

SOUND ON SOUND

EUROPE'S No.1 HI-TECH MUSIC RECORDING MAGAZINE

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Roland JS30 Sampling Workstation

Changing To Hard Disk Recording

20 Years Of Gateway Recording School

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VOLUME 10 • ISSUE 8

JUNE 95

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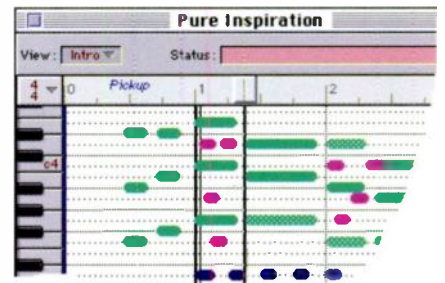
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But if you do glance at your computer, you'll see full-color graphic editing and impeccable music notation. And when you're ready to put it all together, FreeStyle's arrangement window lets you easily assemble sections into a song.

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FreeStyle is also designed to keep MIDI complications out of your face, so it has built-in support for General MIDI sound modules and other popular devices. Just plug in your instrument, select the players you want, and start recording.



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So, the next time you sit down at your computer to write a song, do it FreeStyle.

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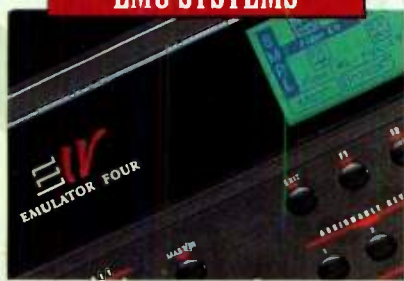
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If you're serious about sampling TSC's the place to go. We specialise in the complete spectrum of sampling systems from top spec EIV through the great Akai range down on to the extremely cost effective Emu ESI-32 & Roland S-760 bundles. We've got them all set-up and ready to show in our demo room. (For computer users - see the fantastic Sample Cell II overleaf). Plus in our special 'early summer promotion' we're giving away a CD-ROM player with every SCSI sampler!!



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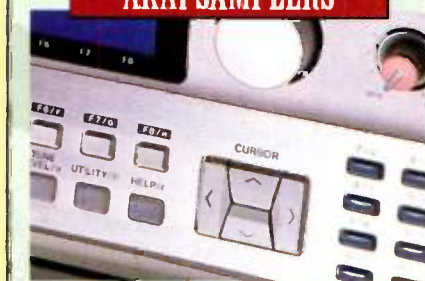
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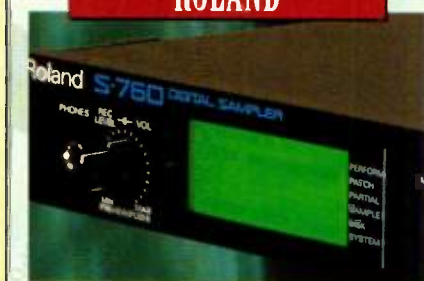
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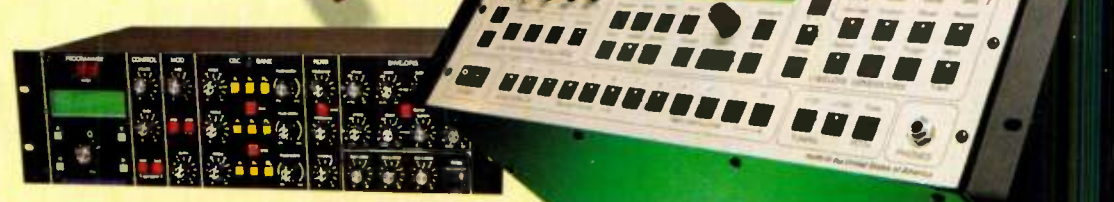
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Time again to rant on about software, mental processing and the meaning of life — but not necessarily in that order. Starting with the meaning of life, my theory is that life is something designed to pass the time between not having existed and having done so but not doing so any more. There may be more to it than that, but if so, I haven't really twigged it yet.

There's a tenuous link between the above three subjects, because software also helps pass the time, often in an inexplicably accelerated manner. Computers are supposed to be time-saving devices, so how come 10 minutes in front of a

the screen look interesting when you're not actually doing anything...

In fact, as this train of thought shows, you can postpone the business of making music almost indefinitely, especially if you decide to really work on your default song structure, and actually make use of all those labour-saving virtual gadgets on offer. If it looks like you might be getting somewhere near the end, don't worry, because the next software update will bring with it several new levels to crack.

Cynical, perhaps, but in those dark ages before MIDI, I bet most of us used to write, rehearse and record songs much faster than we do now —

I know that I did. In fact, I discovered an old DAT tape this week while rummaging about my tape

box, and it proved to be full of spontaneous synth and guitar jams. There was stuff on there that I would never have come up with in a million years if I'd been plugged into a sequencer. In fact, some of it sounded so good that I'm going to pinch bits, put them into *Logic Audio*, and see what I can turn them into. Of course, that will take much longer than it took to come up with the ideas in the first place, but then, that's progress — isn't it?

Incidentally, those of you perusing the 'flannel panel' to the right of this text may notice some changes to the staff line-up of *SOS* this month. This will be the last issue to feature the talents of Assistant Editor Derek Johnson and Managing Editor Debbie Poyser, who are taking a well-earned break to check out the cultural side of mainland Europe while it still has one! We wish them well in all their travels. As those of you who passed by the *SOS* stand at the MEMS show will already know, Matt Bell, previously Editorial Assistant, has now been promoted by simply swapping his titles around, and is now Assistant Editor. To complete the round of musical titles, may I welcome on board the new *SOS* Staff Writer Jonathan Miller, previously a freelance writer for the magazine. Before any of you write in, Jonathan is at pains to point out that he is *not* the same fellow who used to present *Body In Question* — any resemblance is purely coincidental!

Paul White Editor

Fear of Music

computer equates to about two and a half hours in the real world? I never really understood how people could get so involved in computer adventure games, where the object is to pit your wits against some sadistic software writer by struggling from one level of the game to the next, purely for the challenge of it. Yet I know people who have spent so long trying to figure out *Myst* that they're starting to believe they live there!

But then, I find myself doing exactly the same thing with music software. I mean, forget making music for a moment — what about the challenge of configuring your Environment page or your

OMS setup so that it reflects your whole studio in 2D miniature, complete with virtual patch cables? When you've done that, of course, you can move on to naming all your patches — preset, internal, card and library — so that you can call them up directly from within your sequencer. And while you're at it, those default icons are pretty tedious — why not

customise the place to make it look a little more homely? And surely the screen could do with a little redecorating — a nice magnolia pebbledash background would be good perhaps, with maybe a swarm of flying toasters or burbling fish to make



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ISSN 0951 - 6816



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Roland XP-50 Workstation p38
Offering 64-note polyphony and a truly gargantuan range of sounds, Roland are hoping there will be something for everyone on this latest synth workstation.

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Fostex XR7 Multitracker p122
We check out this top of the range cassette multitracker from Fostex.



Allen & Heath GS1 Mixer p78
Allen & Heath's latest model offers MIDI Machine Control and onboard muting in a usefully compact package.

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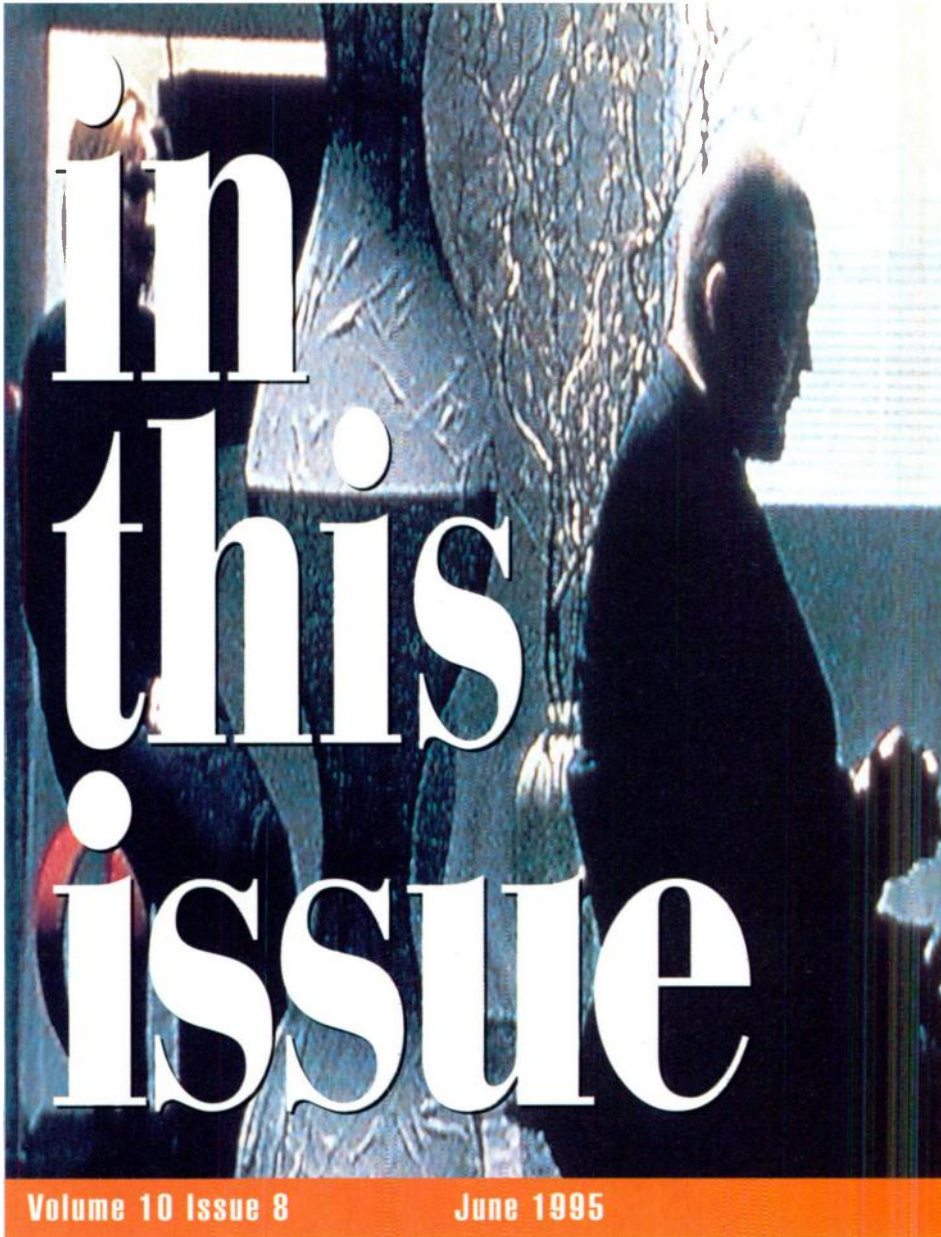
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WIN

DEEP BASS NINE
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Hot from Australia comes this rather appealing capacitor mic. We put it through its paces...



Crosstalk

Send your letters, tips and comments to:

The Editor, Sound On Sound, Media House, St Ives, Cambridgeshire, PE17 4XQ.

Or email us — from CompuServe on 100517,1113, or from outside CompuServe, on 100517.1113@compuserve.com

PUBLISH AND BE DAMNED!

I've been reading the articles on music publishing by David Bibbey in the February, March and April issues of SOS. It makes for fascinating reading. The most striking point I noticed was the differing reactions to David Bibbey's demo by Brian Jackson of EMI US and Dominic Walker of BMG UK. Brian Jackson had this to say about a particular song: "That's cool, I really like that... it's really cool, and talking of styles, it's a good song because I could think about Sting singing that song. It's clever, those lyrics are clever." Whereas Dominic Walker of BMG Music thought that: "The songs aren't good enough, they have the same

old chords, and lyrically I don't think it's anything special..."

Were they listening to the same demo? The other interesting point I noted was that Brian Jackson listened to the songs all the way through, whereas Dominic Walker played snatches of them. I used to believe that A&R people were eclectic in their taste and could appreciate good songs whatever the style. But through bitter experience I have realised that this isn't the case (they are almost human, after all). To be honest, I think the different attitudes from the publishers reflect a deeper cultural divide. From experience, Americans are in general more open, positive

and appreciative than British people.

I'm a songwriter myself, and have become very wary of approaching A&R executives in this country. Sending out demos is a very hit-and-miss affair, especially with the likes of Dominic Walker, so I'm pursuing a different approach of generating interest through gigs.

Well, that's enough griping from me. I've got Brian Jackson firmly in my sights and am looking West to the land of dreams and opportunity. By the way, keep up the good work — or should I say, keep up the fantastic work?

Peter Mannion
Huntingdon

UMI BOTH

If there are any fellow UMI 4M BBC sequencer users out there, I'd like to let them know that the UMI system for the BBC Master has now reached version 1.09. If users have suggestions that they would like implemented in a future upgrade, or would like more information, they can contact me, Linton Naiff, on 0181 788 3729

PRODUCTION WHINES

I feel I must write and complain about Production Lines in the May issue, which featured the Rapino Brothers. They seem to be completely obsessed with the idea of music as a commodity, referring to the fact that these days music is just another product. This strikes me as an extremely depressing viewpoint; perhaps the pair of them are getting on a bit and have decided to make themselves a few bob. This is the only excuse for describing music in this way. In their article they at first refer to the artists as the ones that "pay the bills". Two paragraphs later, apparently it's the record company, then at the end of the piece it's pointed out that "the audience is king", because it is they who buy the product (therefore presumably paying the bills.)

All I can say is that if everyone approached music in this mercenary fashion, we would eventually end up with silence.

F Newell
London

TIME FOR A CHANGE...

I own a TEAC TSR8, which at present I sync to a Korg M1 and a Roland R8. The TSR8 sends its sync signals to an XRI XR300, which converts it to MIDI

signals, which the M1 and R8 can read.

I am seriously thinking of buying a PC, or a Mac in the not-too-distant future (primarily

to use for sequencing). Can you advise me if it would be possible to sync the PC sequencer to the TSR8 (ie. the TSR8 is the master, the PC is the slave) in a manner that would allow me to create more tempo changes than the XR300's maximum of 10?

Could you also tell me the likely cost of any additional outboard gear I would need to purchase?
Colin Eastwood
Lancs

Editor Paul White replies:

Unless you're determined to stick with SMPTE, I feel that a Smart FSK-type sync box is the best bet, because of its low cost and because it takes its tempo data

directly from your sequence, so there's nothing to program and no limit to the number of tempo changes you can have in any piece of music. Providing you have a MIDI sequencer that responds to MIDI Song Position pointers (and I can't think of any modern ones that don't), you should have no trouble.

Currently, the Philip Rees TS1 sync box offers good value, at £99, and it also includes a merge facility so you can still record into your sequencer when you are synced up. If you're buying a PC or a Mac, you'll also need to buy a MIDI interface, and in the case of the PC, an MPU 401-compatible MIDI interface is usually safest.



REASONS TO CHOOSE THE MACKIE 8•BUS-PT 2

Lately, several big pro audio companies have gone out of their way to "mention" us in their own 8-bus console ads. Okay, we'll admit it, several consoles have at least one more thingamajig, dooflanger or whozamabob than ours does.


If your sole criteria for buying an 8-bus console is the sheer amount of STUFF on it, there's always gonna be contenders.

But the Mackie 8•Bus console is founded on sound quality — ultra low noise, high headroom, premium mic preamps — rather than sheer quantity of knobs and buttons.

Not surprisingly, seasoned professionals share the same priorities. In competition with several of the very consoles that keep "mentioning" us in their ads, we recently won *MIX* magazine's highly coveted TEC Award for Small Consoles. As well as *LIVE! Sound* magazine's Best Front of House Mixer Award.

Call us toll-free for our 24-page 8•Bus brochure. It details more of the reasons that our 8•Bus Console series is the best recording or PA console values available today.

An expandable console system.

 If you can successfully foretell the future, you might as well play the stock market, make a zillion bucks and buy a 128-channel SSL console.

However, because most of us are less clairvoyant and a lot poorer, we've designed a system that can grow with your needs and budget. Start with our 24•8 or 32•8 console. Then, when your tax refund comes back, add an optional meter bridge. When you land that Really Big Project That Pays Actual Money, add more input channels (and tape returns) in groups of twenty-four with our 24•E Expander console.

You can keep right on growing your Mackie 8•Bus console system up to 128 channels or more.


And, beginning this spring, you can automate the whole shebang with our OTTO-34/Ultramix™ Pro/OTTOpilot Universal MIDI Automation system. It's receiving rave reviews from



seasoned pros who are used to working with "big console" automation systems.

¹ Mention in this ad denotes usage only, not official endorsement by the artists or production companies listed.

+4dBu operation throughout.

 This is a biggie in terms of overall noise and headroom. There are two current standards for console


operating levels: -10dBV and +4dBu. Without knocking our competition, let's just say that +4dBu is the only truly professional standard, used with all serious recording, SR and video production components.

This higher operating level effectively lowers the noise floor and increases dynamic range.

Naturally, our 8•Bus consoles operate exclusively at internal levels of +4dBu. (It's one of the many reasons that Mackie 24•8s and 32•8s have already been used to track top-charted albums such as Queensryche's new *Promised Land*, edit dialog for TV shows like *The Untouchables*¹).

And, for those of you who still own -10dBV gear, our 8•Bus console tape outputs and returns can be switched to accept this semi-pro/hobbyist standard.

Built like tanks.

 Our 8•Bus Series consoles have been in the field long enough to gain an almost legendary reputation

for durability. For example, several absorbed the impact of toppling monitor speakers during last year's Los Angeles earthquake with little more than a few broken knobs.

Others have survived drops off loading docks, power surges that wiped out whole racks of outboard gear, and beer baths, not to mention gazillions of air and semi trailer miles with major tours.

Read our 8•Bus tabloid/brochure to learn about the impact-absorbing knob/stand-off design, fiberglass circuit boards and steel monocoque chassis that make our consoles so rugged. And why we ship our consoles with a massive 220-watt power supply that can withstand high ambient temperatures and low line voltages.

Bottom line: You simply can't buy a more dependable console. Maybe that's why *LIVE! Sound* magazine readers voted us 1994 "Best Front of House Console."



MACKIE

KEY AUDIO SYSTEMS, LTD • UNIT D, 37 ROBJOHNS ROAD
CHELMSFORD, ESSEX CM1 3AG • TEL 0245 344 001 • FAX 0245 344 002

Crosstalk

PROJECTED RETURN

Further to the letter from Patrick Stanbury and your reply in the May issue of *Sound On Sound* [regarding whether a device exists to control a Kodak Carousel slide projector via MIDI], I'm writing to inform you that the box to control Carousel slides does exist, and it's the MM Productions Relay Controller.

This is designed to provide 16 channels of relays from 16 MIDI notes. The contacts are rated at 1 amp but can be custom supplied to any level. The main use in theatres is to MIDI-automate Revox tape machines, but Theatr Clwyd have been using one for a 10-Carousel show recently. You can contact MM Productions at Unit 10, Smeaton Close, Severalls Industrial Estate, Colchester, Essex CO4 4QY. Tel: 01206 845947. Fax: 01206 853765. John Hoskyns
MM Productions

SLIPPING THROUGH THE NET

I have been looking through your recent edition of *Sound On Sound* and am linked to the Internet through Telnet. I have tried calling up some of the addresses you've given on your PC notes page. Unfortunately, I have not managed to get any info, as it comes up "host Unknown". Please advise me what I'm doing wrong.

May I just also say that your magazine seems to be brilliant. My partner, who is in a band, has endless fun finding your recent issues and it manages to keep him occupied for far more time than I would ideally like. What can you do, though!!

Mena Puri

Email mena.puri@health-care-libraries-unit.oxford.ac.uk

PC Notes columnist Brian Heywood replies: *There are a number of reasons for getting the "host Unknown" message. Some reasons are: the remote computer (called the host) is not currently connected to the Internet; it's too busy to take any more Internet 'calls'; it's changed its Internet address; and so on. In your case I think the reason is that you're using the wrong Internet 'tool' to access the information.*

As you may be aware, the Internet is not a 'computer system' as such — it's simply an electronic network (or protocol) that allows computers to talk to each other. How they 'talk' is entirely a matter of agreement between the computers — or rather, the people who write the software for them.

The most common connection is the mail link, which is transparent to the user. You simply send electronic mail using your computer's normal email system and it packages it up and sends it to the destination — usually via several other

computers. There are other means as well: for instance, Telnet is a point-to-point system using the Internet protocol that gives what looks like a modem link to a remote computer; you need access rights on the remote host to be able to use this. Other access methods are FTP (File Transfer Protocol) for retrieving binaries (i.e. programs, data), the World Wide Web, WAIS, Gopher, Archie — the list goes on.

The current interest in the Internet revolves around the World Wide Web, usually referred to simply as the Web (but also sometimes WWW or W3). This is because of its rather nifty 'point and click' hypertext style of interface, which makes it easy to 'browse' (or 'surf' if you are into the jargon) the information available on hosts (i.e. other computers) connected to the Internet.

In physical terms, what happens is that the Web server presents the information to your Web browser, along with formatting information that tells it how to display the information. The browser can interpret this information on-the-fly to give something that looks like a printed page, complete with graphics and other features (like forms, sound bytes, and so on). How much of the information is used depends on the capability of your computer software. For instance, CIX has a text browser that allows you see 'printing' but throws away the graphics.

What you need to do is find out if your system has a Web browser. Alternatively, if you have a personal computer and a fast modem, you could subscribe to a service like Demon or Cityscape to get a direct connection to the Internet and use one of the excellent Web browsers (like Netscape) available to 'surf' the net at your leisure.

SEE HOW YOUR STUDIO GROWS

I'd like to comment on your Back to Basics articles about planning your first home studio. You emphasise that studios grow. They certainly do, and I think it's something people don't really consider enough.

Being from a computer programming background, I was really into technology and computer-controlled synths, but I didn't have the money to invest in a large system, so I originally

(along with the price) before I bought. OK, so I bought one of the first Ensoniq EPS samplers into the country, and the underrated Alesis Quadrasynth, but I was weak — there was absolutely no way I was waiting for those!

Further investment followed for my now all-consuming hobby (who needs holidays anyway?). I added an Akai ASQ10 sequencer, as the SQ80 was now too small, an Ensoniq EPS sampler, Roland D550 (end of line unit), Roland P330 piano module (sale), Roland M16E rackmounted mixer with Alesis effects units (again in a sale), a Casio VZ8M (cheap, with a Casiotone-style reputation and some great sounds), and my all-time favourite synth, the Korg Wavestation EX. Still no compressors, patchbays, multitrack tape machines or any of the other 'essential' studio items. I was still monitoring via the hi-fi system, as that is what I was most used to, but recorded directly to DAT.

After a couple of years of learning about my new system, I got itchy feet again. Out went the older stuff, mostly to friends, who got real bargains. The best upgrade was selling the EPS and buying the amazing Akai S1000KB, but the best buy of the last few years sounds a bit silly after spending thousands of pounds on gear — my patchbays. These were a revelation. I always had my gear directly wired to the desks, but this



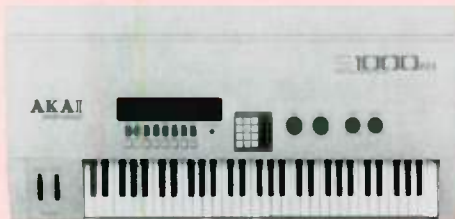
Best advice — "buy a patchbay!"

discovery allowed greater flexibility beyond what I had previously known. The compressors came a close second (I thought that, being keyboard-based, I'd never need them — how wrong can you get!).

The point of this epic? Building home studios takes time, and lots of it (not to mention money). I've been building for seven years and have finally got a system that I'm really satisfied with. I know my rig from both a sound and programming point of view, and it shows in the quality of recording I make (the content might not be up to it, but that's a different story...)

By way of a summary, my advice for anyone starting up from scratch would be: buy sensibly and always listen to what other people say. Learn how to use what you have got but keep an eye on what is going on around you (even if you can't afford it immediately) and always consider the upgrade path. Learn from your own and other peoples' mistakes and, oh yes, *buy a patchbay!*

Mike Best
London



"Best upgrade" — the Akai S1000KB

started off small with what I thought was a massive bank loan, and bought an Ensoniq SQ80, Yamaha RX5 drum machine and a Seck 12:2 mixer. I kept up to date by reading music magazines and always went to the local stores in my spare time to try out the latest gadgets. When I did succumb to the temptation to buy, I usually waited a few months so that the queues for the newest and most powerful gear had shortened



At last. Affordable, direct-to-disk multi-track recording and playback with no stutters.

This is the direct-to-disk development the sound recording industry has been waiting for.

A hard disk drive that's specifically developed for real-time sound recording and playback, rather than for computer number crunching.

A drive that'll cope with multi-track recording, and never lose even a fraction of a note.

A drive that delivers pure CD sound quality, however long the session. However often you play it back.

With no stutters. No dropouts. No jumps.

It's the Micropolis Microdisk AV mass storage system. The only disk drive technology that's been designed specifically for real-time sound recording and playback.

It's a modular, stackable system. Adding more Gigabytes is as easy as adding extra modules. Each module is removable, so recordings can easily be transported. And you can use Microdisk AV as a network server.

Micropolis Microdisk AV is a quantum leap in mass storage technology for direct-to-disk sound recording.

What's more, it's very affordable.

Hardly surprising, then, that the system is fast becoming a de facto standard. Not only for sound recording, but also for digital video and graphics editing.

Insist on Microdisk AV, and listen to the results for yourself.

For an information pack on this innovative technology, phone today, or use the magazine's reader reply service.

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The logic stacks up.**

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European headquarters

Tel +44 (0)1734 751315

Fax: +44 (0)734 868168

MICROPOLIS

Specialists in hard disk drives, ^{WDH} audio/video storage and disk array technology.

Shape of THINGS TO COME

By Derek Johnson & Jonathan Miller

SOS can be reached on CompuServe; our e-mail address is 100517,1113. Our full Internet address is 100517.1113@compuserve.com.

GROOVE ON THE MOVE

New drum machines are few and far between these days, yet Yamaha continue to fly the flag with the latest in their

percussion voices held within 12 preset drum kits and four user-definable kits. It is 28-note polyphonic, with a 200 preset pattern and 50 user pattern internal sequence memory. In addition, 50 instrumental voices, arranged into 200 preset style accompaniment patterns, can be 'superimposed' onto any of the aforementioned rhythm patterns. Patterns, including chord progressions and shapes, can be entered

via 12 pads, assisted by a large LCD. Headphone, stereo output jacks and MIDI In and Out sockets complete this unit, attractively priced at £225.

series of 'rhythm programmers', the RY8. This battery-powered little number weighs in at around 380 grams and is small enough to slip into the pocket of a carry bag or the bottom of a guitar case — ideal for musicians on the move.

The RY8 utilises Yamaha's tried and tested AWM technology, with 128 drum and

A Yamaha-Kemble Music (U.K.) Ltd, Sherbourne Drive, Tilbrook, Milton Keynes, MK7 8BL.
T 01908 369269.
F 01908 368872.

MUSIQUE NON-STOP



Fans of a certain reclusive teutonic synthesizer quartet may be interested to know that those kind bods at EMI have re-issued a quartet of their most popular albums on CD — we are, of course, referring to Kraftwerk here. *Radio Activity* from 1976 and 1978's *The Man Machine*, featuring their 1982 number one hit single 'The Model', are now available at a 'special low price', whilst *Computer World* from 1981 makes it into the digital world in Europe for the first time, having previously only been available on US import for ludicrous prices. Finally, 1991's *The Mix* includes classics like 'Autobahn', personally selected and radically re-recorded by Kraftwerk themselves. According to EMI, Kraftwerk are currently working on music for a brand new album. We'll keep you posted, but don't hold your breath — it's almost a decade since the release of *Electric Café*, their last album of new material!

In the meantime, fans of the fab four can content themselves with the knowledge that the group's seminal first three albums are also making their CD debut. *Kraftwerk 1*, *Kraftwerk 2* and the aptly-titled *Ralf & Florian* (named after the nucleus of Ralf Hütter and Florian Schneider), are a tad more *avant garde* than the aforementioned EMI releases and date from the period 1970-1972. These are available from C&D Compact Disc Services of Dundee, a specialist importer/distributor of electronic music, priced at £16.95 each.

A C & D Compact Disc Services, Magnum House, 140 Seagate, Dundee, DD1 2HF.
T 01382 76595.
F 01382 736702.

SPEAKERS CORNER

British loudspeaker moguls B&W have added the Matrix HTM (Home Theatre Monitor) compact high performance A/V monitor to their Matrix 800 series. The HTM is primarily designed with the ongoing merging of the home theatre and audio markets in mind, and "built to audiophile standards, but with full audio/visual compatibility", according to B&W. Its high power handling, suitable for amplifiers rated between 50W and 120W continuous into 8 Ohm, and the ability to reveal an accurate sound stage, has already endeared

the HTM to professional users, suggesting suitability for studio use as a near-field monitor. The Matrix cabinet construction houses a single cone bass/midrange unit and an externally-mounted, metal-domed, magnetically fluid-cooled tweeter — both are shielded against stray magnetic fields, enabling positioning close to video monitors.

The Matrix 800 ASW (Active Subwoofer) adds an extra dimension to the B&W range of monitor systems. Designed for use in top-flight audio-visual and domestic hi-fi systems, the ASW features a 12-inch bass driver and an

internal 200W power amplifier with 'soft limiting' to prevent hard clipping, permitting higher volume levels, without audible overload.

Retail prices, including VAT, are £499 each for the Matrix HTM — they can be used singularly in a centre-channel role to complement all B&W 800 series models — and £1495 for the 800 Active Subwoofer.

A B&W UK, Marlborough Road, Lancing, West Sussex, BN15 8TR.
T 01903 750750.
F 01903 750694.

EMO Systems have supplied MTV Europe with 24 channels of Microphone Splitters for their London studios. They form part of a new monitor system for MTV's *Most Wanted*

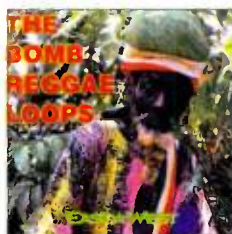
EMO ON THE AIR

series which is broadcast four nights a week throughout Europe. Marquee Audio installed the monitor system, interfacing the Microphone Splitters with the monitor desk and on-air desk.

A EMO Systems Ltd,
Durham Road, Ushaw Moor,
Durham City, DH7 7LF.

T 0191 373 0787.

F 0191 373 3507.



SPACE TIME CONTINUUM

Sound developers Time & Space have announced four new sampling CDs from their renowned US counterparts, East-West Soundwarehouse.

- *LA Riot 3* is a two-CD set providing 'construction' kits and breakdowns, plus hundreds of breakbeats, custom drum kits, basses, guitars and horns in a variety of musical styles.

- *The Bomb — Reggae Loops* is self explanatory, musically speaking — 'The Bomb' is New York street talk for the absolute best. The brainchild of top New York producer Jonathan 'The Bomb' Holmes, this caribbean-influenced CD features "real sounds played by real musicians".

- *Phat & Phunky* is a two and a half hour double

CD of R&B, slow 'jamz', hip-hop loops and breakdowns. A MIDI file floppy disk is included to enable the user to customise the loops.

- *Chronic Horns* is, strangely enough, a horn collection specifically aimed at dance, acid jazz and flat out 'phunky' jazz people! This time a four horn section, comprising of a trumpet, trombone, and tenor and alto sax was used to create swells, falls, stabs and riffs in every key.

All of the above titles are available on audio CD for £59.95, including VAT and P&P. CD-ROM versions are to follow.

A Time & Space, PO Box 306, Berkhamsted, Herts, HP4 3EP, England.

T 01442 870681.

F 01442 877266.

SEEING IS BELIEVING

Once in a while a unique product quietly enters the fray — please welcome *Metaphor* by Aldridge Technology, a revolutionary way of accessing complex graphic-based software for the blind, which, incidentally, is sponsored by the Royal National Institute for the Blind.

Windows, menus and other graphic commands are given non-visual equivalents, using a voice synthesizer to interact with the user, while artificial intelligence techniques are

used to interpret screen graphics and text, allowing personalised interfaces to be constructed.

The system is currently provided with interfaces for Steinberg's *Cubase* and *Cubase Audio* for the Atari Falcon and ST, and priced at £300 (including VAT) — a worthy use of technology indeed.

Aldridge Technology also manufacture the *Magnific!* Screen Magnifier software, which provides magnification of up to 16 times the original screen display of Atari Falcon/ST computers, priced at £49, including VAT.

Finally, "A-Switch provides access to the Atari Falcon/ST range for the motor disabled at £200, including VAT. Graphic and non-graphic software can be accessed in a number of ways via a single switch connected to the joystick port of the computer. Multiple switch versions and versions with speech output are available on request.

Aldridge stress that they will customise any of their products to suit the needs of the individual.

T 0181 671 0076.

M-PEOPLE SHOWING OUT AT AUDIO TECHNOLOGY 95

The Music Corporation is attending this year's Audio Technology 95 (The APRS Show) for the first time, and are using the show to unveil their "new image". Under the banner of The M Corporation, the new company aims to provide a one-stop solution for your audio, digital video, multimedia and



photographic needs. The company's stand (number 232) will feature the following:

- Demonstrations of 4-Sight International's sub-£2000 entry-level ISDN hardware, for digital transfer of audio over special phone lines.

- Kurzweil's new K2500 synth/sampling workstation, which will have its UK debut at the show.

- New monitoring systems from Silver, including the redesigned 5L and BH plus the new 10L; the systems are the first to benefit from Silver's RWRS (Real World Response System) computer-based design system.

In addition, several examples of multimedia



and CD-ROM-based videos will be on the stand, as well as one of the first two Sony PCM800 digital multitracks in the UK and an Avid Media Suite digital video transfer system.

A The M Corporation Ltd,
The Market Place, Ringwood,
Hampshire, BH24 1AP.

T 01425 470007.

F 01425 480569.

MIDI-CV GOING SOLO

MIDI retrofit specialists Kenton Electronics have announced the Pro Solo, a single-channel MIDI/CV converter. Designed to control all types of monosynths, the Pro Solo's preliminary specifications read remarkably like a single channel of their renowned Pro 4: Auxiliary CV controllable by any MIDI controller, with 15V range, to control functions such as cut-off, programmable LFO to modulate pitch or Aux CV (for filter sweeps), true new note priority — old notes remembered for 'trill' effects, Portamento, V/oct or Hz/V, V-Trig (up to 15V) or S-Trig, MIDI In and Thru, fine tune, non-volatile memory.

At the time of writing, estimated price is £99.95, including VAT.

A Kenton Electronics, 12 Tolworth Rise
South, Surbiton, Surrey, KT5 9HH.

T 0181 337 0333.

F 0181 330 1060.

Shape of THINGS TO COME

Audio connection manufacturers Deltron have launched the DGS Pro-Audio Direct Injection Box, an active balanced line driver allowing unbalanced signals to be balanced and distributed over cable runs in excess of 100m in length, with sufficient drive capability to feed two mixers. Features include an active signal path, powered by two internal PP3 batteries or external phantom powering. A five way attenuator selects signal gain reductions of -6dB, -12dB, -18dB, -24dB or -40dB. Price? A reasonable £ 116.33, including VAT, plus a £5 carriage charge.

T 0181 965 5000.
F 0181 965 6130.

ABC Music in Slough are holding a massive closing-down sale, with 'crazy prices', prior to their relocation to larger premises in nearby Windsor.

A ABC Music, 324 Farnham Road, Slough, Berks.
T 01753 822754.

Stuart and Sheila Mercer have sold their entire shareholdings in Carlsbro Retail Limited to Keith Woodcock and will now be concentrating on further expansion of world-wide markets for Carlsbro Electronics Limited, with the addition of David Caulfield as Sales & Marketing Director. Meanwhile, Keith Woodcock has formed a new board of directors at Carlsbro Retail, headed by himself as Managing Director, Director of Finance & Administration Graham Worthington, Gareth Hunt as Director of Purchasing & Marketing, and business consultant John Piper as a non-executive director.

Digidesign have moved their London office. As of May 1, they have been located at the address and phone number below.

A Digidesign Inc, 20/28 Kingly Court, London W1R 5LE.
T 0171 494 2949.
F 0171 494 2758.

Turnkey have announced three 'scoop purchase special offers'. First off, an end-of-line exclusive deal on the Roland JV50EX synthesizer for £799, including VAT — a saving of 550 over the recommended retail price. This tidy sum gets you the full sound set from the (now discontinued) Roland JV80 and the top-of-the-range JV90 series, plus Roland's GS format chip, as used in the JV30 and JV35.

The Yamaha CBXT3 sound module, based on their popular TG100 Expander Module, is also being knocked out at less than half price — £169, including VAT (RRP £399). It's 28-note polyphonic, 16-part multitimbral, has 10 drum kits and on-board reverb, controllable for each channel separately, plus a built-in MIDI interface for Macintosh

or PC, which works via the computer serial port — you even get the necessary cable.

Turnkey's package also includes a Mac or PC version of Steinberg's *Cubase Lite* sequencing software and *Music Box* song disk with 20 well-known titles as a bonus.

Finally, Turnkey are offering nearly 70% off Fostex's DCM100/MixTab fully automated mixing system at £249, including VAT (RRP £799). The DCM100 is a rack-mounted mixer with eight stereo inputs and the following MIDI-controllable functions on each channel:

- Volume.
- Mute.
- Pan.



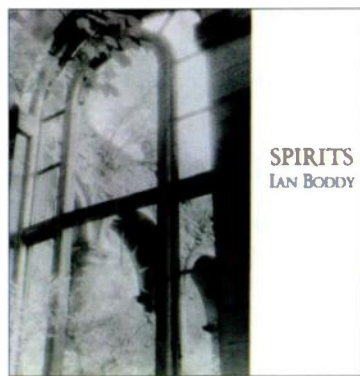
END OF THE LINE

- EQ (high and low).
- Aux send (switchable between aux 1 and aux 2).
- Master aux sends/returns and master EQ.

The MixTab looks like a conventional mixer, but sends MIDI to the DCM100 to control all the above parameters. When the system is connected to a sequencer, all MIDI automated functions can be recorded in real time.

A 114-116 Charing Cross Road, London, WC2H 0DT.
T 0171 379 5148.

IS ANY BODDY OUT THERE?



Sound On Sound contributor and UK electronic music stalwart Ian Boddy is playing a concert at The Guildhall in Derby on Saturday, 27 May 1995. Tickets and further details can be obtained from Midas Records in Derby.

The show will coincide with the CD reissue of his second vinyl album, *Spirits*, originally released in 1984 and premiered at the first UK Electronica Festival in 1983. *Spirits* features some skilful

programming of the notorious Yamaha DX7 synthesizer, combining pulsing sequencers with live rock drumming. A 13-minute bonus track, 'Lamalode', is also included. Recorded in 1995, this piece combines strings, choirs and piano to successfully complement the mood of the original album.

A Something Else Productions, PO Box 16, Consett, County Durham, DH8 8YZ, England.
T 01207 592211.
F 01207 508021.

DREAM SIGNING?

London-based electronic music label AMP Records have signed German synth pioneers Tangerine Dream for the UK rights to their latest studio album, *Tyranny Of Beauty*. The album features founder and mentor Edgar Froese on keyboards and guitar, his son, Jerome, also on keyboards and guitar, and saxophonist Linda Spa, together with guest guitarists Mark Hornby and Gerald Gradwool. In addition to a completely reworked version of the 1976 classic 'Stratosfear', instigated by Jerome, the UK version of the album includes a bonus track, 'Quasar', unavailable elsewhere.

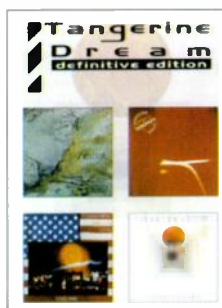
In an exclusive *Sound On Sound* preview, Edgar shed light on the album's



Jerome Froese, Linda Spa, and Edgar Froese in the studio during the recording of the latest album.

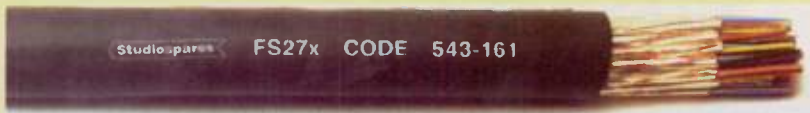
intriguing title: "It was born out of the fact that the term 'beauty' is ruling a big portion of our day-to-day lives. Models have become extremely popular. Work-out videos are always top sellers. People try to re-shape their bodies to become more beautiful, but what about all

the so-called 'normal ugly ones' who can't measure up to all these beautiful images? Is anybody out there asking to re-shape the terribly confused mental structures which rule our daily lives from tragedy to tragedy?"



"Everything is being brought back to the individual and that's part of the materialist world. You suddenly realise that this world doesn't look beautiful at all, so, talking about *Tyranny Of Beauty*, that's what it's all about."

Following on from our March 1995 report, the next 'chronological' batch of Tangerine Dream's Definitive Edition catalogue from the band's Virgin Records period is out now — check out those catalogue numbers. Like their predecessors, *Encore* (TAND1), *Cyclone* (TAND9), *Force Majeure* (TAND10) and *Tangram* (TAND11), all dating from the period 1977-1980, have been remastered using the SBM (Super Bit Mapping) system, with fully restored artwork and informative sleeve notes by *SOS* contributor Mark J. Prendergast. Eighties albums *Thief*, *Exit*, *White Eagle* and *Logos* are destined to follow in June.



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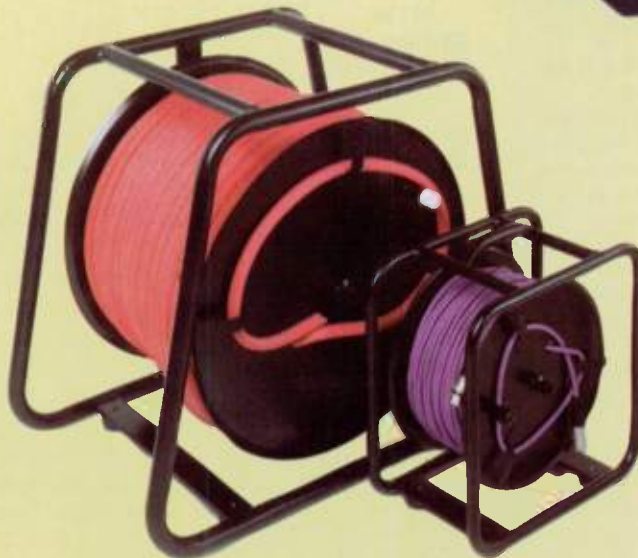
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- + floor cable protectors
- + ten wall box systems



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Sound On Sound

The latest addition to Keyfax Software's *Twiddly Bits* range of building block MIDI Files is volume 4, *Drums and Percussion*. The disk contains over 700 drum and percussion parts and patterns, played by leading percussionists using a variety of controllers, including Roland Octopad, Simmons SDX and Kat Drumkat. A wide range of time signatures is available, from 8 and 16 beat grooves to 5/4, 7/4, 6/8 and 7/8.

T 01734 471382.
F 01734 471382.

HW International have published their 1995 pro audio catalogue. The 64-page full-colour catalogue is full of product information on all HW distributed lines, including Shure, QSC, Ultimate, 3G and their own branded range of products.

A HW International,
167-171 Willoughby
Lane, London N17 0SB.
T 0181 808 2222.
F 0181 808 5599.

Music Control, the company behind the Control Synthesis Deep Bass 9 (see our fabulous competition in this issue), have reported a number of groovy sales of new and classic gear to the following notable customers: Portishead — ARP Odyssey; Ultrasonic — Roland TR707 and TR727; N-Trance — two Korg Poly 6s; The The — Roland GI10P; Gee St Records — Emu SP1200; FX Rentals — Roland JD800; Hilton Sound — Emu Vintage Keys; and Johnny Marr — Alesis ADAT.

T 01270 883779.
F 01270 883847.

EDUCATION CORNER

We've been sent details of an MA in Electronic Media at Oxford Brookes University. The new course combines elements of Sonic Art and Visual Art with the processes of dissemination. Composers do not necessarily have to be visual artists, but can work with visual artists or publishers to produce new work. The aim is to create an environment for students with backgrounds in one field to learn from, respond to, and incorporate ideas and activities from their colleagues in other fields.

A Tim Howle, Senior Music Lecturer, Oxford Brookes University, Gypsy Lane Campus, Headington, Oxford, OX3 0BP.
T 01865 4834661.
F 01865 483013.

Lewisham College's Music Department are on the lookout for aspiring musicians, and anyone looking for a career in the music industry, to come



along to two evenings of performances by their music students at the Albany Empire on 26 and 27 June 1995. Up to 20 bands will perform a range of contemporary music, including jazz, rock, soul, reggae and world music. Ticket details and times are available from the Albany's box office

Music teachers at the college — all of whom are professional musicians — will be on hand to answer course-related questions. Lewisham College is adding a BTEC National Diploma in Popular Music to its range of courses, including a one-year pre-BTEC Music Foundation and City & Guilds Sound Engineering — the National Diploma is, "a two-year, full-time course aiming to enable students to develop all the skills they need to work, adapt, survive and succeed in today's music business."

A Lewisham College, Lewisham Way, London, SE4 1UT.
T 0181 692 0353.
F 0181 694 9163.

Les Ateliers UPIC in Paris are offering a two-semester university-level program in Computer Music and Composition, running from 2 October 1995 to 25 May 1996. The program consists of four comprehensive courses taught by Curtis Roads, Julio Estrada, Gerard Pape and Brigitte Robindoré, namely Techniques of Computer Music (based on the text of *The Computer Music Tutorial* by Curtis Roads, published by MIT Press), Compositional Theory and Practice, Electroacoustic Composition on the UPIC System, and Advanced Topics in Computer Music. Guest lecturers include such luminaries as Iannis Xenakis, Jean-Claude Risset, François-Bernard Mâche and Harry Halbreich.

The course promises individual studio time with an impressive array of equipment unlike anything residing at your local music emporium — Iannis Xenakis' interactive UPIC systems, developed at the CEMAMu, and a wide range of tools for synthesis, signal processing and performance. Digital editing is courtesy of *ProTools*, *Deck* and Akai's DD1000. Cours en français et anglais — those fearing an *en masse* mockery of their lack of foreign linguistic abilities need not worry, as both English and French are spoken during the course.

The centre for the creation of computer music was founded in 1985 and is supported by the French Ministry of Culture and the City of Massy — tuition fees are said to be "moderate."

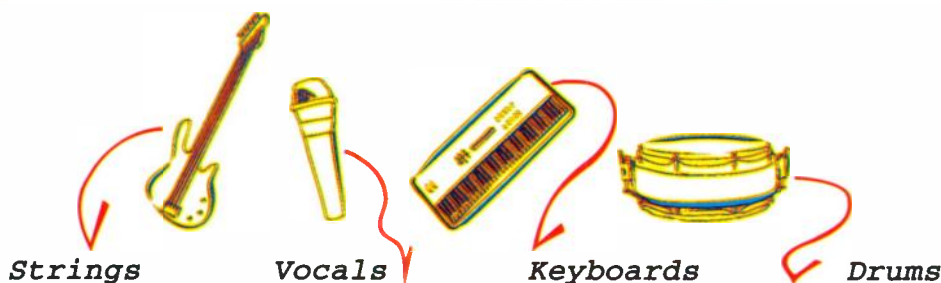
A Les Ateliers UPIC, 5 allées de Nantes, 91300 Massy (Paris) France.
T 33 (1) 60 13 93 39.
F 33 (1) 60 13 93 39.

Upcoming band Close Enough release their debut single 'Proud Mary', an innovative re-working of the Creedence Clearwater Revival classic, later this month, in conjunction with students of the second-year Commercial Music BA (Hons) course at the University of Westminster. Second-year students are required to undertake a record release project, led by Stevie Wonder's Personal Manager, Keith Harris. This entails forming a 'virtual' record company, signing a band, and releasing a CD single, within a budget of £2000. This is the first project the course has embarked on to deal with the real issues involved in releasing a recording, including MCPS clearance, manufacturing costs, and contract/legal considerations. For further information on the Commercial Music course, contact Norton York at the address below.

A University of Westminster, Watford Road, Northwick Park, Harrow, HA1 3TP.
T 0171 911 5000.

The University of Surrey's music department — they're behind the UK's only Tonmeister degree course — has just received an official excellence award from "an independent government body". This isn't yet another example of the insidious influence of quangos on our daily life, but rather an assessment, under the auspices of the Higher Education Funding Council for England (HEFCE), by a panel of five leading academics. The panel consists of people in the music field, with an independent, non-partisan chairperson. Following a "rigorous" four-day assessment, the department were delighted to get their award of excellence — the award means that the department's staff, facilities and student achievements were all top-rated compared with other music departments in English universities.

A University of Surrey, Guildford, Surrey GU2 5XH.
T 01483 300800.
F 01483 300803.



The Peavey Spectrum Analog Filter

a programmable analog system that can process any audio source

*warm up
to a fat & sassy, full-of-personality sound*

The **Peavey Spectrum™ Analog Filter** combines the best of old and new technologies. This product is a must for any studio or live music environment where you want to enhance the personality and nuances of any audio source. Plug in your miked drums, vocals, electric guitar or bass, keyboard, and voilà!—you won't believe your ears. A smooth, warm sound reminiscent of the days when synthesizers had real guts. Better yet, the Spectrum Analog Filter is MIDI controllable, allowing you to filter, envelope, and resonate signals to your heart's content.

“ Does the Spectrum Analog Filter sound *exactly* like a real Minimoog filter and VCA? Well, not quite, but it sounds great, and it's close enough to a Mini for most purposes. Besides, try fitting your Minimoog into one rackspace. If you want to warm up that icy-sounding, digital synth you've been whining about, this will do the trick. ”

Steve Oppenheimer
Electronic Musician Editors' Choice (Equalizer/Filter)

“ Specs be damned, how does the thing sound? One thing is certain, we didn't hear a \$150 difference between it and the [competitor]. The Peavey, simply put, knocked our socks off. It's nice and smooth, and has plenty of beef and bite. Some of our tweezy synths have never barked bigger. One listener dubbed the Spectrum 'a big, fat pig' (a compliment, by the way). Another enthused: 'This is cool. I want one.' ”

Greg Rule
Keyboard magazine

FEATURES—

- Classic Analog 4-Pole Filter Circuit
- 100 Programmable Locations
- 3 Audio Inputs
- MIDI Note Triggering
- Audio Trigger and Envelope Follower
- Filter Frequency Velocity and Key Tracking
- MIDI Controllable
- Mono Audio Output
- Great Price!

Shape of THINGS TO COME

Et Cetera Distribution have announced the immediate availability of Digital Audio Labs' family of professional audio products for the PC.

The CardD Plus (£699, including VAT) provides professional quality sound for

ET CETERA SLOTS INTO PC MARKET

the PC with simultaneous stereo record/playback capability. Features include:

- Dual 16-bit Delta-Sigma A/D converters with 64x oversampling (recording).
- Dual 18-bit D/A converters with 8x oversampling (playback).
- 48kHz, 44.1kHz and 32kHz sampling rates.
- 20Hz-20kHz frequency response.
- 92dB dynamic range.
- .003% Total Harmonic Distortion at 1kHz.
- Single-ended RCA input/output jacks.

The I/O CardD (£249, including VAT) enables recordings edited and mastered in the digital domain to be saved to DAT, without going through another set of converters. An exact copy of the recording from the hard drive to DAT, or vice versa, can be made with the I/O CardD connected to the CardD Plus. Features of the I/O CardD include:

- SP/DIF(IEC) format.
- RCA connectors.
- 8-bit buss slot.

The Digital Only CardD (£399, including VAT) plugs into any PC, providing a digital input and output for direct

digital transfer to and from a DAT recorder in SP/DIF format. Provided a soundcard is installed in the computer, the Digital Only CardD adds direct digital DAT transfer capability, without generation loss.

Without a soundcard, it allows the DAT recorder's converters to be used as an analogue front end for the computer. The card is supplied with a Windows audio waveform driver, enabling it to work

with many popular waveform editing programs. Its features include:

- SP/DIF format.
- RCA connectors.
- 48kHz, 44.1kHz and 32kHz sample rates.
- 16-bit buss slot.

The *EdDitor Plus* (£299, including VAT) utilises the hardware features of the CardD Plus, allowing one stereo soundfile to be recorded whilst listening to another. Both recordings can be played back together, mixing four channels of audio down to two channels in real time. Ten multiple punch-ins can be memorised for later comparison. Editing tools include cut and paste editing; overlays; custom fades and crossfades; sample reversal; scrub; gain change; permanent on-line help.

Finally, *Fast Eddie* (£129, including VAT) is a totally non-destructive editor for Windows soundfiles, providing most the facilities of the EdDitor Plus, with the exception of simultaneous record/playback and punch-in.

A Et Cetera Distribution, Unit 17, Hardmans Business Centre, Rawtenstall, Lancs, BB4 6HH.

T 01706 228 039.

F 01706 222 989.

2turnkey complete

EMULATOR IV Digital Sampling System



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Redefining digital sampling standards, the Emulator IV features 128 voice polyphony and up to 128mbyte of sample memory, giving up to 24 minutes of sampling time. A new icon based graphic interface makes it easy to use and powerful audio processing features include distortionless pitch transposition over a 10 octave range. Additional options include Flash RAM sample memory, 32 MIDI channel capability. **NEW SOFTWARE UPDATE** an additional 32 different filter types including band pass and morphing filters.

TASCAM DA88

8 track digital recorder



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FOSTEX RD8

8 track digital recorder



CALL

The Tascam DA88 has a place in most of London's professional environments, establishing itself as the premier digital 8 track. Come in & judge for yourself.

If you want a digital multitack for use with video or MMC then this is the machine that has it all built-in. In simple terms this is a Turbo'ed ADAT at a keen price.

NEW MARION SYSTEMS PRO SYNTH



£699

The legendary American synth designer Tom Oberheim's Pro Synth is today's analogue synthesizer. The eight part multi-timbral voices utilise 200 RAM patches, 200 ROM and 100 layers, with 2 high resolution oscillators per voice. All this is housed in a 1U rack and at an incredible price of **£699**

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Tape	
Alesis ADAT	£1999
Fostex RD8 new	£3295
Tascam 122Mk II	£595
Revox B77	£595
Tascam MSR16 dbx	£3995
Tascam DA88	£POA

Consoles

Soundcraft Delta 20 8	£1999
Soundcraft DC2000	£POA
Tascam M520 20/8/2	£599
Yamaha DMP7	£499
Roland M240	£799
Roland M480	£999

Direct-to-Disk

Dig.design ProTools	£3499
D design AudioMedia II	£799

Aikai DR8

EPOA	
Samplers / Synths	
Aikai CD3000 NEW	£2199
Emu E11xp	£1949
Peavy DPM08	£1295
Kurzweil K2000	£1699
Roland JV1080	£POA
Roland MKS70	£695
Microphones	
Manley Baby Cardiod new	£1199

adj (1927) : installed and ready to operate

Manley Laboratories



David Manley's vacuum tube designs use only the highest quality components. The single or dual channel Microphone Preamps are designed for use with modern capacitor mics (a 60dB version is also available), with rugged, thick CNC milled front panels, and aluminium sides. With his 'Purist Mixers' the actual mixing is achieved by each input having its own dedicated input grid to avoid unnecessary increase in noise-floor. Manley Labs is the only authorised user of the original Western Electric passive EQ circuitry used in the original Pultecs. Both the EQP1 and Mid Frequency EQ monoblocks use this classic design for an equally classic sound. If you are interested only in the best valve equipment call us to arrange a demonstration. Assesments 'on site' are available, call for details.



waldorf

The **Wave** synthesizer is now available in a range of different colours and sizes. A 76 note version in either black, red or sand. To add to this Waldorf have released two new MIDI accesories called the **Gekko MIDI Trigger** and **MIDI Note** at £79. With the new **Miniworks Analogue Filter** it is now possible to address the legendary filter of the MicroWave with any audio signal, whether from a sample, mic or guitar. The unit consists of a resonant 24dB low pass filter whose input can be over-driven like in the MicroWave. ADSR envelope curves can be started over MIDI, trigger input, audio input or the trigger pad. In addition, it is possible to choose between a conventional or a one-shot envelope curve. Via a sequence, all settings can be operated in real-time by a MIDI controller.



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digidesign

We've sold literally thousands of computer-based systems from the first Apple Ite sequencers in the early 80s and our Apple-trained product specialists demonstrate and support applications in music and post-production. As an authorised Apple Reseller we have on permanent demo a PowerPC 7100 with Pro Tools III with all the range of MIDI/SMPTE interfaces and MIDI based, TDM/DAE compatible MIDI sequencers. Please call for the keenest prices and a comprehensive, unrushed demo.



Authorised Apple Reseller



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Neuman KM56	EPOA
Neuman TLM193	EPOA
Audio Technica 4033	EPOA
DAT	
Sony TCD-D3	£1150
Fostex D20B new	POA
Sony PCM2300	£1049
Computers	
OpCode Studio 5	EPOA

MOTU MTP II	EPOA
JL Cooper DataMaster	£499
s/r Mac Quadras	CALL
Outboard	
Manley Pultec EQ NEW	£1599
Manley Dual E/O Lim new	£1875
Langevin dual micpre+EQ	£1099
Langevin dual E/O Lim	£1349
Drawmer DS201	£299
Reland SDE330	£549

Drawmer DF320	£339
Sony MP5 new	£449
Lexicon PCM80	EPOA
Lexicon LXP15 Mk II	EPOA
Massenburg GML EQ	EPOA
SSL G383FX new	£2799
SPL Vitalizer Stereo	£585
Behringer Composer	£269
Analog	
SE1 Rack MiniMoog	£1475

Prophet VS	£1399
Oberheim OBX-A	£699
Monitoring	
Dynaudio M1 new	EPOA
ATC SCM20 new	EPOA
Omniphonics Footprint	£279
Chameleon Amps from	£749
Waldorf Red & Blue new	EPOA
Genelec 1030 & 1031s	EPOA
Tannoy PBM6 5	£249

turnkey
studio
Systems

Shape of THINGS TO COME

If you're into homebrew electronics, you might want to check out Cricklewood Electronics' 1995 catalogue. Apart from a comprehensive range of resistors, capacitors and semiconductors, the catalogue also features a great range of video spares and accessories. The catalogue costs £2.50 (£5 overseas).

A Cricklewood Electronics Ltd, 40-42 Cricklewood Broadway, London NW2 3ET.

T 0181 450 0995.

F 0181 208 1441.

Fans of obscure gear, read on: an SOS reader has recently obtained a Musico Resynator, a funky two-oscillator synth with built-in pitch to CV facilities, built in Indianapolis during the early '80s. The Resynator is a 2U device aimed at guitarists or wind players: an audio input processes your playing and allows you to play the synth. It also features gate and CV inputs. The instrument is actually non-functioning, and said reader would be grateful for any help; if anyone has any info, documentation or service notes, drop us a line here at SOS and we'll pass it on.

The Network is a joint initiative between local authorities in the East Midlands and East Midlands Arts, the regional arts board, providing "opportunities for musicians across the region". The Network consists of three "popular music coordinators" based in Leicestershire, Nottinghamshire and Northamptonshire, each with a brief to raise the profile of music in the region. This might mean helping a band find its first rehearsal space or recording studio, or ensuring that the national music industry is aware of the region's talent. Training seminars are also on the agenda.

A Fosse Studios, Mantle Road, Leicester LE3 5HQ.

T Notts, Mark Spivey, 0115 942 2952.

T Leics, Dave Howard, 0116 251 5577.

T Northants, Alison Brown, 01536 263786.

SOS AT APRS

Your favourite hi-tech music monthly is to host a series of Briefings at this year's APRS show at Olympia, London on 21st-23rd June 1995. Readers wishing to attend the following seminars by *Sound On Sound* contributors should make their way to Stand 220:

• Wednesday, 21 June, 11am to 12pm: Journalist and lecturer David Mellor deals with equipping a studio, exploring the available choices and how to get the best out of your investment.

• Thursday, 22 June, 3pm to 4pm: 'Getting Away From Presets' with musician and writer Martin Russ — quick and easy ways to customise your preset sounds and personalise your recordings.

• Friday, 23 June, 1pm to 2pm: 'Integrating Hard Disk Recorders With The Project Studio' — David Mellor explores the creative potential of non-linear systems and shows how to harness the power of hard disk recorders in the project recording studio.

A Sound On Sound Ltd, Media House, Burrell Road, St Ives, Cambridgeshire, PE17 4LE.

T 01480 461244.

F 01480 492422.

ALL YOU NEED IS LOVE(TONE)



A group of musicians, collectively known as Lovetone, have announced a new range of hand-built analogue effects pedals, designed to incorporate the best of vintage and new technology, with the aim of producing "more natural, communicative, exciting and lasting music."

- The Meatball is an envelope follower/ triggered filter, with a large frequency and dynamic range, making it equally suitable for guitar, bass, keyboards and studio use. By treating simple waveforms, it can effectively become an analogue synth in its own right, or can be used to add sparkle and depth to digital samples.
- The Doppelganger is described as a 'texture' machine, concentrating on harmonic 'richness' — a kind of subliminal phaser, in effect.

Lovetone pedals will, for the foreseeable future, be built to order in small batches, and are offered for a limited period at a special introductory price of £150.

A Lovetone, PO Box 102, Henley-on-Thames, Oxfordshire, RG9 1XX.

T 01491 571411.

F 01491 571411.

LIVE TALKING

More than 100 students attended Soundcraft's sixth Going Live! training course for live sound engineers in Manchester at the end of March,



accessing over £300,000 worth of equipment, reputedly weighing three and a half tons! This included a full Turbosound

Floodlight PA system and Soundcraft Europa and SM24 consoles.

The 'beginners' part of the course was attended by 25 students, whilst the following day saw professionals like Roger Lindsay (Prince, Dire Straits, George Michael), Jim Ebdon (Wet Wet Wet) and Andrew Frengley (David Bowie, Beverly Craven, Deep Purple) covering microphone technique, use of EQ and outboard effects, stage monitors and PA speakers, plus all aspects of live sound mixing, for an audience of over 75 people.

GOING, GOING, GONE



ABC Music are currently selling Alesis Quadrasynth keyboards at £799 — remarkable value for money, bearing in mind that the Quadrasynth originally retailed at £1499!

To recap, the Quadrasynth was the first synth to offer true 64-voice polyphony, and includes a digital interface for direct recording to the Alesis ADAT. It employs Alesis' QSC Composite Synthesis system — Alesis-speak for sample and synthesis — and features 16Mb of on-board sample ROM, plus a built-in parallel matrix effects section, comprising four independent signal processing busses providing fully programmable multi-effects. Check out Martin Russ' comprehensive review in the May 1994 issue of *Sound On Sound* for further details.

ABC have also bought up all remaining stocks of Korg's Audio Gallery. Originally retailing at £399, these nifty little units are going for a song at £139. Audio Gallery allows the creation of computer-based music in one package, including an AG10 wavetable sound module, sequencing software, start-up driver software and computer interface cable. The half-rack module utilises the same A12 synthesis system found in the Korg 01W workstation and features 128 General MIDI sound programs, four drum kits and dual effects. Note that there are two versions available — the AG101, for use with Windows software, and the Macintosh-compatible AG102.

A The ABC Music Company, 56-58 Surbiton Road, Kingston, Surrey, KT1 2HT.

T 0800 132 193.

August 1995 dates for the next Going Live! seminars are to be announced. Plans are also being drawn up for a special Going Live! course specifically aimed at sound engineers working in the theatre. Presented by professional theatre sound engineers and designers, with a strong emphasis on hands-on training, the Central London course is planned for October 1995.

A Soundcraft Electronics Ltd, Cranborne House, Cranborne Industrial Estate, Cranborne Road, Potters Bar, Herts, EN6 3JN.

T 01707 665000.

F 01707 660482.

The first of the planned twice-yearly international Vintage Electronic Musical Instruments auctions, for anything vintage, electrical and musical, will take place in Exeter on Sunday, 2 July 1995 — an ideal opportunity to add some character to your

THE CREAM OF VINTAGE DEVONSHIRE



guitars, amplifiers and effects, valued between £10 and £7000!

The main thrust of the auction is intended to be the instruments and equipment themselves, although several lots with "star connections" have already been entered.

A Star House, Sandford, Crediton, Devon, EX17 4LR, England.
T 01363 774627.
F 01363 777872.

music. According to Devon-based organisers Star House, publisher of Peter Forrest's informative A-Z *Of Analogue Synths Part One: A-M* (see SOS Book Shop), there will be "something for everyone" with the 150 lots already received spanning the whole range of electric music, including synthesizers,

Mandala Records are on the lookout for new talent. The label is the brainchild of former Sex Pistols producer Dave Goodman, with an admittedly different slant — since 1986 they have been promoting experimental, ambient, sacred, tribal, dance and meditational music, as part of a growing movement who have come to realise that 'music



CALLING MUSICAL OCCUPANTS OF INTERPLANETARY CRAFT

can save the world'. Their catalogue so far contains only a dozen or so products, but current successes have enabled them to increase their output on CD with more vigorous distribution, courtesy of Pinnacle.

One such release involves Dave himself, who has teamed up with ambient brothers Clive and Mark Ives, to produce *Live From Venus*,

an album with overtones of The Orb and Enigma, which deserves to go down well with the ambient fraternity.

The background to *Live From Venus* is an almost unbelievable

story. In a nutshell, the three core musicians claim to have received a series of inspirational dreams from a group of Venusians — sounds like an overdose of the *X-Files* to us!

A Mandala Records, PO Box 344, London, SE19 1EQ.
T 0181 761 3288.
F 0181 766 7009.

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KRK K-ROK

Nearfield Monitors

American company KRK have gained quite a reputation for distinctive monitor design since their inception less than 10 years ago. PAUL WHITE checks out their most affordable speakers, the nearfield K-ROKs.

At the extremes of the monitor market, the choices are rather more obvious than in the £300 to £700 market sector. If money is no object and you're looking for a £1000-plus monitor, then you're probably going to go for something like ATCs or Genelecs, whereas if you only have a couple of hundred pounds to spend, you're pretty certain to end up with a pair of hi-fi speakers. In the middle ground, there are the Alesis Monitor 1s, Wilmslow Audio's excellent Home Studio Monitor kit, Soundcraft's Absolutes, the smaller Questeds and a host of other speakers vying for the same market — and that's where KRK have decided to pitch the K-ROKs.

Retailing at around £469, the K-ROKs reside at the bottom end of the KRK range and come housed in squat, compact MDF cabinets finished in black satin paint with grey spattering. The cabinets are built as a single-piece structure, so there's no way of getting inside without removing the front-mounted bass driver, while the cabinet sides are angled inwards — partly to reduce standing waves inside the box and partly, I suspect, to make the monitors look distinctive.

Like most near-field designs, the K-ROKs are based on a ported, two-way

passive system, the middle and bass being handled in this case by a 7-inch, long-travel driver incorporating a latex-coated cone sitting in a roll-rubber surround. The top end is reproduced via a 1-inch soft-domed tweeter, and the crossover point is quoted as 2.5kHz, the crossover itself being an 8 Ohm KRK passive design incorporating hand-wound inductors. Connections to the speakers are made using conventional binding posts which can take either banana plugs or bare wire, but there is no provision for bi-wiring, should you be that way inclined.

With a sensitivity of 92dB for 1 Watt at 1 metre, the K-ROKs have a maximum power handling of 100 Watts each, producing a maximum SPL of 106dB. On paper, the frequency response is 57Hz-19kHz, +/- 3dB, and though this doesn't seem to go particularly low, in subjective terms, the speakers still pack quite a punch.

THE SOUND

Driven with 75 Watts per channel, the K-ROKs are capable of a usefully high monitoring level without showing any signs of stress, though when you really crank them up, they do start to sound a touch boxy. At more realistic (and less damaging) levels, they provide a clear, detailed sound with a tight, punchy bass, and though the sound is a touch on the bright side of accuracy, the overall impression is one of reasonable smoothness. The dispersion is good too, which means you can move quite a long way off-axis before the tonal character changes significantly. In turn, this leads to generally good stereo imaging, though centre-stage sounds aren't quite as solid as they are with some of the more up-market speakers I've used in the past.

Focusing on the bass response, cabinet tuning has been used to keep the bass punchy and well-controlled down to the frequencies normally associated with bass guitars and kick drums, but below this, the response dries up rapidly, so if you're into mixing 20Hz organ pedal notes, don't

KRK K-ROKS £469

PROS

- Sensible price.
- Clear, smooth, detailed sound.
- Compact.

CONS

- Slightly bright voicing.
- Can sound boxy when driven hard.

SUMMARY

These are genuinely good near-field monitors, with no serious weaknesses given their price range.

expect to hear much evidence of them from these monitors. This kind of limitation is pretty much what you'd expect from a speaker of this size, though both the Alesis Monitor 1 and the Wilmslow Home Studio Monitor Kit have a slightly more extended low end.

SUMMARY

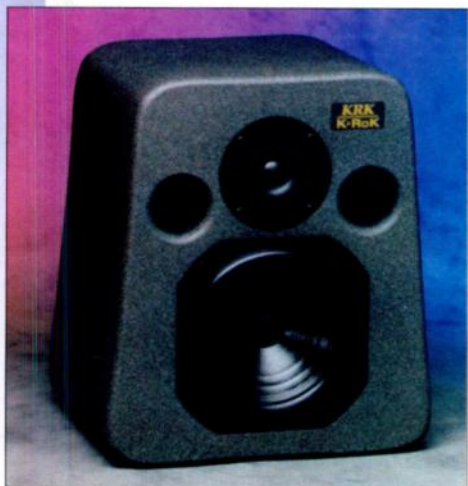
Any small monitor is the result of a compromise, the most obvious trade-off being low-frequency efficiency, but given their role as near-field monitors, the KRKs are nice to work on, and even though their voicing is slightly bright (no doubt for the benefit of the American market), the overall impression is of smoothness and detail rather than of aggression or harshness.

Certainly the K-ROKs produce a bigger, more detailed sound than you might expect from such a compact monitor, and in many home studio situations, they'd work fine as main monitors. The lack of any really low bass means that you're not going to excite any room resonances, but at the same time, there's quite enough kick to tell you what your rhythm section is up to — these are definitely not wimpy speakers. Within their price range, the K-ROKs are amongst the better near-field monitors I've tried, so if you're thinking of trading up but have a limited budget, make sure you put these on your short list.

SOS

FURTHER INFORMATION

- £ KRK K-ROK monitors £469 per pair inc VAT.
- A Tony Larking Professional Sales Ltd, Herts SG6 1AN.
- T 01462 490600.
- F 01462 490700.
- T The European Office 01296 661748.



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Rode NT2

Capacitor Microphone

Just when you thought all the bargain mics came from the former Eastern Bloc countries, the Australians turn up a bargain of their own. PAUL WHITE decides whether it's as good as their wine or merely as good as Neighbours.

Australia's only really big claim to international audio was probably the Fairlight sampling system, but despite the predominance of Japanese and American gear on the world market, Australia still has a significant audio industry. The mic under review comes from Rode, a part of the Freedman group of companies, and though there's no sign of the Aussie dry wit in the physical design of the mic or its packing (no Wallaby-skin case or wooden box with corks round it), it can't be just coincidence that Rode NT2 spells rodent! Humour is more evident in the manual, which contains a warning that you should never take the mic into the shower, go swimming with it, play football with it or use it to hammer nails in, as doing any of these may void the warranty...

AT A GLANCE

I'd always thought of the Australians as being proudly original — so why have they styled this mic after Neumann's U87? I know there are only so many shapes you can make a mic, but to copy somebody else's cosmetics so blatantly is almost like shouting out loud that you're producing a cheap copy. However, having taken the



mic apart, I have to say that it's very nicely put together, and the satin chrome casework is quite solid; the whole thing weighs 530 grammes.

Most capacitor mics are cardioid only, or offer a choice of all the main pickup patterns, but this model is switchable between cardioid and omni patterns. A 3-position switch allows you to select a 10dB pad, an LF roll-off filter, or to bypass both these functions. This prevents you using the pad and the roll-off settings at the same time, but in most situations, this isn't a serious limitation.

The dual-pressure gradient capsule is around 25mm in diameter, and utilises the familiar gold-plated membrane. Unusually for a relatively low-cost mic, the circuitry is transformerless, which helps to maintain the mic's fast transient response (see below). It's also evident that the designers are audiophiles, as each component has been selected not only on the basis of its electrical properties, but also for the best subjective sound. On top of this, the internal connectors (and the output XLR pins) are gold-plated and coated with an

antioxidant, and even the printed circuit boards are coated with Conformal, which I'm told protects against corrosion.

I was rather hoping that the package would include a frequency response plot, but no such luck. All we're told is that the frequency response extends from 20Hz to 20kHz, but without specifying within what limits, this doesn't really tell you much! Ultimately, what really counts is the subjective sound, but I always find a response plot useful. Sensitivity is quoted as 16mV/Pa, which is about what you'd expect from a large-diaphragm mic, as is the 17dB A-weighted noise figure. The mic runs from standard 48V phantom power, and can handle a maximum SPL of 145dB with the pad switched in.

Included with the Rode NT2 is a rather nice shock mount, and both this and the mic come in their own soft plastic storage boxes. There's also a zip-up synthetic leather pouch to protect the mic.

IN USE

Everything I've written so far tells you very little about how the mic works in the studio, so it's time to tell you what it sounds like. As usual, I dragged my other favourite capacitor mics out for comparison, and conducted extensive tests with vocals and acoustic guitar, as well as other miscellaneous sounds, including bells and an assortment of percussion. The NT2 seemed a little more sensitive than my other large-diaphragm models, and the transformerless design certainly translated into a more detailed sound at the high-frequency end of the spectrum. This was particularly evident on the steel-strung acoustic guitar, bells and percussion, and on vocals, although here, fortunately, the tendency towards sibilance seemed no worse than my other mics. If anything, the open top end overshadows the warmth of the low end slightly, but working closer to the mic brings the proximity effect into play, and really firms up the bass end, giving a very intimate yet assertive sound.

The rear rejection and off-axis performance was also comparable with my other mics, and the NT2's own noise was acceptably low, so the main difference has to be in the tonal quality. If you can imagine the classic large-diaphragm sound with just a tiny hint of 'exciter' quality about it, you won't be far off the mark. On balance, this mic has to be considered an excellent buy at £500, especially as you get the shock mount thrown in. SOS

FURTHER INFORMATION

- £** NT2 £499 inc VAT.
- A** HNB Communications, 73-75 Scrubbs Lane, London NW10 6QU.
- T** 0181 962 5000.
- F** 0181 962 5050.

RODE NT2 £499

PROS

- Good price.
- Shock mount included.
- Excellent sound quality (especially transient response).

CONS

- No figure-of-eight pattern.

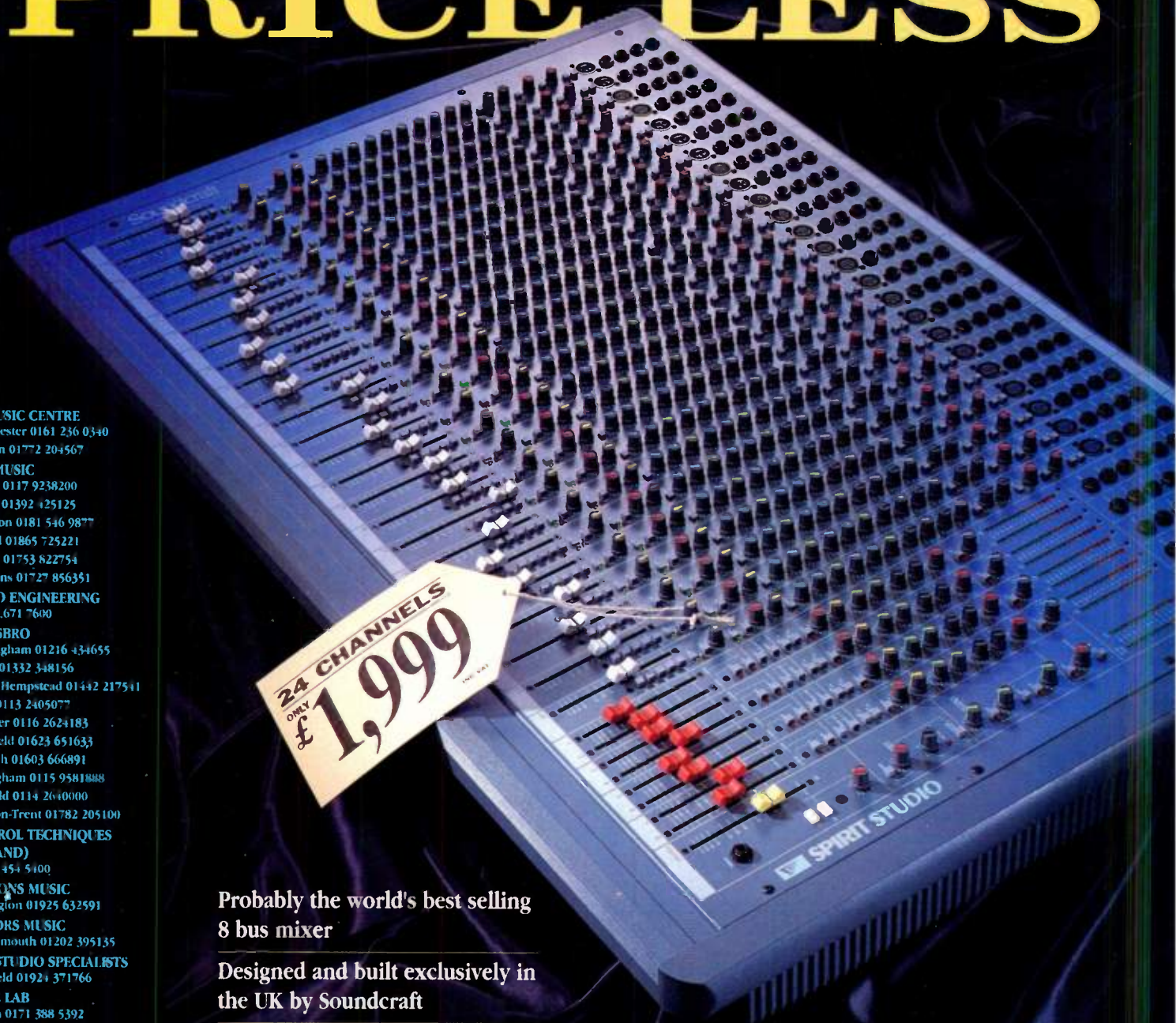
SUMMARY

A well-made mic that offers a viable alternative to the big-name models at a lower price. The excellent transient response makes this a good mic for acoustic guitar and ethnic percussion, as well as vocals.



