

Established 1981

# Music Technology

THE WORLD'S PREMIER HI-TECH MUSIC MAGAZINE

December 1991  
£1.60



## ORCHESTRAL MANOEUVRES IN THE DARK

'90s tech - '80s ideals



**ROLAND S-750**  
*sampling with quality  
and distinction*

### ON TEST

- Anatek SMP16 Sync/Patchbay
- Friendchip K..AT Atari Remote
- Dr T's Omega ST Software
- Dr Beat MIDI Rhythm Files
- Pascal Gabriel Dance Sample CD
- Zero-G Datafile 2 Sample CD
- DJ Food Jazz Brakes Sample CD
- Valhala Korg MI Sound Card

**BIZARRE INC raving mad • MOOG POLYMOOG the big mistake?**

# SY99 - BEST SYNTH EVER?

**YAMAHA**  
▷ THE SPIRIT OF MUSIC ◁



Simply *posing* the question suggests that Yamaha's SY99 must be a pretty significant new synthesizer – particularly when the questioner is Sound On Sound Editor Paul Ireson, in the September copy of the magazine.

But when reviewer Martin Russ answers in the same issue saying that the instrument "is closer to 'the perfect synthesizer' than any I have ever seen" and that "the SY99 is now my all time favourite" – well then you know that is one new keyboard you *have* to check out.

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ALL PRICES EXCLUDE VAT

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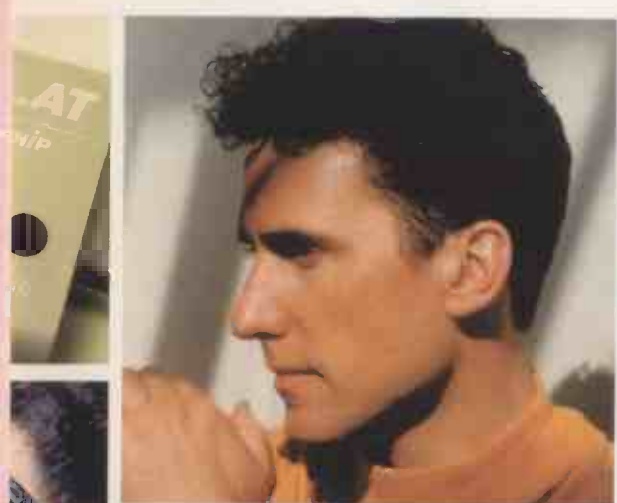
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A collection of CDs which should be the sampler's delight are the stars of this month's Patchwork. If your music needs a boost from Ed Stratton, Coldcut or Pascal Gabriel, check out these disks.

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MIDI mergers - can't live with 'em, can't live without 'em. Don Erskine looks at the uses and misuses of mergers and concludes that two into one will go.



## THE LOST CHORD

XIF YOU'RE NOT already aware of the intention of the major record companies to phase out vinyl LPs, consider yourself told. Certain classical labels have already ceased releasing material in the form of vinyl - your remaining options are CD, cassette or nothing. And regardless of any arguments about the fidelity of analogue over digital media, the old "12 inches of plastic" format is on its way out.

So you've accepted CD as an acceptable - possibly preferable - format, but what are you going to do with your LP collection? How long are your turntable and stylus going to remain serviceable? Will you be able to replace them when they're worn out? Are you prepared to buy the same music on CD so that you can still play it when you can't (and you've already paid for it once)? Is it worth the time and expense to transfer it all to cassette or DAT? If you find the time and the cash, how long will it be before cassette and DAT themselves are obsolete? Too many questions. . .

Looking back at the history of music reproduction, the message becomes all too clear. Music preserved on wax cylinders was also lost on wax cylinders. The same is true of shellac 78s. True, part of the old vinyl catalogue of music is reappearing on CD - for as long as that lasts - but plenty of it won't. Instead it will become increasingly forgotten as record turntables become collectors' pieces instead of household items. Perhaps the only reassuring observation you can make is that the longevity of each medium is greater than that of the one which preceded it.

The problem becomes more serious still when you

consider the fact that multitrack and two-track masters of the records we buy are archived on magnetic tape of one sort or another. Tape is delicate stuff - it's prone to edge damage, damage from magnetic fields, damage from print through, damage from oxide loss. . . Right now people are starting to use DAT for mastering, but DAT is still an unproven medium. How long will it actually last? Last month Martyn Ware raised the question of responsibility for recordings lost through poor technology. I suspect that the situation will remain the same as with photographic film: the manufacturer's responsibility ends with the materials and manufacture.

Perhaps the best perspective on all these "media problems" is gained by looking at sheet music. Before you could buy recorded music, you had to either play it yourself or listen to someone else play it for you - from sheet music. The beauty of this system is that the medium on which the music is stored isn't dependent upon a single technology for reproduction. You can play it back using anything from a flageolet to a symphony orchestra. Recordings which are dependent upon a specific technology to retrieve them and which survive into the future may well find that the technology to retrieve them has become obsolete.

Me? I don't have any answers. Most peoples' collections are full of records they don't listen to any more, so much "old" music isn't going to be missed. But somehow, with the level of technology presently available to us, it seems wrong that any music should be lost forever. *Tg*

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# Canvas & Brush by Roland



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 timbrality, 24-voice polyphony, reverb,  
 chorus, and pan. A convenient half-rack  
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**Sound Brush SB-55**  
**MIDI File Player**  
 CD-style Remote Control and 3.5" disk  
 drive. Songs created on cumbersome  
 home sequencer setups can easily be  
 converted for live or studio use.



Whether you're sketching out a new idea or remixing an old master the Sound Canvas will allow free rein to your artistic talent. It has a palette of 315 sounds (acoustic instruments to FX and everything in between), plus 9 drumkits, reverb, chorus and pan.

The Sound Canvas adopts the GS Format, which standardises MIDI parameters for Roland equipment, and is also compatible with data prepared for MT-32 and CM-32L sound modules.

Like the Sound Brush MIDI File Player, the Sound Canvas can be operated by remote control; as a portable system the two units are ideal, at a total weight of under 3.5 kg. But most important is the sound. Suffice it to say that anyone with half an ear would go mad for this setup – and it sounds even better in stereo.

