewinners must be prepared to make themselves available in the event that the competition organisers wish to make a personal presentation.

QUESTIONS

1. How many Stereo inputs does the Folio SX offer?

a. 1 ☐
b. 2 ☐
c. 4 ☐
d. 6 ☐

2. How long are the SX faders which provide extra fine mixdown control?

a. 50mm ☐
b. 100mm ☐
c. 200mm ☐
c. 1cm ☐

3. The Folio SX has how many Mic inputs as standard?

a. 10 ☐
b. 12 ☐
c. 14 ☐
d. 20 ☐

4. Who is the design guru behing Spirit equipment?

a. Graham Blyth ☐
b. Graham Souness ☐
c. Graham Gouldman ☐
d. Golden Graham ☐

Name ....
Address ....
....
....
Daytime tel. no ....

TIE-BREAKER

Only a madman or a genius would plunge a brand new Folio SX into a fish tank. Prove to Spirit that you straddle the thin line between the two by suggesting who or what should be submerged in there with it! (Remember, no marks for saying Mick Hucknall or everyone would have the same entry.) Have fun and good luck.

....
....
....
....
....

Post your entry to: *SOS Spirit SX Competition, Sound On Sound, Media House, Burrel Road, St Ives, Cambridgeshire, PE17 4LE.*

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Valid from ☐☐ ☐☐ Expiry date ☐☐ ☐☐ Switch Issue No ☐☐ Signature ....

WRH

SPECIAL READER OFFER!

Anatek Pocket Products to

At *SOS*, we have regularly found ourselves referring readers to one or other of the Anatek Pocket range of MIDI accessories to solve their all too common MIDI interconnection and transmission problems. Trouble was, Pocket Products were previously hard to find... until now!

POCKET SYNC

• 'Smart' FSK Tape-to-MIDI synchroniser • Starts anywhere in song • MIDI In to Out merging • Automatic read/write switching • 'Jam Sync' protects against tape dropouts • Records tempo changes • MIDI and FSK status LEDs

POCKET SYNC is the way to expand the capabilities of any multitrack studio. No longer is it necessary to allocate more than one tape track for sequenced parts. Now, shuttling to different points in the song is quick and effortless. POCKET SYNC writes a special FSK sync tone on one track of tape that is converted to MIDI Clock and Song Position Pointer on playback. Merging of data from the MIDI input to the output allows new sequencer tracks to be added while remaining synchronised to tape.

Automatic switching between write (recording FSK) and read (playback FSK) cuts downs on confusing switches and buttons. Tape oxide dropouts are no longer a problem with POCKET SYNC's variable dropout protection. The sequencer can continue playing over a dropout for a short time, even if FSK code is completely lost!

Order Code: PP003 **£69 inc VAT.**

Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET MAC

• Economical Macintosh MIDI interface • No external power supply required • 1 MIDI In, 2 MIDI Outs • LEDs indicate MIDI In/Out data • Uses serial or modem port • High speed CMOS design • Improves signal to minimise data errors.

POCKET MAC opens up a whole new world of MIDI programs for the Macintosh computer user. With many Macintosh programs simultaneously supporting both the serial port and the modem port, one POCKET MAC could be connected to each allowing access to twice as many MIDI devices.

Order Code: PP004 **£39 inc VAT.**

Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET CURVE

• Modifies MIDI velocity response • Controls keyboard sensitivity • 6 tapered curves • 6 velocity increase curves • 6 velocity decrease curves • 6 constant levels • Special DX7 velocity curve

POCKET CURVE is a necessity for master keyboards that require velocity scaling control. With it, a keyboard's response to harder or softer playing styles can be modified to suit the player and their MIDI setup. DX7 owners can especially benefit from POCKET CURVE! A special curve is available to boost the DX7's low velocity output, so that missing dynamic potential can be recovered. Use POCKET CURVE to allow a lighter touch during performance on a heavily weighted keyboard controller. For ease of programming, a quick reference to the many curve possibilities is permanently printed on the sides of the unit.

Order Code: PP005 **£69 inc VAT.**

Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET MAPPER

• Remaps MIDI controllers • Maps Pitch Bend to Aftertouch • 'Set and forget' programming • Supports 15 controllers • Allows unconventional routings • Updates older keyboards.

POCKET MAPPER allows modulation routings to be customised to suit a particular need. Controller data such as Pitch Bend, Aftertouch, Breath Control and others is received and can be retransmitted as a different controller. For instance, DX7 Breath Control modulation can be rerouted to MIDI Volume to modulate synths that do not accept Breath Control. POCKET MAPPER is the most convenient and cost effective way of rerouting MIDI modulation. Now, MIDI wind instruments can remap mouthpiece Breath Control to Aftertouch quickly and easily.

Order Code: PP006 **£69 inc VAT.**

Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET MERGE

• Merges 2 MIDI signals into 1 • Handles System Exclusive • Merges on all 16 MIDI channels • Merges Clock and MIDI Time Code • Merges all controllers • Handles large volumes of data • Stackable for 3 or more inputs

POCKET MERGE is an essential tool for sequencing or live use. Operating as a 2-In, 1-Out MIDI Merger, several Pocket Merges can be stacked to merge more than 2 inputs. Now any controller can be a 'master'. In live setups, POCKET MERGE allows any two controllers (keyboard, drum pads, guitar synth, etc) to share a sampler or sound module. Use one keyboard as a master, while using a favourite pitch bender from another, or combine two keyboards for a multi-tiered, organ-style controller. In the studio, POCKET MERGE is a must for sample dump editors, allowing a keyboard and a computer to be connected to the sampler at the same time. POCKET MERGE handles data very quickly, making buffer overflows a thing of the past.

Order Code: PP007 **£59 inc VAT.**

Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET FILTER

• Filter on all MIDI channels • Filter controllers, System Exclusive and real-time data • Combine data types/channels • DIP switch selectable filtering • Select channel from any keyboard • Filter all data on selected channels

POCKET FILTER is a vital tool for problematic setups. With MIDI data becoming increasingly complex, POCKET FILTER can unclog the MIDI data stream, sending only the most useful info. Use it to remove unwanted clock messages or System Exclusive data or memory-intensive aftertouch and controller information. POCKET FILTER frees-up unused MIDI Channels from multitimbral synths, making them available for other modules. In addition, it can be used to channelise older synths that only receive in Omni mode.

Order Code: PP008 **£69 inc VAT.**

Postage: UK £2.50 Europe £4.95 ROW £8.95

LONG DISTANCE MIDI

• Enables extra-long MIDI cable runs • Easy to connect to existing 3 conductor wiring • 4,000 feet capability • Balanced XLR connectors • Dual transceivers allow 2-way MIDI communication • Handy data input and output LEDs confirm presence of MIDI signal

The problem with MIDI is that you are likely to encounter data errors when running more than 50 feet of MIDI cable. These can be embarrassing errors such as hung notes, mysterious program changes or worse in the middle of a performance.

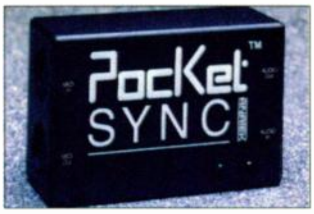
The cost-effective solution is MIDIMATCH by Anatek. Two identical units convert MIDI data to balanced signals that can be transmitted through up to 4,000 feet of cable. The balanced MIDI signal is virtually immune to the problems that have previously plagued studio owners and sound contractors over long MIDI runs.

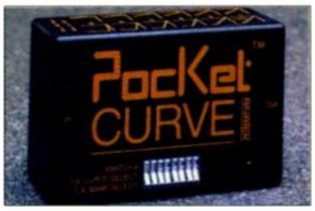
MIDIMATCH works through ordinary balanced microphone cable so you can connect keyboard controllers to MIDI sequencers or lighting controllers to dimmer packs through your existing snake! Studios already wired for audio can connect MIDI through the cabling already in place. MIDI signals could even be run through a balanced patchbay!

The price includes transmitter and receiver. (Please note: requires two 9V AC adaptors.)

Order Code: PP001 **£115 inc VAT.**

Postage: UK £2.50 Europe £4.95 ROW £8.95





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HOW TO ORDER

Join the group of satisfied customers worldwide who have found the solution to their MIDI problems with Pocket Products from Anatek, now available direct from SOS.

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USE YOUR YAMAHA BREATH CONTROLLER WITH NEARLY ANY MIDI SYNTH!

WIND machine
BREATH CONTROL INTERFACE
ANATEK

Anatek's WIND MACHINE and your Yamaha BC1 or BC2 Breath Controller (not provided) will add woodwind-like expression to keyboard performances. Brass patches can punctuate or pad according to your whim, not to some pre-programmed attack setting. Sax solos will turn heads with their authenticity. And layered string sounds can fade in precisely where they're needed, while your hands and feet are free to control wheels and pedals. *(Will not work with Yamaha WX7/11.)*

Compatible with everything, WIND MACHINE interfaces to Korg, Roland, Yamaha, Ensoniq and the rest! No longer are you forced to use your Yamaha breath controller with only one brand of MIDI synth. Any MIDI keyboard that will respond to MIDI Volume, Aftertouch, Modulation, Breath Control, Pitch Bend, Expression, Foot Controller, or Pan can be controlled via your breath controller and WIND MACHINE.

Blowing into a mouthpiece is the most natural way to enhance keyboard performance. Wind instruments have been designed around this principle for centuries. Alone, keyboard Aftertouch isn't as effective because when you release the keys, the effect goes away. Modulation and Pitch wheels alone aren't as effective because they don't allow you to play chords. But when combined with WIND MACHINE, all of these can be used to create vastly improved expression capability.

A flexible input/output configuration means that WIND MACHINE can fit seamlessly into any setup. The simplest way is to use it to send control signals to the MIDI In of a keyboard synthesizer. If the MIDI setup involves a master keyboard and external modules, WIND MACHINE can combine incoming signals from the master with its control signals and then pass them on to a sequencer or sound modules. WIND MACHINE can transmit the most popular control parameters to keep it simple. Most MIDI keyboards respond to Modulation, Aftertouch or Volume so you won't have any problem finding one compatible with your synth. Any one of the 16 MIDI channels can be selected as well. All control parameters are set by switches on the lid that retain settings even when power is disconnected.