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Alesis Matica 500

Power Amplifier

The latest additions to the Alesis dream studio line are the Matica 500 and 900 power amplifiers. PAUL WHITE checks out the 500.

The new Alesis Matica amps have been designed to deliver both power and a high degree of musical fidelity, making them suitable for both studio and live sound applications. Like most high-power amps, the Maticas are fan cooled, but Alesis use a system of fan speed control (CoolSync) that depends on the music level being handled, so if the music level drops, the fan speed drops to an idle, to minimise the background noise. More conventional cooling systems either use a constant fan speed or link the fan speed to heatsink temperature, which, as Alesis point out, doesn't start to cool the output transistors until they've already overheated. Furthermore, because a typical heatsink stays warm for quite a while, the fan may still be going full-tilt when the music level has dropped or stopped altogether.

THE DESIGN

The sonic integrity of these amplifiers relies on a low-distortion design employing a new generation of bipolar output devices, capable of very high slew rates — necessary for good transient response and to minimise Transient Intermodulation Distortion (TIM). The result is a claimed 103dB (unweighted) signal-to-noise ratio and a mid-band harmonic distortion of less than 0.009%.

The front-panel gain controls are detented for easy adjustment, and both the power switch and circuit breaker are also on the front panel, for easy access. The circuit breaker protects the amplifier and loudspeakers from potentially dangerous faults, such as shorted speaker cables (it must be manually reset if it trips), and true Clip LEDs show the onset of clipping. Conventional banana/bare-wire binding posts are used to connect the speakers, while dual-purpose jack/XLR sockets

handle the balanced inputs. Inputs may also be connected via a terminal barrier strip for installations. A rear-panel switch enables the amplifiers to be used in mono bridged mode, and there are separate signal and chassis ground points to help eliminate ground loop problems. A 25-pin 'D' connector is also fitted on the rear panel, ostensibly to support future expansions such as remote on/off or active crossovers.

When the amplifier is switched on, a relay holds the speakers in a disconnected state for around five seconds, until the power supplies have stabilised; when the amplifier is switched off, the relay drops out immediately to avoid any switch-off thump.

Two versions of the Matica are presently available: the 500 and the 900. Both can run loads down to 2 Ohms, delivering a maximum power of 350W and 680W per channel respectively, with almost double that power being available in mono bridged mode (into 4 Ohms minimum).

Both versions are physically similar and come in a 2U rackmount format with additional rack-mounting points at the

BRIEF SPECIFICATION

Frequency Response:	10Hz-80kHz (+1, -3dB) (-0.1 dB @ 20kHz)
Slew Rate:	80V/microsecond
THD:	0.009% @ 1kHz (4 ohms)
Hum and Noise:	Better than 103dB below rated output (unweighted)
Sensitivity:	0.775V RMS for rated power
Input Z:	20kOhms

back end of the side panels for extra support in mobile racks. The cooling air inlet grille is located on the right of the front panel, with further ventilation at the rear, allowing a clear flow-through of air. No air filters could be seen through the grilles, but as nobody ever cleans them anyway, maybe that's no bad thing.

THE SOUND

To test the Matica, I hooked up a pair of ATC SCM10 monitors and sifted through my CD collection for some suitable and varied test material. These particular

ALESIS MATICA 500
£499.99

PROS

- High sound quality.
- Compact design.
- Sensible cooling system.
- Cost effective.
- True clip indicators.

CONS

- The fan is very quiet but is still audible when no music is playing.

SUMMARY

A well-designed power amplifier suitable for live sound, installation and studio applications.

monitors are extremely accurate but do demand a lot of input power — which the Matica delivered. With all power levels up to clipping, the sound maintained its integrity with no undue harshness or blurring of detail, and the low bass information came across cleanly with authority and punch. It's never easy to be subjective about power amplifiers because they're not usually the weak link in the chain, but as I'm very familiar with the rest of the signal path in my own system, I feel that such an impression is both useful and valid. On the whole, the Matica delivered a solid, detailed sound, but also managed to sound smooth, even at quite high listening levels — something I feel is important, particularly in the studio. The mid-range and high end didn't seem to suffer in the presence of powerful bass sounds, and the only time the fan noise was evident was when the music was suddenly switched off, in which case you could hear the fan speed falling back to an idle. Under normal monitoring conditions, fan noise would not be a problem, even if you monitor at very low levels.

The Alesis Matica amplifiers are very realistically priced, even when you compare them with slightly cheaper products aimed at the very budget end of the market, and from what I've heard of them, they stand comparison with amplifiers costing rather more. I'm still not sure that power amplifiers will ever qualify as exciting, but the Maticas certainly do a good job and look as though they'll continue to do so for a long time.

SOS

FURTHER INFORMATION

- E** Matica 500 £499.99; Matica 900 £649. Prices inc VAT.
- A** Sound Technology plc, Letchworth Point, Letchworth, Herts SG6 1ND.
- T** 01462 480000.
- F** 01462 480800.



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Ridge Farm Gas Cooker

2-Channel Tube DI Box

Despite the preponderance of digital technology in the modern recording world, many independent manufacturers continue to produce valve-based processors for the subjective warmth they add to recordings. PAUL WHITE looks at one of the latest, Ridge Farm's new valve DI box.

The charmingly-titled Gas Cooker is a very ruggedly-built, dual-channel valve DI box, employing three 12AX7 tubes in the circuitry. The unit features both unbalanced jack and transformer-balanced XLR outputs, as well as a buffered amplifier output. This last output carries a buffered version of the input signal, allowing the unit to be patched into an existing signal path to deliver a split feed, but without the need to disrupt the original signal feed. The unbalanced jack input (which is situated on the rear panel) is high-impedance, which makes the unit suitable for use with electric guitars and basses, as well as many piezo pickup systems.

The physical presentation of the aptly-named Gas Cooker is suitably retro while still being practical. Both channels have independent Ground Lift and Pad switches, and the only rotary controls are the large bakelite Gain dials, with unity gain marked around one third of the way up the scale.

In order to furnish the user with some degree of control over the amount of tube coloration, the Gain control comes after the input buffer, but before the output stages, which means that it is possible to drive the valves into audible distortion by switching out the Pad and turning up the Gain. This can be useful for creating obviously dirty keyboard sounds, but the Gas Cooker is at its most musical when used in its ostensibly clean mode. Because of the Gain arrangement, even when the valves are operating in reasonably linear fashion, the Gain control may still be used to adjust the amount of coloration. I tested the Cooker with various music CDs, and the subjective result was to create an illusion of increased transparency. I found little audible change at the low end of the audio spectrum — any detail within bass sounds was just slightly enhanced — but at the top end, the sound definitely 'opens up', allowing the listener to seemingly get further inside the mix. With the Pad switched in and the Gain set to unity, I patched the Gas Cooker into my console insert points, and found that this setting produced a subtle but significant degree of 'sparkle'. The over-used term 'musical'

GAS COOKER £410

PROS

- Solid, retro-style construction.
- Flattering sound.
- Transformer isolation.

CONS

- Relatively expensive compared to solid-state DI boxes.

SUMMARY

A professional, well-designed DI box that combines genuine valve coloration with transformer isolation.

springs directly to mind, but you don't get that bass end thump associated with valve guitar amps.

APPLICATIONS

Having established that the Gas Cooker has a flattering sound, where might you use it in a typical studio? Firstly, it may be used as a conventional DI box for recording guitar and bass. Although it's very nice with bass guitar, most electric guitar sounds will need further tonal control, so it may be that a guitar preamp combined with the Gas Cooker would give the best results. Keyboards may also be DI'd, and the Gas Cooker's valve sound can help to impart a little warmth and spaciousness to otherwise sterile-sounding digital synth patches. Furthermore, because both channels are completely independent, you aren't limited to processing stereo signals — you can treat the unit as two separate mono DI boxes.

Using the jack connectors, the Gas Cooker can also be patched into any of the insert points of a typical console, and it's here that things start to get really interesting. For example, you could patch the Cooker into a mic channel to create a tube mic sound (either when recording or while mixing), or patch it into the console's main stereo insert points to add a pinch of valve flavouring to an entire mix. You could treat sub-groups in the same way if you don't wish to process the whole mix.

The more you play around with a box like this, the more uses you find for it. You have all the benefits of a conventional DI box, including transformer isolation, plus a controllable degree of valve 'flavouring', and though the effect might not be as pronounced as you'd get from something like an exciter, it's arguably a lot more natural. Definitely worth a close listen, especially if you're a valve freak! SOS



FURTHER INFORMATION

- E** Gas Cooker £410.08
- A** The Home Service, 178 The High Street, Teddington, Middlesex TW11 8HU.
- T** 0181 943 4949.
- F** 0181 943 5155.



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Yamaha MU5

Tone Generator

It's 28-voice polyphonic, with 128 sounds and a computer interface — and comes in a box the size of a video tape. DEREK JOHNSON finds out whether size matters after all...

W e now take it for granted that each generation of synth technology will be packaged in a variety of formats. A recent phenomenon involves squeezing a full General MIDI synth onto a PC sound card or into a similarly small stand-alone box — which is exactly what's happened with Yamaha's new MU5. With a package the size of a video tape — similar to Yamaha's QY10 and QY20 'walkstations' — the MU5 offers 128 TG100-like sounds (plus eight drum kits), GM compatibility, 28-voice polyphony, 16-part multitimbrality, a computer interface for Mac or PC and battery (as well as mains) operation.

WHAT'S IT GOT?

The MU5 features a 2-octave mini keyboard, which can be used for note entry with a MIDI sequencer; up to 10 octaves can be accessed by using two octave shift buttons. Apart from the keyboard, the MU5's most prominent feature is a large liquid crystal display. This is generally very clear, but a lack of backlighting means that visibility from some angles and in low-light situations may not be ideal.

Editing the MU5 is as obvious as it gets: the white keyboard buttons double as global utility and individual part edit buttons (see box for list); the black keys

double as a number-pad. These functions are accessed by pressing both octave shift buttons together, followed by the button labelled with the parameter you wish to adjust; the parameter value is then altered with the keypad or 'Value' buttons.

Now you know what you're getting, I'll briefly mention some of the compromises that have been made to keep the MU5 compact and affordable. First of all, the sounds aren't editable (apart from very basic volume, pan and transposition values) and there are no on-board effects. The keyboard isn't velocity sensitive, though its output velocity can be set to any fixed value you like (while I can't complain about the lack of modulation and pitch bend wheels, there are plenty of small drum machines which sport velocity sensitive pads), and audio is output through a stereo mini-jack socket best suited to headphones,

MUS EDITABLE PARAMETERS	
UTILITY — global parameters.	
Master Tune	Transpose
Mute Lock	Keyboard Velocity
Local On/Off	Dump Out
Initialise All	
PART EDIT — parameters available for each of the 16 parts.	
Volume	Pan
MIDI Channel	Note Shift
Part Tune	Bend Range

so you'll need some sort of adaptor to connect the MU5 to the outside world. Lastly, all custom settings are lost when you power down (unless you keep a set of batteries inside the machine even when you're using mains power).

IN USE

Fiddliness aside, using the MU5 is fairly straightforward. The onboard keyboard is surprisingly useful and offers a novel way of getting notes into a sequencer, making this little box especially relevant to the mobile musician with a laptop computer. Selecting patches can be a bit fiddly, so if you can, it's probably best to choose patches and set volume levels and pan positions from within your sequencer.

Testing the MU5 with a variety of MIDI Files produced pleasing results, and I marvel that Yamaha are able to produce such a big sound from such a small box. Basic sample quality is good, if not stunning, and most deficiencies, including the occasional buzzy loop, background

YAMAHA MU5 £249

PROS

- Compact, portable and battery powered.
- Computer interface.
- 28-voice polyphony.

CONS

- A bit fiddly.
- Sound set a little restricted.

SUMMARY

If you don't mind the very limited editability of the MU5's sounds and the fiddliness of the buttons, whether you're on the road, on the desktop or in the studio, it offers an accessible collection of good-quality GM sounds.

noise and noticeable crossover point, are masked during a performance.

Budgetary restraints show up in the waveform ROM, where several waveforms do double and triple duty. For example, programs 49: Strings 1, 50: Strings 2, 51: Syn Str1 and 52: Syn Str2, all appear to use the same basic waveform, with a little filtering to provide a different feel in each case. The same goes for 58: Trombone and 59: Tuba (the upper range of both is identical), 73: Piccolo and 74: Flute, and 79: Whistle and 80: Ocarina. Examples abound of the MU5's resources being stretched, but in general, Yamaha have been rather clever in producing 128 different programs from a limited collection of waveforms.

CONCLUSIONS

The market for the MU5 is potentially large, given its reasonable price. If you're on the move, adding a battery-powered MU5 to a laptop computer equals instant music making, with sophistication limited only by your sequencer. The budding desktop musician will also appreciate the low price and small footprint, not to mention the built-in computer interface and functional, if tiny, polyphonic keyboard. Still others wishing to add basic General MIDI capabilities to their system at minimal cost will also do well to cast a glance in the MU5's direction. It must be admitted that the MU5 is rather stripped-down in terms of facilities, but at under £250, who's complaining? SOS

FURTHER INFORMATION

- E** MU5 £249 inc VAT.
- A** Yamaha Kemble Music (UK), Sherbourne Drive, Tilbrook, Milton Keynes MK7 8BL.
- T** Product info line 01908 369269.
- F** 01908 368872.



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Roland GI-10

Guitar MIDI Interface

PAUL WHITE packs away the keyboard and plugs Roland's new Guitar-MIDI interface into his sequencer.

Man has always had visions — to fly like the birds, to walk on the moon, to make a guitar synth that tracks properly... Well, I guess two out of three isn't bad! Even the best guitar synths still need to be played with care.

stable, predictable and free from delay as pitch-tracking guitar synths are likely to get. While it seems that guitar synths are always destined to be somewhat of a technical compromise, you can play things on them that would be quite impossible on a keyboard, such as subtle bends and vibrato on individual strings.

In an attempt to make guitar synthesis even more accessible, Roland have just launched the GI-10, which, as far as I can see, is the pitch-to-MIDI side of a GR09 without the internal synth section. Not having an onboard synth naturally makes the price lower, but then this assumes you

who had to take up playing keyboard in order to gain access to all those wonderful synth and keyboard noises. With a guitar synth or pitch-to-MIDI converter, guitar players get to use all the neat sounds without having to learn to make their fingers go in directions they're not used to.

Almost any guitar will work with the GI10, but you can't just plug it in and go — you have to fit a GK2 series divided pickup first, so that each string can control its own synth voice. You can buy the pickup separately, for £129, or, alternatively, Roland are currently selling the GE-10 in a bundle with the GK2A for £549. Even so, the total cost is very attractive considering what it enables you to do.

Unlike the GR09, the GI-10 includes an audio input, so that any suitable monophonic instrument can be miked up



but no company has worked harder than Roland to make the guitar synth a manageable and viable instrument. Last year we saw Roland's GR09, arguably the best-behaved pitch-tracking guitar synth on the market, and though sloppy or over-ambitious playing can cause it to throw the odd wobbler, it's about as

have a MIDI sound module lying around somewhere. In reality, few guitarists are going to discover a hitherto neglected Sound Canvas tucked under their bed, but the home studio owner with a MIDI setup can just plug in and go. And that's where it gets really interesting, because many MIDI users were originally guitar players

and used to drive a MIDI synth. How successfully this works depends on the sound you feed into it, as I'll explain later.

HARDWARE

Housed in a half-rack case and powered by the familiar lump on the carpet, the GI-10 is an absolute doddle to operate. There are only around a dozen parameters to set up, all of which are printed onto the front panel, next to their corresponding display character. The display itself is a simple 3-digit affair, so this kind of on-panel information is very important. The only controls are buttons for Parameter +/- and Value +/-, and once you've set the interface to suit your synth and playing style, you just leave it alone.

An effective built-in tuner is provided, along with jack inputs for a Hold switch and an expression pedal, the latter of which may be used to control synth volume or vibrato depth. MIDI In and Out jacks are

HOW DOES IT FEEL?

Once you've got the GI-10 plugged in and talking to your synth modules, it takes only a few minutes to set up the sensitivity, after which you can sit back and try out a few patches to see how they respond. Even with the optimum sensitivity setting, it's still important to play cleanly, otherwise the unit may mistake you lifting your fingers off the strings as an intentional pull-off, which can sound messy, particularly on percussive sounds, such as piano. As with the GR09, triggering delay isn't a serious problem, and the majority of any delay you can hear is likely to be due to your MIDI module rather than the GI-10. Pitch tracking is very accurate, even when you're performing

bends and slides, but it's important to resist the temptation to strike harmonics off the side of your thumb as you pick, because this can fool the system on occasions.

If you're using the unit with a sequencer, it's important that your system has a mode that lets you record on six different MIDI channels at the same time (one channel per string). Editing can also be a bit of a problem, because the notes you see in the edit list aren't necessarily the ones you played. This is due to the extensive use of bend information to handle slurs and hammer on/off's, so if you want to create a printed score from your performance, you may have to do a spot of fiddling up after you've recorded a part.

fitted, but no Thru. However, you can switch the unit to pass MIDI In data directly to the output, which enables you to leave the GI-10 permanently patched into a system, even when you're switching between keyboard and guitar.

Setting the unit up includes matching the pitch bend range to that of the external synth (a range of 12 is ideal for guitar synths), and making sure that the six MIDI channels (consecutive only) are the ones required by your synth module. A few other tweaks are all that's needed to match the sensitivity to your playing style. You can also opt to use a single synth in Poly mode, but this doesn't allow you to make full use of pitch-bend, hammer-ons or slurs. That's because hammers and slurs are also created using pitch-bend information, so if you choose to work in poly mode, it's best to play cleanly, simply and to re-pick every new note rather than rely on hammering or pulling off.

SUMMARY

As pitch-tracking guitar systems go, this one is about as close to perfection as we're likely to get without another quantum leap in technology. Clean playing is rewarded by delay-free tracking, and bends and hammers are faithfully reproduced over MIDI, but you can't just play as you

would on a regular guitar, because fast strumming isn't handled very well. Additionally, fast mandolin-style trills can cause missed notes. Nevertheless, if you think like a keyboard player, and play in a way that's appropriate for the sound you're using, then you can have a lot of fun. And if your MIDI module will allow you to set up different sounds for each of the six MIDI channels you're using (and most multitimbral modules will), you can experiment with different sounds on different strings.

The monophonic pitch-tracking mic input is slightly less of a success story, and I found it virtually impossible to track the human voice correctly, unless I stuck to a very pure tone with clear stops and starts between notes. I had a little more success trying to get it to follow my daughter's recorder, but on balance, I don't think this is a facility you'll come to rely on, unless you want to turn the spoken work into avant-garde jazz!

Until now, guitar synths have demanded a great leap of faith on the behalf of the buyer, a leap that many guitarists were unprepared to take, but now that the technology is less expensive and more reliable than ever before, that leap is starting to look more like a hop. If you haven't tried a guitar synth for a while,

ROLAND GI-10 £450

PROS

- Simple in operation.
- Accurate, delay-free tracking — provided you play cleanly.
- Affordable.

CONS

- External mic input doesn't work too well on most normal sounds.

SUMMARY

The least expensive guitar-to-MIDI system Roland have yet produced, with a performance to rival their top-end guitar synths. However, you do have to budget for a sound module as well.

give the GI-10 a spin — I think you'll agree that guitar-to-MIDI conversion has come a long way.

SOS

FURTHER INFORMATION

- E** GI-10 £450; GK2A pickup £129; GI-10/P (bundle containing GI-10 and GK2A pickup) £549. Prices inc VAT.
- A** Roland UK Ltd, Atlantic Close, Swansea Enterprise Park, Swansea, West Glamorgan SA7 9FJ.
- T** 01792 702701.
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Dave Ward photographed in front of the Gateway School.

Top of the CLASS?

Though there's now no shortage of recording and music technology courses available, the situation was rather different 20 years ago, when the Gateway School was first established. PAUL WHITE talks to pioneering co-founder Dave Ward about almost a quarter of a century of audio education.

Gateway — 20 Years of Audio Education

The Gateway School of Recording and Music Technology has come a long way since its small beginnings as a back-street studio in 1975, but as founder Dave Ward is keen to point out, there's still a lot of work needed before mainstream education gives the subject the support it deserves. I tracked Dave down at the campus of Kingston University, where I began by asking him to recount the school's beginnings, 20 years ago.

"Most of my young life was spent as a singer, mainly on the folk scene, and in 1975 myself and a few friends started the first Gateway studio, above

a chiroprapist's in the centre of Balham. This was when the first TEAC 4-track open-reel machines became available. The idea was to use the studio for songwriting, but it got completely out of hand and became quite a popular little studio. What most people didn't know was that the whole studio was run from a 5p electricity meter because the landlord wouldn't let us have a proper electricity meter. Every morning, before a session, we used to have to run out to the bank and get a bag of five-pence pieces!"

How did you make the transition from offering recording services to teaching recording as a subject?

"That happened much later. We were in Balham for three and a half years when we had the opportunity to take over a derelict studio in Battersea. We'd grown to 8-track by the time of the move, and upgraded again to a 16-track Soundcraft recorder and one of the first Soundcraft Series B consoles. The studio was much bigger and it was a luxury being able to monitor properly."

I imagine that you were learning new things about recording all this time?

"Yes — there was no training in those days, and at that time there wasn't as much good advice coming from magazines as there is now. So we had to formulate our own ways of understanding the technology from a creative perspective. The school idea developed from musicians and producers asking us what we were doing during sessions — it got to the stage where we were spending more time explaining the recording process than recording music.

"We went on to start some evening courses at Battersea Arts Centre, and Dave Dearden, who was then with Soundcraft, lent us a little Soundcraft demo unit comprising half a dozen 2400-series input modules and a couple of output modules. From there the courses developed, and we opened up a room above the studio in Battersea and turned it into a proper school room. At that time we had a lot of help from the Turnkey

organisation, which was then run by Andrew Stirling and Ivor Taylor. When the new Fostex 8-tracks first came out we used these, along with a little Fostex mixer, to run the first courses."

UNIVERSITY CHALLENGE

Probably the biggest step for you was moving to Kingston University, which gave you a chance to put your teaching methods into practice on a much larger scale.

"Eight years ago we were closing down the main studio in Battersea because the lease had run out and it wasn't practical to renew it. We were talking to

several people, including various manufacturers, about the possibility of building a bigger school somewhere, and it turned out that Kingston University had a studio built, but because of funding problems, they couldn't afford to equip it. Andy Smith, who was the Faculty Technical Officer, came on a Gateway course, saw what was happening, and suggested to the authorities that we work in partnership with them.

"We got together with Professor Edward Ho, Head of the School of Music, and within four months had moved the entire operation onto their campus. We helped the School of Music put together a new stream of their already very popular music degree, which would incorporate music technology. Gateway staff teach the music technology components of the degree and the teacher training courses. The Gateway-accredited qualifications came a little time after that, when we put all the courses through the University's validation system, and successful students on our one-year course now receive a Kingston University diploma."

How much help did you get from the industry at that time?

"We got huge amounts of help from the manufacturers, and none of the work that we are doing would be possible without the help of such people as Harman, Soundcraft, Soundtracs, Ampex, Shuttlesound... the list seems endless."

But your one-year course is not just to do with recording skills?

"No — the course has four main areas: the recording technology; music technology (which includes all the sequencing, sampling and hard disk recording technologies); music and business studies (which encompasses copyright, contracts, and basic business skills); and the fourth part, which we call complementary studies, which looks at the communication skills needed for working in the music industry, and also areas like studio management and studio etiquette."

One of the advantages of working at Kingston is that your studio includes a very nice performance hall, which gives you the opportunity to record full orchestras in addition to pop groups...

"Because the University orchestras and choirs are rehearsing there all the time, everyone has the opportunity to multi-mic an orchestra, choir, string quartet, big jazz band and many other combos. We're setting up a system now where Gateway students and School of Music students are working together recording the orchestra onto DAT, adding discrete reverb, but also logging the bar positions so that the conductor can ask for a replay. That means that the students have to learn something about the score-reading process and the communication skills necessary for working in recording."

In recent years you've started to diversify, so that instead of just looking at studio recording, you're getting into all the mainstream areas of audio.

"When we first started the school, the manufacturers were the first people to take advantage of our training — we still train the staff of many of the main manufacturers and distributors in Europe. We've always done quite a lot of work relating to sound for film, and all our teaching rooms are synchronised, for working to picture. The new

multimedia areas require a lot of study and we'll be working in those areas later on. There seems to be this myth that there will be some kind of multimedia person in the future who will have all the skills to be able to do the graphic design, the layout, the animation, the programming and so on — but it's just a myth. What we're looking at is bringing teams of people together with all the different skills, so that the learning process will be more about teamwork and about having an overview of each other's processes.

"We're also going to be running courses for company managers who need to know something about multimedia before they invest in expensive development programs."

How do your teaching methods and ideas sit alongside those of the traditional teaching establishment? I understand that you played a part in getting music technology recognised as a part of the National Curriculum.

"That was some of the work that we did within the MIA as the National Curriculum was being developed, and it was nice to be part of the advisory process. Also, as a director of the Association of Professional Recording Services, I was involved in the setting up of National Vocational Qualifications — there's now quite a good set of NVQs, which were written mainly for the Broadcast Organisations through an organisation known as Skillset. There'll be quite a bit more publicity about those in the coming months."



THE FUTURE FOR TRAINING

Which way do you think music technology education ought to go in schools, given the limited resources and lack of training time?

"The creative possibilities of music technology in schools has all kinds of benefits for the pupil, but the main things that are going to hold it back are the physical resources (money), and the fact that teachers don't have the time or energy to spend on the training they need. Music is a core subject up to the age of 14 at the moment, and composing and performing are such big parts of the curriculum that technology has an enormous part to play. But this potential won't be realised until it's resourced properly. There are also huge cross-curricular benefits from music technology, because students don't just learn about music — they gain familiarity with computers, they learn to

Dave Ward with composer, musician and Gateway studio partner Mick Parker, in the school's main teaching room, with the new Soundcraft DC2000 desk.

20 Years of Gateway

- ▶ organise data and to develop mathematical reasoning. Just within a simple explanation of how a microphone works, a teacher can cover subjects such as electromagnetic induction, dynamos, power stations, the effect on the environment, and all kinds of things. It all seems so obvious that I can't understand why the educational decision makers haven't seen it.

"It's interesting that, already, a lot of employers in industry now seek to employ people who have musical training, because musicians are likely to have developed their communication skills as well as their logical skills. The value of music in schools is, on the whole, vastly underrated."

When you started out, you were teaching people who wanted to know about the recording process, but now you find yourself in the position of teaching and advising other teachers.

"One part of the work that I'm doing is developing in-service training for teachers and encouraging the industry to take part in that. Unfortunately, it's difficult when the government doesn't

provide the funding or allow the teachers the time for adequate training. In other parts of the world, we're working with organisations, helping them set up their training procedures in recording techniques. We were recently in Singapore talking to the distributors and manufacturers about the need for training. I've just returned from Finland where we've been working with the Sibelius Academy, setting up their courses for recording engineers and producers. A lot of the

training we do is not for people who want to find a job in the recording industry — there are musicians who now need to know much more about the whole recording process so that they can develop their creativity, and increasingly record company staff are needing to keep up with the technology. Gateway has always developed in line with evolving needs, which is why we are now setting up courses in broadcast and live sound."

Is it true that your emphasis has now shifted from straightforward teaching of the subject, to teaching people how best to learn in a rapidly changing technical environment?

"Yes, we tend to put emphasis on the learning process rather than on the teaching process. One of the lectures I gave at the Sibelius Academy was entitled 'Too Much Teaching and Not Enough Learning'. The one constant that we know in the Universe at the moment is change. We need to teach people how to cope with change for the rest of their lives. Often it's the perceived rate of change that sets up the fear and stress patterns that cause people to resist change and be frightened of the learning process. For example, a school music teacher might suddenly be given a 4-track recorder on a Friday night and be told to use it in a lesson on Monday morning."

Where do you plan to take Gateway next?

"At the moment, because of all the new courses that we want to bring in, we're modularising our course material, which will make it easier for us to construct new courses very quickly. Within Gateway, I'm also developing stress management courses for the Arts Industry and other courses that help people express their creative potential. This is part of my work which is not so well known, and it goes hand in hand with helping people deal with new technology in industries other than the music industry. I'm currently developing a training course for trainers in music technology. This course will be available internationally for those people and organisations who have the expertise but not the training skills."

It seems as though there's a lot of very serious educational theory put into practice at Gateway, but I assume that you still run courses for those who just want to spend a few days learning how to record better music in their home studios, as well as for those looking for full-time musical careers?

"Absolutely. We have one-week courses, weekend courses and one-month courses running all through the summer. Although I talk a lot about the theory of education, it all comes back to our original concept, which is that learning has to be fun, and unless you can actually enjoy learning, you're not going to learn efficiently."

SOS

FURTHER INFORMATION

- A** Gateway School of Recording, Music Technology and Music Business Studies, c/o The School of Music, Kingston University, Kingston Hill Centre, Surrey KT2 7LB.
- T** 0181 549 0014.



Dave in the original Gateway school in Battersea, c.1984.

THE PHILOSOPHY OF TEACHING

Where does your teaching theory come from? It doesn't appear that teaching is a direction you originally intended to go in.

"Not long after we started teaching, a lot of our students asked us why it was that they had learnt more from us in 10 minutes than they had from their physics teachers in two years. I was trying to figure out what it was we were actually doing, so I went off and studied humanistic psychology for five years, training with the Psychosynthesis and Education trust. This work became the basis for many of our teaching techniques. What it comes down to is giving people the big picture of what's going on before you give them the detail. On a lot of courses, teachers start filling a board full of mathematics and equations before the students have a sense of where the mathematics might fit into the picture. Another important aspect is that we have a policy of making the learning process comfortable and fun. I don't know who wrote the rule that says learning should be frightening and a drudgery.

"Over the years we've taken on board the work of a lot of other pioneering people in the education and training field, such as Colin Rose from Accelerated Learning Systems."

You've mentioned Accelerated Learning in the past; what is the theory behind it?

"It's a very eclectic system that brings in lots of theories — one of the interesting angles is based on the work of Howard Gardener, who is Professor of Education at Harvard. He says that we don't have just one intelligence but several. We're familiar with the verbal/linguistic intelligence and a mathematical, logical intelligence, but there's also a spatial intelligence which allows you to learn by pictures and by interconnections. Then there's musical intelligence, which includes making up rhymes — it's well known that if you have a big list of things that you need to remember, it's easier if you can turn them into a rhyme or song. On top of that, there's interpersonal intelligence, where you have people discuss things between themselves; as we discovered, if we want to understand something better for ourselves, the best way is to try to explain it in very simple terms, to someone who has no knowledge at all of the subject. Then there's kinesthetic intelligence, which all Gateway teaching pays a lot of attention to — learning by doing. Our courses tend to be 50% experiential and 50% theory. Finally there's intrapersonal intelligence, which is inner reflection — taking the time to review for ourselves exactly what it is that we've been trying to learn. We also learn not just with our minds but also through our feelings, and this is very important in the learning process."

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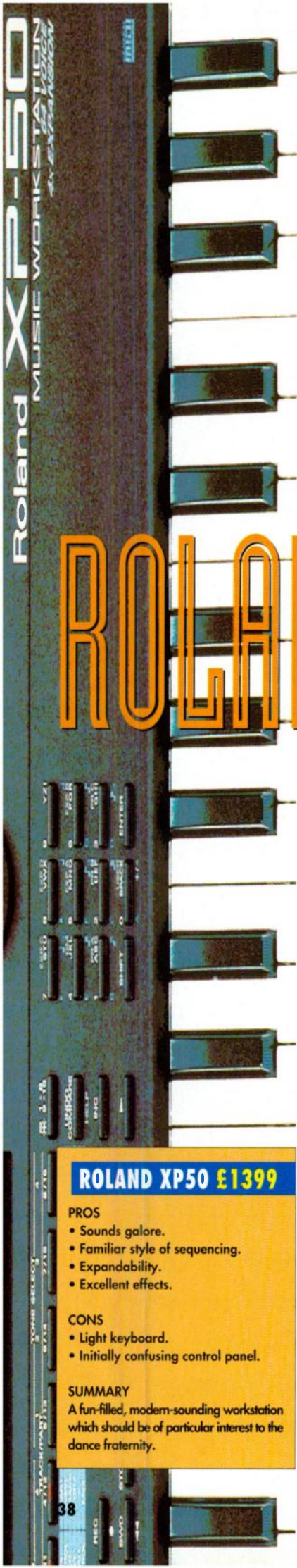
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S300

TANNOY



Launched at the Winter NAMM show this January, the XP50 is Roland's latest workstation, an instrument whose ancestry can be traced back not just to the JV1080 module, with whom it shares a sound engine, but to the JV1000, JV80, even the JD800 — even the D50, for heaven's sake. The XP50 is not in the advance party of new Roland technology; the XP50 is a new presentation of a well-loved theme. Even the murderous user interface and owner's manual have a cosy, familiar feel to them.

WHAT IT IS

Roland synths are so often wonderful but slightly annoying, in my book (though I've bought a large number of them over the years, so I guess the former, in the end, always wins out over the latter). We'll kick off in upbeat mood with the wonderful first: sounds. Not only have you got 'em by the sackful, you've got 'em good, and you've got 'em on-going, in terms of being able to slot in up to

modelling technologies, PCM might seem like dull fare. But not a bit of it. The larger part of these patches are bright, fresh, lively, and inspirational in true Roland fashion.

If I simply enumerated the XP50's patches, that alone would take up a fifth of this review (hey, that's not a bad...), so we're going to have to be thematic here. Fortunately, there is a thread that runs through the programming, if not the actual waveform ROM, and that thread is edgy, ambient, techno, rezy, squelchy patches, begging for space on your next megamix. This is exceedingly smart thinking on Roland's part, because on the other side of instrument, we have what some people feel is the claustrophobic world of General MIDI, where all pianos, gunshots, applause, and fretless basses are created equal. Marrying up this immediate, highly useful but standardised GM set with the wacky and weird then balances out the instrument perfectly.

Instrument? Did I say "instrument?" Nay, this is no mere instrument, milad, this is a workstation

ROLAND XP50

MUSIC WORKSTATION

Roland's latest attempt to part you from your savings boasts no less than 1700 patches, a well-specified sequencer, comprehensive effects section and expandability via Roland's popular wave expansion boards. JULIAN COLBECK takes it for a spin.

four SR-JV80 wave expansion boards, offering both new waveform and new patch data, and taking the instrument's tally to more than 40Mb of waveform ROM and more than 1700 patches.

Like the JV1080, the XP50 incorporates Roland's new 32-bit RISC chip (Reduced Instruction Set Chip), to which can apparently be accredited the instrument's ability to process large amounts of data fast, a factor that manifests itself in real-time control over effects, and being able to haul around large amounts of sequence data without going all limp and soggy. So we like the RISC chip.

The XP50 is a PCM sample + synthesis instrument — in other words, a synth that uses sampled sounds as its waveform base but which processes sounds in (subtractive, analogue) synthesis style. In these days when everyone's busy peering over everyone else's shoulder to get a better view of the latest physical



— correction, Music Workstation, for those who might otherwise have felt it might be a knitting workstation. The analogy is not entirely random, mind you — the 16-track MRC sequencer is interwoven into the fabric of the XP50 to such an extent that any operation more complex than increasing the volume seems to require fingers and wits of an ultra-nimble persuasion. Intuitive was certainly not the first word that sprang to mind.

The first word was, in fact, "light!" The XP50 weighs in at a flighty 9.2kg, although it has a full 61-note keyboard, disk drive, and internal PSU. The physical design can hardly be called radical but it's pleasant enough, with its little ribbed edges at either end of the control panel. The display screen is small, though, by current standards, and the mass of buttons and switches below it, frankly, a mess. Many of the controls are dual function, some require the addition of the shift key, others a second bank key, some work only when others are on, or off, some are just bizarrely named. To complete this small selection of annoyances, we come to the keyboard itself. This is velocity (including release velocity, which is a splendid feature) and aftertouch

ROLAND XP50 £1399

PROS

- Sounds galore.
- Familiar style of sequencing.
- Expandability.
- Excellent effects.

CONS

- Light keyboard.
- Initially confusing control panel.

SUMMARY

A fun-filled, modern-sounding workstation which should be of particular interest to the dance fraternity.

sensitive, but its weight and travel is just not up to Roland standards. Play these sounds from a decent keyboard and they feel £1000 more expensive.

Completing the physical, from the far left of the control panel protrudes a DD/HD disk drive, beneath which are master volume and a pair of assignable sliders. Beneath this is a multi-function pitch and mod lever which has been given a deeper travel than on recent Roland synths. This works well, and gives you a far greater feeling of control when adding vibratos and the like. Since you can also manipulate effects using the mod lever, this improvement is most timely.

SOUNDS & PROGRAMMING

If you are familiar with Roland JV-type synths of recent years, you can skip the next paragraph, but for those who are not, the XP50 organises its sounds thus: a Tone is the smallest part of a sound — a mini-synth if you like, complete with its own waveform, amplifier, and filter, and accompanying envelope generators

evident from the stream of sweeping resonant filter patches, gate-effect-type jiggery pokery, psychedelic flanging and phasing, and Lord knows what else. It's a real multi-coloured, fun-lover's instrument.

By now you might be thinking, 'yeah, but I bet it's going to be a real headache to program.' Strangely, it's not. Although I'd cheerfully throttle the bloke who designed the front panel, the internal layout, and sound tweaking in general, is surprisingly clean and clear-cut. If you just want to do a bit of customisation, try removing Tones from, or adding them to, a Patch. There are four Tone buttons that you can select or de-select quite painlessly. Almost as painlessly, you can slip into edit mode and substitute the odd waveform. Being able to effectively solo constituent parts of a sound so quickly takes a lot of the headache out of programming.

For the few smart Alecs who really do know what they're doing in programming terms, there is considerable fun to be had. The Structures, of which there are 10 types to choose from, set the style of

BASIC SPECIFICATION

- Keyboard: 61-note, velocity and aftertouch sensitive.
- Polyphony: 64 tones.
- Multitimbrality: 16-part.
- Patch Memories: 640 preset (including GM set), 128 user.
- Performance Memories: 96 preset, 32 user.
- Drumkits: 10 preset (including GM kit), two user.
- Sequencer: 16-track, MRC Pro/SMF (0/1 format), 20,000 note capacity, one song.



(3), plus a pair of LFOs. What you play, though, are Patches, which can be constructed using up to four Tones, combined in a number of ways. These 'ways' are called Structures. For multitimbral use, the XP50 employs Performances, in which Patches or drumkits are then slotted into what are called 'Parts.' This might sound a bit hairy in print, but it's a good system and one that has now been tried and tested to varying degrees on everything from a Sound Canvas to a JD800.

Now for polyphony. Again, those familiar with the system know the pitfalls. For the rest of you, be aware that 64-voice polyphony could perhaps more accurately be described as 64-Tone polyphony. Since Patches — the things you play — frequently use several Tones, your polyphony on a given Patch could be as little as 16-voice. And we're not even talking multitimbral yet.

Flipping through the XP50's Patches is an overwhelming experience. Thank goodness my review model didn't come fully loaded with the new SR-JV80-06 Dance Expansion Board (jointly produced by Roland and AMG) and its siblings, or I'd never have got this review underway. The XP50's power is

your Patch, since they define which, and how, Tones are combined. Structure Type 1, for instance is very straightforward: two Tones run in parallel, in a waveform through filter to amplifier chain. Type 8, on the other hand, finds the Tone 1 (and Tone 3 if used) waveform through filter to amplifier chain ring-modulated with the Tone 2 (+4) waveform; the resulting waveform is then processed through Tone 2's filter and amplifier. Here, then, there is interaction between Tone groups, with appropriately complex-sounding results. Some structures use a ring modulator as this link, others, what Roland call a 'booster,' which overdrives the incoming signal, producing amp distortion-type effects.

The next most critical decision comes in choosing waveforms. On a standard XP50, these range from acoustic piano samples — full samples to thumps — to electric pianos, D50 waves, organs, component parts of electric guitar sounds, basses, through wind noises, string scrapes, hits, plucks, tinkles, crashes, to a vast army of unadulterated percussion samples. Within Internal banks A and B, there are some 450 nuggets of sound to choose from.

The signal path from the waveform will be

ROLAND XP50

► familiar territory to anyone acquainted with analogue-style synthesis, which is not to say there aren't plenty of interesting lay-bys and side turns along the way. Amongst these are frequency cross modulation, numerous variations on the 'tone delay' theme — including 'playmate', which helps tie the delay time to your current style of playing, and clock sync, which lets you delay tones in time with a sequence, velocity controllable pitch envelope, high/low/band pass and peaking resonant filter options, and synchronisable LFOs. The envelope generators are Time Variant, Roland's four-stage time and level types — never the easiest to work with, but by now we're all kind of getting used to them. As mentioned, there is a separate envelope generator for the pitch of a note, its tone, and its volume. Powerful stuff.

SEQUENCING

Concentrating on the XP50 for pure sound programming would miss the point of this instrument, though, because it is designed, and I'm sure will be used far more often, as a workstation housing sounds that people will leave largely unaltered.

And so, without further ado, to the sequencer. Roland are one of the few companies which continue to tread the now-lonely path of the hardware sequencer. As an MC500 user myself (if nowadays only for on-stage use), I can fully understand. Roland's MRC-system sequencing offers that wonderful mix of enough power to do what you want, without so much control that you never get anything finished.

If you know the MC500, there are enough similarities in terminology and systems to make you comfortable with the XP50's sequencer. However, understanding how this sequencer works, physically, I found rather more difficult. The reason is the front panel layout once again — plus certain annoying little factors such as a metronome that works independently of the sequence. In other words, when you switch it on, off it goes, and even when you press Stop after you've finished a take, the metronome keeps tapping away until you switch it off again.

When you're working on a sequence, you slide the XP50 into Performance mode (Performances, as you may remember, house batches of Patches, slotted into Parts, that can be arranged multitimbrally). Out of the box, Roland provide a number of Performances named and styled for certain types of recording — Big Band set, LA Ballad set, Ambient set, and so on. There are 64 preset Performances, in fact, and just 32 locations in which you can write and store your own. Having made sure to marry up tracks and Parts so that the sound you're playing will be the sound you record, you can now begin basic recording in either real time or step time.

As I said, it's the button pushing rather than the sequencer itself that I personally found quite tiresome. For instance, when you stop recording, pressing STOP simply halts the proceedings. If you want to go back to the top, you have to press the SHIFT plus BWD (backward) button. Pressing the BWD button alone merely nudges you back a few ticks, or bars if, like me, you first of all drill at the wretched thing like a woodpecker because you can see no other obvious method of returning to the beginning of your sequence. By the time you've done this a few squillion times, plus toggled the metronome on and off... well, I've said my piece.

But it's not all gloom and doom, by any means. You have an endless array of time signatures to record in, you can overdub, punch in and out, you can set up loops, you can vary count-ins, you can erase on the fly... You can also record items called Phrases, which, as you'd expect, are snippets of parts that you can subsequently initiate direct from a pre-

MULTI-EFFECTS

SINGLE

- Stereo EQ
- Overdrive
- Distortion
- Phaser
- Spectrum
- Enhancer
- Auto wah
- Rotary
- Compressor
- Limiter
- Hexa chorus
- Tremolo chorus
- Space-D
- Stereo chorus
- Stereo flanger
- Step flanger
- Stereo delay
- Modulation delay
- Triple-tap-delay
- Quadruple-tap-delay
- Time-control-delay
- Voice-pitch-shifter
- FBK-pitch shifter
- Reverb
- Gate reverb

IN SERIES

- Overdrive->chorus
- Overdrive->flanger
- Overdrive->delay
- Distortion->chorus
- Distortion->flanger
- Distortion->delay
- Enhancer->chorus
- Enhancer->flanger
- Enhancer->delay
- Chorus->delay
- Flanger->delay
- Chorus->flanger

IN PARALLEL

- Chorus/delay
- Flanger/delay
- Chorus/flanger

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Dennis Miller. *Electronic Musician Nov '94*

"Soundscape is one of the few digital recorders that permits recording while chase locking without an expensive hardware add on to control it's sampling rate. The SSHDR1 currently provides the most cost effective solution for this application."
Jim Aikin. *Keyboard Nov '94*

"The quality of the converters seems particularly high; I couldn't detect any coloration when comparing recorded material with the original. A lot of effort and care has been devoted to this crucial side of the system."
Dennis Miller. *Electronic Musician Nov '94*

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Eddie Ciletti. *EQ Feb '95*

"Everybody reported that their system had never crashed and that they had never found any bugs, not even on preliminary alpha or beta versions ..."
Paul Tinggen. *User review for Audio Media Dec '94*

"Soundscape does offer everything that you could want from a professional quality hard disk recording system ... it is cheaper, more powerful and more stable than many similar systems. But most of all it is so easy to use, allowing you to concentrate on the music."
Philip Moore. *Australian Digital Mar '95*

"Having used Soundscape for three months in post producing audio for corporate programmes mastered on Betacam SP, it is now unthinkable to return to the old way of working ... Soundscape is reliable, simple to learn, easy to use and produces very high quality results."
Nic Blinston. *Business Video Mar '95*

"Soundscape could well find it's way replacing the analog tape recorder up and down the country ... a welcome addition to any studio set up for the sheer freedom it offers when it comes to laying tracks down quickly and easily in order to make the most of that creative muse."
Bob Walder. *Music Technology Jul '93*

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Brian Heywood. *MIDI Monitor Issue 11*

"I wanted to really check out the vari sync mode. I slowed the video down to a crawl, Cubase locked in and the sequenced music was playing slowly ... a bit faster ... and ... yes the Soundscape synced up and was recording. The SSHDR1 has lots of features, creative usage of available power, sounds great, syncs great, straightforward, easy to use and expandable."
John Zulaikha. *Connections Feb '95*

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ROLAND XP50

► assigned key on the keyboard. The idea, borrowed from home keyboard technology, is that you can add parts to songs in real time — a ripping brass line, a drum fill, and so on. The XP50 is not, I hasten to add, a home keyboard — there are no 'Styles'. The Phrase track concept is simply a way of spicing up your performance with or without the internal sequencer in tow.

Another nice feature, and one of my favourite aspects of the XP50, is its range of quantise options.



greater pitch-bend range than +2 on the guitar files, everything worked perfectly, instantly. The XP50 can accept data in both Type 1 and Type 0 formats too.

EFFECTS

And so to the effects. There are three independent effects processors, one dedicated to reverbs, one dedicated to chorusing, and one containing some 40 fully-editable effects algorithms. Though the effects themselves are extremely well presented, what impresses me most is being able to switch effects on and off, separately, directly from the control panel. Thank you!

It's probably easier to say what the multi-effects bank *doesn't* contain than what it *does* contain. Sure, there are reverbs, and delays, and flangers, but there's also the splendid auto wah; a minutely-detailed rotary program with specific upper/lower speaker acceleration and deceleration parameters; a Dimension D sound-alike; a six-phase chorus; overdrive; and, as mentioned, the excellent feature, for which I think we must thank that speedy old RISC chip, controllability of certain effects parameters, depths, speeds, and the like, from the modulation lever, or either of the two assignable sliders. Some of the 40 effects are multi-effects in themselves, some applied in series, some parallel (see box). Effects are applied per-patch until you're in Performance mode, when a Performance setup kicks in.

Speaking of kicking, the XP50 boasts no less than 10 drumkits, plus room to store a pair of your own making. Interestingly, the instrument does not limit you to what it thinks of as drum sounds. You are quite free to build up a kit by trawling the regular tonal waveform bank for likely suspects. Nice touch.

CLOSING WORDS

It's no secret that keyboard manufacturers, distributors, and retailers are still feeling the pinch somewhat. The problem is simply that we are not buying enough new keyboards. So who should at least be looking at the Roland XP50? Judging by the instrument's type and range of sounds, the XP50 must appeal to the ambient techno-inclined, who will surely love the samples, enjoy the wild yet controllable effects, and appreciate the street-level directness of MRC-style sequencing. Without wishing to offend, I would also imagine that such programmers, as opposed to players, will probably not object to the lightweight feel of the keyboard as much as an old piano player like myself.

I do have reservations (already voiced), but the XP50 offers a lot for the money. If you've got any, get down to your Roland dealer today and have some fun with it.



FURTHER INFORMATION

- £ XP50 £1399 inc VAT.
- A Roland UK Ltd, Atlantic Close, Swansea Enterprise Park, Swansea, West Glamorgan SA7 9FJ.
- T 01792 702701.
- F 01792 310248.

EXPANSION

The XP50 accepts SR JV80-01-6 wave expansion boards, housing waveform and program data. Currently available: Pop, Orchestra, Piano, Vintage Synth, World, and Dance. (There's no card slot, by the way.)

Although Grid quantise drags notes back into time, it can do so in percentage terms, so notes are progressively dragged nearer your set quantise value. Or you can choose Shuffle quantise, which effectively swings the whole framework of timing, the quantise factor, and is similarly alterable in percentage terms. All well and good, you say. Ah, but you can perform these manoeuvres in real time, actually as a sequence is moving along. Thus you can audition the effect of different quantise styles and percentages before you make an actual choice. This is both fascinating and extremely useful.

Editing is as in-depth as most of us ever need, from being able to record tempo changes, filtering out data, cutting, copying, and pasting, track merging (you can even merge all 16 MIDI channels onto a single track), and full microscope editing of every recorded event. Another useful sequencer feature is time fit, which allows tempo to be altered so that your sequence will 'fit' a specified length of time.

This sequencer does have some limitations, the most noticeable (to me) that you can have only one song loaded at a time. True, you can access songs direct from disk for playback, which redeems the instrument's gigger potential somewhat, but free cutting and pasting between songs in a recording environment would have been nice.

What is possible, though, is being able to access data written on older, stand-alone Roland sequencers like the MC500/MC50. I'm sure there are many people (me, for instance) who have disk boxes full of ideas stored on such formats, which are generally never cranked out because you work on a software sequencer. The addition of an XP50 to your armoury would then open up this treasure chest (let's be generous!) of old material. The sequencer also happily accepts Standard MIDI Files. Those who know my involvement with a certain piece of MIDI software that rhymes with "fiddly twits" will presume, correctly, that this was the first such third-party disk to be inserted. Aside from an initial difficulty in accessing a



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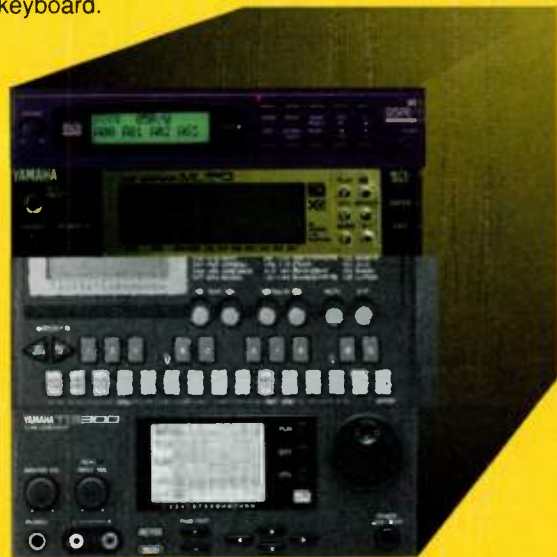
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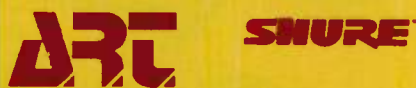
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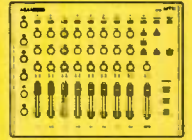


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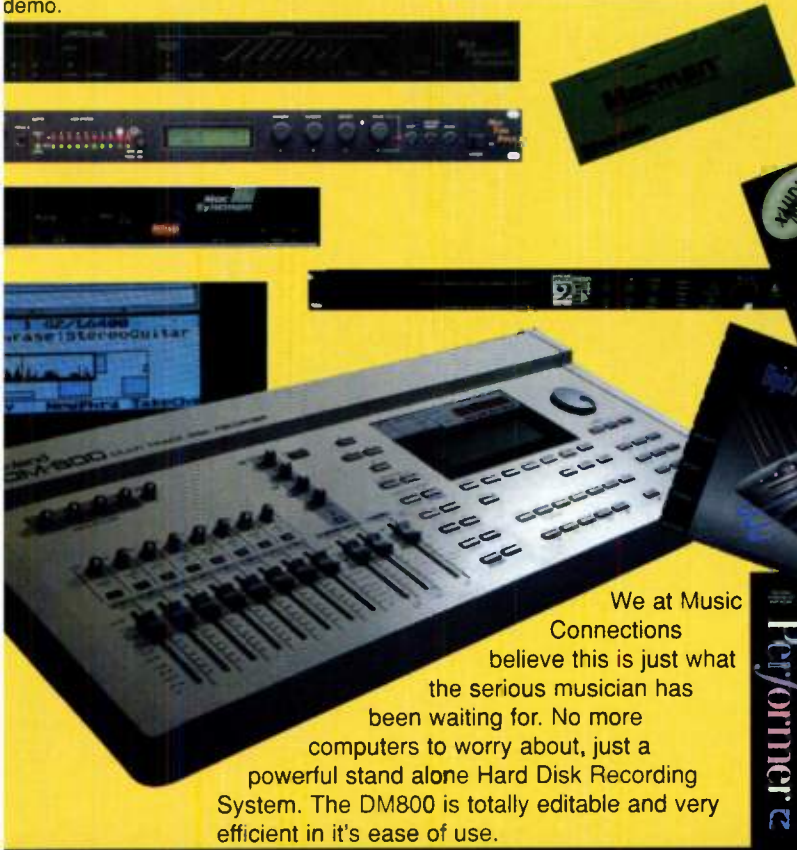
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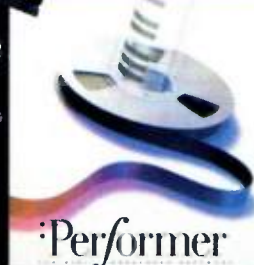


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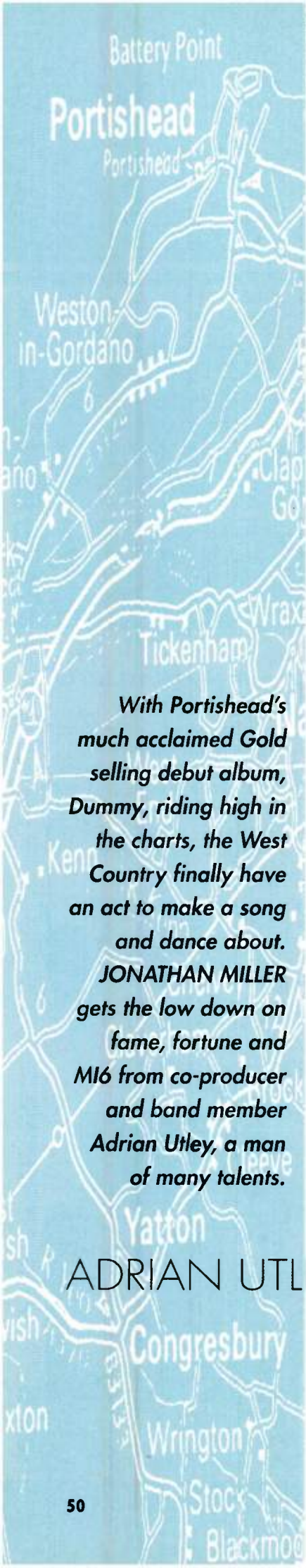
What can we say that hasn't already been said about this Mid Studio. This is the tops there is no other 8 track portastudio on the market today, and it is only available from Music Connections, but again were sorry to say we have very limited stocks of this machine left. The usual price on this recorder is £2599 our price £1795

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With Portishead's much acclaimed Gold selling debut album, *Dummy*, riding high in the charts, the West Country finally have an act to make a song and dance about. JONATHAN MILLER gets the low down on fame, fortune and MI6 from co-producer and band member Adrian Utley, a man of many talents.



Adrian Utley, photographed at Portishead Docks!

Until recently, Portishead was simply a name on a map — a deceptively mundane English town overlooking the Mouth of the Severn on the outskirts of Bristol. Previous claims to fame include residents Eddie Large, half of comedy duo Little and Large, and photographer Martin Elliot, responsible for the infamous bottom baring tennis-girl poster, adorning many a student halls of residence bedroom wall in bygone days.

An unlikely candidate for a band name, Portishead now rolls off music fans' tongues up and down the country, and beyond. It comes as little surprise to learn that Portishead is the former hometown of founder member 24 year-old Geoff Barrow.

Much media coverage has been directed at the Portishead nucleus of turntables man, keyboard 'dabbler' and programmer Geoff, and reclusive

vocalist Beth Gibbons. As a tape-op at Bristol's Coach House studios, Geoff befriended Massive Attack and graduated to occasional engineering work. This fortuitous connection led to work with Neneh Cherry, with whom he co-wrote three tracks for her *Homebrew* album; Tricky; Ride; Primal Scream; Sabres Of Paradise; and Depeche Mode, to name but a few.

However, it is 37 year-old guitarist, bassist, keyboard player, co-producer, co-writer and 'sound shaper' Adrian Utley who is arguably the group's unsung hero. As Musical Director, he is effectively the unofficial third full-time member of the Portishead project. Prior to a chance meeting with Geoff at Coach House studios, Adrian was an active session musician, relentlessly touring and playing alongside musicians of the calibre of guitarist Jeff Beck and saxophonist Dick Morrissey. At Coach House, he heard early versions of tracks that would end up on *Dummy* and made a brave

ADRIAN UTLEY • PORTISHEAD

AVON

decision to retire from session work and join Portishead. The rest, as they say, is history.

THE SPY WHO LOVED ME

Although 'Sour Times', the unusual top 20 single featured on *Dummy*, put Portishead on the road to glory, their first actual release was a 10-minute short film entitled *To Kill A Dead Man*, nominated for an award at The British Short Film festival in August 1994. National release supporting the likes of Quentin Tarantino's *Reservoir Dogs* and *Pulp Fiction* no doubt assisted in the credibility stakes. Based on an original idea by Portishead themselves, it features a score owing much to the work of '60s soundtrack supremo John Barry — obviously Adrian's passion for classic spy films rubbed off on Geoff & Co. This is further reflected on 'Sour Times' itself, with samples credited to Lalo Schifrin from *More Mission Impossible*, amongst others. And Adrian maintains that when Harry Palmer (Michael Caine) turns on the coffee grinder during the title sequence of *The Ipcress File*, it's in tune with the music!

SHOWROOM DUMMIES

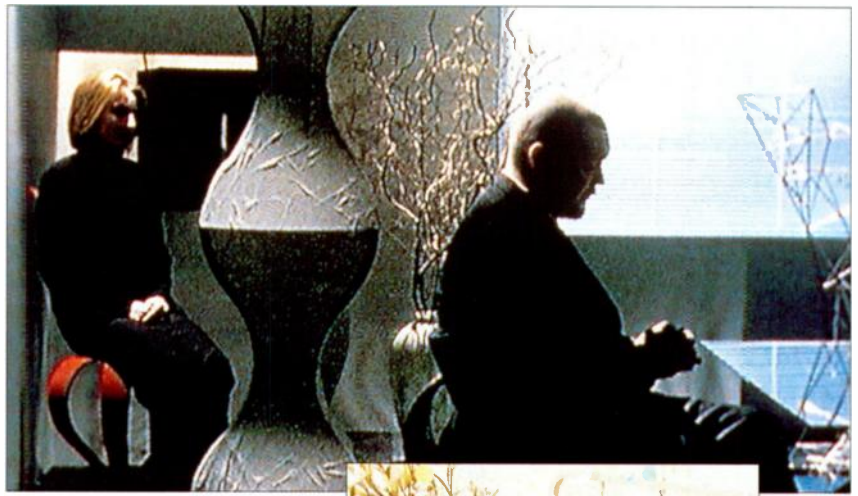
Dummy, once called "a '90s mix of hip hop beats, imaginary '60s film soundtracks and the scorching blues vocals of Beth Gibbons," has, to date, sold in excess of 850,000 copies worldwide since its release in August 1994, whilst the second single taken from it, 'Glory Box', sold a quarter of a million copies, both in the UK and the USA. Heavy rotation on MTV's *Buzz Bin* helped bring Portishead to the masses, as did an outrageous publicity stunt involving large-scale projections onto the M16 building on London's South Bank, *a la* Jean-Michel Jarre — it's that 007 vibe again.

I was lucky to speak with Adrian Utley, during a break in rehearsals for Channel 4's *The White Room* music show at West Way Studios in London, at a time when his career is about to go stratospheric. He recently turned down a direct offer from a certain internationally famous ivory-tinkling singer/songwriter to remix a track from his first album of the decade. Instead Adrian opted to pursue his first love of jazz, producing the comparatively unknown Flanagan Ingham Quartet. Here is an artist who is definitely not ruled by his wallet — increasingly rare in this day and age.

I'LL HAVE A BIT OF THAT

Comfortably ensconced in the sunlit surroundings of West Way Studio's outdoor restaurant, I began by asking about the aforementioned '60s fixation, with intentions of shedding further light on the unique and much sought-after Portishead sound. The group have even gone as far as sampling the sound of crackling vinyl to add to their tracks. Adrian:

"Sixties soundtrack music is a minute facet of



what we all listen to, but the sounds that we make are like that, so it will sound similar. For me, I love that kind of soundtrack music. *The Ipcress File* has been one of my favourite films for years and the sound of John Barry's orchestrations, in terms of voicings and the way they were recorded, is amazing.

"I don't suppose John Barry had much to do with the recording process, although I know that Ennio Morricone must have done when he did things like *The Good, The Bad And The Ugly*. I imagine from listening to the electric guitar on *The Good, The Bad And The Ugly*, which is such a disgusting noise when it comes in, that he must have got his hands on the amp, saying, 'I'll have a bit of that, whatever that is'. So it's the sound of soundtracks and the way they are recorded that I love."

Adrian agreed that Portishead had actively tried to emulate this style of music on *To Kill A Dead Man*: "We were into a bloke called Riz Ortolani at that time, who nobody's ever heard of. We picked up this cheap soundtrack album and it's probably a crappy film, but Geoff, Dave and myself like the sound of Italian soundtracks. I think they were trying to copy the American soundtrack stuff that was going on at the time. They hear Lalo Schifrin, Quincy Jones and people like that and then they do it in their own way, but all they've got is a Fender Rhodes and an echo unit. They haven't got masses of technology, so they record something really dodgy with that and then flip the tape over so it's backwards. It's really inventive, a little bit crap and just sounds really vibey. Also the Italian orchestras sound like they're half pissed, don't they? That's the appeal for me."

ORCHESTRAL MANOEUVRES

Dummy is not simply an electronic affair. Adrian is credited with the string arrangement on 'Roads', yet strings are not his forté: "We were helped by

Stills from Portishead's award-winning short film, *To Kill A Dead Man*.

CALLING

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► the string players on that, although it was in our heads. I do read music and used to do arrangements jazz-wise with horns and stuff, but I'm not very experienced with strings, although I want to be.

I'm not actually sure of the entire range of a viola, or what it sounds like in that range, or whether you can play it on a certain string, or whatever, but it is something I will be learning more about."

This prompted me to observe that ex-Tangerine Dream member Christopher Franke, now a successful soundtrack composer, has set up his composition software such that he *cannot* play outside the various orchestral instruments' ranges, before handing over to his own Berlin Symphonic Orchestra.

Adrian: "I might do something similar, because I'm going to get a Fender Rhodes at home to play on. I don't play keyboards very well, but I think piano is an incredible instrument to see it all on. I do like guitar,

but there's things you just can't do, like tight clusters. I did know an arranger who had the range of instruments written on the piano.

"It's a timbral thing. I know what would sound better on a guitar, bass and the instruments that I do know without hearing it, whereas with strings I could see that the viola goes from that note to that note and the player might be able to play harmonics if they're very good, but I don't instinctively know what that actually sounds like in an orchestration. I think that is only something you can learn by actually doing it, or by writing your arrangement and then going to a professional and saying, 'I want the violins to sound like Bernard Hermann and I want this kind of vibrato here'. I know the sounds that I want and they'd probably think, 'Christ, corny!'"

Bearing in mind the lucrative niche that the likes of Christopher Franke have carved for themselves, and the fact that the instrumental nature of 'To Kill A Dead Man' is obviously ideally suited to visual accompaniment, I wondered if Adrian had aspirations to conquer Hollywood: "It would be excellent. A few Hollywood people have picked up on Portishead stuff. I'd definitely like to work with films that are more sort of left-field. To do something like *Blue Steel* would be absolutely bloody excellent! But I couldn't possibly deal with something like *Star Wars* — God forbid! Something like a cop film would be cool, but I'd rather go for something a bit weirder. I'm not chasing the dollar, although we've all got to live."

SONIC IMAGES

I was particularly interested in the fact that Adrian was once described as a 'sound shaper', and asked him to expand on this theme: "The sound is worked on by our engineer Dave McDonald, Geoff and myself. The sound sources we use are very particular and very 'worked on'. For example, a synth sound from a Roland SH09, which is integral to a new track we've been working on, relies heavily on a valve reverb which is immensely important to the sound. The synth itself is also important, so I tend to collect

THE PRICE OF FAME?

Were you surprised at the success of 'Glory Box' and *Dummy*, given that they are not exactly commercial recordings?

"I'm a major fan of Beth. Her voice and her vibe is incredible, so I wasn't surprised that people would like her and what we are doing, but I didn't expect it to sell as well as it has or as many people to be into it. I am so glad they are, just because we've done it from an honest point of view and used severe production techniques and sounds that we like."

Are you perturbed by the daunting task of producing a follow-up?

"I don't think it's a worry in the camp. We just want to get on and do it again, but now we've got to tour for seven weeks. We're pretty reluctant, although we're doing it. It's chopping into the recording and thinking time. The 'phone's never stopped ringing. It's not like it used to be where we could sit and talk. Now it's just full-on madness."

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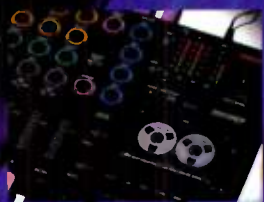
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Portishead: L-R, Geoff Barrow, Beth Gibbons, Adrian Utley, and Engineer Dave McDonald.

ADRIAN UTLEY • PORTISHEAD

▶ all sorts of instruments, keyboards, guitars and effects. 'Sound shaping' involves whatever I put onto tape sounding pretty much like the finished result.

"With guitars I always record direct to tape with the effects already on. That's how it used to be done and it's good because you're making a commitment. It's the same with sampling."

Attention to detail is obviously the name of the game with Portishead, as Adrian concurred: "There was one remix of 'Glory Box' we did that used one vibraphone note on it. It did have two vibes notes, and it took us an hour to get rid of one of them, as if to say, 'Now that's much better with just that one little touch.' It makes that much difference."

BRAVE OLD WORLD

Adrian is primarily a guitarist, but within the last three or four years has discovered the joys of subtractive synthesis and sampling: "I'm completely self-taught in terms of recording, self-taught on the guitar and self-taught with synths. I've now got an ARP Odyssey Mk1, which has very distinctive sound. I want a Moog now, particularly an early Minimoog, and I'd really like to get a big modular system. I started off just messing around with knobs and now understand all about routing. When I got the ARP it took me about an hour to get a noise out of it, but now the possibilities seem endless.

"I'm more interested in old synth sounds. Most people can hear the difference between old and new synths. Even the SH09 sounds totally different

to the Odyssey. Modern synths are on every advert the next week, so it's nice to create your own sounds and use the sampler to make pads up out of synths."

SAMPLEMANIA

I asked Adrian if he multisamples his old monosynths so he can effectively play chords: "I do that, but you can't use any kind of massive filter or modulation effects because it'll go weird over the pitch range, so you have to use the internal facilities in the sampler. I did have a Roland S330, which is quite good in that respect, but I've just flogged it because I'm going to get an Akai S1000. Geoff uses an S1000 and I've got an S950, which is also really excellent. Even though it's 12-bit it's got a grainy sound which I really like."

I wondered whether he would consider sampling parts of older Portishead compositions and reworking them into new ones: "I've got a feeling we're kind of doing that anyway. There's quite a library of stuff that Geoff and myself have put together on various DATs and they'll get sampled. That's why I want an 8-track and Revox to build things up and sample them. My ARP Odyssey's so evolving and massive for me, never having got near a modular, that I now start taping everything that I do, even if it's just messing around, because you never know what you're going to come up with that could be sampled and used."

Bearing in mind that several artists are credited for samples on *Dummy*, I was surprised to learn that Adrian is not keen on sampling other artists' material. When asked on his position regarding people sampling Portishead, he replied, "I've never thought about it. I've got a feeling we heard something we thought somebody had sampled. We were going to get it in the studio and slow it down and see if it was us, but we forgot about it fairly quickly.

"I don't think we'll be sampling other people any more, but the songs on *Dummy* evolved like that. In a way I don't blame companies for suing over uncleared samples because there's a lot of people who buy a sampler and think they can sample what the hell they like and get away with it."

DIGITAL TO ANALOGUE CONVERSION

Adrian's love affair with all things analogue extends to his home studio setup: "I've got a Kenton Pro2 MIDI/CV interface for my Roland SH101, SH09, ARP Odyssey and Pro One synths. I use an Atari running *Cubase V2* for sequencing and storing ideas. For Portishead there's very little on it, just a couple of things going along on screen.

"I've got a Tascam analogue 8-track, which I haven't used yet, and I'm planning to get a Revox B77 for mastering. I like mucking around with editing and I also want to use the Revox for bouncing on the 8-track. I'm quite into putting a load of stuff together, bouncing it over to the Revox in stereo and then bouncing it back onto two tracks of the multitrack and building things up that way. I love that warm analogue sound.

"I did something recently on ADAT and I really didn't like the sound of it. I've got a '70s Fender ▶

GOOD VIBRATIONS

Musical inspiration is always difficult to sum up in words, and there are no hard and fast rules in the Portishead *modus operandi*: "Within the Portishead context it's soundtrack-type sounds — weird, vibey little things. We're looking for loops mainly. It's not like a traditional songwriting situation, sitting down and strumming a guitar or whatever, although a couple of the songs could be done that way now, but they didn't come about that way at all. So we tend to find a little vibey, atmospheric thing, then that gets sampled and Geoff works on it. We add little bits and put live stuff on top. Inspiration can come from anywhere. It could be a sound from an organ with an unusual echo or something on it, or it could just be a beat that Geoff's put together.

"Geoff and I tend to work together, trying to find something by bouncing ideas back and forth between us. Remixes are very much like that as well, but on a Portishead song it usually starts with a vibe that Geoff wants to get going and then we all do our stuff.

"With Portishead we put something together on a tape, very roughly arranged with a chorus, and

then Beth works on the lyrics at home. Geoff tends to help her with the melody, if it's not working."

Whilst we're on the subject of 'good vibrations', I mentioned that Adrian is credited with playing a 'Thereman' on *Dummy*'s opening track, 'Mysterons'. I was most impressed that he had mastered what is a difficult instrument to play, until he told me the background to this track.

"This is a terrible thing to admit, but it wasn't actually a Theremin. It's a synth sound made on an SH101, because we couldn't actually get hold of the real thing. Since then I've got one from a guy called Barry Wooding who makes them. He saw the same TV program that we saw about Leon Theremin. That changed my life! I've always been into those kind of sounds anyway and I never knew what it was.

"There's another thing called an Ondes Martenot. It's a keyboard, where you wear a ring on your finger to make contact. It makes virtually the same sound as a Theremin, but it's obviously a lot easier to play because you're touching a keyboard, unlike the Theremin, which is incredibly difficult to play."

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"I don't like DAT machines either, but they are a necessary evil. We cut the Portishead album from DAT, although we did master it to quarter-inch. There was an obvious difference between the two, but the recording was so noisy and dense to start with anyway that it really didn't make that much difference.

"However, if you've got something with a lot of bass in it, like a jazz recording, where things are not so messed up sound-wise, then the sound from quarter-inch or half-inch is just excellent, especially if you really drive it hard. You hear something as you're mixing it, then you listen back to the quarter inch and it's been compressed in the most excellent way."

CRYSTAL CLEAR WATER REVIVAL

Outboard is obviously an integral part of Portishead's sound. Here, too, Adrian sings the praises of analogue.

"I don't like Lexicons, although I have used them. I don't know what it is, but I'm not keen on them at all. When I did another film project called *Protocol* in a studio in London recently, they had an EMT plate reverb. I think it's called a Gold Foil, which is one of the little portable ones. They're in a lead box or something, so it would still take a couple of people to lift it, but the sound of it was unbelievable and the tail-off as the reverb decayed was absolutely crystal clear and very warm, unlike digital reverbs. It was completely smooth, like on the Isaac Hayes recordings of the '70s. So faced with that, I couldn't possibly use digital reverb. I'm almost on the point of buying an EMT and having it lifted to wherever I'm going to mix. It just makes so much difference if you're going to do a jazz record, for instance, where the reverb is an immensely important part of the sound. It's only £600, so I would do it."

I joked that in addition to an initial outlay of £600, Adrian would need to put a couple of people on the Portishead payroll to lift the damn thing!

STATE OF THE ART

Dummy was recorded in various Bristol studios, and I wondered if this was a case of financial constraints or of familiarity: "We did go down to a big London studio to mix, but we hated the result because we weren't used to it. We know that the studios around us have got what we need and we know the sound of them.

"We've now got our own place, State Of Art,

which is based around a Studer 24-track and TAC Scorpion desk. It mainly came about through the concept of first idea, best idea. I was talking to Beth about this. When she sings, that's it and it's the same when I play something on guitar. When you first get that vibe of the moment, it's a pain in the arse trying to recreate it. Once it's on tape, as far as I'm concerned, that's it, even if it's got little mistakes in it. To us, saying, 'OK, let's go to a real studio now and do it for real', is a ridiculous concept."

State Of Art was already a studio before Portishead took over, having previously used it for pre-production purposes. They then re-equipped the facility to suit their needs, choosing older gear — hence the tongue-in-cheek name.

"It was built from the ground up really. Dave, the engineer, had already been working there when it was a 16-track, when we did our pre-production. Some of the vocals on *Dummy* were actually from the 16-track synced up with a 24-track because the vibe was right.

"We were going to get a 2-inch 16-track originally, which would have been a wonderful format with even greater separation, but in reality, if we get sent remixes they are always on 24-track. When we remixed the Paul Weller 'Wildwood' track, for example, we had to go to another studio; now we can actually do it all on our gear.

"I remember reading that producer Don Was had a 24-track at home when he was working with Bonnie Raitt, because she would sing something, play it, and that would be it. Then he could take it to other places to work on, but the vibe was there from day one when it was written.

"For years and years bands have always tried to recreate their demos, but better quality. So if you do it at half reasonable quality in the first place, you can end up using it. One take can be completely different to another, and one can be *the* one and that's it. I think that's a problem that we all felt — we did it in pre-production, why are we doing it again? So that's why we got our own studio."

OPEN YOUR HEART

As our meeting drew to a close, Adrian elaborated on his new-found dual career as a successful musician and producer, an enviable position by any standards: "I enjoy both really. I've always wanted to produce all my life. I definitely want to do more film work, but that will be in my own esoteric kind of way. I don't want to end up doing corporate music. It would bore the shit out of me! In terms of production, I'd like to do more jazz because I really want to get on top of it. I'm going to die doing that!