## Roland

For a list of authorised dealers  
 and a free leaflet contact:

### Roland UK Ltd

Atlantic Close  
 Swansea Enterprise Park  
 Swansea  
 W Glamorgan SA7 9FJ

Fax 0792 310248  
 Tel 0792 310247



Bluebridge Music, distributors of the Brother range of stand-alone hardware sequencers, have announced a new addition to the family. The PDC100 Disk Recorder, priced at £351.32 including VAT, is related to the existing MDI40 sequencer but differs from it in some significant ways. RAM has been doubled to 128K, and now

## RELATIVELY NEW

provides a 21,000-note storage capacity, while instead of two tracks with limitless merging there are now 32 tracks, each of which can store note data on up to 16 MIDI channels, plus a tempo track.

Step-time recording and bar/event-level editing including

quantisation and transposition have been introduced, and Song and SysEx data can be saved to and loaded from the sequencer's onboard 3.5" floppy disk drive together. Other differences include a 2 x 16-character window on the PDC100 compared to a six-

character LCD on the MDI40, upping of the song-name length from six to 12 characters, and 32 as opposed to 30 Songs storable per disk.

For further info, contact Bluebridge Music Ltd at 3-5 Fourth Avenue, Halstead CO9 2SY. Tel: (0787) 475325/476631. Fax: (0787) 474280. **St**

## GENERAL MUSICATOR

Digital Music are pleased to announce the imminent availability of Musicator GS, offering "totally integrated sequencing and notation for IBM PC and compatibles", and supporting both the General MIDI and Roland GS standards.

Features offered by Musicator GS include 16-track, 16-staff sequencing displaying music in standard notation, real-time recording, step-time recording and PC-keyboard note entry, printing to dot-matrix, Inkjet, Bubble-Jet and

HP laser printers, MIDI File compatibility, special support for the Roland Sound Canvas and future range of GS instruments, and upgradeability to The Musicator.

Musicator GS will be available from December and will cost £250 plus VAT, or with a Music Quest PC MIDI card, £319 plus VAT. More info from Digital Music at 27 Leven Close, Chandlers Ford, Hants SO5 3SH. Tel: (0703) 252131. Fax: (0703) 270405. **Dp**

## MT PHONE ZONE

Fast rivaling MCM and AMG in the "how many products can we get mentioned in Newsdesk?" stakes, London-based Zone Distribution are now exclusively handling the entire range from the American company Midiman in the UK. These include the Finline 1U-high 24-channel mixer with four XLR inputs (£279), the Syncman Pro SMPTE-to-MIDI synchroniser (£499), the Smartsync smart Song Pointer sync box (£99), the Midiman MIDI-to-tape data recorder (£129) and Midiman 32K version which adds SysEx archiving (£249), the Transmidi wireless MIDI piggyback system (£419), the Minimixer 8:1 or 4:2 battery-powered compact mixer (£85), the MIDI Thru two In/eight Out switchable MIDI thru box (£79), the Mini Mac one In/three Out Macintosh MIDI interface (£59) and the Rack Release quick-release fasteners for rack-mounting gear (£4.99). And I wrote all that in one breath.

Zone also have exclusive UK distribution rights to software from US company The Blue Ribbon SoundWorks, who specialise in music software for the Amiga. As well as the oddly-named Bars & Pipes sequencer (£299), numerous add-on software modules for the Pro version of the sequencer including the Creativity Kit and the Multi Media Kit (all but one of which are priced in the £40-50 range) and the Patchmeister generic synth librarian (£79), the Blue Ribbon range offers Jam! (£99), an automatic music

generator program which can create music in a variety of styles including rock, samba, swing and funk using the Amiga's internal samples. Special Turbosound Technology allows the Amiga to play more than four sampled sounds at once, and a special Turbosound sample editor has been included so that Amiga owners can edit their existing IFF samples for use within Jam!. The program can be run "seamlessly" within Bars & Pipes Professional, with windows from both programs viewable together.

Via Blue Ribbon and Zone come the SunRize Industries' AD1012 (12-bit) and AD1016 (16-bit) sampling cards (£tba), which bring disk-based digital audio recording to the Amiga. What's more, four Bars & Pipes software Tools and Accessories, included free of charge with each sampling card, allow Bars & Pipes Professional and SunRize's Studio 16 software to function as an integrated digital audio recording and MIDI sequencing system, with synchronisation to SMPTE timecode from the cards, a user program-mable "hit list" for triggering samples via MIDI notes, audio recording from within the sequencer and a "virtual" audio track running in parallel with the sequencer tracks.

All quoted prices include VAT.

For a twilight experience, Zone can be contacted at 5 Abeville Road, London SW4. Tel: 081-766 6564. Fax: 081-766 6656. **St**

## FIVE COMMANDMENTS OF SAMPLING

The Advanced Media Group bring you yet more sample CDs to add to your collection with the introduction of a new range from Swedish company AudioQuest, which command you to SAMPLE IT! There are currently five CDs in the series, each costing £39 inclusive of VAT and delivery.

*Breaks, Grooves and Rhythms 1* provides 80 rhythms, each featuring an intro, variation 1, break and variation 2. Styles featured include old school, hip hop, house, techno, acid, bleep and more. All breaks have been programmed from scratch rather than lifted off records.

*Classic Synths & Beatboxes 1* provides 810 samples including ARP Odyssey, Prophet 5, MS20, Mono/Poly, TB303 and TR808.

*Classic Synths and Beatboxes 2* provides 951 samples including Minimoog, Pro One, Jupiter 8, MC202, TR909 and TR727.

*Sample Wave Sounds and Textures 1* provides 599 samples, which include all the basic waveforms from the Prophet VS, rhythmic waves and vocoder wave samples - or, as the press release puts it, "a whole world of hyperdelic sounds to explore". Quite.

*FXs and Bizarre Samples*, meanwhile, apparently provides "a whole world of supersonic weirdness to explore!". To give you some idea of what's in store for you if you buy this CD, its 521 samples include the likes of Animal, Space, Horror, Destruction and Impact noises.

Upcoming from AMG are new dance sample CDs from France, two new CDs in the HitSound Producer series, and a Guitar Licks CD in the MasterBits Climax Collection.