£85 inc VAT.
Order Code: PP002
Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET PEDAL

• Sends on multiple MIDI channels • Supports 1 continuous controller • Supports 1 momentary footswitch • Sends pitch-bend, modulation, portamento time, and MIDI Volume • Sends sustain, portamento on/off, sustenuto, and start/stop • Auto pedal/footswitch calibration • Forward/Reverse pedal operation • 3 mode pitch-bend operation • Combine data types

POCKET PEDAL is an indispensible controller for the performing musician. Use it with an ordinary volume pedal and footswitch to send MIDI volume, modulation, and sustain controls on all 16 MIDI channels simultaneously. For owners of multi-effects processors, POCKET PEDAL provides a convenient cost-effective way of providing dynamic control over effects parameters. It is also a handy controller for automated mixdowns, converting any resistive input into MIDI Controller messages for VCAs. Connect a photocell to POCKET PEDAL and control MIDI parameters with a light source!

Order Code: PP009 **£69** inc VAT.
Postage: UK £2.50 Europe £4.95 ROW £8.95

POWER PACK

• 'Phantom' powers all Pocket Products • Functions in-line with MIDI signal • Powered by most AC adaptors • Automatic polarity switching • Fully regulated supply • Passes all MIDI data • Alleviates hook-up problems • Boosts MIDI signal

POWER PACK provides power to Pocket Products in instances where upstream devices from other manufacturers have neglected to meet MIDI specifications, or in any instance where power is unavailable. POWER PACK can be placed anywhere in the MIDI chain and accepts power from a standard AC adaptor (not included). It provides additional power when more than 4 Pocket Products are used in a row or allows POCKET PEDAL and POCKET FILTER to retain their channel settings when the master device is turned off. What's more, POWER PACK can be used to boost the MIDI signal and extend the maximum distance between two devices.

Order Code: PP012 **£29** inc VAT.
Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET SPLIT

• 8-Zone Keyboard Splitter • Range from 1 to 127 notes • Fixed boundaries • MIDI Channel/Zone assignment • Footswitch controllable • Floating split point

POCKET SPLIT is an 8-zone keyboard splitter. Each zone has its own MIDI Channel, and has a range of 1 to 127 keys wide. Zone boundaries can be set for hard or soft (overlap or splits). Use POCKET SPLIT to maximise the performance of your master keyboard, or create interesting performance possibilities with your guitar controller. An added feature is an 'intelligent' 2-way floating split that automatically tracks the keyboard player's left and right hands. Now any MIDI device can have the features of a sophisticated MIDI controller at a fraction of the cost!

Order Code: PP013 **£69** inc VAT.
Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET TRANSPOSE

• In-line 16 Channel transposer • +/- 5 Octave transpose range • Switch between normal and transposed modes • Separate intervals for each channel • Transpose key signature and octave simultaneously • All non-transposed MIDI data is passed • Harmonisation mode • Footswitch controllable.

POCKET TRANSPOSE is a performance-orientated transposer that supports separate transpose intervals for each MIDI channel. Although many keyboards have a transpose function, it's usually too cumbersome for live use. POCKET TRANSPOSE makes transposing easy. Intervals can be set while playing, and the user can select the normal or the transposed setting from a footswitch. Guitar synth players can use the POCKET TRANSPOSE to set intervals on 6 separate MIDI channels, or use it to transpose all strings by a certain amount. POCKET TRANSPOSE provides an easy way to try different arrangements without altering sequencer data. You can even set it so that the drum machine channel remains intact.

Order Code: PP011 **£69** inc VAT.
Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET CHANNEL

• Remaps Receive channel • Remaps Transmit channel • Sends multiple MIDI channels • Velocity-switch mode • Footswitch controllable

POCKET CHANNEL takes data from any MIDI channel and remaps it on to one, several, or all 16 MIDI channels. Up to 16 different channel assignments are possible. A unique velocity-switch feature allows automatic switching between two different sound modules depending on the key velocity. Use POCKET CHANNEL to organise channel assignments for a multitimbral sound module, or send a controller's output to two or more MIDI channels. With POCKET CHANNEL, for example, two drum machines or two samplers can share the same note assignments and be set to two separate MIDI channels.

Order Code: PP014 **£69** inc VAT.
Postage: UK £2.50 Europe £4.95 ROW £8.95

POCKET THRU

• 1-In, 3-Out MIDI Thru box • High-speed CMOS design • Very low power requirements • Buffered outputs clean up data • Handles all MIDI data • Stackable for more outputs

POCKET THRU is an essential building block for any MIDI setup and an excellent companion product for all Pocket Products. POCKET THRU provides 3 buffered outputs from a single MIDI input. Use POCKET THRU to minimise MIDI delays, or expand the outputs of a POCKET MERGE unit. POCKET THRU also allows POCKET FILTER to be placed anywhere in the MIDI chain, when using it to channelise older synths. Up to 4 POCKET THRUs can be combined to provide a total of 9 outputs.

Order Code: PP010 **£35** inc VAT.
Postage: UK £2.50 Europe £4.95 ROW £8.95

ABOUT POCKET PRODUCTS

Pocket Products are handy MIDI accessories designed to solve the problems arising from incompatibilites between MIDI products from different manufacturers. Compact and sturdy, Pocket Products can be placed anywhere in the MIDI signal chain.

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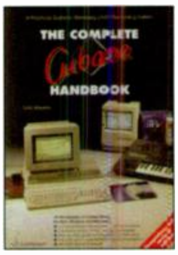
2nd Edition



by Udo Weyers

After a short break, the definitive Steinberg Cubase Hanbook is back in print. This *new edition* is once again filled with real world applications and down to earth explanations of how to use all the powerful features offered by Cubase in all its many forms. *The book is now relevant to all three platforms (Atari, Mac and PC)*, and the main attraction of the revised text is its focus on Cubase Score. The Complete Cubase Handbook is a not-to-be-missed purchase for users of Steinberg's highly popular software.

CODE B195 **£29.95**

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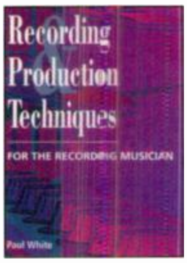

by Paul White.

This highly informative book by SOS's own Editor demystifies the techniques used by professionals in the recording of contemporary music.

It reveals how to make full creative use of all manner of studio effects and signal processors. These techniques can be utilised both in the home and commercial studio. The book concludes with an invaluable section on master tape formats and an overview of the various processes and vinyl records.

CODE B200 **£11.95**

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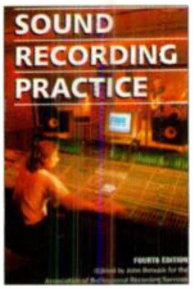

by John Borwick

This now classic text reaches its Fourth Edition, and has been *enlarged and revised* to cover up to date developments in the recording industry. The contents of this 600+ page is too diverse to summarise in such a short space. Suffice to say that every serious recordist, whether amateur, semi-pro or professional should have a copy of this book.

CODE B107 **£19.99**

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RECOMMENDED READING

INTRODUCING DIGITAL AUDIO

2ND EDITION *by Ian R Sinclair*

Explains digital audio – CD, DAT and sampling – non-mathematically. The updated 2nd edition adds information on oversampling and bitstream techniques, plus a glossary of technical terms.

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GOOD VIBRATIONS

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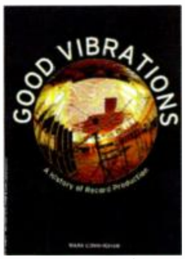

by Mark Cunningham

Good Vibrations — A History of Record Production features a foreward by BRIT award-winning Best Producer of 1996, Brian Eno. The book chronicles the development of recording techniques and music technology, from the invention of sound-on-sound (multitrack) tape recording in 1949, to the current dramatic advances in digital technology. Also highlights the changing role of the producer and engineer, with quotes from George Martin, Brian Wilson, Tony Visconti, Trevor Horn, Hugh Padgham and Pete Waterman. Recordings discussed in detail include The Beach Boys' *Pet Sounds*, The Beatles' *Sgt Pepper's Lonely Hearts Club Band*, Pink Floyd's *Dark Side Of The Moon*, Queen's *Bohemian Rhapsody*, David Bowie's *Heroes*, and U2's *Zooropa*. Includes around 100 photos and illustrations, many previously unseen, plus extensive reference section.

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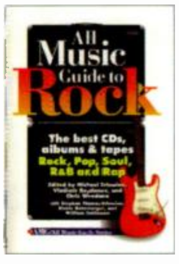
ALL MUSIC GUIDE TO ROCK



From doo-wop to hip-hop, this is the most complete guide to the best CDs, albums and tapes in all genres of this music, both mainstream and alternative. Compiled by dozens of top music critics, 15,000 recordings by 2,500 performers are listed, rated and reviewed — including bootlegs, imports, out-of-print albums, and "cult" artists.

Easy to use and fun to explore, the All Music Guide to Rock also gives you major artist bios and discographies, essays exploring dozens of rock styles and influences, music maps, and more.

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PIANO — Evolution, Design & Performance

By David Crombie

This is the most spectacular and informative book ever assembled on the history of the piano. At its heart is a stunning collection of more than 150 pianos ranging from the instruments's earliest roots to today's magnificent upright and grand pianos.

This important new book is an essential purchase for every piano player and every musical instrument enthusiast, bringing alive the most fascinating and wide-ranging collection of pianos ever seen in one book.

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MUSIC & NEW TECHNOLOGY

by Gabriel Jacobs & Panicos Georghiades

Forward by Vangelis. A thorough guide to creating music with today's music technology. Covers music theory, MIDI and electronics principles, computers, what gear to use in your MIDI studio, and most modern MIDI production techniques. Ideal for beginners and advanced readers alike.

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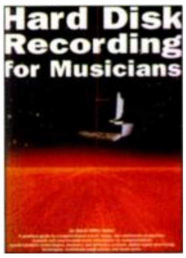
HARD DISK RECORDING FOR MUSICIANS



by David Miles Huber

More of a digital recording overview, this book looks at digital audio in all its forms. Huber discusses the equipment, the techniques and processes of digital audio. Computer-based sound editing, digital audio workstations digital signal processing techniques, sampling and real-world applications in music, film, video and broadcast environments are covered plus multimedia. The text is designed to be understood by newcomers, while delivering information of value to professionals. *182 pages.*

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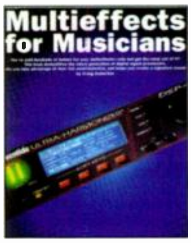
MULTI-EFFECTS FOR MUSICIANS



by Craig Anderton

Occasional SOS contributor Craig Anderton adds to his long list of music technology-based books with this comprehensive look at multi-effects units. The book helps you with what to look for when buying a new unit, how to use it when you've got it home, and provides a collection of tips to help you get the most out of your device. 137 Pages.