"I wouldn't change my outfit to suit a new band, that's why I only want to work with someone I like, or jazz. I'd even like to work with country people, or anything which is acoustic or analogue. I don't really want to work with pop people because it's too fickle and I don't understand the charts enough. So to sum up, anything from the heart, definitely good songs, anything with nice guitar playing on it that's not clever Dick, although I could work on thrash noise surf nonsense — severe noise, but interesting. Music from the heart is what I'm really into."

SO

TWIST AND SHOUT

Although Portishead are actively involved in remixing, it would be unfair to accuse them of jumping on the bandwagon. Adrian is well aware of the proliferation of remixes, with record companies actively using the concept as a marketing ploy. For example, EMI used The Orb to remix a Mike Oldfield track in order to give their artist 'credibility', according to Orb man Alex Paterson.

"I generally don't like it. We've done quite a few remixes — Paul Weller, Massive Attack, Earthling, Ride — and I enjoyed doing them. Some them sound so fucked up that you couldn't possibly dance to them and I quite like that, but I really hate the remix angle where the song is no longer as important as who's remixed it! The record companies are just hedging their bets.

"Last summer I first heard jungle full on. I really like jungle and wouldn't muck around with it; I just think when you start hearing jungle remixes, it cheapens the music. It happened with garage and I think it's a crappy record company tool to sell more records across the board."

Having got that off his chest, Adrian went on to outline how he would typically approach a remix: "It would start with the original vocal and nothing else. If we were going to do something involving me playing live, then I would try not to hear any of the chords from the original and I would try and get some kind of weird harmonic twist on what's going on with the melody.

"In the case of the Paul Weller track, I hadn't heard 'Wildwood' until Geoff asked me to come over and work on it. We stuck the vocal track up and I was stunned. It was just one fader with his voice on it and his guitar had bled onto it as well. Obviously it was live and not done to a click, so they'd built up around that. We couldn't just take the vocal and had to incorporate the bled guitar as well. We built up something around it and then stripped a lot away. Geoff played the drums on it live and I took responsibility for dropping the drums in. Then we put the bass on it and some twangy guitar."

Geoff Barrow has talked about producing Portishead tracks in a different style, like grunge, to attract fans of that style in the hope of leading them into the 'true' Portishead sound. Adrian: "We did do a grunge version of 'Glory Box'. It had noisy guitars on it, and that's something that both Geoff and I like anyway, so that could be encompassed in Portishead, even though there's nothing like it on the album."

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CHOOSING A MICRO

Every studio needs at least one mic, but which type and which model is best? PAUL WHITE provides some guidance.

MICROPHONE TYPES & USES

All microphones convert sound energy into electrical energy, but there are many different ways of doing the job, using electrostatics, electromagnetism, piezo-electric effects or even the change in resistance of carbon granules. Fortunately for SOS readers pondering over which mics to buy, the field of choice is narrowed considerably when it comes to mics used in music recording or live performance. The vast majority of mics used in these applications are either capacitor (electrostatic) or dynamic (electromagnetic) models. Both types employ a moving diaphragm to capture the sound, but make use of a different electrical principle for converting the mechanical energy into an electrical signal. The efficiency of this conversion is very important, because the amounts of acoustic energy produced by voices and musical instruments are so small.

DYNAMIC MICROPHONES

Most of you will have used a dynamic mic at sometime or another — if it looks like a mesh ball on a stick, then it's almost certainly a dynamic model. In live sound, nearly all the mics used are dynamics, and in the studio, instruments such as drums, electric guitars, and basses may also be recorded using dynamic mics. Dynamic microphones have the advantages of being relatively inexpensive and hard-wearing, and they don't need a power supply or batteries to make them operate. So, how do they work?

A lightweight diaphragm, usually made of plastic film, is attached to a very small coil of wire suspended in the field of a permanent magnet. When a sound causes the diaphragm to vibrate, the whole assembly works as a miniature electricity generator, and a minute electric current is produced. Because the electrical output is so very small, it has to be amplified using a mic preamp before it is large enough to be useful.

Given the stated advantages of dynamic mics, why bother with any of the other, more expensive types? The weakness of the dynamic mic lies in the fact that the sound energy has to move both the mic diaphragm and the wire coil attached to it. The

mass of the coil adds to the inertia of the diaphragm assembly, which in turn restricts the frequency response of the microphone. In practical terms, the outcome is that dynamic microphones fail to reproduce very high frequencies accurately. In some applications, this isn't too serious, but if you're working with an instrument where a lot of tonal detail is contained in the upper harmonics, a dynamic mic is unlikely to bring out the best in that instrument.

Another side-effect of the finite mass of the diaphragm/coil assembly is that the dynamic microphone is not particularly efficient — a lot of amplification has to be used to make the signal usefully large, and the more gain you use, the more noise you add to the signal. In the studio where the mic is used very close to the sound source, this lack of efficiency is not a major problem, but if you're trying to capture a quiet or very distant sound, then a dynamic mic isn't likely to produce good results.

To summarise; dynamic microphones are most effective when working with relatively loud sound sources that don't contain a lot of very high-frequency detail. They're also tough as old boots, which makes them good for live work, or for any application within six feet of a drummer!

Another type of dynamic microphone is the ribbon microphone, but these are only used in fairly esoteric recording applications by engineers who appreciate the subtleties of the ribbon sound. These mics are comprised of a thin metal ribbon suspended in a magnetic field, and when sound energy is encountered, the electrical signal generated is induced in the ribbon itself rather than in a voice coil. The main advantage of ribbon microphones is their smooth, detailed sound; the disadvantages are their higher cost and the fact that they are more fragile than conventional dynamic mics.

CAPACITOR MICROPHONES

Capacitor mics have been around for several decades, and although modern capacitor mics do incorporate a few small technical improvements, the sound

character has actually changed very little — some of the best-sounding models were designed over 20 years ago. Basically, the heart of any capacitor mic is a pair of conducting plates, one fixed and the other in the form of a moving diaphragm. When



Neumann U87.

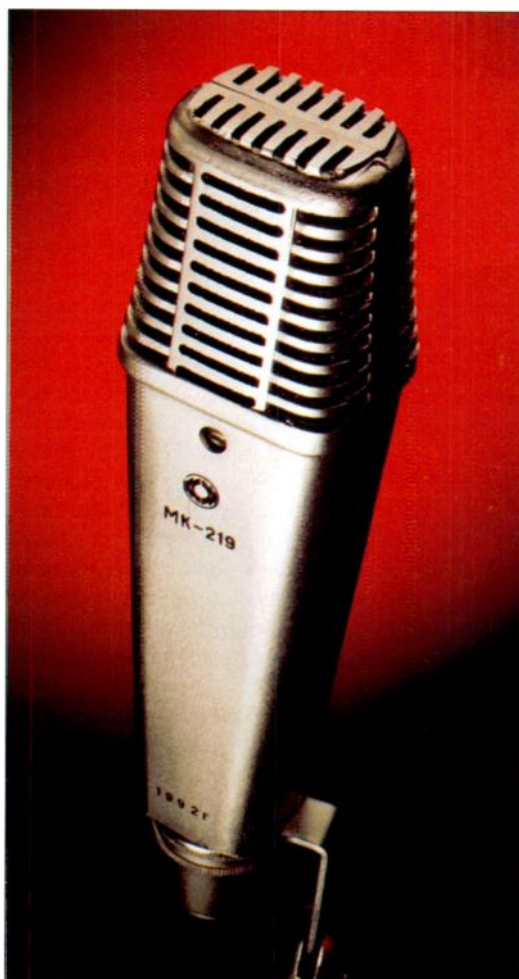
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the spacing between the plates changes (as it does when the diaphragm vibrates) the capacitance varies, and if a fixed electrical charge is applied to the capacitor, an electrical signal is produced which faithfully represents the diaphragm vibration.

To keep the weight down, the diaphragm is often made from gold-coated plastic film. As a result, the diaphragm assembly is very light compared to that of a dynamic mic, so the system is much more efficient, and is capable of capturing harmonics right up to the range of human hearing and beyond. The size of the diaphragm also has an effect on the tonal quality of the mic — large-diameter models are chosen for vocal work because of their warm, flattering sound. Small-diaphragm models tend to be chosen where high accuracy is required.

Even though they are relatively efficient, capacitor microphones still produce such a small electrical signal that they require a special type of built-in preamplifier to bring the signal up to usable levels, and this is one factor that contributes to the higher cost when compared to dynamic mics. Additionally, all capacitor mics need a polarizing voltage in order to work. The most common source of polarizing voltage is the 48V 'phantom' power source, which is why many mixing consoles have a phantom power supply built in. The term 'phantom power' came about because the polarizing voltage is supplied via the signal leads of the microphone — no additional cabling is needed. Because of the way phantom power is supplied, all phantom-powered microphones must be balanced, and must employ the same wiring configuration. Budget mixers or cassette multitrackers with unbalanced mic inputs cannot be used with conventional capacitor microphones unless an external mic preamp (with phantom power) is used.

Broadly speaking, capacitor microphones are more expensive than their dynamic counterparts, but they are also much more sensitive, and can



Oktava
MK219.

capture high-frequency detail much more accurately. Furthermore, the capacitor principle, unlike the dynamic principle, lends itself easily to the production of mics with switchable pickup patterns (see the box elsewhere in this article for more information on these), although the cheaper models tend to offer just a fixed cardioid pattern. Currently, there are some real bargains to be had in the capacitor mic market — for example the AKG C3000 (currently retailing at £351) and the Russian-made Oktava MK219 (£311).

ELECTRET MICROPHONES

There is another type of capacitor microphone, known as the electret mic. Despite inauspicious ►

PICKUP PATTERNS

The most basic microphone pickup pattern is omnidirectional — which means that the microphone picks up sound equally from all angles. Omni pattern mics tend to be the most technically accurate, but they may well pick up sounds not intended for them, especially where several instruments are playing close together. That's why cardioid (unidirectional) mics are more suitable for use in smaller studios.

Directional microphones are referred to as cardioids because a graph of their sensitivity at different angles looks 'heart-shaped'. The least sensitive spot of a cardioid microphone is right behind it, with the most sensitive spot being 'on-axis'. Cardioids (or the more tightly-focused hypercardioids — see below) are used extensively in live performance, because of the need to

prevent spill and acoustic feedback.

Hypercardioid mics, sometimes also known as supercardioids, are useful in situations where sound leakage is a real problem, but in the studio, they tend not to be used, as relatively small physical movements by the performer can cause the sound level to change significantly.

One mic pattern which now tends only to get used in specialist applications is the figure-of-eight — so called because its sensitivity graph looks like a figure eight. This type of mic picks up sound equally well from in front and behind, but is relatively 'deaf' to sound arriving from the sides. Back in the early days of pop, it wasn't uncommon to see two backing vocalists singing into opposite sides of a figure-of-eight

mic to save on the number of microphones, but now they tend to be used mainly for classical stereo recording or as part of a Middle and Side (M&S) stereo pair (the workings of M&S mics are beyond the scope of this article, but keep your eyes peeled for an detailed explanation of the subject in future issues of SOS).

As mentioned elsewhere in this article, capacitor microphones can be built to provide several different pickup patterns which may be changed with a simple switch. To achieve this, the capsule is made with two diaphragms, and by changing the level and polarity of the polarising voltage on one of the diaphragms, every possible pickup pattern can be created, starting with from omni, progressing through cardioid and hypercardioid to figure-of-eight.

CHOOSING A MICROPHONE

► beginnings, these have now been developed to the point where they can rival true capacitor quality for a much lower price. Instead of applying an electrical charge to the microphone capsule via an external power source, electret mics use a diaphragm made from an insulating material that has a permanent electrical charge. A preamplifier is still needed, but this can be built very cheaply, and will run from a battery in some cases.

Electret mics made in this way don't offer any real advantage over dynamic mics, because the diaphragms have to be quite heavy in order to carry the permanent electrical charge — but what if the permanently-charged material was fixed not to the diaphragm, but instead to the stationary back-plate? This way, much thinner diaphragms can be employed, made of the same metal-coated plastic material as on a true capacitor model. What I've just described is the back-electret microphone, and the best of today's back-electret models can rival conventional capacitor models in every aspect of performance. The best back-electret models are actually just as expensive as top capacitor models (the famous Bruel and Kjaer mics are back-electrets), but there are some less costly models around which deliver studio quality at a bargain price. One of the most popular low-cost back-electret models in recent years is the AKG C1000 (yours for £281), but don't neglect the models from other manufacturers. Currently, it's possible to buy a good back-electret mic for around the same price as one of the better dynamic models — the new

Beyer back-electret, the MCE83, retails for just £234. Most back-electret microphones in this price range offer a choice of battery or phantom power operation, with a fixed cardioid pickup pattern.

FREQUENCY RESPONSE

You might expect the perfect microphone to have a perfectly flat response right across the audio spectrum, but there are various practical reasons why this isn't so. Virtually all mics have a deliberate low-frequency (or LF) 'roll-off' — in other words, they are less sensitive to frequencies below about 50Hz. Without this roll-off, low-frequency vibrations, knocks, breath pops and other such problems would produce very large, low-frequency output signals, which would not only compromise the sound quality, but might even damage loudspeaker systems.

While LF roll-off is designed to exclude unwanted sounds, mics are also often designed to *accentuate* specific parts of the audio spectrum in order to create a flattering sound. For example, numerous models are designed with a 'presence' boost in the upper mid-frequency range, to help make vocals more intelligible. Presence boost (which is usually between 3 and 6 kHz), has the effect of making the sound more transparent or detailed.

PROXIMITY EFFECT

The proximity effect comes into play when vocalists sing very close to a mic, and the effect is that the level of bass in the recorded signal goes up enormously. The proximity effect is all down to the laws of physics, and may be a benefit or a problem depending on what you do with it — experienced live performers can use the proximity effect as a type of dynamic EQ, allowing them to alter the tone of their voice as they sing, simply by varying the mic-to-mouth distance.

In the studio, mics tend to be used at a reasonable distance from the performer, usually with a pop shield in between, so the proximity effect doesn't affect the recording of vocals. When

AKG
C3000.

AKG

C 3000

WHAT TO BUY

It's a fact that different mics are better at different jobs, and in the studio, where there are lots of different instruments to record, it helps to have range of mics from which to choose. If you can afford it, buy at least one good capacitor mic (ideally a large-diaphragm model) or at least one of the better back-electret models for serious vocal work, and keep a few general-purpose dynamic mics around for drum and electric guitar work. In smaller studios, where the acoustics are seldom ideal, the cardioid pattern mic is the most useful, because it helps exclude unwanted room reflections — so don't spend a lot more money buying a switchable pattern mic unless you have very clear reasons for needing those other pickup patterns.

When it comes to choosing a capacitor mic, you have to decide whether to opt for a large- or small-diaphragm model, but on top of that, you may have a choice of transformer or transformerless electronics, and maybe even a valve option to consider. As a very general rule, modern transformerless electronics offer

the best paper specification, and the subjective sound is often brighter and more detailed than the transformer version of the same mic — but that's no guarantee that the sound is better. Matching transformers can introduce benign coloration, and the mechanisms by which they do this are wrapped in almost as much mystique as the alleged sound of valves. For this very reason, some users will insist on the transformer version of a mic simply because they like the tonal character of the microphone. Subjectively, transformers seem to produce a warmer, more comfortable sound than transformerless circuits.

At one time, it looked as though valve mics would stay extinct, but the escalating prices of original models forced some manufacturers to reconsider, with the result that you can now buy re-issues of original valve mics alongside brand-new valve designs such as those built by Groove Tubes. Valve mics invariably cost more than their solid-state counterparts (prices range from around £700 upwards), but those who use them seem

to feel that the enhanced sense of warmth and transparency is worth the extra cost. On the other hand, it can be argued that a good solid-state capacitor mic processed via a valve mic preamp (or via a mixer channel with a valve DI box in-line) should sound just as good, and will cost rather less.

The problem arises when you want to try out a mic before buying it, because there's no simple way to judge a mic without actually working with it for a period of time. That's one reason people tend to buy tried and trusted mics instead of risking an unfamiliar brand. Ultimately, most people either buy something that they've used before in another studio, or they buy what the professionals use. This is a pity, really, as there are some excellent new mics on the market too. If you're interested in an unfamiliar mic, try to arrange to hire one for a few days, to see how it works in your studio. Most dealers should be happy to offer an arrangement whereby you get the hire money back if you make a purchase.

WHAT TO USE: QUICK GUIDES

• VOCALS

When it comes to recording vocals there are no hard and fast rules about the type of mic to choose, because all that matters is the end result. For this reason, some top pop singers record using relatively inexpensive dynamic mics, rather than capacitor models, because the dynamic mic gives them a warmer, thicker, more punchy sound. On the other hand, a breathy, intimate voice can benefit from the detailed high-end of a capacitor mic. Not only do the different types of mic sound quite different, but you'll also notice that even similarly-specified mics of the same type but from different manufacturers will also sound noticeably different. For example, the classic Neumann U87 (retailing at £2028) provides a warm, confident sound, but with plenty of detail and 'air', while something like the Audio Technica 4033 (£622) has a distinctively silky sound. By the same token, AKG's 414 (£1035) and Beyer's MC740 (£1173) have a very bright, open sound, because of their presence characteristics.

• DRUMS

For drum work, the most common setup is to use dynamic mics for all the close mics (on the individual drums) and then augment these with capacitor mics for the overhead mics and the hi-hat. Dedicated kick drum mics are available (such as the AKG D112, currently retailing at £216), and these will produce a more powerful bass drum sound than general-purpose dynamic models. Some engineers also prefer to use capacitor mics on the snare drum for a crisper sound.

• GUITAR

Electric guitar is less demanding on mics, because a typical guitar cab has a very limited high-frequency output, and in most instances, a dynamic vocal or drum mic will do fine. As an alternative, a capacitor mic can be used for a more American sound.

recording electric guitar or bass, the proximity effect is often deliberately brought into play, to help create a more punchy sound.

SUMMARY

A professional studio will accumulate a varied collection of mics, but in project studios, where finances are limited, it's usually a matter of buying whatever mic suits the regular vocalists the best. If you're working with a number of singers, then it may be better to go for a more tonally neutral mic, so that you can use EQ to fine-tune the sound.

If you're currently working with budget equipment, you might feel that paying a lot of money for a mic is pointless, because the ultimate quality of your recordings will be limited by the gear you're using. To some extent this is true, but if you don't capture a good sound at source, things can only go downhill from there. Microphones don't tend to go out of fashion in the same way that effects units and synths do, so there is an argument for buying only quality models that will always be useful to you, no matter how your recording setup evolves over the years. Quality dynamic mics aren't expensive, and even the top studios use mics such as Shure SM58s and 57s (currently going for £150 and £139 respectively), AKG D112s, or Sennheiser 421s (£288 each). Similarly, you can now buy a really good capacitor mic for under £300, and if you can stretch

to buying two of the same model, you'll be well set up for any stereo work that might come your way. If you can't afford a capacitor mic straight off, a good dynamic will get you by for the time being, and when you eventually add a capacitor mic to your setup, the dynamic model will still be useful for instrument recording. It's no longer true that professional mics are only for professionals.



Shure SM58.

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THE SYSTEM

The system comprises the microphone head itself, a shock mount, wind-shield, multi-pin connecting cable and control unit, presented in a sturdy aluminium field case. Power for the microphone and control box can be via conventional phantom powering, battery or mains, though the capsule heater (provided to help prevent condensation) doesn't operate when battery power is selected,

as it would shorten the battery life to an unacceptable degree. Under normal conditions, a set of batteries will run the mic for around 10 hours. A red LED shows the controller is powered up, and the controller itself connects to the recorder or mixing console via two conventional XLR mic leads. It is advisable to power up the unit several minutes before use, as the capsules can take a while to stabilise, especially if the system hasn't been used for long periods.

The default setting for the controller is to have all of its six buttons out, and in this mode, the ST250 functions as a side-entry mic, the side with the logo being the 'live' side. A button is included to switch the operation from side-entry to end-entry, and the left and right outputs may also be inverted for occasions when the mic is to be used upside down. Other buttons provide bass roll-off (120Hz, 2-pole) and a 20dB attenuator, and select Battery operation. The output signal may be selected as M&S (prior to matrixing) or conventional left/right format, and there is also a B-format option, which represents the outputs from the capsules as four discrete signals based on

additions and subtractions of the capsule outputs, with each capsule contributing equally. If the four B-format signals are recorded separately, they can be matrixed after recording using a MkIV or MkV controller to, in effect, steer the microphone or change its polar pattern retrospectively.

In addition to the selector buttons already discussed, the controller features rotary knobs for 'Width' and 'Pattern'. These controls are normally flush with the panel surface, but when you push them, they pop out so that you can turn them. Pushing them again returns them to their flush position, which ensures good immunity from accidental movement. To understand these controls, you have to visualise the four-capsule array as forming two virtual capsules, one a sideways-firing figure-of-eight, and the other a variable pattern omni-cardioid firing forwards. 'Width' controls the level of the side or figure-of-eight component of the mic which, in turn, allows the pattern to be varied from mono to an unnaturally wide pattern which is the equivalent of two back-to-back cardioid mics pointing hard left and right. 'Pattern', on the other hand, varies the pattern of the 'virtual' mid capsule from omni, through wide, regular and hypercardioid, to figure-of-eight. In other words, without moving from the control room, you can construct any type of M&S mic array you choose and hear the results as you make your changes.

For live use, there's a headphone socket on the control unit, but this isn't intended for serious

FIELD STUDIES: HOW THE SOUNDFIELD WORKS

The ST250, like the SoundField MkV, employs four capsules configured as a regular tetrahedron, to provide a continuously-variable range of coincident stereo pickup patterns after matrixing. In an ideal world, all four capsules would occupy the same point in space, but in reality, they have to be located a few millimetres apart. Electronic amplitude and phase compensation is applied to the capsule outputs, which has the effect of moving all four sources to a virtual point at the centre of the cluster.

Essentially, the SoundField ST250 works on the M&S (middle and side) principle, where, traditionally, one capsule captures on-axis sound

while a figure-of-eight 'looks' sideways to capture the left/right information. The outputs from these two capsules are then matrixed to extract discrete left/right information. The ST250 takes the M&S principle even further by providing M&S, L/R stereo or B-format outputs from the control unit. For M&S applications, the four capsules can be considered to behave as two variable-pattern capsules, and by controlling the characteristics of these two 'virtual' capsules via the control unit, a number of changes can be made to the stereo pattern, including the overall stereo width and the amount of 'rear' sound included in the output.

set up, this was all so easy. Between takes, we also had a chance to hear the mic on speech and general ambience sounds, and the experience was really second only to being there. Further tests confirmed that the mic was just as accurate regardless of the sound source — I can see why SoundField mics are so popular for direct-to-stereo recording of live classical events.

CONCLUSION

It's tempting to think of the SoundField mic as something designed for live orchestral or classical recording but, as many people have discovered, it's just as useful in the recording studio, and just as happy handling rock and roll as a string quartet. The ability to fine-tune mic characteristics from

all Reasons

monitoring work and, according to the manual, using it may even compromise the performance of the mics (the extra current demand may cause a loss of headroom) unless mains powering is employed. It's really included for confidence checking prior to recording, where it can be used to verify that the stereo image is as expected.

SOUND IN THE FIELD

The ST250's first challenge came when a friend of mine needed to record a drum kit in his timber hallway, but because he only had eight tape tracks, he didn't want to use more mics than strictly necessary. This seemed an obvious job for the SoundField, so I set it up a few feet in front of the kit on a high stand and then added discrete kick and snare mics. With a wide cardioid Pattern chosen, and Width set to around 6, the result was an incredibly natural sound with plenty of real woody ambience.

Because the drummer in question had a selection of what I call 'heavy artillery' cymbals, the ride and crash cymbals often dominated the sound (equally so in real life as in the recording), so the close snare and kick mics were brought into the mix to offset this. We all agreed that the SoundField's contribution to the mix was incredibly accurate, and whereas some mics take ages to

the control room is not to be underestimated, and the SoundField comes as close as is probably possible to behaving as a true coincident system, which means there's no comb filtering when you sum the outputs to mono.

On the face of it, SoundField might still seem like an expensive system, but you have to remember that it is a system, and that it can often take the place of a whole array of conventional mics, saving not only on cost (the ST250 is significantly cheaper than, for example, the list price on a pair of U87s) but also on time. If you're a sound professional regularly involved in stereo recording, music, film or broadcast, then you might find the cost of not having a SoundField mic far outweighs the cost of buying one!

SOS

FURTHER INFORMATION

£ ST250 £2643.75 inc VAT. Price includes microphone, control unit, foam windshield, shock mount assembly, mic to controller cable and mains lead. The portable version of the system (at the same price) adds an aluminium field case and omits the shock mount — an optional mounting kit is available if required.

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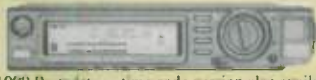
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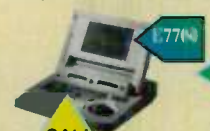


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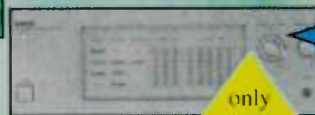
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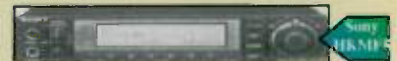
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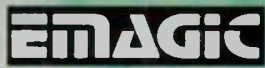
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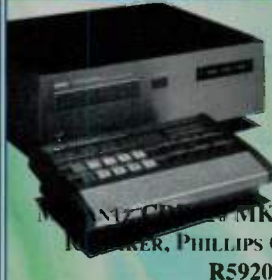


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PANICOS GEORGHIADES puts the case for 'soundcard and PC'-based sampling systems, and compares four popular soundcards.

CHEAP SAMPLING WITH PC SOUND CARDS

Sampling on a PC is far cheaper than using a stand-alone sampler. 4-Meg PC memory chips cost between £100 and £125 at the moment, and hard disks have recently tumbled to a new low of about 40 pence per Megabyte. Furthermore, the Windows .WAV file format has become a widespread standard, and there's a multitude of .WAV file editors for digital sound on the market. These are very cheap, and it's possible you will get one free with the soundcard of your choice.

Aside from purely financial considerations, it's worth remembering that if you have a PC, then you already possess some of the components needed for sampling. You will already have a

floppy disk and hard disk drive, together with a monitor, which is much more informative than the small LCD you get in a rack sampler. You may also have a CD-ROM drive. If you have a modern 16-bit soundcard (or are planning to buy one), you will also have A/D and D/A facilities.

So, if you're not against having a sampler that doesn't look like a 19-inch rack box or a keyboard, consider the soundcard sampling option. In this article, I'll be looking at three; the Creative Labs SoundBlaster AWE32, the Turtle Beach Maui and Tropez, and the Gravis UltraSound Max — all of which cost around £200. Put any of these together with a reasonably powerful PC running Windows (properly), and you have a system that can change your mind about what a sampler should look like for ever — and which should cost you a lot less.

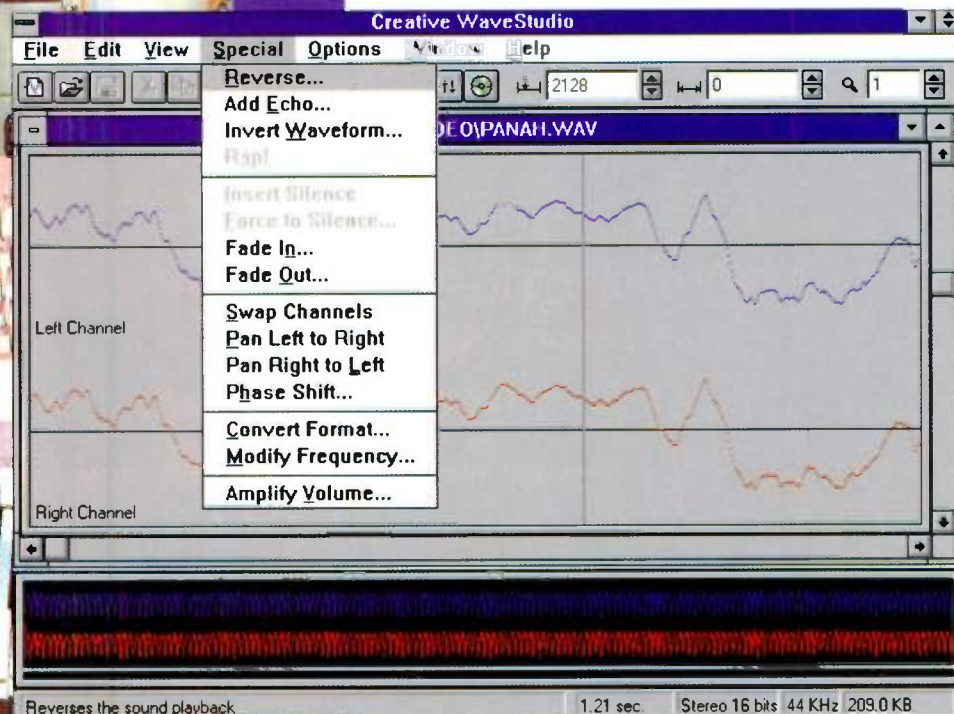
CREATIVE LABS SOUNDBLASTER AWE32

Until recently, the SoundBlaster name was associated solely with budget soundcards and computer games. Since manufacturer Creative Labs bought Emu Systems, however, things have changed. The latest product, now a year old, is the SoundBlaster AWE32 soundcard. On board is an Emu wavetable synthesizer (into which you can load your own waveforms), a MIDI interface, a DSP chip and Reverb and Chorus effects. The card allows you to add up to 28Mb of RAM for your own samples, and is bundled with a budget version of Twelve Tone Systems *Cakewalk* sequencer.

• WHAT YOU GET

The on-board wavetable synth is the Emu8000, which has 1Mb of ROM sounds. The card comes with 512K of RAM for your own sounds, but you can upgrade using Single In-line Memory Modules (SIMMs). These are used in pairs of 1, 4, or 16Mb modules, so you can have 2, 8, or 28Mb on the card (if you use two 16Mb modules, you can't utilise the top 4Mb — hence the 28Mb RAM limit).

The AWE32 can record and play back 8- or 16-bit digital audio at 11, 22, or 44.1kHz, in either stereo or mono. The card also supports a number of compression standards for speech and music, including three versions of ADPCM sound compression (note that ADPCM is only used when storing digital audio files on the hard disk — it is not related to the sampling facilities). With ADPCM, you can compress sound at a ratio of 4:1, and provided you use full bandwidth sound as your source



WaveStudio sample editor for the AWE32.



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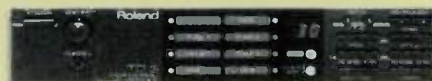


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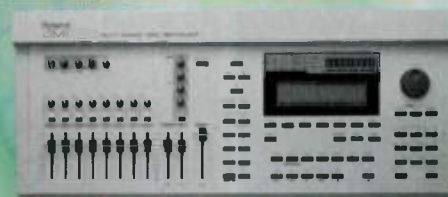
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▶ material, there should be no apparent loss in quality. In addition, the AWE32 includes interfaces for Panasonic, Mitsumi, Creative and Sony CD-ROM drives, so you won't need to buy an extra card when you want to buy a CD-ROM.

On the MIDI side, there's an interface which emulates the Roland MPU401 in UART mode, but you have to buy a special connector cable (about

Interactive), speech synthesis and speech recognition software, and, as mentioned earlier, *Cakewalk Apprentice* — the budget version of one of the top sequencers on the PC, *Cakewalk Professional*.

• SAMPLING ON THE AWE32

There are two programs associated with the sampling side of the AWE32: *WaveStudio* and *Vienna SF Studio*. *WaveStudio* lets you record and edit sounds (waveforms) and save them as Windows .WAV files. When recording from a CD-ROM, there's an option for sync start recording.

The program is basic as far as Wave editors go, but it does include a few rare features. You can apply most of the edit functions to the left and right sound channels independently, something not available in most other programs. However, although you can adjust the gain by a percentage, there's no normalise feature. This useful function finds the highest wave peak and then scales the waveform to the point of maximum amplitude without distortion, and would have been handy here.

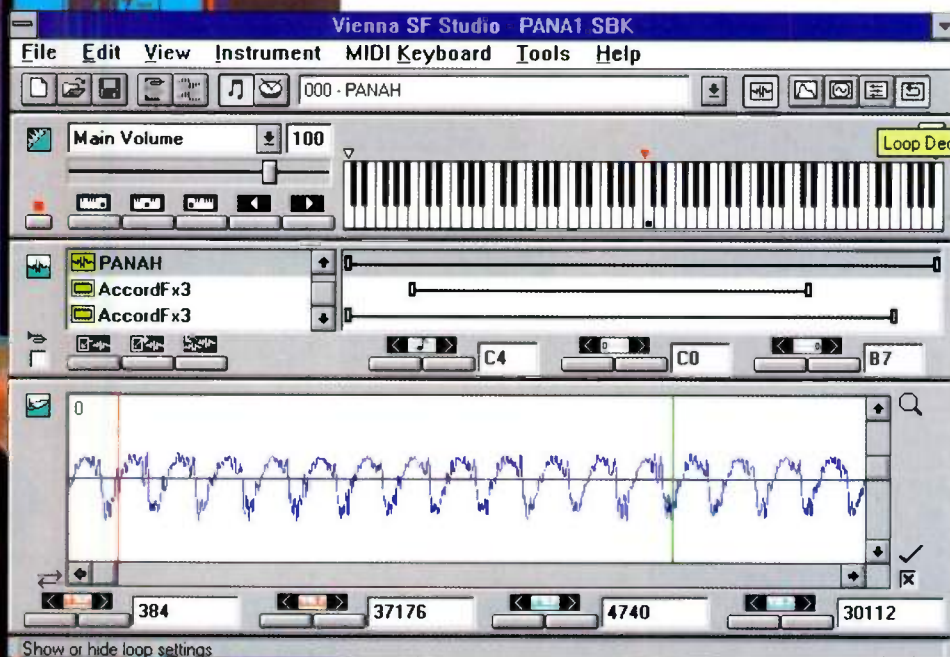
The special effects on offer are: Reverse, Echo, Invert, Rap! (stutter), Fade In/Out (linear only), Swap channels, Pan (left to right and vice versa), and Phase Shift, which offsets the start time of one of the two stereo channels. You can also mix two waveforms to create a third. Although you can convert waveform sampling rates and bit resolutions, there's no pitch-shift or time stretch.

Once you have recorded a sound and saved it as a wave file (.WAV extension) using *WaveStudio*, you then move to the *Vienna* program. Here you can import wave files and create patches (a sound that can be called by a single program change from your sequencer). One or more wave files can be combined to make a patch, in a number of ways. *Vienna* can import only mono Wave files (unlike Turtle Beach's *WavePatch*, which can accept stereo files), but two files can be imported and panned left and right to create a pseudo-stereo image.

Vienna is very similar to a synthesizer editor. You can set ADSR-type envelopes to the pitch, filter and amplitude of imported wave files, and set loop points. You can pitch and pan sounds, pass them through oscillators, and even multi-layer sounds by setting up keyboard splits, but not by means of velocity crossfades (again, something that *WavePatch* can do). Once you have finished setting patch parameters you can save all the information in a bank file on disk.

FURTHER INFORMATION

- £ SoundBlaster AWE32 £190 inc VAT.
- ▲ Creative Labs UK Ltd, Unit 2, The Pavilion, Ruscombe Business Park, Ruscombe, Berks RG10 9NN.
- T 01734 344322.
- F 01734 320300.



Vienna SF Studio patch editing software for the AWE32.

£20) with MIDI sockets on one end to provide you with your MIDI connections, as the card itself just has a D-type connector. The built-in synth is 32-note polyphonic, 16-part multitimbral, and supports three MIDI standards — GM, GS and MT32.

In the GS mode, you get the basic 128 instruments, together with all the variations that you find in additional banks, as well as eight drum kits and an effects set (arranged as a drum kit). There are eight reverb and eight chorus settings, and you can alter the amount of signal sent from each MIDI channel to the effects. The setup is very similar, if not identical, to that on the Roland Sound Canvas. There's also an OPL3 FM synth on board, which you can use at the same time as the wavetable synthesizer to add another 11 (4-operator) or 20 (2-operator) voices.

The card has external stereo line in, line out, speaker/headphones out and mic in connectors, plus internal connections to a CD-ROM for audio. The on-board software-controlled mixer can combine all these inputs, the output from the internal synth, and digital audio from the hard disk, and send the resulting signal to the main stereo output. Apart from a pair of stereo faders and a spectrum analyser display, the mixer features bass and treble EQ controls.

The AWE32 comes with the richest variety of bundled software of any card on the market: a budget multimedia authoring package (*HSC*

SOUNDBLASTER AWE32 £190

PROS

- Up to 28Mb RAM.
- Has Reverb, Chorus, Treble, Bass.
- Best value for money.

CONS

- Cannot use stereo .WAV files for the sampling section.
- No aftertouch.

SUMMARY

Top-of-the-range soundcard from Creative Labs, offering good sampling facilities and a vast range of bundled programs.

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analysis, stereo coherence and level metering.

Version 3.0 of Steinberg's Avalon will allow high-speed sample transfers via SCSI-2 between your sampler & the Falcon MKII for visual editing, looping and DSP processing.

Of course, Steinberg are not the only company whose software runs on the Falcon MKII. Because it is fully compatible with the Atari Falcon and also run hundreds of ST programs, you will find many other programs you can run. It's just that none of them will get you anywhere near the performance from a C-Lab Falcon MKII that Steinberg's Cubase Audio 16 does. And Cubase Audio will only give you that level of performance on a C-Lab Falcon MK II. The perfect match.

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SRP: £680 Ex, VAT

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CHEAP SAMPLING WITH PC SOUND CARDS

▶ TURTLE BEACH MAUI AND TROPEZ

Turtle Beach manufacture three cards that have sampling facilities: the Maui, Tropez and Monte Carlo. The Monte Carlo uses the MIDI Sample Dump Standard to load files, and this makes it very slow. Furthermore, the card can have only 4Mb of RAM, so I chose not to include it in this review. Nevertheless, all three soundcards use the same software (*Wave SE* and *WavePatch*, of which more in a minute) — so most of the information here will also apply to the Monte Carlo anyway.

• THE MAUI

This half-length 8/16-bit card includes a MIDI synth, but can only play back samples. In other words, there's no built-in facility to record digital audio, as on the other cards, so you cannot sample your own sounds. However, it happily co-exists with any other soundcard, so you can use the Maui to expand the polyphony of your system.

The Maui comes with 512K of RAM, expandable to 8.25Mb. There are two memory slots and, as on the AWE32, you can use standard PC SIMMS — in this case 256K, 1MB, or 4MB chips. Unlike the AWE32, you can mix different sizes of SIMM — you don't have to use matching pairs. The card boasts an on-board 32-note polyphonic, 16-part multitimbral GM synth with 2Mb of ROM, 128 sounds and a single drum kit.

You can use the Maui with any DOS program that works with the Roland MPU401 MIDI

the only two external connections to the card are a stereo in (which acts as an auxiliary in for mixing other external signals) and a stereo out.

• THE TROPEZ

This is supposed to be Turtle Beach's answer to the AWE32, and has similar facilities at a similar price. However, the Tropez is closer to the Maui when it comes to the internal synth and sampling facilities. These are based on very similar chips, and the same software (*Wave SE* and *WavePatch*). You can think of the Tropez as a Maui with the addition of digital audio recording, a CD-ROM interface, and the option of adding up to 12Mb of RAM.

The Tropez was designed to offer facilities you would find on a standard soundcard. The MIDI interface is via a games 'D' connector, and as with the AWE32, the MIDI connector cables are extra. The card has a single IDE-type CD-ROM interface, and three slots for sample RAM. As with the Maui you can use 256K, 1Mb and 4Mb SIMMs in any combination. Apart from the MIDI and joystick connections, there's a stereo line in, aux in, mic in and a line out. The internal GM synth has 128 sounds and a single drum kit.

• SAMPLING ON THE MAUI AND TROPEZ

Both the Maui and the Tropez come with *Wave SE* (Sample Editor) and *WavePatch*. *Wave SE* is a special version of Turtle Beach's *Wave for Windows* editing program. It does not have all the digital effects available in the full version, but does include additional features for editing samples — for example, you can create loop points and download samples straight into the Maui or the Tropez. You can edit four different .WAV files at the same time, and import a variety of file formats, including raw PCM, SampleVision (.SMP), Macintosh AIF and Microsoft ADPCM.

Editing functions include Fade In/Out (with the option of exponential curves), Gain Adjust, Mute, Equalise (which offers 15 presets and a 4-band parametric equaliser), Frequency Analysis, Mix (for combining up to four wave files), Crossfade, Reverse, Invert, and Time Compress/Expand. The last of these has three accuracy levels, and in a quick test, the high accuracy option took over three minutes to stretch a 25-second file to 60 seconds.

You can view the waveform at a variety of zoom levels, and when zoomed right in, a draw tool enables you to sketch in raw sound data. This can be useful for removing unwanted noise. Looping is handled very well — the program can find a zero point, and automatically seek

out the next one. When you finish editing a wave file, you can save it to disk, or send it straight to the synth for auditioning as an instrument sound.

Patch editing and management is handled by *WavePatch*, which displays a table of the patches stored in the synth. Double-clicking on a patch

TURTLE BEACH MAUI £189

PROS

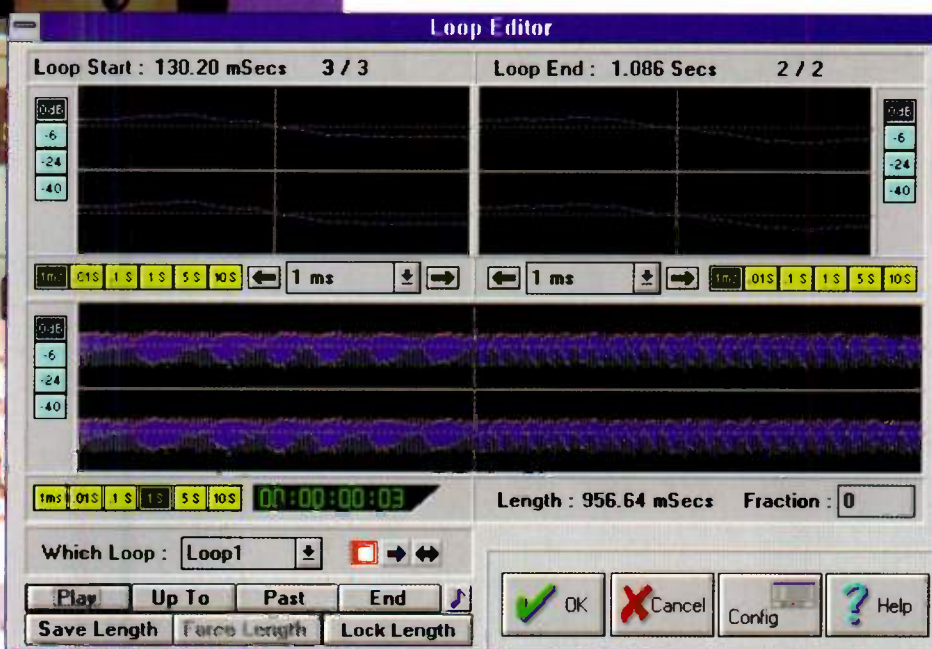
- Simple installation.
- Good MIDI implementation.
- Very comprehensive sample editing.
- Can import stereo waveforms.
- MIDI Thru.

CONS

- No sample record facility.

SUMMARY

Sample playback-only soundcard, ideally suited for use alongside a second, sampling, soundcard.



Setting loop points with *Wave SE* sample editor for the Maui and the Tropez.

interface (such as Voyetra's *Sequencer Plus*) without requiring additional drivers. Once again, a connector cable (about £20) is necessary to provide your MIDI connections — but the connector cable for the Maui has a MIDI Thru port as well as In/Out sockets. Apart from MIDI,

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CHEAP SAMPLING WITH PC SOUND CARDS

TURTLE BEACH TROPEZ £249

PROS

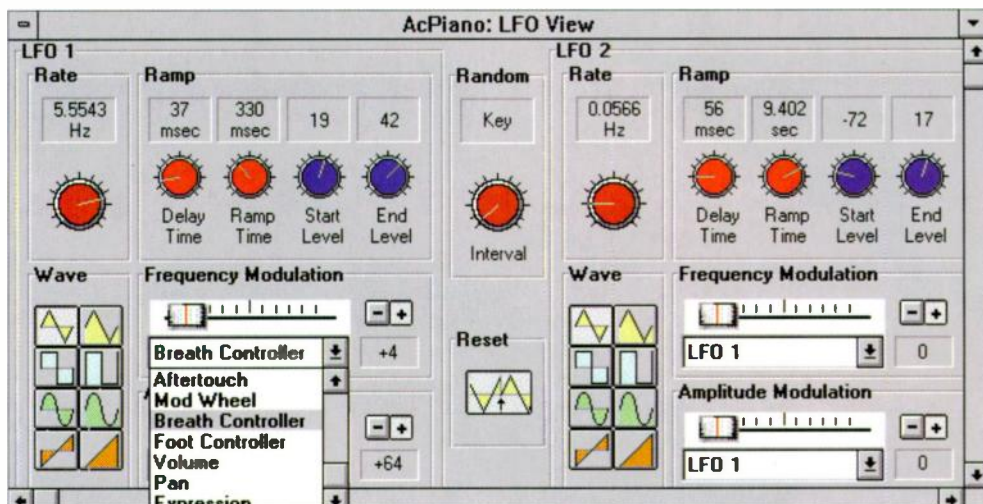
- Good MIDI implementation.
- Very comprehensive sample editing.
- Can use stereo waveforms as samples.
- 12Mb RAM.

CONS

- No Reverb or Chorus.
- Only one type of CD-ROM interface.

SUMMARY

Well-specified sampling soundcard with comprehensive editing software. Ideal for multimedia applications.



Setting up LFO parameters with Turtle Beach's WavePatch patch management software for the Maui and Tropez.

▶ name brings up various windows showing the settings for that patch. These include multi-layering options, keyboard and velocity splits, and envelope, LFO and modulation settings.

There are more options included here than those in *Vienna* for the AWE32, and they are a bit more sophisticated — you can have real-time control using MIDI aftertouch, breath and foot controllers, as well as the modulation controllers offered by *Vienna*. You can use stereo wave files as a source, and create keyboard splits using Note On velocity as well as note number. On the other hand, *Vienna* does allow more than four waves to be combined into a single patch, and has facilities for creating effects like Wah Wah.

FURTHER INFORMATION

- £ Maui £189 inc VAT.
- ▲ Et Cetera, Unit 17, Hardmans Business Centre, Rawtenstall, Lancs BB4 6HH.
- T 01706 228039.
- F 01706 222989.

- £ Tropez £249 inc VAT.
- ▲ Et Cetera, Unit 17, Hardmans Business Centre, Rawtenstall, Lancs BB4 6HH.
- T 01706 228039.
- F 01706 222989.

GRAVIS ULTRASOUND MAX

The Gravis UltraSound Max offers yet another option for sampling on the PC. Although the card is, in general terms, very good, and offers 48kHz digital audio and ADPCM sound compression, its sampling facilities are not as sophisticated as those available on the other cards. For this reason, I am not dedicating as much space to it, since this is an article about sampling, rather than a full-blown product round up.

The Ultrasound has 512K of RAM on board, and is only upgradeable to 1Mb. Connections include line in, mic in, line out and speaker/headphones out, as well as a MIDI/joystick 'D' connector. Amongst the comprehensive

selection of bundled software is MidiSoft's *Recording Session* sequencer/notation package, and Howling Dog Systems *Power Chords*, a wonderful guitar-based composition program.

For wave editing, the UltraSound package includes *Wave Lite* (a cut-down version of Turtle Beach's *Wave*), and *UltraSound Studio*. The latter is pretty comprehensive, with effects like Echo, Reverb, Reverse, Fade, Mix (for combining two wave files) and Time Compress/Expand. For patch editing, the Ultrasound package includes *Patch Manager* and *Patch Maker Lite*. This has features for editing envelopes, stereo balance, tremolo and vibrato, and for tuning and looping.

Overall, the package is pretty good, but the 1Mb RAM limit is restrictive.

FURTHER INFORMATION

- £ Ultrasound Max £269.08.
- ▲ Koch Media, East St, Farnham, Surrey GU9 7XX.
- T 01252 714340.
- F 01252 711121.

CONCLUSION

This article was not intended to present a full and comprehensive review of the complete facilities offered by these soundcards. Its main purpose was to put forward the case for sampling on a PC, using any of the soundcards mentioned here.

I hope that what you've read has convinced you that this method is cheaper and not necessarily less sophisticated than using a stand-alone sampler. As for which of the cards mentioned here is the best, I could not make up my mind. The Turtle Beach cards and software offer more sophisticated control, while the AWE32 allows more RAM, and bundles more software for the money. The sonic quality and specification is pretty much the same on all of them. For the record, I personally use an AWE32 and a Maui in my machine, both of which are fitted with 4Mb chips. This gives me 64-note polyphony, four separate outs, and 16Mb of RAM — for about £900!

SOS

GRAVIS ULTRASOUND MAX £269

PROS

- 48kHz recording.
- Bundled with *Power Chords* composition software.
- Includes a CD-ROM with games and other utilities.

CONS

- Sampling memory only expandable to 1Mb.

SUMMARY

A basic multimedia soundcard with fairly comprehensive sample editing facilities, somewhat hampered by its 1Mb sample RAM limit, but bundled with some fine software.



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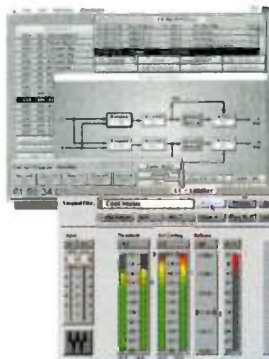


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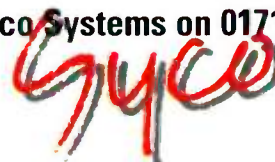
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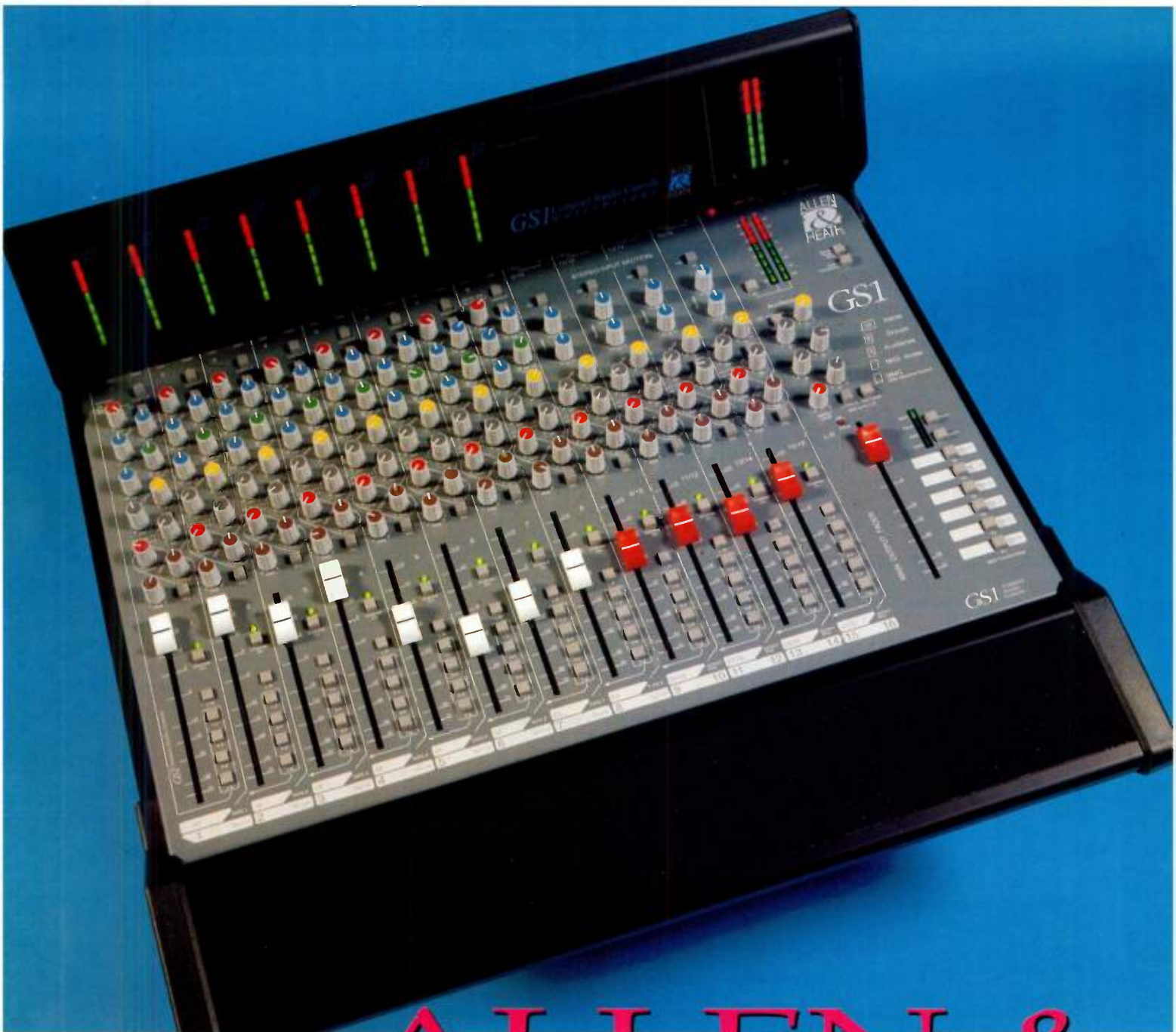
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ALLEN &

8-BUSS RECORDING CONSOLE

Allen and Heath's new 8-buss console costs about the same as the VAT on my own recording desk — and my desk doesn't even have the GS1's MIDI muting or MIDI Machine Control! The GS1's spec also squares up well alongside most other mid-market consoles, with low noise and a 30kHz audio bandwidth, so what's going on — surely this isn't possible? OK, they've had to make some compromises — but the GS1 still has full-length Alps faders, three-band EQ with sweep mid on all the main mono input channels, two-band EQ on the four stereo channels, four stereo aux returns, and three Aux send controls routable to five Aux

busses. Both the mono and stereo channels have full 8-track routing, and all eight mono inputs are mic/line switchable, with global phantom power and insert points. You also get master stereo insert points, while the channel inserts double as direct channel outputs. On the face of it, whatever they've taken out, they've certainly left a lot in!

The GS1's mic inputs are on balanced XLRs, the tape connections are on unbalanced phonos and the remaining signal connections are on unbalanced jacks. MIDI In, Out and Thru sockets are provided on the back panel, alongside a DIN socket which connects to the external power supply. All this, plus MIDI mute automation, comes in a package not bigger (or much thicker) than a tea tray. All that's really missing are Group faders and Group inserts, so if you want to change the

level going to tape, you have to do it by moving your input faders. And on a console with only 12 faders, that isn't such a big deal.

FEATURES

In essence, then, the GS1 is a miniature, in-line mixing console with most of the facilities you'd expect from a conventional mixer, though you don't get features such as assignable EQ, and the Tape Return has only Volume and Pan controls. Even so, you can still globally assign Aux 1 to the Tape Returns (when it flips from post-fade to pre-fade) allowing it to be used to set up foldback mixes based on the off-tape signals.

As is customary, the Tape Returns can double as extra line inputs when you mix, and a Mixdown input flip switch is provided on each of the eight mono channels so that this can be achieved without the need to repatch. If you count the stereo inputs and returns as two channels each, that means you can route a maximum of 32 signals into the GS1 at mixdown, and even though the master section is a little basic, you still get the option to monitor either the L,R mix, the stereo tape return or Aux 1.

The GS1's MIDI muting is based on the same FET switching system used in the more up-market Allen and Heath consoles, and because it employs soft switching, there are no clicks or glitches, even if you mute or unmute when a signal is present. The mutes operate via the Channel On buttons, and one is provided for each of the mono and stereo input channels, though not for the Tape returns or Effects returns. A green LED shows when a channel is on. No on-board mute sequencer is provided — you have to use the MIDI muting with an external MIDI sequencer, but operation is very straightforward, and any sequencer with decent editing facilities will work. The mute data is preset at MIDI channel 16.

In addition to the MIDI muting, there's also a Function Key section configured for MIDI Machine Control, but this may also be used to recall stored mute snapshots or to learn and replay other MIDI information. In MMC mode, the buttons may be

PFL button which not only solos the channel signal, but also puts the level up on the meters to help you optimise the input level. The PFL buttons are non-latching and a red LED comes on in the master section to remind you that you are soloing a channel.

A very neat touch is that when the mono channels are switched to 'Line', the XLR mic input socket may be used as a balanced line input, providing nothing is plugged into the jack input. This is achieved by switching a 30dB pad into the mic input when 'Line' is selected. On the stereo channels, if only the left input is used, the signal appears on both the left and right sides, providing a convenient way of achieving mono operation.

The low and high EQ shelves at 80Hz and 12kHz respectively, and is the same on all channels, though the mono channels also have swept mids which cover the 300Hz-12kHz frequency range. The eight mono channels include a Mixdown button, which simply swaps the line input and tape return sources, so that when you come to mix, the tape signal is routed through the main channel with the benefit of EQ.

In most other respects, the control layout on both types of channel is similar, with Aux 1 providing either a post-fade send to the channel or a pre-fade send to the monitor signal path, depending on the position of the global Aux/Cue switch in the master section. The remaining two sends are fixed as post-fade/main input channel for use as effects sends, and are switchable (as a pair, unfortunately) between Aux busses 2,4 or 3,5.

The Tape Return section has a pan control and a level control, both on knobs, and the main input channel also has a pan control, which works in conjunction with the routing buttons to send the

PAUL WHITE checks out what must be one of the smallest 8-buss recording consoles around, which sports MIDI muting and MIDI machine control and still maintains a very affordable price tag.

HEATH GS1

used to access the conventional transport controls of any MMC-compatible multitrack, as well as to set and search to locate points, but in the interest of avoiding tragic accidents at mixdown, no MMC Record button is provided!

THE CHANNELS

The two types of input strip are identified with white fader caps for the mono channels and red caps for the stereo channels, which, at first glance, could lead you to believe that the stereo channels are in fact groups. Once you've realised they're not, everything is immediately obvious. While the mic channels kick off with a gain trim control and a Mic/Line switch, the stereo channels have a simple Lo and Hi gain selector for -10dBV or +4dBu operation, though both types of channel have a

input channel signal to the desired group output buss. On the stereo channels, there's no need for tape returns, so the pan and level controls function as a stereo effects return input. In the context of a stereo channel, the pan control functions as a left/right balance control.

The PFL button is right next to the channel Pan control, and a little further down is the Channel On button, the latter's green status LED being linked to the MIDI muting system. The usual arrangement of routing buttons lies alongside the full-length Alps faders, and the whole thing is nicely finished off by a wide armrest covered in soft rubber. The reason the armrest is so generous is that you can replace it with the optional meter bridge if you want to mount the mixer in a case or on a wall.

ALLEN & HEATH GS1
£1056

PROS

- Compact and affordable.
- Good sound quality.
- Useful MIDI muting and MMC facilities.

CONS

- No Group level controls.
- No EQ bypass.
- Not rackmountable.
- Meter bridge rather fiddly and time-consuming to fit.

SUMMARY

A really neat, compact 16:8:16 console with MIDI muting. Amazing value given the facilities on offer.

ALLEN & HEATH GS1



MASTER

The master section occupies its traditional place to the right of the front panel and is reassuringly simple —

there are no bizarre routing tricks to compensate for compromises elsewhere in the system. LED-ladder VU meters monitor the stereo output of the console, and a nice touch is that these can be switched to conform to either -10dBV or +4dBu operating levels. If a PFL button is pressed, the pre-fader channel signal level is displayed on the meter.

Directly below the meters are the five master level controls for the five aux send busses. Also located here is the global Aux/Cue switch, which moves Aux 1 from the channel signal path (post-fade) to the Tape Return path (pre-fade). The headphone output is switchable from the main stereo output to the Foldback output (Aux 1) and a separate switch allows the main monitor output to be muted.

In addition to all the above, you get a couple of buttons to select the monitor feed as the Left/Right mix, the Aux 1 foldback mix or the stereo tape return, a Monitor Level control, and a single stereo fader to control the main output level.

MIDI

All that remains to explore is the MIDI/Mute Automation section, which has four modes: MMC, Patch, MIDI and Learn. To use the Mute Automation in its simplest form, you select Patch mode, press the Learn button, and then use each of the six function keys to store a snapshot of the mixer's mute settings. As long as you remain in Patch mode, pressing the appropriate function key will recall the mute snapshot you stored and send MIDI program change information at the same time. Alternatively, you can call up your six snapshots using MIDI program change commands from an external sequencer.

For a simple job, that may be enough to save the day, but once you've got a taste for automation, you'll probably want to get a bit more involved, in which case you'll need to use an external sequencer to store and edit your mute data. Whenever a Mute button is pressed on the GS1, MIDI Note On/Off and velocity information is output on MIDI channel 16. The system interprets high note velocities as Mute Ons and low velocities as Mute Offs. Sending this mute data back to the GS1 will cause the mutes to operate. What happens if you start playback in the middle of a sequence depends on how intelligently your sequencer 'looks back' at preceding Note information. Using programmed mutes, it is possible to do basic level and EQ automation by feeding the same signal into two channels with different settings, then using the mutes to switch between channels.

In MMC mode, the GS1 sends out MIDI SysEx commands corresponding to the MIDI Machine Control functions for Play, Stop, Fast Forward,

Rewind, Set Locate and Locate. If you have a tape machine or sequencer that responds to these, you may never have to leave your seat during a mixing session. Sequencer mute control may be used at the same time as MMC, though direct snapshot recall from the function keys isn't practical, as you'd have to keep switching modes.

Finally, in MIDI mode, you can send MIDI messages to the GS1 and store them so that they can be sent back out whenever one of the function keys is pressed. Obviously, there must be a limit to the length of the message that can be stored, so if you try to store a total SysEx dump from one of your synths, I don't think you'll have a lot of success, but for storing simple triggers for samples, or other short messages such as patch changes, it works fine. A nice touch is that you can store one message for a key press and another for the key release, which allows you to control note length, for example, directly from the function keys.

IN USE

The first thing you notice about the GS1 is that most of its features are delightfully conventional, so the learning curve is as near flat as you can reasonably expect. The use of phonos for the multitrack and stereo tape connections, as well as the monitor output, might be seen by some as rather unprofessional, but most analogue budget multitracks use phonos, pretty much all cassette and DAT machines use phonos, and the hi-fi amp you'll most likely be using for monitoring will also have phono inputs. In practice, this means you can use cheap, ready-made phono hi-fi leads to wire up most of your system, and if you do have a digital multitrack with jack inputs, you can always buy 16 phono-to-jack adaptors.

Where I'm less convinced about the use of phonos is in location recording. Phonos are absolutely fine if you're going to plug them in and leave them alone, but they aren't designed to be plugged and unplugged on a regular basis. Bearing this in mind, if location recording is high on your list of priorities, I'd recommend casing up the mixer and the multitrack so the wiring can be left intact, or failing that, packaging the mixer with a patchbay or multicore connection system.

The main operating compromises are the lack of Group faders and the fact that the Aux Sends are switched from groups 2,3 to 4,5 in pairs rather than individually. What this means is that if you're mixing six drum mics to two tape tracks, you have to move all six faders up or down to get the to-tape level right. This is a bit of a nuisance, and fitting a single Group rotary level control to each of the mono channel strips would have solved the problem without taking up too much space. Even so, in most real-life situations, the adopted arrangement isn't likely to be a major irritation.

The MIDI side of the system is surprisingly simple, and the only thing that might make life more difficult is if your sequencer doesn't allow you to edit the recorded data very easily — as may be the case with some older hardware



EXPANDING YOUR OPTIONS

Once you've bought your GS1, you don't have to worry too much about outgrowing it — at least not in the immediate future. Unlike most small mixers, the GS1 has an 8-channel expander module available, which duplicates its first eight channels, providing you with eight more mic/line channels and eight Tape Returns. There's also a meter bridge, which may be mounted either at the top of the mixer in time-honoured fashion, or in place of the armrest for the benefit of those who want to hang their mixer on the wall. In addition to duplicating the main stereo meters, the meter bridge also provides eight further bargraphs which monitor the Group output levels.



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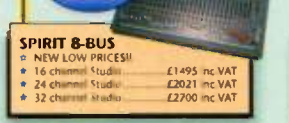
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ALLEN & HEATH GS1

► sequencers. Most of the current computer sequencing packages, on the other hand, are quite 'mute friendly' so you should have no trouble at all. It's worth reiterating that the GS1 only handles mute data on Channel 16, but again, I don't see this as an insurmountable problem.



On the MMC front, the GS1 works just like any other remote control, but if you want to use any of its MIDI features at the same time as your MIDI keyboard, you'll need some kind of MIDI merge box, as the GS1 has no internal MIDI merge facility.

Perhaps most important is the way the GS1 sounds. It's an often overlooked fact that the shorter signal path of a small mixer such as this makes it easier for the designer to provide a very clean signal route from input to tape. However, the real purists can use the channel insert sends to go directly to tape, which bypasses the mix busses and the group output amplification stage. A significant point is that the mixer has a 30kHz audio bandwidth, and although this is well above the cutoff point of human hearing, it's widely recognised that the fast transient response of high-bandwidth

circuitry helps preserve a transparent, detailed sound, possibly because of better phase linearity.

Tests confirmed that the GS1 was electrically very quiet, both via the mic and line inputs. Even with the meters driven firmly up against their upper limits, no distortion was evident (from which I conclude

that the mixer has plenty of headroom), and to get even the slightest whiff of crosstalk or leakage through the mutes, you have to turn the monitor gain so high that you'd never dare turn the signal on, for fear of wrecking both your speakers and your ears! And yes, the mutes are quiet — no clicks were evident, no matter what material was being played at the time.

The GS1's EQ also turned out to be a pleasant surprise, and though there are no EQ bypass buttons, the controls are centre detented. On a larger console, the lack of EQ bypass would be a major flaw, but when you consider just what Allen and Heath have managed to cram into this little desk, it would be petty to complain. If anything, I would have liked the mid EQ to sweep a little lower, ideally down to 150Hz, but the actual tonality of the EQ is very

sweet, and the plus or minus 14dB range on offer is far more than you would normally use. Using the EQ subtly, you can add bottom or top to a track and still leave it sounding quite natural, without boominess or harshness. Similarly, the mid control is reasonably warm, yet still focused enough to let you home in on trouble spots.

SUMMARY

You can't make a desk this small and to this price without cutting some corners, but I'm happy to say that none of the compromises affect this desk's sound quality in any way, and most have very little adverse effect on its usability. So, if you buy a GS1, apart from regaining most of your room space, you get most of what you'd expect on an 8-buss, in-line mixing console, but without Group faders, EQ bypass, individual aux send buss switching (they have to be switched as a pair) or a separate level control for the headphones. What you do get is exceptionally good sound quality, a nice-sounding EQ, and very simple MIDI muting, plus the other MIDI function key features, including MMC.

Finally, then, who's going to buy the GS1? Obviously, it's going to appeal to those 8-track users who are short of money, space or both, but there are enough neat features to encourage a lot of people to buy the desk for its convenience and its sound quality. Because there are 32 possible inputs on mixdown, even those using lots of effects and MIDI instruments shouldn't find it too limiting, and the fact that you can expand the mixer further is also appealing. I only hope that Allen and Heath will consider making a stereo expander module. This would be excellent for MIDI users, as it would add another 32 inputs in less than a foot of space, as well as making the mixer better suited to 16-track work.

You've probably gathered by now that I like the GS1. It does have its limitations, but none of them can be considered as more than a minor irritant, and I think that Allen and Heath have finally beaten their Harman team-mates at Soundcraft by coming up with cutest, most desirable budget recording mixer currently on the market. For how long they maintain that position is, of course, another matter, but right now, if you're after a compact mixer that will enable you to make high-quality 8-track recordings without tying you up in knots (either mental or financial), you won't go far wrong with the GS1. For those who say that our conclusions sometimes sit on the fence too much for their liking, I'll spell it out — go and buy one, there's currently no competition!

SOS

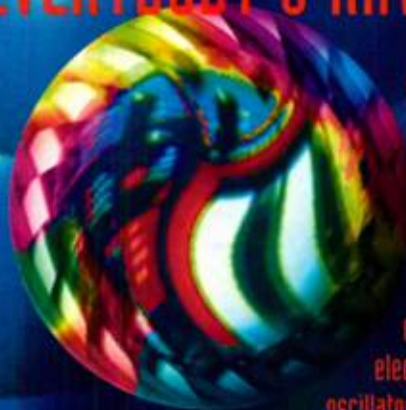
BRIEF SPECIFICATION

Tape Outs and Sends:	50 Ohms, unbalanced phono, +21dBu max output level.
Monitor Out:	100 Ohms, unbalanced phono.
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Line In:	Unbalanced jack, 10 kOhms.
MIDI:	In, Out, Thru.
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Mix Noise:	-85dB.
Crosstalk:	Better than 80dB at 1kHz.
Dimensions:	700 x 800 x 120mm.
Weight:	7.5kg.

FURTHER INFORMATION

- E GS1 £1056.33. This price includes the meter bridge — the GS1 cannot at present be bought on its own. Expander module, £586.33. Prices include VAT.
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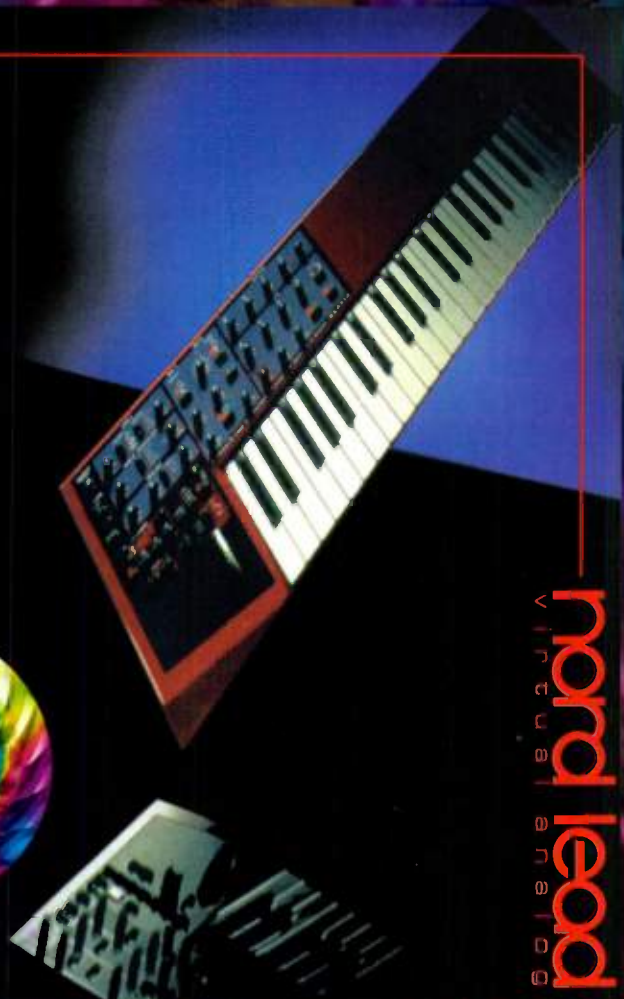
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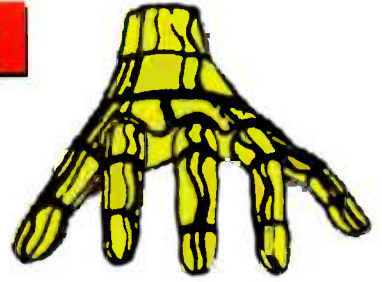
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back to basics

PART 4: PAUL WHITE
*looks at the multitrack
recording console and
its role in your
multitrack recording
system.*

PLANNING YOUR FIRST HOME STUDIO

If you're working with a cassette multitracker, the chances are that it has a relatively simple mixer section, and because everything is in one box, you don't have any wiring to worry about. All that changes when you move up to a larger multitrack system based around a separate mixer and tape machine. Separate multitrack mixers are much more flexible and powerful than the ones you find in most cassette multitrackers, but by the same token, they are potentially more confusing and you also have to deal with the wiring. A studio console doesn't just mix signals — it also acts as a central routing system, sending signals to the different tape machine tracks, adding effects from external processors, and mixing the outputs from the tape machine to produce a final, stereo mix. At the same time, it has to function as a 'mixer within a mixer' so that a separate control

room monitor mix can be set up while the performers are recording or overdubbing.

CHANNEL FLANNEL

If you're new to mixers, you might find the terminology a little confusing, and one mistake that even experienced users make is to refer to a mixer as having so many 'tracks'. In fact mixers don't have tracks, they have channels and groups — it's tape recorders that have tracks.

A mixer channel is simply another name for an input and its associated controls; a typical mixer channel will include features such as gain control, EQ, an insert point, Aux sends and a fader, though on a multitrack mixer there are two different kinds of channel. The main input channel generally has the most comprehensive facilities and is used to feed microphones and line-level sources such as

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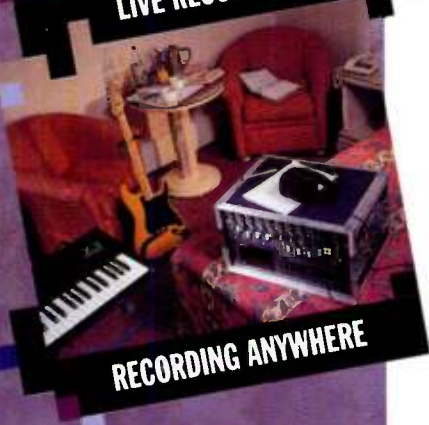


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Your first home studio

▶ keyboards and samplers into the mixer while recording. When you come to mix, this channel is switched to handle the output from the multitrack tape machine. The other type of channel is the monitor channel, so-called because it is used to set up a guide monitor mix based on the multitrack outputs while the performers are recording their original parts or overdubbing new parts. Without this facility to monitor the multitrack outputs, there'd be no way for the engineer to hear what was going on, and no way for the performers to hear what was already on tape.

Monitor channels tend to have fewer facilities than the main input channels because their main job is to provide a rough mix during the session. They may have little or no EQ and fewer Aux sends than the main channel, though on an in-line mixer (so-called because the main input and monitor controls are located in the same channel strip), there's often provision to switch all or part of the EQ between the main and monitor signal paths, and the same is often true of the Aux sends. More on this later.

Because there is no need for a monitor mix when the recording is completed, most consoles allow the monitor channels to be used as extra line inputs at the mixing stage. These may be used as additional effects returns or to add sequenced MIDI instruments into the mix.

GROUP THERAPY

The next piece of terminology to explore is the group. Whereas a stereo mixer just has a left and a right output, a multitrack mixer has several

KEY TERMS

MUTE: the vast majority of serious studio mixers have Mute buttons on their input channels. These turn off both the channel signal and any post-fade Aux (effects send) sends. Pre-fade (foldback) sends are not normally affected.

PFL AND SOLO: PFL is short for Pre Fade Listen, a system that allows any selected channel or Aux send/return to be heard in isolation over the studio monitors. Because PFL is pre-fade (monitored prior to the channel fader), the level is independent of the channel fader position. When a channel's PFL button is pressed, all the other channels (on which the PFL has not been pressed) are excluded from the monitor mix and, at the same time, the signal level of the channel you are checking is displayed on one of the console's meters. PFL is generally used in this way to set up the individual channel input gain trims. Solo also isolates the channel in the monitor mix, but this time the signal is post fader, which means that what you hear is the actual level of the signal in the mix. Most solo systems also retain the Pan position of the signal being checked, which is why the term 'Solo In Place', or SIP, is also commonly used. On a studio console, the main stereo output feeding the master stereo recorder, is not interrupted when PFL, Solo or SIP are used.

AUX SENDS: mixers invariably incorporate both pre-fade and post-fade Aux sends. Aux sends provide a means to set up an independent mix of the channel signals, either for feeding effects or

for providing a foldback mix. Pre-fade sends aren't affected by changes in the channel fader position, which makes them ideal for setting up foldback mixes. Post-fade sends are derived after the channel fader, so if the channel fader is adjusted, the Aux send level changes accordingly. This is exactly what is needed when adding effects such as echo or reverb, because we normally want the relative levels of the dry signal and the effect to remain constant.

INSERT POINT: an Insert point is simply a point at which the signal flow may be interrupted, allowing an external signal processor (a compressor or gate, for example) to be connected. Most consoles use stereo jacks as insert points which means that a Y lead (stereo jack at one end, two mono jacks at the other) is needed to connect the external device. Alternatively, the insert points may be wired to a normalised patchbay. Insert points are usually provided in the Input channels, the Groups, and at the main L/R stereo outputs.

AUX RETURNS: An Aux return is an additional line input channel, but with fewer facilities than the main input channels. On smaller desks they will be permanently routed to the stereo mix buss, while larger desks will provide the same routing arrangement as on the main input channels. Though these are included for use with effects, they can be used to add any line-level signal (such as a tape machine, CD player or MIDI instrument) to the mix.