More info from AMG at Hurst Lane, Privett nr. Alton, Hants GU34 3PL. Tel: 073088 393. Fax: 073088 390. **St**



# The Top 500



Play the D4 with its onboard trigger inputs.

Alesis drum machines are famous for their sounds. The HR-16's natural acoustic drums are still the standard for transparent rhythm tracks. The punchy aggressive samples of the HR16:B redefine how to make rhythm tracks burn. The SR-16 is an instant hit with its sampled reverb and ambience techniques.

Now you can have all this and more with the new **Alesis D4 Drum Sound Module**. There's an incredible 500 sounds in all. Right at your fingertips.

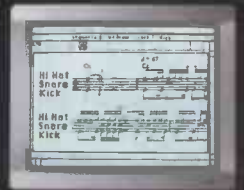
The D4's sounds are unparalleled for their realism. For example, when you hit a D4 sound harder, the tone *and* pitch change just like a real drum, thanks to the D4's Enhanced Dynamic Articulation.™ Plus, stereo reverb and ambience are built into many of

the samples so you can keep your mind on the beat.

Using the D4 is a breeze with its large data entry knob and dedicated buttons for all major functions. There's even a touch-sensitive preview button and headphone output for instant gratification... and latenight drumset programming.

The D4's 21 user definable drumsets are accessible via MIDI or through the 12 onboard audio trigger inputs. You can even replace a wimpy drum sound on tape. Which you'll want to do if it didn't come from a D4. No rocket science here. Just pure honest incredible sound. The only reason to buy a drum sound module.

Everybody wants a hit. The D4 has 500 of them right now. At your Alesis dealer.



Play the D4 with MIDI software or hardware.

12 audio trigger-to-MIDI inputs are built in for drum triggers, pads, or tape.

PHONES

VOLUME

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**D4**

HIGH SAMPLE RATE  
16 BIT DRUM MODULE  
STEREO SAMPLES

THE TOP 500

DATA

PREVIEW

STORE

NOTE CHASE

VOICE

TUNE

MIX

OUTPUT

POWER

CURSOR

DRUM SET

EXT TRIG

GROUP

MIDI

## ALESIS THE TOP 500 DRUM SOUNDS

THIS WEEK	LAST WEEK	WKS. ON CHART	TITLE ARTIST	DRUM PRODUCTION	THIS WEEK	LAST WEEK	WKS. ON CHART	TITLE ARTIST	DRUM PRODUCTION
1	2	208	HONEST SNARE HR-16	ALL WOOD-BRASS RIM	302	NEW		RAW HIDE BRAND NEW D4	CUSTOM SNARE
2	NEW		STUDIO TOM BRAND NEW D4	16" MAPLE TOM w/VERB	303	450	52	HI ROOM TOM SR-16	10" MAPLE w/
3	NEW		BIG "O" BRAND NEW D4	DOUBLE HEAD KICK w/VERB	304	NEW		WET HALF BRAND NEW D4	HALF OPEN HAT w/
4	5	52	RIM SHOT ROOM SR-16	BRASS PICCOLO w/VERB	305	327	52	RIM 2 CENTER SR-16	ARTICULA
5	10	156	BIG FOOT HR-16:B	SINGLE HEAD 26" MAPLE	306	123	208		DOUBLE HEAD KICK w/
6	NEW		SLAM BRAND NEW D4	POWER TOM w/VERB	307	223	151		
7	23	156	COMBO SNARE HR-16:B	PICCOLO PLUS WOOD	308	401	51		
8	NEW		BIG BALLAD BRAND NEW D4	WOOD SNARE w/BIG VERB	309	NEW			
9	NEW		FAT CITY BRAND NEW D4	SUPER FAT SNARE	310	175	1		
10	NEW		CLOSE TO OPEN BRAND NEW D4	ARTICULATED HI HAT	311	NEW			
11	21	156	TRQ WRENCH HR-16:B	TORQUE WRENCH/FAST	312	171			
				14" THICK SPUN	313	332			
					314	NEW			



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Alesis Corporation 17 Letchworth Point  
Letchworth, Hertfordshire SG6 1ND  
TEL: 0462 480500 FAX: 0462 480600

# INTERNATIONAL RESCUE

For those musicians who make a living from their music, a computer is often the centre of operations - and a crash can cause considerable inconvenience, loss of important data or even loss of income. Southampton-based Aquarian, a

specialist computer equipment company, think they have the answer in a new maintenance program they've recently been authorised to offer. Though the program is aimed at the "home-based micro businessman", its

provisions are just as appropriate to the professional musician wishing to safeguard his/her computer and data. The maintenance scheme covers "any and every eventuality from operator error, data corruption and virus attack through power surge damage and flood". A guaranteed response time of eight hours maximum comes as

standard, with four hours response time as an option.

Of course all this will come at a cost - and as with any policy of this kind, make sure you're well aware of any conditions and exclusions which apply. Aquarian will be happy to supply you with the necessary literature and answer your questions on (0703) 685006. **Dp**

## 1 + 1 = 3

Ever had a day when nothing seems to add up? The milkman reckons you owe him eight quid for 15 pints of milk, your bank's charged you a £30 unauthorised overdraft fee on a one-day overdraft of 5p, Bryan Adams has just topped the national singles charts for the 20th week in succession, and MT's Korg 01/W FD review has just informed you that 50,000 notes is marginally more than 58,000 notes.

Well, it's in our power to solve the last of the above puzzles. Through a mere slip of the word processor, 10,000 notes got added to the capacity of the 01/W FD's onboard sequencer - it should be 48,000 notes, not 58,000. So we make mistakes sometimes. . . **St**

## FREE BOARD AND LODGING

Following a relocation from Manchester to Warwick, free bulletin board service The Music Studio UK has a new phone number: (0926) 403904. Since its last mention in Newsdesk (MT, November '90), the BBS has expanded and is now linked to the Australian MIDI/Music conference areas and also takes messages, files and information direct from the USA MIDI/Music Distribution Network™ to distribute around other MIDI BBSs in the UK.

Talking of MIDI bulletin boards, The Music Studio UK has now linked up with two other free services, the Sounds Digital BBS

based in Norfolk (mentioned in Newsdesk MT, July '91) and Compass!! based in Ormskirk near Liverpool, to set up a UK MIDI/Music Files Network, with files and data being transferred nightly between the BBSs. In this way, users will be able to trade information on all three BBSs for the cost of phoning the nearest service.