CODE B306 **£10.95**

Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

TAPELESS AUDIO DIRECTORY

(4th Edition) *By Yasmin Hashmi*

Completely updated, this 4th edition is the only international buyers guide to over 200 professional digital audio workstations and systems aimed at cart replacement and broadcast automation.

The comprehensive listings include target markets, hardware and software specifications, operational features, networking and file translation, future development plans, training and customer support, costs and suppliers details for USA, Europe and Far East. The Directory not only covers all existing systems, but those soon to be launched and those on which development has been halted. It also provides a comprehensive explanation of the terminology, with useful tips for potential purchasers.

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TECH TERMS - A Practical Dictionary for Audio and Music Production

by George Petersen and Steve Oppenheimer

This is a concise collection of definitions of electronic music and recording terms; 300 words and phrases are given quick accurate definitions in plain English. So if you're new to recording, synths, samplers and MIDI, this book could be a big help in getting your mind into the terminology.

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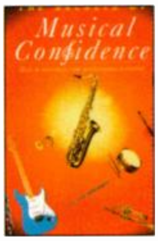
THE SECRETS OF MUSICAL CONFIDENCE - How to Maximise Your Performance Potential



By Andrew Evans

Written by a musician and psychologist, this is claimed to be a first for musicians: a book aimed at maximising performance potential and increasing confidence.

A series of questionnaires and exercises allow you to analyse your abilities and needs and allow you to deal with stress, creativity and career management, amongst other topics.

CODE B240 **£7.99**

Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

AUDIO

by F A Wilson

Volume 6 of the Elements of Electronics series, *Audio* offers a comprehensive guide to the physics of sound, its recording and its reproduction. There is a lot of physics used in the book – in fact, this aspect makes the book a good basic text for those with a serious interest – but the text in between the formulae is clear and informative. Not bad value for £3.95 – a total of 308 pages.

CODE B277 **£3.95**

Postage: UK £1.50, Europe £4.50, R.O.W. £6.50

SOUND FOR PICTURE

Edited by Jeff Forlenza and Terri Stone

Covers all aspects of film and TV sound, dialogue, music, effects recording, and editing and assembling the result into a final soundtrack. Technical and creative aspects are all covered, and a comprehensive glossary is provided. A good proportion of the book is also taken up with a selection of case studies (including Malcolm X, The Abyss, Northern Exposure and Twin Peaks) that provide hands on information.

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Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

STUDIO MUSICIAN'S JARGONBUSTER

by Godric Wilkie

If the terminology of musical technology and recording leaves you gasping, then this is the book for you! With clear explanations of 1500 terms and concepts, amidst illustrative graphics, the whole work is extensively cross-referenced, and worth its weight in gold.

CODE MX30045 **£12.95**

Postage: UK £2.50, Europe £6.95, R.O.W £9.50

THE COMPOSER'S GUIDE TO MUSIC PUBLISHING

(2ND EDITION)

written & compiled by Annie Gunning

This book has been produced by the Association of Professional Composers and examines the business of musical copyright and music publishing from the composer's point of view. It aims to educate composers of all kinds of music in the operation of the music publishing business to help them obtain, negotiate and benefit from publishing agreements and avoid expensive mistakes. Apart from publishing, the book also covers copyright legislation, performing and mechanical rights, the royalty administration societies, music in film, broadcasting, theatre and ballet and commissioning agreements. There is also advice for composers setting up their own publishing companies. An exhaustive and useful book.

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HIGHLY RECOMMENDED

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by Paul White

The first in this major series, Effects and Processors is a complete guide to the outboard equipment which has today become an integral part of popular music.

A comprehensive analysis of studio effects and signal processors, it provides detailed coverage of each piece of equipment: how it performs its respective task, what effect it has on the sound, and its role in creative music production.

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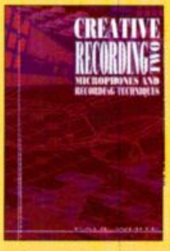

by Paul White

A complete guide to understanding and using microphones in a recording environment.

In plain English, it explains how the different types of microphone work, discusses the advantages of the various different types, and shows how they can be used to get the sound you want onto tape.

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CREATIVE RECORDING THREE ACOUSTICS, SOUNDPROOFING & MONITORING

By Paul White

Soundproofing, Acoustics and Monitoring is designed to take the mystery out of studio design, whether you run a bedroom studio or a commercial recording facility.

In plain English, it explains how soundproofing works, how you can change your room acoustics to give the optimum monitoring environment and how to choose and use your monitor system.

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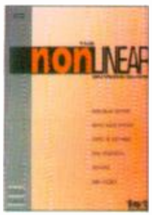
NON LINEAR BUYERS GUIDE 1st Edition



New from Sypha is the Nonlinear Buyers Guide. Known especially for their definitive digital audio-focussed Tapeless Directory (look out for the 4th edition in the future), Sypha have applied the same comprehensive approach to digital video systems. The first edition of The Nonlinear Buyers Guide is the only international source of information on over 150 nonlinear video systems. Products included in the Guide are nonlinear editing systems, mixed mode editing systems, plug in cards and software for editing, disk recorders and servers. The information is provided in an easily accessible format and includes operational and technical specifications, future developments, costs and suppliers details. The Guide also gives useful pointers to those considering investing in a system.

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SAMPLERS

THE SAMPLING BOOK

By Steve De Furia & Joe Scacciaferro

How to achieve better samples - this book explains the technical issues involved, clearly and simply. Good advice on what to look for when buying a sampler.

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WHAT'S A SAMPLER?

By Freff

Ideal starter book for sampling novices. Whether you are serious about sampling or merely curious, this book is for you.

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RECORDING

HOT TIPS FOR THE HOME RECORDING STUDIO

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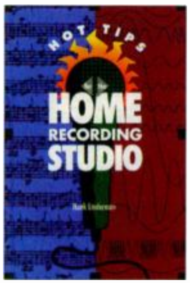

by Hank Linderman

Learn how to lay down music the way you want it to sound, with advice for getting the best from your mixer, multitrack, compressor etc. Discover tricks and what traps to avoid, unlock the mysteries of timecode, prevent noise problems. Packed with sound advice.

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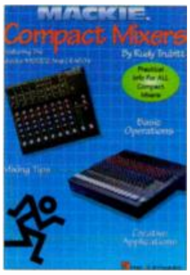

by Rudy Trubitt

Journey through the design and features of mixers so you can maximise the use of this essential and very flexible audio component. Using Mackie's wildly popular MS1202 and CR1604 mixing desks as a foundation, the book explains general concepts as well as model specific operating tips. Topics include: mixing basics, real world applications, hooking things up, mixing tips, block diagrams and a glossary.

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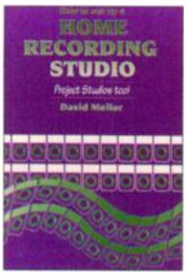
HOW TO SET UP A HOME RECORDING STUDIO



UPDATED & EXPANDED

By David Mellor

If you are thinking of setting up a home studio, a project studio or a DJ studio, this book is the place to start. It takes a highly practical 'nuts and bolts' type of aproach to help you produce an efficient and productive studio. It covers soundproofing, keeping the sound in and the noise out, acoustics, studio layout, and studio equipment, and advice on the kit you are likely to need. The book ends with an invaluable questions and answers section, a glossary of terms and a list of contacts.

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THE MUSICIANS GUIDE TO HOME RECORDING

by Peter Mclan & Larry Wichman

(Revised and Updated)

This is the book every serious songwriter, musician, and home recordist needs, with a new chapter on MIDI and the lastest digital recording technologies. A problem-solving guide as well as an instructional text, it is designed to expain in simple terms how professional recording techniques can be applied at home.

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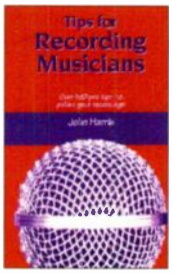
TIPS FOR RECORDING MUSICIANS



by John Harris

Today's studio equipment is affordable but sophisticated, and it takes a lot of know-how to use all this technology effectively. This book details the equipment you need - mics, effects, tape machines, etc. It has separate sections on recording of vocals, electric guitar, drums and acoustic instruments, as well as the use of MIDI in the recording process. You will learn how to get the best from delay and reverb, as well as effects like compression and gating. There are some useful tips on using the mixing desk and post production work. All in all it's a handy guide that will improve your recording techniques at a stroke.

CODE B309 **£8.50**

Postage: UK £1.50, Europe £3.95, R.O.W. £3.50

PRACTICAL STUDIO TECHNIQUES

by Tom Misner

This book and audio CD package comes from the School of Audio Engineering's Tom Misner. It's an excellent source of basic recording facts and figures, and if you want concrete examples of the subjects discussed, then listen to the free mixdown demonstration CD.

CODE B301 **£15.00**

Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

RECORDING TECHNIQUES FOR SMALL STUDIOS

by David Mellor

This well written, user-friendly book is designed to offer accessible and helpful tips on how to get the most out of the equipment in your studio. Chapters cover: mic techniques; musical arranging for recording; 4-track recording; the mixer; preparing for an running a session; recording drums; recording vocals, integrating MIDI; using effects and signal processing; location recording, and digital recording. The book is rounded off with an "any questions" section, a glossary and a list of recording studios in the UK. As you would expect from a book based on an SOS series, this is a *must have!*

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THE MASTER TAPE BOOK

Alan Parsons, Bill Foster & Chris Hollebone

The definitive guide to the creation and management of audio master tapes. With 'Master Tapes' literally flying around the world being copied, cloned or re-cut for seemingly endless variations of compilation albums, it is terrifying to think that there is no standard set of procedures for labelling and maintaining master tapes. Until now, that is.

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MUSIC BUSINESS

YOU CAN WRITE GREAT LYRICS

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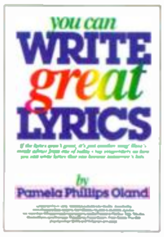

by Pamela Phillips Oland

This book helps you develop your own philosophy and style. Its plentiful techniques, combined with practical advice and exercises, will have you writing great lyrics before you know it!