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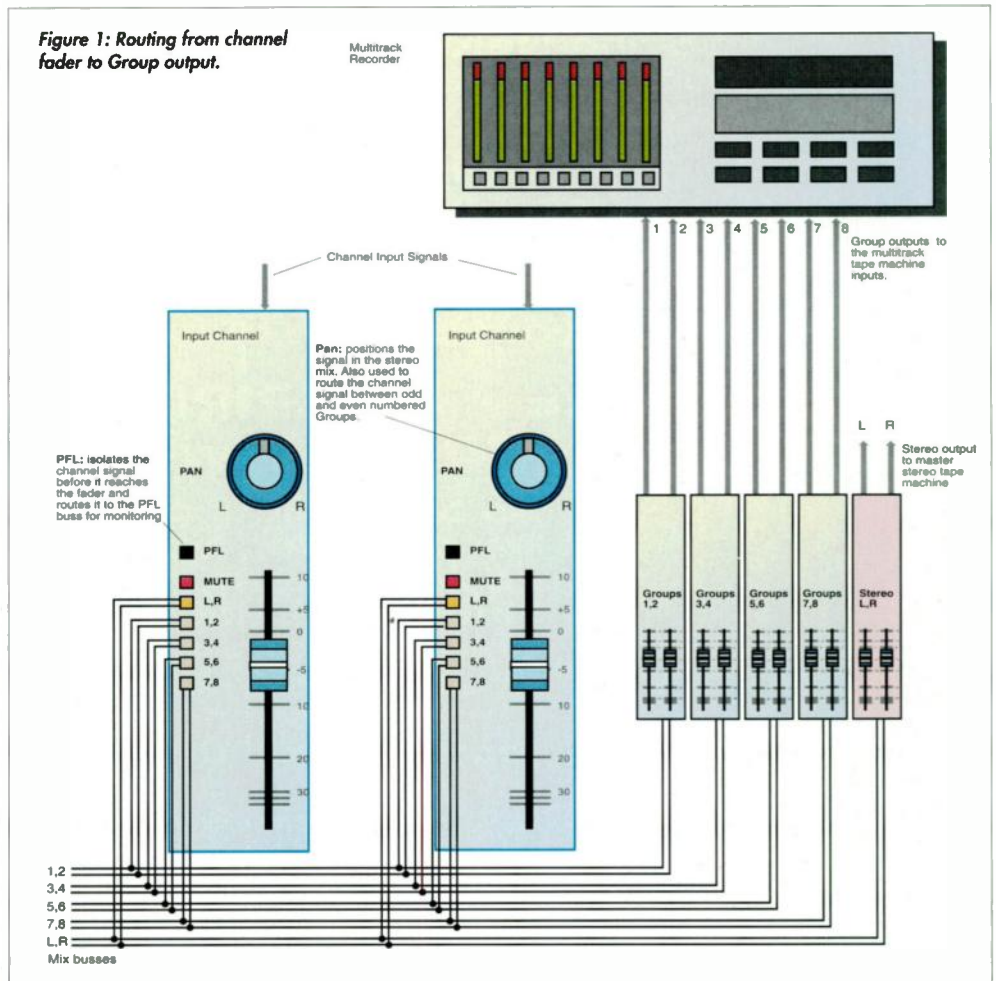


Your first home studio

► additional outputs, each with its own fader, the idea being that a different combination of signals can be routed to each of several tape tracks. These separate outputs are known as groups, and for use with an 8-track tape recorder, an 8-group mixer is ideal. The term 8-group simply means that the mixer has eight mix outputs in addition to the main stereo output. (You might also see such a mixer described as an 8-buss console, because the eight groups are fed from eight mix busses.) Any of the input channels may be routed to any of the eight group outputs (or to the stereo output), and if two or

outputs (which are connected to the multitrack inputs) or to the stereo mix which, at mixdown, is used to feed the stereo mastering recorder. Invariably, a single button handles the routing for a pair of groups, with the Pan control being used to change the balance of what is sent to the odd- and even-numbered groups. If you want to route a channel only to output group 2, for example, you'd press the routing button marked 1,2 and turn the Pan control fully clockwise so that all the signal went to group 2 and none to group 1. Leaving the Pan control in its centre position would send equal

Figure 1: Routing from channel fader to Group output.



more channels are routed to the same output, they are automatically mixed together; the channel faders set the relative levels of the various elements in the mix and the group fader controls the overall level. During recording, these group outputs feed directly into the inputs of the multitrack tape machine, enabling any mixer input to be routed to any tape track without the need to re-plug any cables.

ROUTING AROUND

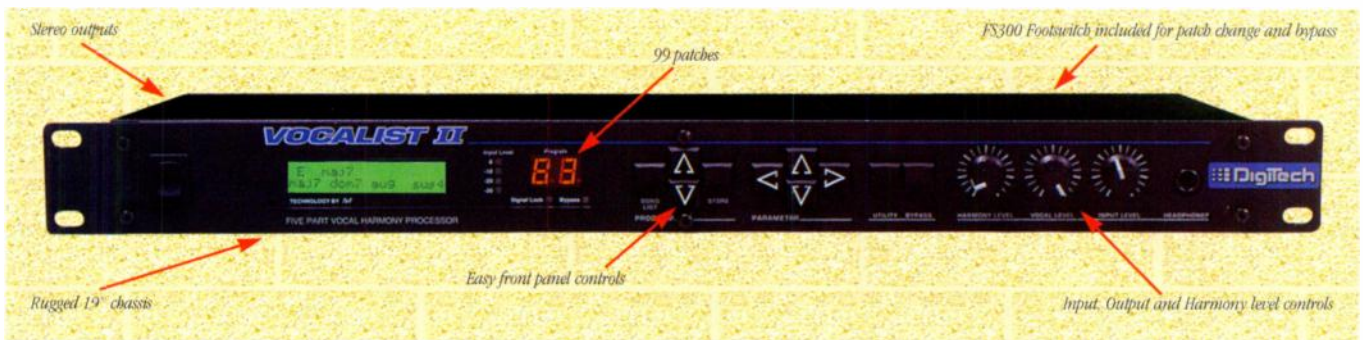
On a cassette multitracker, routing the desired input signals to tape is relatively straightforward, but using a multitrack mixer the procedure may be slightly unfamiliar. Next to the channel faders, you'll find a set of routing buttons which are used to send the channel signals either to the various group

amounts of signal to groups 1 and 2. To record something in stereo (for example, the different drum mics over a drum kit), the relevant channels would be routed to a pair of groups and the Pan control used to position the various sounds between them. The outputs from these two groups would then be recorded to two tracks of tape. When mixing, these two tape tracks would be panned hard left and right to maintain the stereo image you created while recording.

On an 8-group mixer (the most popular format for project studio use), the routing buttons would be marked 1,2 3,4 5,6 7,8, with a further L,R button for routing the channel directly to the stereo mix. Figure 1 shows the signal flow through the routing buttons of a typical console, including the signal

"Your first encounter with a multitrack mixer may be daunting, but you can take comfort from the fact that one channel is exactly the same as the next, and once you've got your head around the basic routing system, you're almost home and dry."

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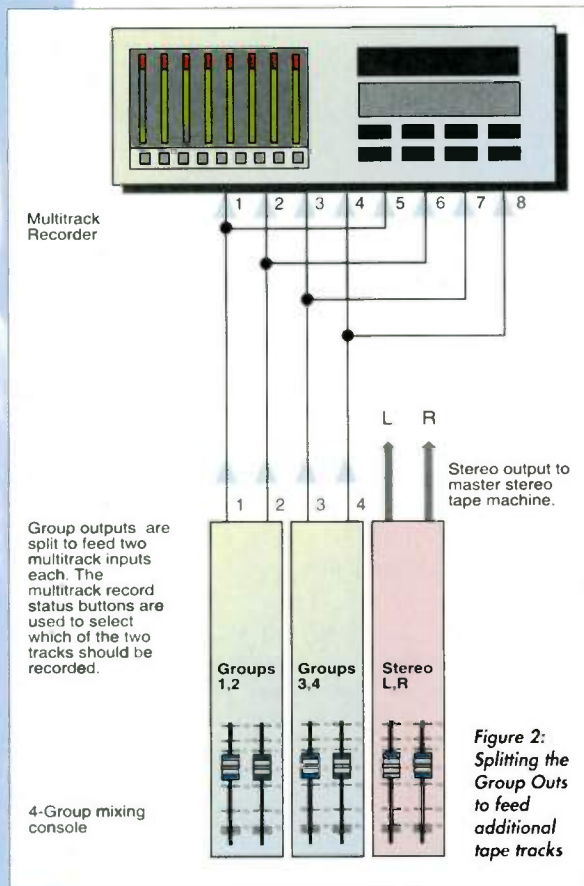


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Your first home studio

- ▶ path to the group fader and group output socket. Note that you don't have to use an 8-group mixer to work with an 8-track tape machine — you could use a 4-group mixer, as long as you don't need to



record more than four groups at a time. You can still record more than four tape tracks at a time by using channel direct outputs, insert sends, or even spare aux sends, to feed additional tape tracks. By connecting group output 1 to tape inputs 1 and 5, group output 2 to tape inputs 2 and 6 and so on, you can still record on all eight tracks without having to re-plug any cables. The tape machine record status buttons determine which of the two possible tracks each group will record onto. Figure 2 shows this arrangement, and in practice, many 16- and 24-track tape machines are used this way.

SPLIT AND IN-LINE MONITORING

On a conventional 'split' mixing console, the group faders and the monitor channel controls are situated on the right-hand side of the mixer. Between the main input channels and the monitor section is the master section, which includes features such as the master stereo faders, and the Aux send and Aux return master controls. It's here that you'll also find things like the test oscillator, the talkback mic, Mix/2-Track switching, headphone level control, and so on. An 8-group console needs a minimum of eight monitor channels to provide an off-tape monitor mix, but many models have 16, allowing the mixer to be used with a 16-track recorder using the split wiring arrangement illustrated in Figure 2. The basic requirements for a monitor channel are Level and Pan controls so that a stereo cue mix can be provided from the outputs of the multitrack recorder. In practice, though, most monitor channels have some form of basic EQ and also Aux controls that feed the same Aux busses as the main mixer input channels. Figure 3 (overleaf) shows a multitrack mixer, with the monitor section shown separately. In reality, the monitor section is housed in the same box as the rest of the mixer, but it can help to visualise it as a separate mixer within a mixer. The diagram shows the signal flow during recording.

Why is it that the monitor section always monitors the tape machine outputs? What happens if you want to hear what you're playing at the same time as you're recording? Fortunately, modern multitrack tape machines are far simpler than they used to be when there was a time delay between the record and playback head, and when there were separate switches on the tape machine to switch each tape track between input, sync and playback monitor mode.

These days, the tape machine takes care of monitor switching without you even having to think about it, and the relevant signal is always present at the tape output socket. If a track is being recorded, you hear the tape input, but if the track is in playback mode, you hear what's on tape. On older, less sophisticated tape machines, there's usually a switch which allows each monitor channel to be fed from either the multitrack output or the group output (which is the same thing as the multitrack input).

PERFORMERS' CUE MIX

So, what exactly does the performer hear when overdubbing? In a small project studio, where only one or two people are recording at a time, it's often sufficient to use the control room mix (usually based on the monitor mix during recording) to feed the performers' headphones. At its simplest, this may mean plugging a pair of cans into the console's phone output, but a separate headphone amp with multiple outputs is a better choice.

For larger sessions, where different members of the band want to hear different mixes, you have to use the monitor section pre-fade (foldback) Aux sends, and on a console that has four pre-fade sends, you can

set up four different mono foldback mixes. It may also be useful to use some of the Input channel pre-fade sends as part of the foldback mix.

Of course you'll need a headphone amplification system that can handle four different mixes to do this, but in practice, the smaller studio can usually get away with just two different mixes — one 'rhythm heavy' and the other 'vocals heavy'. Professional consoles may have stereo pre-fade sends, but most budget consoles don't, and it's unlikely that a budget in-line console will give you four different pre-fade monitor Aux sends, for that matter! While it's easiest to use the monitor channel

pre-fade sends to set up a monitor mix, some engineers also use the Aux sends on the main input channels, which allows more control when adding the sounds of the individual performers into the headphone mix. It's also customary to add reverb to the singer's headphone mix just to help encourage a good performance. This need not be recorded to tape.

Most low-cost commercial headphone amps allow for two different input mixes to be handled, and each phone output can be set to 'listen' to either of the two available mixes. There'll be more about foldback monitoring and headphone amp systems in future issues of SOS.

The Natural Move

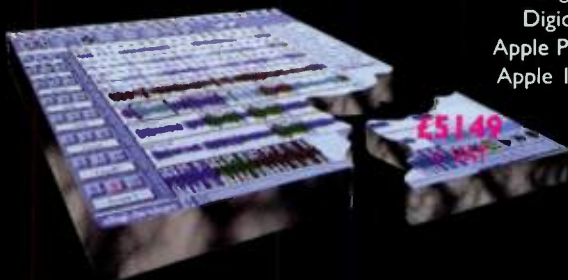
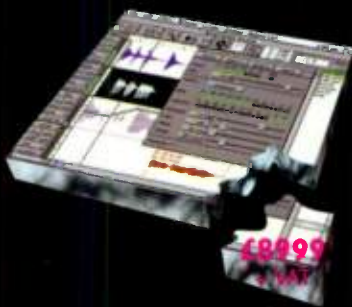


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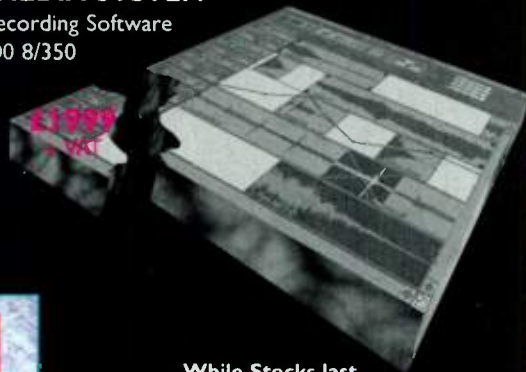
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Your first home studio

► Currently, nearly all budget recording consoles follow the in-line format, which differs from the split concept in that the monitor controls reside in the same channel strip as the main input channel

in-line mixer, you may get just a simple bass and treble EQ, or no EQ at all. To mitigate the evident restriction of having no EQ, there is often a switching arrangement that allows the monitor channel to share part of the main input channel's EQ. For example, if the main EQ is a 4-band affair with two sweep mids, the monitor channel may be able to commandeer the Hi and Lo EQ, leaving the main Input channel with two sweeps. In such cases, the sweep range is usually wide enough to allow the two mids to cover the entire audio spectrum. Another common arrangement is for a couple of the Aux sends to be switchable between either the input or monitor channel.

MIXING DOWN

If you're using a split console, when it comes to the final stereo mix, you have to route all your tape tracks to the main input channels and then set up the mix from scratch. With an in-line console, however, as each track is recorded, you can operate a flip switch at the top of the channel strip to route the tape

signal through the main input channel path, leaving the monitor input free for later use. The benefit of working this way is that you can be working on your mix and fine-tuning the balance and EQ as you go along. By the time you've finished recording, you should have the basis of a good mix set up.

Having lots of free monitor channels (now connected to the channel line inputs, courtesy of the Flip switch) more line signals can be added to the stereo mix using the monitor channel Level and Pan controls. In these days of large MIDI systems, many of which are used sync'd to tape,

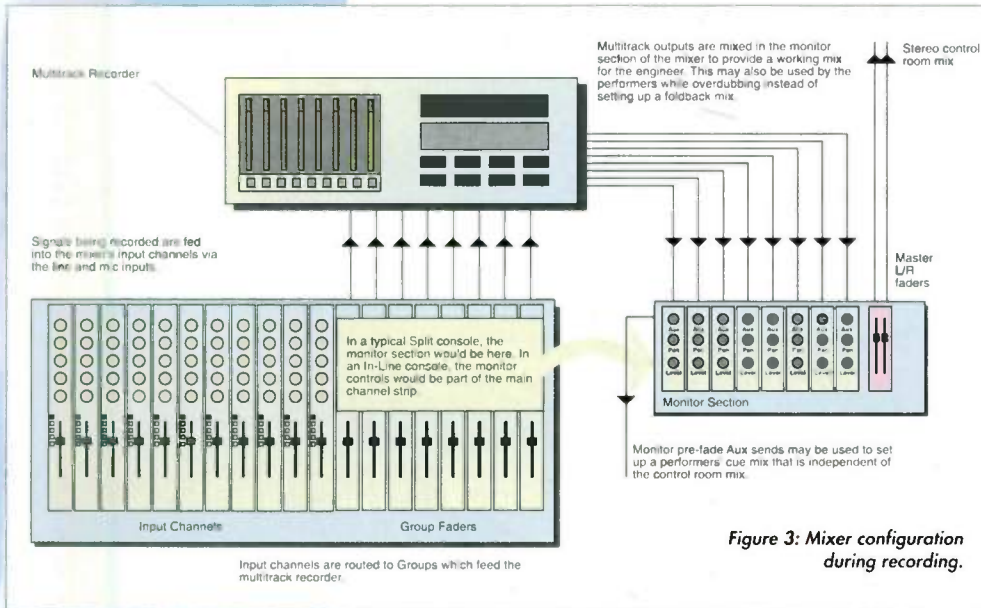


Figure 3: Mixer configuration during recording.

controls. This may seem confusing at first, but the advantage is that instead of being limited to just eight or 16 monitor channels, there's one monitor channel for every input channel. This layout usually results in a mixer that is deeper front to back than an equivalent split design, but it also means the mixer can be made less wide for the same number of channels. This can be an important consideration in the project studio where space is limited.

Most monitor channels have at least one Aux send control, but there may be little or no room for EQ controls. Depending on the model and make of

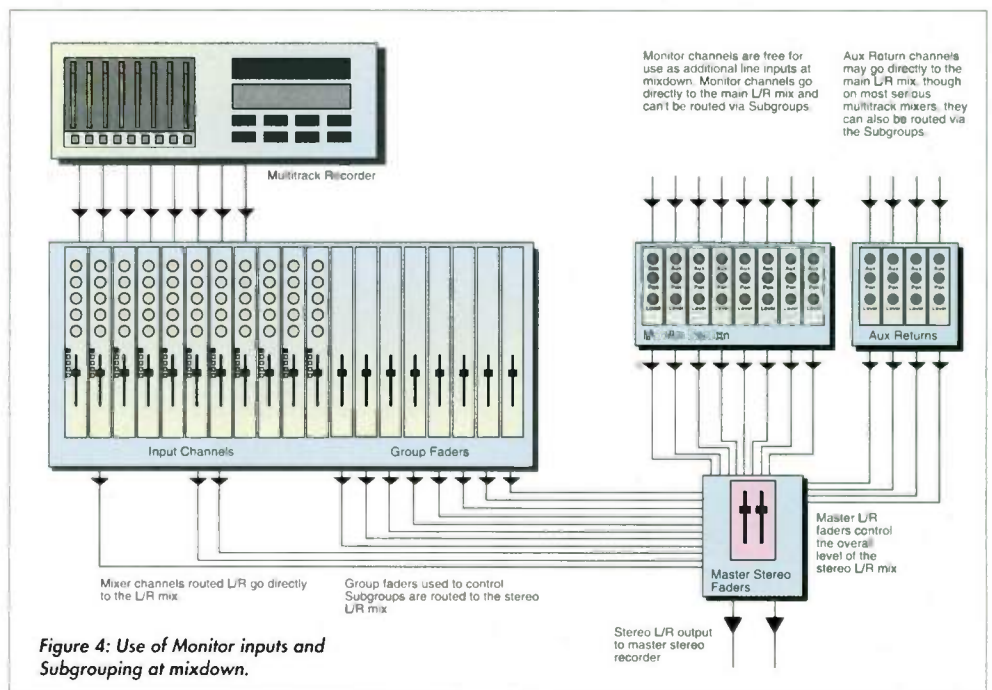


Figure 4: Use of Monitor inputs and Subgrouping at mixdown.

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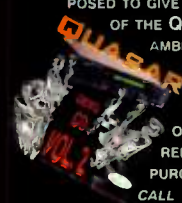
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Your first home studio

- ▶ these additional inputs are a necessity. Furthermore, these spare monitor channels may be used to handle extra effects returns if you run out of conventional effects return inputs. It's worth noting at this point that an effects return is just another kind of input channel, and you could equally well use it to feed synths into your mix. The names are largely for convenience.

REAL WORLD MIXING

Though both in line and split consoles have separate Monitor channels to provide an off-tape control room mix while recording, it seems that a great many people don't use them for that purpose at all. Instead they operate their mixers in so-called 'all-input' mode.

SUBGROUPING

Now that you've got used to the idea of the monitor channels changing roles when you come to mix, it's time to look

faders to the left and all even-numbered ones to the right. A better system, which is usually missing from budget consoles for cost reasons, is to provide group Pan controls. If you have group Pan controls, you can create mono subgroups and still pan them anywhere in the stereo mix. If you don't have group Pan controls, you always have to use up two group faders for every subgrouping operation, apart from those where the end result will be panned either hard left or hard right.

In a typical mix, you might create subgroups from elements like drums, backing vocals and keyboards, which reduces the number of faders which need to be moved during the mix. Note that any effects that are to be added to these subgroups using the Aux sends should be returned to the same subgroup, otherwise the effect level won't change when the group fader is moved. Figure 4 (on previous page) shows the signal flow at mixdown. In this example, the monitor channels are being used as extra line inputs and the signal flow shows how subgroups actually work.

SUMMARY

Your first encounter with a multitrack mixer may be daunting, but you can take comfort from the fact that one channel is exactly the same as the next, and once you've got your head around the basic routing system, you're almost home and dry. Take the time to study the block diagram of your particular mixer — there's always one in the back of the manual — and try to get a feel for what can be routed where. Most mixers work in the same way, but there are small differences between models that it pays to be aware of.

Finally, when choosing a mixer as part of your system, don't look at your

system as it is now, but as it might be in a year or two's time. If you don't, you're bound to run out of channels as your MIDI system expands or as you add more tape tracks. If you have a very large MIDI setup, consider whether buying a separate rack submixer would make more sense than buying one big multitrack console, and ask whether expander modules are available for the mixers on your short list. If you've moved into digital multitrack you have the option of using multiple machines to provide more tracks, but will your choice of mixer allow for this? You may even be considering mix automation, in which case, is there a system that can be added to your mixer at a later date? You can never predict every future requirement, and even if you could, you probably couldn't afford to buy a mixer that would cover every eventuality, but a little forethought will help you choose something that you aren't likely to have to sell at a loss in six months' time when you've outgrown it. Next month, I'll be looking at how the mixer and multitrack are connected.

SOS

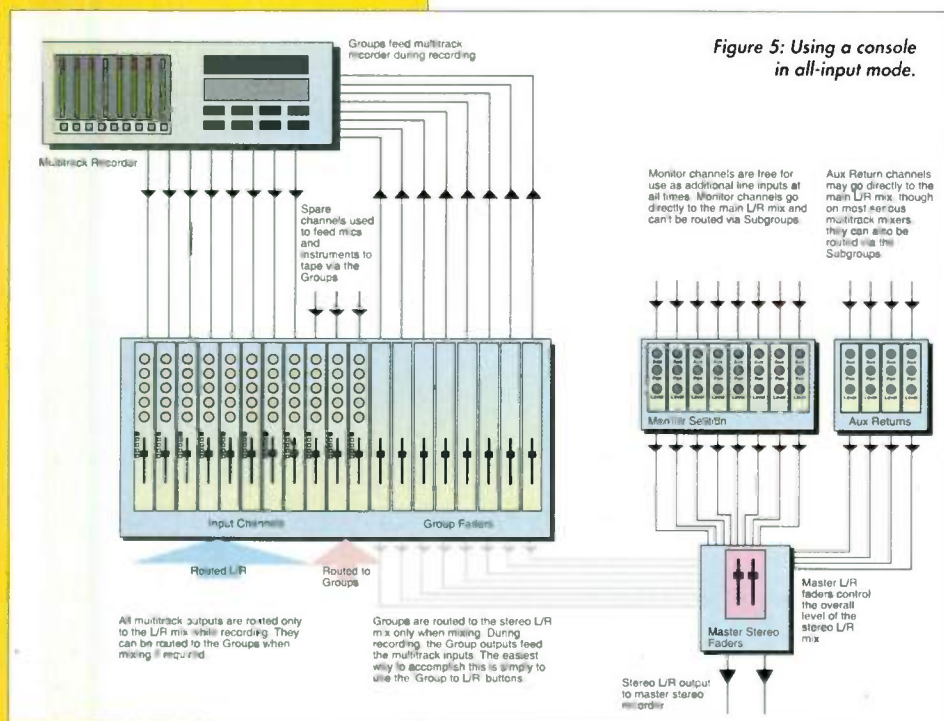


Figure 5: Using a console in all-input mode.

To illustrate by example, let's assume you have an 8-track tape machine. Providing you have enough Input channels, you can leave the outputs of your tape machine permanently connected to the first eight channels of the mixer, routing these directly to the stereo L/R mix, and use the remaining Input channels to handle the signals being recorded. This does away with the need to switch the off-tape signals between the Monitor and Input channels, and also means that you can build up your mix, complete with added effects, as you record. In effect, your control room mix also becomes your final mix.

The now-redundant monitor channels may be used as inputs for MIDI instruments being sequenced in sync with the multitrack recorder or as effects returns. The only limitation of working this way, other than having to ensure you have a mixer with enough input channels, is that the monitor channels can't be routed via the groups to create subgroups — they always feed directly into the stereo L/R mix. Figure 5 illustrates this way of working.

at the group routing system, which also has another part to play. During recording, the groups are used to route signals to tape, but when you mix, they can be routed back into the stereo mix. Why would you want to do this? Imagine you have a backing vocals recorded over four or five tracks of your multitrack tape. To change the overall level of the backing vocals, you have to change the level by moving several faders at once, which is both cumbersome and inaccurate. A more effective approach is to create a *subgroup* of the backing vocals, by routing those channels not to the L/R stereo mix but, instead, to a pair of groups. In this way, the whole stereo backing vocal mix can be controlled by just two group faders. Some consoles have the groups permanently routed to the stereo mix, while others provide 'Groups to Stereo' buttons for each group fader, and these generally route all odd-numbered group

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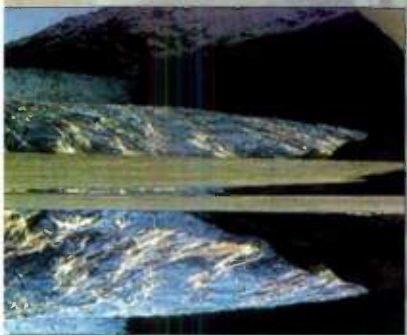
HECTOR ZAZOU • SONGS FROM THE COLD SEAS

One of the most striking albums you're ever likely to hear is *Songs From The Cold Seas*, brainchild of French keyboard player, composer and sound sculptor Hector Zazou. Released earlier this year, it's a long musical voyage across the seas of the North — the Chukchi Sea, the Greenland Sea, the North Sea, The Atlantic Ocean, the Arctic Ocean, the Barents sea, the Kara Sea, Baffin Bay, the Labrador Sea, the Sea of Okhotsk, the Berings Sea, and many others. Eleven times during this voyage, land was visited and local traditional songs and rhythms were sampled and brought back. Thus *Songs From The Cold Seas* contains exotic singing and percussion playing from the Ainu people of Hokkaido Island, from Eskimos in Baffin Island, from shamans and Yakuti people in Siberia, joik chanting from the Sami people of Lapland, and music from more familiar Nordic places such as Finland, Sweden, Ireland, The Hebrides, Greenland, Iceland and Newfoundland.

Hector Zazou, virtually unknown in this country, but well-known in France, has long been a champion

of what's usually called 'World Music' these days. During the early '80s, he was one of the first to fuse African music with Western music styles such as rock, techno and ambient, and by the late '80s he was delving into the polyphonic vocal music of Corsica, making an award-winning album, *Les Nouvelles Polyphonies Corses*, that achieved cult status across the Continent. And now there's his excursion to the North, musically an undiscovered country — though this, explains Zazou, was exactly the point: "I had some propositions to work again on Mediterranean music, or on Rai, or other things, and I wasn't excited about any of them. So I decided to find something completely unknown, to work with music that hadn't been heard before in the West. The music of the South — the Caribbean, Brazil, Africa — has been done to death, so the only place to go was North."

His pioneering spirit was rewarded. *Songs From The Cold Seas* contains sounds so unusual that the dropped-jaw effect is inevitable, even with our overloaded Western ears. The amazing breathy throat-singing of shamans and call-and-response singing of





electronics backings, yet on *Songs From The Cold Seas* he has surpassed himself. Using the instrumental skills of Harold Budd, Mark Isham, Renault Pion, Marc Ribot, Jerry Marotta, BJ Cole, the Balanescu Quartet, and the sound sculpting skills of French ambient band Lightwave, Zazou conjures up a wall of sound that is vertiginous in its height and depth, full of cold air in its space and freshness, and mysterious, melancholic and continually moving. Laced with Zazou's extensive sampling and sound treatments, the vocals on *Songs From the Cold Seas* are embedded in a translucent and largely unidentifiable parallel universe that has to be heard to be believed.

"I wanted to have a musical sound where everything would be part of a whole and where it's difficult to identify individual sounds," comments Zazou. "It's like the difference between a classical orchestra and a rock 'n' roll band. With the latter you have bass and drums and guitar and everything is easy to define and easy to recognise, whereas with a classical orchestra, the arrangement as a whole has an identity of its own, and the instruments are a part of the colour and texture of that whole picture."

Zazou utters these words whilst we're sitting in the lobby of a hotel in Notting Hill, West London, on one of the first truly warm days of the British Spring. Zazou, 46, tall, round glasses, short hair, relaxed and good-natured, and speaking fluent English, has just embarked on the inevitable round of interviews that follows the release of a record. Not surprisingly, given the unusual nature of *Songs From The Cold Seas*, he has a long and interesting story to tell, and it takes him well over four hours of animated talking to tell it all.

He recounts that his decision to try to work with the unknown music from the Northern seas had unexpected consequences. When he began the project, Zazou himself was hardly familiar with the

French musician Hector Zazou's quest for sounds and songs with a difference took him North, to find ethnic drumming from Siberia, joik chanting from Lapland, and the disappearing folk music of the world's Northern tribes — which he combined with contributions from himself and world-famous artists, to create a unique musical experience. PAUL TINGEN gets some Northern Exposure.

Cometh

the Eskimos might sound vaguely familiar to some, yet the yodel-like throat singing of Yakuti singer Lioudmila Khandi, the siren calls of the Swedish singer Lena Willemark, or the traditional Karelian rapping of the Finnish women's group Värttina are simply stunning. On top of this, there are moving vocal performances by well-known artists such as Suzanne Vega, John Cale, Bjork, Siouxsie and Jane Siberry. Yet these performances are only half of what makes *Songs From The Cold Seas* such a perplexing record. The other half is the context in which Zazou has placed them. He explains that his brief to himself was not only to cover unusual sounds from the North, but also to ensure that they were "songs that related to the sea, that told stories and legends about the sea."

UNIDENTIFIABLE

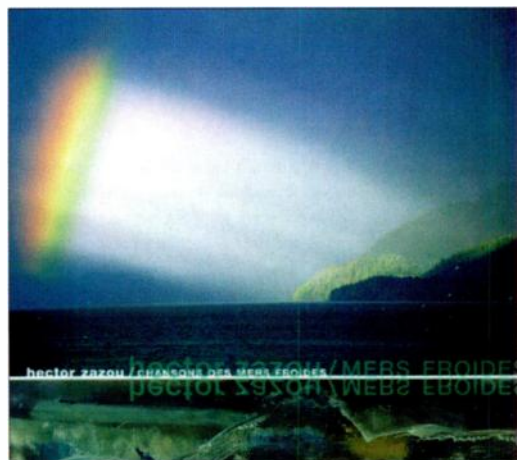
In his backing tracks, Zazou has tried to embody the cold and magnificent grandeur of Nordic seas, and the dramas of the often harrowing stories told; he succeeds, to often spine-chilling effect. On previous records — for example, the atmospheric *Sahara Blue* (1992, with, amongst many others, David Sylvian and Ryuchi Sakamoto) — he has already shown himself a master of slow, spacious synth, sample and

music, and his first task was to gather information and material. Yet he was determined not to simply plunder ethnomusicological recordings of the North, but rather to record his own material locally, thus becoming familiar with the singers, their songs and their cultures, so that he would be able to do a better job representing them in his background sound sculptures.

Yet finding material, let alone singers, proved rather difficult. It turned out that the North wasn't only a forgotten musical territory for Joe Public, but also that many of the countries in question were not taking their musical heritage as seriously as one would imagine. As a result, the project took much longer than expected.

BLACK HOLE

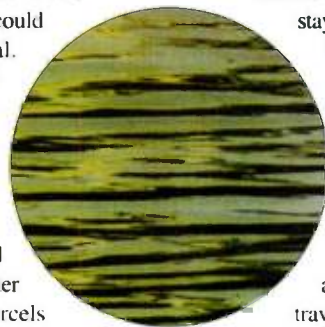
Zazou began work in June 1991 and spent, he says, the first half year as a "bureaucrat", doing research, much of it from behind his desk. For six months



Hector Zazou



► his time was occupied with making phone calls, sending faxes and letters, and visiting embassies, cultural attaches, music libraries, record shops, ethnomusicological institutes and music festivals, and so on, seeking out samples of music of the North. To his surprise, Zazou was often met with disbelief or disinterest, and the material he found tended to be incomplete or unusable: "I was very disappointed. For example, I could hardly find any Alaskan material. Indian and Eskimo scores or music examples that I found often didn't have explanations with them. The records that I did find were made a long time ago and the people who had made them had disappeared or died. It was a truly undiscovered country and that made it exciting. After a long time I started receiving parcels with stamps from Greenland and other places. But most of the music was disappointing — like people singing Bob Dylan songs in Greenlandic or playing straight rock 'n' roll. However, I did discover some good singers during this period that I ended up using on the album."



because the Indian culture there has suffered a lot. And Eskimo music was a big problem too, as there was little material, and I was told that Eskimos weren't generally prepared to sing for strangers. I became desperate, because I really wanted some Eskimo singing on the album. We only found some by chance on Baffin Island in Northern Canada. On arrival we couldn't find a hotel, and had to stay in a bed and breakfast, where an old Scotsman introduced us to two young Eskimo women who were prepared to sing for us. They did so the next day in the dining room."

Zazou recorded the Eskimo duo during one of his many almost ethnomusicological 'field' trips. For a total of more than three months, he travelled to Finland, Norway, Sweden, the Hebrides, Japan, Alaska, Canada, Greenland and Siberia, armed with an Alesis ADAT recorder and a set of microphones. A cameraman also travelled with him, and a television documentary about the making of *Songs From The Cold Seas* will be completed later this year. Apparently Zazou was "very inspired" by *One World One Voice*, the magical world music 'chain tape' made by Kevin Godley and Rupert Hine, featuring a host of artists, amongst them Peter Gabriel, Suzanne Vega, Sting, Youssou N'Dour, Ryuichi Sakamoto and many, many others, which was broadcast by the BBC in May 1990 (and of which an excellent CD is available on Virgin Records).

HORROR

After his long voyage across the icy worlds of the North, Zazou returned to his home studio in Paris, where he worked for a full two years, mostly alone, sometimes with help from guest musicians, sifting through the material and sculpting his esoteric



Slowly Zazou's collection of songs and chants grew, as did his list of contacts with musicians and singers. Some places proved harder than others: Scandinavia has a vibrant folk scene which honours the country's musical traditions, so it was relatively easy for Zazou to find good singers and interesting songs. But Iceland, for example, proved "a complete black hole. There was nothing. I couldn't find anything. So I asked Bjork, who in turn asked her mother. Her mother sent her what I believe is the only record that exists of traditional Icelandic songs, and we recorded one of them. I couldn't find any music from Alaska that was interesting enough, probably

NORTH SEA TOIL

A poignant story was Zazou's trip to Siberia, where he arrived in the capital, Novosibirsk, only to be met by complete official indifference: "Folk music doesn't interest anybody. There was something comparable to a Ministry of Culture, and they were horrified when I told them that I wanted to listen to traditional music. They had arranged meetings with 10 different local musicians for me, but I said: 'this is not what I'm looking for.' I suggested that we should go and hear some peasants sing, so they took me to a small town and we listened to a Russian choir. The ministry people looked disgusted, because the voices were quite rough. When I told them that I wanted something even more simple, they finally put me in touch with a teacher at the local conservatoire, Ivan Sopotchine, who they said was interested in traditional music.

"Ivan turned out to be brilliant. He's a very intelligent and sensitive guy who had spent all his life collecting shamanic songs. What was very sad was that he had been collecting all these treasures of music and here he was, completely broke, without money for petrol or cassettes. If he wanted to record new

material, he was obliged to recycle valuable old cassettes. And his cassette recorder was incredible, like something from the '50s, extremely bad, with a very bad mic. But he had this deep passion for shamanistic songs and knew many of them by heart. Together we visited several remote places and I recorded many voices and a lot of drumming." As it turned out, Zazou's Siberian trip was one of his most fruitful, and the results can be heard on many of the tracks on *Songs From The Cold Seas*. The shaman Tchotghtguerele Chalchin behind Siouxsie, the vocals of Demnine Ngamtovsovo, the ethnic drumming of Sargo Maianagacheva and Ivan Sopotchine, the mouth harp of John Johan Andersen, the balalaika bass of Orlan Mongouch and the distorted, industrial effects in 'Song Of The Water' — constructed from heavily-treated drum samples — all came from the Siberian trip.

During most of his field work, Zazou had gone out to record the performers after he'd made preparations at home. Usually he'd approached the singers beforehand, discussed the material with them that they were to sing, and generally decided on two songs per

singer. One song from each was to be recorded completely unaccompanied, and this collection will later this year be released as *Songs From The Cold Seas II*, featuring the songs without backing tracks. For the other song, Zazou generally prepared a simple drone and backing rhythm, with the ADAT's BRC as synchroniser.

Back in his home studio in Paris, with many thousands of miles and much musical material under his belt, Zazou started work on the backing tracks. The ADATs remained his main recording medium, and in the few cases where he had recorded artists on other multitracks, because he had worked in a commercial recording studio, this material was transferred to ADAT as well. The ethnic drumming he had recorded in Siberia (but also in Sissimut in Greenland, the Sakharine Islands — a Russian island next to Japan — and Hokkaido) was recorded both as regular drum playing, and as individual sounds, so he could either use the patterns as played and speed them up, loop them, and treat them sonically, or use the individual sounds to create completely new rhythms.

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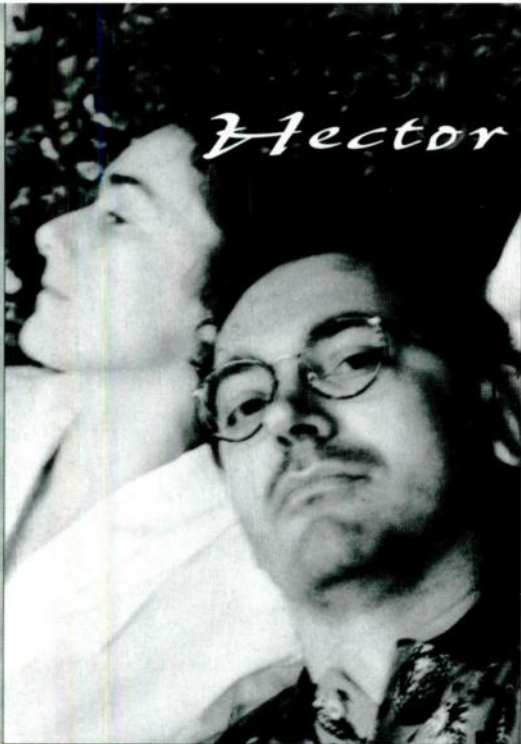
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Hector

Zazou

Hector Zazou with Barbara Louise Gogan, guest vocalist on both *Sahara Blue* and *Songs From The Cold Seas*.

▶ backings. He returned with not only a wealth of astonishing sounds, but also a collection of anecdotes, ranging from the hilarious to the surreal, and often resulting in unexpected technical complications. There was for example the drifting Atari click on his recording of Värttina, which meant that Zazou had to ask Pro Tools expert Vincent Kennis to time-stretch the Karelian rapping back into time. And Zazou remembers how, in another case, a tragi-comic episode turned into a technological nightmare: "I went to the Hebrides to record Catherine-

Ann MacPhee, a famous Scottish singer. She had reserved a very beautiful church for us to do the recording. But when we arrived it turned out to be windy, and in the Hebrides windy really means windy — there was no place on the entire island where you could get away from the sound of the wind. I spent several days trying to find a place where it was quiet enough to record, and finally found one, but it was in the toilets in the basement of a hotel. So I said to Catherine: this is the only place, so if you don't mind... She was rather disappointed, because she knew she was going to be filmed, and she had prepared herself with a nice dress and this beautiful church, and now she was being filmed here singing whilst sitting on a toilet. But she did it and she did it very well."

However, because of the primitive and cramped surroundings of the hotel toilets, Zazou had been unable to supply MacPhee with backing percussion and backing drone, as he normally did. On coming back to Paris he discovered, to his horror, that she had drifted almost a semi-tone in pitch from beginning to end: "I gave it to Vincent to see if he could correct the pitch in Pro Tools, but that didn't work. I don't know why, but there was something that didn't sound good. The Värttina track was very rhythmic, so absolute purity of sound wasn't so important, but here, with the slow singing, I could hear where the pitch had been altered. So I had the choice: either not use Catherine-Ann's singing, or instead of changing the voice, change the instruments — and the latter is what happened."

Zazou's solution is truly an indictment of how far modern digital technology still has to go, and how old-fashioned hands-on solutions, however unlikely, often still have the edge: "What I did was change the pitch of her vocals by ear whilst recording overdubs — manually, using the varispeed on the ADAT. The result was that on playback the keyboards would drift with the vocals. I had made notes of the places where the vocals were drifting, so we had these very strange scores with lyrics on them and next to certain words it would say +0.02% or -0.05% and so on.

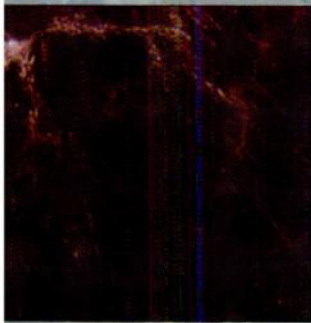
In order for Harold (Budd) to be able to overdub to the voice without being put off by the pitch changes, I took all the other instruments out, and whenever there was a problem with the voice I would simply take it out of his monitors. The wind instruments on this track weren't a problem, because they're only at the end and at the beginning, and never during the singing."

COHERENT UNIVERSE

Zazou's main home studio tool is, apart from three ADATs, his Emulator III. Virtually all the backing sounds on *Songs From The Cold Seas* were created or sampled or processed in the Emu III, with only a few exceptions, such as the keyboard sounds on Bjork's track, which were Lightwave-designed and played on a Roland JD800, the electric piano on Jane Siberry's magnificent Newfoundland song, 'She's Like A Swallow', played on a DX7II, and some Emulator SP12 that was applied to the stark-sounding Ainu lullaby 'Yaisa Maneena'. For other Lightwave sounds, Zazou would visit their studio in Paris, record the sounds he liked on DAT and sample them with his Emulator III back at base. Various synth sounds, such as sounds from Jean-Michael Jarre's ARP 2700 (heard at the beginning of 'Yaisa Maneena') were also sampled and processed in the Emulator.

Zazou's sounds are very clear, with a strong, modern, digital quality to them, yet also have true warmth and depth. Zazou explains: "For *Sahara Blue* I used the Emulator II, and for *Cold Seas* it's mainly Emulator III and a little bit of the II. I'm very very happy with the Emulator III, even to the point that when I have created a sound that I like in my TX816, I will sample it with my Emu. I think that DX7 sounds are too cold and recognisable, and the Emu makes them warmer and gives them more character. The Emulator has a great warmth and a huge, beautiful bass that you don't get from the Akai samplers, for example. I do many sound treatments in the Emulator: using the LFO, or the reverse function, or the EQ, or the filters. I find that by putting everything through the Emulator I have been able to create a coherent sound universe.

"The Emulator gives a new lease of life to old sounds, which is why I have sampled most of my old synths on it, and sold them or put them in the attic. I used to have many synths — Juno 106, JX8P, Oberheim OB8, OBX, ARP 2600, M1, D50 and so on — but I find that when you're going back to the same sounds on them for most of the time, it's better to stop using them. It doesn't mean that the instrument is finished and that you can't find something new on it, but you're simply losing too much time with it. Now when new equipment comes out, I borrow it from a shop, work with it for two



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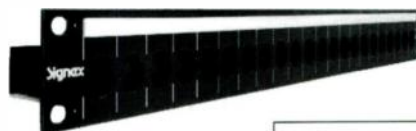
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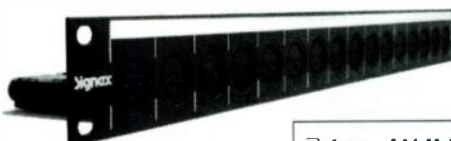
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Hector ZAZOU

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▶ weeks, sample what I want, and give it back, because I think that very few of them are actually worth having, especially since I much prefer the sounds of older, analogue synths. So over the years I've built up an enormous sound library."

Another part of the unique sonic universe of *Cold Seas* comes courtesy of the effects signal path Zazou used for all his sounds. For *Sahara Blue* he was advised by engineers to wait until the mix before adding sound treatments. For *Cold Seas*, he decided that this was nonsense, since a treated sound is the sound he wants, and there was no reason to tie up outboard gear during the final mix by putting untreated sounds on tape: "So I developed a special way of recording for *Cold Seas*. I have a small, 20-channel Roland keyboard mixer, which I put sounds through purely to

make them dirty — digital sounds, especially, need that. From the Roland, the sound goes into an Ensoniq DP4 multi-effects unit, which has great EQ, great distortion and great phasing. It's all very strong stuff that you wouldn't normally use because it is too strong, but I love it. After the DP4, the sound goes into a Quadraverb, which I don't use for reverb, but more for chorus and delays, a Urei limiter or an old Roland analogue delay, and finally the sound goes via a Jansen mic pre-amp directly onto the ADAT. What this setup gives me is maximum compression, maximum dirtiness and maximum definition."

NASTINESS

Zazou's home studio sports three of these Roland mixer-DP4-Quadraverb treatment chains, one for the Emulator III, one for his Yamaha TX816 sampler and one for the SP12 — although he used the Emulator chain almost exclusively for *Cold Seas*. His mixing desk is a Mackie, his monitors Yamaha NS10s. The Frenchman stresses that his playback and monitoring equipment is rather basic, because "I'm not interested in hearing everything at the same time all the time. I prefer to hear each part separately and from beginning to end, and build the piece gradually in that way. Also, all the sounds go via these treatments, so short of having dozens of DP4s and Quadraverbs, I couldn't possibly listen back to them all at the same time. It's another reason why I've decided to put my sounds on tape with treatments, and it's also the reason why I don't work extensively with sequencers." Instead, Zazou employs the Emulator's internal sequencer, which he prefers to computer sequencers, he says, because: "I don't like computers. I try to avoid them. They're not musical. You have the tendency to start thinking in terms of what's *possible* rather than what you

want. You build your arrangement on the screen and sometimes this can make what you see more important than what you hear. When I'm using the Emulator sequencer it prevents me from becoming too analytical."

So Zazou records his sequenced Emulator III tracks one by one to ADAT — how does he manage not to run out of tracks, especially when a song like 'The Lighthouse' which features Siouxsie, was built out of at least 30 layers of sound with "almost everything taken from rap samples, and then layered"? He explains that he works with mono submixes of his arrangements, whilst keeping the original tracks, with many of the sounds in stereo, on separate ADAT tapes: "I filled five or six ADAT tapes for 'The Lighthouse' in that way."

For the final mix, which was done in Parisian studio Plus XXX with engineer Gilles Martin, Zazou reconstituted every track by transferring the relevant tracks onto a Sony 3348 digital multitrack, synchronising everything with the BRC. Zazou stresses that the mixing stage is very important to him; it's during this phase that he adds another set of treatments: "I add many treatments to various instruments, like mandola, koto, pedal steel guitar, wind instruments and so on, either in my studio or during the mix. It's usually the same things: reverbs, delays, chorus — I used a lot of flanging on the synths.

"Even though I don't like digital synths too much, I don't have a problem with digital effects. I like digital reverbs, and I've used digital distortion on the Ainu song, 'Yaisa Maneena'. We tried to use digital distortion in the same way that one normally uses analogue distortion. I think we're afraid of using digital distortion, because it's not as nice as analogue distortion, but I think that it can be very interesting. It may be difficult to do something pleasant-sounding with digital distortion, but when you want an unpleasant sound, you can create interesting effects with it. 'Yaisa Maneena' is a lullaby, but I wanted to put some nastiness into the sounds, to call attention to the terrible fate that the Ainus have suffered, a fate similar to that of the American Indians."

This is only one of the many ways in which Zazou managed to find ways to construct fitting backing tracks that are as arresting as his source material. Thus 'Annuka Suaren Neito', the Karelian rap track, gets an aggressive, grunge-metal feedback-driven backing, Bjork's 'Visur Vatnsenda-rosu' gets an almost classical music treatment with grand piano and clarinet, the mesmerising mandola of Ale Moller is pasted between Lena Willemark's astounding vocals, Jane Siberry's heart-rending performance in 'She's A Swallow' is accompanied by tender, unhurried electric piano and gorgeous pedal steel guitar, and the two 22-year old Eskimo women are framed by some of the most striking industrial sounds you're ever likely to hear. Everywhere it's Zazou's electronic treatments that provide the icing on the cake, and pull everything together in a sonic universe that's as stark and alien as the endless ice and snow-filled plains and cold seas of the North.

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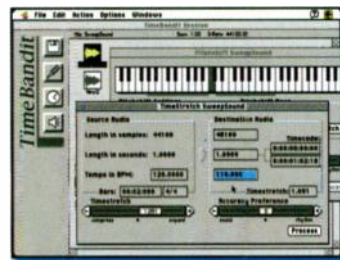
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ROLAND JS30

SAMPLING WORKSTATION

The JS30 forsakes the familiar rackmount sampler format for desktop presentation, and aims for simplicity and immediacy of operation.
DEREK JOHNSON
checks it out.

I'm always surprised when I'm reminded that Roland actually have an Italian manufacturing base; this is the source for the company's line of home keyboard style auto-accompaniment keyboards, which take Roland technology and give it a friendly front end. It's this factory that brings us Roland's latest 16-bit sampler, the JS30, a large and chunky desktop unit that just invites you to play with it — a 'keyboard', made up of 12 large pads, dominates the middle of the unit (along with a large, four-character LED display), so you can use the sampler independently of a normal MIDI keyboard. The keywords for the JS30 seem to be simplicity and immediacy — having noted the popularity of their W30 sampling workstation with DJs, Roland seem to be addressing the DJ market once more, though the JS30 is equally suited to less-demanding studio sampling uses.

In addition to the 'keyboard' mentioned above, the JS30 sports a collection of buttons in various shades of grey: sample recording, editing and playback parameters are accessed by a collection of buttons in the upper left-hand corner, and an alpha dial and data-entry buttons to the right of the display. Between the display and the keyboard pads is a strip of buttons for controlling the on-board sequencer, a basic device, which, like that on the MS1 (reviewed SOS March 1995), simply records your pad presses in real time and plays them back in the right order.

My first surprise when I started to examine the JS30 was the discovery that the basic machine samples at 8-bit resolution, somewhat unusual in 1995. However, worry not — an easy to install 4Mb upgrade not only doubles your sampling time, but brings the JS30 up to full 16-bit operation. (Sampling time with the standard unexpanded 1Mb allocation of RAM is a total of 22.5 seconds at 44.1kHz and 45 seconds at 22.05kHz, by the way, with the user RAM split however you like across two banks, with 12 sample locations each). The second surprise is that the JS30 is supplied with a factory selection of 36 loop and hit samples, in ROM. These are OK as far as they go, but given their dance/techno bias, the samples could tend to date the machine in a year or two — and isn't the whole point of having a sampler that it allows you to get hold of original material?

As mentioned, it's fairly obvious that the JS30 has been designed for real-time DJ applications, and it's also perfect for general live use and grabbing quick samples in the studio. To this end, the input is on stereo phonos, for connecting a cassette deck or a CD player (although there is no RIAA input for connecting a turntable), with an output that sends the stereo signal through the instrument. There is

also a mic input, with sensitivity and EQ controls. There's even a fader on the front panel for switching between the input signal and the JS30's samples. Note that, despite the stereo connections, the JS30 is strictly a mono sampler, as evidenced by the single LED bar graph input level meter, next to the main display.

Other DJ-friendly features include an Input/JS30 fader, a cue facility that allows you to check out a sample in your headphones before sending it to the main output, and a 'scratch' facility over MIDI (although the manual is remarkably quiet on exploiting this). Another good point for live use is that the User RAM can be split into two banks, and one bank can be loaded while one is being played. A Hold button to the right of the keyboard plays a sample endlessly without you having to hold the button, and a 13th pad in the 'keyboard' array (labelled Mute) lets you mute sections of a sample without actually having to stop it from playing.

OPERATION

The JS30 operates in one of three basic modes, and has the buttons to prove it: Play, Record and Edit. A little careful thought should tell you that Record puts you into sampling mode, Edit lets you access sample editing functions, and the button labelled Play covers playback functions.

Sampling is simple: press the Record button (next to the central display panel), and all available (or remaining) sample time is automatically assigned to the first or next available pad/sample location. Check your level, making sure the level meter doesn't stay in the red too long, and press the large Sampling button (lower right) to sample. Press again to stop. Your sample is looped automatically, and is ready to go. Carry on like this until you run out of RAM.

Although you soon get the hang of getting good looped samples on the fly, you will often not get it quite right, so fortunately samples can be easily truncated and re-looped afterwards to suit your needs. Each sample can also be given a basic ADSR envelope, retuned, assigned its own MIDI channel and high and low note limits. About the only thing you can't do is reverse a sample, which is a shame.

Editing can be rather fiddly. Several Play or Edit functions require double button pushes and are momentary — the buttons must remain depressed while you alter a value, which isn't comfortable. However, I discovered that if you press the sequencer's Play button when you select a parameter, it's locked, so you can change the parameter with one hand. This is useful when choosing loop points and sample start and end points on the fly. The keyboard pads can also



ROLAND JS30 £899

PROS

- Easy to use.
- Built-in basic sequencer.
- Long basic sample time.
- Akai CD-ROM compatibility.

CONS

- No disk drive.
- Memory not backed up.
- Some operational aspects a bit fiddly.
- Mono sampling only.
- 16-bit sampling only available if you buy the memory upgrade.

SUMMARY

A good, if slightly expensive, machine, ideal for live or DJ use. If you can't use a JS30, you don't deserve a sampler.



double as a numeric keypad for entering parameter values.

SAMPLE STORAGE

You may well have noticed the studious avoidance of the words 'disk drive' or 'storage' so far. There's a reason: the JS30 doesn't have a disk drive. The pocket-sized MS1 sampler (see review in March 1995 SOS) was similarly drive-less, but had Flash RAM and the option to use Flash RAM cards. Not so the JS30: you lose everything when you power down. The options for external storage are as follows:

- Dump the memory contents over MIDI; this takes ages, and you need a large amount of memory to hold the resulting dump.
- You won't believe this, but you can save the JS30's memory to tape — this is a most bizarre option for a hi-tech product of the late 20th century.
- Buy a hard disk or an optical drive; the JS30 thankfully implements a SCSI port as standard equipment. Note that the largest disk accessible by the JS30 is 600Mb.

To give it its due, the tape saving option appears to be quite robust, if time-consuming. It's certainly not the hit-and-miss procedure often encountered with pre-MIDI equipment, such as Roland's MC202 sequencer or Yamaha's CS40M synth, for example. Note that the SCSI option also allows you to load in samples from CD-ROMs meant for the Akai range of samplers.

CONCLUSION

What the JS30's spacious front panel and layout mean is that Roland have produced one of the most approachable and easy to use samplers on the market. Although complete beginners may still be baffled, getting familiar with the manual and prodding a few buttons should get you through.

There is much that is admirable about the JS30, but

much that defies description. Its manual is not the best I've come across (being a quadrilingual effort, with text placed side-by-side across a double page spread rather than segregated into logical linguistic sections — and having no index), factory preset samples are anathema to me, and I can't for the life of me figure out why anyone this far into the 20th century would include a tape back-up system on a sampler. This lack of a disk drive was my biggest disappointment with the JS30, although the inclusion of a SCSI socket goes some way to countering this. I also found the LED display to be a little inscrutable; however, although a traditional liquid crystal display would probably have been more informative, it would not be very visible on stage.

Sound quality is good — in 16-bit mode, carefully recorded samples can be subjectively indistinguishable from the input source, bar a lack of stereo. I recommend that you bang in the extra 4Mb and go 16-bit as soon as funds allow; the extra three 1Mb SIMMs (80 nanoseconds or faster) should only cost about £150, but try and negotiate with your friendly hi-tech retailer. The basic 8-bit machine loses a little in the high frequency department and gains some noise. Actually, I found noise to be a problem even in 16-bit mode; the output is a little hissy on both the main and headphone outputs.

As an easy to use, on-the-fly live sampler, the JS30 hits its target dead centre: DJs will love it, although those completely new to technology should still be prepared for a short acclimatisation period. At the other end of the spectrum, studio musicians who want fast and friendly access to sampling — for grabbing loops and effects, spinning in backing vocals and so on — will also be interested.

SOS

SEQUENCER USES

Though the JS30's non-time-referenced sequencer is about as basic as it could be, it still provides a surprisingly effective and intuitive way to build up a finished piece. The sequencer has four tracks, and polyphony is limited to eight voices at once. One neat feature is being able to assign a sequence of key presses to just one of the keyboard pads; up to four sequences can be so assigned to one pad each.

As a scratchpad, the sequencer is great. In fact, I foresee hit records being created with its assistance — only the monophonic output of samples gets in the way of this goal. And of course, it's possible to use the JS30 with an external sequencer; each sample can be given its own keyboard zone, MIDI channel and pitch-bend value. Advanced uses include a feature called 'Synchro Sampling'. When used with an external MIDI sequencer, the JS30 can record a sequence track that, on playback, will tell it when to start and stop sampling. This can happen as many times as you like, until you run out of sample RAM. It's a great way to record vocals, although there may not be quite enough RAM for really long songs. It's almost like adding one track of digital audio to your sequencer.

FURTHER INFORMATION

- £** JS30 £899 inc VAT.
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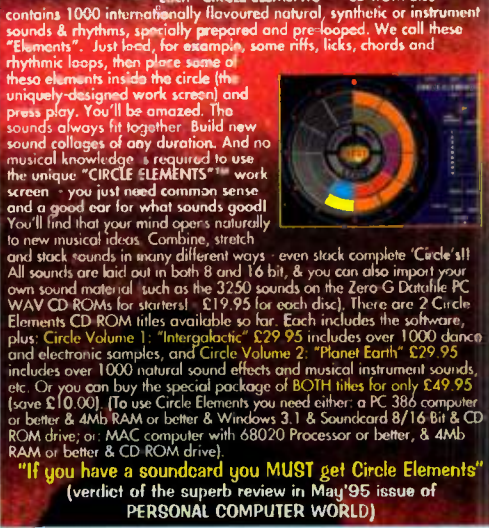
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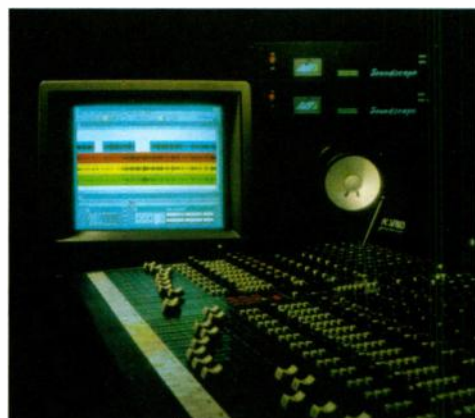
ANALOGUE *to* digital!

CHANGING
FROM
8-TRACK
TAPE TO
HARD DISK
RECORDING

STEPHEN BENNETT
*chucks his trusty 8-track
tape setup in favour of
one of the new hard
disk multitrack systems
— but not before doing
some thorough
research. Here he
reveals the factors that
influenced his decision...*

Sometimes the high prices of desirable recording equipment can be a blessing. If it costs several hundred thousand pounds you just know there is no way to afford it, so you can comfort yourself with reviews and with popping down to the nearest music store for a quick ogle. When multitrack hard disk recording equipment cost the same as a semi in Fulham, it was easy for me to sigh and press my nose against the shop window. Now, however, systems are coming down to the price of a second-hand car. So I start to think — well, if I do a bit of fasting...

But why change from my trusty Fostex M80 8-track and Seck desks? After all, I've recorded three albums on this equipment and the last one came out on CD. Nine out of 10 of my friends can't tell the difference between this home-recorded album and one recorded in a studio costing several hundred pounds a day. This is either a testament to the quality of budget



Soundscape.

Sound quality was not one of my reasons. As I stated earlier, my analogue system was easily capable of CD-quality recording, and my noisy effects units make a nonsense of any 'digital silence'. I could have gone for one of the 8-track digital tape machines or, indeed, an analogue 16-track, though that that would have meant a much bigger, and more expensive, mixing desk. However, neither of these options would have given me the advantages of hard disk recording. But can a hard-disk based system really replace a tried and trusted 8-track analogue tape machine in a real studio? In this article I'll pass on my experiences on making the transition, as I'm sure a lot of you are thinking of doing this soon.

For the purposes of this article, I intend to concentrate on systems that could be a direct replacement for an analogue 8-track, which excludes the 2-in/2-out, 4-track systems such as Audiomeia, SAW and Card D. While these units are ideal for adding a few tracks to a MIDI system, or for compiling DAT masters, the lack of separate outputs or sends and returns limits them severely in a multitrack recording environment. I'm also assuming that the serious project studio owner will have a computer, a mixing desk or two, and some outboard, such as effects units.

THE OPTIONS

At the sub-£5000 end of the HD recording market, there are two choices: stand-alone systems, and computer-based systems. Stand-alone systems generally try to mimic the way tape recorders work, but with the added benefit of manipulating the audio after it has been recorded. The computer-based systems are usually internal cards or



Akai's DR4d.

recording equipment or to the fact that I have particularly deaf friends.

In fact, there are several reasons why I decided to change my recording system. Firstly, I hoped it would press me into a new way of recording, as I felt I had reached the limits of my present system. I decided I needed a change — if you become too familiar with something you tend to fall into the same way of doing things. I wanted to impress my friends, and I had been looking for an excuse to get a Macintosh ever since I first started reading *Bloom County*. And finally, I wanted a DAT editing and compilation system

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CHANGING TO HARD DISK

► peripherals hung off a computer. Both types of system have their advantages and disadvantages.

Stand-alone systems are good in that they are reliable, with close software/hardware integration within one box; they can be used with or without

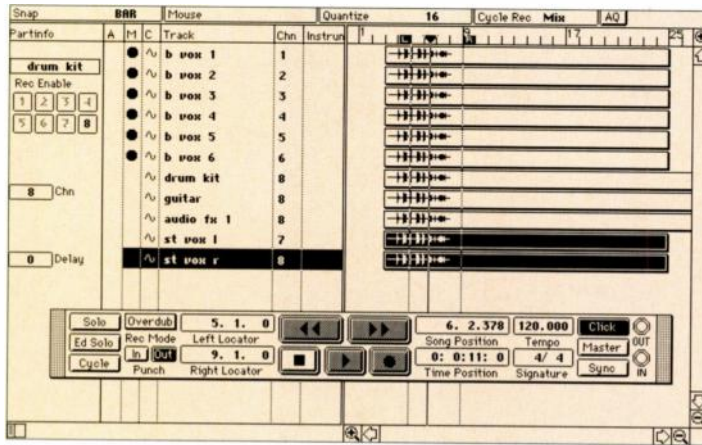


Figure 1: Cubase Audio. Note that tracks 1-6 have been bounced to stereo tracks 'st vox' L & R and then muted.

treat your audio material as you do MIDI data. This can also be achieved by synchronising audio-only software, such as OSC's *Deck II*, with a conventional MIDI sequencer. This is not as convenient as using an audio sequencer, though, as you will have to swap between the two programs to record MIDI and audio. The software supplied with hard-disk recording hardware is often more powerful than that integrated into audio sequencers. For example, while the software supplied with the Digidesign Session 8 hardware allows punch-in on the fly, four EQs per track and the bouncing down of audio tracks, the present versions of *Cubase Audio* and E-Magic's *Logic Audio* do not. But these are software limitations — forthcoming versions should allow all these things and more.

• VIRTUAL TRACKS

With 8-track tape you get eight tracks — period. If you don't bounce tracks (which will add to noise and distortion) the only way of adding extra audio recordings on each track is to punch in and out. Hard disk recorders usually have a fixed number of tracks that can be output at the same time, but the number of audio tracks that can be recorded is usually much greater. For example, in an 8-track HD system using an audio sequencer like *Cubase Audio*, up to 64 tracks of audio can be recorded, though only eight can play back at any one time. (Figure 1). This means, for example, that you could record six tracks of backing vocals, bounce them down to stereo and then mute the original tracks. You don't need to delete the pre-mixed tracks — they just don't play back. If later you don't like the vocal mix, you can simply remix. Any permutation is possible, the only rule being that no more than eight tracks can be output simultaneously.

Different systems have different methods for specifying which tracks are output if there are overlaps. Punching in and out can be done to millisecond accuracy and, usually, each take is kept so you can recall it at any time (Figure 2). You can also compile the 'perfect' take from all the recordings. Software-based EQ can usually be applied to each audio track and to each separate portion of that track.

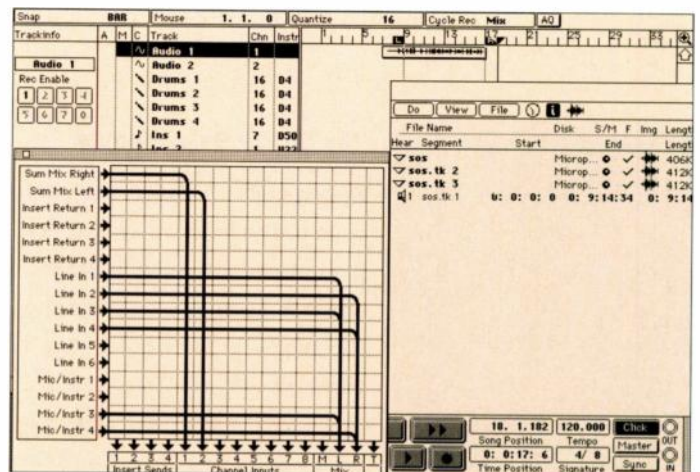


Figure 2: Session 8 routing from within Cubase Audio on the left; multiple takes on the right. Note how cramped my 14-inch monitor is getting!

SYSTEM TYPES

■ STAND-ALONE SYSTEMS

Several of these are available at the moment. They tend to be 2- or 4-input systems with eight separate outputs and can have internal or external hard drives. They can be used without a computer, but waveform editing, for example, is better done on a large screen. Some systems can be used with audio versions of popular sequencers, but this is not always the case. Current stand-alone systems include Roland DM800 (Roland: 01792 310247), Akai DR4d and DR8 (Akai: 0181 897 6388), Vestax HDR4 and HDR6 (Vestax Europe: 01428 653117), and the Otari Radar (Stirling Audio Systems: 0171 624 6000).

■ COMPUTER-BASED SYSTEMS

These fall into two camps: the basic 2- or 4-input/8-output systems designed to replace an 8-track tape machine directly; and the 'studio' system. These can be used in the configuration above, or can provide effect sends and returns, computer-controlled mixing, insert points, and other facilities designed to replace both a tape machine and a mixing desk. These systems allow the audio to stay in the digital domain from recording to mixdown and usually have some kind of sub-mixer inputs for bringing in 'live' MIDI equipment. Computer-based systems include Digidesign's Pro Tools and Session 8 (Digidesign UK: 0181 875 9977), Soundscape (Soundscape Digital Technology: 01222 450120), and Yamaha's CBX-D5 (Yamaha: 01908 369269). You might also want to check out OSC's *Deck II* software, which, if you run it on an AV Mac or a Power PC (with suitable hard drive), gives you hard disk recording without any further hardware. Digidesign's own *Session* software does a similar job.

a computer system; they're easy to understand since they mimic the multitrack tape machine as closely as possible; some can use inexpensive IDE drives rather than more expensive SCSI ones; and they can be more cost-effective than other systems. On the downside, third-party software support may be limited or non-existent, and these systems may be relatively 'closed', with limited upgrades to hardware and software.

The advantages of computer-based systems include the fact that they allow the visual editing of audio data; they can be more open, so you can mix and match software from various companies; they can integrate well with other music peripherals and MIDI software such as editors and sequencers; they use standard components, making hardware improvements, such as slotting in a more powerful computer, simple; and you get a powerful computer for other tasks. Less positive aspects of stand-alone systems are that they can be more prone to computer crashes and unreliability caused by software incompatibilities; and they can be slower than stand-alone hardware systems.

HARD DISK ADVANTAGES

Whatever type of system is chosen, hard disk recorders have some advantages over conventional tape-based systems — as well as some disadvantages. They allow you to achieve more complete integration with your sequencer — if you use an audio version of a popular sequencer, such as Opcode's *Studio Vision Pro*, you can record MIDI data along with audio and almost

• **AUDIO EDITING AND CUT 'N' PASTE**

It's well known that using a hard disk recording system makes it easy to copy bits of music around, reverse them, fade them and generally muck about with them to your heart's content. After all, it's only data. But you can also load in other audio from CD or DAT, stretch parts to fit your MIDI data, and change the pitch of an audio file. Generally speaking, anything you're used to doing with MIDI data is possible with audio — and in real time, thanks to the DSP (Digital Signal Processing) in hard disk recording systems.

• **COMPILING PROJECTS**

A multitrack HD recording system is invaluable for compiling your finished project. Because transfer between the HD recorder and a

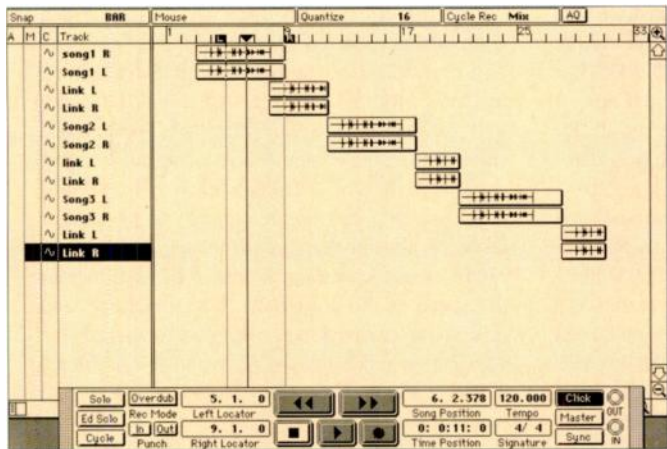


Figure 3: Compilation of a finished project. Songs and links.

DAT recorder is digital, it brings many benefits. You could, for example, mix tracks in sections of a couple of minutes at a time onto DAT. This is really useful for complex mixes, as it allows you to concentrate on one small section of the track at a time. The whole lot can then be re-loaded back onto the hard disk and 'glued' together to produce the finished piece. People often used to do complex mixes like this onto stereo reel-to-reel and then splice them together. Think of what Mike Oldfield would have given for hard disk facilities when he was recording *Tubular Bells!*

Even adding links between tracks is easy with a HD system. Load the first song onto tracks 1 and 2, the link onto 3 and 4 and the second song onto tracks 1 and 2 again. Then use the software to fade into and out of the link — instant Pink Floyd. When you've finished compiling, you can digitally transfer it back to DAT (Figure 3).

PROBLEMS

• **RELIABILITY**

You don't get something for nothing, and hard disk recording is no exception. In my five years of running a Fostex M80 8-track, I had not one problem with the machine — no drop-outs, no crashes. HD systems, whether stand-alone or not, are based on computers. Think about that for a moment — computers, the same computers that deduct £14 from your bank account without asking, that suddenly convert all the characters in a letter you are writing into 'z's, for no apparent reason... Luckily, some computers are more reliable than others, but HD systems still seem to crash fairly regularly. Usually you don't lose recorded audio when this happens but it can still make you start to sweat.

• **BACKING UP**

When your hard disk is full, or when you want to back up your precious recordings, you'll need some way of offloading your data. Removable disks or dedicated tape backup devices, such as Exobyte or DAT (not audio DAT) are the best. These provide good data

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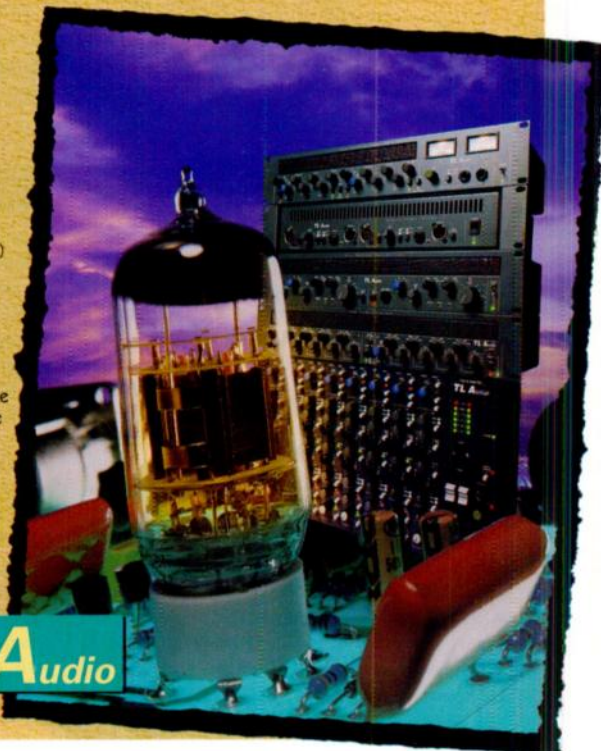
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TL Audio

CHANGING TO HARD DISK

- integrity, but are either expensive to buy or expensive to feed. But most HD systems also allow you to back up to your audio DAT recorder. This seems like a good deal — after all, many studio musicians also already own a DAT recorder. Some systems also allow backup of all non-audio data to DAT. But there are some problems you should be aware of:

1. Each minute of audio recorded at 44.1kHz takes up about 5Mb of hard disk space. Eight tracks need 40Mb per minute. So a five-minute song with, say,

several takes and muted tracks could easily fill up your 1Gb drive. As the backup to audio DAT is in stereo and real time, it could take around 100 minutes! And you can't skimp on backing up — hard disks crash when you least expect it. Neither does audio DAT have the error-correction and logging that the dedicated backup devices do. You may not know you have lost data until you reload the session. Remember that you won't just be

backing up data for safety — you will be wiping the hard drive, recording a new session, reloading earlier work, and so on.

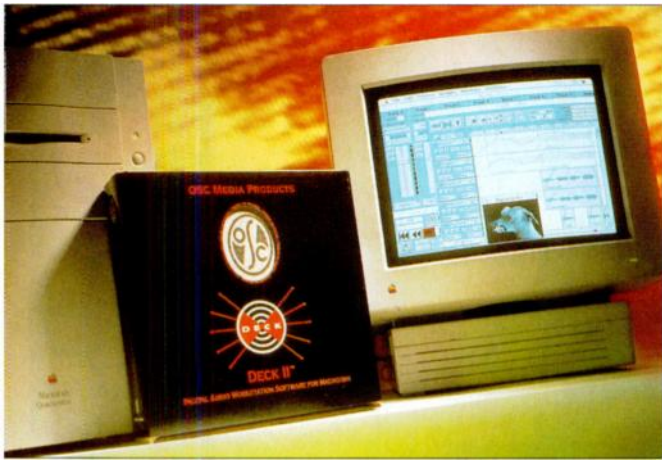
2. Will you be able to use your existing DAT recorder for DAT backup? You may need an SCMS (Serial Copy Management System — the code that inhibits digital copying on many domestic DAT machines) stripper, as the backup is done digitally. Without it, you may not be able to do a second digital copy of your data. Most HD systems use SP/DIF coaxial cables for DAT backup. If your DAT recorder has only a SP/DIF coaxial output (like the popular Sony DTC690), or

just optical in and out, you'll need an adapter. There are some units that solve both these problems. Turnkey, for example, make a combined SCMS stripper/optical-to-SP/DIF converter for about £120. Just make sure you sit down before they tell you the price of the optical cables. It goes without saying that you should only use the best quality DAT tapes and follow the DAT manufacturer's instructions. If possible, back-up the backup!

OTHER POTENTIAL PROBLEMS

The other problems HD recorders bring are generally ergonomic ones. A mouse and a computer keyboard are no replacement for faders and the start/stop buttons on an 8-track tape machine. MIDI fader boxes, such as the JL Cooper CS1, go some way to alleviating this. The cramped conditions on the computer screen created by using several pieces of software, each with several windows open, can be overcome by using a larger monitor, though these can be very expensive. There are also some questions to be asked about the speed of the computer. Screen redraws and disk saving can become so sluggish as to really try your patience. That said, I have had few problems in this respect with my Mac IIfx, a 3-year old '030 machine.