The UK MIDI Association now has a conference area for discussion of MIDI matters which is mirrored on each of the three BBSs. Additionally, on The Music Studio UK there is a UKMA members' section managed by Vic

Lennard which allows members to download any UKMA information and data.

To get access to any of the BBSs mentioned above, you need a modem and some comms software for your computer. The Music Studio UK BBS is on +44 (0)926 403904 (SysOp: Paul Urmston), Sounds Digital BBS is on +44 (0)842 762136 (SysOp: Wally Beben), and Compass!! BBS is on +44 (0)695 571117 or 571118 (SysOp: Barry Phillips). The UKMA can be contacted via the UKMA conference area on any of the BBSs or directly by the traditional spoken phone call on +44 (0)81-368 2245. **St**

MCM are keeping ever busy with more new products to tempt you and your money to part company. For a start, they're getting in on the fast-growing sample CD market by distributing the new CD versions of Simon Harris's extremely successful *Breaks, Beats and Scratches* albums (vinyl editions have sold in excess of 60,000 copies worldwide). Albums 1-6 are available in three double CD sets (£34 including VAT per set) while album seven is available as a single CD (£19.95 including VAT).

If you have an E-mu Proteus/1 with Invision's Protologic board fitted, you can get a bank of 64 new Presets from MCM for free. The new Presets, which include strings, choir, basses, several saxes and brass patches, a couple of acoustic pianos and a selection of percussion sounds, use the Tones (samples) of the Protologic board and come on disk in Atari, IBM (MS DOS) and Macintosh formats, complete with downloader software which also allows you to back up your existing RAM Presets before downloading the new ones.

New from Opcode is the Studio 5

## MCMINENT

combined SMPTE-to-MTC synchroniser and 15 In/15 Out MIDI patchbay and processor, which connects to the Mac and can read and write SMPTE in all formats, rewrite SMPTE code when locked to an incoming SMPTE signal (a process known as jam sync) and remain locked to tape through dropouts and other short SMPTE errors by "flywheeling" through them. It also allows an audio trigger to be used as a sync source for Opcode's Vision sequencing software, and is compatible with Direct Time Lock (DTL) and Enhanced Direct Time Lock (DTLE) for synchronisation to other software applications.

The patchbay/processor side of the Studio 5 can route any combination of its MIDI Ins to any combination of its MIDI Outs, and allows filtering, rechanneling, transposing, note-range splitting and velocity and controller modification of incoming MIDI data. Routing and processing setups can be stored in up to 128 patches and called up via MIDI patch changes.

The Studio 5 comes bundled with OMS (Opcode MIDI System) software, which has a Studio Setup file which allows you to describe the MIDI connections, devices, channels and controllers of an entire MIDI studio. When used with OMS-compatible software such as Vision, Studio Vision, Galaxy Plus Editors or Max, the Studio 5's 15 MIDI Out ports can be addressed separately for 240 distinct MIDI channels. Programs which address Mark of the Unicorn's MIDI Timepiece can also address the Studio 5's 15 Outputs independently. Expected retail price on the Studio 5 is £1051.62 including VAT.

Sticking with Opcode, registered owners of Opcode's Galaxy universal patch librarian software can now upgrade to Galaxy Plus Editors for £160 plus VAT. With the advent of the latter software, Opcode have now discontinued production of dedicated editor librarians. As a result, while stocks last you can purchase Macintosh editor librarians for a variety of

synths at greatly reduced prices. With the low-end Mac Classic creating a new generation of budget-conscious Mac users, Opcode are providing an easy intro to MIDI music-making on the Mac by bringing out the EZ Music Starter Kit, which brings together the MIDI Translator Mac/MIDI interface, EZ Vision sequencing software and the new Hypercard-based Book of MIDI in one package.

Meanwhile, three-dimensional sound reproduction comes to the higher-end Macs courtesy of the Focal Point card (£1169 inc VAT) from the company of the same name. This is a Nubus card which takes mono audio input or a Digidesign soundfile and turns it into a 3D sound image in real time by means of dynamic equalisation and audio panning. What's more, positioning of the sound in the 360-degree sphere can be controlled via MIDI. If you want to process more than one output at a time, you can use multiple cards.

More info from MCM at 708A Abbey Road, Tudor Estate, London NW10 7UW. Tel: 081-963 0663. Fax: 081-963 0624. **St**



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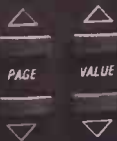
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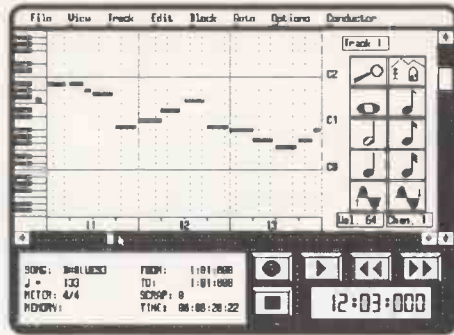
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FACE



## technology blues

Having just read the letter in *Communiqué* from Keir Thomas complaining that today's remarkable technology is massively overpriced and that he, a poor student, is unable to afford a Korg T1, I have to say that I feel rather angry. I also have a sneaking suspicion that Mr Thomas has no real dedication to music.

Until recently, I was a "poor student" as well as a musician and have been unable to afford a T1. But appreciating the amazing scope of today's equipment in relation to its price, I went out and got a part-time job, looked around for good secondhand deals and bought a Kawai K4, Q80 and Casio FZ1. I am perfectly satisfied with this equipment and, considering the price that a setup of comparable capability would have cost ten years ago, feel that today's technology is worth every penny you pay for it.

As pointed out by Tom Robinson in the Casio Rapman review (MT, October '91), new ideas and imagination are what music is about. Equipment alone will not give you these.

Equipment does give you the facility to turn ideas into music quickly and efficiently, but there is a real danger that musical equipment "commodity fetishism" will become a problem. This, I believe, is Mr Thomas' problem.

Looking in MT's Readers' Ads section, I spotted a Roland D110 and an Alesis MMT8 for a combined price of £449 - affordable at just over the value of a student loan. Need I say any more?