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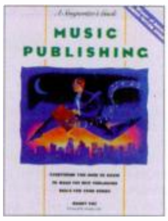
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

MUSIC PUBLISHING

NEW



by Randy Poe

This book demystifies music publishing, explaining what it's all about and what it means to a songwriter. Learn what your publishing options are, from a single song contract to a staff writer to a self-publishing operation. By the time you have finished this book you will never make an uninformed decision about publishing your songs that you will later regret.

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SONGWRITERS MARKET 1996

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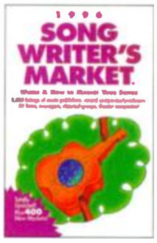

To get your songs published and produced, you must know who the music industry's players are and how to approach them. This directory identifies those seeking the work of songwriters. Lists 2500 lyric and music markets, clubs, associations, contests, workshops and songwriters publications. Includes 'The A & R Roundtable', where pros discuss their role in a songwriter's career, business side of songwriting, music industry trend report, and interviews with music industry professionals.

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WRITING BETTER LYRICS

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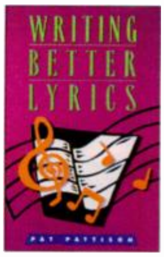

by Pat Pattison

In-depth approach to lyric writing examines 17 songs to discover what makes them so effective. Learn a warm-up exercise that will revolutionise your songwriting imagery, how to use a rhyming dictionary to unlock fresh, unexpected rhymes, avoid cliches and create imaginative metaphors and similes.

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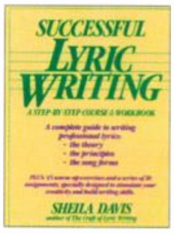

by Sheila Davis

Superb guide to the art of writing words to music. Learn how to create a memorable song title, choose the best music form for each idea, apply writing principles and avoid common pitfalls, write with both sides of your brain, find your voice. Includes songwriter's bibliography and lists over 60 songwriting organisations to help you connect with your chosen marketplace.

CODE B327 **£12.95**

Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

SOS Book Shop

THE SONGWRITER'S GUIDE TO COLLABORATION

NEW

by Walter Carter

This book describes what to expect when entering into a co-writing situation and how to make the arrangement work. Covers the pros and cons, how to find a partner, publishing your songs, who writes what, money matters, sharing success and rejection, growing together or apart plus co-producing and pitching.

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CREATING MELODIES

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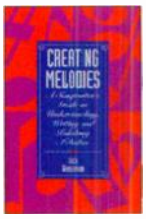


by Dick Weissman

Learn how to create memorable melodies, from love ballads to film scores and jingles. Using lots of examples of popular songs and styles by top-name musicians, Weissman covers the full range of melody writing. Learn how to marry music to lyrics, relate rhythm to the message of your song, read and write musical notation, write instrumentals for films, TV, commercials and theatre, and put together a demo tape.

CODE B322 **£12.99**

Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

CAN YOU SING A HIGH "C" WITHOUT STRAINING

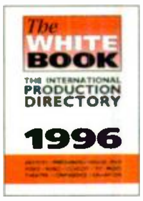
by Thomas Appell

This book features extensive coverage of the vocal cords and explains clearly how to sing high notes without going into falsetto, and without straining. You'll learn how to extend the range of your voice, and why most singers either strain or "break" into falsetto when attempting to sing above their normal range. It comes with 2 CD's jam-packed with over 2 hours of vocal examples and exercises that you can practice with. Many singers have increased their range by several notes after the first week of practice. If you can't sing high notes without straining, but would like to know how, then this book is for you. 122 pages.

CODE B319 **£24.95**

Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

THE WHITE BOOK INTERNATIONAL PRODUCTION DIRECTORY 1996



This is the latest edition of the essential source of contacts for artists, performers, venues, services and facilities associated with music, concerts, shows, festivals, film, TV, video, conferences, exhibitions and corporate hospitality - there's even a comprehensive international section. The layout is logical and an index makes fact finding an easy task - altogether an indispensable 864 pages. The new edition once again comes with a complementary copy of The Little White Book, which distils the contents of the larger volume to a pocket-sized list of names and phone numbers.

CODE B259 **£46.00**

Postage: UK £4.75, Europe £8.50, R.O.W. £16.95

THE MUSICIAN'S GUIDE TO READING & WRITING MUSIC

It's an entertaining but practical introduction, well, to reading and writing music. This is as friendly as it comes. Learning to read and write music isn't easy, but at least the process is lightened up with considerable doses of wit.

CODE B224 **£8.99**

Postage: UK £1.50, Europe £4.95, R.O.W. £7.50

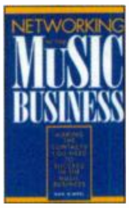
THE ARC MUSICIANS' DIRECTORY

The new Musicians' Directory from Arc Publishing aims to provide all things to all musicians: whatever your style of music, the comprehensive listings offer you the contacts you need, whether it's labels, studios, venues, music shops or management - and that just scratches the surface of the dozens of topics covered by the book. Apart from being a directory proper, the Handbook also includes a selection of useful articles, including subjects such as how to be a session player (by SOS's very own Paul White), music publishing, releasing your own record, copyright protection, accounting, legal advice and more. The Musicians' Directory offers over 380 information-packed pages for little more the price of a new CD.

CODE B219 **£14.99**

Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

NETWORKING IN THE MUSIC BUSINESS



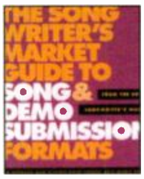
by Dan Kimpel

Think of this book as a popular psychology course for musicians. If you feel you could benefit from developing a positive attitude to getting ahead in your area of the music business, then *Networking* is for you. There's nothing like it for good, sensible advice: it's often not enough to have talent. To be successful, you'll need to persevere, have good "people skills", and exercise good networking skills. Success depends on what you know, who you know, and perhaps most importantly, who knows you. An essential book, and a snip at £11.95. Hardback.

CODE B251 **£11.95**

Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

THE SONGWRITER'S MARKET GUIDE TO SONG & DEMO SUBMISSION FORMATS



From the Editors of Songwriter's Market

If you've got the songs and you've got the contacts, this book will help you to choose a format that will get your demo heard as well as overall packaging and presentation and dealing professionally with publishers, A&R reps and other industry people. Plenty of example documents (lyric sheets and letters) are given, and the book is nicely rounded off with a glossary and index. Hardback.

CODE B258 **£12.95**

Postage: UK £2.50, Europe £5.95, R.O.W. £9.95

SONGWRITER'S WORKSHOP

Edited by Harvey Rachlin

If you want to work systematically at improving your songwriting skills, then try this book: it's divided into four individual 'lessons', each of which is backed up by audio material on cassette. This allows you to listen in the car or walk around with your personal stereo and still absorb useful information. The four sections are: On Songwriting by Janis Ian (yes, *the* Janis Ian); Making Demos by John Barilla; Understanding MIDI by James Becher; and The Art of Pitching Songs by Teri Muench (ex-A&R director with RCA and publisher). Also included is an intro, a quick and breezy glossary and an index. Includes two cassettes.

CODE B260 **£15.95**

Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

MUSIC BUSINESS AGREEMENTS

by Richard Bagehot

Written by a practising music business solicitor, "Music Business Agreements" can be seem as a legal textbook for the UK music industry. Don't let the formal tone put you off: this book is a mine of information with reference to real-life problems and examples, and a helpful question and answer appendix. Expensive, but invaluable. 522 Pages.

CODE B303 **£58.00**

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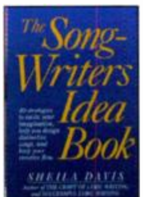
SONGWRITERS IDEA BOOK



by Sheila Davis

If you want a textbook, this is it: 250 pages of serious, intelligent insight into songwriting. Loads of good advice and a friendly tone make this a useful read to anyone, whether beginner or seasoned pro. The focus is firmly on lyrics rather than music, and the prominent references to poetry terminology shouldn't really be a surprise. Use Davis' 40 strategies and you to could soon be "designing distinctive songs". Hardback.

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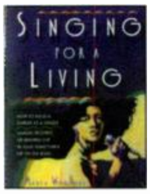

by Marta Woodhull

The title says it all. If you're already a singer, this book gives you everything you need to know in order to exploit your talent further: looking after your voice and voice exercises, business advice and marketing and audience interaction are all covered in this straightforward book.

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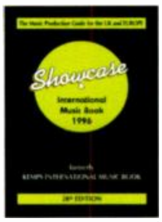
SHOWCASE INTERNATIONAL MUSIC BOOK 1996



The music industry equivalent of *Yellow Pages*! over 500 pages crammed with all the latest information, including new phone and fax codes for record companies, recording studios, music publishers, equipment manufacturers, artist management, producers, PA and lighting hire, and more. Plus a USA section.

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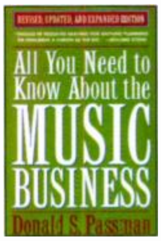
ALL YOU NEED TO KNOW ABOUT THE MUSIC BUSINESS



by Donald S Passman

This book is a must: the author manages a portfolio of high profile clients and teaches music business law at the University of Southern California, and has produced a clear overview of the music business. He starts at the beginning of your career, with advice on choosing a manager, lawyer and agent, and moves through getting a record deal, songwriting and music publishing and finishes with details of copyright, mechanical royalties, songwriter deals, films and more. An exhaustive and entertaining read. 415 Pages.

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88 SONGWRITING WRONGS & HOW TO RIGHT THEM

by Pat & Pete Luboff

This is a real workbook for songwriters, dealing with both the craft and art of songwriting. Song structure, rewriting, matching lyrics to music, collaboration, making the right demo, pitching the final result, and business matters.

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BEGINNING SONGWRITER'S ANSWER BOOK *by Paul Zollo*

If you're just starting out as a songwriter or haven't progressed very far, perhaps you have questions about the art and business of songwriting that you can't find answers for. Chances are, they're covered in this book. Over 200 of the questions songwriters most often ask are answered in this book. There are 11 chapters, covering subjects such as lyrics, theory, song structure, collaboration, demos, publishing and the music business. Some answers - such as "What makes a professional-sounding demo?" are actually mini-articles - and an index allows you to target subjects without wading through the text. A friendly, informative read.