Another problem I came across when starting to use the HD system was noise from the computer. Many of you, like me, will have one room that is both the control room and recording room. The fans inside a computer and external hard-drive can make a hell of a noise. The answer is to put the computer in a box or cupboard or in another room! I use a large wooden box. A couple of 12v fans move the air around the box. Don't completely seal it, though — your computer needs air-flow if it is not to overheat. Remember, too, that while you can freely extend monitor and keyboard cables, SCSI disk drive cables cannot be more than a foot or two in length.



OSC's Deck II.

ADVICE AND INFORMATION

The first port of call is reviews in music magazines, which should give you a general idea of the capabilities of available systems. Then find a dealer who specialises in hard disk recording and arrange some demos. Try to see the system doing the things you really want to do in a studio. Try punching in and out, mixing, and so on. Don't assume that all the hardware and software capabilities of different systems are the same or that they are all compatible with each other. Retailers obviously cannot test out every feature on all the equipment they sell, in every situation. Most HD systems are a combination of computer, hardware and software. The safest bet is to buy a complete system from a single retailer, though this can work out more expensive.

■ HELP FROM THE INTERNET

If you want to talk to dozens of people who use HD recorders in real situations and can give you advice and opinions on the various systems available, use the Internet.

There are several sources of information:

• NEWSGROUPS

The main newsgroup discussing HD recording is rec.audio.pro. There is also some discussion in comp.sys.atari and rec.music.makers.synth.

• MAILING LISTS

The main ones I use are daw-mac@netcom.com and digidesign-mac@oregon.uoregon.edu — both deal with Mac-based HD recording. Cubase-users@mcc.ac.uk deals with both the audio and MIDI versions of Cubase, and logic-users@mcc.ac.uk deals with Emagic's Logic software.

• FTP SITES

[ftp.mcc.ac.uk/pub/cubase](ftp://mcc.ac.uk/pub/cubase)
[ftp.mcc.ac.uk/pub/emagic](ftp://mcc.ac.uk/pub/emagic) — updates for both Logic and Cubase, Mixer Maps and other useful information.
[ftp.netcom.com/pub/daw-mac](ftp://netcom.com/pub/daw-mac) — utilities and updates for Mac-based HD recording.

There are also various World Wide Web sites,

such as:

<http://www.bdt.com/home/bakalite/Daw-Mac.html>

<http://www.mcc.ac.uk/emagic/logic-users.html>

Both these have pointers to other useful sites.

I can't stress too much how helpful the Internet has been in choosing a hard disk recording system. Initially, the mailing lists provided information from users that went deeper than anything I could have got from retailers or manufacturers. People who own and have used the equipment don't mind telling you its drawbacks and problems either. When it came to setting up the system, the internet proved even more helpful. After setting up my Session 8, it all seemed to work fine, but I soon discovered a couple of strange 'glitches' with my Cubase software. I posted the problems to the cubase-audio mailing list and the next day Stefan Scheffler from Steinberg told me how to solve the problem. Simple!

WHAT YOU NEED

One of the hardest tasks I faced when I decided to go HD was determining what equipment I would actually need. I wanted to set up a fully-functioning 8-track system that would at least equal the capabilities of my tape-based system, which consisted of: Fostex M80 8-track; Seck 18:8:2 mixing desk and 18:2 sub-mixer; Casio DA2 DAT; various effects units and synthesizers; Atari ST computer running *Cubase* and MIDEX+ SMPTE synchroniser.

There are several possibilities for integrating a hard disk multitrack into this type of system:

- Replace the 8-track with a stand-alone HD system.
- Replace the computer and 8-track with a computer-based HD system and, perhaps, an audio sequencer.
- Replace the computer, 8-track and multitrack mixer with a 'studio'-type HD system, like Digidesign's Session 8.

You'll also need the following:

- **A large hard disk:** In general, this should be an additional drive and not the drive you store your software on. Its capacity should be



Yamaha CBX-D5.

about one and a half times bigger than you think you'll need, and then usually plus some! You must take the advice of the manufacturer of your chosen hard disk system on the type of drive to buy, as not all drives are suitable for HD recording — most hard drives pause occasionally to perform a thermal calibration, and this disrupts the data flow to and from the disk. Lists of suitable drives are available from the hard disk recording system manufacturers, and on the Internet.

- **Disk defragmenting software:** as files are recorded and deleted, the bits of information making up the file become spread across the disk in discontinuous fragments. When this happens, it takes longer for the HD system to find the data on the disk, leading to 'disk too slow' messages. Defragmenting the disk can be done without deleting data.

THE COMPUTER

Regardless of which computer you decide to buy, the following applies: get the most powerful computer you can and as much memory as you can afford. There are some guidelines to follow:

Atari Falcon: get the maximum memory of 14Mb.

PC and Mac: 16Mb is the minimum memory you need to do HD recording. If you want to use a sequencer or editor, get more.

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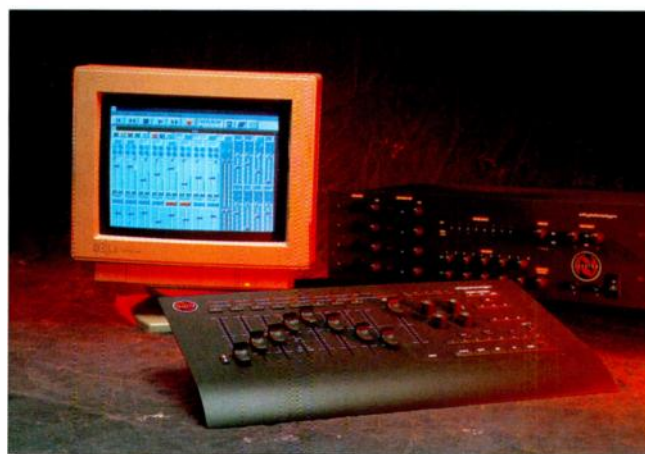
CHANGING TO HARD DISK

- ▶ You should also be aware that most computers have 1-, 2-, 4- or 8-SIMM memory slots. This means that if you have, say, 16Mb of memory, as 2Mb SIMMS in an 8-slot system, you may have to sell *all* these and replace them with 4Mb SIMMS to upgrade. Different computers have different configurations and it is essential to check these when you buy the computer. It may be cheaper in the long run to get more memory straight away.

Your choice of computer can depend heavily on the use you want to make of your system aside from music. As I write, there are three computers suitable for 8-track HD recording systems:

- **Atari/C-Lab Falcon**

Though Atari have exited from the Falcon scene to concentrate on the games market, C-Lab have taken over production of the Falcon and are optimising it for audio use. The Falcon still represents the most inexpensive way into HD



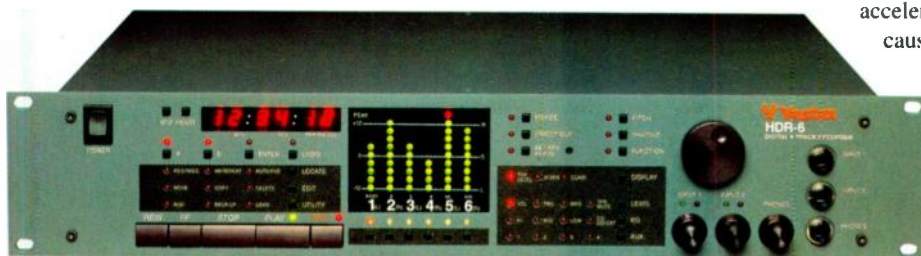
Digidesign Session 8.

at the moment. You need a pretty powerful PC just to run the Windows operating software at a reasonable speed, so for HD recording the fastest is definitely best. The bottleneck in a Windows-based PC system is usually the video hardware, though there are video/Windows hardware accelerators available. They can, however, cause problems with peripherals like HD recorders. There are some improvements coming soon that may make PCs more suitable for HD recording, including the new, Mac-like, Windows 95 operating system. Opcode's OMS for Windows, and better MIDI integration into the operating system. These should all come about in 1995, so watch this space.

- **Apple Macintosh**

At first glance, the Mac appears to be the ideal computer for HD recording. It is simple to use, reliable, and has the longest history of HD recording. Software like Digidesign's Digital Audio Engine (DAE) and Opcode's Open MIDI System (OMS) make it easier for various manufacturers to write integrated HD and MIDI programs. Sound files created by different software is generally in the *Sound Designer II* format, allowing easy data transfer between different programs. This, combined with the widest range of add-on software and hardware, such as DSP-based reverbs, CD mastering, NuBus-based Lexicon reverbs and Emu Proteus modules, makes the Mac a powerful recording tool.

There is something nasty in the woodshed, though. The first difficulty comes when trying to buy a new Macintosh for HD recording! There has been much discussion on the Internet about the incompatibilities of the MacOS emulation and NuBus slots on the new PowerMacs. The '040 Macs available don't have NuBus slots, which are essential for HD recording. The AV series of Macs that do have NuBus slots are also reporting problems with HD systems. AV Macs, using their on-board DSPs, do not have multiple outputs or effects sends. Luckily, the secondhand Mac market



Vestax HDR6.

recording, but there is less audio software available for this machine than the PC or Mac.

- **IBM PC & Compatibles**

Several computer-based and stand-alone systems are available for the PC. These usually require you to synchronise the recording software to existing MIDI sequencers, as few 'audio' sequencers support the PC-based systems directly

THE DIGIDESIGN SESSION 8

The system I finally chose was the Session 8, an integrated HD recording system designed to be a single-box replacement for an 8-track tape machine and a multitrack mixing desk. It is available for both the Mac (uses one NuBus slot) and the PC (uses two 16-bit slots). Either can be used as a complete studio system or as an 8-output system direct to an existing mixing desk. There is also a less expensive 882 system, which ditches the mixer and sends, etc, for a simpler, eight direct output system.

The main features of the unit are:

- Four computer-controlled sends and six returns with up to four EQs per channel, which can be applied during recording or playback.
- Four computer-controlled inserts. These can only be used on recording.
- Four Mic/Line inputs (no 48V phantom powering, though!).
- An 8:2 submixer which can be used to take in the

stereo output from an external mixer or other sound sources. No EQ is available on this submixer. The HD audio can be mixed with the submixer input and, along with effects and EQ, recorded digitally direct to DAT.

- Computer-controlled routing.
- The features of the Session 8 are implemented as MIDI controllers. This, combined with DAE, means that audio sequencers can easily support most of the features of Session 8.
- The Session 8 DSP/SCSI card interface is, apparently, identical to the one in the new Pro Tools III. This could open up the possibilities of Session 8 users taking advantage of the extra DSP power and TDM plug-ins available for Pro Tools III.

Audio scrubbing is not yet implemented on the Session 8, though this doesn't stop you from listening to single audio files.

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CHANGING TO HARD DISK

► is healthy at the moment, as people move to PowerMacs. Many a bargain is to be found. Even some '030 Macs are easily as powerful as the latest 486-based PCs. (For a rundown of the capabilities of the older Macs see *SOS* January '95, page 78.)

Macs less powerful than the IIci are not recommended by manufacturers for HD recording. The ideal Mac for HD recording, in my opinion, was the Quadra/Centris 650, which had three NuBus slots and was very fast. Some music suppliers still have a few of these, but be prepared to pay an arm and a leg for them. Apart from the caveats above, any Mac more powerful than the IIci and with more than one NuBus slot can be used for HD recording. For the record, I finally got a second-hand '030 Mac IIcx. It came from a dealer in used Macs and has 20Mb RAM and a 170Mb Hard drive. I got a six-month guarantee, it cost £700, and it works just fine!

In general, when you decide on a software/computer/hard-disk combination, you should contact the HD and software manufacturers to make sure the components you're buying will work together. If you decide to go the 8-track, output-only route you'll just need to sell your old 8-track. If you decide to go for a system that provides effect sends, returns, inserts and automated mixdown all in the one box, you could sell your desk too! Or, alternatively, you could use it as a sub-mixer for your MIDI keyboards.

BUYING THE GEAR & GETTING ADVICE

I found it very difficult to get accurate information and advice when I decided to buy a HD recording system. Retailers, in general, only knew the overall capabilities of the systems they were supplying. The companies who specialise in HD recording tended to be the most informed. After a few phone calls and demos, I found I was a bit bewildered. What did I really need to buy? How much was it going to cost? None of my colleagues had much experience with HD recording, so I turned to the

Internet for advice (see box on help on the Internet elsewhere in this article).

I posted several queries in newsgroups and mailing lists and was bombarded with helpful advice. This came from both users of systems in real studio situations and from on-line manufacturers. A lot of replies came from the USA where, inevitably, HD recorders are much

more common. This help, along with software upgrades and bug fixes available from FTP sites, became invaluable. My advice is — add a modem and on-line costs to your purchase.

A TYPICAL SESSION

Using the HD system on a day-to-day basis has required a little more concentration on my part than with my old tape-based system. Routing inputs to tape tracks is done in software, and there are no flashing lights and meters to guide me if the relevant windows are hidden. Using an audio sequencer, I now tend to record several takes and either choose the best, or do a cut and paste. I don't need to worry about levels so much either. As long as I'm well under 0dB, I can normalise the data later if I need too. This doesn't seem to add much noise if the source is quiet.

Mixing is surprisingly easy. It's so simple to loop a small part of the song I'm working on, set the level, EQ and effects on each track in turn and then move on to the next bit. Crashes are a regular occurrence, but as data is read directly to disk, I have usually been able to recover the recordings. I had to put a mains on/off switch on the flying power lead of my Macintosh for rebooting — remember, it's in a box! All in all, I think I can live with the HD system, especially with regard to the benefits it brings. If I was working to the clock, or had paying customers, I would be more wary. Many people use a multitrack tape machine for recording, transferring the results to a HD system for editing. This is a much safer bet if you have customers looking over your shoulder as you reboot the computer for the tenth time that session.

THE FUTURE

With the advent of more powerful and less expensive computers, it cannot be long before a complete recording environment becomes available all in one box. This system could contain a multitrack hard disk recording system, DSPs, software-based effects units and perhaps software-based 'synthesizers'. The integration with video editing will improve too. The major problems at the moment are software reliability and data storage, though these are being overcome by mainstream computer innovation. Because the major manufacturers seem to be engaged in an evolutionary development of their systems, there is no reason to put off buying a system 'till tomorrow'. The TDM system available on the Mac from Digidesign is a particularly exciting step forward. It promises the prospect of buying a modular HD system, starting off with an inexpensive basic unit and adding more tracks and features as the budget allows. The interface between MIDI, software plug-ins and audio recording is becoming more integrated and open between manufacturers. The future of HD recording should be a rosy one indeed.

Oh, and by the way — a hard-disk recorder *can* replace an 8-track analogue system. It's up and running in my studio!

SO WHY DIDN'T I BUY A...?

You may be wondering why I went for the Digidesign Session 8 system. Here are some of the reasons.

■ I didn't buy a Pro Tools III system because...

It would have cost about a third again as much for an 8-track system. It is a much more flexible system than Session 8, with TDM, multiple DSPs and a simple, though expensive, upgrade to 16 or more tracks. I felt that I would not need more than eight tracks in the near future and that the 'virtual track' features in Session 8 would suffice. The SCSI/Interface card and Session 8 hardware are identical to those used in the Pro Tools III system, so there may be an easy upgrade path to multiple DSPs, and so on, though Digidesign are being very cagey about this at the moment.

■ I didn't buy a dedicated 8-track HD recorder such as the Akai DR8, or the ones from Vestax or Roland because...

I didn't want to buy a unit that might have a limited shelf-life. Japanese companies in particular tend to change their products after a short time on the market, whereas Digidesign have only just stopped supporting Audiomedia 1 and they offer upgrade paths from Pro Tools I. I also wanted the complete automated mixer, effect sends, EQ and inserts available on the Session 8. Other units have automated mixdown at most and cost about the same as, or more than, the Session 8. Things may change rapidly in the next year, though.

■ I didn't buy the Soundscape 4/8-track dedicated unit because...

It is PC only at present. It also has only four discrete outputs, and two units would have cost more than the Session 8. It is not directly supported by the sequencer manufacturers, although you can run a sequencer in tandem with the Soundscape software.

■ I didn't buy an Alesis ADAT or Tascam DA88 digital tape 8-track because...

I wanted the 'cut and paste' and virtual tracks of a hard disk system, and it would also have cost more for one of these units, plus a mixer, than the Session 8. However, the Session 8 system has an ADAT interface option, allowing transfers to and from the HD recorder and synchronisation of the two units, and this was an important reason for me when deciding to buy the Session 8. I feel that a combination of HD and digital tape is the most flexible setup, and I intend to get an ADAT as soon as funds allow.

■ I didn't buy a Sony 32-track digital multitrack and DAR Soundstation because...

I need somewhere to live!

■ I DID buy a Digidesign Session 8 system because...

It was the only Mac-based system that provided all the features and flexibility I required at a price I could afford.



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The mid-priced XR7 is at the top of the new Fostex cassette multitracker range. SHIRLEY GRAY checks it out.

Despite speculation about the demise of analogue recording in all its forms, 4-track cassette-based multitrackers continue to proliferate, and this year's Frankfurt Musikmesse saw a whole raft of new models floated on the market. In principle, there was nothing really new, but as expected, the trend was towards an increase in sophistication and a continuing fall in prices.

The Fostex XR7, one of the above-mentioned machines launched at Frankfurt, leans towards the budget end of the recording market, and as such has been designed to be easy to use.

FOSTEX XR7

4-TRACK CASSETTE MULTITRACKER

Commendably, the manual has been written with the recording newcomer in mind and includes step-by-step instructions for recording a first session. The XR7 also has a few rather advanced features, such as a Rehearsal mode, which, as well as saving in setting-up time, can be a great help for those doing their first few overdubs.

OUTLINE

The XR7 is a 4-track, 6-channel multitracker and is powered by mains only, via the supplied 12V PSU. The machine features footswitch punch-in/out recording, but if you want to make use of this, you'll have to provide your own footswitch. Simultaneous recording is possible on all four tracks, which is a plus, as many similarly priced units only allow you to record on a maximum of two tracks at once. In practical terms, this means you could record a whole band at once, whereas the more limited machines are better suited to the solo musician building up a recording one or two tracks at a time.

Fostex have stuck with Dolby C noise reduction, which seems to provide a realistic compromise between noise reduction and audible side effects without going to the more costly Dolby S system. The XR7 also features pitch control, high and normal tape speed, insert points on two of the mixer channels, two Aux sends, three-band EQ, a sync facility on track 4, and direct tape outputs. The latter provision is very important if you want to mix down via an external mixer with better facilities. The machine weighs in at a mere 3kg and is extremely compact, measuring only 405 x 321 x 105mm.

WELL CONNECTED

Overall, the XR7 looks to be well thought out, but a more thorough rundown of the inputs and outputs may help you decide if it's exactly what you need. On the front panel are the input jacks 1-6; 1-4 are designed to handle line levels, such as electronic instruments, while 5 and 6 can handle either line- or mic-level signals. In most home studio

situations, this isn't a limitation, but if you have a regular need to multi-mic acoustic ensembles of any kind, you'll need either an external mixer or some outboard mic preamps, and if you don't have these already, buying a multitracker with more mic inputs is definitely the cheaper option. In addition, there's a jack for headphones and one for the optional punch in/out footswitch.

The rest of the connections are on the rear panel. There are two insert jacks, which you can use to process individual signals while you're recording to tape or during mixdown — typical applications would be using a compressor/limiter on vocals, or (if you're slightly 'outboardly challenged') recording an instrument or voice complete with its effects, thus freeing the signal processor to be used with a different setting when you come to mix. To use the inserts, you need the usual 'Y' cable with a stereo jack at one end splitting into two mono jack leads at the other; one of these goes to the processor's input and the other to its output. You can also use the inserts on the L/R buss during mixdown — for example, if you wanted to add compression or enhancement to the overall mix. The Aux Sends and stereo Returns are mono jacks.

There are several sets of output jacks, the first labelled Foldback, which is a single, mono jack; this might be used to feed a headphone amplifier for the benefit of the musicians in the studio. Next come the Stereo Out jacks, for connecting to the input of your 2-track mastering machine for mixdown. Monitor Outs provide the signal for the monitor amp and speaker setup, while the Tape Outs (direct outputs from the individual tape tracks), can be used either to feed an external mixer for mixing down, or even as extra effects sends relating to the individual tracks.

IN CONTROL

And now for the guided tour around the control panel... Each of the six mixer channels has an Input Fader to adjust the level of the signal going through that channel, and associated with these faders are input source switches, which determine whether the incoming signal is derived from the Input jack or the Tape track. Channels 1-4 have a Foldback (pre-fader) level control, which can be sourced from either the input signal or the tape signal, depending on what you want to listen to. All six channels have a Pan control.

The EQ on channels 1-4 is rather basic — just High (10kHz +/- 12dB) and Low (100Hz +/- 12dB). However, on channels 5 and 6 there's a sweep

FOSTEX XR7 £499

PROS

- Flexible.
- Good sound quality.
- Cost effective.

CONS

- No Pause button.
- Punch-out awkward without a footswitch.
- Inserts, mic inputs and three-band EQ only on two channels.
- Aux system only allows one send to be used per channel at any one time.

SUMMARY

A very adaptable little machine capable of making good-sounding recordings.



mid, which makes these channels rather more tonally flexible. The manual refers to this as a parametric equaliser, but this isn't, strictly speaking, accurate, as a parametric has further controls to set the width of the band of frequencies affected by the equaliser. The fact that the sweep mid facility is only available on the two 'extra' channels means that if you want to use the sweep mid on mixdown, you have to connect a lead from the tape out of the relevant track and feed it into the input of channel 5 or 6. Not an ideal solution, but at least it's possible.

The Aux Send arrangement is the same on all six channels. There's only one pot per channel, despite the fact there are two Aux Sends; the pot is centre zero, so you turn it anti-clockwise to send to Aux

a nice touch, as most people sing better with a little reverb in the cans. Finally, the Master section has overall level controls for Aux Sends 1 and 2, Returns 1 and 2, Monitor level, and the stereo left/right output (Master Fader).

DEPARTMENT OF TRANSPORT

The tape deck offers nothing startlingly new in the control department, except for the fact that there is no Pause button. Pressing Record without the tape playing allows you to monitor the signal you are about to record and set its level. To record on a particular track you have to select it via one of four Rec Select switches. You can then monitor its status from flashing (record ready) to continually lit (recording). In Rehearsal mode, depressing the

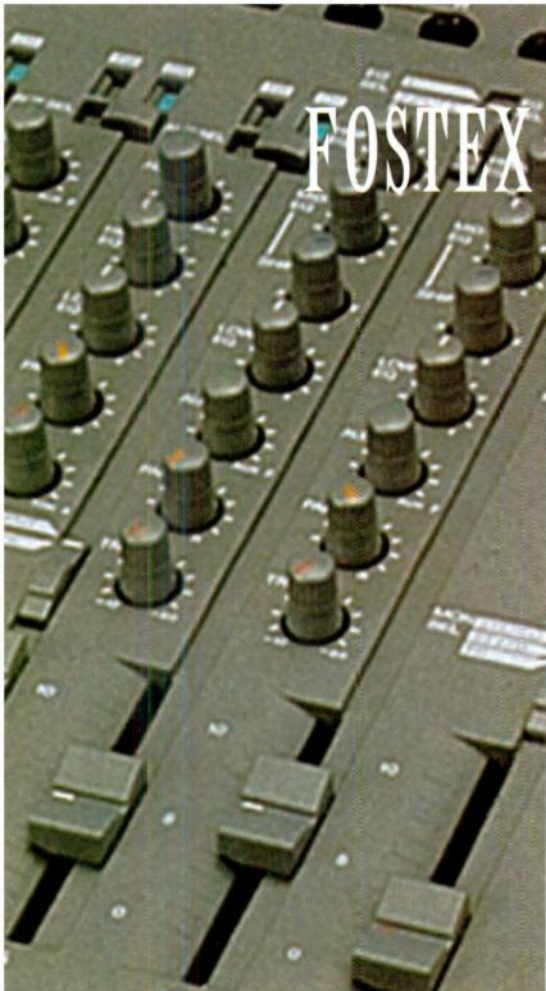


1 or clockwise to send to Aux 2. Obviously this means that you can't have both effects on a channel signal simultaneously. There is a switch associated with the Aux send system which selects whether the signal you are sending to your effects processor is derived from the channel (ie. input/tape signal) or the foldback buss. This means in practice that you can have effects on your monitor mix when you're doing your overdubs —

footswitch switches the track monitoring from the off-tape signal to the input signal, which allows you to hear how your punch-in would sound before actually committing yourself to doing it.

The LED display contains the metering, and has six bar meters, four for the tape tracks and two for the Left and Right buss. The colours used are rather happy shades of golden honey and lemon, and the Rec Status lamps are quite large, so you're unlikely





FOSTEX XR7

► to miss the fact that one is flashing! There's also a cute little LED diagram of the tape, which imitates the tape travel, showing whether you're in Play mode, Fast Forward or Rewind. There's quite a bit of headroom on the meters, so you can go a couple of bars into the red (actually gold) before you get distortion.

IN USE

The compact, lightweight nature of the XR7 has an unfortunate side effect; it's too easy to pull it off its perch by tripping over a lead! If I owned this machine, I'd put it on something with a high friction co-efficient, or find a way of firmly anchoring it down — perhaps one of those double-sided suckery things for holding the soap down in the soap dish? The power supply came with sensibly long leads, which is unusual, and definitely a bonus.

Aesthetically, the XR7 is rather attractive, though plasticky in feel, and is laid out sensibly, with the connections easily accessible and

clearly labelled. The knobs, which have a rubbery surface, are smooth in action and quite slim — just as well, as they're rather close together. The faders feel positive, but a little coarse.

My first favourable impressions of the XR7 were rather marred by the fact that after about a minute of use, the display 'crashed', leaving all the LEDs on, and nothing would operate. I couldn't do anything except turn it off and start again. I did try to make this fault repeat, but fortunately it appears to have been a one-off, and subsequently the test session went fairly smoothly. Some operations weren't quite as intuitive as they might have been, but there's usually a way of doing pretty much anything you want to, although it might take a few moments to work out exactly how. If you get stuck, there's always the manual — remember them?

The XR7's sound quality is very good, considering the limitations of the cassette recording medium and the budget nature of the machine. The use of Dolby C noise reduction means that there is none of the coarseness which can occur with dbx, especially on a bounced track. I was pleased to note that the mixer is surprisingly quiet in use; crosstalk between tape tracks is possibly a little more apparent than on a machine with dbx, but I still had to listen pretty intently to hear breakthrough from a recorded sync-code during periods of (otherwise) absolute silence. The EQ is very pleasant and smooth — not peaky, boomy or harsh — and the sweep-mid controls on channels 5 and 6 allow for a wide range of EQ possibilities. Sadly, the full works are only available on mixdown on two of the four tracks (and then only by connecting the tape out to the input of channel 5 or 6), or on the entire stereo buss, but as is often stated in these pages, people have a habit of over-using EQ anyway.

The XR7's headphone amplifier quality is much better than I've heard for a long time on a budget machine — so often the circuit used is cheap and noisy, because it is assumed that you'll only use the headphones for doing your takes, rather than for actually checking out your sound quality.

Punch-ins are quiet and positive, but as usual, you have to make sure you leave a little bit of a gap, otherwise you don't erase the very start of the section you want to replace, leaving a slight overlap. Similarly, you need to punch out during a pause wherever possible, because you always end up with a small unrecorded gap at the punch-out point. This is inevitable on this type of machine, and is simply a function of the distance between the erase head and the record head.

Punch-ins are most easily managed using a remote footswitch; although you can punch in manually (as opposed to footually) by holding down Rec and hitting Play, I couldn't find a way of punching out using the tape transport controls other than by pressing Stop, which leaves a click on tape. Unusually, you can't use the Rec Select buttons to punch in or out. This makes the footswitch essential for any serious work — which begs the question: why is it optional?

The Rehearsal feature was helpful and easy to use. I liked the idea of having centre detents on the Aux and EQ controls, but they should be on the Pan controls too — it can be quite difficult to judge the centre position.

CONCLUSION

As always with a unit that's built to a price, there are compromises, but Fostex have tried hard to provide a good level of basic quality and enough flexibility to let you get around most of the common restrictions. You do get insert points and three-band EQ, but they are on either channels 5 and 6 or the Left and Right buss, leaving just two-band EQ on the other channels. There are two Aux sends, but you can only have one on any particular channel because of the centre-off pot arrangement.

On the completely positive side you get the fancy and informative LED display; Search Zero and the Rehearsal features; pitch control; a tape sync facility; and a couple of extra channels to plug your MIDI gear into. Personally, I'm most impressed with the sound quality, which is above average; both mixer noise and tape noise have been kept to a minimum, given the target price range. At the end of the day, no matter how many features you've got, it's the sound of the finished product that counts, and with this unit you've got more than a fighting chance of coming up with something that sounds like a professional demo. Despite a couple of minor gripes then, the verdict on the XR7 is generally good.

SOS

FURTHER INFORMATION

- £ Fostex XR7 £499 inc VAT.
- A SCV London, 6-24 Southgate Road, London N1 3JJ.
- T 0171 923 1892.
- F 0171 241 3644.

SPECIFICATIONS

Frequency Response:

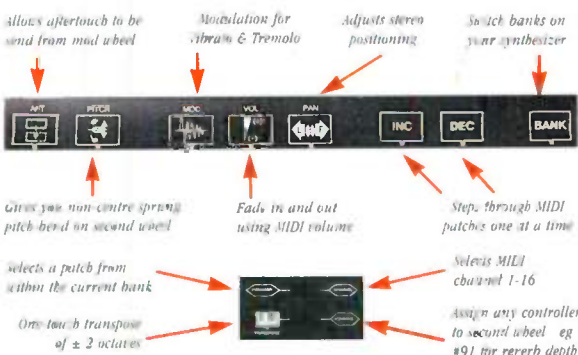
Mixer	20Hz-20kHz
Recorder	40Hz-18kHz (high speed)
Crosstalk	60dB (1kHz)
Distortion	Less than 0.05%
Wow/Flutter	+/- 0.07% at high speed (IEC/ANSI)
Power	DC12V (12-16V), 13W
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Tape Speed	9.5/4.75cms per second

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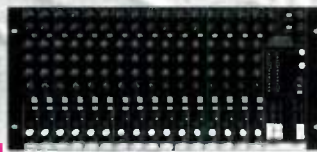
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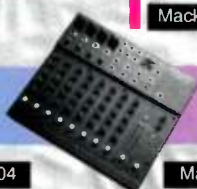
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26 March 19.00 - 22.00
 A night of live interactive multimedia on Radio 1 97-99 FM

— and recent advances in software make it relatively easy to use. The 'World Wide Web' (see sidebar panel) is the new, friendly face of global computer networks, replacing reams of text and laborious typing with on-screen graphics and mouse clicks. The Web is best thought of as an anarchic global electronic magazine, which is capable of being accessed by an estimated audience of more than 30 million people. (Not a bad circulation...)

RADIO ONE

The Radio One side of the event included simple verbal explanations of what the Internet is, advice on buying a computer, what you need to get connected, and so on. There was plenty of music too, from celebrity Net-surfers like Belly and the Beastie Boys, whilst technological comment came

RADIO INTERACTIVE

MARTIN RUSS ON THE NET WITH BBC RADIO ONE FM

tunes into a very different BBC Radio One...

Television, magazines, and newspapers have been hyping the Internet for at least the past six months, and so when the BBC's Radio One schedule boldly claimed that they were going 'interactive' during the evening of Sunday, 26 March 1995, I was definitely intrigued. The combination of radio and computers is an interesting mix, which arguably makes the best use of both media. So what was this interactivity all about?

Stephen Bennett's 'Networking For Musicians' article in *SOS* November 1994 is useful background reading for anyone interested in the 'Information Super-Highway' and 'surfing the Net'. Probably the most important thing for any musician to be aware of is that the Internet computer network is already used by vast numbers of people all over the world for entertainment, personal communications, information and advice

from Internet gurus and musicians like Peter Gabriel and Future Sound Of London. To demonstrate that it really is possible for an ordinary person to use computers and the Internet, Radio One had persuaded Rob Newman to make the transition from a rather droll complete novice to a very droll surfer, albeit with a little help from an expert.

In between the DJ's chat and the music, there were several references to the other aspect of the evening: the interactive part. The measured and cultured voices of the BBC coped well with techno-speak such as <http://www.bbnc.org.uk/online/radiointeract/>, although I suspect there may be complaints about all those slashes being read out on air! What all those dots and slashes referred to was the address of the computer-based part. With the aid of some software, a computer, a modem and a connection to the Internet computer

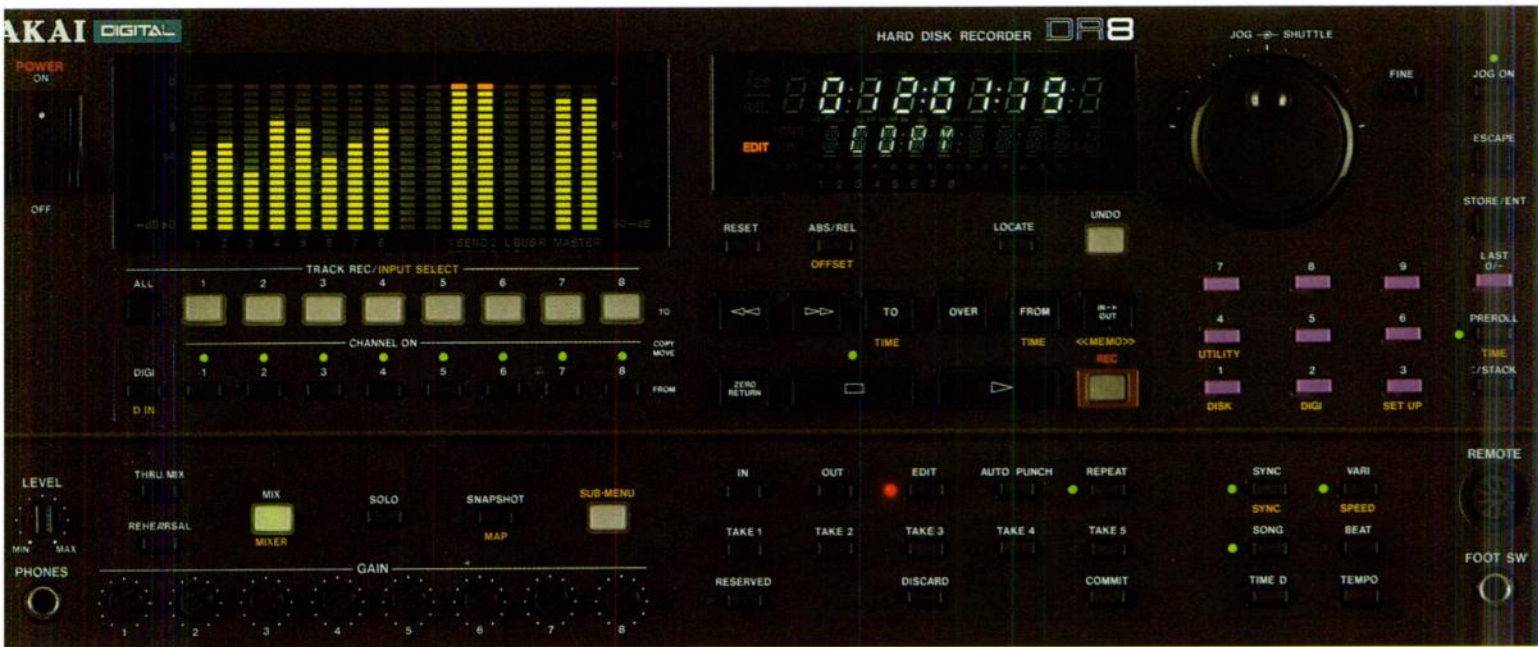
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The 'main menu' page. Clicking on any of the areas in the picture takes you to that page, whilst the underlined coloured text does just the same. The blue link text shows unexplored pages, whilst the purple text shows the pages which have been visited.

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The DR8's powerful, non-destructive editing functions have the same logical feel as working with analogue tape. Random access to the disk lets you instantly play back or edit

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ON THE NET

► network, it was possible for listeners to call up a set of specially created interactive 'pages' on their computer screen (some of which are printed here).

INTERACTION

Unlike the 'sit there and let it wash over you' approach of TV, interactive computer programs do nothing particularly interesting unless you initiate it. The pages in the Radio One area were linked to additional sources, like the Internet Underground Music Archive (IUMA), and almost everything available from these links was of a musical nature — freeware samples and loops from well known names, for example, and lots of pages to explore on just about any musical topic you care to mention. It was like opening a very large encyclopedia, only to discover that it is full of only music-related information.

The usual explanation of 'multimedia' is that it is a combination of audio and visual elements, which is often just an excuse for a bit of animation or an audio soundtrack. Of course, audio is where the medium of radio excels; there are no pictures

to distract your imagination, and so 'the special effects are much better'. (Which is probably why the *Hitchhiker's Guide...* worked so much better as a radio series.) But where radio falls down is in permanence and repeatability: if you miss the part where they tell you about who supplied the music samples, then there is no easy way of going back and finding out. But this is where the interactive part comes in — computer screens are excellent at displaying text and images. So by making the background information and additional resources available on a screen, you get the best of both worlds: audio with extra information.

The result is unlike television and makes much better use of both types of media: audio and visual. If you like what is happening on the radio, then you keep listening, but if the radio is droning on too much, then you can follow up the bits that were interesting by exploring information pages on the computer. This hopping back and forth between the two media is very different from television or video, where your attention is held by the combination of sound and picture. In fact, it is arguably a better use of multimedia than the current fashion for putting moving video pictures onto computer screens.

MUSIC ON THE NET

The concept behind the 'Interactive Music Night' seemed to be one of introducing ordinary

Radio One listeners to the possibilities of using computers to access the Internet and thus extend their involvement with music culture. Using a word like 'culture' may seem strange in this context, but that's exactly what is happening on the Internet. The available information is loosely structured, constantly changing, and very diverse — rather like a fanzine or a club. But the potential membership is very large, and geographical separation does not matter — you can participate from the comfort of your own home.

The computer allows the listener to extend their experience and knowledge beyond merely appreciation

of the music. If you like 'Band X', say, then you can probably use the Net to find out about their discography, their interests, influences, likes and dislikes, look at pictures of them, view their favourite pictures, and even send e-mail messages to them asking about the next album... Unlike a fanzine or fan club, where the ratio between creators and readers is very large, the Internet provides the means for anyone to contribute. If this sounds more like



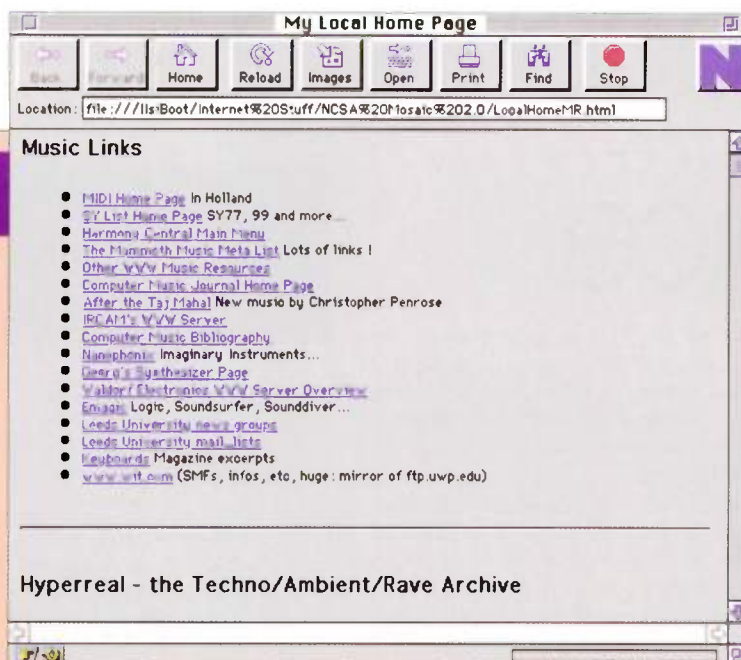
Info about the band Blur is available on the Internet.

WHAT IS THE WORLD WIDE WEB?

The World Wide Web (WWW) is an offshoot of a hypertext/hypermedia project originally written for CERN, the European Particle Accelerator run by theoretical physicists in Switzerland. The idea was to make complex technical documents easy to access from a computer system, but it turns out to have a much wider application.

The basic idea is that pages of text and graphics can contain coloured 'links' which take you to other pages when clicked on with a mouse. To access the pages you need a program called a 'browser' — although these started out as freeware, like NCSA's *Mosaic*, commercial versions are about to appear, and currently Netscape seems to be the one to choose for leading-edge technology.

Actually producing the pages themselves is very similar to the process used to produce the pages of this magazine — a 'page description' language called 'HTML' (HyperText Mark-up Language) is employed to tell the computer how the finished page should appear. HTML itself is just ASCII text with special embedded control words and characters (eg. *to turn on italics*), although it is rapidly evolving as ever greater demands are made on its abilities to lay out screen pages. Future versions of Netscape will include the ability to download complete finished pages of magazine-style text and graphics.



The author's own 'Home' page, displayed using the Netscape World Wide Web browser application program. Scrolling down reveals more of the page and the hypertext 'links' take you to other sources of music information on the WWW.

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- ▶ talking to schoolmates who are in a band, rather than the more traditional 'buy records from famous but distant celebrities', then that is precisely one of the major advantages of Net music. It can bring the musician and the listener much closer together — buying music becomes a part of the interactivity, not all of it.

NETMARE

The Radio One webzine / e-zine / i-zine (the names are still evolving) used for the Interactive Radio Night was produced by Netmare, a London-based



Netmare's
Dean Frederick
with Yamaha
ProMix 01.

company who specialise in providing expertise on the Internet to a wide range of customers. The interactive magazine included an archive of low resolution (8-bit) samples and loops which had been donated as freeware by people like Coldcut, Brian Eno, The Orb etc. Full pieces of example music were available

SAMPLE STATISTICS

Netmare used the ProMix 01 to prepare 1.8 megabytes worth of low-resolution samples for downloading by interested Net-surfers. In addition, more than 20Mb of MPEG-coded samples were available. As an example of the sort of compression that MPEG can provide, a 33.3Mb .AIFF format audio file from the Beastie Boys was

netmare

on the Internet as downloadable MPEG-encoded data files. Also accessible from the electronic magazine were the all-important bits of freeware and shareware software (eg. MPEG players) which would enable users to replay these audio files on their own computer once they had downloaded them.

Netmare brings together four people with diverse interests:

- Dean Frederick — audio-visual producer who used the Yamaha ProMix 01 digital mixer to help encode the audio samples and loops into MPEG format files.
- John Bains — a fanzine producer who virtually ran the Internet Underground Music Archive (IUMA) on the www.southern.com site for six months, and was instrumental in making it the 'Coolest UK Web Site', according to votes from the readers of *Vox* magazine.
- James Stevens — a QuickTime expert, who also showed me some novel applications of the latest version of *Netscape*, the WWW browser program — including some very clever background graphics.
- Kim Bull — who described herself as a 'content provider'.

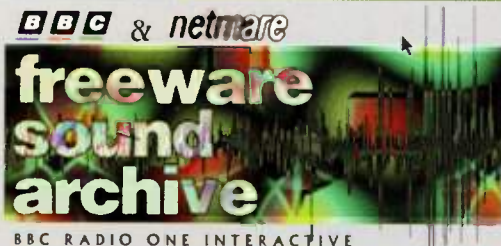
Dean explained that Netmare were part of the fledgling 'Internet Providers' Association' (IPA), which aimed to provide a code of conduct for anyone producing material by self-organising, informing and self-regulating. Netmare started out

- ▣ [808 State - Lopez](#) +
- ▣ [Shamen - Conquistador](#) +
- ▣ [The Orb - Oxbow Lakes \(Film Mix Version\)](#) +
- ▣ [PWEI - Cape Connection \(exclusive mix\)](#) +
- ▣ [Belly - Spaceman](#) +
- ▣ [The Black Dog - I felt like it](#) +
- ▣ [Bomb the Bass - Sleepy Head](#) +
- ▣ [Massive Attack - Blacksmith/Dreaming](#) +
- ▣ [Beastie Boys - Son of Neckbone](#) +
- ▣ [Aphex Twin - Ventolin](#)

The 10 tracks on the 'on-line album'. Because these are 'links', merely clicking on one causes the computer to transfer the sound file to your computer (a process known as 'downloading')

compressed to a 4.5Mb MPEG file, with very little significant audible degradation.

Downloading 4.5Mb is still not a trivial exercise! Dean said that he had seen figures which suggested that of the approximately 2.25 million modems in the UK, about half were 9.6 kbaud or less, and the remaining half were 14.4 or higher. So the time to download 4.5Mb at 28.8 kbaud would be much less than an hour, and so would cost less than a pound (assuming a local phone call at the cheapest rate). A whole album's worth could therefore be downloaded overnight, if you wished. Organising payment for this sort of interchange is still under development on the Internet, but it's only a matter of time...

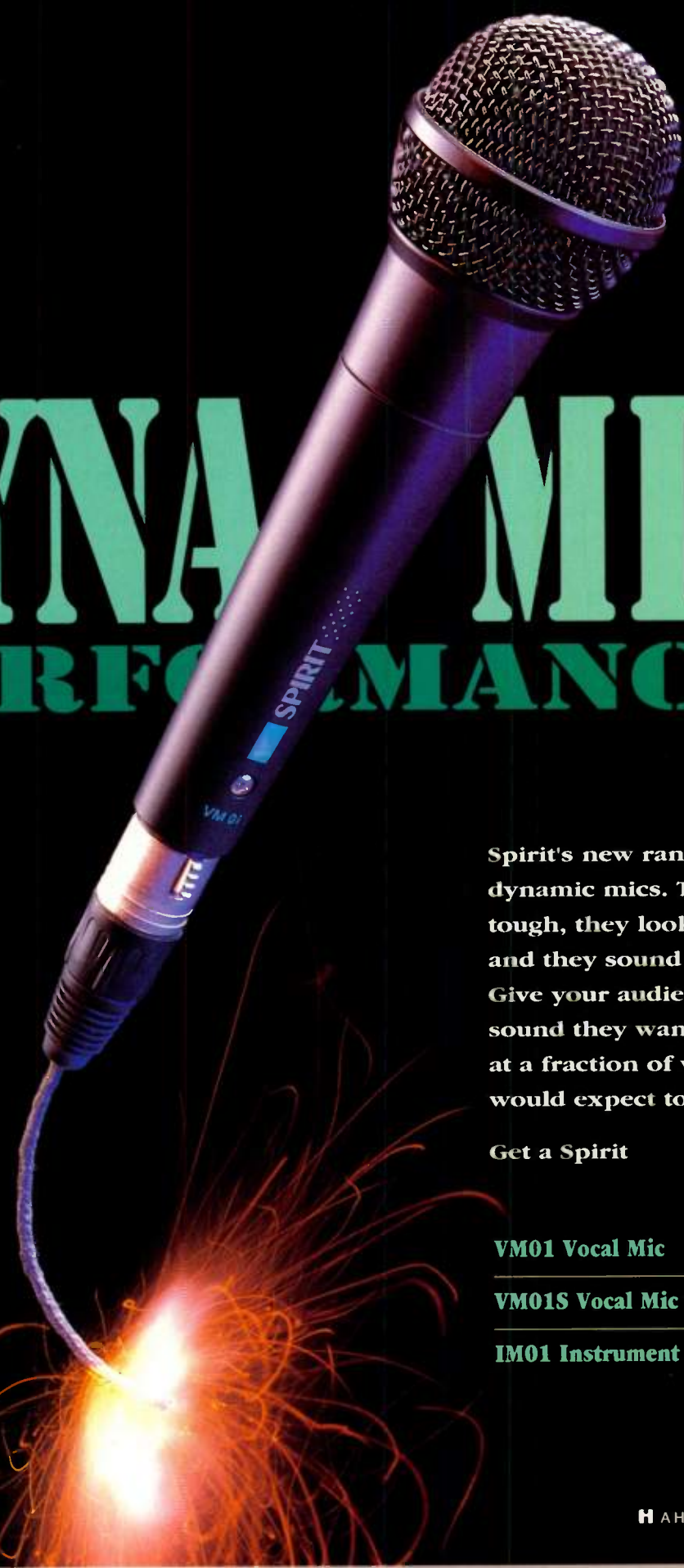


Here are the first few sounds from the **BBC/NetMare Freeware Sound Archive**. This archive is being constructed from original audio donations by professional music makers, and is intended for your free use and enjoyment. Download the cross-platform 10-fi mono 8k .au files, and **vote on your favourite samples** in each category. Your decisions will determine the contents of the hi-resolution Radio 1 mix that will be played on March 26th.

The freeware sound archive page. This was available before the Interactive Radio Night so that voting could take place on which samples were most popular.



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ON THE NET

- ▶ providing consultancy and are now helping companies make the most of the Internet.

Always keen to learn about unusual applications of musical technology, I spoke to Netmare's audio specialist, Dean Frederick, about how the ProMix had been used in the preparation of samples for the Radio One interactive project. The goal had been to create a low resolution sample archive from which anyone could download sampled loops of music, and then play about with them using computer software to splice them together, re-loop them, and so on. In addition, these samples act as 'adverts' for the full resolution CD quality music, and provide a good way of listening before buying.

The ProMix 01, it seems, proved very useful for optimising the audio samples into MPEG format. The combination of powerful onboard signal processing with storage and recall of mixes enabling rapid comparisons to be made between the original, unprocessed audio and the processed output signals.

SOS: Processing-wise, how did you optimise the HF and LF boosting so that you didn't run into clipping/dynamic range problems? Did you use the ProMix to help here?

Dean: We used careful stereo compression to keep the distortion away without ruining the musical dynamics. The MPEG processing seemed to spuriously enhance certain mid-frequencies, depending on the overall frequency content of the source. I have not yet tested MPEG with anything better than a Power Mac 7100, so this is possibly due to the limitations of the 7100 sound chip. The worst mistake I made was adding too much very high frequency (16-18kHz) boost — the results were appalling and were hastily binned!

SOS: One problem with A/B comparisons is that they are very sensitive to level differences. Presumably you used the ProMix to 'level' your two inputs (source and processed) — did you

YAMAHA INTERACTIVE

Yamaha are no strangers to multimedia technology. They not only have a whole division dedicated to recordable CDs and similar leading-edge computer technology in the UK, but they are also innovative users of CD-ROMs and computers for advertising and educational purposes. The 'VL Series Interactive Multimedia Experience CD-ROM' is a prime example, produced by ex-SOS co-founder Paul Gilby's new company, Co-Activ (with some help from a mysterious technical consultant called Martin Russ!).



SOS: You said that you were using the ProMix to do A/B comparisons — does this mean that you were switching between source (uncoded) and processed (MPEG encoded) signals using just a simple path change? Or was it just moving the faders?

Dean: The simple path change technique seemed the quickest, with some attention to constant volume levels, of course. I have since acquired *Cubase* for the Power Mac, so no doubt MIDI control will now take over and make everything much less time consuming.



Introducing ProMix 01

At first sight, it is apparent that Yamaha's ProMix 01 is an entirely new breed of mixing console.

However, ProMix 01's simple control panel belies the vast power beneath the surface.

ProMix 01 not only packs more functionality than ever into a compact working area, but also offers automation capabilities that promise to revolutionize the way mixing consoles are used.

The following screens in this program will demonstrate the unique power and flexibility of ProMix 01, while also showing you just how fast and easy the mixer is to operate.

One of the introductory pages from the ProMix 01 product demonstration disk.

For the ProMix 01, there is also multimedia support in the form of another interactive presentation, which fits onto HD floppy disks. It offers a complete animated specification, complete with demonstrations if you have a ProMix 01 connected to the computer via MIDI. There are hints on applying the ProMix 01 in various application areas, as well as QuickTime video interviews with two users: Hans Zimmer (studio use) and Stan Miller (live sound).

The main menu page of the VL1 CD-ROM. Clicking on any of the large buttons lights the LED and takes you to that section.

automate this at all?

Dean: Yes — it's very easy to do this accurately with this box of wonders [the ProMix 01].

SOS: Did you investigate hooking into the ProMix at a digital level?

Dean: The ProMix 01 has DAT-digital (or CD) and ProMix digital interfaces, which makes it gloriously noise-free. I used the digital output to go back to DAT, although very often the next stage was to the Power Mac 7100, which as yet has no digital audio input. Any changes to the sound were most perceptible (though still small) at this stage, revealing the limitations of the Apple sound chip!

SOS: Did you consider reverse-engineering the MPEG coding? MPEG splits the input into frequency bands, codes those, spreads the quantisation noise away from the loudest band

(noise-shaping) and then adaptively looks at the difference between the current and previous samples. So splitting the source signal into several bands with wild EQ settings, tweaking those (a little compression here, some gating there, perhaps) and then recombining them might be interesting...

Dean: Yes, but time was limited. Now that the BBC rush has dwindled I shall definitely take a few days out and explore this. I knew the ProMix was ideal for noise-shaping, and only wish I'd had a lot more time to really use it on the low resolution samples. Those gloriously ropery 8-bit samples are so short that it occurs to me that it would be a good place to start, by doing the pre-processing on the ProMix in 16-bit stereo before reducing them down to 8-bit mono.

THE FUTURE

For the musician, the Internet opens up all sorts of additional opportunities. With the end product no longer restricted to CDs, vinyl or cassettes, the wider aspects of an artist become available. It is very probable that the convergence of audio, video and computers will be accompanied by 'media artists' who combine the roles of musician, artist, video producer and computer programmer. The risk for anyone who does not get involved is that

Note that the fader for channel 1 was sent down when Send 1 was selected.
That's because ProMix 01e faders are now set to display and control the levels going to Send 1.
The LCD has also changed to display the effects currently selected for use on Send 1.
There are 30 high-quality digital effects available for each of the two internal processors. Each effect includes a number of editable parameters.
Press MORE to continue.

4 Aux Sends plus Digital Effects
contd... Auxiliary Sends 3 and 4 go to analog outputs allowing simple connection to external effects devices. Alternatively, these outputs can be used to create cue mixes or can be used as outputs to recording machines.

3/4 can be configured as 2 independent mono sends or as a single stereo

SEND 1	19. KARAOKE ECHO 2	CLIP	0
	20. ST. PITCH CHANGE	+12	
	21. VOCAL DOUBLER	+ 6	
	22. FUNNY PITCH	0	
	23. CHORUS	-40	
	(FADER = SEND1)	RTN1	L R

ST OUT STORE RECALL EDIT SEND: POST

INDEX | DONE | PREV. | MORE | DETAIL | DEMO

YAMAHA

they will start to look rather one-dimensional as their audience becomes hooked into multimedia. When even the BBC start to get involved in mixing computers and music, perhaps now is the time to explore what the Internet can do for *your* music.

SOS

The ProMix 01 digital mixer makes the most of its large LCD display. This screenshot is from Yamaha's multimedia product demonstration.

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Steve De. Furia



BEHIND THE SCENES AT LEXICON

PAUL WHITE discusses the future of digital effects processing with Lexicon's Steve De Furia.

Despite stiff competition from other major manufacturers, Lexicon remain the undisputed champion when it comes to professional digital reverb. Even so, they realised that the audio professional wasn't the only potential customer in the marketplace, and that if they continued to build only high-end products, they'd miss out on the booming project studio and MI markets. Initially, mid-range products such as the LXP series brought Lexicon quality within reach of the serious non-professional and project studio owner, but it wasn't until the Alex hit the shops that you could honestly say the Lexicon for the rest of us had arrived. Two similarly packaged, but functionally different products have also emerged from the Lexicon stable, namely the JamMan delay/sampler/looper and, more recently, the Vortex Audio Morphing effects processor. So, does the non-reverb nature of these processors

signify a new direction for Lexicon? I put these questions and more to Lexicon's Steve De Furia at the recent NAMM show.

Steve has a diverse background in music and high technology. He has taught Electronic Music and Audio Production at Berklee School of Music, he worked as a session player and programmer for a number of years, and as a columnist for the US *Keyboard* magazine, he wrote a featured series on performance applications and computer programming for musicians. He has also written several books on synthesis, sampling and writing MIDI software.

PRODUCT DEVELOPMENT

Could you tell us exactly when and how you came to be working for Lexicon full time, and in what capacity?

"I've been a Product Development Manager at Lexicon since 1990. I felt that Lexicon's products were very interesting, and I was quite excited at the prospect of getting involved in product development. There were things not being done that I thought obviously should be done, so it was a nice opportunity for me to apply my experience." ►

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- * Selectable high & low filtering on each gate
- * Filters independently switchable with separate input/output for external EQ use
- * Fully balanced audio inputs & outputs

4x2 2 noise gates, 2 filters & 2 compressor/limiters in 1U

- * Ideal for use with digital multitracks
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- * Filters individually assignable for frequency conscious gating
- * Individually assignable filters also allow compressor de-essing
- * Switchable compressor side chain
- * Gate outputs switchable to compressor input for gated compression
- * True stereo linking



CX2 2 separate compressor limiter de-essers

- * Switchable high/low filter
- * Full & Half band compression
- * Selectable cross-over
- * Separate normalised side chain inputs & outputs
- * Gain reduction LED metering
- * Full stereo linking
- * Fully balanced audio inputs & outputs

GX2 2 separate frequency conscious gates

- * High speed 5µs gates with ext. keying
- * Unique Selective Noise Reduction for single ended noise reduction
- * Full channel linking
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But then again, you know that.



Steve De Furia

► **How involved do you get in product development? Do you restrict yourself to proposing concepts, or do you get in there with the engineers and talk about code and hardware design?**

"I've written code, but I'm not an engineer. My background is mainly as a hands-on user, but I've taken courses in DSP and written a lot of music software. My first experience as a software designer was writing a set of composition programs for Frank Zappa. Those programs got me very deep into computer programming. Before that, I'd never really written any software. I know

MI gear that doesn't compromise the Lexicon name for high-end products.

"It's a challenge, but we're good at it. Our inexpensive stuff still costs a little more than other inexpensive stuff, but ours has higher standards in terms of both audio performance and mechanical design. You can drive a car over an LXP1, and I've seen a JamMan that was burned in a studio fire, doused with water, thrown out into the street — and still worked! We get agency approval on all our products, CE in Europe and UL and FCC in the United States; not all our competitors are that rigorous about quality and safety. It costs money, but we feel it's important and have a very sharp crew who know how to design for agency approval."

Which of the MI products have you had most input on, and how do they evolve before a production version is finally decided on?

"I did a lot with Vortex and the PCM80, but I've been involved in Alex, JamMan, and more recently Reflex as well. We do a lot of initial spec'ing where we sit down and come up with feature sets based on the input from our users, and the project team. It's a large negotiating process where we balance the price against the features, and then we get to a stage where we're ready to start building. At the point, things aren't actually frozen, but they're pretty fixed. If something happens along the way and we


realise there's a feature we should include, or something new comes up, we'll make changes, but we have a very fixed target because that's the only way to bring things to the market on time.

"You have to come out with MI products pretty quickly. A lot depends on whether it's a 'from the ground up' new product with new DSP and mechanical packaging, or if it's a new application for DSP and mechanical packaging that already exists." **With the Alex/Vortex range of products, the packaging is clearly similar, but what goes on inside the box? Is the hardware similar with different software, or is each product quite different?**

"The JamMan, Vortex, Alex and Reflex packages are very similar. The Vortex package is different internally from the other three products, but we still tried to keep as many common elements as possible. That's one way of keeping the price down."

MARKET PERCEPTION

I guess that you've had time to analyse the market response to these units, so is there anything that you think can be taken forward and improved upon in the next generation? ►



Some of the Lexicon family of processors: from top, Alex, JamMan, Vortex, PCM80, and Reflex.

enough about code and hardware to be able to translate marketing concepts and new product ideas into a format that the engineers can work with, and I'm also able to converse with engineers to translate their ideas into marketing concepts."

Where do the ideas for new products come from? Are they individual concepts or the result of meetings and pooled ideas?

"We get our ideas from anywhere we can! There are certain things that make sense to us individually, but we try very hard to listen to what our customers say. We look at what our customers are doing, but we also try to think ahead a bit and extrapolate, to provide them with things that perhaps they haven't thought of yet. JamMan and Vortex fall into that category."

It must be a real problem designing low-cost

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Steve De Furia

► "I think our approach to tapped delays, where it's not just a single fixed rhythm, but you get to set divisions of the tap to create flexible rhythmic delays — that concept is moving forward. Also, the looping idea, where you can create a loop, then instantly play it back. The PCM80 'Dual FX' card that we announced here at NAMM has some elements that are very similar to some of the morphing stuff on Vortex, in that you'll be able to re-route the effects ordering within an algorithm from, for example, serial to parallel, on the fly. A general concept we're carrying forward is performance control. Vortex, JamMan and the PCM80 are not passive effects processors. They are interactive, in that many of their parameters are tied to performance attributes, like dynamics, tap, and a variety of control sources."

A GUITAR'S WORLD

The Vortex seems well-suited to both guitar and keyboard processing, but traditionally, hi-tech processing seems to have been aimed at the keyboard player or home studio owner. Looking round the show, it's obvious that there are at least 10 guitar companies for every keyboard manufacturer, and the guitar shows no sign of going away. Does this mean you'll be looking further into this market in the future?

"I don't know if this is the peak year, but the guitar is absolutely king of the hill at the moment and I love it — it's great to see. A huge number of guitar players are already using our stuff but we're always looking for new things to do. A lot of guitar players are using Vortex, but then it has a lot of effects that process stereo inputs, so you can use in a mix situation too. The guitar market hasn't gone unnoticed."

Another interesting area is the creation of 3D sound illusions from conventional stereo. I

know you have some stereo enhancements in the PCM80, so you see this as a worthwhile avenue for further research?

"As you say, the PCM80 has surround capabilities built into all of its algorithms. These can be used to produce a wider reverb sound or focus it anywhere between the centre, sides or surround speakers. The trouble with a lot of the so-called 3D stuff on the market is that it doesn't image very well over two-speaker systems unless you're sitting in the absolute 'sweet spot' between the speakers. Even then, without visual cues, some people might believe a sound is behind them, while others hear it as being in front."

"On the PCM80, we use a standard 'left minus right' technique which is continuously variable, and if you use it on a project intended for playback on a Dolby surround system, anything that's processed that way will come out of the surround channel. The fact that you can vary the effect width means that you can take stuff from the centre to the sides, or to the rear, and you can do it dynamically. You can put your echoes or repeats wherever you want as long as the result is played back over a Dolby surround system. One of the patches keeps the reverb focused up front when you're playing, but when you stop playing, the reverb tail sweeps out to the sides and then goes out behind you."

"We're seeing more surround music albums coming out, and lots of people have surround TV. One of our preset developers, Frank Serafine, is working on a television series with a virtual reality theme that's being mixed in surround. They're using the PCM80 constantly to generate the surround effects. Of course, I can't tell you exactly what we're working on now. Let's just say the future is going to be interesting."

SOS

A MODEL FUTURE

Physical modelling is the emerging technology for synthesis, but I can foresee several applications of this in sound shaping. Is this a line that you are following?

"Well, sure. An ironic thing is that Lexicon was one of the first companies to get involved in physical modelling/virtual reality. Those buzz-words weren't around back then, but Dave Griesinger's reverberation algorithms had to be among the first practical examples of 'virtual reality.' [See *Recording Musician* August 1992 for a full interview with David Griesinger]. In these algorithms, an existing signal is processed to place it within a simulated acoustic environment. Look at the Roland VG8 — it's an extension of the same idea. A set of existing signals (the six guitar strings) are processed to place them within different simulated environments, and out come different kinds of guitars, played through different kinds of amps and so forth. It's all audio processing. You could conceivably build a processor that could re-process monophonic input sources, such as the human voice or a sax, to produce completely different sounds — or, for that matter, morph from one to the other in real time."

"One application that has been kicked around for quite a while is formant-corrected pitch shifting so that you can keep the shifted voice sounding natural."

Using modelling techniques, it doesn't seem too implausible that you could map the characteristics of one singer's voice onto the voice of another. Maybe in a couple of years, we could all choose who we want to sound like?

"Absolutely. You could conceivably have a system where you dialled in parameters like the gender, perhaps the age, of the singer, the amount of whisky drunk over the years, how many packs of Marlboros a day and all that kind of stuff."

What aspect of effects processing most appeals to you at the moment?

"Control related to performance. In the case of Vortex, a lot of what's in there is standard: chorus, delay, modulation, filters and so on. What's different is that the effects are controllable by your performance, so that your style and phrasing completely influences the way they sound. That interaction with the effects is an extremely potent means of expression. I have done a lot of synthesis work, and still do. I've always liked synthesizers as opposed to samplers, because synths generally provide more direct 'handles' to the aspects of sound that are used for expression — pitch, timbre, loudness, etc. As a player, I've developed a vocabulary of techniques that allow me to put myself into the 'here

and now' of a performance. Samplers don't offer this kind of sonic interaction. They will create impressive sounds at the push of a button, but basically, you're conjuring up someone else's performance."

"With audio processing now, because of all the power of DSP, you can make expressive changes to what you're doing based on how you play. At the moment, a lot of this is based on playing dynamics, but in the future, a lot of that can relate to other things, such as frequency content."

With Vortex, you took effects that had been around for years and gave them a new lease on life by enabling them to evolve dynamically. Presumably, when effects based on modelling become available, you'll also be able to control those in a similar way, to create evolving sound textures?

"That's true, and it's not just the weird stuff that you never heard before, it's also the stuff that you've heard lots of, that we're letting you hear it in a new way. For example, the Vortex 'Choir' patch isn't just a great chorus, it's a ducking chorus, so that as you play louder, the chorus effect gets less. That means that when you're playing a loud solo passage, the chorus isn't getting in the way — the notes are right out in front. As you play quieter or let a chord ring, the chorus comes up from behind."

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(Falcon)

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MAP

CREATING A CUBASE

laid out like a conventional mixing desk. Program Change, Volume, Pan, Tune, Note Shift, Effect Send Level and On/Off were to be included for each of the 16 Multi channels (or 'Instruments', as they're called on the SY85), plus anything else I thought might be helpful. Suddenly Alex had become my client and I realised that I was going to have to produce something to a high standard. This month's article, and the follow-up in the next issue, tell the story of the hows, whys and wherefores in the creation of this Mixer Map. Readers who use the SY85 in Multi Mode with *Cubase* (Atari v.3 onwards or equivalent) should find this both practical and informative, and any readers into *Cubase's* Mixer Module should find this a valuable tutorial. It's probably going to take a bit of time, possibly a couple of Sunday afternoons, but it should be worth it.

TOOLS OF THE TRADE

So what do we need before we commence? Firstly, and most obviously, you need a Yamaha SY85 keyboard and a recent version of *Cubase*. Second on the list are the SY85 manuals, particularly the SY85 MIDI Data Format manual, and (if you haven't already read it), the MIDI Mixer chapter of the *Cubase* manual. It's not necessary to be an expert, but any reading you do before completing this project will help make things a little easier to understand.

The creation of the SY85 Multi Mode Mixer Map will involve the manipulation of System Exclusive data. As many readers will already know, System Exclusive is a special kind of manufacturer-specific data which is used to pass special messages for particular instruments down the MIDI cable. This could be anything from requesting the machine to dump its memory contents, to the changing of a single parameter. In the case of the SY85 Multi Mixer Map, we'll be dealing with the latter — the changing of single parameters.

Strange though it may seem, I do not own a Yamaha SY85, and I couldn't have access to Alex's in the busy studio, but luckily another friend of mine, Paul Beecham, gave me access to his. In addition, he gave me a few insights into the SY85 which helped shape the choices for the final map.

He, too, was using the synth with *Cubase*, which seems to be a very popular combination. Paul had found that editing on the SY85 was not particularly user-friendly. The problem is that the SY85 can do so much in so many different ways. In truth, it's probably not ideally suited to be slaved in Multi mode to *Cubase*, since many of its features are somewhat rigid and unadaptable. Indeed, some functions are difficult to find within its complex web of multiple menus. However, the SY85 comes close to being all things to all MIDI musicians, hence its enormous popularity.

Cubase's MIDI Mixer Module allows you to create Mixer Maps to help you edit and control your MIDI instruments. In part one of this two-part series, SIMON MILLWARD takes you through the construction of a Mixer Map for Yamaha's popular SY85.

A friend of mine, Bad Apple Sound Studios owner Alex Giorgiou, bought a Yamaha SY85 recently, with the intention of using it as the master keyboard in his North London facility. Being also the owner of Steinberg's *Cubase Audio* running on the Atari Falcon, Alex decided to integrate the SY85 into his existing MIDI setup by using it in Multi Mode with the sequencer. This gave him an extra 16 channels of multitimbrality, but the system lacked an easy way to quickly set up all the Multi Edit parameters. Doing this on the SY85 itself involved paging through a fairly large selection of menus and peering at the various parameters in small groups. This wasn't very intuitive, and it was difficult to see the current setup as a whole.

When Alex asked me to solve the problem, creating a Mixer Map in the Mixer Module of *Cubase* seemed the obvious solution. A Mixer Map, for those who haven't come across this term, is a set of user-definable objects which can be created to control external devices, such as the SY85, from within *Cubase*. Each object appears as an on-screen icon which can be manipulated in order to send out almost any kind of MIDI data.

YOUR MISSION, SHOULD YOU ACCEPT IT...

Alex's brief included the following: the Mixer Map was to be a one-screen affair with all the controls

REFERENCE

MIDI MIXER MAP FOR THE YAMAHA SY85

INSIDE STORY

The SY85 Multi Mode features a number of menus, each containing settings for the 16 Instruments. Each Instrument is set to receive on a consecutive MIDI channel, from 1 to 16. It is, of course, a good idea to become familiar with the Multi Edit menus, since this will help you to understand what we're aiming for with the Mixer Map. Also, please note that the SY85 sends out System Exclusive data over MIDI when various of the front panel controls are moved. Paul had already noticed that this sometimes caused some strange reactions in *Cubase*, with various notes sounding at random. I'm not quite sure of the source of this problem, but if 'Device Number' in the MIDI 1 menu of the Synth Setup utility is set to the 'OFF' position, this prevents the synth from sending SysEx data — but it also prevents it from receiving SysEx. This, obviously, would present problems with sending data to the synth from our forthcoming Mixer Map, so, for the purposes of this project, 'Device Number' must remain set to 'All'.

It was also decided that a Local On/Off switch

and an On/Off switch for each Instrument should be included in the map. In addition, Paul suggested that it would be a real bonus if we could label each channel of our virtual mixing desk, just as a sound engineer would do in the real world.

But first, let's take a look around the SY85 to find where some of the functions are — they're not always easy to find in the manuals. Local On/Off is found in the System menu of the Synth Setup, and the inclusion of this on our map will improve its ease of use with the SY85/*Cubase* combination. The keyboard would normally be set to Local 'OFF' for use in Multi Mode with *Cubase*. The On/Off function for each of the 16 Instruments in Multi mode may be accessed while in Song Multi Edit, by moving the cursor to the desired Instrument and pressing [Shift] [+] or [Shift] [-]. This isn't ideal, but our map will make it a lot easier, since we'll include a simple 'OFF' switch for each of the 16 Instruments. This will be a one-way switch, for reasons which will become clear later.

That's a start in finding some of the Parameters we need to target on the SY85. The other Parameters follow those outlined in Alex's brief,

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CREATING A CUBASE SY85 MIXER MAP

▶ above, and these are found on the various Multi Edit windows of the SY85. To obtain an overview of the parameters involved, refer to the Multi 'InitSong' table on page 300 of the SY85 user manual 2. Refer also to the MIDI Parameter change tables on pages 6 and 7 of the SY85 MIDI Data Format manual. Above the first MIDI Parameter change table, on page 6, is the essential building block for the objects we will be creating — the System Exclusive message. This warrants detailed inspection.

PARAMETER	BULK NUMBER	PARAM NUMBER	DATA RANGE	DISPLAY	NOTES
MUL\$CH\$BNK	94,95	0	b0,1 b2,3 b4_b7	1..4 int/crd(pre) 0..1	inst mem bank inst mem off/on for ind 1..4
MUL\$CH\$VNUM	96,97	1	b0_5 b6 b7	0..63 pfm/vce off/on	inst voice number inst v,p select inst switch
MUL\$CH\$VOL	98	2	0..127	0..127	inst volume
MUL\$CH\$TUN	99	3	1..127	+ -63	inst tune
MUL\$CH\$NSFT	100	4	1..127	+ -63	inst note shift
MUL\$CH\$SPAN	101	5	b0_b5 b6=0,1	+ -31 multi,vce/pf	inst pan inst pan source
MUL\$CH\$EFSNDSW	102	6	b0_3 b4_5 b6	0..1 0..1 0..1	off/on for send 1..4 off/on for out 1,2 off on for vce send
MUL\$CH\$EFSNDLV	103..253	7	0..127	0..127	inst effect send

Figure 1.

WHAT THE HEX

Like all SysEx, the message is expressed in Hexadecimal. Each byte represents an essential part of the syntax which the SY85 needs in order to understand what it is receiving, and to decide whether

	PARAMETER VALUE MSB							PARAMETER VALUE LSB							
Decimal							1								6 4
Hexadecimal							\$0 1								\$4 0
Binary	0	0	0	0	0	0	0 1	0	1	0	0	0	0	0	0
SY85 Bit No.							7		6	5	4	3	2	1	0
SY85 Function							inst on/off	vce/pfm <-			inst voice number				-->
SY85 Display							ON	VCE			A 1				

Figure 2.

it should respond to it. The following is a brief analysis of each part of a message which would change the Volume of Multi Mode Instrument 1 on the SY85:

\$F0 — SysEx Status byte. All SysEx messages begin in this way.

\$43 — Yamaha ID. Each manufacturer has an ID number. \$43 is for Yamaha.

\$1n — Device Number. 'n' = the Device (1-16) to which the message is addressed.

\$29 — Model Number.

\$00 — Parameter Group Number. \$00 specifies parameters in Multi Mode.

\$01 — Sub Group Number.(1-16); \$01 specifies Multi Mode Instrument number 1.

\$00 — Parameter Number MSB. [Most Significant Byte.]

\$02 — Parameter Number LSB. [Least Significant Byte.] Choice of Parameter number. \$02 specifies Volume.

\$00 — Parameter Value MSB.

\$XX — Parameter Value LSB. Value of chosen Parameter. Volume range = 0-127.

\$F7 — End of SysEx message (EOX). A kind of SysEx 'over and out'.

For the purposes of our Mixer Objects, the first four bytes of the message (often referred to as the 'Header') will remain constant. The other bytes will vary according to which Parameter we are addressing. A brief look at Parameter table 2 on page 7 of the MIDI Data Format manual (Figure 1) reveals the essentials of the Multi Mode Parameters we wish to address. The final map will use Parameter numbers 0, 1, 2, 3, 4, 5 and 7.

Note that some functions are common to the same Parameter number, and change according to the status of the respective bit. This is awkward to use with some of our Mixer objects. For example, when addressing the On/Off switch of an Instrument (with Parameter 1), it is bit 7 alone of the Parameter value which activates the change. But with a Mixer Object, all the other bits are unavoidably sent down the MIDI line at the same time, thus also selecting an Instrument Voice Number and choice of Performance or Voice.

Figure 2 clarifies the situation. Some knowledge of the Binary representation of each Hexadecimal byte helps in understanding things, and the *Cubase* manual should help, with its Decimal/Hexadecimal/Binary conversion table in the MIDI Mixer section.

Just above table 2 on Page 7 of the MIDI Data Format manual, the statement 's = 1..16(inst number)' specifies that the Instrument number being addressed is given by the Sub Group number (the 6th byte), as shown in the SysEx message above. Apart from that, the Parameter Number, Data Range, Display and Notes columns are what concern us most. However, before we go on to create our first MIDI Mixer objects we will need to understand *Cubase's* MIDI Mixer Module to some degree.

THE MIXER MAP

The MIDI Mixer needs to be 'activated' in the Modules menu before we can use it, so select and activate the MIDI Mixer from the 'Modules...' window.

• To go into the Mixer window, first create a new part on the Arrange page.



- Click in the Track Class column (C) and select 'Mix Track' from the pop-up menu.
- Click in the Output column of the Mixer track, select an 'empty' Mixer Map slot and exit the pop-up Mixer Map Setup without loading any map. 'Untitled' should appear in the Output column.
- Now double-click on the Mixer part and you should go into a fresh, blank Mixer Map window. This is where so-called 'objects' are created, which may take the form of faders, dials, switches, numerical displays and text. All, except text, can be made to send out almost any kind of MIDI data.