Anon

*You could have left your name - Don McCormick did when he called MTHQ to offer poor Keir a guitar and a Casio MT65 Personal Keyboard he had going spare. . . I'll explain.*

*Having seen Keir's letter, Don was reminded of his days as an impoverished student in Ireland, and a kind benefactor who'd given him a guitar to help him on his way. Being a charitable chap, Don called us and explained that he'd like to pass the same guitar on to Keir, along with the Casio - with a couple of conditions. First of all - to prove himself worthy - Keir has to get off his arse and make his way to Liverpool (from Manchester) to pick the gear up. Then, when it's served its purpose with him, he has to find another deserving soul and pass it on once more.*

*In the meantime we'd heard from Keir again accepting that he'd set himself up and protesting that his "begging" was light-hearted and actually intended to attract attention to the plight of musically-inclined students. Well, Keir, it may be more than you deserve, but you've struck lucky. I hope you and your new gear get on well together.*

*One last word: thanks - to Don for his generous offer. Tg*

## system crash

With reference to your recent interview with Steve Hillage about his project, System 7, I think Steve needs to change his stance and ideas about MIDI guitars. He is rooted in the past and should widen his perspectives towards such areas as guitar synthesis. Guitar synthesis has come a long way since the '70s and to say that

there's no need for it in the '90s is an argument based on musical short-sightedness.

MIDI guitars are powerful instruments for music composition, performance, sequencing, effects control and so on. So before he dismisses or ignores the MIDI guitar, let me ask him to think again. The guitar playing he talks about is in the past and the world has changed. The caterpillar has turned into a beautiful butterfly, it is best to enjoy its beauty with an unjaded eye.

**Martin Howard  
Wembley  
Middx**

*I've just been hit by a wave of vodka nausea. It's happening again - the guardian of guitar synthesis has appeared to me in a dream, warning the world of the error of my ways. Only last month I was visited by a being from another planet wearing an "IBM-type" suit, extolling the virtues of the MIDI guitar and threatening me with the Thought Police should I not take the instrument seriously. I thought I'd woken up, but I must have been dreaming that too. . . Tg*

## i robot

It would appear that MT has dropped the proverbial clanger. In the October competition for the Zero-G Datafile sample CDs the correct answer to question two: "What is the name of the robot in Logan's Run?" is Box, not RAM, REM or ROM. (I take it the question refers to the metallic gent who confronts Michael York and Jenny Agutter in the ice cave. I don't recall any other robots in the film.)

Incidentally, REM is the name of a computer program in *Tron*. In case you decide to add or substitute another question for the competition, here are a few other robots, androids and computers from movies and TV:

Robbie - *Forbidden Planet*  
Ash - *Alien*  
Number Five aka Johnny Five - *Short Circuit*  
Gort - *The Day the Earth Stood Still*  
Data - *Star Trek, The Next Generation*  
Maximillian and VINCENT - *The Black Hole*  
Leon, Roy, Zhora, Pris & Rachel - *Blade Runner*  
MAX404 - *Android*  
The Gunslinger - *Westworld*  
Daryl - *DARYL*  
Maria - *Metropolis*  
HAL9000 - *2001: A Space Odyssey*  
SAL9000 - *2010: Odyssey Two*  
ORAC & Zen - *Blake's Seven*

I hope this is of use to you.

**Steve Clark  
Coves  
Isle of Wight**

*Thanks for your observation, Steve - perhaps we should have made it clear that the question referred to the TV series rather than the film. Taking up your observations of our mechanical friends, however, I suspect you don't know your robots quite as well as you think. You've got Maria down as the robot from Fritz Lange's *Metropolis* but it's actually the girl (played by the magnificent Brigitte Helm) the robot impersonates who is called Maria. As far as I'm aware we're never told the robot's name, if it has one. Tg*

## FRIENDCHIP K..AT



PHOTOGRAPHY: JAMES CUMPSTY

EVEN IN A small studio, it's easy to find yourself in the situation where your Atari is simply too far from one piece of gear or another for comfort. Let's face it, the computer can only be in one place at a time, so if you've mounted it above your main MIDI controller keyboard, it probably isn't readily accessible from your mixing desk when the time comes to do a mix. On the other hand, if you've mounted it above the mixer. . .

Many of us - me included - have consequently set the record count-in on our sequencers to accommodate the dive from computer to keyboard before the downbeat of the first bar. It's not great, is it? True, there are solutions to the problem: moving your Atari around is one of the less practical, assigning sequencer control to actual keys on your controller keyboard or using foot pedals are a couple of more practical ideas. These latter two, of course, are only available where the software supports them. All work but have drawbacks which equate to inconvenience of one sort or another. If only someone, somewhere made a small remote control for the Atari. . .

OK, it was a set up. The Friendchip K..AT is a cable remote unit for use with the Atari ST/STE computer. It offers 14 user-definable commands which can be set to perform any software functions accessible by Atari keyboard strokes. As such it's perfect for controlling your sequencer, and has the additional advantage of being mobile enough to be moved around the studio with you.

Looking at the K..AT more closely, you'll find a grey-finished plastic box bearing nine momentary buttons (seven function buttons and two "2nd" buttons for accessing seven second page functions). On the right-hand side of the box are the cable for connecting the K..AT to the second joystick port of your Atari and a 3.5mm jack socket for the connection of a footswitch (dedicated to duplicating the record function). The supplied cable is 5m in length but extensions can be used. Along with the K..AT itself, you get the requisite software and a "manual" - a folded sheet of A4, but it tells you all you need to know.

Although the K..AT's software allows you to set the unit up for control of *any* piece of ST software (as long as it's controlled by key strokes), the front-panel screening suggests dedicated uses for the seven buttons - Play, Stop, Record, +, -, >>, << (use of these buttons in conjunction with the "2nd" buttons is not marked). While this is an arbitrary assignation on behalf of Friend Chip, it does serve to make the K..AT very musician-friendly. The Record button is even coloured red! Without its software, however, the K..AT's hardware is useless.

Supplied with the hardware is a disk containing .ACC, .DAT and .RSC files. To use the K..AT you must power up your Atari with these either on your boot disk or in the C partition of your hard drive. Once loaded, control and definition of the K..AT's functions is from the desk accessory. Easy.