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By Paul Overaa

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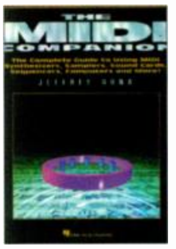

By Jeffrey Rona

A breezy run through MIDI that would suit the absolute beginner, this book is well-illustrated, clearly expressed and explains the technical bits in as close to non-technical language as the subject matter allows.

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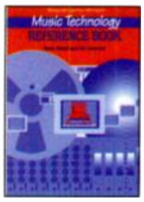

by Peter Buick & Vic Lennard

Written by Peter Buick and Vic Lennard (author of SOS's Atari Notes column), this book offers information at your fingertips and is an indispensable reference source for the musician or sound professional in the recording, broadcast, live, video, computer, multimedia, post production and theatre industries. It includes comprehensive MIDI spec, General MIDI, MTC, MSC, and SysEx information. It also includes charts, check lists, useful hints, tips, and ideas, plus a glossary, list of contacts and a comprehensive indexed, it is also organised into convenient sections. 150 Pages.

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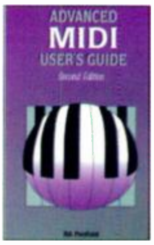

by R A Penfold

Most MIDI users do no more than scratch the surface of MIDI's potentialities. But dare to dig a bit deeper and you'll find a whole new world of creative possibilities.

With the Advanced MIDI User's Guide, you'll learn how to optimise your MIDI system to get the best results from your particular setup, and you'll find out how to use gadgets like switchers and mergers to enhance your system. If you want to incorporate a multitrack tape recorder into your MIDI system there's a section on synchronisers, SMPTE and MIDI time code, and retro freaks will learn how to hook up that dusty old analogue synth to their MIDI systems.

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By Francis Rumsey.

This revised edition has been expanded in an umber of topic areas, to provide even more comprehensive coverage of every area of MIDI. Contents include: an introduction to principles and terminology; MIDI timecode; librarians and editors; different approaches to sequencer software design; practical systems design.

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PRACTICAL MIDI HANDBOOK (3rd Edition)

by R A Penfold

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by RA Penfold

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MIDI FOR THE PROFESSIONAL

by Paul D Lehrman and Tim Tully

Co-written by SOS contributor Paul D Lehrman, this substantial, exhaustive work covers pretty well any aspect of MIDI that you could think of. As an overview of what MIDI is and does in 1994, this 239 page book couldn't be better.

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MIDI SURVIVAL GUIDE

by Vic Lennard

Whether you're a beginner or a seasoned pro, the 'MIDI Survival Guide' shows you the way. No maths, no MIDI theory - just practical advice on starting up, setting up and ending up with a working MIDI system. Contains over 40 cabling diagrams, and how to: connect synths, sound modules, sequencers, drum machines and multitracks; how to budget and buy secondhand; using switch, thru and merger boxes; transfer songs between different sequencers, get the best out of general MIDI , and understand MIDI implementation charts.

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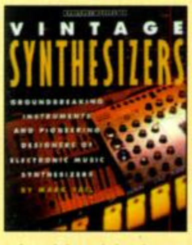
VINTAGE SYNTHESIZERS



By Mark Vail

This well-illustrated, 300 page book covers synth history, interviews with designers and overviews of important instruments. Mark Vail's book could be the most entertaining and useful synth book yet – check out the definitive history of the Minimoog, complete with pre-production designers' sketches. While not strictly a buyers' guide, there is a comprehensive section to sourcing, valuing, upgrading and servicing classic instruments.

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KEYFAX 2

by Julian Colbeck

1989 version of Keyfax provides individual summaries and specifications of the last of the great mono synths, digital pianos, and classic polysynths like the Roland JX10 and Prophet VS -forerunner of the SY22 and Wave Station. Early Keyboard and rack-mount samplers are covered in this indispensable guide. Still a great buy.

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KEYFAX 4

by Julian Colbeck

The new Keyfax book (1993) is the most comprehensive guide to professional keyboards yet compiled, Keyfax 4 spotlights synthesizers and expander, and MIDI keyboard controllers. From classic analogue machines right up to the latest synth/sampler hybrids. Reviews include technical tour on a practical, need-to-know basis. Everything you need to decide which instrument is best for you.

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THE MUSEUM OF SYNTHESIZER TECHNOLOGY

by Martin J Newcomb

If you liked our feature on the opening of the Museum of Synthesizer Technology in October, but haven't got the time or the cash to visit in person, then the next best thing has to be the museum's guide book. This 118 book is printed on glossy paper and contains full-colour pictures of a large selection of exhibits from the museum, together with some descriptive text and company backgrounders. The text reads a little like a fanzine, but the hardcore synth fanatic will want this book for the pictures. In these pages you will glimpse instruments that you are unlikely ever to experience in the flesh: an exceedingly large Roland System 100 modular set-up, an EMS Synthi 100, an ARP 2500, a large Emu modular and what must be the comprehensive collection of Moog equipment anywhere.

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KEYFAX 5

by Julian Colbeck

The latest instalment in the intrepid Keyfax series offers potted specifications and concise mini-overviews of digital pianos, home keyboards, General MIDI modules, stage organs and computer sound cards. Look out for company backgrounders, contact details and cross-references to earlier Keyfaxes.

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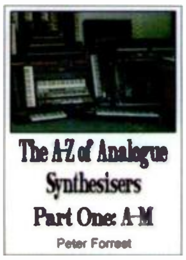
THE A-Z OF ANALOGUE SYNTHS PART ONE: A-M



by Peter Forrest

The author has aimed to make his book a complete rundown of all the major analogue synths and keyboards ever made, and on the evidence of this first volume, he seems to have succeeded. The book is useful and detailed, and shows evidence of the massive amount of research and effort put in by Peter. He gives pocket company histories and detailed data on the instruments produced - but note that a few entries for a few particularly obscure instruments and companies are limited due to lack of data. The book also provides a comprehensive overview of the qualities of various instruments; charts and tables assess second hand values and maintenance levels necessary to keep a given instrument playable as well as such intangibles as sound quality, collectability and user interface. The A-Z of Analogue Part One, which is limited to 8000 copies worldwide, also features 96 colour pictures of classic instruments.

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DRUM MACHINES

DRUM PROGRAMMING — A Complete Guide to Program and Think Like a Drummer

By Ray F Badness

Coming from a publisher that has a good range of real drum texts, we'd expect this book to be a little different. And it is: it gives plenty of insights into how real drummers approach their job, and there are plenty of example patterns to help translate these ideas to a drum machine.

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DRUM MACHINE RHYTHM DICTIONARY

By Sandy Feldstein

For use with Roland drum machines or any grid-based pattern system. First 75 pages on programming huge range of rhythms in rock, latin, jazz and funk styles. Remainder analyses styles and patterns of world's top drummers - Phil Collins, Billy Cobham, Steve Gadd, Stewart Copeland. etc. Highly recommended.

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By Siegfried Hoffman

Looks at how drummers compose rhythm patterns to add emotion, swing or groove. Contains examples for you to programme into your drum machine or sequencer.

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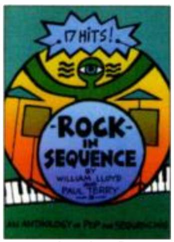

by William Lloyd & Paul Terry

The latest book from the authors of Music In Sequence and Classics In Sequence is now available: Rock In Sequence offers detailed scores of 17 rock and pop hits from the '50s to the present day, alongside a collection of helpful sequencing tips. Songs are included from the likes of the Beatles, Led Zeppelin, Abba, Eurythmics, Blur and more. Rock In Sequence 112 pages.

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CLASSICS IN SEQUENCE

by William Lloyd & Paul Terry

Takes concepts behind Music In Sequence and applies them to all-time favourite classical music scores. Authors show how to make fresh, exciting interpretations of classic scores. Info on reverb and effects, interpreting scores, editing synth voices. Highly creative—an ideal workbook for the music classroom. Covers Medieval, Renaissance dance music, Bach's Toccata in D minor; Vivaldi, Purcell, Handel; opera excerpts from Rossini, Verdi, Borodin; Mozart, Schubert, Tchaikovsky, music from Carmina Burana; Debussy, Satie, Steve Reich's Piano Phase and more. Highly recommended.

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MUSIC IN SEQUENCE

by William Lloyd & Paul Terry

Still one of our best-selling books. Easy to follow, practical guide to making real use of your sequencer, written by people who really understand music and how to create it using today's technology. This brilliant, unique book carries the SOS seal of approval.

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by J Dreksler & Q Harle

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128 pages dealing with both bass and drums, the 'heart' of the pop group, together. Although written primarily for drummers and bass players, anyone interested in understanding rhythmical music in popular styles will find this book invaluable.

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THE COMPLETE SOUND BLASTER

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MULTIMEDIA ON THE PC

By Ian R Sinclair

If you want to know what multimedia is and what it can offer you, then this is the book for you. Much of the information is general enough for everybody, but as the title suggests, the book is aimed at PC users. The book explains the installation and use of a CD ROM drive and a sound card and covers all key concepts behind multimedia. As an added incentive, if you buy this book, you can send away for a free copy of *Picturebook*, a multimedia authoring package.

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PC MUSIC HANDBOOK 2nd Edition

NEW

by Brian Heywood & Roger Evan

This book will show you how to turn your PC into a creative music making machine. It explains how you can create very sophisticated music on your PC by running sequencing software, how to create your own sounds with a soundcard, how to use your PC as a sound librarian, or a sample editor, or even use it as a hard disk recorder or a sound sampler. All these things are possible with today's sophisticated PC.

The use of sound in multimedia applications is also covered, and there is a chapter on PC hardware with advice on which type of PC is best for your particular needs.

There's advice too on getting connected to the Internet, where you can contact other PC music aficionados world wide!

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SEQUENCER SECRETS

Ian Waugh

Ian's book aims to "go beyond the manual" in telling you how to get the best from your sequencer. The book features 29 hands-on sequencing projects and is suitable for use with all software sequencers. The book hopes to help you optimise your MIDI system and use your sequencer to create all sorts of useful effects. A troubleshooting section helps you track down stuck notes, double notes and so on.