It's now time to create our first MIDI Mixer object. Pressing the right mouse button reveals the Mixer Map Toolbox, from which the 'NEW' Tool should be selected. Clicking anywhere on our empty Mixer Map will create a new object and bring up the Object Definition Box. Here we define the function and characteristics of the object. The first task is to create 16 Volume Control Objects for the 16 Instruments of the SY85 Multi Mode section. Please note that the order in which the objects are created is important for the correct functioning of the Mixer Map, so please follow the instructions carefully. Proceed as follows:

- Name the object as '1' in the NAME section.
- Set a value range of 'MIN 0' and 'MAX 127' in the VALUE section.

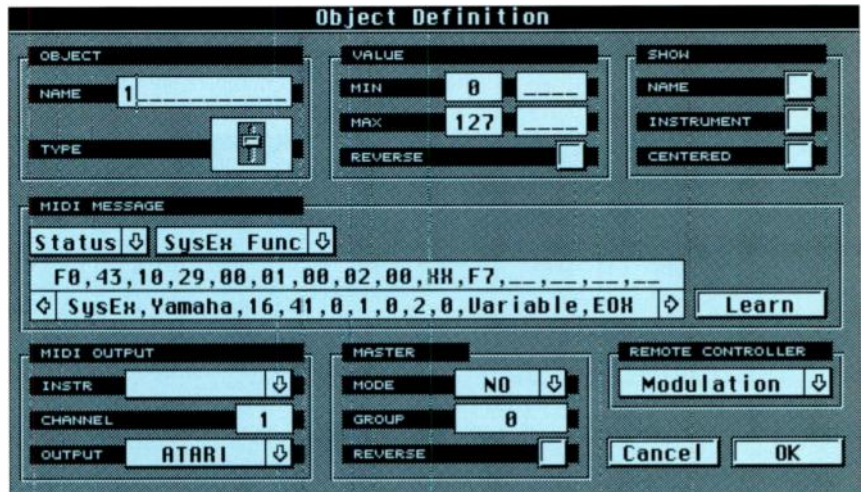


Figure 3.

- Select 'name' and de-select 'instrument' in the SHOW section
- Set the object type to a Vertical Fader in the OBJECT TYPE section.
- Select 'SysEx' from the MIDI MESSAGE Status pop-up menu. The SysEx message should be edited to read: **F0, 43, 10, 29, 00, 01, 00, 02, 00, XX, F7** (see Figure 3). The user is allowed to enter a message with one byte alone as a variable (XX). This variable is usually entered into the Parameter value part of the message,

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CREATING A CUBASE SY85 MIXER MAP

- ▶ enabling the target Parameter to be altered according to the movements of the object. Note that the Sub Group number (the 6th byte) has

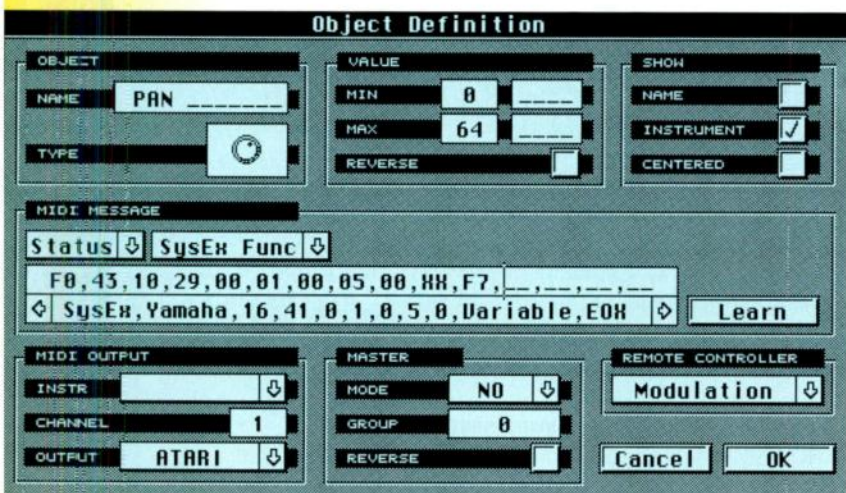


Figure 4.

been set to 1, for Instrument 1, and the Parameter number being addressed (the 8th byte) is 2, as shown in table 2 on page 7 of the MIDI data format manual. Note also that the chosen 'Device Number' (the third byte) is \$00 (Device Number 1).

- Clicking on 'OK' will return you to the MIDI Mixer window, where a new vertical fader object will be found. The object may be sized appropriately using the Edit Tool (Pointing Arrow) and it may be manipulated (played) using the Play Tool (Pointing Finger). When played, the object should send out data to the SY85. With the appropriate window of the synth displayed, the Volume setting should be seen to match that of the new object as it is moved. If you experience difficulties, check that the SysEx message is correct in the Object Definition box and check that the Device Number is set to 'ALL' in the SY85 System Setup. Note that this, and all forthcoming objects, will contain SysEx messages addressed to Device number 1. You may adjust this if it is not suitable for your own MIDI setup.

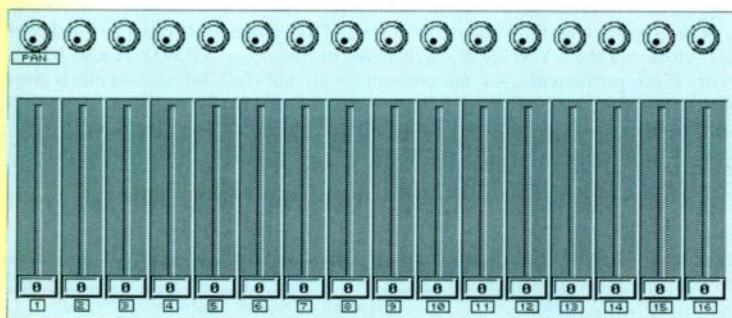


Figure 5.

When you're completely satisfied that the object is functioning correctly, copy the object 15 times using [Alternate] drag with the Edit Tool. Each time, copy from the previously created object and adjust the SysEx message Sub Group number to read consecutive Hexadecimal numbers from \$02 to \$10 (2 to 16 in decimal). Also name the

objects as '2 to 16' as you proceed. For the purposes of this map, the names of most of the objects will not be visible on screen. However, the Volume Objects are to be used to label the 16 channels of the whole map, and each should clearly display its respective number. Most of the other groups of controls will be labelled using the leftmost Object.

The next group of objects to create is the Pan dials for the 16 Instrument channels. Once again, create a new object using the New Tool.

- Name the object simply as 'Pan'.
- Set the object range to 'MIN 0' and 'MAX 64' in the VALUE section.
- De-select 'Name' and tick 'Instrument' in the SHOW section.
- Set the Object Type to a dial.
- Set the MIDI Output section to MIDI channel 1
- Select SysEx from the MIDI MESSAGE Status pop-up menu.
- Edit the SysEx message to read: **F0, 43, 10, 29, 00, 01, 00, 05, 00, xx, F7** (see Figure 4).

When satisfied, click on 'OK' to go back to the Mixer window. A new dial should be visible on the screen. Once again, size and position the object appropriately using the Edit Tool. Then copy it in the same way as the Volume objects, adjusting the Name and MIDI Output Channel each time to consecutive numbers from 2 to 16, and the sixth byte to consecutive Hexadecimal numbers from \$02 to \$10. Finally, the leftmost dial should be made to display the function of the dials by ticking its SHOW 'Name'. The screen should now resemble Figure 5.

Note that the 'Instrument' part of the SHOW section of all Pan dials should be ticked, and the MIDI Output Channel numbers should match the Pan Dial number, as outlined above. This will serve as a labelling system for each of the 16 channels of our virtual mixing desk. When tracks on the Arrange page of *Cubase* are named in the 'Instrument' column, these names will appear on the Mixer Map for each Pan Object with the corresponding MIDI channel.

You will notice from the Multi Parameter table on page 7 of the SY85 Data Format Manual that Parameter 5 simultaneously addresses the Instrument Pan Source as well as the Instrument Pan itself. When bit 6 changes from 0 to 1, the Multi Source ('MLT' on the SY85) changes to Voice Source ('VCE' on the SY85). In other words, the Instrument takes its Pan position from the chosen Voice. Bit 6 becomes a 1 when the Parameter Value reaches its maximum of 64 (Binary 0100 0000), so moving the new Pan control to its maximum right position will select 'VCE' on Instrument 1 of the SY85 Multi Edit Pan window. All other positions for the object will produce the corresponding Pan position in the stereo image.

Test that all the objects function correctly and then save your efforts so far as 'SY85M116.MIX' from the Setup Mixer Maps pop-up window. Next issue, we'll complete the map and learn how to use it... See you then.



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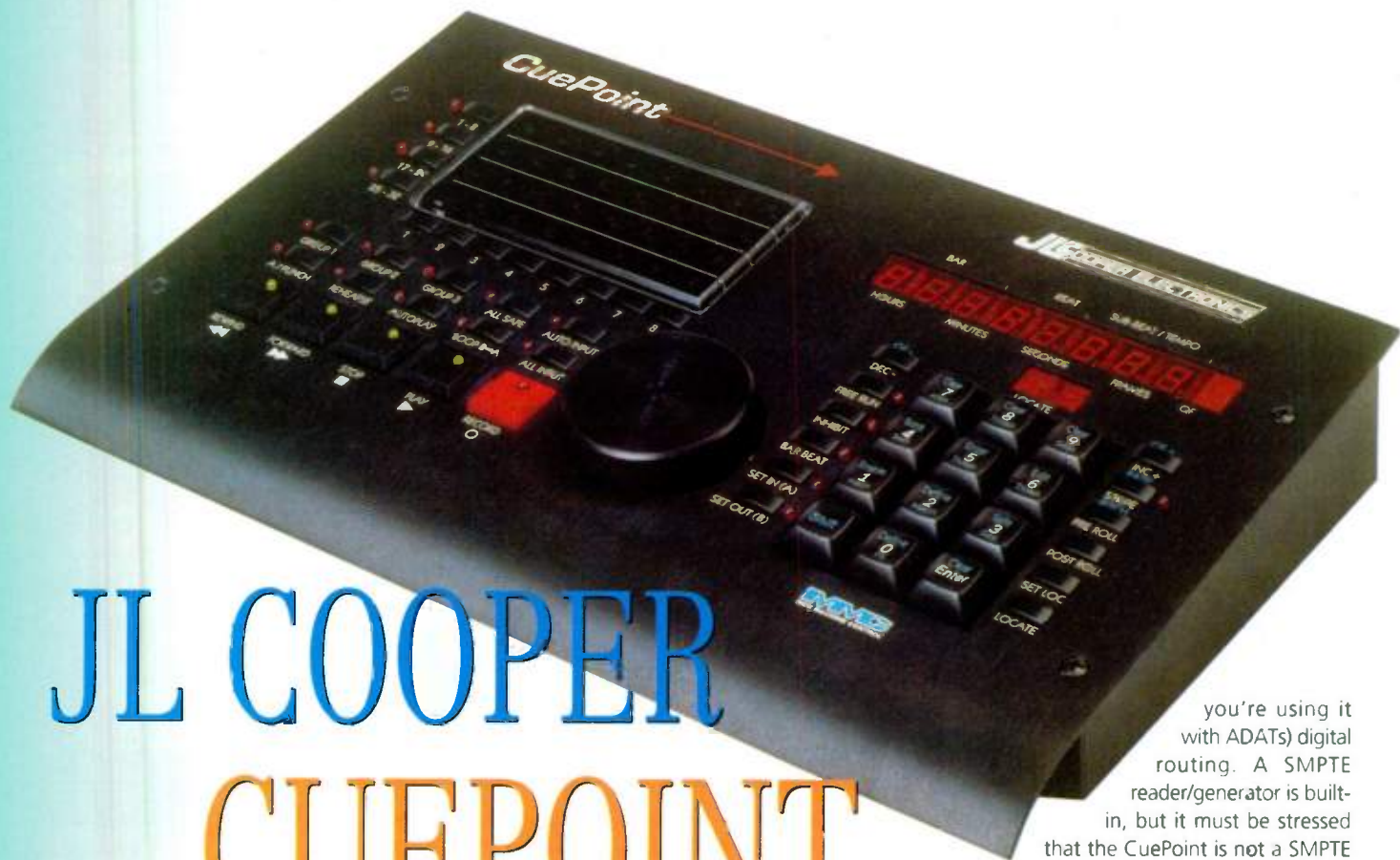
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JL COOPER CUEPOINT

UNIVERSAL AUTOLOCATOR

JL Cooper's new remote controller could become the nerve centre of your studio, driving all your MMC-compatible studio equipment from its front panel. Control freak JOHN HARRIS checks it out.

These days, anybody interested in recording, either professionally or in their spare time, has to contend with a multitude of differing recording machines and standards, in the form of digital and analogue tape, CD and hard disk-based systems, and even video recorders. As a result of differing manufacturing standards, the job of syncing equipment together can be a complex one — and so can finding a master controller to bring the whole system under central control. Individual manufacturers often provide their own remote controllers or synchronisers, such as Alesis' BRC, but what if you don't need the complexity of a BRC, or are working in a mixed-machine environment? Provided that your machines are equipped to respond to MIDI Machine Control (MMC), JL Cooper has a solution, in the form of the CuePoint Universal Autolocator.

WHAT IT IS & HOW IT WORKS

CuePoint is a remote control/autolocator which provides track arming, auto-punch-in/out, and if

you're using it with ADATs) digital routing. A SMPTE reader/generator is built-in, but it must be stressed that the CuePoint is not a SMPTE synchroniser. What it can do,

however, is take SMPTE from, for example, an analogue tape machine, convert it to MIDI Time Code (MTC), then output this code to other MTC-compatible devices. This enables CuePoint to control multiple-machine recording systems, and to provide additional facilities not found in a conventional autolocator.

CuePoint works by maintaining two-way communication between itself and your equipment; it reads timecode from the machines in your setup, so it can tell when they're running and where they are, and also sends back MMC messages to control your equipment's transport and record functions. In effect, there is one master machine, and all the rest are slaved to it using CuePoint as the central autolocator (it must be stressed that CuePoint can't be used to slave an ADAT to an analogue machine).

CuePoint is aimed primarily at the users of Alesis, Tascam and Fostex digital machines, and in practice (remembering CuePoint's two-way communication system), the connection of CuePoint to something like a Fostex RD8 system is straightforward, requiring just two MIDI leads — Out and In! The need for extra expense arises when machines need an interface to understand CuePoint's MMC messages. For example, in the case of the Tascam DA88, the optional Tascam SY88 sync card performs this function, and in the case of the Alesis ADAT, a JL Cooper DataCard is needed. This slots into the CuePoint case — the review model came with a DataCard, which I fitted with no problems (see the box on this elsewhere in this article for more information). It's important to note that CuePoint will not work with the Alesis ADAT unless a DataCard is fitted. Once these interfaces are in place, up to 32 digital tracks can be controlled directly from CuePoint (analogue tracks have to be

CUEPOINT £699

PROS

- Safe feature to prevent accidental over-recording of protected parts.
- Compact, rugged presentation.
- Scrub wheel.
- Can be used to integrate ADATs and DA88s into the same system.

CONS

- External mains adaptor.
- Won't go into Locate directly from Play mode.

SUMMARY

A useful MIDI Machine Control autolocator and control station that will particularly appeal to ADAT and DA88 users.

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Folio SI / SI R	£524	20	2	8	1	2	mix	X	X	✓	X	3
Folio Rac Pac	£899	28	10	2	7	6	chan	4	✓	✓	X	3
Folio 4	£1174	30	12	4	5	8	chan	4	X	✓	✓	3

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JL COOPER CUEPOINT

FITTING THE DATACARD

The optional J L Cooper DataCard allows CuePoint to generate MTC without using up an audio track for time code. It also permits you to connect Alesis ADATs and Fostex RD8s with two 9-pin sync cables, simplifying hookup and leaving CuePoint's MIDI connectors free to connect additional machines like sequencers, hard disk recorders and so on. The card comes with a ribbon connector and two 9-pin sockets attached, and only takes about ten minutes to fit if you follow the clear instruction sheet provided. Once connected, only the 9-pin connectors remain visible, mounted on the rear panel of the CuePoint next to the MIDI and mains sockets. The 9-pin leads supplied are just over five feet long.

armed on the machines themselves). To date, CuePoint is the only affordable way of providing master control for a system which incorporates both ADATs and DA88s.

If your system comprises *multiple* ADATs (up to a maximum of four), connection is simple, as the 9-pin Sync Out from the CuePoint (provided you've installed the DataCard) connects with the first ADAT in line, and the last ADAT connects to the CuePoint Sync In. The machines in between must, of course, be connected via their Sync Outs and Ins. Whatever the system, once you're hooked up (whether via MIDI, 9-pin connectors or a combination of both), CuePoint needs you to define which machines it is dealing with using the keypad and display. This information is then stored, and you need only alter it when you change a unit in your system.

USING CUEPOINT

All the requirements of a good autolocator are met by CuePoint, which reflects the universal transport functions of the target machines. This includes more esoteric functions like loop and auto record punch in/out with rehearsal (although I must confess to never using these, as they always take too long to set up), and excludes only very machine-specific functions like the Format button on the Alesis ADAT. In addition, there is an All Safe button, Safe Segment and Pre- and Post-Roll functions. The 99 locate points and the ability to store locations on the fly should be enough for any self-respecting engineer.

It's worth dwelling on the Safe Segment function for a while, as this canny inclusion can be a life saver! Once this function is initiated, by means of the keypad switches to the right of the main panel, CuePoint starts keeping a second-by-second log of recording activity on all 32 tracks. Attempts to record in any area set to 'Safe' will result in the machines coming to a halt — which is rather better than inadvertently wiping

something you meant to keep! If you wish to record over something, you can just switch CuePoint out of Safe Segment mode while you do it. Even the BRC can't do this.

I can see this function being used by those who cram a lot onto an 8- or 16-track system, where an error in the heat of the moment could mean the loss of an irreplaceable take. A segment log program is also planned for Macs and Windows PCs that will allow the display, modification and printing of the safe segment log.

Not everyone will feel they need to use the Safe function, but it's a nice one to have, especially when you're working on a project that was started somewhere else. In most respects, CuePoint offers ADAT users a kind of stripped-down BRC functionality, but in this area, CuePoint actually offers *more* functionality than the BRC (see the 'CuePoint vs the BRC' box for more CuePoint/BRC comparison).

The control panel includes three display areas, one of which shows the SMPTE time, or bars, beats, sub-beats and tempo (if you want to use the tempo mapping facility for sequencer control). Another, smaller box displays the locate number and various other functions, such as stripe, for SMPTE generation. To the left, above the transport function buttons, is the remote record track arm display.

Up to four multitracks can be controlled at once, and this display is arranged in four banks of eight numbered 1-32 — further proof that CuePoint is aimed primarily at the digital 8-track market. A nice touch is the addition of three memories for group track arming — this is very useful when recording a band over a long session, when a lot of signals are routed to tape in one hit.

With a nod in the direction of hard disk recording systems and the Tascam DA88, JL Cooper have included the shuttle wheel from their CS10; the action of this wheel is dependent on the capabilities of the machine being controlled. For example, with an Alesis ADAT or Fostex RD8, moving the wheel will initiate a 'shuttle search' mode, giving the same result as holding Fast Forward or Rewind at the same time as Play. With a Tascam DA88, the wheel behaves like the DA88's own variable-speed shuttle wheel, and for Digidesign and Spectral Synthesis hard disk recorders, the wheel will send MIDI controllers which can scrub through sound files. For this last application, the CuePoint has to be in CS10 emulation mode, so that only MIDI control messages are sent. However, you can still run four multitracks alongside your hard disk system, as CS10 emulation is the fifth machine option on CuePoint.

ERGONOMICALLY SPEAKING

I felt it was important while reviewing CuePoint to check out the action of the transport function controls. After all, these are the buttons that you are constantly using, and you have to feel comfortable and confident when you're doing all those split-second drop-ins and -outs. The angle of the CuePoint forms a comfortable light slope that allows the buttons to fall easily under the hand, but the unit

is slightly too big to keep on your lap for long, so it's best positioned on a flat surface. The buttons themselves are reminiscent of the Adam Smith Zeta Three remote switches; they're hard plastic and spring-loaded, with an illuminating LED, and give an audible click when depressed. The feel is a definite improvement over the Alesis LRC which comes free with the ADAT!



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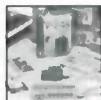
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JL COOPER CUEPOINT

MULTIPLE MULTITRACKS AND CUEPOINT

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- SMPTE to MTC conversion.
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- Capture cues in real time.
- Loop record.
- Display SMPTE or bars and beats.
- ADAT track and machine offsets.
- ADAT digital routing control.

I must admit that the idea of CuePoint's machine offset and digital bounce functions appealed to me greatly for compiling composite tracks and dropping in repetitive sections, so I decided to give it some rigorous testing using two ADATs. It's important to remember that you can only digitally bounce between two different machines — you can't bounce tracks within one multitrack. Furthermore, it's only the slave machines in the setup which can be time-offset, so your choice of track allocation will be restricted. For instance, with two ADATs, you have to make sure that a chorus vocal you wish to record once then repeat will be on the slave, so that it can be offset and digitally bounced to the master for all the other choruses. When working with sequencers, it's a shame that offsets cannot be established in bars and beats, as this would make the whole process more intuitive. You can't toggle between the SMPTE and bar beat display either, unless the tape is stopped, but I suppose you could

click track is useful! The track offset (maximum 170ms) is also fun for creating effects, for instance with a copied lead vocal, or indeed, when someone plays consistently ahead of the beat and needs some delay to bring them into time!

Everyone who has used a multiple Alesis ADAT system will want to know if the CuePoint improves the reliability of lock-up, or the time it takes to lock up. Well, I timed it with my trusty stopwatch, and there was no noticeable difference when using CuePoint — and of course there shouldn't be, as CuePoint merely controls the first ADAT in your system, with all the others slaving to the first one. My ADATs still misbehaved occasionally (I really must get my ADAT software updated to version 4!) and there was still a short delay before lock-up, but again, that's no reflection on CuePoint.

One thing that you can do on the ADAT LRC which is not possible on the CuePoint is hit a locate while the machine is in play. Strangely, the locate button doesn't work until the machines have been stopped, although you can still store locate memories on the fly — an invaluable function. You can also use the locate memory while in bars and beats mode — for musicians, this is very useful.



SUMMING UP

A good autolocator needs to be reliable, and for the most part the CuePoint behaved well. In fact, one of the most helpful things about the unit is the small display telling you which mode you're currently working in — whether digital routing, machine offset, SMPTE or one of the many others. The layout is also clear and the manual helpful. On the downside, I would have liked to see MIDI Clock included, to support those with older sequencers and other devices which don't work with MTC, and I can't see that this would have been too difficult to implement. Also, I have to mention that I narrowly avoided a major accident when I used a dodgy mains socket to power CuePoint, and it went into all sorts of random functions (including dropping itself into record on tracks of its choice!) before I pulled the plug. Of course, this was not the fault of CuePoint itself, but it *would* be easy to knock the flimsy mains connection to the external power supply on the back panel, and cause an instant panic attack! The moral is to plug it into a reliable socket where it isn't going to be disturbed.

Ultimately, CuePoint is a nicely-engineered solution for those needing a central control panel for multiple MMC-compatible systems, while for ADAT users, CuePoint represents a cheaper alternative to the BRC, without sacrificing any of the essential functions.

SOS

CUEPOINT VS. THE BRC

I imagine that many of the people who buy CuePoint will be those owning ADATs who are interested in a BRC, but unable to afford one. Even with the DataCard installed in your CuePoint for sync'ing to your Alesis ADAT, the total cost (£848) is still less than a BRC (£1299), and the basic benefits are much the same.

However, it should be pointed out that whereas the BRC can control 128 tracks of ADAT, the

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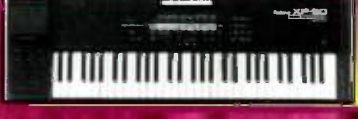


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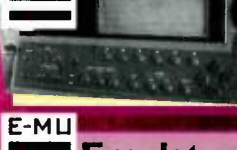
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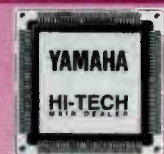
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RED SUN

Recording Venue: Home?

Recording Equipment: Fostex 24-track, Soundcraft Spirit desk, Akai S01 and S1000 samplers.

It's not clear from the letter where this demo was recorded, but the lack of information on effects suggests to me that it must have been a commercial studio. However, pre-production was obviously done at home using a Korg O1W/FD and the S01 sampler, with both being transferred to superior equipment in the studio.

On the first track, the three-piece begin with a heavy backbeat made interesting by an industrial-sounding snare treated with copious amounts of empty-factory style reverb. A heavy synth bass, warm and with some modulation, plays a walking pattern and is the perfect companion for the synthesized kick drum which provides the attack portion of the sound in the bass end. Some of the synth sounds and the electric guitar verge on the scratchy in the upper mid range and sound over equalised — perhaps in an attempt to increase separation in what is a full-sounding production. This aside, the track sounds good and the vocals are excellent — both the lead from Colin Pye and the tracked-up soft singing of Sue Reeves Bassett.

The second song goes for a dance feel, where the first was moody and atmospheric. Panned sixteenth-note synth sounding rather like a banjo underpins the instrumental introduction, before Sue's echoed vocals trip into the pounding fours on kick drum. In common with the other compositions, this song has a catchy chorus with an anthemic quality about it



which could easily be transferred from an '80s synthesizer production to a rock band. (The guitar playing also suggests some rock background.) However, with the full, mellow string pad punctuated by very digital-sounding synthesized sounds — including orchestral strikes — the production suits the addition of female backing vocals.

Gregorian chant merges seamlessly into strings for the start of the last track, and is joined by an atmospheric feedback synth patch, which wanders around the stereo in the background. Percussion is running from the start of the song and the pattern works well with the breakbeat when that joins in, but is too busy for the introduction and sounds rather clumsy against the other instruments. Once again, the song is strong and a lot of thought has been given to the arrangement, with some production tricks, like backwards reverb, thrown in for good measure.

Overall I would work on bringing the sounds up to date, with less obvious reliance on the hard digital synths, which tend to date the production when used in combination with electric guitars and rock drums. □

Readers submitting demo tapes should note that SOS regards the inclusion of photos or artwork with demos as permission for the magazine to reproduce this material free of charge, as illustration, with any review of the accompanying tape.

MERGE



Recording Venue: Home and unnamed studio.

Recording Equipment: Fostex 280 4-track, Atari running Cubase, ART Multiverb effects.

Based in Balham, Merge are a trio who have been working together for three years. During this time they've taken what I regard as a very intelligent step when you have limited

equipment but want to produce good-sounding demos — they take their backings to a local studio and record the vocals there. Presumably they also mix there, because the tracks sound pretty polished to me.

Kicking off with a standard dance organ sound, I like the way that the first track builds, with some nice synth bass pitch bends being added in true '70s style to emphasise where their roots lie. A groovy rhythm is set up, with the hi-hat pattern on the off-beat, and the low bandwidth of the sound source is entirely suitable in this context. I also liked the standard but effective use of repeated sixteenth-note chopped chords with filter modulation against the rhythm track, which helped make the sound fat. It's also the perfect contrast for the heavy bass end of the mix, as it occupies the mids when the vocal drops out.

The vocals of Anne-Merie Jarnell are strong and sound especially powerful when they are tracked up, but I would have taken some of the edge off the mid tones in the voice by cutting at 1kHz slightly, as a lot of the other sounds are digital and edgy in that region too. A delay is most often employed on the vocal, which is great for this kind of pop/dance, especially when pushed up on long held notes and certain phrases. As well as the standard use of delay repeats on fours it's nice to try triplets and stereo ping pong delays, some of which I can hear occasionally — the triplet echo on the vocal at the end of the third track, for example, is effective. My only criticism of the vocal is that Anne-Merie has a tendency to sound too much like Madonna in places, and that will certainly influence the way record companies react to the demo. □

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GUIDO ZEN

Recording Venue: Home.

Recording Equipment: Atari 1040 running Cubase, Lexicon LXPI effects, Yamaha AM802 mixer, Sony TCD D7 DAT.

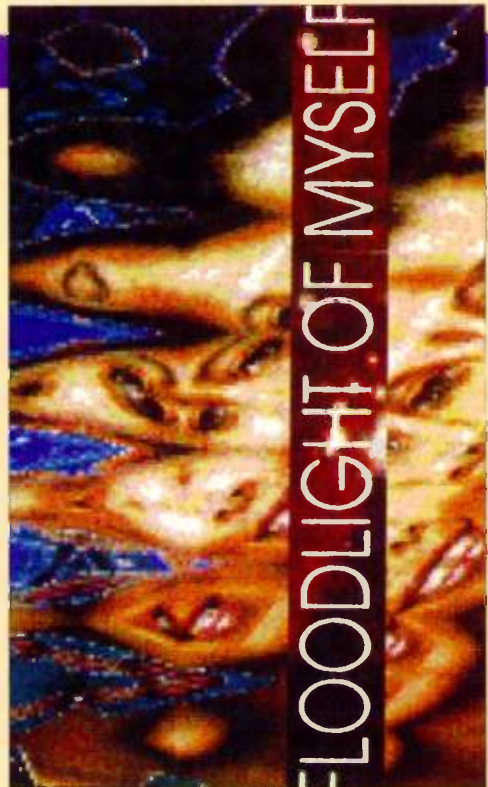
What an interesting name — but then Guido is an Italian reader of *SOS!* His tape is the first he's composed away from his band, who normally play music he describes as industrial metal. Solo, Guido goes for a more mellow instrumental synthesized style that retains some vestige of industrial sounds but is altogether more orchestral in texture.

'28 Giugno' is the title of the first track, which is set up by low strings and a single echoed piano phrase. Nothing special about that, you may think,

top tape

but he then adds a swirling and very aggressive sound which I can only describe as a combination of screeching wind and industrial drilling. This works well as an aggressive foil to the mellow undertones and is panned back and forth across the stereo with gleeful abandon! Interspersed with a sampled conga break complete with live room reverb, the short composition holds the interest.

Panning features once more on track two, where the bass synth is fed to a ping pong echo and darts around the stereo image. This creates quite a big wash of sound, which is then joined by a lonely synth cello theme. Consequently, other sounds appear only to punctuate and never stay for long.



Orchestral strikes lead into a panned chainsaw, and later the sound of water slapping is used in the composition. I particularly liked how the water appears as the strings move from cello to violin sounds, which build to a string quartet. Meanwhile, the bass cycle repeats with the filter closed down somewhat, to give it a more mellow feel. For the climax, Guido returns to the Orchestral strikes and synthesized chainsaw — great movie soundtrack material! □

PETER BOULTON & CHARLIE HUMPHREYS

Recording Venue: Home.

Recording Equipment: Tascam 688 Midistudio, Sony DTC 750 DAT, Aiwa HDS1 DAT, Atari running Steinberg Cubase, Alesis Quadraverb GT effects, Soundtech ST200 comp/lim, Akai SO1 sampler, Alesis Datadisk, AKG C1000S mic.

As a song-writing team whose main aim is to get their songs published and covered by established artists, Peter and Charlie look to produce as wide a range of styles as possible. In order to tackle the diverse requirements of rap, pop, ballads and soul they must have listened to a great deal of music and have a good ear for production sounds and methods. This demo contains three of their most recent compositions, beginning with a strong pop/rock composition entitled 'Take this Heart', and also demonstrates such production skills.

Keyboards, synthesized sax and sparse wood-block percussion draw us into a song that develops into an American pop/rock standard.

Obviously real saxophone is intended for this introduction, and would be far more of an attention grabber than this pale imitation. However, the track develops in some style, with a standard low-key first verse moving to the big drum sound for the second half of the verse. Well-chosen Alesis SR16 samples provide the aggressive rock kit with a heavily gate-reverbed snare. This powers the whole rhythm track along, although it also conspires to make the production somewhat dated. In terms of arrangement, the movement to a bridge section is fairly common before a chorus, but Peter and Charlie could do with a bigger vocal for the chorus to lift it. I hear a harmony, but it's very low in the mix and another harmony, possibly a female vocal, would have been effective.

The second track is another rock/pop number and I would suggest that some of their other styles might be more useful on a demo. That's not to say that this is a bad song — in fact it's very

good, but the latter rather suggests that they are more diverse. Criticisms aside, the song has an obvious Scottish folk influence in production style and melody — note the use of pentatonics, and military snares (excellently programmed, by the way) before we're into the song proper. The choice of a bombastic drum sound and anthemic theme draws obvious comparisons with Runrig and Del Amitri, who are not the sort of bands who tend to need songs, so I wonder who exactly this is aimed at?

All the people I know with publishing deals produce demos which are of as high a standard as they can get them (which may be contrary to what some publishing companies say they want in interviews). In truth, this demo is easily up to the standard of others I've heard recorded on supposedly better equipment. It has all the right ingredients — excellent vocals, strong songs, sounds and arrangements. Now it needs to be targeted at the right people. □



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yours would suit that company. Listening to the tape, the mellow side didn't seem to justify that tag, being too aggressive and up-tempo, but featuring some interesting synth programming. For example, 'Slippery When Wet' is the nearest the band comes to trance dance for me, with its warm, fat sounds and sub-bass.



VIVID are based in Milton Keynes, have been recording together for 10 months, and are a pretty funky combo. The American influence of artists like Prince are obvious in the programming, choice of sounds and camp nature of the music. As for the production, it sounds pretty good to me, and the addition of compression to the overall mix keeps it punchy. I also like how the production takes into account the soft vocal sound of lead singer Clair and leaves a hole for it in the mix by featuring harder sounds with more upper mid. For example, the funk guitar and brass stabs work well in this area, while presence is taken care of by the cymbals and bell sounds in the mix. Warm keyboard pads and bass guitar then provide the body and energy for a production which places the vocals up front without isolating them — well done!

DAVE WADE has been recording for some time now and has enclosed some of his earlier band recordings alongside more recent material. Strangely, this type of pub rock doesn't sound particularly dated in 1995, and is probably a pretty good representation of what the band was like live then as now! Since the band are using only four Tandy microphones and a Tascam Porta One, I wouldn't expect release-quality

recording, and as usual it's the drums that suffer, with the hats being out of balance with the rest of the kit. On the third acoustic workout, the DI guitar sound is thin and some bass equalisation should really have been used to fatten up the sound.

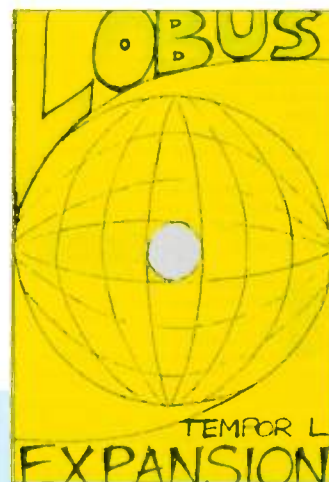
FASCINATION are an Oxfordshire-based House/Soul outfit who record and produce material for their own label, S.O.M. The sound is professional, if conventional, and wouldn't be out of place in any of the trendy drinking establishments so fond of House. Nothing leaps out or upsets the equilibrium, with mellow sounds, a strong rhythm and a melodious vocal performance from Jess Poore to complete a fine production. It's interesting to hear what Mario and Andy, the other members of the band have done with their alternative mixes; the 'Flowing Cement Mix' puts more balls into the music, with a harder chordal sound bouncing around the stereo image and a different rhythmic backing to get you moving. I think my personal favourite was the 'Island in the Sun Mix' complete with congas, strings against the chorus and muted brass chord loop. Perhaps I just need a holiday!

WL THOMPSON sent a tape with absolutely no recording information and only made it into the column because the music was so good. Mellow soul is something we don't get sent often and so it's nice to hear it done well — especially the vocals. The programming is uncluttered and the balance good, with the emphasis on the weighty slow bass groove. Minimal effects have been used, and the dry-sounding mix is perfect for this style of music — yet I also liked the contrast of the heavily-reverbed string lines on the chorus.

One of the most unusual tapes I've ever been sent is **DARREN S PULLMAN**'s demo for Guy Clapperton, a script writer for BBC Radio 4's *Week Ending*. Recorded and mixed in an afternoon using a Tascam 424 Portastudio, Oktava microphone and an Akai sampler, it's a demo of Guy's political spoofs in the form of a sketch. Featuring John Major (of course), Michael Portillo, Heseltine *et al*, it has been excellently recorded, complete with sound effects. The Oktava produces a remarkably good sound — very Radio Four, in fact — and so it's entirely suitable for the job. Following the sketch is a Keats

poem, read by Guy, where, for some reason, a vast amount of reverb is hastily added after the first few lines. This initially made me think that it was going to turn into a comic sketch — alas, it was just a small cock-up!

Temporal Expansion is the title of **LOBUS**'s demo. Recorded on fairly basic equipment and using a guitar amplifier's effects section for processing, it's bound to be a little noisy and low bandwidth. Yet this low-tech approach often suits the sort of trance dance that Michael Judge writes, creating a more organic sound, with distortion, tape compression and noise messing up in a nice way what are often cold digital sound sources. It's also nice to hear Michael making the most of the little Fostex X15, experimenting with reverse tape tricks,



and on the third track mixing three compositions together under the title 'Global Clusters'.

KICKING SATURN have come up with a fine demo tape which features a reworking of the Otis Redding classic 'Too Hot to Handle', as well as original compositions. Engineer and guitarist Steve Coates has also worked hard on a dub version of the track by the aforementioned Mr Redding, something which can all too often seem a good idea at the time in the studio and turn out to be a poor one in retrospect. However, Steve has certainly done a good job on this, as well as the other tracks on the tape, with some fine guitar sounds and keyboard extras to enhance what is basically a boogie/soul band with elements of American pop. Currently gigging in the Newcastle area, Kicking Saturn sound well worth checking out. □

► **ROO** records as a 'back bedroom hobby', but has been nagged by friends to send in a tape for some critical listening. This is probably because he has a strong rock voice that has been well recorded, with good microphone technique and possibly some compression. The vocal would benefit from echo to enhance the production sound on all the tracks, and it would have been worth borrowing an extra effects unit for the mix to do just this — saving the multi-effects for a general reverb. Overall the sound is a little thin, and I'd recommend mixing the bass guitar louder for this style of heavy rock, because that's where all the energy comes from.

With a name like **EUROPEAN COMMUNITY**, you might expect the band members to be drawn from around Europe, but in fact they turn out to be a duo from Manchester. EC are also influenced by 'anything synthesizer-based from the past 20 years'. With music that varies from mellow trance/dance to techno, they seem a little unsure which tracks to use when



approaching record companies. The answer is simply to target those companies specialising in techno or trance and send them the appropriate material. For larger labels look at their roster of artists and ask yourself which music of

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FRYCLW is the second release from US company Digital Kitchen, and the first to come my way. It comprises 300+ two- or four-bar programmed drum patterns. No two bars are identical. With a two-bar pattern you can re-trigger the first bar 'X' times on your sequencer, allowing the second bar to play out wherever you want a fill. For more sophisticated variation creation, you'll want to split the whole into several smaller samples for re-sequencing. BPMs are 83-108, and all loops are pre-mixed in stereo. As an bonus, around 100 bass loops terminate this CD.

The beats that count these days fall into two distinct camps. There are those which can add live feel to a track when mixed in at a relatively low level, where a 909 and/or other custom drum samples are providing the main source of rhythmic energy. The second

category is much more thinly populated, and (by its very nature) is being driven to extinction: where you have a loop with *real identity*, merely by its repetition you generate an important hook. However, once it has been featured in a smash hit (or two) it's finished. Who can now stand to listen to that 'Whoo-Yeah' loop once beloved of the PWL stable? Replenishing this vanishing stock of unique patterns is, I suspect, what *FRYCLW* is trying to be all about.

As you might expect, most beats are variations on the hip-hop theme. Programming is mostly adequate, sometimes outstanding. However, not enough attention has always been paid to ensuring that individual sounds blend into a totally convincing whole. At times, voices seem to be merely stuck on top of, rather than woven into, the groove. There are exceptions to this rule, however. Look no further than track 2, loop 3, for an example of how it should be done.

A variety of voices are used, the most convincing of which sound (or have been made to sound) as though they have been taken straight from vinyl. An industry-standard trick frequently employed here is the inclusion of a long, low 808-style bass drum tone coming in on, or just after, the bar start, in order to give serious bottom end. This can get in the way if you are tuning a loop upwards. Also, I could have done without any of the (admittedly subtle) digital reverb that lurks around many of the patterns.

I sampled 30 of the most natural-sounding beats and, unlike with most sampling CDs, noted none of that horrid digital whine you get when detuning. When pitching upwards, I'd advise applying a high-pass filter with key follow to knock out the low end.

The accompanying bass loops are suitably cool, and both electric, acoustic and synth lines are included. Presentation is bass on one channel, click track on the other. BPMs are given throughout.

Conclusion: my guess is that the drum patterns on *FRYCLW* are aimed at hip-hop perpetrators who want an instant and interesting backdrop. First, the bad news: the majority of these loops are neither distinctive

nor clever enough to elevate them beyond the mediocre, and discerning rap artistes will be looking for more than that. The good news? There is a substantial minority of genuinely quality beats here. Those that work best tend to have more feel than attitude, and as such might be best suited to underpinning soulful tunes. Fidelity is fine throughout, and all loops are obviously license-free. *Wilf Smarties*

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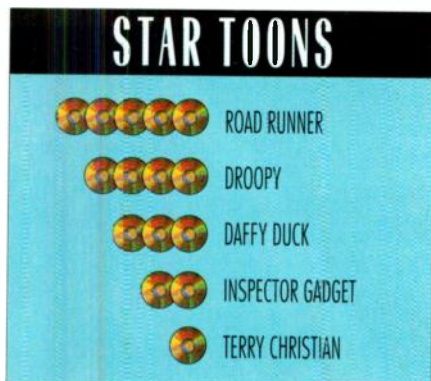
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throughout. Ditto for ambient. Any wetness is the natural acoustic of a very clean live space rather than any digital monstrosity. The kit is — Roxette, a good tight-but-live sound, with no untoward (some would say character-building) buzzes or resonances, and the kind of

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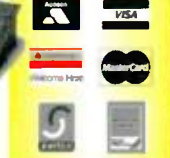
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► clarity many engineers only dream of getting from a live kit. Some compression is evident on the snare but, I have to say, it all sounds exactly right, if you like that sort of thing. The playing is immaculate, the patterns not overdone. Of this I wholeheartedly approve. (The sleeve notes explain, again sensibly, that you can use the matching single-hits and flams to add fills to existing patterns).

The next section on this CD covers a dozen basic styles (shuffles, 4/4s, 6/8s, brushes and blues) and tempos (65-136BPM). The basic backbeat is presented several times, once at each of at least three dynamic levels, and again with relevant variation(s) for the groove, like 16th hi-hats or ride cymbal 8s. Then the entire collection is repeated thrice: once dry and in stereo, again with ambient miking, and thirdly, dry and in mono. Then come around half a dozen serious fills, again presented dry and ambient. A similar number of hi-hat and/or ride cymbal patterns follow. Guess what? You can select from wet or dry. A complementary set of around a dozen Latin percussion loops are included for each set. This time dry mono is all you get. Finally, we're presented with snare and tom-tom flams, specially designed to complement the main loops exactly. Consequently they, too, are in stereo, mono, and wet and dry.

The last section on the CD comprises a manageable selection of single hits, dwelling largely on the snares (three types — A, B or C — are used, but what a pity the previous section made no reference as to which one was used on each particular style/set). The hi-hats and cymbals are particularly state-of-the-art, but there are no percussion hits.

A reference tone at digital max comes at the end, as usual — completely the wrong place for it to be, of course. How many of you actually line up your sampler to this tone? Wouldn't you be far more likely to do it if it was put at the BEGINNING? As it is, for this CD it's actually very important — all samples are level-matched, and you should not be resorting to the Normalising algorithm if you wish to maintain relative dynamics.

And now the bad news: at least some, and possibly all, of the audio shows a low-level digital whine which, while barely perceptible at the original pitch, becomes much more evident upon de-tuning. I'd have expected more (or should I say less?) from the Roxette team, with their funds and technology.

Conclusion: every sample in *Drum Tools* is a logical part of the whole, which aims to bring immaculate rock/pop drum production to the masses. A perfectly organised, recorded and played sample set is only marred by the low-level whine which is

present on so many sample CDs I get to hear. Despite that, if you want an easy-to-use, well-balanced drum workstation, and you like that polished Roxette sound, I'd recommend you overlook the slight technical difficulties and go for it anyway. There are CD-ROM versions available for just about every sampler. *Wilf Smarties*

E *Drum Tools* £59.95 inc VAT and P&P within the UK.

A Time & Space, PO Box 306, Berkhamsted, Herts HP4 3EP.

T 01442 870681.

F 01442 877266.



ZERO-G PHANTOM HORNS (SAMPLE CD)



If the demo on this CD is anything to go by, we're in for a treat. *Phantom Horns* is jam-packed with brass riffs, hits, falls, swells and multi-samples. All the brass parts contained in the demo track are sampled from the CD, then sequenced against a rhythm bed; to my ears, this represents some of the most convincing use of brass samples I have yet heard.

The *Phantom Horns* line-up consists of trumpet, flute, flugelhorn and trombone, as well as alto, tenor and baritone saxes. The riffs are all performed by various combinations of these instruments, and this CD provides an in-depth study of the range and versatility of the contemporary brass section.

Format is fairly logical, with five main stylistic sections, namely: Tower of Power, James Brown style, Earth Wind and Fire, Rock 'n' Roll, and Reggae. Each section comprises a vast number of short brass riffs and phrases, played at two different tempos and in four

different key signatures. Each phrase is recorded four times, once in each key, and always at intervals a fourth apart. This gives you maximum flexibility when putting a track together, and also encourages you to explore some of the more unusual ranges of the instruments within the brass section.

The next section of the CD is given over to multisamples of the solo brass instruments themselves; tenor sax, baritone sax, trumpet and, finally, the full horn section. Each one gives you loads of options for creating an accurate representation of the instrument, by sampling a wide variety of single notes over nearly three octaves. There are easily-loopable long notes, swells, slides, short and long falls, as well as crotchets, quavers and semi-quaver short notes. As a bonus, a few minutes of excellent solo improvisation on flute, trumpet and sax are provided right at the end of the CD — I can envisage these cropping up in middle-eights all over the country within a matter of weeks.

My only real complaint about this release is that in a couple of places I notice a little background hiss (despite the digital recording); this is especially noticeable on some of the otherwise excellent Reggae riffs. I think that the producers are aware of this, as nearly all of the phrases are edited (or possibly gated) quite close to the end of the note, leaving hardly any of the original ambience. This is not necessarily a bad thing, as it does leave you plenty of room for your own effects in a mix.

Conclusion: *Phantom Horns* is great value for money — the sheer number and variety of usable riffs and phrases must be applauded. For those of you who like to combine accountability with music production, you may also like to consider that even if you leave all of the terrific solo instruments and brass section multisamples aside, *Phantom Horns* still works out at about 50p per riff — not something to be sniffed (or indeed, blown) at. *Paul Farrer*

E *Phantom Horns* £59.95 inc VAT and P&P within the UK.

A Time & Space, PO Box 306, Berkhamsted, Herts HP4 3EP.

T 01442 870681.

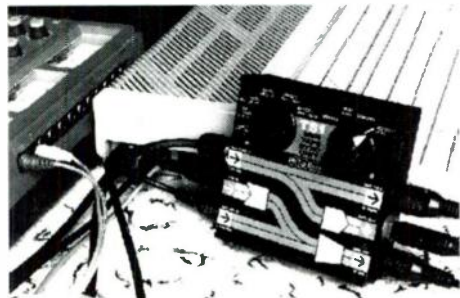
F 01442 877266.

In last month's instalment of Sample Shop, we inadvertently omitted to print Wilf Smarties' byline with the two sample CDs he reviewed (Heart of Asia and Best Service XX Large). Sorry Wilf! The person responsible has been sacked.

Talented tape sync unit

You can use the **TS1** to sync your MIDI sequencer to any decent tape machine. When you start, stop or shuttle your tape back and fore, **TS1** tells your sequencer to play in time, just as if your MIDI voices were extra tracks on the tape.

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The **TS1** has a built-in mains power supply.

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For an amazingly low price, the **Little MCV** lets your MIDI system control your analogue synths with their great sounds and friendly knobs.

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The gate output can be set to five volts positive, ten volts positive or S-trig.

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The MIDI sustain commands are all correctly implemented. MIDI reception can be set to any channel, using the straight-forward front panel rotary control.

There are MIDI IN, CV OUT and GATE OUT sockets. The mains power supply is built-in.

Little MCV MIDI to CV Converter.. £89.95

Smarter merge units

You can't combine MIDI signals by joining wires together, so you may need a merge unit - we make the best! The **2M** merges two sources, while the **3M** merges three.



These units both have built-in mains power supplies. They can handle all types of MIDI data, including Time Code and SysEx. Many automatic features enhance performance and convenience.

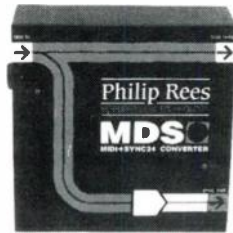
2M MIDI Merge Unit £69.95

3M MIDI Merge Unit £99.00

MIDI to DIN Sync box

When connected up via **MDS**, slave devices equipped with Sync24 ("DIN Sync") inputs should start, play in time, and stop automatically by remote control from your MIDI master equipment.

The unit is compact and contains an integral mains power supply.

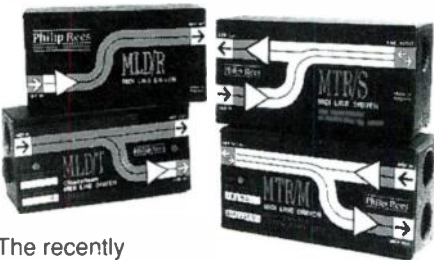


MDS MIDI to Sync24 Converter.. £69.95

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Our MIDI line drivers overcome the 15m limit of standard MIDI hardware, by converting the signal to a differential (balanced) format.

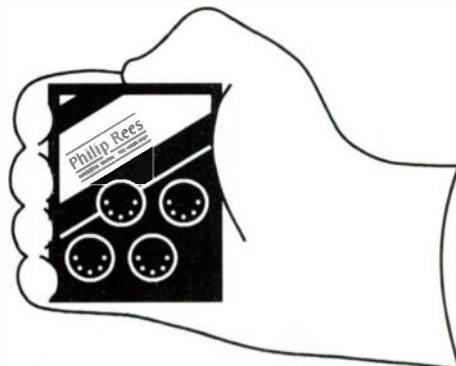
MLD has a range of 1km and consists of a pair of compact units. The mains-powered transmitter includes waveform restitution and has a Thru socket. The receiver is powered via the line and features a noise filter.



The recently introduced bidirectional **MTR** system has a range of 150m. It too consists of a pair of units. The first unit is the mains-powered master transceiver. The second unit is the phantom-powered slave transceiver.

MLD MIDI Line Driver £89.95

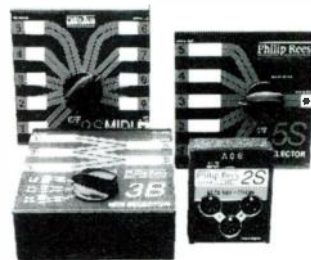
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These handy low cost switch-in-a-box gadgets solve many MIDI routing problems and avoid the inconvenience of recabling.



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The **V4** has four outputs and is powered via its MIDI input.

The **V8**, which has two inputs and eight outputs, requires an external power source. The **V10** is a mains-powered 1-into-10 unit.

The mains-powered **W5** has independent source selection for each of its 5 outputs.

V3 MIDI Thru Unit £11.95

V4 MIDI Thru Unit £19.95

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CONCISE REVIEWS OF ESSENTIAL ACCESSORIES



CIS STUDIO DESK PRO MK2

There's nothing like a tidy studio — and where I keep my synths and recording gear is nothing like a tidy studio! If your situation echoes mine, then give the folks at CIS a call. They're behind the GT Pro keyboard/computer stand (reviewed in *SOS* April 1994), and they also produce the more substantial (but still self-assembly) Portable Studio Desk Pro Mk2. We'll let the word 'portable' pass for the moment, and move onto what the desk offers.

Basically, the Studio Desk has been designed to support pretty well anything in the average modest studio setup and keep it in one place. To this end, the desk provides three work surfaces: a pull-out keyboard shelf, the main worktop, and an upper shelf. In addition, a rack shelf unit is built in to accommodate up to 4U of 19-inch rack-mounting hardware.

But first, you've got to build it. Constructionally, there should be no problems: if you've ever had the misfortune to be reduced to assembling MFI furniture (yeah, me too), the Studio Desk Pro Mk 2 should hold no shocks for you. What will surprise you is the weight and bulk of the package. The whole desk is flat-packed in one large and very heavy box, so you may need a hand to move it around. Construction should take less than an hour, using the clear seven-page instruction leaflet.

The result is reassuringly sturdy. As with other CIS stands, there is a compromise between elegance and price, but the all-black Studio Desk Pro Mk 2 does look impressive. The

sliding shelf will take your main synth or a master keyboard, the main work surface will easily hold a mixer or cassette multitracker with room for a computer, and the top shelf is ideal for your monitors — both computer and audio.

My favourite feature of the desk must be the pull-out keyboard shelf: simply slide it away to get access to your computer for non-musical tasks or your mixer/cassette multitracker during a mixdown.

Do keep in mind that it is not adjustable for height, although it seems to be in a good position for most people. The internal height isn't adjustable either, so if your keyboard is too high at the back, it won't fit. For the majority of keyboards, both

the width (about 55 inches) and the height (a little over five inches) will be perfectly adequate. For example, Yamaha's new W5 76-note synth is 50 inches wide and 4.75 inches high at the rear.

Other points to rave about include the 4U of rack space (very thoughtful), which can also be mounted left or right, a rear 'modesty panel' that keeps unsightly cables from view, and the fact that the two front castors lock, although there's not much chance of a fully-laden GT Desk Pro Mk 2 rolling off into the sunset under its own steam. As mentioned in my introduction, CIS actually call this a 'portable' desk, by which I presume they mean it'll move around on its castors; as long as you don't expect the desk to be portable in the real sense of the word, you won't be disappointed.

I must also remark on the overall sturdiness of the desk — I would feel quite confident about loading it, unlike certain other budget stands I could name. All in all, the GT Desk Pro Mk 2 is a convenient and affordable way to tidy the average bedroom studio (or the main control components of a larger one) into a tidy corner.

FURTHER INFORMATION

- E** Studio Desk Pro Mk 2 £279.95 inc VAT, plus £14.95 carriage within the UK.
- A** Cambridge Innovation Systems Ltd, Unit 10A, Hardwick Industrial Estate, Bury St Edmunds, Suffolk IP33 2QH.
- T** 01284 725639.
- F** 01284 725640.

ACTIVE INSTRUMENT LEAD

Unless you're into radio mics, longish guitar leads are a necessary evil — even the best leads have both resistance and capacitance which affect the tonal quality of the instrument. Also, if you want to record the guitar without going into an amp, you still need to use some form of DI box as an impedance matcher — unless you happen to have an active guitar.

The idea behind the Active Lead is to kill the proverbial two birds with one stone by providing electronic impedance-matching at the guitar end of the lead. Because the output impedance of the electronic impedance-matcher is very low, even long lengths of lead can then be used without affecting the tone of the guitar. There are those who claim that the capacitance of the guitar lead resonates with the inductance of the guitar pickups to enhance the tone, but as there's no way of knowing exactly what type or length of lead a specific guitar was designed to work best with, I tend not to worry about that too much. In any event, if you're DI'ing using the Active Lead for recording purposes, the chances are you'll be using a clean guitar tone, which generally sounds noticeably brighter and livelier without the impedance loading of a conventional lead. If you're using overdrive, then your preamp will act as an impedance matcher and you may find the active lead doesn't make any significant difference. Even so, it's worth trying, just

in case it does!

I've reviewed active leads before, but this one is battery powered, which makes it very convenient to use. It runs for around 1000 hours from a PP3 battery, and used with my PRS guitar, it delivered a vibrant, sparkling tone with no trace of noise. The PRS is capable of putting out very high signal levels but I was unable to overload this device. A small LED is fitted to the battery box to show you that the lead is powered up, and a recessed slide switch is used to turn the power on and off.

At £45, the 6-metre Active Lead is a viable alternative to buying a DI box for recording both guitars and basses (longer versions are available at a slightly higher cost), and because it runs off a battery, there's no hassle with phantom power or ground loops. If you don't have something like this already, I strongly recommend it for recording any form of clean electric guitar or bass.



FURTHER INFORMATION

- E** Active Lead, £45 (6-metre version); £50 (8-metre version); £55 (10-metre version). Prices include VAT and P&P.
- A** Ivan Bozi, Hoffland House, Hoffland Rd, London W14 0LN.
- T** 0171 603 9745.
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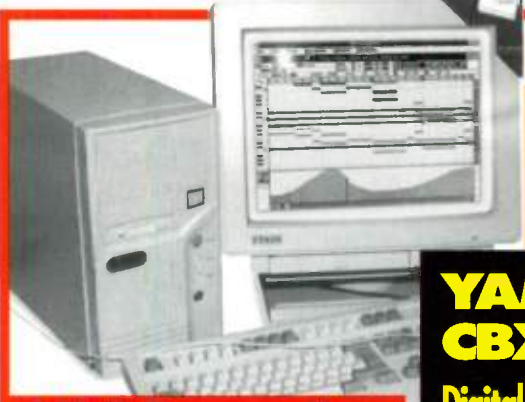
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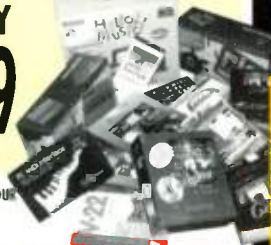
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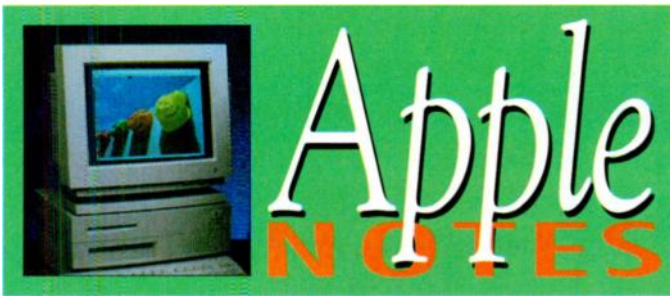
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MARTIN RUSS rounds up the latest Apple hardware and software news, kicking off with tidings of QuickTime with everything...

On the 27th of March, at the Apple Music Industry Day, Duncan Kennedy, Apple's QuickTime Product Line Manager, announced that Opcode's OMS software technology would be incorporated into Apple's QuickTime multimedia product by the end of 1995. This extends the possibilities of the QuickTime music architecture, and should simplify the use of the Mac for musicians and multimedia developers. (A similar announcement was made in December last year about OMS being included in the forthcoming Windows 95 for the PC.) In the case of the Mac, it appears that the important point is that the low-level serial driver from OMS has been incorporated into QuickTime — which thus makes QuickTime OMS compatible. Presumably, the full OMS package will not be supplied as part of QuickTime, but will continue to be supplied with Opcode software.

OMS 1.2.1 and alpha test copies of OMS 2.0 are also available (for free) from ftp.rahul.net in the pub/opcode directory (AIIST). If you write Macintosh music applications, the OMS Developer Kit might well be useful too — and you can get this via your Opcode distributor; contact MCMXCIX on 0171 723 7221.

QUICKTIME & OSC

OSC's *Deck II* version 2.5 claims full native PowerMac compatibility, and now offers recording and playback

of 24 tracks of 16-bit, 'CD-quality' audio — and with digital video support via QuickTime. Of course, you'll need a fast SCSI hard disk for this sort of task... The combination of the PowerMac processor's speed with Apple's QuickTime enables high levels of functionality in software, without the need for additional expensive hardware cards. OSC will have been demonstrating the new version of *Deck* at the National

without needing to make extensive changes to software is definitely how a computer should work. It's nice to see that the eagerly awaited Windows 95 operating system software from Microsoft, extends the 'Plug & Play' idea to MIDI devices too — by incorporating Opcode's OMS software architecture. Since QuickTime is also available for Windows, this should mean that QuickTime MIDI movies will soon be playable on the Mac and the PC

TIP OF THE MONTH

Telephones have changed quite a lot over the last few years. And our use of phones is changing too — especially with the wide range of add-on goodies that the phone companies now offer. Modems are increasingly used to enable computers to communicate, and this is where you can come unstuck. I certainly did!

I had just received a US Robotics 14.4 kbaud modem, and was testing it by checking out a BBS (MacTel on 0115 945 5444) when the telephone rang! In the middle of a modem call? Actually the fault was mine, not the telephone's. I had Call Waiting activated on the telephone line, which is that neat service which lets you know when someone else is trying to phone you — very

useful when you've been on the phone for ages and suspect that another call may be imminent. Call Waiting lets you know that there's another call waiting by putting a discrete tone in your ear. This is fine in normal circumstances, but if you're using a modem, the modem can interpret this tone as a problem, and it can then drop the line — at which point the 'phone rings!

The moral of the story is this: don't have Call Waiting on a telephone line that you intend to use with a modem. Buying a second line is one solution, and there are some bargains around if you install more than one line at once with some phone suppliers. Try ringing 150 and asking the BT operator.

Association of Broadcasters convention in Las Vegas in early April (as I write this, in fact!) — which underlines how much Macintosh music software is now part of the broadcast TV, radio, video and multimedia worlds too. The NAB will need no introduction to any reader who has used pro reel-to-reel tape recorders...

QUICKTIME & PLUG AND PLAY?

Macintosh users have been enjoying the advantages of a 'plug and play' environment for some time now. Adding new peripherals

QUICKTIME & FREEMIDI

Daniel Rose of Mark of the Unicorn software (*Performer*, MIDI TimePiece, etc) has revealed that MOTU will be writing code to make QuickTime compatible with FreeMIDI. Next month's Apple Notes will feature an extended question and answer session with Daniel. Don't forget that Klemm Music Technology are now the contacts for any MOTU enquiries: (01462) 733310.

(Hopefully this ends the QuickTime connection for this month.)

APPLE NEWS IN BRIEF

• MAKING FILES

Until the end of June, Claris's *Filemaker Pro* database application is available for the bargain price of £399 — and the package includes a sample database of over 1000 wines, CD-ROM of more example applications, an introductory membership to CompuServe, and a Claris T-shirt! If you need to keep track

of almost anything, then a database could be invaluable. Some ideas: an equipment record to make organising insurance (and insurance claims) easier; a song database — when did you write that one about the green banana?; guitar chords; neat chord sequences; CD, cassette or vinyl information; and lots more. In a future Apple Notes, I

may get around to showing you how to produce some of the more interesting databases...

• PDS UPGRADE

Centris and Quadra Mac owners who want to upgrade to a PowerMac should find some bargain pricings on the Apple PDS Upgrade card at the moment — and

if you buy before the 31st of May you may even get the System 7.5 upgrade thrown in for free as well. Contact Apple on 0181 569 1199.

• DOWNLOAD

You can apparently now get QuickTime 2.0 for Mac (or even for Windows) from <http://quicktime.apple.com>.

EMAGIC

Emagic's *Logic Audio* sequencing, notation and digital audio program for the Macintosh can have its functionality extended by adding *Logic Extension* products. The basic core of the program is common, but you can add the extra hardware and software elements as required. The first three extensions to be announced show the possibilities:

- The TDM Extension allows *Logic Audio* to run on the Digidesign Pro Tools II system, and this extends the feature set of *Logic Audio* quite considerably — up to 48 tracks (depending on the hardware), a TDM Plug-In Configuration Editor, and lots of TDM Plug-In capability.

- The AV Extension allows *Logic Audio* to use Apple Sound Manager 3.0 with a PowerMac, 660AV or 840AV Mac, to give up to 12 tracks of 44.1 kHz, 16-bit digital audio. On any other Macintosh it will provide up to 12 tracks of 8-bit digital audio. All the usual features of *Logic Audio* are available for the AV audio tracks, including the Digital Factory DSP options, which include time

Contact Sound Technology (01462 480000) for details on any Emagic product.

DIGITAL AUDIO ON THE MAC

Choosing a digital audio and MIDI sequencer for the Macintosh is not easy. Each of the major suppliers now has comprehensive facilities for adding digital audio tracks to their already sophisticated MIDI sequencing capability. There are even quite a few less well-known suppliers appearing with programs designed for more audio-specific purposes (OSC, for example). You'll be working with your new purchase for a long time, so how do you go about selecting your next studio companion and getting it right?

As with any major purchase, the method of making the right decision is the same. I advise preparing a list of your requirements, and then compiling a chart which shows how each of the contenders matches up to your needs. In the course of filling in the chart, you may well find that you hear about desirable new features that change your specification, in which case you may often need to revise the basic data. Bear in mind future expansion, but

ON THE NET

World Wide Web browser applications using the HTML page layout language seem to be in 'leapfrog' mode at the moment. Rapid advances in the creative possibilities may come with the news that a future version of the Netscape browser will use Adobe's *Acrobat* software. *Acrobat* enables complete pages of finished magazine-style layout to be easily viewable on most major computer platforms — DOS, Windows, Unix, and Macintosh

— without any need for the time-consuming task of coding up complex pages using HTML.

Simple pages with mostly text and hypertext links will probably continue to be produced using HTML, but for prestige purposes, especially where the appearance of the page is important, the use of *Acrobat* could turn the WWW into the next century's magazine publishing medium. You may even see SOS on the WWW one day...

compression and expansion, pitch shifting, re-grooving of digital audio, MIDI-to-Audio and vice-versa, plus sample rate conversions.

- The CBX Extension allows *Logic Audio* to run four tracks of digital audio on one Yamaha CBX-D5 digital processor. Simultaneous AV Mac tracks are available if you also have the AV Extension. The CBX effects can be fully automated, and again all the usual features of *Logic Audio* are available for the CBX audio tracks — with the CBX's signal processing too.

also make sure that you don't rely too heavily on promises of forthcoming features, because they may well be vapourware. The final decision is rarely easy — you're unlikely to get one column completely full of ticks! It's much more likely that you will need to compromise on some features, in which case you should assess their relative importance — and the best advice here is to drop anything with a high 'pose' value and little else. If you never use it, but it looks flash, then it is probably a waste of money!

HOW IT WORKS: NETWORKING

You may have heard of 'Networking' in the context of computers, but it can also mean maintaining a useful set of contacts who can help you. The larger the set of people you know, the better the chances they may have the answers. This is exactly what happens on the Internet: ask a question and you're talking to a potential network of more than 30 million people who might know the answer.

On a smaller scale, Apple Notes reader Francois Rossi wrote to me to follow up on the QuickTime MIDI information in the April Apple Notes. He reminded me that there are also some neat freeware applications that can be useful to anyone who wants to explore QuickTime MIDI. *BijouPlay* is a QuickTime Player that is MIDI movie compatible, whilst the not-so-obviously-titled *All MIDI* application can convert MIDI Files into QuickTime MIDI Movies (although I had

some trouble when I tried it, so there may be some machine-dependent problems). Both programs are Fat binaries, which means that they will run on both ordinary Macs and PowerMacs, and they are freeware. You should be able to find them on the major Mac ftp servers like sumex. Francois suggests that you try ftp'ing to somewhere like src.doc.ic.ac.uk and look in the /packages/mac/sumex/snd/util directory.

Thanks for this information, Francois. If anyone else has any useful information that could help other Mac music makers, drop me a line at SOS, or even e-mail me via SOS at 100517.1113@compuserve.com. The advantage of networking is that you get more than just one person's opinion or knowledge, so let's share some ideas. If it works, all the Apple Notes readers should benefit!

COMPETITION TIME

We've never had a competition in Apple Notes, so here's a first. I recently got *Claris Organiser* as a free gift when I subscribed to the *AppleWorld* magazine, and since I already have it, I thought that this was a good opportunity to pass it on to a reader of Apple Notes. *Claris Organiser* is one of those combined calendar/to-do list/personal organiser applications which can help to sort out even the most complicated of lifestyles. It can also be very useful for keeping track of other activities too — I misuse it to try and keep the two books that I am writing under control, and with a little creative renaming here and there it serves this purpose very well indeed.

All you need to do to win *Claris Organiser* is to answer the following question:

Why did Apple choose names like Claris, Macintosh and Pippin?

Answers, on a postcard please, to *Apple Notes Claris Organiser Competition, Sound On Sound, Media House, Burrell Road, St Ives, Cambridgeshire PE17 4LE*. Don't forget to include your address and a daytime telephone number, so that if you win we can contact you. The winner will be drawn at random from the entries received by Friday, 30th June 1995.

Thanks to Apple Computer UK Limited for making this competition possible.



THE COMPETITION SMALL PRINT

1. Only one entry per person is permitted.
2. Employees of SOS Publications Ltd and their immediate families are ineligible for entry.
3. No cash alternative is available in lieu of the stated prize.
4. The competition organisers reserve the right to change the specification of the prize 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 and your address on the postcard.



Following the resurrection of the Falcon under C-Lab (as reported in last month's Atari Notes), GE-Soft of Germany has just launched the Eagle, a TT-compatible Atari clone. VIC LENNARD takes a look...

As mentioned last issue, C-Lab now has a licence to continue to develop the Falcon technology, but what of the TT? For those of you who have never seen one (probably 98% of everyone reading this), suffice to say that we're talking about a powerhouse that never realised its potential. It sported a 32MHz 68030 processor, and had some useful video modes, including 16-colour support in its 'medium' resolution. I've seen *Cubase Score* running on a 19-inch monitor, and believe me, the screen redraws were lightning-fast.

So, what happened to the TT? To start with it was heavily overpriced, initially retailing at over £2,000. You also needed a dedicated monitor, and, often, special versions of software. Not many units sold in the

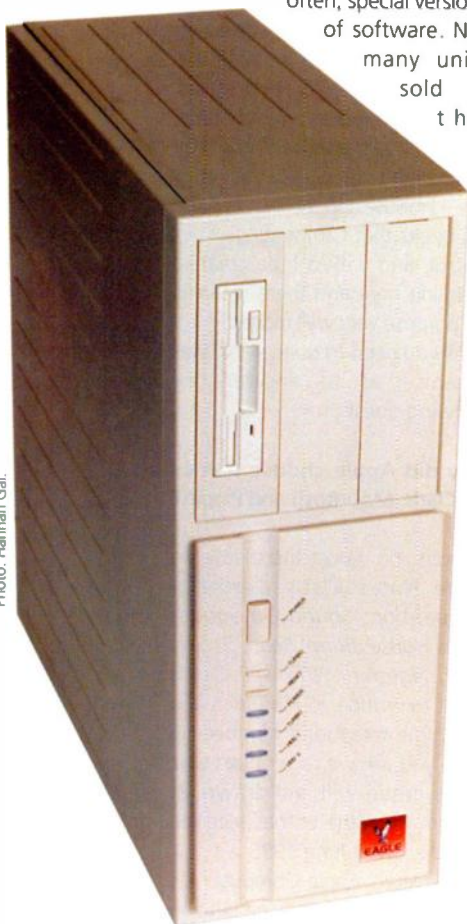


Photo: Hamzah Gal.

GE-Soft's new Eagle.

UK, and most of those were to serious desktop publishing people.

FLYING VISIT

GE-Soft has been working on the Eagle for some time. To say it's an interesting machine is an understatement: it's modular to make upgrading easy, and

enough to take another three internal drives, which can include CD-ROM, magneto-optical and SyQuest varieties.

EXPANSION

Without a doubt, the biggest plus of the Eagle is its 8-channel bus system — the 'Eagle channels' as

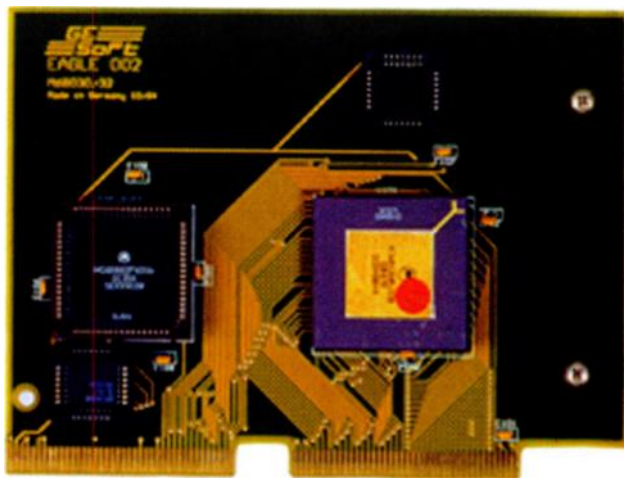


Photo: Hamzah Gal.

Easily upgradeable — the 32MHz 68030 processor and maths coprocessor are mounted on a board that simply plugs into one of the Eagle 'channels'. Upgrading takes mere minutes.

currently boasts the same 32MHz 68030 as the TT. However, the processor is on a separate board, so it can be changed in minutes for a 68040, 68060 or PowerPC version — and each of these is planned, starting with the 68040 as a free upgrade in the Summer.

Purely in terms of spec, the Eagle is impressive. The entire system runs at 32MHz, unlike the TT, which, despite the 32MHz processor, had the rest of its system clocked at only 16MHz, causing substantial data bottlenecks. As a result, the Eagle's performance is about two to three times that of a standard TT. The Eagle offers a host of useful ports, including ACSI and SCSI for both types of Atari-based hard disk, two modem and two serial sockets, plus LAN, parallel and MIDI connectors (In and Out). There's also a cartridge slot and two keyboard sockets for a TT or PC-compatible version. Nice touch.

As you might expect from a modern computer, the whole lot is housed in a neat tower case. A 320Mb SCSI hard disk comes as standard, as does a high-density floppy drive. The tower case is big

GE-Soft refers to them. The motherboard has eight slots, each of which can take an Eagle expansion board. To give you an example, the video capability is dependent on the graphics card you use — and this can be anything from a very cheap PC

CONTACT

GE-Soft's Eagle is distributed in the UK by Gasteiner Technologies (0181 345 6000). The RRP is £1,699 including the SuperNova card or £1,999 with the inclusion of a 15-inch multisync monitor.

ET4000 through to state-of-the-art Nova and Matrix cards. This degree of expansion has never really been offered on an Atari computer.

Such a system offers a variety of bonuses. You want a DSP board to run *Cubase Audio*? You got it. Well, perhaps, anyway — the expansion boards are proprietary, so there has to be demand before supply — market forces dictate, as Dave Nicholson at Steinberg always tells me.

Memory is also situated on an expansion board: 4Mb comes as standard, upgradeable to 14Mb of ST and 256Mb of TT memory.

PERFORMANCE

In terms of raw processor performance, the 68030-based Eagle gives about a 30% improvement over a TT. But that's only part of the story. If you happen to have a Falcon, try this little test. Set it to ST high-res-compatible video mode, and double-click on a folder. See how fast it opens. Now set it to 256 colours: the contents of the same folder appear more slowly on screen. Finally, select true colour: you can probably time it with a stopwatch! There are various reasons for this, but let's just say that the Falcon's video isn't up to much.

On the other hand, the Eagle's video performance depends solely on the graphics card, and the standard model includes the SuperNova Mach 32, an absolutely fabulous piece of hardware. With 2Mb of video RAM on-board, this can display any colour mode from mono through to 24-bit colour with barely a change to the on-screen performance. In terms of pixels, you can have 1280 x 1024 resolution with 256 colour (8-bit),

1024 x 768 with 16-bit colour, or 800 x 600 in full 24-bit colour. Super stuff.

COMPATIBILITY

In general, most Atari programs run on the Eagle without trouble. This, of course, includes *Cubase* and *Logic*, though not the audio versions of these, as these require a DSP. Most of the current applications entering the market are programmed in Germany to a high standard, and work faultlessly on the Eagle.

There are two kinds of programs the Eagle will not run, however. The

first are those requiring DMA sound, which includes most games, and this can, perhaps, be viewed as a failing. Second are any applications that interact directly with the video hardware, such as the MagiC replacement operating system. The Eagle lacks ST video modes, and while this is currently under investigation by GE-Soft, it is fair to say that an Eagle version of MagiC 3 should appear at some point.

ANY TAKERS?

Future developments depend on how well the machine sells. At an asking price of £1,999, inclusive of the SuperNova card and a 15-inch multisync monitor, it's unlikely to be at the top of many shopping lists, but the professionals out there might like to consider the possible scenario of *Cubase Audio* or *Logic Audio* running on a 68060-based Eagle with a dedicated DSP card. Such a processor would result in about four times the current performance — and I'd certainly like to see how this would compare with similar software running on a Mac.

The main point is that companies are still out there developing serious hardware for Atari users. Perhaps those in our industry who continuously preach that the Atari is dead should have a careful look at what's on offer. These companies are putting a lot of money into Atari hardware — surely we owe it to them to keep an open mind over the future of the Atari as a platform...