Opening the accessory you are presented with four dialogue boxes. The first box allows you to scroll through the 16 sets of key definitions supported by the DA. These can be named (in up to eight characters) and the definition selected when the accessory is closed (using the Exit box) is the one currently in use. Along the top of this definition box there is a bar identifying the current selection as either the Actual Configuration or the Boot Configuration. Only one configuration can be designated Boot, and will automatically be active when you boot up your Atari. Below the config box is where you define the K..AT's keys. Two boxes - the left-hand one marked K.AT Key, the right marked Atari Key - allow you to select (by pressing) the K..AT's buttons and assign (also by pressing) the Atari key equivalents. In the Atari Key box there is a Rpt On/Off message. Toggled by clicking on it with the mouse, this facilitates the equivalent of successive key-presses by holding down the K..AT button - useful for track selection, say, but not for entering Record mode. Once a complete set of K..AT keys has been defined, it can be saved using the Save box.

The review K..AT came with definitions already programmed for C-Lab's Creator and Steinberg's Cubase sequencers. Setting up the hardware took a matter of seconds, booting with the K..AT disk took a couple more - booting Creator took longer. Opening the desk accessory and selecting the Creator option (Cubase had been assigned the boot config) left me with the K..AT up and running in only slightly more time than booting Creator alone. And it worked first time.

For me, Friendchip have solved a long-standing problem. In spite of being another piece of technology intended to solve a problem thrown up by technology - a plot usually destined to make the use of technology a less attractive proposition in the first place - the K..AT comes over as friendly, ridiculously easy to use and almost indispensable once you've worked with it. And that's without even considering its potential outside use with a sequencer. ■ Tg

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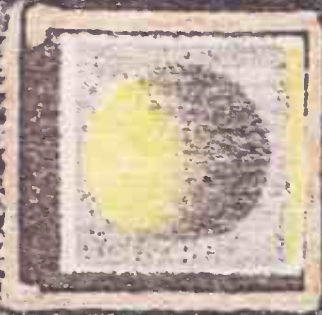
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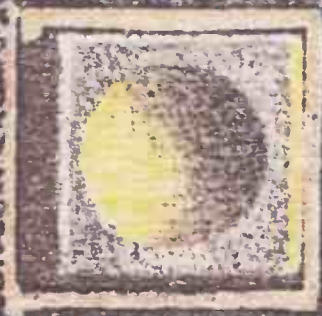
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## Part 25

**DIVORCING A RHYTHM FROM THE MUSIC THAT USUALLY ACCOMPANIES IT RAISES INTERESTING ISSUES - SOME OF WHICH ARE DISCUSSED IN THIS MONTH'S BEATBOX PROGRAMMING COLUMN. TEXT BY NIGEL LORD.**



THOSE OF YOU who've faithfully followed this series will have become used to the various conventions I've adopted in order to help you turn my ideas into drum patterns. Although it's often been difficult for me, I hope it hasn't generally presented you with too many problems. Last month, however, will have left you well and truly baffled. Although the article itself should have made sense, the grids were regrettably duplicated from the previous month. Here, then, is how it should have been. . .

Looking back over this series, one of the most interesting things I've realised is just how contextualised most rhythms are. Outside the broader divisions which separate jazz, latin and most triplet patterns, and so on, you would normally have to look at the description of a particular rhythm to be sure of the style of music with which it was intended to be used. Though there are rhythmic differences separating house patterns from hip hop and techno from rap, all





PHOTOGRAPHY: TIM GOODYER

these rhythms (and most others in contemporary pop) are defined for the most part by the choice of instrumentation, the feel of the song and the complexion of the band playing it. The very fact that you use a drum machine in preference to a real drummer, for example, has as much importance in defining your music as the rhythm it is programmed to play.

For the more enlightened musician this rhythmic interchangeability is of

considerable creative advantage; you can experiment with a range of patterns of widely differing feels without being seen to be moving away from the particular style of music you've chosen to be identified with. Rarely has anyone been accused of losing touch with their roots or selling out because of their use of a particular rhythm track.

In the field of dance music, categorisation becomes particularly problematic; notwithstanding the fact

that I made full use of the various pigeonholes which exist to divide the series up into monthly chunks, I would, I'm sure, be hard pressed to sift through a random selection of dance patterns and place them in precise groupings. To some extent this is because rhythms simply aren't memorable in the way that melodies are (how many drum tracks can you tap out note for note?). But more importantly it's because they lose many of their identifying features when taken out of context - even if that context is simply the page heading of an instalment of *On the Beat*.

It is perhaps symptomatic of just how contextualised rhythms have become that a choice of one of two (out of production) drum machines can be instrumental in determining your chosen area of operation. Outside dance music, the divisions are equally blurred; pop seemingly becomes rock when the toms are lowered in pitch and the drummer grimaces each time he whacks his snare. Metal becomes thrash when the tempo is doubled and the drummer strips down to his DMs and bleeds from the knuckles. Rhythmically, there is little change.

To this extent, I have felt much more comfortable with the patterns presented over the last two or three months.

Making no greater claim for a rhythm than the fact that it is (or isn't) danceable, or that it perhaps has a jazzy feel to it, is, I believe, an altogether more honest approach and much more in the spirit of experimentation - which was, after all, what this series was intended to foster. I defy anyone to fix firm labels to any of this month's patterns.

Stylistically, the only dividing line one could confidently make would be between the straight 4/4 signature in Patterns 1-3 and the triplet programming of Patterns 4 and 5. Yet in terms of feel, you'd be hard pressed to find five more disparate rhythmic structures. You can't even use the advised tempo settings as a guide to their likely effectiveness on the dancefloor. Pattern 2 ticks along nicely with a very effective groove despite its fairly moderate tempo. Pattern 3 on the other hand, is right on the button in >

> terms of preferred dance tempi, yet would have to run well outside the stated range to be considered anything like danceable.

Pattern 1 would definitely take the award for heavy of the month, but the assurance of the snare drum coming down on beats two and four of each bar give the pattern a much wider range of applications, and it would be particularly effective in a live situation. The tom figure which occurs in bars seven and eight can, of course, be programmed to occur at any part of the rhythmic track, or left out altogether, if you prefer something a little more "straight ahead".