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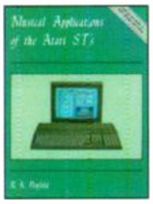
MUSICAL APPLICATIONS OF THE ATARI ST's



By R A Penfold

Includes a general introduction to MIDI, a handful of MIDI add-on circuits (Thru box, MIDI switcher and so on), plus a collection of programs, in Fast BASIC, that allows you to use the ST's internal sound generator and create little MIDI applications.

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MULTIMEDIA ON YOUR PC

by Francis Botto

A practical guide to multimedia specifically on the PC. Botto's book is once aimed at users, educators and developers, and comprehensively discusses the hardware required to take advantage of multimedia in a PC environment as well as the hardware and software necessary in a multimedia authoring situation. The book is provide with comprehensive appendices covering a glossary and comprehensive product and manufacturer lists.

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SOUND REINFORCEMENT HANDBOOK

by Gary Davis and Ralph Jones

From recording to broadcast, fixed installations to touring, this 400 page reference covers live sound setups, equipment, techniques and jargon.

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Written by John Vasey.

How to set up and operate sound / lighting equipment for the performance of amplified music or any kind of touring production.

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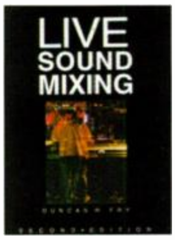
LIVE SOUND MIXING

by Duncan R Fry



This is a hands on, friendly introduction to all aspects of mixing live. It hails from Australia, and is an SOS Bookshop exclusive. The author is an experienced live sound engineer and has packed his book with loads of information, diagrams and hints to take you from basic principles through to trouble shooting when things go wrong.

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INTRO TO LOUDSPEAKER& ENCLOSURE DESIGN

by V Capel

The book provides both useful background to speakers and enclosures in general, plus practical information on crossovers and full details on constructing the so-called 'Kapellmeister' design of speakers.

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THE FOCAL GUIDE TO SAFETY IN LIVE PERFORMANCE

Edited by George Thompson

This book provides an authoritative look at safety matters for workers in the live entertainment industry. It is edited by the Standards Officer of PLASA (Professional Lighting and Sound Association), and provides good solid information in an easily digestible, well-illustrated form. Topics covered include audience and crowd control, fire safety precautions and engineering, electrical safety, laser safety, sound levels and noise control and much more.

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PUBLIC ADDRESS LOUDSPEAKER SYSTEMS

by V Capel

All aspects of PA speaker systems are covered in this book, including low-impedence matching, 100V systems, transmission lines and how to install inductive hearing aid loops. At the heart of the book is the Line-Source Ceiling Array, a system that is claimed to improve clarity, even coverage and reduce feedback. Full step-by-step construction and installation details are given.

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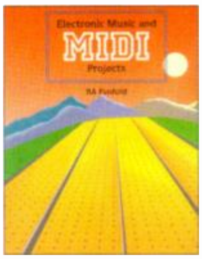
ELECTRONIC PROJECTS

ELECTRONIC MUSIC AND MIDI PROJECTS



by RA Penfold

Want a MIDI THRU box, patchbay or switcher? Well 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, fear not. Here's the book to help you build up your MIDI system without laying out thousands on hardware.

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DIGITAL AUDIO PROJECTS

by R A Penfold

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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.

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ELECTRONIC PROJECTS FOR MUSICIANS

CODE B068 **£10.95**

Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

MIDI PROJECTS

by R A Penfold

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 **£2.95**

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 **£4.95**

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

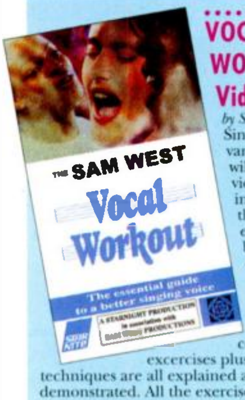
CODE B286 **£4.95**

Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

VOICE TRAINING

NEW NEW

VOCAL WORKOUT Video



by Sam West

Singers of varying abilities will find this video a great aid in assisting their vocal efforts. It begins by explaining the principles of voice production. Breath 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.

VIDEO **CODE V067** **£22.95**

Running time approx 59 minutes

Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

VOICE BUILDING Cassette/CD

by Sam West

VOICE BUILDING

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 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 exercises.

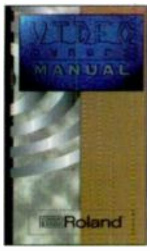
CASSETTE **CODE MC001** **£6.95**

CD **CODE CD037** **£9.95**

Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

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 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!

CODE V047 **£24.99**

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 V062 **£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 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 Drum Pads & KD-7 Kick trigger. You may have a different configuration to what is shown in the video, 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 muli-camera 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 UK & USA, this video shows you everything you need to know.

CODE V045 **£19.99**

Running time 65 minutes
Postage: UK £1.75, Europe £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 professional features plus excellent sound quality. Tim Walter starts at the beginning and makes the instrument look easy and fun. His enthusiasm is catching, and, yes, the PSR6000 is a very capable instrument. The tape runs to 75 minutes, which makes for excellent value.

CODE V029 **£19.99**

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-1 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 specialist, Jay Stapley.

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 V014 **ONLY £29.99**
FOR 2 VIDEOS

Total Running time: 4 hours. Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

STEINBERG CUBASE

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 Cubase, whether they're running the program on an ST, Mac or PC computer — there's even a basic background on using the computers themselves! All of Cubase's controls are shown, explained and demonstrated in depth. Once you're familiar with the basic controls, Chris takes 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, customising names and outputs, copying and pasting between arrangements, MIDI filter, cycle mode recording, the tool box, all edit screens.

CODE V011 **£29.99**

Run time: 1hour 30 minutes Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

KORG AX30G TONEWORKS VIDEO MANUAL

The Toneworks series 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 flagship AX30G 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 in-depth tutorials which cover Basic MIDI, MIDI Connections, Custom Patch Maps, Screen Layout, Juke Box, Printing, Recording & Editing Melodies, Importing & Editing Styles, Drum Editor, Masks, Assigning Instruments.

CODE V031 **£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
For Windows

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...

BASICS

Basic MIDI, Step & Realtime Recording, Playback Features (on the fly), Editing Features, Graphic Views, The Inspector Menu, Menu Overiew, The Control Bar.

CODE V032 **£34.99**

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 V033 **£34.99**

Running time: 113 mins
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

CAL

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 V034 **£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

NEW

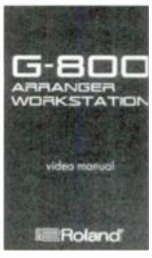
This highly informative video for the Ultramix automation system, clearly demonstrates how to set up and use Ultramix's many time-saving features to get the best from your system. The cost of the video may be redeemed against the purchase price of an Ultramix system, making the video a good way to try before you buy!

CODE V066 **£9.99**

Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND G800

NEW



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 close-up shots of the LCD screen. The video was produced in association with Roland USA and Roland UK to ensure that the content is accurate and informative.

CODE V060 **£19.99**

Running Time 92 minutes
Postage: UK £1.75 Europe £4.95, R.O.W. £6.95

ROLAND GR09

NEW

Presented by Roland UK product demonstrator Nick Cooper, this application-based tutorial video for the Roland GR09, produced in association with Roland USA, covers every function completely. Covered topics include; the GK2A Synthesiser Driver, pickup sensitivity, use of the tuner, what a patch consists of, use of the pedals, patch edit 1 & 2 (including layering and detune, chromatic function, reverb & chorus, edit target, pitch shift), the use of external midi devices, saving to an external sequencer & more.

CODE V061 **£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 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 to fit the expansion boards & gives 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.

CODE V046 **£19.99**

Running time: 80 minutes Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ROLAND XP-50

NEW

This XP-50 video owners manual is produced 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 V063 **£24.99**

Running time: 63 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

WINDOWS 95: WHAT WILL YOU LEARN TODAY?

NEW

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 also features Labyrinth'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 V065 **£19.99**

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 Waugh

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 V048 **£19.99**

Running time 91 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

KORG PROPHECY VIDEO MANUAL

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 V049 **£14.99**

Running time: 36 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

BOSS ME-8

NEW

Nick Cooper (Roland UK product 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 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.

CODE V064 **£19.99**

Running time: 72minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

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SOS Videos

EMAGIC NOTATOR VIDEO TRAINING MANUAL

EMAGIC
&
Notator
Video Training 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 basics - 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. Topics covered include: sequencing page, score editing, lyrics and text, graphic arranger mode, hyper edit, the printer page, using the part box.

CODE V012 ONLY **£19.99**

Running time: 2 hours 20 minutes Format: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 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's 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*
• *Factory Disk* • *Disk Drive Modes*
• *Selecting Sounds* • *Global Modes* • *Sequencer Mode* • *Quick Sound Editing*
• *Playing MIDI Files on the X3* • *Using the X3 with an external sequencer*
Note that these are loose 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**

Running time: 55 minutes Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

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 V003 **£14.95**

Running time: 1 hour 7 minutes
Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

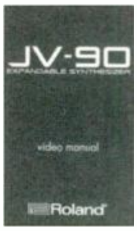
BOSS DR-5 DRUM MACHINE

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 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.

CODE V043 **£19.99**

Running time 57 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 production. Virtually every facet 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.

CODE V044 **£19.99**

Running time 70 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ANALOGUE HEAVEN

ANALOGUE HEAVEN
The Museum Of
SYNTHESIZER
TECHNOLOGY

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?
Well, now you can have the next best thing: the museum has released a fascinating 50 minute promo video that features footage shot on the day as 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 anyone interested in vintage synths, represents good value, and offers the perfect companion to the Museum's guide book, also available from SOS Bookshop.

CODE V026 **£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 BASICS

FOR WINDOWS & MACINTOSH

EVS
Master Tracks Pro 4
Basics (Windows)

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 step-by-step instructions.
Basic MIDI, Track Editor Window, MIDI Settings, Screen Layout, Conductor Window, Transport Controls Window, Inserting Measures, Step & Real Time Recording, Event List Editor, Piano Roll Editor, Quantising, and much more.

CODE V041 **£34.99**

Running time 105 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ORDER YOUR VIDEO NOW!
01480 461244

PERFORMER 5.0 BASICS

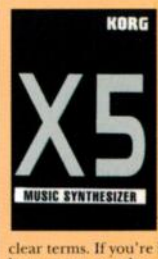
FOR MACINTOSH

Expert tuition 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, Copy/Cut/Paste/Merge & Erase, Loop Recording, Track Palette, Device Groups, Counter Window, and much more.