SOS

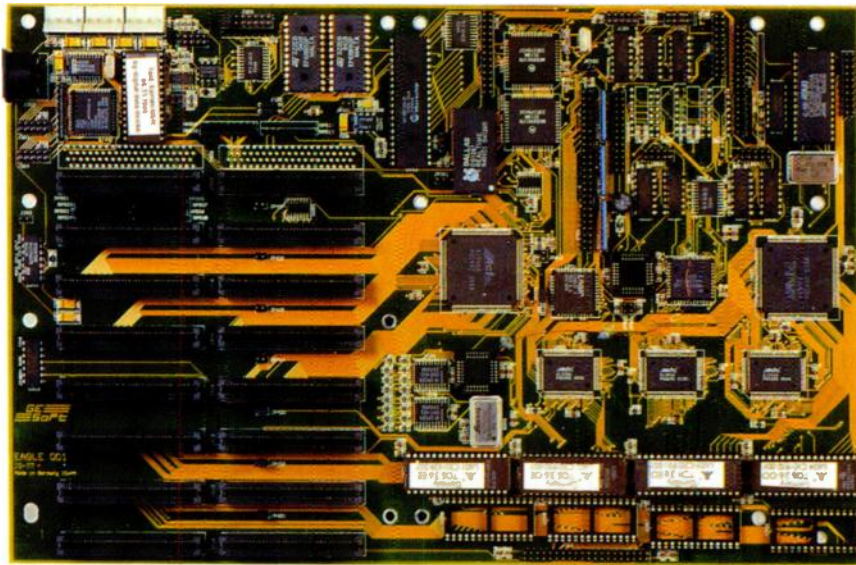


Photo: Hannah Gal.

Neat design — the Eagle's motherboard sports the TOS 3.06 ROMs at the bottom and the eight expansion channels to the left.

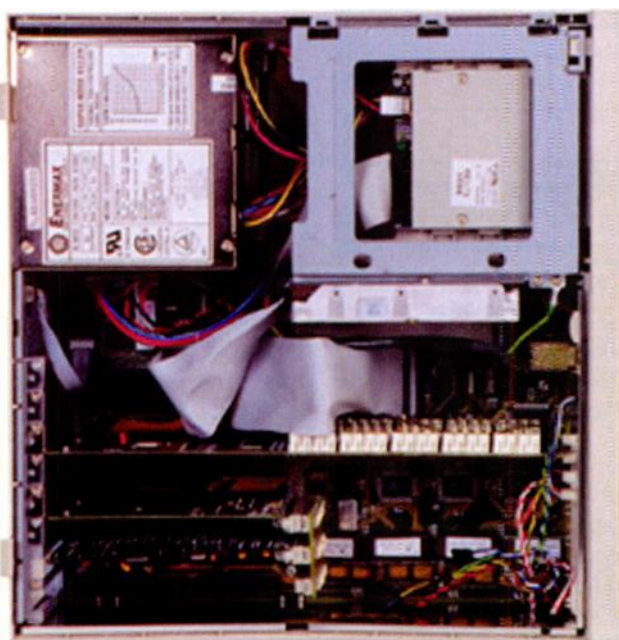
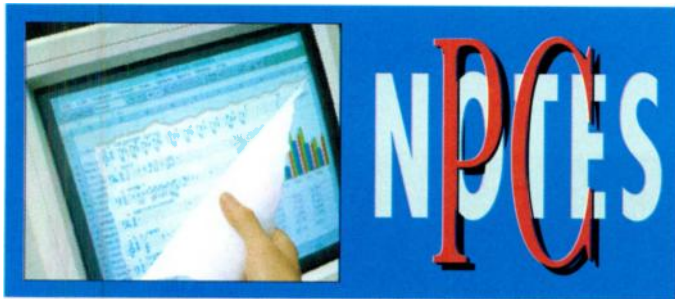


Photo: Hannah Gal.

Loads a room — by opting for a tower case, GE-Soft has ensured that you can fit up to four disk drives, and enough memory to open a shop!

ABOUT THE AUTHOR

Vic Lennard has been an Atari enthusiast since 1987. He runs *Club Cubase UK* along with Ofir Gal, and is also author of *MIDI Survival Guide*, available from the SOS Bookshop.



BRIAN HEYWOOD
*reports back from the
 1995 MEMS show,
 and looks at an
 interesting new way
 of getting video onto
 your PC...*

This year's MEMS show at Olympia was a surprisingly low-key affair, with not a lot happening in the way of new products for the PC-based musician. There were also a couple of surprise 'missing persons' — neither Akai or Yamaha had a stand. I find the latter's non-representation particularly surprising, since they are reportedly bringing out some interesting new PC products in the near future.

A few things did catch my eye, however. For instance, the new pickup for the Lyrrus G-Vox was on show at the Koch Media stand.

common in guitar-to-MIDI systems — at the cost of some of the aural feedback that you get from a performance-based system.

The new pickup is an improvement on the old one — it fits *under* the strings, rather than over, as on the previous version. The one I've got is a prototype, and is affixed to the guitar using small suction cups, though I believe that there will be a way to permanently attach the pickup if required. Koch were also showing the Windows version of the *Riffs and Chords* software that allows you to use the G-Vox as an interactive tuition system for learning or improving your guitar playing. Koch can be contacted on 01252 714340.

Another product that caught my eye was the modestly-titled *Best Drum Sample CD Ever* (reviewed briefly in the Sample Shop column of October '94's *SOS*

by Newtronic (0181 691 1087), who are also doing a number of Windows voice editors for Korg (05R/W, 01(R)/W, X3 and i1/i2) and Roland (JV80/100/1000). The editors cost between £70 and £90, and the CD is just under £50.

IMAGES OF YOU...

The audio side of the PC is pretty well catered for these days, with a lot of choice available, both in terms of quality and price. However, as the power of the PC increases, more and more people are looking to it to handle video manipulation. There are a number of different ways you can use the PC in the video domain — for example, to control external devices such as VTR machines, effectively replacing the traditional edit controller. At the other end of the spectrum (or controller cable), the PC can perform the actual editing, by digitising the images onto your hard disk, and then using non-linear editor software like *Adobe Premiere*.

How the PC is used for video rather depends on what the end product is going to be. For example, the last of the above options is ideal for producing digital video for inclusion in presentations, but you can't get the quality required for broadcast (or even low-band) applications. So, if your video is going to end up on someone's TV, you have to stick to traditional methods, but if your images are destined for a computer screen somewhere, it's worth looking at a digital editing system.

CREATIVE LABS RT300

The first thing to do is get the video onto your hard disk. The RT300 VideoBlaster from Creative Labs is the latest incarnation of the VideoBlaster, and is designed to capture live video (say from a VCR or camcorder) and store it on your PC's hard disk. The package consists of a full-length ISA bus card, *Adobe Premiere* video capture and editing software, *Asymetrix Presentation PE* and the *Video For Windows 1.1 Runtime* software.

Unlike the original VideoBlaster, the RT300 is a dedicated capture card — it has no role in the playback process at all. Its sole purpose is to capture moving



The Adobe Premiere software provides some advanced editing facilities. The pointing 'hand' cursor shows an audio fade being adjusted graphically.

I've mentioned the G-Vox in these pages before — it's a guitar based pitch-to-MIDI system that connects directly to the PC's (or Mac's) serial port. The Windows version comes with driver software that does some clever processing to virtually eliminate the conversion delay

— Ed), which comes with a floppy disk containing MIDI versions of all the loops and samples on the disk. Apart from the loops, the CD has all the individual sounds used, both as plain audio and Akai sampler data, which can be loaded via the digital I/O. The CD is distributed

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NOTES

▶ images from one of its three video inputs, and store the resulting data as an AVI file on your hard disk. Also, it has no sound capabilities, so if you want to capture a video soundtrack, you'll need a soundcard of some sort.

The RT300 incorporates hardware video compression technology from Intel, so you can digitise your moving video images, compress them in real-time, and then save the video onto your hard disk as a single process. The card uses a hardware implementation of the Indeo compression system, based around an Intel i750 processor. This gives a

VHS VCRs. The first composite video input is actually doubled up with the S-Video input, and you can only have one of these inputs connected to an external video signal — ie. S-Video or composite input, not both — so the card can play no part in the mixing process.

MAKING MOVIES

The RT300 comes with Video for Windows drivers that should let you use the card with any compatible capture software. The drivers are installed by a stand-alone setup program, so you don't have to mess about with the drivers icon in the

video. The software is capable of some quite advanced editing techniques, such as image superimposition and special graphic effects, and there are also three audio tracks, so that you can 'dub' sound to the edited video, with graphically controllable fades and cropping tools.

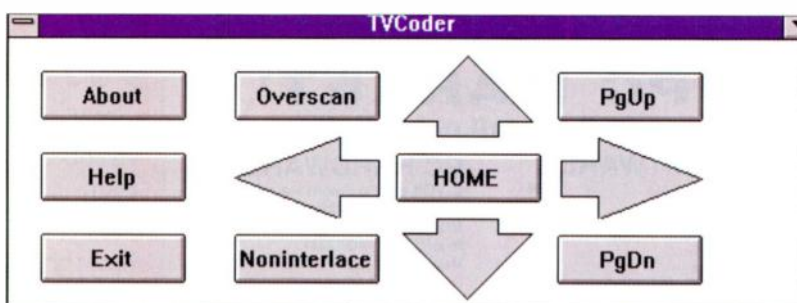
GETTING IT TAPED

Premiere can save the edited video in AVI or Apple Quicktime movie formats, Photoshop 'filmstrip' format or (if you have suitable hardware and a powerful PC) print direct to a video tape machine. One way of doing this is to use another Creative Labs product — the TVCoder External. This is a compact peripheral that fits between the output of the computer's video card and the external VDU. The module has outputs for composite video, RGB and S-Video, as well as a pass-through for the computer's VGA/SVGA display. The TVCoder is switchable between PAL and NTSC standards, and has adjustments for signal colour, contrast and brightness, as well as a 75Ω termination switch to correctly terminate the VGA output when a computer monitor is not being used.

Two drivers are supplied, one for NTSC and the other for PAL systems, and the relevant one needs to be loaded to get any kind of display on your external TV. As the driver can be loaded from from the DOS prompt, it is easy to load it only when needed, which conserves memory — or you could add it to your autoexec.bat file if you want to have it available at all times. There is also a DOS program and a Windows application that allows you to size and position the display on the video monitor.

The TVCoder has other uses as well — for example, you can use it to drive a TV with a video input, which is probably going to be cheaper than a large-format computer or video monitor for demonstration or teaching purposes.

The TVCoder's RRP is around £150 and the RT300 VideoBlaster is £299, but you should be able to get them cheaper if you shop around. To find out more about these two products, contact Creative Labs sales on 01734 344744.



Creative give you a couple of utilities to control the TVCoder's image from the comfort of your PC.

compression ratio of 6:1, and can handle frame sizes up to 320 x 240, and frame rates up to 30 fps (frames per second).

Physically, the card is pretty self-contained, with all inputs on the card's backing plate, three composite video inputs (RCA cinch or phono plugs) and a S-Video signal (mini-DIN socket) to give improved image quality when used with Hi8 camcorders and Super

Windows Control Panel. The card is also supplied with a runtime version of *Video For Windows* version 1.1, complete with the Indeo 3.2 drivers. The bundled capture application can be run by itself or from within the supplied video editor software. You can select the frame size, frame rate and compression ratio, and choose between a number of capture methods, including normal video, single frame, step and timed capture. *AdobeCap* will also allow you to remotely control a VCR attached to your PC, if you have an appropriate MCI device controller installed. If you have a soundcard in your PC, you can also save audio along with the video clip.

To glue your captured video images together, the RT300 is bundled with Adobe *Premiere* version 1.1, which consists of a capture program (*AdobeCap*) and a video editing application (*Premiere*). The inclusion of *Premiere* is what really makes the RT300 into a complete video production system. Using the editing software provides a simple way to splice together your captured video clips along with bitmap graphic files and even Autodesk animation files, so you can get a pretty decent-looking

SAMPLEVISION FOR WINDOWS

One thing that the PC really lacks is a generic sample editing program for use with professional music samplers. Turtle Beach had a GEM-based product called *SampleVision* which supported a number of well-known samplers, and which incidentally looked a great deal like their *Wave for Windows* product. This has led to a certain amount of speculation as to whether *SampleVision* would be updated to run with Windows and the samplers that have come onto the market since the program's original release over seven years ago.

Well, Turtle Beach have finally announced a new version, *SampleVision for Windows*. According to the press release, it will directly support the Akai S1000, S900 and

S950, and the Ensoniq EPS and ASR10, as well as the Turtle Beach soundcards and any sampler that understands the MIDI Sample Dump Standard (SDS). The software will also allow you to transfer sample data using SCSI as well as via the more common (but slower) MIDI protocol. New drivers are under development for the Casio FX1, Ensoniq Mirage, Emu Emax/Emax II and Korg DSM1/DSS1. The press release goes on to say that the full package will cost \$249, and that existing *SampleVision* users can upgrade for \$129. To find out more, contact Turtle Beach on 001 717 767 0200 — or try calling Mark Ballogh at Et Cetera, on 01706 228039, as they handle the rest of the Turtle Beach product line in the UK.

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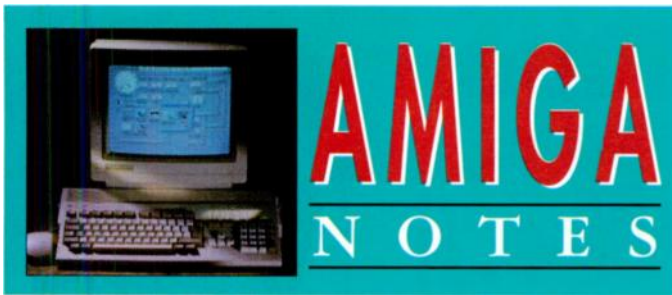
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Something a little different this month, as PAUL OVERAA provides details of how the Amiga's MIDI facilities can be used from BASIC...

One of the reasons that real-time Amiga MIDI programming is difficult is that accurate time-stamping of events often means getting involved with low-level serial port control, direct use of the timer hardware, and so on. If you want to write your own sequencer program, you have little choice but to come to terms with these Amiga system-related 'nasties'.

ideas which follow should give those of you who would like to experiment some important 'initial footholds'!

MIDI uses serial transmission, and for the examples here, I've chosen to use *HiSoft BASIC*, with serial port access achieved using the `SER:` device. This provides high-level access to the Amiga's serial device, which in turn controls the machine's underlying serial hardware. All you need to remember is that serial device characteristics must be set to suitable values, namely: a baud rate of 31250 with no parity, no handshaking, and just one stop bit. All of these settings can be adjusted from the Amiga's Workbench Preferences program.

The file-handling approach of *HiSoft BASIC* is straightforward, and the sequential file handling input/output conventions are that you 'output to a file' or 'input from

MIDI real-time stop message. This is a single byte whose value is decimal 252 (or FC in hex). The `CHR$()` function can convert the decimal 252 numeric argument into a 1-byte character string, and this can then be used in conjunction with the BASIC 'PRINT#' statement like this:

```
PRINT# 1, CHR$(252);
```

The result? A MIDI stop message will be transmitted. Note that the semicolon at the end of the statement prevents BASIC from transmitting a terminal newline character. There are several ways of transmitting longer messages, but the easiest approach is just to build up the messages using `CHR$()` coupled with BASIC's string concatenation operator (+). To transmit a two-byte program change message, for example, we send a program change status byte followed by the patch number. The general layout for a channel-n/patch-p message takes the form as shown below:

Status byte	Data byte
1100 nnnn (binary)	pppp pppp (binary)

Providing we remember that MIDI channel numbers 1-16 are actually transmitted as the numbers 0-15, and patch commands 1-128 are similarly represented by the numbers 0-127, it is easy to work out what bytes need to be transmitted. If, for example, we wanted to transmit a patch number = 6 command on MIDI Channel 2, we'd need to incorporate the numbers 5 and 1 respectively into the general message just described.

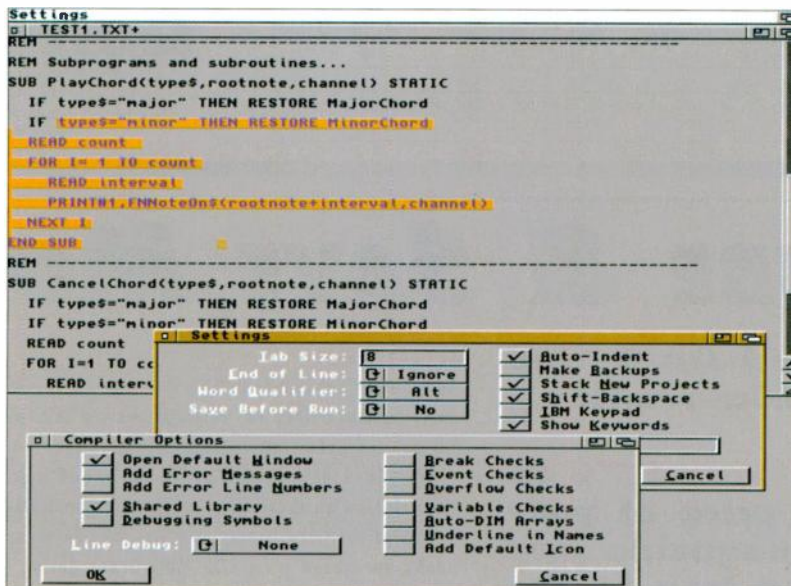
The binary, hex, and decimal forms of the required numbers are as shown in Table 1. So, the message which needs to be transmitted is this:

```
PRINT# 1, CHR$(193) + CHR$(5);
```

Most MIDI programmers prefer to use hex values for status bytes, and in the above case, this would be done by re-writing the fragment as:

```
PRINT# 1, CHR$(&Hc1) + CHR$(5);
```

Why use hex? Because working out decimal values for the status bytes is not only a pain, it also makes it harder to see what the status byte represents. The '1' value in the above status byte C1 hex tells you immediately that the byte refers to a Channel 2 MIDI message, and (once you are MIDI-literate) the C



HiSoft BASIC is particularly useful for writing utilities, because its 'Microsoft style' syntax means that programs are easily ported to BASICs running on other types of computer!

In many other cases, however, a much easier alternative is available. Believe it or not, there are many useful MIDI diagnostic utilities and test programs that can be written with just a few lines of BASIC, and I thought this month that an explanation of the fundamental ideas might be useful. Needless to say, it's not possible to provide the whole story in just one instalment, but the

file'. This being the case, we can open the Amiga's serial device for sending serial data like this:

```
OPEN "SER:" FOR OUTPUT AS #1
```

To ensure that MIDI data is sent straight away (and not buffered), it is better to explicitly set a buffer size of 1 byte, like this:

```
OPEN "SER:" FOR OUTPUT AS #1 LEN=1
```

Once the serial device is open, all we need is a way of sending MIDI messages. The easiest way to transmit bytes of MIDI information is to place them in a string variable or string expression. Supposing, for example, that I wished to transmit a

STATUS BYTE		DATA BYTE
Prog Change	Channel	Patch Number
1100	0001 (binary)	0000 0101 (binary)
C	1 (hex)	05 (hex)
	193 (decimal)	5 (decimal)

tells you that the status byte refers to a program change message. The same pieces of information are undoubtedly still there when the status byte is in decimal form... but neither the message type nor the channel number are particularly obvious!

A useful idea, as far as constant values are concerned, is to isolate the characters being transmitted, so that they are no longer clutter the main program code. One way of doing this is to place the required descriptions at the start of the program. The definition written initially as

REM define MIDI message...

message\$=CHR\$(&Hc1)+CHR\$(4)

might, for instance, be used later in the program as:

PRINT# 1, message\$;

You don't have to use constant values in the PRINT# expressions. To send a two-byte message consisting of the numerical values X and Y we could use something along the lines of:

PRINT# 1, CHR\$(X) + CHR\$(Y);

If we used X=&Hc1 and Y=5, the same program change message described earlier would be transmitted.

The variable approach is very useful when used as part of a BASIC FOR/NEXT loop. To send all 128 channel program change messages on MIDI channel 3, we could use a loop like this:

```
X=&Hc2
FOR Y=0 to 127
PRINT# 1, CHR$(X) + CHR$(Y);
NEXT Y
```

On the other hand, to send the program change patch 5 message on all sixteen MIDI channels, we could use a loop which modifies the status byte value:

```
FOR X = &HC0 TO &HCF
PRINT# 1, CHR$(X) + CHR$(4);
NEXT X
```

This is fine for illustration purposes, but in general, it is better to use meaningful variable names. In a real MIDI program, for example, a twin loop to send all program change numbers on all channels might be

written as something like:

```
FOR STATUS = &HC0 TO &HCF
FOR PATCH = 0 to 127
PRINT# 1, CHR$(STATUS) + CHR$(PATCH);
NEXT PATCH
NEXT STATUS
```

As well as binary to hex, and hex to decimal conversion, all potential MIDI programmers need to be confident about extracting part-values from a byte. Given a channel message status byte, for instance, you'll often need to be able to identify the channel and the message type. Channel numbers can be obtained from a status byte by masking out the upper four bits of a byte by ANDing with &HF, like this:

channel=ASC(status\$) AND &HF

Similarly, masking out the lower four bits (by ANDing with &HF0) will give the isolated MIDI message class in the top four bits of the number:

messagetype=ASC(status\$) AND &HF0

Sometimes, the alternative situation will occur, and you'll want to build up a status byte from the channel and message type values. In this case, the values need to be combined by ORing. So to create and send a Note-On status byte, we would logically OR &H90 with the channel number, and transmit the value using this type of code:

PRINT# 1,CHR\$(&H90 OR channel);

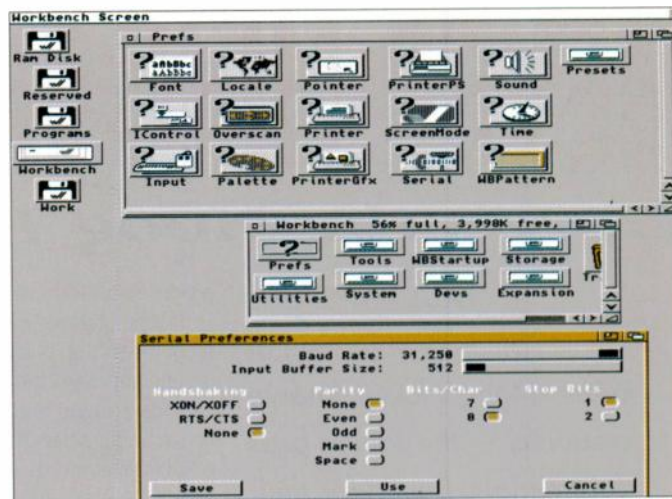
To transmit a complete Note-On message, we'd follow the status byte with a note number and a velocity value, thus:

PRINT# 1,CHR\$(&H90 OR channel)+CHR\$(note)+CHR\$(velocity);

The string part of these types of fragments are generally useful, and easily turned into user-defined functions. Here's one which sends a complete MIDI Note-On message on a specified channel, this time using a fixed velocity value of 64:

DEF FNNoteOn\$(note,ch)=CHR\$(&H90 OR (ch-1))+CHR\$(note)+CHR\$(64)

Subtracting one from the channel number in the above example is just a convenience for the program user — it allows conventional 1-16 channel numbers to be used, rather than the internal representations



(the values 0-15) used by the program itself. Here's the alternative function to turn a note off:

DEF FNNoteOff\$(note,ch)=CHR\$(&H80 OR (ch-1))+CHR\$(note)+CHR\$(64)

It should be obvious from these discussions that once you know how to transmit one type of MIDI message, you can apply the same principles to any MIDI message. Having to work with binary and hex numbers takes a bit of getting used to if you have not encountered them before, but the solution if you have any difficulties in this area is to practice. Have a look in your synthesizer's MIDI implementation chart or manual to see what types of messages your synth can recognise, and then write a few simple test programs to turn notes on and off or send patch commands. A little experimenting should help you get to grips with these somewhat alien number forms in no time!

SOS

General serial device characteristics can be set using Preferences.

AMIGA NEWS IN BRIEF

• NEW CATALOGUE

Silica Systems have launched a dedicated Amiga catalogue containing offers and details of new products. For details, contact Silica at 1-4 The Mews, Hatherty Road, Sidcup, Kent DA14 4DX (or phone on 0181 309 1111).

• FRAUD SQUAD INVESTIGATES

It has recently been reported that two companies that deal with Amiga products, Total Computer Supplies and WTS Electronics, have been the subject of an investigation by the Bedfordshire Police Fraud Squad over alleged claims that goods ordered and paid for have not been supplied. Both companies have said that the problems are connected with Amiga stock supply shortages, and that in most cases, customers have been informed of possible long delays in supplying certain

items. Bearing in mind the current Commodore liquidation situation, such delays are certainly understandable, but surely the proper thing for any company to do when it finds that it is unable to fulfil a particular order within a reasonable time span is to refund the customer's money. That keeps the customer happy, and, as an added bonus, ensures that they don't go running off to the local fraud squad making complaints!

• ICPUG SPECIAL OFFER

The Independent Commodore Product Users Group (ICPUG) are currently offering cut-price membership (£16.50 for the UK). Members get advice and expert help, free PD software, and a copy of the club's journal every month. Telephone ICPUG on 01235 815725 (after 8.30 pm) for details.

NEVER MIND THE BULLOCKS...

Here's the Moog Taurus Bass Pedals

PAUL WARD gets bullish about one of Robert Moog's lesser-known creations — the Taurus bass foot pedals, famed for their thunderous sound and association with some of the 1970s prog rock scene's greatest stars.

Back in the late 1970s, alongside a keyboard player surrounded by Hammond organs, Clavinets, Mellotrons and MiniMoogs, you could often find a bassist stomping on a set of Moog Taurus bass pedals. Not only did these give him a chance to reach down to those low C and D notes that the keyboardist seemed to delight in requiring of him, but they also allowed him to turn his hands to other instrumentation, such as rhythm guitar or extra keyboards. Happily, the Taurus, launched in late 1976, also sounded phenomenally good in its own right. So good, in fact, that progressive bands of the time, such as Genesis and Rush, went on to make them very much a part of their 'sound'.

FANTASTIC MR OX

The first thing to know about the Moog Taurus is that there aren't many of them. I was scouring the classifieds for over eight years before I acquired my own. The market for a dedicated bass synthesizer was a small one in the MIDI-less '70s, and, unsurprisingly, the market for a *foot-controlled* dedicated bass synth was even smaller! As a consequence, the number of new units sold was considerably lower than for a conventional keyboard synth. A MiniMoog, for example, was more versatile, and could arguably

produce similar results when required.

But perhaps the main reason for the lack of second-hand units is that current owners just don't want to sell them. Even allowing for their legendary sound and inherent collectability, if you do require bass notes by foot there are few credible alternatives. Free-standing MIDI pedal boards have appeared over the years, but they require a sound module in tow. The Taurus pedals, by contrast, are self-contained, and exhibit many features in keeping with contemporary '70s synth technology — they're analogue, monophonic and very heavy! The physical design is also typical of its era, with shiny aluminium end supports, and bold, angular styling. The build quality is generally good, although the decision to leave the pedal contacts exposed on the underside of the instrument is nothing short of ludicrous! The contacts are very much the Achilles



heel of the Taurus, and pick up muck and grime with irritating regularity. Cleaning does help, although the contacts on my own pedals are now in need of total replacement.

TAKING THE BULL BY THE CONTROLS

The overriding factor in the design of the Taurus was obviously to make it easy to use when playing live. The big and chunky controls are designed to be operated at speed by foot, and the status lights are very welcome on a darkened stage. To the left of the front panel is the volume

slider. The output cannot be fully faded down from this control — it is merely used for trimming the level during performance. To the right is a similar slider assigned to the filter cutoff. These two controls are a little difficult to use at first, and require a subtlety of touch that only comes with practice. To a well-versed bassist or guitarist with his hands full of wooden plank, however, they represent a quick and easy way to tweak volume and tone on the fly. One user-definable sound and three presets (of which more in a moment) are available for instant selection by means of switches positioned directly above the pedalboard — more on these presets in a minute. On the right, just above the pedalboard, are three latching controls marked 'Glide', 'Decay' and 'Octave', each again generously adorned with a small red light. 'Glide' simply switches the glide/portamento effect in and out'. 'Decay' actually toggles envelope release, allowing for a smoother transition between notes as your foot stretches for the next pedal. 'Octave' simply raises the notes played by one octave when the switch is depressed.

Under a transparent hinged door in the centre of the front panel lie the controls that form the 'User' preset. Here you find fairly standard analogue synth controls — after all, the Taurus is nothing less than a fully-fledged two-oscillator synth. Though the degree of control is not as sophisticated as even the humblest of keyboard monosynths, the range of sounds on offer is surprisingly wide. Controls are provided for oscillator balance and beat (detuning), along with simple Attack and Release envelopes for both amplitude and filter cutoff.

MOO-VING SOUNDS

The Taurus filter is rich and fruity, much as you would expect from a Moog synth. With the filter biting on the edge of self-oscillation, the Taurus pedals can be a great source of ambient effects and burbling resonant filter sweeps. But there's no doubt that bass is what the Taurus does best. Admittedly, of the presets, the names 'Tuba', and 'Bass' are merely vague indications of the type of sound on offer, rather than implying the kind of fidelity that we expect of modern synth presets. However, the mighty 'Taurus' preset has been the favourite of progressive rock bands since these pedals first appeared. This consists of a throaty roar, gradually decaying to a rounded purr as the pedal is held down. After all these years it still makes my mouth water, and is enough to fill out even the most sparse of arrangements. I am perfectly serious when I say that I have seen

THE PROBLEM WITH SEQUELS... THE TAURUS MARK II

If you ever have the opportunity to check out a set of Moog Taurus pedals, I'd recommend that you jump at the chance, and decide for yourself whether or not they warrant the description of 'classic' synth. Beware of the Taurus MkII, however. These were a set of floor-standing pedals with a screw-in stand designed to present the synth controls at waist height for more convenient adjustment. Unfortunately, the gutsy sound

of the original Taurus was somewhat compromised in the end result. Those in the know refer often to the MkII as the 'Moog Rogue-on-a-stick', and I suspect there is a lot more truth in this description than Moog would have admitted at the time. In my own experience, having heard the pair of them side-by-side, I have to say that the MkII Taurus is a very pale imitation of its older brother.

BUYING SECOND-HAND: A BULL MARKET

You're in a seller's market here. Given the relative rarity of these beasts, the chances are you won't be able to use the 'I've got a few more to see, so I'll get back to you' routine!

Check any potential purchase very thoroughly. Don't be fooled into believing that little can be wrong if the Taurus you're considering makes noise of any description — the Taurus may be a fairly simple machine, but there's still things that can go wrong. Test the preset buttons, and listen for crackly faders on

both the front panel and under the glass door. Leave the pedals switched on for a while to test the tuning stability — after five minutes they should usually remain fairly steady (though don't expect digital accuracy!). The pedal contacts are the *bête noire* of the Taurus — check for dodgy triggering or notes that hold on longer than they should. I've been unable to track down any source of genuine replacement contacts, but fortunately a friend of mine has concocted an ingenious method of producing his own!

Taurus notes move chairs around in a concert hall. That's what I call bass! The 'Bass' patch is a chunky plucked sound with a fast decay that really cries out to be played faster than my feet can manage — I resort to playing by fist when necessary. 'Tuba' is perhaps the least exciting of the presets, but finds its niche in filling out the lower frequencies without adding its own character to the mix. Think of it as the ultimate sub-oscillator and you won't be far from the truth.

A BREED APART

Surely, you cry, these sounds are available on any half-decent analogue monosynth? Well, to a certain extent, I'd agree, but the Taurus just seems to have that indefinable 'something' that sets it apart. The closest sound I can get is, perhaps predictably, from a MiniMoog, but

there is still a significant difference. Anyone who regularly uses an analogue synth for bass duties will be well aware of the problems that can be caused by the phasing between two closely-tuned oscillators. When the two waveforms are in phase, the resulting sound is strengthened and becomes louder. Conversely, when the oscillators are out of phase, the sound weakens and the volume drops. This can make the bass content of a track fade in and out with the beating of the oscillators. This effect can of course be ironed out by using a compressor, but with the Taurus, the problem never arises in the first place. The oscillators beat against one another, and give the rich swirl that is so appealing to the ears, but the bass content remains solid and consistent. I once asked an ex-Moog employee about this, suggesting that perhaps some form of

compression — intentional or otherwise — was taking place inside the circuitry, but he categorically denied that this was the case.

I really believe that you've not heard 'deep' bass until you've heard the Taurus in full flight. I have no measurements to illustrate the frequencies that the Taurus reaches, but these kind of sub-sonics are beyond the scope of any digital synth that I've come across, and even put a lot of good analogue ones to shame. Maybe sustained pedal bass notes aren't fashionable at the moment, but the Taurus is capable of a wonderful range of chunky 'sequencer' sounds which my fists just can't play fast enough. Indeed, the option

RECOMMENDED LISTENING

To hear prime examples of the bovine bass machine, you really need to wander into '70s progressive rock territory. Unmistakable examples include 'Clocks' from *Spectral Mornings* by Steve Hackett, 'Dance on a Volcano' from *A Trick of the Tail* by Genesis, and 'Sub-Divisions' from *Signals* by Rush.

of MIDI is a temptation that is hard for Taurus owners to resist — a retrofit is certainly high on my list of things to do when the funds are available. But whether retrofitted or not, for the moment I'll continue to perform the 'Taurus two-step' and rattle a few teeth on the back rows... **SOS**

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ATM-010

A QUESTION OF TRUST

Part 2: Having wondered last month about the reliability of your gear, DAVID MELLOR discusses the even less predictable nature of music business people...

Last month I discussed how far it's possible to trust your equipment and software. My conclusions were that modern equipment is reliable and trustworthy, but that you should still prepare for the worst! This month I'll be talking about the people who you may meet and work with in the music and sound business.

There are those who maintain that the music business in particular is full of sharks and charlatans. My experience, however, is that the music business is mostly staffed by honest, hard-working people in whom you can safely trust. The problem is that there is money and glamour involved, and hordes of hangers-on whose intentions are not quite so honourable are attracted to the industry — and it only takes one dishonourable person in a hundred to make everyone very cautious in their dealings with others in the business. I'm not going to tell you how to eliminate the risk, but simply present a few ideas you can think over. But before I come onto music, let's take a look at the way things can go wrong in sound...

CD MASTERING

When I finish recording session for a CD, either for my own projects or for the people I work with, I book a mastering session with Denis at Porky's. Porky's is one of the top record cutting and CD mastering studios in London and I know that when I go there I'll come out with a perfect CD master tape. CD mastering is the stage that comes after you've finished mixing the individual tracks onto DAT, where a skilled mastering engineer will edit, EQ, compress or limit, and balance the relative levels of your tracks to produce a perfect Sony 1630-format tape from which the CD will be manufactured. Since the mastering engineer does this every working day and acquires more experience in mastering than any recording engineer ever could, you can look upon the process as a final coat of varnish on your already finely polished piece of work. The trick with CD mastering is to go to the session yourself and make absolutely sure that

everything is going the way you want it to. If you are paying the full cost of a top class facility then you will be able to do this. On the other hand, your budget may be limited and you might want to economise on the mastering, or you may be sending the tape abroad so that it isn't practical to attend yourself. Let me tell you two horrible experiences that I'm going to make sure I never have again...

The first concerned a track from a CD of mine that was due to be included in a compilation CD produced by a different record company. I sent a DAT of the track over to Europe and the company producing the compilation passed it onto a mastering studio. The track was about six minutes long and just before the end it faded into complete silence before a final 'epilogue'. Guess what? They missed off the last part of the track! A major act would have shouted and screamed and had the CD re-mastered and re-pressed, but smaller fry like me are not in a position to do that.

What I should have done is anticipated the problem and listed the duration of the track on the DAT inlay card — and also pointed out the fact that it had a false ending. Maybe the mastering engineer was in a hurry to go to lunch.

Another problem happened with a second compilation CD, where the mastering engineer used the start ID on the DAT as the starting point for the track. I had allowed my DAT machine to insert the start ID automatically, and therefore it came just a couple of milliseconds after the music. At Porky's they always wind back the tape to a point just before the ID to make sure that the very beginning is captured, like any sensible person would. I thought this procedure was universal. Evidently, it isn't. The track on the CD was clipped and it started with an obvious click. The answer is always to play safe and insert ID points manually about a second before the music starts.

PRINTING AND CD MANUFACTURE

Printing is definitely not a strange topic to mention in *Sound On Sound*, since it is becoming more and more common for musicians and bands to release their own CDs. Since CDs are comparatively cheap to manufacture, yet sell for a healthy price, if you have a reasonable following you'll be able to recoup the cost of production and still have

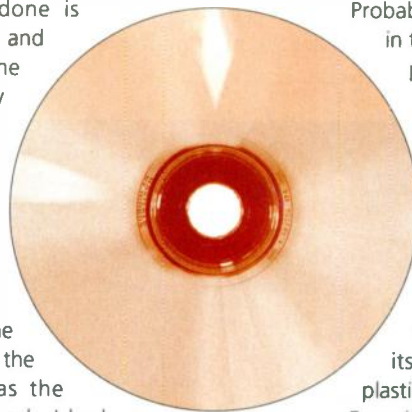
plenty of copies left over to send to record companies as up-market demos. A CD, as you may realise, is more than just a storage medium for music. It should be a whole range of experiences, from pleasurable anticipation for the potential purchaser, to pride of ownership for the dedicated fan. To achieve all of this, everything about the CD has to say that it is a high-quality item. Assuming that the music is up to standard, this then depends on the quality of the design, print and manufacture.

Most CDs play perfectly these days, and most have the appearance of quality, but there are still some around which have, literally, a rough edge formed as part of the manufacturing process. This might not be a problem for you, but if you would prefer your CD to have a smooth finish, ask for a sample before you go ahead with manufacture. This also applies to the jewel box which will contain the CD. Not all are of equal quality.

Probably the biggest difference in the quality of CDs is in the printing on the CD itself, sometimes referred to as the 'on-body print'. You will see from your own collection that some CDs have on-body print which is crisp and clear, some are a little fuzzy, and on some the ink obviously hasn't attached itself to the polycarbonate plastic properly.

Even if you've received perfect samples from the pressing plant, there are specific requirements for the design of the artwork itself. You should check these with the manufacturer, but one key area is how thin the lines can be, particularly when text is reversed so that silver characters are surrounded by ink. Some typefaces are better than others for this — don't make assumptions: ask. You should also find out which areas of the CD you can print onto and which you cannot, whether you're considering a picture CD or not.

One problem I have frequently had with repro houses and printers is that they have a tendency to make changes without letting anyone know. On a recent CD booklet, someone inserted a space in the text which wasn't on my disk file or in the laser-printer proofs. It was very obvious and the booklet had to be reprinted — not at my expense in cash terms, but at my expense in time. Insist that you are informed of any technical



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2 MIDI Ins merged into 2 MIDI Outs, doesn't need a power supply and it's guaranteed for life! MIDI All Notes Off Message is sent on power up allowing the unit to function as a MIDI 'Panic button'. Measures only 3"x3"x1.25"

PORTMAN 2x4 £156

The first 2 In / 4 Out, Parallel Port MIDI interface for the PC. Perfect for portable or laptop PCs and comes with Windows driver & Cakewalk DDS driver. Works with all Windows based MIDI software and includes Windows Help software for Cakewalk, Cubase and Mastertracks Pro.

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SMARTSYNC £129

SmartSync is the most reliable, most versatile, and most affordable Smart Song Pointer sync box on the market! SmartSync features include merging capability, 'JAM' sync, and much more.

MM-401 £69

MIDIMAN's MM-401 is the finest MPU-401 compatible PC interface on the market. The MM-401 works with any PC compatible. Features include: The only 401 card with a lifetime guarantee. Free software including a System Exclusive Archiver, a MIDI Viewer Channelizer, Diagnostics and more. 1/3 size card - fits into ANY slot. Works at any speed. Works with all MIDI sequencers, editors, Librarians, and games that use the MPU-401. Fully MPU-401 compatible.

WINMAN 1x1 £59

The Winman 1x1 is a 1 In 1 Out Windows PC MIDI interface. Works with all programs that support the Windows Multimedia standard. One MIDI Out gives you 16 separate MIDI channels.

WINMAN 2x2 £99

The Winman 2x2 is a 2 In 2 Out Windows PC MIDI interface. Works with all programs that support the Windows Multimedia standard. Two independent MIDI Outs give you 32 separate MIDI channels.

MICRO MIXER 18 £265

The world's first ultra-quiet 18 channel mixer that fits into a single height, half-rack space.

MicroMixer has: 12 channels with gain, pan, dual send controls and clipping LED; 6 additional channels of straight left and right inputs; left and right auxillary returns; a mono return; stereo headphone jack and level controls; and all this in a single height, half-rack space!

MINIMIXER £99

MiniMixer is a digital quality, compact, 4x2 (stereo) or 1x8 (mono) mixer that will run for up to a year on a single, 9-volt transistor battery.

And MiniMixer's JFET Op Amps make it quieter than the most expensive studio quality mixing boards. MiniMixer measures only 6"x3"x1" and weighs less than 12 ounces!

PORTMAN PC/P £119

The Portman PC/P - the world's first parallel port MIDI interface for the IBM PC! Connects directly to the external parallel printer (Centronics) port on any IBM compatible computer using a standard printer cable.

PORTMAN PC/S £119

The Portman PC/S is a professional 1 In 1 Out MIDI interface that connects externally to the serial port on any PC.

FINELINE £265

FineLine is a single space, rack mounted line mixer which is perfect for the professional and home studio. FineLine contains two groups of ten: 1/4" inputs (20 channels) and 4 XLR microphone inputs which can be configured as a 2x10 (stereo) mixer or as a 1x20 (mono) mixer.

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CONCERT PROMOTERS

There are many ways in which you have to place your trust in concert or tour promoters. Will you get paid? Will you get your return flight tickets? Will the tour bus — and driver — be in a safe condition? One problem area I have found on a number of occasions is in the equipment. If I play in Europe (I don't think anyone wants to listen to me in Britain!), I need the promoter to hire a keyboard for me — but will I get the right one? I use a Korg O1W/FD and that is exactly the model I want on stage. You wouldn't think it would be a problem but I have ended up, on different occasions, with an M1, a T1, an O1W (without the FD) and an O1W/FD Pro. At least they're all from the right manufacturer! In each case, the problem has been the inability of the promoter and hire company to understand that I have particular reasons for wanting exactly the right model, and although the other keyboards may be as good as, or even better than, mine, they are not the same. For one thing they might not take the same data card, and although I imagined that the O1W/FD Pro would be OK, I found at the sound check that the extra notes of the keyboard really distracted me in the dim light (only the star of the show gets a bright light!). My 'fix' was to stick black gaffer tape over the notes outside my normal five-octave range, and my fingers managed to find mostly the right places.

PUBLISHERS AND RECORD COMPANIES

"Where there's a hit, there's a writ", is a saying in music business circles. When a song makes a lot of money, there's always someone ready to creep out of the woodwork to accuse the writer of having stolen their work. Few

of these cases go all the way to court. Most are settled quietly out of court and no-one, apart from the people directly involved, is any the wiser. In fact, it would very rarely be the case that someone had intentionally stolen some lyrics or a snatch of tune. What is far more likely is that two people have accidentally come across a similar combination of the 12 notes that make up our musical language, or some of the fairly limited range of words that make up the lyrics of a typical pop song. If this happens by accident there isn't any blame attached to anyone, although there may still be some discussion about financial matters! What aspiring songwriters do tend to worry about is that if they send anyone a cassette of their work, the next time they hear their own song it will be on TV, with someone else taking the writing credit. Although this isn't impossible, if you are dealing with industry professionals it is very unlikely. If you can write one chart-topping song, you can write more. Why should they kill the goose that's laying golden eggs when they can sign it to a contract? Actually, the most unlikely scenario of all is that any of your early songs will be of chart quality, so there will be no point in ripping you off. A good publisher will be listening for potential that can be developed, and hopefully that's what your songs will demonstrate.

Just to round off this section with an example of how rare it is that anyone's work is abused in this way, over the years I have had more than 300 pieces of instrumental music published, and not once has anyone questioned the originality of my work, nor have I had occasion to imagine that anyone was copying my tunes. By all means take the sensible step of sending a copy of your music on cassette to yourself, via registered post, with a clear date stamp. Keep the unopened envelope in a safe place against the day when it might be necessary to present it in court. But

once you've done that, stop worrying and get out there and promote your work to anyone and everyone. That's the only way you'll achieve the success you're looking for.

CONTRACTS AND AGREEMENTS

The holy grail of music is to win a publishing or recording contract. But many people don't realise that it's just the first rung on the very steep ladder of success. It's a very precarious foothold too, and you can easily slip back down to earth. Contracts come in various forms, but there are two basic types you should think about. The first is where you sign over your rights to a particular song, or collection of songs, in return for a share of the profits the publisher or record company can make. The second is where you sign the rights to all the compositions you create over a set period of years. The dangers should be obvious. In the first case, if things go wrong there's at least a limit to how much of your work is lost. In the second case, you're virtually signing your life away, so you had better be very sure you can trust the people you're dealing with. Since the music business is a very fertile field for misunderstandings, you'll soon find that around every corner there is a lawyer, and you should have access to good legal advice on whatever you sign. In my rather humble compositional capacity I have been offered contracts which are extraordinarily deficient in the obligations they place on the publisher. In other words, they wanted to have control of the copyright but they wouldn't commit themselves to actually doing any promotion! Be very careful when you sign a contract, and get proper advice.

When people think of a contract, they often imagine it written on parchment and trimmed with sealing wax and red ribbons. A simple spoken agreement is just as valid as a contract, and so might be an offer you make or accept in a letter. At the lower end of the music industry, where a band makes beer money out of gigging, or a one-man-and-a-dog record company offers to make 1000 CDs from your home studio recordings, there just isn't any leeway in the budget to hire a music business lawyer to check over the small print. This is where the question of trust comes back in. If you get to know the people you're dealing with, and your instincts tell you that you can trust them, go down to your local pub and talk over just one specific project thoroughly, so that everyone understands what their roles and responsibilities are, and write everything down on a piece of paper rather than trusting the details to memory. Whether you sign or don't sign the paper, it could still be construed as a contract if a dispute arose, but the whole point of this exercise is to get away from the 'shark-infested waters' of the music industry and back to real life, where people act honourably and with mutual goodwill.

WHO OWNS THE NAME?

When a couple of mates get together and say, in time-honoured fashion, "Let's form a band", they tend not to look 10 years down the line when they might be extremely rich, extremely famous, and exceedingly fed up with each other. There comes a time in the fortunes of most bands when the various members want to go their own ways. Usually this is a disastrous idea and none of them are ever heard of again. Sometimes, however, the band has such a reputation, and such a large fan base, that one or other of the ex-members wants to recreate the band and make even more money. Since the reputation of a band hangs on the brand name, the question of who owns the rights to the name is vitally important. Yet unless they were advised by a manager early on to set everything down in writing, there may nothing more than an unspoken agreement made in the dim and distant

past — or no agreement at all. If it is true that a verbal agreement is not worth the paper it's written on, a mere 'understanding' is potentially a sound basis for lengthy arguments and possible litigation.

In this situation, it isn't really a question of trusting your fellow band members to do the decent thing when the time comes. Imagine how you will feel if you develop your musical talent to such an extent that you are the centre of the band and virtually the whole basis of its success, but the other three members decide democratically to throw you out and to keep the band's name for themselves! You really do need to agree at an early stage in your career what will happen to the name if you finally split, because you may start off as friends and continue as business partners, but time and again bands have split on the bitterest of terms. Sad, maybe, but don't allow yourself to be the loser.

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

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
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
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
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
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
AKAI AX73 analogue synth, 73 note keyboard (good master), can process Akai samplers, mint, boxed, £360 ono; Yamaha PSR500, 16-part sequencer, boxed, great sounds, £300 ono.  Darren 0181 853 0610.


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
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
CASIO CZ3000 MIDI synth, £180; Yamaha QY10 mini synth/sequencer, £100; Roland RS09 analogue springs/organ, £80.  Chris 01296 81379.


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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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KORG 03R/W, 32-voice sound module, plus Rave and Orchestral sample cards, £600; Atari 1040, Midex+, Cubase, SM124 Monitor, £400; Ensoniq SQ32 7-octave workstation, 32-voice, £850 or £1700 the lot.  01438 350034.

KORG 05R/W, 6 months old, box, manual, sound sorter, over 2000 sounds on Atari disk, £470.  John 0181 505 6782 eves.

KORG 05R/W MIDI sound module. Boxed as new, with manuals, 3 months guarantee, £400.  Rob 01394 672292 (Felixstowe).

KORG POLY 800 polysynth, with manual and power supply. Boxed, very good condition, £140.  Carl 01507 606956.

KORG POLY 800, PSU, sound cassettes, manual, immaculate, boxed; Boss DR110 rhythm box, immaculate, all in boxes, £300 ono.  0181 312 4188.

KORG POLY 800 hybrid digital synth with analogue resonant filters, with sequencer, MIDI and power supply, £140 easily negotiable, Yamaha R100 effects, immaculate, boxed, complete, £95.  Simon 01524 65201 ext. 4718.

KORG T1, as new, home use only, 88 note weighted keyboard, 50,000 note sequencer, with sample disks and flight case, £1400.  01206 384143 (Colchester).

KORG T3 workstation, 50,000 note sequencer, excellent condition, 100s of sounds on disk, including M1 presets and M1 piano card.  Ian 01253 29559 (9am to 5.30pm).

KORG VC10, excellent condition.  Ralph 01785 712980.

KORG WAVESTATION with analogue sound card, very good condition, £650, or swap for either Casio FZ1 sampler (preferably with

ALLEN & HEATH Brenell 24-track tape recorder kit, £600 ono; Electro Harmonix sequencer, brand new, £120. ☎ 0121 420 3295.

AMSTRAD STUDIO 100 4-track with stereo twin cassette, 6:4-2 mixer, phono tuner and amp. Offers around £100. ☎ 01782 621111 ext 8704 ask for Chris, Room 2.

ARIA ADL1 analogue delay pedal, £25 ono; Yamaha CX5M music computer, with large keyboard, 4 operator voicing and 8-track sequencing cartridges, £90 ono, all boxed. ☎ 01902 845112 or 0121 629 5245.

BEYER DYNAMIC M380TG, great bass drum mic, £60 ono; Peavey 535N vocal mic, unused, £45 ono. ☎ 0181 660 0522 any time.

CARVER PM150 600W per channel stereo power amp, thermal cut out and speaker protection etc, professional spec, £475 ono. ☎ Mick 0121 525 1832.

DBX 263 de-esser, 3 months old, very little use and still under guarantee, rack kit and all original packaging, £100 ono; Yamaha SPX900 multi effects, vgc, includes manual etc, £395. ☎ 0161 205 1186.

DESCTECH 1602 16-channel mixer, 3-band EQ, £300; Alesis RA100 reference amplifier, £200; Peavey Eurosys 3 150W speakers, £250. All excellent condition, home use only. ☎ 01952 260064 (Telford).

DIGITECH VOCALIST II vocal harmony processor, fully programmable 4 months old, £300; Lexicon Alex digital effects, superb Lexicon sound, 4 months old, £250; Boss SE70 pro effects, 4 months old, £275; AKG C1000S condenser mic, with stand, 4 months old, £100; 8 unit flight rack case, £60; Yamaha TG100, £75. All mint with guarantees, boxes and manuals. ☎ 0114 254 8697 (Sheffield).

DYNAMIX 12:2 mic/line mixer, 3-band EQ per channel, two stereo aux sends and dedicated returns, home use only, excellent condition, £170 no offers. ☎ Paul 0113 232 0537 (Leeds).

FOSTEX A8 8-track recorder, plus Fostex 350 mixer with meter bridge, £900, or will consider PX for effects, microphones, or DAT recorder. ☎ Rob 0121 333 3201.

FOSTEX DC100, plus Mixtab keyboard and MIDI mixer, excellent condition, £400; Korg Wavestation SR, good condition with manuals, £650; Alesis Datadisk, boxed as new, £175. ☎ Andy 01225 702962.

FOSTEX G245 with 8330 sync board, home use only, includes manuals, 2 reels and all looms, excellent condition, £4700 ono. Serious enquiries only. ☎ Terry 0181 521 4491.

FOSTEX MODEL 80 8-track recorder, £700; Roland TR707, £130; Roland CR8000, £150; Korg Poly 800, £200, Amiga A600 with stereo master sampler. ☎ Roger 01305 774367.

FOSTEX R8 little used, £825; 30 reels Ampex 456 for above used once and erased, £90. ☎ Richard 01924 895227 or 893246 (Wakefield).

FOSTEX 160 multitracker/mixer with EQ, pan, aux and Dolby C, excellent condition with cover, PSU and manual, £170 ono, or swap for Studiomasster 8:2 mixer or similar with EQ. ☎ Lee 0161 792 6824.

FOSTEX 280 excellent 4-track recorder, boxed, very good condition, travel forces sale, £390. ☎ Aidan 01462 672751 (Herts).

FOSTEX 280 4-track recorder, 10 inputs, auto punch in/out, tape sync., excellent condition, boxed, £375. ☎ Neil 0181 723 0379 (West).

KAWAI RV4 effects processor, 4 stereo effects in one unit, digital inputs, still under guarantee, excellent condition, never gipped, £450 ovno. ☎ Kris 0151 523 8110.

LA AUDIO CX2 compressor, boxed

as new, cost 249, accept £200 for quick sale. ☎ Colin 01562 884488.

MACKIE CR1604 16-channel mic/line mixer, £550. ☎ Micky 01932 245533.

MACKIE 1604 £700; Zoom 9120, £170; Ibanez DM1000 digital delay, £200; Jamie 0161 861 7761.

M+M ELECTRONICS 8-channel mixer, stereo effects return, foldback, 4-band EQ. Flightcased, great sound, but needs 3 new op amps, hence offers around £100. ☎ Jon 01566 784665.

PANASONIC SV3700 DAT machine, 5 months old, mint condition, shows error correction rates, analogue 44.1kHz, SCMS hour meter (so far unregistered), RRP £1644, £1244 ono. ☎ 01422 876086.

PHONIC 8:2 mixer, £150; Audioline 8:2 mixer, £100; Phonic 2x15 graphic EQ, £150; Peavey Digital 2x350W amp, £400. ☎ Paul 01480 391613.

QUADRAVERB PLUS, boxed with manual, perfect £200; 19-inch rack unit box on wheels, 11 inches deep with 40-jack patchbay and many patch leads, £40. ☎ 01623 822468 (Mansfield).

ROLAND M480 6U, 48-channel mixer, or 24 stereo channels, immaculate, almost new, boxed etc, a lovely quiet mixer with amazing spec, ideal for MIDI recording and small studios, £895 ono. ☎ 01179 493109 or 01179 505297.

ROLAND SRV330 Dimensional Space Reverb, £370. ☎ Alan 0151 339 1167.

SANSAMP GT2 amp simulator, gives different amp/speaker/mic placement configurations, £70; Alesis Micro Enhancer, manual and PSU, £65. ☎ John 01273 548748 days or 01273 707954 eves (Brighton).

SCINTILLATOR stereo enhancer, very good condition, £120. ☎ Paul 01684 561397 (Midlands).

SECK 18:8:2 board, vgc., £650; Roland MM1 20:2 board, MIDI mutes, £350 ono; MC202 Roland analogue Microcomposer, £175; Roland SH09, £150; Roland TR707 Drum machine, £100. ☎ Paul 0171 373 9728.

SECK 12:8:2 mixer, home use only, boxed, excellent condition with 8-way loom, £450 ono. ☎ Malcolm 01734 730774.

SECK 18:2 mixer, parametric EQ, ideal submixer for keyboards, £600. ☎ Stephen 01603 5044621.

SECK 18:8:2 Mk II mixing desk, excellent condition, boxed, home use only, £799. ☎ 01244 377102 after 6pm.

SENNHEISER MKH406T studio microphone, still boxed, £195. ☎ Aidan 0121 427 5754.

SIMMONS SPM 8:2 MIDI-controllable mixer, sweepable mid, £180; Evolution EVS1 synth/sampled drum module, £130. Wanted: Atan ST, Q'verb. ☎ 01865 727863.

SONY TCD3 portable DAT recorder, including case and 2 new rechargeable batteries, with mains recharger. 14 months old, as new £300. ☎ Jon 0171 221 8823/0956 311810.

SOUNDCRAFT SPIRIT AUTO 24:8:2 mixer, 72 inputs on mix down, 4-band EQ, 4 stereo effects returns, plus Steinberg automation, latest version (1.04), including manuals and dangle, excellent condition, £3600 no offers. ☎ Dave 0181 902 9784.

SOUNDCRAFT SPIRIT STUDIO 24:8:24, total of 56 inputs on mixdown, excellent condition, £1450 ono. ☎ Vince 0171 607 7195.

SOUNDCRAFT SPIRIT 16:8:2 mixing desk, immaculate, £1500. Fostex M80 8-track, plus loom, £700. Yamaha EMP700 multi-effects processor, £175. Drawmer D2201 stereo noise gate, £275. ☎ Kevin 01295 257062.

SOUNDTRACS CM4400 32:12:24, plus p/bay, £3300; Fostex E16, £1650; Soundcraft 762 2 inch 24-track, £2500; Yamaha Rev 7, £350;

Tannoy Lockwood 15-inch, £600; Akai MX73, £220; Akai SO1, £450; D Audio BM105. ☎ 01923 267733.

SPL OPTIMIZER stereo EQ, very serious equaliser from the Vitalizer people, absolutely as new, £650. ☎ Paul 01684 561397 (Midlands).

SPL SX2 enhancer, £280. Yamaha NS10 monitors, £150. Fostex X15 portastudio, £160. Shadow SX22 synth expander pedal, £90. ☎ Neil 01273 494502.

SPL SX2 VITALIZER, £475; Omnicraft Quiet Noise Gate, £150; Roland GR1 Guitar Synth and GK2, £575; Roland Octopad, £225; Yamaha PF70 Piano 7 Octave, weighted, £250. ☎ Alan 01603 592453 days.

STUDER A80 Mk 2, 16-track, 2 inch, 350 hours since new, immaculate, £2800. Dolby SP24 rack, with 8 channels of Dolby A (can take SR cards), £800. ☎ 01179 354858 (Bristol).

STUDIOMASTER SERIES 5 16:8:2 mixer, very good condition, £500. ☎ Gary 01234 215823.

STUDIOMASTER POWERHOUSE 12-channel powered mixer, 350W per channel, with digital reverb, speakers and stands. Ex demo, as new. £1100 complete. ☎ Paul 01684 561397 (Midlands).

TASCAM D488 8-track digital recorder, hardly used, £3000; DBX 160A professional mono compressor, £300; Lexicon PCM80, £1725. ☎ Oscar 00 34 4411 4039 (Spain).

TASCAM M2516 professional 16-channel, 8 group mixer, 4 aux sends and returns, MIDI muting, 7 months old in excellent condition, hardly used, boxed with manuals, £1300. ☎ Dado 0171 720 3702.

TASCAM MTS30 MIDI tape synchronizer, smark FSK sync position pointer sync, as new, £80 ovno. ☎ Martyn 01579 343845.

TASCAM PORTA 01 multitracker, perfect condition, with manual and free tapes, £200. ☎ Dave 01734 790122 (Berkshire).

TASCAM PORTA 07 4-track recorder, £300 ono; Spirit Folio 10/2 mixer, £300 ono. Both boxed with manuals, perfect condition, ideal 4-track package, £500 for both. ☎ Mike 0161 256 2453.

TASCAM 38 8-track, perfect condition, plus DBX noise reduction and remote control, £900; Soundtracs 16:8:16 mixer, good condition, £750. ☎ Tom 01737 357716 or 0860 864483 (Mobile).

TASCAM 464 portastudio, 12 inputs incl. 4 XLR mic inputs, 3-band equalisation, sync in & out jacks, excellent condition, £475. ☎ Tony 01724 853584 (Scunthorpe).

TASCAM 488 8-track recorder, 12-channel mixer, mint, hardly used due to MIDI set-up, £695. ☎ 01254 202032.

TASCAM 644 Midistudio 4-track cassette deck, DBX noise reduction, 16 inputs, boxed with manual, £449 for quick sale. ☎ 0181 989 1309.

TASCAM 644 Midistudio, 16-channel mixer, with MIDI mute and built-in synchroniser, excellent condition. ☎ Steve 01429 222517.

TASCAM 644 MIDISTUDIO 4-track with 16 inputs, plus 2 effects returns, programmable routing with MIDI tape synchroniser, latest as new £500. ☎ 01309 676128.

TASCAM TS88 8-track tape recorder, mint, low mileage, bargain, £1000. ☎ 0181 672 0073 (SW London).

UHER 4200 stereo broadcast reel to reel tape machine, as new. Cost £1400, offers to Craig. ☎ 01738 630145 (Perth).

YAMAHA A100 50W stereo amp, cost £250, accept £150; Yamaha P2040 4x20w or 2x40w, cost £300, accept £175; 19-inch rack. ☎ 01973 439123.

YAMAHA MT2X and YMC2, £165; Tascam MM1 Mixer, £395; Simmons SPM8:2 mixer, £195; Art Multiverb, £145; Boss RDD10 delay, £95; quarter-inch machine,

£50. More available. Phone for list. ☎ 01329 663048.

YAMAHA MT3X 4-track, 6-channel portastudio, immaculate condition, boxed with manuals, hardly used since discovery of sequencing, £300 ono. ☎ Steve 01202 528775 (Bournemouth).

YAMAHA MT8X 8-track cassette studio, 4 months old, £750; Phonic PMC 802B 16:2 mixer, balanced inputs, phantom power and 3 effects sends, 4 months old, £150; Yamaha NS10N monitors, 6 months old, £150; Fatar Studio 900 master keyboard, 88 piano weighted keys, 4 months old, £350. All mint with guarantees, boxes and manuals. ☎ 0114 254 8697 (Sheffield).

YAMAHA MT44 4-track with built-in patch bay and mixer, mint condition, £200 ono. ☎ 0181 662 0465.

YAMAHA MT44 4-track recorder, no mixer section, just great quality cassette-based recording. No counter reset button hence, £120. ☎ Carl 0181 444 0582.

YAMAHA MT120 4-track recorder, 6 months old, boxed as new, with remote control, £300 ono. ☎ Roger 01293 525014 or 521303.

YAMAHA R100 effects processor, immaculate, boxed and complete, £95; Korg Poly 800 hybrid digital synth with analogue filter and MIDI, £140. (negotiable). ☎ Simon 01524 65201 ask for extension 4718.

YAMAHA SPX90 II, £250; Q'verb +, £200; Roland DEP3, £200; D110, £250; SPDB, £350, Amcrn Graphic, Revox A77, £200; Pearl Brain, £50; Technics SL1200 II, £250. ☎ Mike 01379 852107.

ZOOM 9120 advanced effects processor (reverb, delay, chorus, pitchshift, etc), £180; Yamaha R100 reverb/delay unit, £90. Both with MIDI, PSUs and manuals. ☎ 01933 678608 (Northants).

COMPUTERS/SOFTWARE

AMSTRAD PC1640 IBM compatible computer, 3.5 inch and 5.25inch disk drives, mono monitor, keyboard, mouse, manual and disks, £200. ☎ 01977 791770 (Pontefract).

bodytext:ATARI FALCON 4Mb RAM, 65Mb HD, boxed, Philips CM8833 colour monitor, Panasonic 24-pin printer, joy stick and software, £550. Ideal entry in the world of Cubase Audio. Will split. ☎ 0161 792 3370.

ATARI 520STFM with 2.5Mb upgrade and Atari SC1435 colour monitor, both boxed with manuals, mint condition, £250, or exchange for Yamaha QX3. Buyer collects. ☎ Mark 0151 606 9763 after 6 pm.

ATARI 520FM, expanded to 1Mb, plus mouse, Pro 24 and additional software, £150. ☎ Chesterfield 230543.

ATARI 520ST, upgraded to 2.5Mb, complete with mouse, leads, sequencing software, good condition, £150 ono. ☎ Kez 01208 873649 (Cornwall).

ATARI MEGA 4 with mono monitor and internal 250Mb hard drive; KCS Level II; Band In A Box and loads of other software, manuals, etc. £500. ☎ Robb 01602 654121 (Notts).

ATARI MEGA 4 with Seagate hard drive, hi-res monitor, Cubase 3.01, plus SMP24, bargain at £1000. ☎ Peter 01276 479255 (Surrey).

ATARI MEGA 4 60Mb hard disk, Atari hi-res monitor, collection of software, including Pro 24. Ideal as MIDI sequencing package, £450 ono. ☎ Jamie 01273 673013.

ATARI MEGA 4 original software; Canon B110 Bubblejet printer, £150. May deliver. ☎ 0161 225 1166.

ATARI ST and high resolution monitor, mouse, sequencing software, WP, DSD, all leads, connections, cables, etc. Boxed in mint condition, quick sale, £250,

or may swap. ☎ 01276 31010.

ATARI STE computer with hi-res monitor, includes mouse, leads and software. Excellent condition, £260 ono., might P/X. ☎ Tony 01908 233520.

ATARI STE sequencing package with SM124/144 hi-res monitor, leads, accessories, complete. Was used in studio for MIDI mixing Cubase etc, £250; Philips Monitor, £90. ☎ 01884 257487.

ATARI STE computer with hi-res monitor, manuals and mouse. Excellent for sequencing and editing, £260. ☎ Tony 01884 256955.

ATARI STFM 1Mb, with manuals and box, £100; Steinberg Pro 24, £35; mono monitor for ST or Falcon, £90. ☎ 0181 360 6885.

ATARI 1040ST, with SM24 hi-res screen, manuals, vgc, software, mouse, £300; DACS MIDI patch bay, vgc, saves hassle, £80. ☎ Paul 01227 361089 (Kent) work.

ATARI 1040STE with monitor, printer, C-Lab Notator, Steinberg Pro 24, Steinberg Masterscore, Band In A Box, plus lots more software, offers around £650. ☎ Richard 01924 840802.

ATARI 1040STE with mono hi-res monitor, mouse, mint, £260; Emagic Notator software with dongle manuals, might deliver, £160. ☎ 01434 606889.

ATARI 1040STE, mono hi-res monitor, 4 years transferrable warranty, both new December '94, boxed with some software, £295. ☎ Mike 01205 870121 (Lincs).

ATARI 1040ST, 1Mb, no monitor, works perfectly, £150. ☎ Paul 01684 561397 Midlands.

CADENZA music sequencing software for IBM compatible PC, 3.25 inch and 5.25 inch disks plus manual, still boxed, £100. ☎ 01977 791770 (Pontefract).

CAKEWALK PRO FOR WINDOWS, version 3.01, unused, boxed with manual, registration card, serial number etc, only £175, plus postage and packing. ☎ Malcolm 01179 558953.

CUBASE AUDIO for Atari Falcon, latest version (V2), 4 disks and dongle, £599. ☎ Simon 01494 439637.

CUBASE FOR WINDOWS, V2.61, latest 100% stable version, includes score printing. Boxed, manuals, dongle, £200; MACSee Format, translates Mac disks, £50. ☎ Carl 0181 444 0582.

CUBASE SCORE for windows, latest version, immaculate condition, unregistered, with Steinberg PC 1 MIDI interface, £350. ☎ Chris 01929 551706.

EMAGIC NOTATOR LOGIC for PC, all manuals, etc, plus Logic Tutorial Video Volume One. All boxed as new, sale due to sale of PC, £300 ono. ☎ 01692 405332 (Norwich).

MIDIMAN MM401 IBM compatible MIDI interface, including software, still boxed, £50. ☎ 01977 791770 (Pontefract).

MIDI MUSING notation and music scoring/publishing software wanted. Eg. Encore; Musicator; Cakewalk; Music Time; Personal Composer, etc. Also Midiscan software wanted. ☎ 0850 539092 anytime.

MUSIC QUEST MQX 32M, MIDI card, 2 ins and outs, SMPTE and chase lock for syncing SAW to sequencer, only 4 weeks old, £150. ☎ 0181 949 7245 (after 6pm).

NOTATOR V3.3 and Atari 1040, monitor and mouse, excellent condition, £300 ono. ☎ Simon 01453 884008.

SAMPLITUDE PRO 16-bit, 8-track, direct to disk recording software for PC computers, with manual, £190. ☎ Ian 01702 616961.

SIMMS, 72-pin 8Mb, brand new, £200 ono. ☎ Robert 01484 847914 after 6 please.

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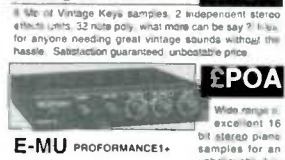
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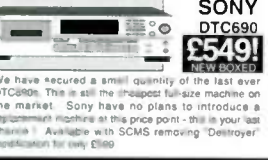
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Tascam DA30 Mk2 £POA
Sony DTC-A8 new £POA

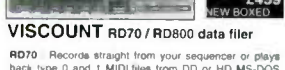


DIGICON SCMS stripper £129 NEW BOXED
or only £99 if bought with any new DAT machine
Remove the SCMS code from a digital signal so you can make as many digital copies as you like. Co-axial and optical connections - can also be used to transfer from one to the other. Use your machine with only an optical out - this now have a co-axial out etc. LEDs indicate the current signal status and also show any digital errors off tape. 4v battery allows use with portable machines. Digihook also available with extra features at £159

Optical leads only £24.95

YAMAHA RY30

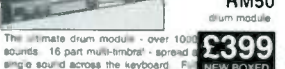
£299 NEW BOXED
In our opinion, the best drum machine ever made. Superb quality 16 bit samples, 16 part multi-timbral, resonant filters etc. Real-time wheel gives fantastic control over the pitch, timbre, reproduced faithfully at 16 bit CD quality. The RM50 is based on Small Space only - order now!



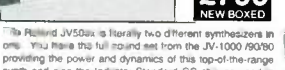
BASSSTATION RACK £399
FACTORY DIRECT EXCLUSIVE



VISCOUNT RD70 / RD800 data flier
RD70 Records straight from your sequencer or plays back type 0 and 1 MIDI files from DD or HD MS-DOS disks (from 10405TE, PC and Mac). Programmable playback similar to top CD players. Internal or external sync. Inst with start/stop. Uses direct to disk storage for very large note capacity. Stores SysEx dump.
RD800 - as RD70 but with 1 Meg (expandable to 4) of battery backed up memory giving you instant song play no break between songs. Instant loading, channel mute, tempo change, transpose stored with song.



BOSS DR550 Mk2 £169 NEW BOXED
Fantastic little boot-box with nearly 100 built in sounds including Latin and the quintessential African rhythms, reproduced faithfully at 16 bit CD quality. Makes a great drum sound module as its velocity sensitive over MIDI. RRP £285. Last stocks ever!!



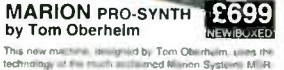
YAMAHA RM50 drum module £399 NEW BOXED
The ultimate drum module - over 1000 sounds, 16 part multi-timbral, spread field, single sound across the keyboard. Full MIDI synthesis including resonant filters, 5 MIDI controllers per channel assignable to pan, filter, balance, decay, pitch etc. velocity cross-fading, 8 outputs, 6 trigger inputs, ground breaking MIDI sample dump option, unbelievable spec, mind-blowing sound quality, ridiculous price. Hurry! Hurry!



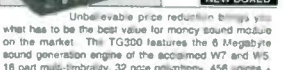
ROLAND JV50Ex £799 NEW BOXED
The Roland JV50 is a literally two different synthesizers in one. You have the full sound set from the JV1000 80800 providing the power and dynamics of this top-of-the-range synth and also the industry Standard GS chip as used in the highly successful JV3003S. Using both together you have an incredible 736 on-board sounds with 56 note polyphony and 16 part multi-timbrality. All of these sounds can be edited using dedicated sliders for filter-cutoff, resonance, envelopes etc. There are also 9 drum kits including electronic, rock and orchestral. Two editable effects at once - those from reverb, delay, range, echo, chorus etc.
Also includes comprehensive data flier which records and plays back type 1 and 0 MIDI files. SysEx data exclusive for loading up your computer, MIDI modules or for playing live. RRP £1348. save £550. End-of-line exclusive deal - These will sell out very quickly.

WALDORF MICROWAVE

£999
The Waldorf Microwave has genuine analog synthesis including resonant filters. It has 16 oscillators, 8 part multi-timbrality and 8 individual outputs. Sweep through up to 64 different waves, controlled by LFOs, envelopes etc. Also available on a full base, please enquire.



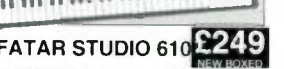
MARION PRO-SYNTH £699 NEW BOXED
This new machine, designed by Tom Oberheim, uses the technology of the much acclaimed Minion System. It's a 2 Midlevel Synthesizer, but priced substantially lower. Classic Analog mix, 400 patches, 8 part multi-timbrality, resonant 2 or 4 pole VCF filters, voltage controlled panning, extensive matrix modulation. Tom Oberheim's sound better than a Matrix 12! Call us now for further details or to get your order in. Initial choice limited.



YAMAHA TG300 £339 NEW BOXED
Unbelievable price reduction brings you what has to be the best value for money sound module on the market. The TG300 features the 8 Megabyte sound generation engine of the acclaimed WT and W15. 16 part multi-timbrality, 32 note polyphony, 456 voices - 9 drum kits, huge display allows full editing of individual filter etc from front panel. Yamaha DSP chip gives 3 high-quality effects simultaneously from a vast selection. Also General MIDI compatible, stereo audio inputs, built in Mac/PC interface. Incredible full-blown computer adaptor for your choice of Mac / PC / Atari. Beware fall price! RRP £699



ROLAND JV-880 £469 NEW BOXED
(with free Analog Sounds disk)
This is the synth which the JV1080 is based on. Fantastic sound quality and built in effects with a wide range of fully editable and intelligible sounds. 4 outputs, 28 note polyphonic, 2 card slots and also accepts Roland's current series of excellent expansion boards which triple the built-in ROM! Buy with any of these, for only £699! Choose from Vintage, Dance, Orchestral, World, Pop and Piano. Limited stocks only available, almost 50% discount! RRP £849



FATAR STUDIO 610 £249 NEW BOXED
The Studio 610 features 5 octave velocity weighted touch and fully assignable wheel (eg pan, reverb, modulation, aftertouch), sustain and volume pedal transposable, program change including banks select 2 MIDI outs. Also includes Studio 900 lite 40v + 88 note hammer action weighted keys - £599. Studio 40v + 61, 4 + 5 octave keyboards for £119. £199



ROLAND MS-1 £379 NEW BOXED
Revolutionary new 16 bit stereo sampling instrument from Roland, ideal for copying but also for other uses. Built-in sequencer, already generous memory can be expanded massively with PCMCIA cards. 8 trigger pads. Make for quick and easy use. Try one out today! Free Time and Space CD.

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manual, £120 ono. ☐ 01924 298907 evenings, after 6pm please.

STEINBERG MIDEX MIDI expander, mint condition, £185 ono. ☐ Malcolm 0191 565 4334.

STEINBERG PRO 24 V3 software, unused with dongle, manual and tutorial, £45; C Lab Notator/Creator V3, manual, £20. ☐ Neil 0181 723 0379 (West).

STEINBERG SYNTHWORKS professional editor. Library editor for Korg M1 on original Atari disk with dongle and manual, £65. ☐ 0171 720 3702.

STEINBERG SYNTHWORKS editor for Korg M1, comes with a library of over 2000 sounds. Program is Atari format, or sounds can be on MIDI file. ☐ Bill 01589 487345.

386 5X 33MHZ PC, with SVGA, 130Mb hard disk, 4Mb RAM, 3.5 inch disk drive, sound/MIDI cards, Windows and Cubase. Immaculate, boxed, £450 ono; 30-pin 1Mb simms for Atari etc, £20 each. 0181 452 8816 answer phone.

YAMAHA CX5M music computer, large keyboard, 8-part step and notation sequencer, four operator FM voicing cartridges, excellent teaching tool, £80 ono. ☐ 0121 6295245 or 01902 845112.

YAMAHA CX5M music computer with MIDI recorder, FM voicing program and music composer cartridges, plus manuals and YK10 keyboard, £35. ☐ 01462 835310.

YAMAHA CX5M music computer, YK01 mini keyboard, YRM101 composer cartridge, YRM102 voicing cartridge, all boxed with manuals, £60 ono. ☐ Chris 01732 740881 (eves).

DRUM MACHINES

ALESIS SR16, excellent condition, boxed, manuals etc, £150. ☐ Carl 0181 444 0582 (North London).

BOSS DR550, £105; DR110, £45; Casio RZ1, £120; Yamaha DD11, £80. More equipment available. ☐ 01329 663048.

EMU PROCUSSION drum module, 6 individual outputs, with over 1000 drum and percussion sounds, fully programmable, 32-note polyphony, excellent machine, £295. ☐ 01628 28626.

KAWAI R50E drum machine, programmable drum kits, tunable sounds, including two bass sounds, 3 outputs, MIDI-compatible, £75. ☐ Neil 0181 723 0379 (West).

KAWAI R50E drum machine, with bass and orchestra stabs, flange and gated effects, MIDI, £60. Forced sale, no time wasters please. ☐ 01332 297434 (Derby).

ROLAND RB drum machine with 'human feel', £250. ☐ Tim 01623 845868.

ROLAND TR707, with manual and power supply, £130. ☐ Nathan 01254 671393.

ROLAND TR808 drum machine, £250. ☐ Duncan 0114 248 2760 (eves).