And the same is true of the accented bass drum/open hi-hat beats in bars four and eight of Pattern 3 - although here you might find yourself having to restructure other parts of the pattern to preserve its flow. Pattern 3 is probably the most complex of the patterns from the programming point of view - though anyone who has followed this series will be familiar with the small figures placed in the notes on the side stick line.

These represent the dynamic range which instruments on your machine may be programmed across (one being the lowest level, nine being the highest) and should be divided equally to provide a decaying effect over the course of two bars of the pattern. Notice, however, the first pair of beats comprises notes programmed at dynamic level nine (or its equivalent on your machine) and dynamic level eight. This is important as the first beat of the bar needs to be accented above the level of the subsequent note.

As you can see, two bass drums are featured in this pattern - the precise sound of each is not so important as the fact that they both sound sufficiently different. Experiment.

Finally we come to Patterns 4 and 5 - both of which, because of the placement of some of the notes in the bar, have had to be notated on expanded grids with some 12 divisions (we're programming in triplets here) between beats. Beyond this, however, programming is quite straightforward and should reward you with two rather tasty patterns, the second of which is, I believe one of the most insistent grooves I've come up with to date.

PATTERN: 1c		TEMPO: 125-140BPM	
BEAT: 1 2 3 4			
Clsd HiHat	◆	◆	◆
Open HiHat			◆
Ride Cymb			
Ride Bell	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick		◆	
Snare		◆	
Hi Tom			
Mid Tom			
Lo Tom			
Bass Drum	◆		◆
TIME SIG: 4/4	BAR: 3		

PATTERN: 1d		TEMPO: 125-140BPM	
BEAT: 1 2 3 4			
Clsd HiHat	◆	◆	◆
Open HiHat			
Ride Cymb			
Ride Bell	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick	◆	◆	
Snare		◆	
Hi Tom			
Mid Tom			
Lo Tom			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 4		

PATTERN: 1a		TEMPO: 125-140BPM	
BEAT: 1 2 3 4			
Clsd HiHat	◆	◆	◆
Open HiHat			
Ride Cymb		◆	◆
Ride Bell	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick		◆	
Snare		◆	
Hi Tom			
Mid Tom			
Lo Tom			
Bass Drum	◆		◆
TIME SIG: 4/4	BAR: 1		

PATTERN: 1e		TEMPO: 125-140BPM	
BEAT: 1 2 3 4			
Clsd HiHat	◆	◆	◆
Open HiHat			
Ride Cymb		◆	◆
Ride Bell	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick		◆	
Snare		◆	
Hi Tom			
Mid Tom			
Lo Tom			
Bass Drum	◆		◆
TIME SIG: 4/4	BAR: 5		

PATTERN: 1b		TEMPO: 125-140BPM	
BEAT: 1 2 3 4			
Clsd HiHat	◆	◆	◆
Open HiHat			
Ride Cymb		◆	◆
Ride Bell	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick		◆	
Snare		◆	
Hi Tom			
Mid Tom			
Lo Tom			
Bass Drum	◆		◆
TIME SIG: 4/4	BAR: 2		

PATTERN: 1f		TEMPO: 125-140BPM	
BEAT: 1 2 3 4			
Clsd HiHat	◆	◆	◆
Open HiHat			
Ride Cymb		◆	◆
Ride Bell	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick		◆	
Snare		◆	
Hi Tom			
Mid Tom			
Lo Tom			
Bass Drum	◆		◆
TIME SIG: 4/4	BAR: 6		



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PATTERN: 1g		TEMPO: 125-140BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Ride Cymb			
Ride Bell	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick			
Snare			
Hi Tom			
Mid Tom			
Lo Tom			
Bass Drum	◆		
TIME SIG: 4/4	BAR: 7		

PATTERN: 2d		TEMPO: 90-110 BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Cabasa			
Claves	◆	◆	◆
Triangle	◆	◆	◆
Crash Cymb			
Side Stick			
Snare			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 4		

PATTERN: 1h		TEMPO: 125-140BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Ride Cymb			
Ride Bell	◆	◆	◆
Cowbell	◆	◆	◆
Side Stick			
Snare			
Hi Tom			
Mid Tom			
Lo Tom			
Bass Drum	◆		
TIME SIG: 4/4	BAR: 8		

PATTERN: 2e		TEMPO: 90-110 BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Cabasa			
Claves	◆	◆	◆
Triangle	◆	◆	◆
Crash Cymb			
Side Stick			
Snare			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 5		

PATTERN: 2a		TEMPO: 90-110 BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Cabasa			
Claves	◆	◆	◆
Triangle	◆	◆	◆
Crash Cymb			
Side Stick			
Snare			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 1		

PATTERN: 2f		TEMPO: 90-110 BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Cabasa			
Claves	◆	◆	◆
Triangle	◆	◆	◆
Crash Cymb			
Side Stick			
Snare			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 5		

PATTERN: 2b		TEMPO: 90-110 BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Cabasa			
Claves	◆	◆	◆
Triangle	◆	◆	◆
Crash Cymb			
Side Stick			
Snare			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 2		

PATTERN: 2g		TEMPO: 90-110 BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Cabasa			
Claves	◆	◆	◆
Triangle	◆	◆	◆
Crash Cymb			
Side Stick			
Snare			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 7		

PATTERN: 2c		TEMPO: 90-110 BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Cabasa			
Claves	◆	◆	◆
Triangle	◆	◆	◆
Crash Cymb			
Side Stick			
Snare			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 3		

PATTERN: 2h		TEMPO: 90-110 BPM	
BEAT: 1		2 3 4	
Clsd HiHat	◆	◆	◆
Open HiHat			
Cabasa			
Claves	◆	◆	◆
Triangle	◆	◆	◆
Crash Cymb			
Side Stick			
Snare			
Bass Drum	◆	◆	◆
TIME SIG: 4/4	BAR: 8		



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**PATTERN: 3a** **TEMPO: 110-130BPM**

BEAT: 1 2 3 4

Cisd HiHat	◆	◆	◆	◆
Side Stick	◆	◆	◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo		◆	◆	◆
Snare				
Hi Timbale				
Lo Timbale				
Hi Tom			◆	◆
Mid Tom				
Lo Tom				
Bass Drum 1	◆			
Bass Drum 2		◆		