CODE V042 **£34.99**

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 entertaining and lighthearted manner, and explains all basic aspects of Korg's highly affordable instrument in very 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 V027 **£19.99**

Running time 55 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

YAMAHA QY20 MUSIC SEQUENCER VIDEO MANUAL

YAMAHA
QY20
MUSIC SEQUENCER
VIDEO MANUAL
PRESENTED BY
TOM ROBINSON

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 Tom 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 V016 **£19.99**

Running 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

GETTING THE MOST OUT OF
HOME RECORDING
LEVEL ONE
CVM

This well presented video explains how to set up and operate a simple cassette-based multitrack home studio. It clarifies all the basic terminology and demonstrates the recording of a song from beginning to end, covering how to record guitars, keyboards, vocals and drum machines: which microphones to choose; how to 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 professional 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 V005 **£24.95**

Running time: 1 hour 10 minutes
Format: VHS(PAL) HiFi Stereo
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

LEVEL TWO

GETTING THE MOST OUT OF
HOME RECORDING
LEVEL TWO
CVM

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 video 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 V006 **£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

GETTING THE MOST OUT OF
HOME RECORDING
LEVEL THREE
CVM

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 (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 V007 **£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

GETTING THE MOST OUT OF THE KORG M1

GETTING THE MOST OUT OF
THE KORG M1
FREE DISC OFFER -
200 NEW CUSTOM SOUNDS
ATARI, MAC OR PC FORMAT
CVM

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 successful synthesizers of all time. But because the M1 is so immediate, it's too easy just to scratch the surface, leaving many of its exciting capabilities undiscovered. This highly informative video enables M1 owners to unleash the full creative potential of this enormously powerful workstation.
With 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-beating instrument.
Comes with a FREE exclusive custom library of fabulous new M1 sounds on Atari format floppy disk (100 Programs, 100 Combinations) created by ABWH/Yes programmer Chris Macleod.

CODE V002 **£24.95**

Running time: 1 hour 10 minutes Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

PLEASE REMEMBER: POSTAGE IS PAYABLE ON ALL MERCHANDISE

4 FINALE 3.0 VIDEO MANUALS

FOR WINDOWS & MACINTOSH

Four superb videos covering the Windows Version and four for the Macintosh version. From Basics through to the most Advanced topics in Power User, these detailed videos will guide you through Finale, giving you the knowledge you need to become a Finale expert with ease.

EVS
Effective Video Solutions
FINALE
BASICS FOR FINALE

BASICS

MIDI setup, Tool Palette, Default File, Customising Templates, Drawing Slurs & Expressions, Key & Time Signatures, Metatools, Music Spacing & Allotments, Printing, Measure & Page Layout, and much more.

CODE V037 **£34.99**

Running time 123 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

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 much more.

CODE V038 **£34.99**

Running time 92 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ADVANCED

Clef Changes, Text Blocks, Tempo Tool, Multi-measure Rests, MIDI Tool, Making an Ossia, Optimising Staves, Custom Score Layout, Page Tool, Multiple Windows, Tiling Pages, and much more...

CODE V039 **£34.99**

Running time 75 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

POWER USER

More Options Menu, MIDI Tool, 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, and much more...

CODE V040 **£34.99**

Running time 108 minutes
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

THE EMAGIC LOGIC TUTORIAL VIDEO VOLUME 1

EMAGIC
LOGIC
Presented by Tim Walter
VIDEO TUTORIAL VOL 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 running, and covers virtually all the controls you'll need. *This video is valid for all versions of Logic, whether being run on an ST, Mac or 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 follows:

- Tutorial 1: The Arrange window and basic sequencing
- Tutorial 2: Playback parameters & Toolbox
- Tutorial 3: Controlling MIDI data flow
- Tutorial 4: Manipulating sequence data
- Tutorial 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
- Tutorial 10: Editing the Event List
- Tutorial 11: Using the Environment
- Tutorial 12: The best of the rest (HyperEdit, Matrix Editor, Cycle Mode and more).

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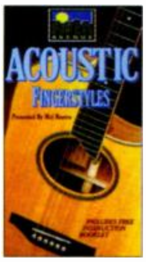
ACOUSTIC FINGERSTYLES



Presented by Mel Reeves

In this video there are 5 major instrumental studies to work through including country, classical and blues. Each style is broken down into small sections allowing you to learn more quickly and efficiently. Each piece is demanding, but great fun to play. The final section looks at styles and techniques used by players such as R.E.M, The Eagles, Sheryl Crow and Paul Simon, and provides an insight into creating new and interesting fingerstyles of your own.

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Presented by Mel Reeves

Whether you can already play fingerstyle guitar, or are simply familiar with basic chords, this programme will show you all of the necessary techniques to play great blues guitar. All of the technical aspects are explained in the clearest possible way before getting down to the real business of learning 5 real blues that are great to listen to and terrific to play.

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Presented by Mel Reeves

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In addition, there is a further look at improvising, making use of melody and scales combined.

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YAMAHA QY300 VIDEO MANUAL

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QY300
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VIDEO MANUAL

Complete overview of Yamaha's new QY300 sequencer/sound source. Presented by Joe Ortiz of Heavenly Music, the video offers a hands-on tutorial on what is potentially a very powerful piece of hardware. Starts off with a runthrough of QY300 features, followed by a clear, step-by-step tutorial that introduces you to creating your own sequences and styles. As a bonus, the video comes with a free disk loaded with 6 new QY300 styles and 6 demo sequences.

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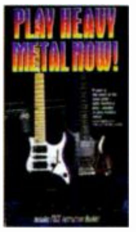

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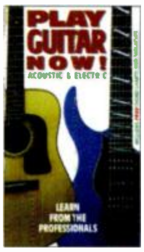

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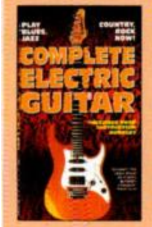

Presented by Mel Reeves

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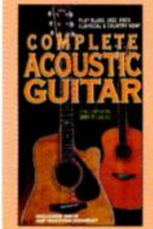

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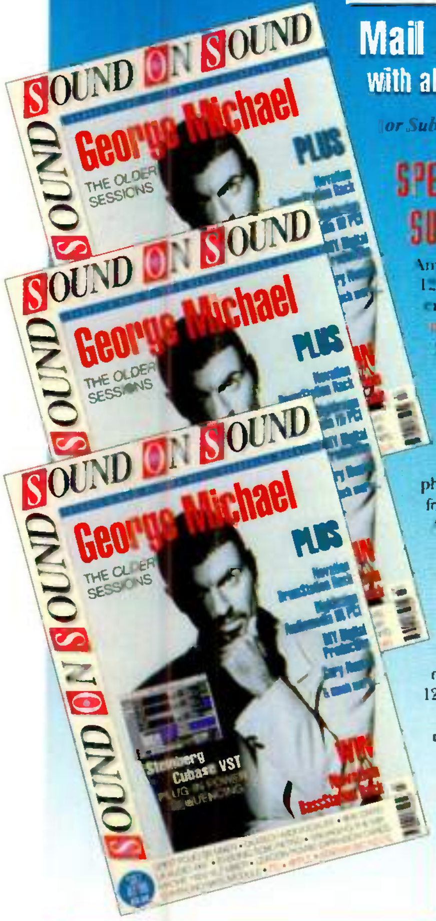

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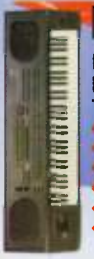

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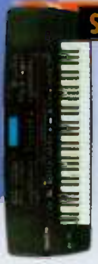

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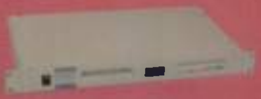

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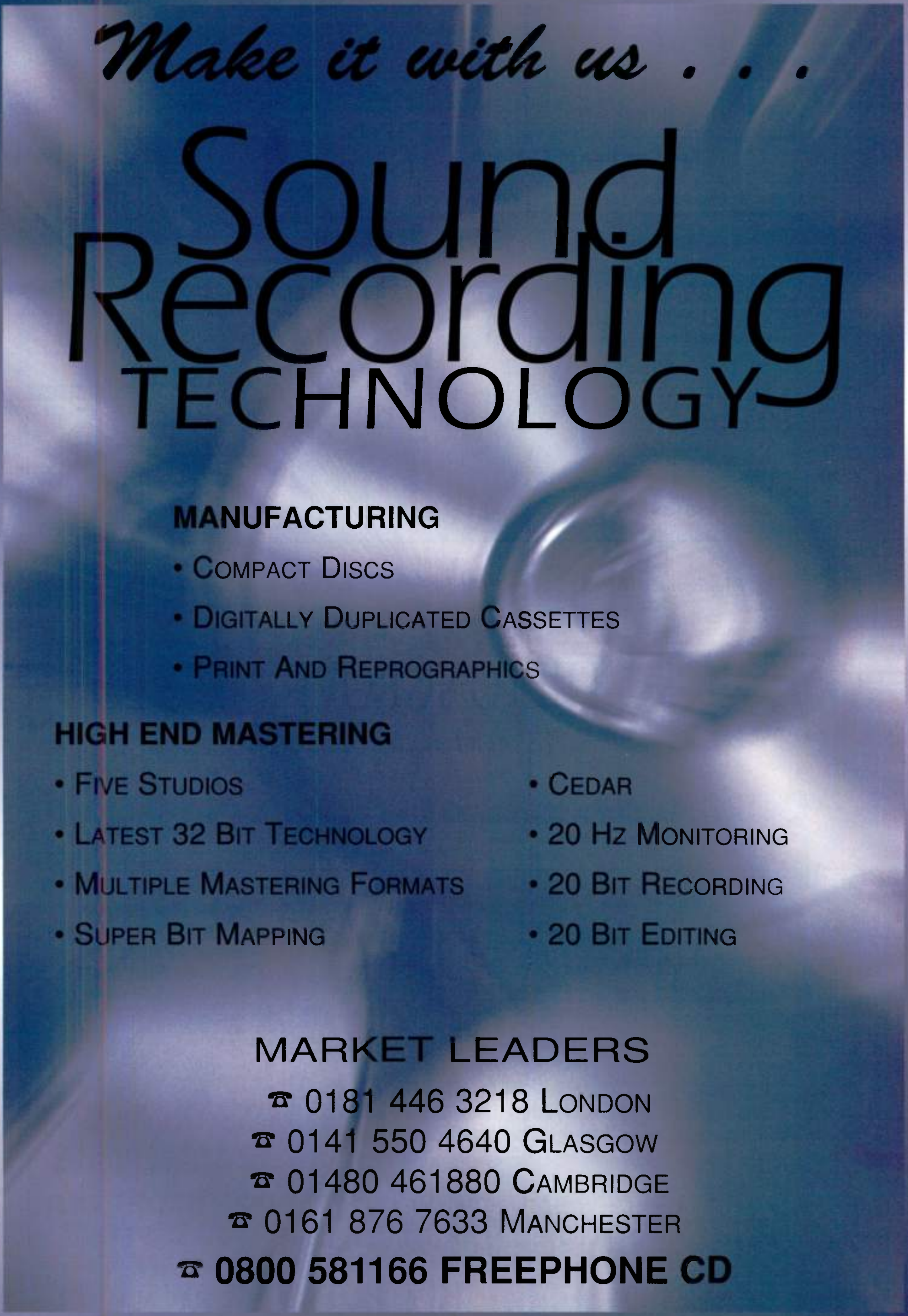