ROLAND TR909, the all-time classic house drum machine, good condition, offers. ☐ Mark 01252 370550.

ROLAND TR909, home use only, in mint condition, boxed with manuals, £550. ☐ Ian 0181 567 2482.

ROLAND TR909, mint condition, boxed with manual, £650; Korg M1 with flight case, £580; Roland TR505 with PSU, £90. Wanted Roland RB with sound cards. ☐ 01626 862425 (Exeter).

YAMAHA RX17, MIDI programmable drum machine, 26 sounds, home use only, perfect condition, £55. ☐ Chris 01732 740881 (eves).

YAMAHA RY30 drum machine, excellent condition, manual and PSU, £265. ☐ Dale 0161 225 5556.

YAMAHA RY30 drum machine, house techno garage sounds, excellent programming and editing facilities, PSU full manual, mint condition, £230. ☐ Daniel 0115 9267684.

SAMPLERS

AKAI S01 sampler, 3 months old, immaculate condition, including 3 current full price sample CDs, reluctant sale, £550 ono. ☐ Nick 01242 672058.

AKAI S700, expanded, great value budget sampler with sound library, £299 ono. ☐ Dave 01203 490020.

AKAI S900 with sound library, £600. Roland D550 with sound card and D50 Synthworks, £500. Roland D110 module, £200. Yamaha TX81Z, £150. Roland TR707, £100. ☐ Peter 01276 479255.

AKAI S950 sampler, fully expanded with SCSI interface and loads of library disks, home use only, £895. ☐ Paul 01684 561397 (Midlands).

AKAI S950 sampler, fully upgraded, excellent condition with manual and discs, £850. ☐ Darren or Chris 01322 863656.

AKAI S950 sampler, home use only, unexpanded, boxed with manual, excellent condition, £850 ono. ☐ Phil 01589 732289 (after 5pm).

AKAI S1000 keyboard with 8Mb memory and SCSI, excellent condition, Digidesign SoundDesigner and Steinberg Avalon editors, plus loads of samples etc, £1995 ono. ☐ Tim 0181 292 3408.

AKAI S1000, 4Mb, good condition, with latest O/S, £1200 ono; Friendchip KAT, Atari remote control for Cubase/Creator, £50; EMC D70 editor/librarian for Atari, £50. ☐ Jon 0121 449 6603.

AKAI S1000, 8Mb, digital in/out, SCSI card fitted, 11 outputs, backs up to DAT, latest O/S, perfect condition, hardly used, reluctant sale due to Protocols purchase, £1500. ☐ Chris 0121 441 2737.

AKAI S1000, 6Mb, plus IB104 digital VO card, £1800. ☐ Jamie 0161 861 7761.

AKAI S1000 2Mb board, £75; Akai ME35T MIDI drum trigger, £175. ☐ 0161 205 1186.

AKAI S1000 sampler, ex. Beautiful People, 10Mb with SCSI board, good condition, £1490 ono, also Roland TR505, £75. ☐ Luke 01252 710244 (Farnham).

AKAI S2800 1 year old, looking for new home, excellent condition, with manuals, home use only, upgrading to S3000, £1000. ☐ Darren 01554 753636 (S. Wales).

AKAI S3000, 8Mb, digital I/O, SCSI board, 2nd filter board with direct to disk, £3000; DBX 463X, £100; DBX 163X. ☐ Dave 0151 709 8811.

CASIO FZ1 2Mb expansion, many disks, tutorial manual, £650 the lot; Roland D110, with rhythm and synth cards, £220; Roland U110, £225. ☐ Kevin 01695 726887 (Skelmersdale).

CASIO FZ1 16-bit digital sampler, 8 outputs, waveform editing, resonant filter, plus extra Atari software and 30 disk library, excellent condition with manual, £585. ☐ Mark 01772 792280 (Preston).

CASIO FZ10M rack-mount sampler, expanded to 2Mb, 16-bit with 8 outputs, graphic display and 70Mb sample library, perfect condition, £650. ☐ Ian 01734 482322.

CHEETAH SX16 16-bit stereo sampler, expanded to 1.5Mb, £400. ☐ Tom 0117 9232477 (Bristol).

EMAX II rack, 3Mb, £950; Yamaha TX802, £450. ☐ Robin 01483 416850 (eves).

EMAX II, with Sonic Images CD ROMs, all vgc, offers; Kawai 16-channel keyboard mixer, FX sends, vgc, boxed, £250. ☐ Paul 01227 361089 (Kent) work.

EMAX II sampler, £800 ono. Fostex 2800 multitracker and MIDI SyncMan, £550 ono. Mackie 1604 mixing desk, £650 ono. ☐ Paul 01245 260561 or 0374 688369 (mobile).

ENSONIQ ASR10 stereo keyboard sampler, SCSI interface, 16Mb memory upgrade, latest version 3 software, allows 2-track hard disk recording, 62 stereo effects, 16-track sequencer, 6 weeks old, cost £2500,

£2000. ☐ 01384 410853.

ENSONIQ EPS, expanded with sequencer, home use only, mint condition, boxed with manuals and sound library, great value at only £625 ono. ☐ Dave 01203 490020.

ENSONIQ EPS16+, 20 note poly, 24-bit effects, poly pressure master keyboard, built-in sequencer, Waveboy disks (turns your inboard into an outboard - no boating accident), vgc, £750. ☐ Iain 01292 442610.

ENSONIQ MIRAGE sampler, plus MASOS and disks, £250; TR606 w/sep outs, £110; Korg MS10 analogue, £190; Yamaha CS01 analogue, £100. ☐ Tom 01372 745494 (London) or 0956 381695.

ROLAND S50 keyboard sampler with monitor, flightcased, loads of disks, absolutely mint condition, £600 ono. ☐ Andy 0171 480 7127 daytime.

SEQUENCERS

AKAI ASQ10, fully serviced and updated, w/extra MPC60 software, studio use only, £475 or swap for D50 w/cards. ☐ Max or David 0131 668 3366 9am - 6pm.

AKAI ASQ10 sequencer, 99 tracks, 60,000 note capacity, 64 MIDI output channels, manuals, £700. ☐ Eddie 0181 643 6401.

AKAI/ROGER LINN MPC60, with huge sound library. The ultimate 'groove machine', £950 ono.; MOTU MIDI Time Piece MKII with Mac software, nearly new, £395 ono. ☐ 01734 589496.

ROLAND MC300 sequencer, excellent condition, boxed, £250 ono. ☐ Ian 01803 868043.

ROLAND MC300, all software, MRC, super MRC, MRP, MRM, manuals, great live, £339 ono. ☐ Scott 01253 404848.

ROLAND MSQ700 MIDI/DCB sequencer, 8 tracks, loads of flashing lights, bargain at £100. ☐ Dale 0161 225 5556.

ROLAND TB303, plus carry case and manual, excellent condition, £400. ☐ Tony 01705 756641.

TECHNICS SYMQ8 8-track MIDI sequencer, little used and in good condition, £175 ono. ☐ Jeremy 01225 832887.

YAMAHA QY10 walkstation, 8-track sequencer, 8 songs, 32-note polyphonic, PCM instrument and drum sounds, good MIDI spec, boxed with manuals and power supply, £100. ☐ 01705 654372.

YAMAHA QY300 GM tone generator, £600 as new, boxed; Sony DAV 24 hour digital archiving from one 8mm tape, built-in tuner, £275, interesting. ☐ 01973 439123 (N. East).

MISCELLANEOUS

AMIGA A500, 2Mb, plus hard drive, software, etc, £350; Cheetha SX16 sampler, 2Mb, large library, reads Akai disks, £450 ono; Korg Poly 800, £150. ☐ Nick 01904 639541 (York).

CARLSBRO COBRA 90W keyboard amplifier, includes cover, £210. ☐ 01977 791770 (Pontefract).

CARLSBRO COBRA 90W keyboard combo, three channels, 90W, excellent condition, £170 ono; Freestyle for Atari, £50, or exchange for Breakthru 2. ☐ 01485 540536 (Norfolk).

DIGITECH VHM 5 vocalist, immaculate condition, boxed, £400, no offers. ☐ Mark 01253 691089.

INFECTIOUS BROTHER ARTS is a small organisation dealing in new music. Send SAE for details tapes/services, c/o 486A Brighton Road, South Croydon, Surrey, CR2 6AP, UK.

JHS M58 M101 switcher unit, will program change up to five independent MIDI units at a time to do 80 program changes, boxed, manual, £80 ono. ☐ 0191 421 7926 (Tyneside).

KEYBOARD STAND, 3 tier, double braced steel, cost £93, £75 ono.;

18U rack, steel, castors, cost £90, £75 ono. Both as new, buyer collects. ☐ 0171 582 6830.

KORG Z3, plus ZD3 MIDI guitar module and pick-up, fitted with Gordon Smith GS1, £550 complete, may split; Yamaha WX11, plus BT7 wind controller, £190. All immaculate, boxed. ☐ 01296 437522 anytime.

KRAMER FOCUS 3000 Super Strat, one humbucker, two single coil pickups, Floyd, Rose, whammy, locking nut, black, £200. ☐ Jamie 0161 861 7761.

ROLAND R8, boxed, manual and adaptor, £220; Atari 1040STE, plus Creator V3.1, £250 ono. ☐ Craig 01203 630385 (Coventry).

SOUNDLAB RACKMOUNT guitar pre-amp, with built-in effects, 99 full programmable channels, £150; MTR Stereo graphic EQ, 10 bands per channel, £100. ☐ 01277 227888.

SWAP YAMAHA DX21, good condition, for Atari 1040. ☐ 01633 601250 (SWales).

YAMAHA EMT10 sound module, superb AWM sounds, especially piano and choir, manual and PSU included, hardly used, £100. ☐ Tim 01273 507674 (Brighton).

YAMAHA PTX 8 tone generator, 8 separate outputs, 5 pads, stands and cases, perfect for studio, full MIDI, £350. ☐ Wez 01491 826081.

PERSONNEL

BRAVE NEW WORLD?, original and exciting new electronic music needed for compilation CD on new label. Send demo and biography to: BNW, Socorro, Tokers Green, Reading, Berks, RG4 9EB.

ELECTRO ARTISTS, a la Blackdog, U2 IQ, Aphex, for collaboration start-up label, Essex area. Wanted: Kawai Q80, exchange for Yamaha QY10, PSS580, DD10, all boxed, manuals, excellent. Contact: DTA Cleare, 34 Millwrights, Tiptree, Essex, CO5 0LQ.

EXPERIENCED DRUMS & BASS Programmer/Engineer, with 16-track digital studio, previous jungle releases, well into new loops and people with good ideas. ☐ Dom 0181 749 1503.

EXPERIENCED PROGRAMMER available, all styles from the usual to the unusual, Handel to Hardcore, Folk to Funk, anything considered. Own equipment/transport. Will travel anywhere, anytime. ☐ Ian 01934 645765.

FANZINES/DJs/JOURNALISTS! The Cage is promoting industrial/gothic/experimental releases from around the globe. Contact us for Promos. Martin Bowes. ☐ 01203 672288, Fax: 01203 670100.

KEYBOARD PLAYER/PROGRAMMER, M/F, 35+, with own gear required for collaboration with guitarist with own 8-track studio in Birmingham. Must be keen. ☐ Bob 0121 445 6070.

UNEMPLOYED RECORDING ENGINEER required for studio partnership, Merseyside-based. Send relevant information to: 59 South Avenue, Prescot, Merseyside, L34 1LU.

SYNTHESIST WANTED, also pianist, singer/guitarist/synthesist and drummer to form an Ultravox-type of band (Midge Ure period). Males, 20-25, dedication essential. In or near Sheffield. ☐ 0114 2691016.

WANTED

AKAI S900 wanted with manual, preferably boxed, in good condition, cash waiting for reasonable offer. ☐ James in Flat B 01142 796084 (Sheffield).

AKAI S1100 8 Mb memory board; IB104; 44Mb Squest cart; sample CDs and CD ROMs; Cubase V3.1 and dongle; Ampex 456 half inch (unused) and acoustic tiles. Cash waiting. ☐ Andy 0113 243 0177 (Leeds).

AKAI X7000, S700 and S612, complete sound libraries or individual 2.8 quick disks, originals only EG

SL202, SL203, SL204, SL207, SL701, SL702, also sound editing software. ☐ Positive Productions 0181 694 2446.

ALESIS SR16 drum machine wanted, in good condition, with manuals, will pay, £150. Preferably Gloucester or Cardiff area. ☐ Joe 01531 650404 or 01222 227348.

ATARI 1040 with monitor. ☐ Dale 0161 225 5556 (NW area).

BOSS RRV10 digital reverb, good condition. ☐ Stan 01204 393708.

CASIO CZ101; Yamaha DX100; Roland PG800; Korg MS02 interface; Korg SQ10 Sequencer; Roland MPU101; original manuals for SH101; Oscar and Korg MS20. Also wanted Roland TR808, TB303 and alternative chips for SCI Drumtraks. ☐ Jai 01253 401737.

DIGIDESIGN PRO TOOLS II 8-channel digital recording system with system accelerator card and Sound Designer II. Cash waiting. ☐ 0181 883 4329 or 0860 482 822.

ELECTRONIC MUSIC artist seeks collaborators with creative mind and business know how to start label. Various projects, equipment and car essential, male/female. Write with tape biography to: SQUISH, 34 Millwrights, Tiptree, CO5 0LQ.

EMAX I wanted by enthusiast, cash waiting, any condition. ☐ 0181 245 6545.

EMU MORPHEUS, Waldorf Microwave, Roland JD990, with analogue board. Also any CD ROMs, hard drives with library, format irrelevant, brand new TS10 available for swaps. ☐ 01563 533965.

EMU PROTEUS II or Roland JV880. Must be immaculate, boxed with manuals, will collect, cash waiting, for best example. ☐ Paul 01296 437522 anytime.

FOSTEX DCM100 in good condition. ☐ Steve 0181 390 5166.

KAWAI K4R synth module, for direct swap with Roland D110 sound module. ☐ Gurj 01462 678685 (Letchworth).

KORG M1 workstation, good condition essential, also Atari STE computer, 1Mb with high-res monitor and software, if possible. ☐ 01472 280154 (Grimsby) after 5pm.

LOOKING TO BUY Marillion's Brief Encounter LP or CD. ☐ 305 935 3981 (Miami, USA)

MUSIC SOFTWARE wanted: Quad or SAW Tahiti or Turtle Beach, Tropez sound card, Superjam or Jammer. ☐ Adam 0151 2802905.

QUAD 405 II in good condition. ☐ 01905 610794.

ROLAND A30 A50 or A80 keyboard wanted, or part exchange for my D50, Casio A21 remote, JHMS8, SKB IOU rack case, cash either way. ☐ Steve 0191 4217926 (Tyneside).

ROLAND DIMENSION D required in good condition, £200 offered. Also Atari 1040STE with hi-res monitor required, in vgc, £1150 offered. ☐ Eddie 0171 263 3919.

ROLAND JD800 sound cards: 02 Drums and 06 Piano. ☐ 0585 331386 (Mobile).

ROLAND MTR100 cassette recorder, OP8M interface, CT300 cassettes and MC48 or MC8. ☐ 01403 272098.

ROLAND JV1080 and Novation Bass Station. ☐ Adam 0151 280 2905.

ROLAND TR909 wanted in good working order, cash waiting, will collect. ☐ Ian 01703 268817 (Southampton).

SONY K677ES cassette deck, new or secondhand, boxed, must be in good order. ☐ John 01452 830018 (Gloucester) anytime.

TB303 required urgently, top dollar paid! Will collect, no MIDI retrofits please. ☐ Stephen 01623 554672 or 01246 410799 (eves).

WANTED ATARI SM124 OR SM125 hi-res monitor and Roland SH101, cash waiting. Contact: Mr Eccleston, 106 Brigstock Road, Thornton Heath, Surrey, CR7 7JB.

WANTED ROLAND JUNO 106; Roland TB303; Roland MC202 and Roland SH101. Cash waiting. ☐ 0131 665 1840 (eves).

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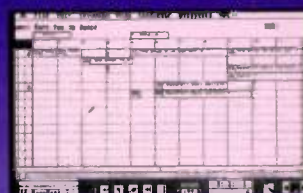
QuickScore Professional is a Windows 3.1 application incorporating advanced features with ease of use and speed. It contains all of the most requested sequencer features, as well as superior notation transcription and printing. This is a quality program, at an exceptional price!

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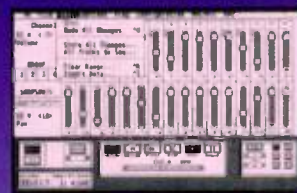
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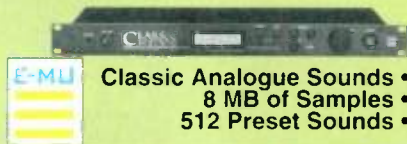
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E64



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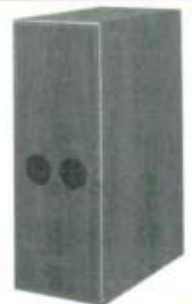
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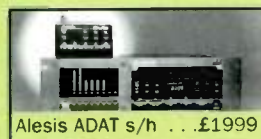
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readers' tape exchange

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by Universal Sound. Serious dub roots to inspire

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UNDER EVERY SKY

by Morgan Bryan. Over 1 hour of filmic, atmospheric, ambient instrumentals on CD, for just £9.99.

Cheques to: Morgan Bryan, Dox Music, 28 Joseph's Road, Guildford, Surrey GU1 1DW.

MAX TRAX EP by Ardcore Choonz. Fast hardcore ragga techno and commercial dance tunes with remixes. 4 rockin tracks, on vinyl, 20 mins. Cheques only

for £2 to: Lee Ascroft, 48 Gilnow Road, Bolton, Lancs BL1 4LJ.

IT'S ONLY MONEY by The Fosters. Debut cassette single 'It's Only Money' c/w 'It's A Heartache' CrO2 tape, available by mail order only. £2.50 (+ £1 p&p) payable to: Quadriga Music Ltd, 79 Wharfedale Gardens, Thornton Heath, Surrey, CR7 6LE.

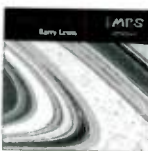


WAITING EP by All Living Fear. Exeter-based gothic stylists now release their first studio-recorded 4-track EP. 20 mins, cassette £2.95 to: Fetish Records, PO Box 29, Exmouth, EX8 2YU.

RUSTLES AND WAVES by Noctern. Innovative ambient music, 2 tracks, 37 mins, CrO2 tape — 5. Cheques to: Andrew Gooding, 95 Hambro Road, London SW16 6JP.

HANGOVER by Hangover. Nice boy punk rock, 3 songs of home recording in the vein of Green Day and Superchunk. 6ish mins on cassette for a breathtaking

£1.50 (inc p&p). Cheques to: L Bodnarchuk, Flat 3, 102 Fitzroy Avenue, Belfast BT7 1GX.



CURVES AND JARS by Barry Lewis. 'Fractal Dice Music'. A series of fractal studies, containing melodies generated randomly by dice algorithm.

Computer music with a friendly face. 20-track CD, £11.75 (inc p&p) from MPS Music and Video, Rosegarth, Hetton Road, Houghton-le-Spring, Tyne & Wear DH5 8JN.

MEMORY LOSS EP by Prole Synthesis. Hard underground dance music. 5 heavy-duty acid and industrial-strength techno tracks. 25 mins, on 12-inch vinyl, £3.50 (inc p&p) to: R Anderson, 7 Nunnington Terrace, Armley, Leeds, LS12 2PH.

WEB OF DECEIT by Jimmi Cranch. 8 songs, all live takes, recorded live to DAT. Blues/rock and roll ballads, 30 mins. Great for driving — get one in

your car today! Send POs for £2 (or blank tape of your choice plus postage return) to: Jimmi Cranch, 67 Hunis Drive, Writtle, Essex, CM1 3HQ.

THIRD EYE by Third Eye. Positive, potential trance, ambient and experimental. The future now. 37 mins, 6 tracks, CrO2 tape, £3.50 (inc p&p). Cheques to: D Appledore, Rotor Studio, 7 Pendennis Close, West Byfleet, Surrey KT14 6RX.



CONTRASTS by Carey Nutman. A mix of contrasting electronic studies, some serious, some not, composed between 1989 and 1993. 11-track CD, £11.75 (inc p&p) from MPS Music and Video, Rosegarth, Hetton Road, Houghton-le-Spring, Tyne & Wear DH5 8JN.

IN THE LAP OF THE GODS by Merge. Progressive techno with heavy-riffing synths in the style of Tangerine Dream, Schulze, Kraftwerk, The Orb, Pink Floyd. ▶

readers' tape exchange phone line service

Now you can listen to selected entries to the Tape Exchange before you consider purchasing them, with the aid of our new phone line service. It's quick and easy to use — just follow these instructions:

- Decide which tape you'd like to hear play through, and note which number (from 1-10) has been allocated to it.
- Dial the SOS Tape Exchange phone line number: **0891 424025**.
- You'll be asked to press the button marked with a star on your telephone. This will tell the phone line whether you have a touch-tone telephone or not.
- If you have a touch-tone phone, you will be able to select the tape you wish to hear simply by pressing the number on your telephone which is allocated to that tape on the Tape Exchange page. You may interrupt the tape at any stage by pressing any other key on your phone; you will then be returned to the main menu to make another selection if you so wish.
- If you do not have a touch-tone phone, you will hear the ten entries listed in sequence. Remain absolutely silent until the one you wish to hear is mentioned, then simply say "Yes". The track will then play through, after which you will be returned to the main menu to make a further selection if you wish.

Although all entries to the Tape Exchange must now be made on the new redesigned entry form, entries can still appear in the magazine without appearing on the phone lines — there's a box to tick on the form if that's what you'd prefer.

Callers charged at 39p per minute (incl. VAT), 49p per minute standing rate. Viewing Communications Ltd CR2 5LR.



1 CONTINUUM by Active Loop Zone. ALZ have gigged with Zion Train, Children Of The Bong, Timeshard and µ-Ziq. This is an excellent 90-minute 12-track CrO2 cassette of ambient

dub trance. Only £4.75 from: Rick Lomas, 48 Old Mill Gardens, London Road, Berkhamstead, Herts, HP4 2NZ. • Well-produced trance with superb analogue-style effects (mostly produced using the filters of the group's Akai 2800). The stated dub influence is not actually that evident — this is pretty much undiluted techno, but very accomplished.



2 REALMS OF THE CLOUD KING by The Amulet. 57 mins of fantasy rock, 11 diverse tracks, each one an emotional trip from acoustic to full-blown, with atmospheric keyboards, soaring guitars, and powerful

vocals. CrO2 tape, £5 from: Two Rivers music, May Cottage, Church Lane, Hampton Bishop, Hereford HR1 4JY.



3 MORNING FLIGHT by Brian Marshall. Nine very melodic tracks, featuring voices, guitar, piano and synths. Laidback grooves, subtle and memorable themes. Evocative,

atmospheric, relaxing, uplifting. A must for any collection. 45 mins, CrO2 tape, £5 to: Brian Marshall, Sutton Court, Tenbury Wells, Worcs WR15 8RJ.



4 THE VIEW FROM MY WINDOW by Emily's Chair. 4 songs, 26 minutes, CrO2 tape of ambient music tinged with moments of

serenity and intensity. Cheques for £3.50 payable to: Jeff Knightly, 14 North Road, Bosham, Sussex PO18 8NL. • Laid-back rock with washes of keyboards. The tape's been well produced, and the colour cover is very attractive, but the tape's slightly hissy in parts. Worth a listen though.



5 MAGIKO by Aquabats. Natural ambiances with improvised percussion, voices and flute makes earth music. 73-

minute CD £10, CrO2 cassette £6. 14 excursions. SOS Demo Doctor's top tape, March '95. Like nothing you've ever heard before. Cheques to: Aquabats, 6 Peel Place, Oxford OX1 4UT. • Highly unconventional improvised recordings based around unorthodox ethnic percussion, ambient 'found' recordings, flute, and vocal chants. Intriguing and diverting, and superbly recorded.



6 THE THORN by Kate Campbell. 4-track CD, 20 mins. Heart- and soul-baring songs, extensive radio play and

considerable following. £4 payable to: Kate Campbell, PO Box 407, Cambridge CB5 8BY. • Folk-tinged MOR rock centred on Kate Campbell's powerful, expressive voice. Interesting blend of instrumental,

including acoustic guitar, programmed drums, sax and mandolin.

7 TRANCE FOR A PROBLEMATIC WORLD by DSP. Trippy tribal trance dance. C60 CrO2. Dolby 'B' £3.50 each (inc p&p) from: C Medd, Jah Cottage, 2 Kirby's Lane, Canterbury, Kent CT2 8AG.

8 RAW ELEMENT by Mankhwala. 8 Ambient global techno grooves. Six choice tracks on a CrO2 C40. The real stuff — highly original, unusual rhythms. £4 (inc p&p) from: A Scott, c/o 13C Goldsmith Rd, Hove, East Sussex BN3 1QA.

• Evocative electronica blending North African samples (percussion and chants) with synths.



9 SHABDA by Marcus Corbett. Highly original acoustic guitar-based hybrid folk with atmospheric strong tunes.

Indian-influenced vocal, genuine accompaniment, piano, flute, and percussion. 10 tracks, 53 minutes. CD £9.99. TDK SA cassette £7.50 from: Marco Music, 25 Dorchester Court, London SE24 9QX.

• Beautifully packaged and produced CD featuring the unconventional folk style of Marcus Corbett. Vocals delivered in Indian style but to a backdrop of off-the-wall acoustic guitar.

10 EAGLE EYE by Earthflow. New age songs of nature and dreams. Haunting, evocative soundscape of eagle, sea, river, wolf, spirit, land, beyond. Soothing, powerful. 7 tracks, 55 mins. CrO2 tape, £5.50. Cheques payable to: S Davies, 4 Oakwood Park, Nutley, East Sussex, TN22 3NB.

Professionals are made not born



Ashley Sheinwald, Alchemea student. 2 hours sleep between two recording sessions and digital editing session.
Total duration: 49 hours (not including the two hours sleep).

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2-18, Britannia Row, The Angel, London N1 8QH. Tel: 0171 359 4035. Fax: 0171 359 4027.

TAPE

Over 100 copies of demo tape sold through this column. Free T-shirt to first 10 orders received. 50 minute-CD, £10 to: Ian Pearson ('Merge'), 78 Elgar Road, Reading, Berks, RG2 0BL.



COMING OUT by Red Ash and the Love Commandos. 10-track, 49-minute CD. "Not a different kind of cider — it is Red and there's

a fair bit of (indie) rock in it. £6 (inc p&p), 14-day money back guarantee, Cheques to: M. Rigler, 35 Beresford Road, Poole BH12 2JR.

THE STORM WITHIN by Secret Archives of the Vatican. Dark ambient based on 12th century Japanese court music. Isolationist electronics. Beautiful, strange world music. C60, 12 tracks, CrO2 tape, colour cover, £5, Cheques to: Vince Millett, 3 Royal Circus, London SE27 0LT.

EYES ROLLED BACK by Harmonic 288. 45 mins of ambient dubscapes and organic textures. 7 tracks, CrO2 tape, £3, available from: Chris Harrad, 85 Canbury Park Road, Kingston, Surrey KT2 6LQ.



HALF LIFE by Phil

Cory. 8 guitar/guitar synth rock songs influenced by Lou Reed, Steve Reich, Pink Floyd, 40 mins playing time, £3. Cheques payable to: P Cory, c/o Helen, 20 Freemans Close, Hungerford, Berks RG17 0QR.

WARPED



WARPED CD by Various. Over 77 mins of various indie, grunge, pop, ambient and techno artists. 20 tracks for £5. Beautiful colour sleeve. Cheques/POs to: Purge Records, 38 Chancery Lane, Nuneaton, Warks CV10 0PD.

GUILT EP by Viral Technology. Vicious techno metal. NIN, Krupps, Ministry, KMFDM with attitude. ADAT-recorded, DAT-mastered, pro-duplicated, CrO2 tape, 3 tracks, 15 mins, £2.50 from: P Davies, 13 Burnham Way, London W13 9YE. All previous titles now sold out — thanks!

THE DREAM by White. New age synth music on C60 Eight great tunes and a new cover, £7. Cheques to: DJ White, 53 Listowel Road, Kings Heath B14 6HH.



NIGHT OF PASSION by Ricky Fentone and the Flat Top Cats. Country rock blues mix. 32 mins, 10 tracks, Fe tape, £3. Cheques to: Harvey, 9 Kingsbury Place, Cwmaman, Aberdare, Mid-Glamorgan CF44 6LH.

FRINGE FIDDLER by John and Nina Bennet. Violin, vocals, bodhran and keyboard. Popular classics and folk. Family fun music making, 48 mins playing time 19 tracks, CrO2 tape, £4.80 (inc p&p) Cheques to:

John Bennet, 6 James Road, Wellingborough, Northants NN8 2LR.

7 TRACKS TO HARD DISK

MELTDOWN by Remote Control. Second demo tape with dance, techno and experimental tracks. 30 mins, CrO2 tape with Dolby. Send 10 Dutch guilders to: Vincent Cuijpers, Stiemensweg 193 PO code 6591 MD, Gennep, The Netherlands.

SONG FROM THE BEST INTENTION by Various. First compilation from Infectious Brother Arts, includes work by Aphasia, Secret Archives, and more. CrO2 tape, 60 mins, 15 tracks. £3 to: AA Elsdon, c/o 486A Brighton Road, South Croydon, Surrey CR2 6AP.



DREW by Drew. Commercial pop 48-track pro studio recording from singer/songwriter, 55 mins playing time. 12 tracks, CrO2 tape, professionally duplicated. £5. Cheques to: Quidoza Music, Flat 3, 105 Onslow Square, London SW7 3LU.

OVER THE LIMIT by Frank Torpey. Original guitarist with 'The Sweet'. 10 tracks on CD featuring Terry Sullivan on vocals. No frills rock/blues. guitar-based £8 (inc p&p). Cheques payable to: FE Torpey, 8 Hawthorn Drive, North Harrow, Middx HA2 7NX.

FRACTAL LAND by The End Quartet. New CrO2 tape, colour cover, 30 mins, string quartets with a difference. Cheques for £3 to: AA Elsdon, c/o 486A Brighton Road, South Croydon, Surrey CR2 6AP.

MAGIC MALVERN by Paul White and Mike Simmons (The Lentils Of Delirium).

Guitar and synth instrumentals (thrash metal-influenced new age). 58 mins, 12 tracks CrO2 cassette, professionally duplicated with printed sleeve. All proceeds in benefit of local community care (via Malvern Arts Workshop). £5.75 (inc p&p). Cheques to: Jan McGuffie, Malvern Arts Workshop, Worcester Road, Malvern, Worcs WR14 1NY. Production details included.

LAF by LAF. Original and innovative pop music played on real instruments. Five go mad in the spare bedroom. 51 minutes playing time, CrO2 tape, £4 from: Phil Matthews, 8 Stanstead Road, Mickleover, Derby, DE3 5PP.



NATURAL INSTINCT by Elegant Simplicity. New album of prog rock in the vein of Camel Oldfield Ozrics Porcupine Tree. Other albums available. Fe tape, 56 mins, colour cover, digitally mastered. £2.50 to: Steve McCabe, 27

John's Avenue, Lofthouse, Wakefield, WF3 3LX.

SET ME FREE by Solid State. 12-inch 4-track vinyl EP. Happy house jungle rhythm by John Bunyan and Craig Easterbrooks. 22 mins, glossy cover, £4.99 payable to: Bayslip 251 Austin Crescent, Plymouth PL6 5QT.



FACE TO FACE by Coup D'Etat. Funky latin jazz, strong grooves, burning solos, 43 mins playing time, 7 tracks, CrO2 tape, features silicon mallet, £5. Cheques to: Louis Borentius, 90 Bridge Lane, London NW11 0EL.

DECLARATION

I, the below-named, hereby give my permission for Sound On Sound Ltd to use a track/tracks from my submitted tape/CD

for transmission on their Phone Line service operated by Livewire Communications Ltd, over a period of up to six months. I hereby waive any royalties that might be due to me for the use of my music on this service during the above-stated period of time. I hereby also confirm and state that I am the owner of both the song copyright and the sound recording copyright of the above-named piece of music, and that the Mechanical Copyright Protection Society do not administer either the song copyright or the sound recording copyright of the above-named piece of music on my or any third-party publisher's behalf.

SIGNED..... DATE.....

If you require your material to be included on the *Tape Exchange* page but NOT on the Phone Line service, please tick this box:

SOS READERS' TAPE EXCHANGE FORM

Name.....

Address.....

Telephone.....

The SOS Readers' Tape Exchange provides an enormously successful service for readers, allowing them to advertise tapes, CDs, or records of their own music in their favourite hi-tech recording magazine. Every month we devote a section of the Reader Classified pages to the Tape Exchange. Here, you can advertise your own material to other readers, free of charge. Not only can you discover what others are up to, the service opens up a whole world of new music that you certainly can't find in local record shops. Furthermore, the service provides a source of new material for the attention of producers and record companies. With the aid of the Phone Line service, you will now also be able to hear a selection of the tapes featured on the pages before you commit yourself to a purchase.

Ads are usually run for three months before re-application is necessary, but this may change at the discretion of the magazine publishers. SOS makes no guarantee as to the quality of the music sold through it. Material will normally also be run on the Phone Lines for a three-month period, but this is subject to demand for the service, and is at the discretion of the Publishers. SOS reserve the right not to run tapes considered unsuitable for inclusion in the Tape Exchange.

It would be appreciated if anyone wishing to use the Tape Exchange page and Phone Line service could send a copy of their material to the SOS offices. Space permitting, we run mini-reviews of tapes that we find of particular interest. If you would like us to advertise your material, please bear in mind that:

1. Tapes should be recorded to the best possible standard and duplicated on good-quality cassettes.
2. Although pricing is up to the individual, your work is more likely to sell if realistically priced.
3. Cost-effective duplication can be undertaken by many companies, the more astute of which advertise in SOS's Classified pages!
4. Unless your tapes contain all-original material, in order to sell your tapes legally to others, you must obtain copyright clearance for any cover versions recorded. This costs a lot less than you might think, and can be arranged through the Mechanical Copyright Protection Society (0181 769 4400). SOS cannot be held responsible for any violation of Copyright law. Note also that MCPS-protected material (for example, cover versions) cannot be aired on the SOS phone lines. The Phone Line service is strictly for the use of amateur musicians, and material will only be placed on the phone lines if the musicians who have sent it are the owners of both the song copyright and the sound recording copyright.
5. If possible, include a sheet with your tape giving recording and equipment details, as other readers are sure to be interested.
6. If you're concerned about the security of your studio (because of publishing your address), use a Post Office box number, or sell via a relative or friend's address.
7. Use the form provided on the Tape Exchange pages or a photocopy. See the sample entry for the format to follow. Please keep your entries to a maximum of 40 words, and include the following information: Tape title and artist name; style/type of music; playing time; number of tracks; tape type, e.g. Chrome (Type II) or Fe; price; address. Send to SOS Tape Exchange at the Free Classifieds address: TAPE EXCHANGE ADS WILL ONLY BE ACCEPTED IF THE TAPE EXCHANGE FORM IS COMPLETED IN FULL.

SAMPLE ENTRY: *The Lentils Of Delirium* by Paul White and Mike Simmons. Hybrid ambient synthesizer and thrash metal guitar music. 56 mins playing time. 10 tracks. CrO2 tape. £4.95. Cheques to: Dept PW1, PO Box 30, St Ives, Cambs PE17 4XQ.

If you wish to have your material included both in the *Tape Exchange* and on the Phone Lines, please read and fill in the declaration carefully, and, if you are in agreement, sign and date in the space provided.



More than 10 years after its introduction, Roland's TB303 Bassline continues to surprise with its status as one of the most desirable antique synths on the planet. With no end to its vogue in sight, and a seller's market on the rare occasion that they turn up, it was perhaps inevitable that companies such as Staffordshire-based Control Synthesis should develop a TB303 clone. The result is the Deep Bass Nine, which, at £449, offers an affordable road to a unique sound. Now read on, to discover how readers of SOS can have the chance to win a DB9 in return for answering a few questions.

The DB9 mimics the Bassline's squelchiness and bleepiness in all its single-oscillator glory, all housed in a MIDI-controlled rack package. Knobs abound; the first selects from two oscillator waveforms (or an audio input), and the rest are labelled pretty much as a traditional TB303. That means controls for tuning, cutoff frequency, resonance, envelope mod, decay, accent and volume. Control Synthesis have even thrown in a couple of surprises, including both Gate and CV input and output sockets at the rear. It all adds up to authentic TB303 emulation, practically *de rigeur* for today's dance music.

So what are you waiting for? Answer the questions, break the tie, cut out the coupon and send it in. Your entry should reach us no later than **30th June 1995**.

Prize kindly donated by Control Synthesis (01270 883779)

A Control Synthesis DEEP BASS NINE MIDI Analogue Monosynth

the small print

1. Only one entry per person is permitted.
2. Employees of SOS Publications Ltd, Control Synthesis, and their immediate families, are ineligible for entry.
3. No cash alternative is available in lieu of the stated prize.
4. The competition organisers reserve the right to change the specification of the prizes 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. Prize-winners must be prepared to make themselves available in the event that the competition organisers wish to make a personal presentation.

QUESTIONS

- | | |
|--|---|
| <p>1. Which synthesizer does the Deep Bass Nine emulate?</p> <p>a. SH101 <input type="checkbox"/></p> <p>b. MC202 <input type="checkbox"/></p> <p>c. TB303 <input type="checkbox"/></p> <p>d. Stylophone <input type="checkbox"/></p> | <p>3. How many oscillators does the Deep Bass Nine have?</p> <p>a. One <input type="checkbox"/></p> <p>b. Two <input type="checkbox"/></p> <p>c. Three <input type="checkbox"/></p> <p>d. None <input type="checkbox"/></p> |
| <p>2. Which country does Control Synthesis hail from?</p> <p>a. Germany <input type="checkbox"/></p> <p>b. England <input type="checkbox"/></p> <p>c. Japan <input type="checkbox"/></p> <p>d. Shamballah <input type="checkbox"/></p> | <p>4. How many basic waveforms does the DB9 generate?</p> <p>a. One <input type="checkbox"/></p> <p>b. Two <input type="checkbox"/></p> <p>c. Three <input type="checkbox"/></p> <p>d. 128 <input type="checkbox"/></p> |

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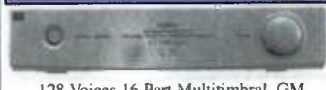
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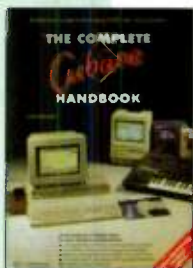
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Recommended Reading

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LOUDSPEAKERS FOR MUSICIANS

by V Coppe

Valuable background is once again put into practice with hands-on projects. A collection of 10 cabinet designs round off a useful and informative book.

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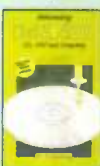
AUDIO

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
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INTRODUCING DIGITAL AUDIO 2ND EDITION



by Ian R Sinclair

If you want a book that explains digital audio – CD, DAT and sampling – non-mathematically, then this is the book for you. The updated 2nd edition adds information on oversampling and bit-stream techniques, as well as a glossary of technical terms.

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THE UNOFFICIAL JEAN-MICHEL JARRE BIOGRAPHY

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This second edition of John Watkinson's classic text has been completely rewritten to reflect recent advances in this field, now covering new digital recording formats such as DCC and MiniDisc and including new treatments of subjects such as oversampling, data reduction, noise shaping, dither and Digital Audio Broadcasting. An introductory theory, applications and reference book all in one.

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THE JEAN MICHEL JARRE BOOK

by Destination Jarre

From the fanclub that brought you The Unofficial Jean-Michel Jarre Biography, comes Exhibit: Jean-Michel Jarre. This glossy A4 magazine is actually the Destination Jarre magazine issue 10, but has been compiled as a themed 56-page collection of photos (over 80) and up to date information. [M]'s recent activities are covered, along with comprehensive video and memorabilia listings. A must for any fan.

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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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by Tristram Cary

This 512 page book is more of a small encyclopedia than a dictionary, and its 800 entries, 600 of which go into great depth, cover all aspects of electronic and electro-acoustic music. From simple definitions (mouse and moving coil, for example) to extended articles - 7 pages on organs, 10 pages on oscillators and 27 pages on computer music composition techniques, Cary's book is a goldmine of serious information. Definitely in the textbook class, the book is still accessible to the more general electronic/MIDI musician, and a comprehensive bibliography offers valuable clues for further research. Hardback.

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by Gabriel Jacobs & Panicos Georgiades

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TECH TERMS - A Practical Dictionary for Audio and Music Production



by George Petersen and Steve Oppenheimer

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by Godric Wilkie

The latest offering from the people who brought you 'Music In Sequence'. 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 will soon be worth its weight in gold.

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THE DAT TECHNICAL SERVICE HANDBOOK



by Richard Maddox

A reference providing a wealth of information on DAT service and repair for engineers and technicians, including: step by step instructions for regular maintenance and repair; detailed techniques for maintaining and adjusting tape transport and head alignment; complete how-to instructions for replacing the record/play head drum; specific service notes, by make and model.

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TAPE DELAY

by Charles Nival

A look at the experimental, electronic, industrial underground, as of 1987, featuring interviews with: Marc Almond, Dave Ball, Cabaret Voltaire, Nick Cave, Chris & Cosey, Coil, Einstürzende Neubauten, The Fall, Diamanda Galas, Genesis P Orridge, Michale Gira, The Hafler Trio, Matt Johnson, Laibach, Lydia Lunch, New Order, Psychic TV, Bored Rice, Henry Rollins, Clint Ruin, Silverstar Amoeba, Sonic Youth, Steve, Mark Stewart, Siavus, Test Dept, David Tibet and Touch. If anything makes the 'underground' accessible, it's this book. As NME said, "A virtual Who's Who of people who've done the most in the past decade to drag music out of commercial confinement." 256 pages, 60+ photos.

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by V Coppe

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POP WENT THE PIRATES



by Keith Skues

Published to coincide with the 30th anniversary of Radio Caroline, this book is as comprehensive a history of pirate radio in the UK as you could want. Much of the book was actually written in the 60s, when the author was himself a Caroline DJ himself, and has only recently been completed. The history of pirate radio is covered from the 30s up to the 90s, and potted biographies are given of DJs concerned with off-shore radio. The book runs to a whopping 368 pages and includes 230 black and white photos.

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KRAFTWERK - MAN, MACHINE AND MUSIC



by Pascal Bussy

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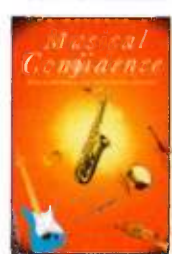
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By Andrew Evans

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by Ken C. Pohlmann, Prominent American audio engineer and writer on digital audio

'Here is an interesting, timely, well-written book in which everything you ever wanted to know about the compact disc and more is explained.' Computer Music Journal.

'compelling and fascinating reading, written by an expert with the knack of making complex explanations understandable.' Image Technology.

This is a new edition, in paperback, of Ken Pohlmann's classic survey of the compact disc world, *The Compact Disc: A Handbook of Theory and Use*, and celebrates the tenth birthday of possibly the most successful consumer electronics product ever introduced. The text of this new edition has been thoroughly overhauled to update the user on the latest technological advances and gives insights into new formats and applications. It remains a comprehensive and authoritative handbook by an acknowledged expert on digital audio and related topics.

Computer Music and Digital Audio Series
364 Pages, numerous line figures, tables 1992 0-19-816327-F Paper covers.

CODE B217 £19.95
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

THE MASTER TAPE BOOK



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.

CODE B194 £15.00
Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

HOME RECORDING

Looks at whole signal chain of recording: signal levels, mixers, effects, portastudios, open reel tape machines, noise reduction, microphone placement, and more! 120 pages plus flexidisc record. Good overall grounding.

CODE B114 £12.95
Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

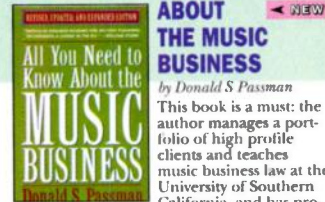
HOW TO SET UP A HOME RECORDING STUDIO

This 112-page book expands upon the popular SOS series with additional text, pictures and a handy reference section. Excellent guide to help you sort out the design, layout and wiring of your equipment.

CODE B136 £6.95
Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

Music Business

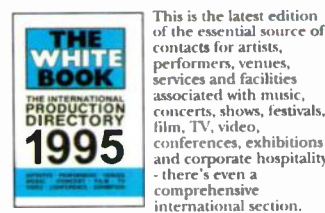
ALL YOU NEED TO KNOW ABOUT THE MUSIC BUSINESS NEW



duced 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.

CODE B302 £19.99
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

THE WHITE BOOK INTERNATIONAL PRODUCTION DIRECTORY 1995 NEW



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.

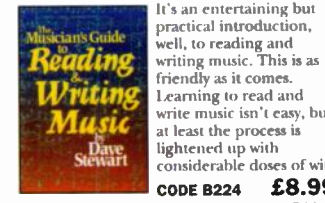
CODE B259 £43.00
Postage: UK £4.75, Europe £8.50, R.O.W. £16.95

HOW TO PITCH AND PROMOTE YOUR SONGS

The title is self-explanatory: if you've got the songs, and you want someone to hear, publish and/or record them, then this book could save you a lot of grief. There's a lot of sensible information about the music biz in general, plus a few (American-biased) words about setting up as your own publishing business.

CODE B257 £8.95
Postage: UK £1.50, Europe £4.95, R.O.W. £7.50

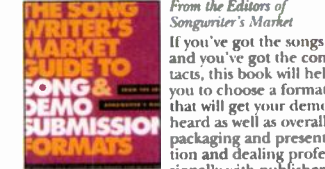
THE MUSICIAN'S GUIDE TO READING & WRITING MUSIC



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

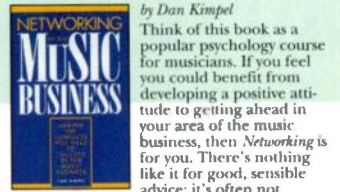
THE SONGWRITER'S MARKET GUIDE TO SONG & DEMO SUBMISSION FORMATS



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

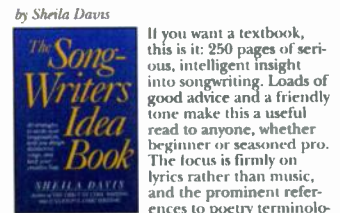
NETWORKING IN THE MUSIC BUSINESS



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

SONGWRITERS IDEA BOOK



lyrics rather than music, and the prominent references to poetry terminology shouldn't really be a surprise. Use Davis' 40 strategies and you could soon be "designing distinctive songs". Hardback.

CODE B250 £9.95
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

SHOWCASE/KEMPS INTERNATIONAL MUSIC BOOK 1995 NEW



Nearly 500 pages crammed with all the latest information, including new phone and fax codes, record companies, recording studios, music publishers, equipment manufacturers, artist management, producers, PA and lighting hire, and more. The music industry equivalent of 'Yellow Pages'. Plus a new USA section.

CODE B192 £30.00
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

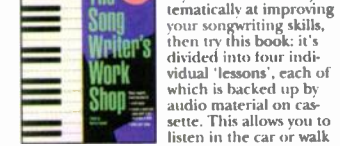
SINGING FOR A LIVING



covered in this straightforward book.

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Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

SONGWRITER'S WORKSHOP



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 £15.59
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

PLEASE REMEMBER: POSTAGE IS PAYABLE ON ALL MERCHANDISE.

SOS Book Shop

Music Business continued...

MUSIC BUSINESS



AGREEMENTS
by Richard Bagehot
Written by a practising music business solicitor, "Music Business Agreements" can be seen 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
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

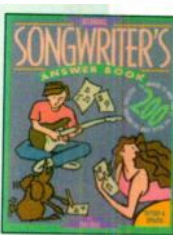
88 SONGWRITING WRONGS & HOW TO RIGHT THEM

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.

CODE B254 £11.95
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

BEGINNING SONGWRITER'S



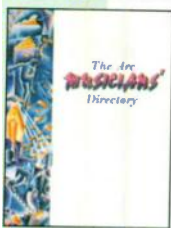
ANSWER BOOK

by Paul Zollo
If you're just starting out as a songwriter to 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.

CODE B253 £10.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

THE ARC MUSICIANS' DIRECTORY

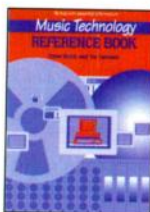


The new Musicians' Directory from Arc Publishing aims to provide all things to all musicians: whatever your style of music, the comprehensive listings offer you the contacts you need, whether it's labels, studios, venues, music shops or management - and that just scratches the surface of the dozens of 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 B210 £14.99
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

MIDI

MUSIC TECHNOLOGY REFERENCE BOOK



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.

CODE B305 £12.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

MIDI FOR THE PROFESSIONAL

by Paul D Lehman and Tim Tully

Co-written by SOS contributor Paul D Lehman, 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.

CODE B227 £11.95
Postage: UK £3.95, Europe £7.50, R.O.W. £14.50

MIDI SYSTEMS AND CONTROL

By Francis Rumsey.



This revised edition has been expanded in an amber 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.

CODE B007AM £19.95
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

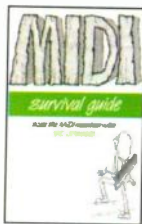
A BEGINNERS GUIDE TO MIDI

by RA Penfold

The title says it all: all aspects of MIDI are explained, and many common beginner's problems are discussed.

CODE B287 £4.95
Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

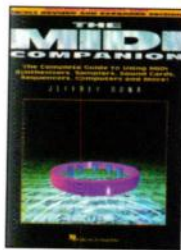
MIDI SURVIVAL GUIDE



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.

CODE B196 £6.95
Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

THE MIDI COMPANION



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.
CODE B234 £9.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

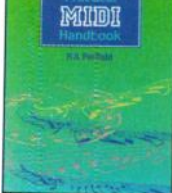
MIDI: A COMPREHENSIVE INTRODUCTION

by Joseph Rohstein, Product Review Editor, Computer Music Journal
Series Editor: John Straum

MIDI - Musical Instrument Digital Interface - is the data communications system which enables music equipment, computers and software from many different manufacturers to exchange information. Since its introduction in 1983 the impact of MIDI on the design and operation of synthesizers has been dramatic, yet to date, information about it has been scattered, but this book fills that gap, providing a practical guide for readers seeking a thorough discussion of the basic principles of MIDI.

Computer Music and Digital Audio Series
238 Pages, numerous figures 1992
0-19-816293-6 Hardback.
CODE B215 £25.00
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

PRACTICAL MIDI HANDBOOK (3rd Edition)



by R A Penfold
This book is completely updated, and features a section on General MIDI. It provides a "straightforward, non-mathematical introduction to MIDI", and features a full glossary of MIDI terms.

CODE B273 £8.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

Playing Techniques & Music

COMPLETE KEYBOARD CHORDS



by Warren Nunes & Steve Doherty

A handy guide to all the keyboard chords you wish you could play - from simple to complex! Includes exercises designed to help their use. Explains chord symbols and music notation.

CODE B161 £7.95
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

SOLID GROOVES

By Dieter Peterini & Herb Quick
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 rhythmic music in popular styles will find this book invaluable.

CODE B172 £11.50
Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

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.

CODE B193 £12.95
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

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.

CODE B155 £12.95
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

1000 KEYBOARD TIPS



by J Dreksler & Q Harle

The high-tech musician's guide to the basics of music, scales, chords and harmonics. 256 pages covering chord relationships, improvisation, suggested drum machine patterns, plus comprehensive chord table. Too good to miss!

CODE B113 £13.95
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

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.

CODE B235 £6.95
Postage: UK £1.50, Europe £4.95, R.O.W. £7.50

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.

CODE B110 £16.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

RHYTHMICAL GROOVES & PATTERNS

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.

CODE B115 £11.50
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

260 DRUM MACHINE PATTERNS

By Rene-Pierre Bardet
Even more drum pattern styles (paso doble, charleston, etc)

CODE B019 £7.95
Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

THE COMPLETE GUIDE TO ALESIS HR-16 & MMT-8

by Craig Anderton
The 182 pages of this book more than live up to the term 'complete'. Covers the operation and application of both these units far more straightforwardly, and in much greater depth than any manual ever could. So, if you've just bought a used

MMT-8 or HR16 without a manual, don't worry because we've just reduced the price of this great book yet again! Even if you have a manual and think you know all there is to know about your machine, you'll be surprised what tips and tricks you can pick up. If you own a different make of drum machine or sequencer altogether, you'll still learn a lot about the practicalities of MIDI-to-Tape Sync, integrating drum machines and sequencers into your MIDI system, and how to inject feel into sequenced music. This is an essential addition to any MIDI enthusiasts bookshelf - buy it today before stocks are completely exhausted.

CODE: B10852 RRP: £14.95
WAS: £9.95 OFFER PRICE: £5.95
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

DRUM MACHINE PATTERNS

By Rene-Pierre Bardet
200 drum patterns and breaks presented in one-measure grid notation. Funk, R'n'B, ballad, pop, reggae, afro-cuban and many other styles.

CODE B018 £7.95
Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

Synthesizers

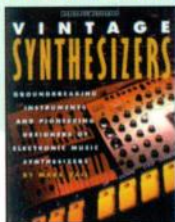
THE MUSEUM OF SYNTHESIZER TECHNOLOGY

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. The Museum of Synthesizer Technology book is yours for £24.95, plus postage.

CODE B291 £16.95
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

VINTAGE SYNTHESIZERS



By Mark Vail
This profusely-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.

CODE B199 £16.95
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

KEYFAX 2

by Julian Colbeck
This early version of the Keyfax (1989) 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 also covered in this indispensable guide. Still a great buy.

CODE B096 £5.99
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

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.

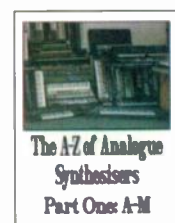
B201 £12.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

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.

CODE B231 £12.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

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 picture of classic instruments.

CODE B294 £14.00
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

Electronic Projects

ELECTRONIC PROJECTS FOR MUSICIANS

By Craig Anderton
How to build 22 electronic sound projects - ring modulator, phase shifter, etc.

CODE B068 £10.95
Postage: UK £2.50, Europe £6.95, R.O.W. £9.50

PRACTICAL ELECTRONIC MUSIC PROJECTS

by R A Penfold
A variety of music and MIDI projects, including guitar distortion, headphone amp, metronome, mixers, MIDI tester, MIDI noise gate and MIDI control pedal, amongst others. No projects require test equipment, but only a few are suitable for absolute beginners.

CODE B289 £4.95
Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

ELECTRONIC PROJECTS FOR THE GUITAR

By R A Penfold
How to make your own effects units at a fraction of the cost. Complete instructions on assembly of a guitar tuner, a distortion unit, a headphone amplifier, and a whole range of others. Assumes no previous knowledge of electronics.

CODE B179 £8.95
Postage: UK £1.50, Europe £4.95, R.O.W. £7.50

ELECTRONIC MUSIC LEARNING PROJECTS

by R Bebbington
A collection of musical electronics projects to give musicians experience of electronics construction and electronics buffs some experience of music. The projects, which all include strip board layouts, are suitable for construction in schools and use no more power than a 9V battery.

CODE B286 £4.95
Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

HIGH POWER AUDIO AMPLIFIER CONSTRUCTION

By R A Penfold
Much useful background to amplifier design, speaker matching and more is included in the first couple of chapters, while the last section contains a selection of high power amp circuits plus suitable PSU circuits. Copper track patterns are also provided to allow you to make your own PCBs. While the circuits aren't too difficult as such, those with limited constructional experience should note that due to the high supply currents and voltages involved, even minor mistakes could be extremely dangerous.

CODE B282 £3.95
Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

ELECTRONIC MUSIC PROJECTS

By R A Penfold
A collection of relatively simple circuits that even the near beginner should be able to construct. The book is divided into four sections: Guitar Effects Units, General Effects Units, Sound Generator Projects and Accessories. Specific projects include fuzz box, phaser, envelope shaper, white noise generator, metronome, automatic fader and many more.

CODE B276 £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 MUSIC AND MIDI PROJECTS

by R A Penfold
Want a MIDI THRU box, patch-bay 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.

CODE B203 £9.95
Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

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

ELECTRONIC PROJECTS FOR VIDEO ENTHUSIASTS

by R A Penfold
A selection of projects for the video and camcorder user, including dynamic noise limiter, automatic audio fader, video faders, video wipe and video crispener. Most of the projects are easy to build, and layouts for strip board are provided.

CODE B288 £4.95
Postage: UK £1.50, Europe £6.95, R.O.W. £9.50

DIGITAL AUDIO PROJECTS

by R A Penfold
A two part book, with the first section looking at the basic principles involved including converting an audio signal into digital form and then converting it back to an analogue signal. The second part contains some circuits - for the moderately experienced only.

CODE B279 £2.95
Postage: UK £1.50, Europe £3.95, R.O.W. £4.50

Samplers

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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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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Computers & Music

MULTIMEDIA ON THE PC



By Ian R Snelman
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 *Picturbook*, a multimedia authoring package.

CODE B272 £11.95
Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

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 provided with comprehensive appendices covering a glossary and comprehensive product and manufacturer lists.

CODE B296 £10.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

COMPUTERS AND MUSICAL STYLE

By David Cope, Professor of Music, University of California, Santa Cruz

Series Editor: John Strawn

Professor Cope provides a step-by-step description of the way in which he analyses and replicates musical style by computer. He demonstrates his results in the style of composers such as Bach, Mozart, and Prokofiev with compositions which sound entirely new and yet somehow familiar. Musicologists, theorists, and composers will find this work to be both ground breaking in its quality and thoroughness, and composers may also find a method to assist them with their own compositional processes.

Computer Music and Digital Audio Series
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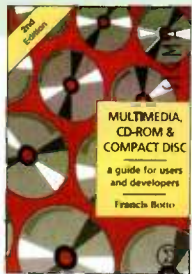
SEQUENCER SECRETS



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 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.

CODE B299 £6.95
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MULTIMEDIA, CD ROM & COMPACT DISK - a guide for users and developers (2nd Edition)



By Francis Botto
This is a practical guide to CD-ROM and interactive multimedia and is aimed at both users and developers. Virtually all platforms and technologies are covered in this book - CD-I, CD-ROM, CDTV, Macs, PC clones and so on - and a comprehensive

range of appendices include a glossary, and lists of development tools, manufacturers and existing CD-ROM titles. All aspects of system development - for example image capture and sound - are covered, along with much valuable general information.

CODE B295 £14.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

COMPUTERS AND MUSIC

By R A Penfold

2nd edition. Covers hardware and software applications. Excellent glossary of jargon, and now bang up to date.

CODE B098 £8.95
Postage: UK £1.50, Europe £4.95, R.O.W. £7.50

MUSICAL APPLICATIONS OF THE ATARI ST'S



By R A Penfold
Although an ageing machine, the Atari ST has had such popularity that it will probably be quite some time before it disappears for good - a situation helped by the inclusion of a built-in MIDI port. This book 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 allow you to use the ST's internal sound generator and create little MIDI applications.

CODE B280 £5.95
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Live Sound

ACOUSTIC FEEDBACK - HOW TO AVOID IT



By V Capel
The causes of feedback in live situations are discussed, long with good advice on trying to get rid of it. Also included is the and layout (using strip board) for a twin variable notch filter, plus full operation instructions.

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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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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.

CODE B256 £19.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

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.

CODE B271 £19.95
Postage: UK £2.50, Europe £5.50, R.O.W. £8.50

PUBLIC ADDRESS LOUDSPEAKER SYSTEMS



By V Capel
All aspects of PA speaker systems are covered in this book, including low-impedance matching, 100W 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.

CODE B283 £3.95
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EASY ROCK BASS

By Dieter Peteret

Deals with various bass techniques in depth. Contains musical pieces in tab and notes in the style of blues, reggae, rock, soul and funk. Includes flexi record of all the exercises, played by Dieter Peteret.

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CONCERT SOUND AND LIGHTING SYSTEMS

Written by John Vasey

This book shows how to set up, maintain and operate sound and lighting equipment for the performance of amplified music or any kind of touring production.

CODE B247 £14.95
Postage: UK £1.95, Europe £4.95, R.O.W. £7.50

SOUND CHECK CD



Impeccably recorded and compiled by Alan Parsons and Stephen Court.
Sound Check CD contains 92 tracks of test signals and reference recordings made at Abbey Road that can be used to set up monitors, check room performance, faulty equipment etc, and overall recording quality. No studio should be without one! 20+ close-miked instruments/vocals/music extracts. SMPTE/FBU timecode tracks (25, 30, drop-frame). Pink noise test tones. Third octave tones. Sweep tones. Sine + Square wave tones.

CODE CD029 £19.50
Postage: UK £1.50, Europe £3.95, R.O.W. £5.50

YAMAHA BOOKS

SOS Bookshelf has obtained exclusive but limited stocks of a variety of Yamaha-based 'how-to' books - at a very special price to SOS readers. The books come from Alexander Publishing in the USA, and each guide offers tons of useful, easily-accessible information provided by experienced users. The list is as follows:

THE BROADWAY QY10

By Peter L. Alexander with Bobby Muenst
Charts and musical examples for re-creating Broadway songs with your QY10 using only the internal patterns. Includes useful set-up information. 77 pages.

CODE B263 £3.95
Postage: UK £1.50, Europe £4.95, R.O.W. £7.50

TG33 QUICK OPERATIONS GUIDE

By Bobby Muenst
Instant access to Yamaha's neat little Vector Synthesis sound module. Loads of examples, well illustrated. 115 pages.

CODE B264 £8.95
Postage: UK £1.50, Europe £4.95, R.O.W. £7.50

YAMAHA SY77 CHEATER'S GUIDE & COOKBOOK

By Peter L. Alexander, researched by James Mierkes
This weighty book offers an accessible and straightforward way into the SY77; sequencing is covered in depth followed by SY77-specific arranging tips and techniques - how to get the most out of the SY77's sounds and polyphony. 354 pages.

CODE B266 £28.95
Postage: UK £2.50, Europe £5.95, R.O.W. £9.95

THE SONGWRITER'S YAMAHA RY30

By Dan Walker with Gregg Perry
A two-part work, the first part covering all operational aspects of the RY30 drum machine and the second uses the audio tape and musical examples to show what the RY30 is capable of, using the preset patterns to create a variety of classic tracks. 229 pages, two cassettes.

CODE B267 £19.95
Postage: UK £2.50, Europe £5.95, R.O.W. £9.95

YAMAHA SY55 OPERATIONS & SEQUENCING GUIDE

By Bobby Muenst
A good helpful look at this arguably overlooked instrument; technicalities are explained in context of music throughout. 153 pages.

CODE B268 £9.95
Postage: UK £1.95, Europe £5.50, R.O.W. £8.50

We'll remind you once again that stocks are strictly limited, so act quickly to avoid disappointment. Postage extra.

SOS Videos

STEINBERG CUBASE VIDEO



TRAINING MANUAL

This manual, the first in a series, 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 until you can use Cubase like a 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.

ORDER CODE V011 £29.99
Running time: 1 hour 30 minutes
Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

YAMAHA QY300 VIDEO MANUAL

The latest tutorial video release from Labyrinth is a complete overview of what Yamaha's new QY300 sequencer/sound source is capable of. Presented by Joe Ortiz of Heavenly Music, the video offers a clearly presented, hands-on tutorial on what is potentially a very powerful piece of hardware. Joe starts off with an explanation of what the QY300 is about, followed up with 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 six new styles and six demo sequences.

CODE V025 £19.99
Running time 69 minutes Format VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

YAMAHA PSR6000 ELECTRONIC KEYBOARD VIDEO MANUAL

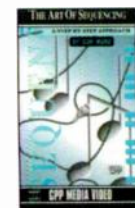


Yamaha's PSR6000 is a home keyboard with a difference, and offers many professional features plus excellent sound quality. Tim Walter starts at the beginning and makes the instrument look easy and fun. His enthusiasm is catching, and yes, the PSR6000 is a very capable instrument. The tape

runs to 75 minutes, which makes for excellent value.

ORDER CODE V029 £19.99
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

THE ART OF SEQUENCING



Presented by composer Don Muro, this American tape divided into six lessons that explain and demonstrate how to create a multitrack sequence, how to correct wrong notes, how to correct rhythmic errors, how to correct dynamics, how to change synth programs and how to change tempos. One nice point is that the tape is not dedicated to any one sequencing package - the information is valid no matter which sequencer you use.

ORDER CODE V030 £30.95
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

ANALOGUE HEAVEN



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 none other than SOS contributor Julian Colbeck; other SOS contributors making an appearance, discussing favourite instruments, include Paul Wiffen and Nick Magnus - and we think we spotted the back of Martin Russ's head as well. The tape opens with Bob Moog making the inaugural speech and officially opening the museum, followed by a nostalgic run through one of his old modular systems. At a mere £15.95 (plus postage), 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.

ORDER CODE V026 £15.95
Running time: 50 minutes Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

KORG AX30G TONERWORKS VIDEO MANUAL



The Tonerworks 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 unit 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

ROLAND GR-1 GUITAR SYNTH VIDEO MANUALS



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. The whole approach is down to earth with no frills, each step

patiently explained and demonstrated by Roland's guitar synth specialist, Jay Stapley. Jay also presents the Advanced tape which 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. These videos may not be as gripping as Terminator II, but if you own a GR-1 or are thinking of buying one, you'll be doing yourself a big favour by getting both these tapes these right away. Nice one Jay.

ORDER CODE V014 £29.99
FOR BOTH VIDEOS
Total Running time: 4 hours. Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

KORG X3 VIDEO TRAINING MANUAL

The latest in Labyrinth's series of exceedingly useful video manuals features Korg UK product specialist Phil Macdonald running through Korg's X3 workstation synth. The X3 features 61-note keyboard, 32-note polyphony, a Standard MIDI File compatible sequencer, disk drive, General MIDI compatibility and more. This video offers an easy way in to a powerful instrument. 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 of the X3 Video Training Manual 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. The video costs a reasonable £19.95 plus postage, and is available from Sound On Sound Mail Order.

ORDER CODE V018 £19.99
Running time: 55 minutes Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

KORG X5 SYNTH VIDEO MANUAL



Korg's new X5 synthesizer, reviewed in SOS' January 1995 issue, now has its own video manual. This 55 minute tape is 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 instrument before laying out your cash, this is the video for you.

ORDER CODE V027 £19.99
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

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 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. The instruction offered by this video is as comprehensive as you can get without inviting Tim to your studio!

Topics covered include: sequencing page, score editing, lyrics and text, graphic arranger mode, hyper edit, the printer page, using the part box.
ORDER CODE V012 £19.99
Running time: 2 hours 20 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

Julian Colbeck, probably the UK's leading keyboard expert and author, has written and presented this highly informative set of videos which no home recordist should be without. Have you got your set yet?!

SORRY, THIS SET OF VIDEOS ARE NOT AVAILABLE TO OVERSEAS READERS.

HOME RECORDING LEVEL ONE



This well presented video explains how to set up and operate a simple cassette-based multitrack home studio. It clarifies all the basic terminology - inputs, busses, auxiliaries, EQ etc - 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 out 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.

ORDER 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

HOME RECORDING LEVEL TWO



This is, in our opinion, the best ever guide to the equipment and skills needed to produce high quality results from a home studio. Full of clear examples and graphic information 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.
ORDER 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

HOME RECORDING LEVEL THREE



This video is packed with information and professional tips on advanced MIDI applications in the home studio, including interfacing with sequencers, which sync code is best for which application and why. Hit producer Marty Phillips (Erasur, 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.

ORDER 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

SOS Videos

HOW TO GET A RECORD DEAL



For the first time, the facts you need from the people who know. It takes more than talent to make it in today's music industry. It takes more than knowing what you want. It takes knowing how to get it. 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 professionals give you the straight facts on how to break into this extremely competitive business. Because sometimes the difference between success and failure is information.

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

YAMAHA QY20 MUSIC SEQUENCER VIDEO MANUAL



by Tom Robinson
Yamaha's popular QY20 portable sequencer's 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 90 minute 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".
ORDER CODE V016 £19.99
Running time: 90 minutes
Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95

GETTING THE MOST OUT OF THE KORG M1



Written and presented by Julian Calbeck
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 instrument's features and operating procedures, helping you to greatly expand your dexterity and creativity across the 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

BRIAN MAY: MASTER SESSION



One of rock's most innovative guitarists gives you 45 minutes of face-to-face, step-by-step instruction. Learn all his hottest licks and effects from such hits as "Bohemian Rhapsody" and "Crazy Little Thing Called Love." Special section on harmony guitar soloing. Highly recommended.

CODE SK10003 £12.99
Running time: 45 Mins Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95



JIMI HENDRIX: MASTER SESSION
Unravels the mysteries of the unique Hendrix guitar styles. His innovative techniques left a deep and lasting mark on the art of heavy rock guitar.

CODE SK10045 £12.99
Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95



BEGINNING ROCK KEYBOARD
Tom Gimbal, keyboardist for Aerosmith, teaches you the fundamentals of the rock keyboard. Takes you step-by-step through chords, scales, modes, soloing and much more.

CODE SK11360 £12.99
Running time: 30 Mins Format: VHS (PAL)
Postage: UK £1.75, Europe £4.95, R.O.W. £6.95



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2. 3m MIDI cable
3. 6m MIDI cable
4. 3m right-angle MIDI cable
5. 7m jack to jack cable
6. 4m 16-way ELCO to jack for use with Alesis ADAT
7. 0.5m jack to jack patchbay cables, 8 per pack
8. 1m insert leads - stereo jack to two mono jacks
9. Stereo jack to 2X mono female socket adaptor
10. MIDI female - MIDI female adaptor (joins two MIDI cables)
11. Musician's Home Stereo Interface
12. 7m 8-way colour coded 5-pin DIN to 5-pin DIN MIDI snake
13. 3m 8-way phono to phono, phono to jack, or jack to jack

QUALITY CABLE

Due to the popularity of our range of affordable eight-way cable looms, SOS Mail Order can now offer you even more products in a similar vein. All cable is manufactured to the same high quality as the looms, and prices are once again excellent. Whatever your cable needs, you should find something in our list at a price that's right.

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3m 8-way phono to jack
Order Code **CPR803 (Pic 13) £27.90**
Postage: UK £2.50, Europe £5.95, R.O.W. £9.95

3m 8-way jack to jack
Order Code **CPP803 (Pic 13) £27.90**
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7m 8-way jack to jack
Order Code **CPP807 £39.00**
Postage: UK £5.00, Europe £9.95, R.O.W. £18.95

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Order Code **MID303 (Pic 1) £3.30**
Postage: UK £1.75, Europe £3.50, R.O.W. £3.75

10ft MIDI cable
Order Code **MID310 (Pic 2) £4.80**
Postage: UK £1.75, Europe £3.50, R.O.W. £3.25

20ft MIDI cable
Order Code **MID320 (Pic 3) £6.70**
Postage: UK £1.75, Europe £3.50, R.O.W. £3.25

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Stereo jack to 2X mono female socket adaptor
Order Code **YPP117 (Pic 9) £3.40**
Postage: UK £1.75, Europe £3.50, R.O.W. £3.75

MIDI female - MIDI female adaptor (joins two MIDI cables)
Order Code **GMD108 (Pic 10) £3.49**
Postage: UK £1.75, Europe £3.50, R.O.W. £3.75

Musician's Home Stereo Interface
If economic necessity means that you've got to use hi fi system for monitoring, then this affordable little box is for you. It simply matches the output of your mixer or synth to your hi fi, and features three switchable inputs for maximum flexibility.

Order Code **AJB128 (Pic 11) £39.50**
Postage: UK £1.75, Europe £3.50, R.O.W. £3.25

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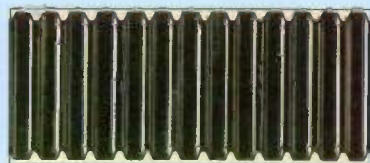
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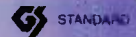
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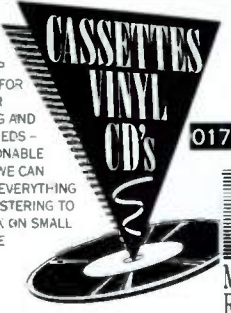
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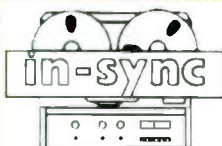
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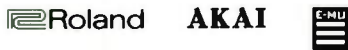
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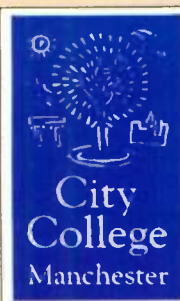
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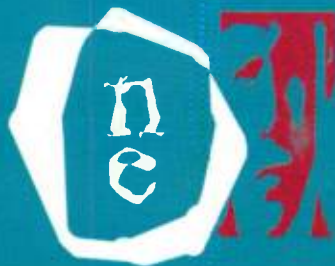
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By Sue Sillitoe



MARTYN WARE

If there's one thing that bugs me about the UK music industry — and one thing that I feel ought to be improved — it's the way that young talent is mistreated by the abuse of resources. New acts

are not being given enough support to develop.

For some years now, record companies have been milking their back catalogues, but like North Sea Oil, these are not unlimited resources. Inevitably, they will peter out, and unless these companies start investing in new talent, there will be nothing to replace them with. All labels are doing is looking for elusive 'superhit' singles

a minimum of three, and a maximum of eight, albums. When the album was recorded, it would be a genuine representation of the band at that point in their career. Only then would the record company select the tracks that would be released as singles.

Britain has always had an international reputation for creating interesting music, but right now our position on the world stage is becoming a pathetic joke, because record companies have set up an infrastructure where they spend a pitiful amount on a new act, build up their hopes, and then drop them when the single fails to chart. As a result, our domestic market is withering on the vine, and the public is having to put up with a load of one-off singles, with very few interesting new acts coming through on the album front.

This system is also incredibly unfair, because these young bands are not battle-hardened

genuine degree of autonomy, and were given a budget to develop their own acts in the way they saw fit. These budgets were usually album budgets, and acts would be signed for

company No Risk Disk initiatives are a step in the right direction, but we need to do more.

At first sight, it may seem that all this has little to do with me, or with any other producer. But in fact, it has an enormous impact, because none of us can guarantee that the work we do with young bands will ever be heard by the public. No matter how good a track is, it is not unusual for record companies to spend more money on remixes than they do on the original recording. Of course, this raises the stakes even more, because if the label doesn't recoup its investment by getting a Top 20 hit, it drops the band. But who actually wants a CD single with five versions of the same track by an as-yet-unknown band?

In the end, I can't complain — I make a living out of what I do, and enjoy doing it. But my heart aches for the broken dreams of a lot of young and talented people. For instance, there's a band called Liberty that won Capital Radio's Young Bands competition two years ago, and to this date they still don't have a deal. I've kept in contact with them, and tried to help them, because I really believe they have a marketable talent, but this band is so hard up that there are times when they can't even afford the price of a tube ticket to come and see me.

The fact is that these days very few bands get signed on the strength of a demo, no matter how good it is, and to me that seems a terrible waste. The most common way bands get deals is through knowing someone in the business who can put their names forward to the appropriate decision-makers. I can't help thinking there is something wrong when the Phil Collinses and Elton Johns of this world get such massive marketing budgets, while the future is so obviously neglected.

SOS

Today, back catalogue sales account for much of the revenue generated by record companies. Here, producer Martyn Ware considers what will happen when there is no longer any back catalogue left to exploit...

that they hope will sell albums — and yet they're *still* struggling to break acts in the albums market, because they are increasingly signing acts on just singles deals. This means that producers like myself are being asked to deliver miracles with one single — and even if it is a hit, there's no further material to back it up. You get a mad scramble to cobble together enough tracks for an album in a very short period of time. It's not exactly forward-thinking, and personally, I think it's very worrying.

At the moment, record companies are guilty of putting the cart before the horse in a way that makes no economic sense at all. In the good old days, if you like, A&R staff had a

veterans. They can't deal with this kind of cynicism, and if they are dropped, they are often destroyed. As a result, we all lose out, because a lot of talent is lost with them — talent that could have turned into the back catalogue of the future, if only it had been nurtured and allowed time to develop.

One way to ease this situation would be for the BPI to come to an arrangement with all UK record companies that allowed for first albums to be released at budget price. This would encourage the public to buy material from relatively unknown bands — something they are not prepared to do at the moment, when every CD costs the best part of £15. Record

Martyn Ware was a founder member of The Human League in the late 1970s, but left the band after two successful albums to form Heaven 17 with fellow League member Ian Craig Marsh. After enjoying worldwide success, Martyn struck out as an independent producer, and garnered widespread acclaim as the producer of many top-flight '80s acts, including Tina Turner, Scritti Politti, Terence Trent D'Arby, and The Style Council. In the last two years, he has enjoyed further success as the producer of Erasure's smash album *I Say I Say I Say* and hit singles by Joe Roberts and Lena Fiagbe. Martyn remains busy in 1995, following work on new albums by Alison Moyet and Marc Almond.

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