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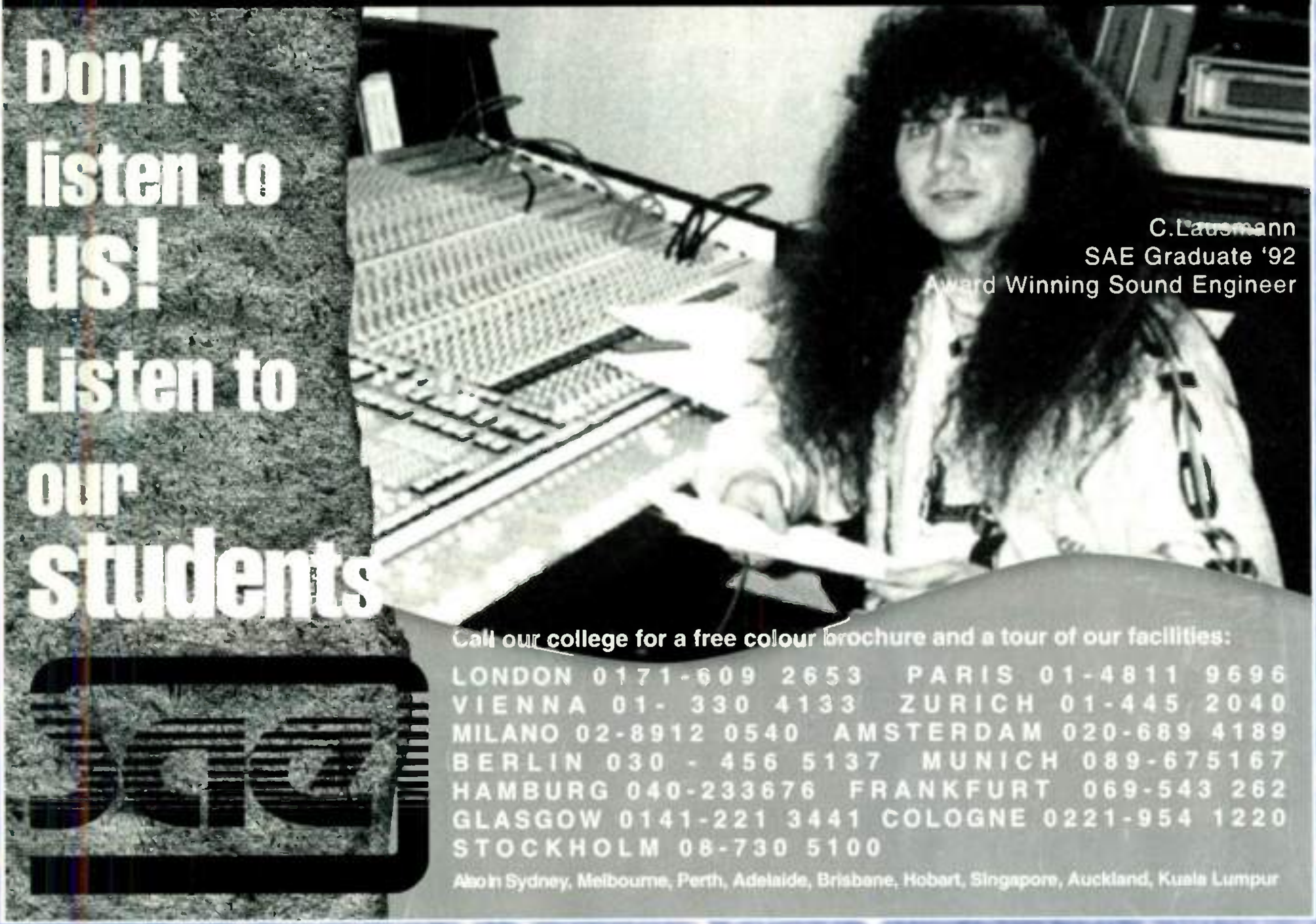

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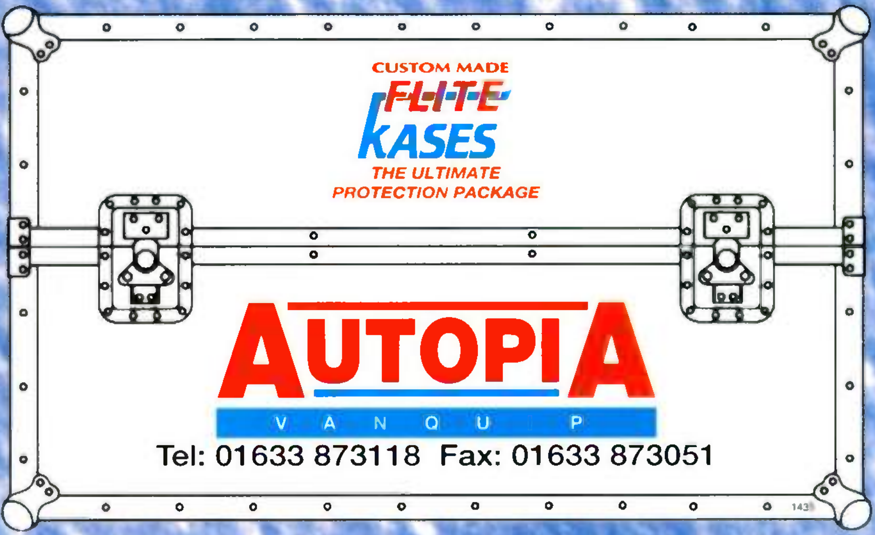

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WRH

sounding off

The latest crop of dance-specific sound modules are a bad thing, both for pop music in general and dance music in particular, says *SOS* contributor and self-confessed 'cynical old hippy' NORMAN FAY.

At the moment, it seems that a humble keyboard player can't so much as open a music mag without reading about the introduction of another box stacked full of sounds 'specifically tailored for modern electronic dance music'. Great, isn't it? What a choice you've got! Look over there, it's the new Roland Groovebox! Wow! It's packed full of those essential TB303 and TR909 sounds that you just can't manage without! And what's this? Far out! The Dance Planet, no less, from those folks at Emu. Packed even *fuller* with those same TR909 and TB303 sounds! And over here — a couple of cute rack boxes from Novation! One makes TB303 sounds, and the other makes TR909 *and* TR808 sounds. Hey, just think — if I buy all these, I too can sound just like those techno acts who are all a bit like Orbital, only not as good!

Bollocks.

Every time I see yet another of these techno cash-in modules, my heart sinks. Here we go again, I think to myself, another cheesy, narrowly-targeted ad campaign, another lot of young (and not-so-young) keyboard players conned by the current musical climate into thinking that if you play the synthesizer, you must be a technohead — and another death-blow to what little imaginative techno remains; the haystack gets bigger, but the pin remains the same size, if you like.

I can't really blame the manufacturers, either. Any business has to make money in order to survive, and the market is obviously there — just look at all of the mugs crying out "Con me! Con me! Sell me a Bassline!" in the small ad pages of *every music publication* every month. Any smart manufacturer has no choice but to try to fill that market. It's just so *narrow*, that's all — and you can't get away from it, either. Most 'general' synths these days seem to come with at least *one* 808/909 kit, and a load of analogue dance bass/sequence sounds amongst their presets. If you don't happen to play dance music — well, tough. And if you look at the catalogues of the sample CD suppliers.. well, need I say more?

Don't think I've got a special grudge against dance music. True, I think at least nine-tenths of it is irredeemable garbage — but that's exactly what I think about heavy metal, rap, indie, or any other style of popular music. The best musicians in any genre *are* the best because they have imagination and the ability to harness that imagination into great music. Orbital are a great dance act, but if they produced prog rock, for example, then they'd be a great prog rock act, Why? Because they have imagination, and they obviously like to work at making their music better.

What I really dislike about the new dance-specific instruments is the way they set into stone the sounds you 'have' to use to produce a specific type of music. The pioneers of modern electronic dance music didn't make the music they made by following some stupid set of rules, did they? I am reminded of guitarists in the '70s (and today too, for that matter) who, in attempting to closely emulate Jimi Hendrix, used the exact same instruments, effects and amps that Jimi used. All a complete waste of time, of course — who remembers any of them? Already, the world of dance music is swamped with soundalike acts whose only contribution to the music they profess to love is to dilute its power. All the Grooveboxes, Orbits, Cyber Sixes, Technoxes, Drumstations et cetera, et bloody cetera will do is make this situation far, far worse. And what will you do with your dance module when the dance boom passes — and it will, just like punk, prog rock, psychedelic music, disco, and any genre of the past you care to name? Hold onto it and hope for a revival? I don't think so. What you'll probably do is wish you'd spent your hard-earned cash on something a little more versatile.

I believe that every musician has within them the possibility of making at least one great record. All that musician needs is the chance to harness their imagination, and go the way they want to go. This has always been hard, and in today's rigidly-compartmentalised music scene, it's harder than ever — so the last thing we want is a bunch of products which will further blinker the imagination of musicians. What we want is better synths which can be easily adapted to suit the personality of their users, so I hope this fad for dance-specific instruments passes — and the sooner, the better. SOS

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.

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