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

**PATTERN: 3f** **TEMPO: 110-130BPM**

BEAT: 1 2 3 4

Cisd HiHat	◆	◆	◆	◆
Side Stick	◆	◆	◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo		◆	◆	◆
Snare				
Hi Timbale				
Lo Timbale				
Hi Tom		◆	◆	◆
Mid Tom				
Lo Tom				
Bass Drum 1	◆			
Bass Drum 2		◆		

TIME SIG: 4/4 **BAR 5**

**PATTERN: 3b** **TEMPO: 110-130BPM**

BEAT: 1 2 3 4

Cisd HiHat	◆	◆	◆	◆
Side Stick	◆	◆	◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo		◆	◆	◆
Snare				
Hi Timbale				
Lo Timbale				
Hi Tom		◆	◆	◆
Mid Tom				
Lo Tom				
Bass Drum 1	◆			
Bass Drum 2		◆		

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

**PATTERN: 3g** **TEMPO: 110-130BPM**

BEAT: 1 2 3 4

Cisd HiHat	◆	◆	◆	◆
Side Stick	◆	◆	◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo		◆	◆	◆
Snare				
Hi Timbale				
Lo Timbale				
Hi Tom		◆	◆	◆
Mid Tom				
Lo Tom				
Bass Drum 1	◆			
Bass Drum 2		◆		

TIME SIG: 4/4 **BAR 7**

**PATTERN: 3c** **TEMPO: 110-130BPM**

BEAT: 1 2 3 4

Cisd HiHat	◆	◆	◆	◆
Side Stick	◆	◆	◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo		◆	◆	◆
Snare				
Hi Timbale				
Lo Timbale				
Hi Tom		◆	◆	◆
Mid Tom				
Lo Tom				
Bass Drum 1	◆			
Bass Drum 2		◆		

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

**PATTERN: 3h** **TEMPO: 110-130BPM**

BEAT: 1 2 3 4

Cisd HiHat	◆	◆	◆	◆
Side Stick	◆	◆	◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo		◆	◆	◆
Snare				
Hi Timbale			◆	◆
Lo Timbale			◆	◆
Hi Tom		◆	◆	◆
Mid Tom				
Lo Tom				
Bass Drum 1	◆			
Bass Drum 2		◆		

TIME SIG: 4/4 **BAR 8**

**PATTERN: 3d** **TEMPO: 110-130BPM**

BEAT: 1 2 3 4

Cisd HiHat	◆	◆	◆	◆
Side Stick	◆	◆	◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo		◆	◆	◆
Snare				
Hi Timbale				
Lo Timbale				
Hi Tom		◆	◆	◆
Mid Tom				
Lo Tom				
Bass Drum 1	◆			
Bass Drum 2		◆		

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

**PATTERN: 4a** **TEMPO: 98-110 BPM**

BEAT: 1 2

Cisd HiHat	◆	◆
Open HiHat	◆	◆
Ride Cymb	◆	◆
Side Stick	◆	◆
Hi Bongo		◆
Lo Bongo		◆
Snare		
Bass Drum	◆	◆

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

**PATTERN: 3e** **TEMPO: 110-130BPM**

BEAT: 1 2 3 4

Cisd HiHat	◆	◆	◆	◆
Side Stick	◆	◆	◆	◆
Hi Bongo		◆	◆	◆
Lo Bongo		◆	◆	◆
Snare				
Hi Timbale				
Lo Timbale				
Hi Tom		◆	◆	◆
Mid Tom				
Lo Tom				
Bass Drum 1	◆			
Bass Drum 2		◆		

TIME SIG: 4/4 **BAR 5**

**PATTERN: 4b** **TEMPO: 98-110 BPM**

BEAT: 3 4

Cisd HiHat	◆	◆
Open HiHat	◆	◆
Ride Cymb	◆	◆
Side Stick	◆	◆
Hi Bongo		◆
Lo Bongo		◆
Snare		
Bass Drum	◆	◆

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







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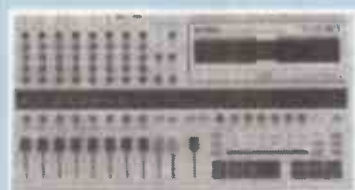
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**PATTERN: 4c** **TEMPO: 98-110 BPM**

BEAT: 1 2

Clsd HiHat	◆		◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆	◆	◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Bongo			◆				
Lo Bongo		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 5c** **TEMPO: 98-105 BPM**

BEAT: 1 2

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆		◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Conga			◆				
Lo Conga		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 4d** **TEMPO: 98-110 BPM**

BEAT: 2 4

Clsd HiHat	◆		◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆	◆	◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Bongo			◆				
Lo Bongo		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 5d** **TEMPO: 98-105 BPM**

BEAT: 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆		◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Conga			◆				
Lo Conga		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 4e** **TEMPO: 98-110 BPM**

BEAT: 1 2

Clsd HiHat	◆		◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆	◆	◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Bongo			◆				
Lo Bongo		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 5e** **TEMPO: 98-105 BPM**

BEAT: 1 2

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆		◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Conga			◆				
Lo Conga		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 4f** **TEMPO: 98-110 BPM**

BEAT: 2 4

Clsd HiHat	◆		◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆	◆	◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Bongo			◆				
Lo Bongo		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 5f** **TEMPO: 98-105 BPM**

BEAT: 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆		◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Conga			◆				
Lo Conga		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 4g** **TEMPO: 98-110 BPM**

BEAT: 1 2

Clsd HiHat	◆		◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆	◆	◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Bongo			◆				
Lo Bongo		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 5g** **TEMPO: 98-105 BPM**

BEAT: 1 2

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆		◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Conga			◆				
Lo Conga		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 4h** **TEMPO: 98-110 BPM**

BEAT: 2 4

Clsd HiHat	◆		◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆	◆	◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Bongo			◆				
Lo Bongo		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 5h** **TEMPO: 98-105 BPM**

BEAT: 3 4

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆		◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Conga			◆				
Lo Conga		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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

**PATTERN: 5a** **TEMPO: 98-105 BPM**

BEAT: 1 2

Clsd HiHat	◆	◆	◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆		◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Conga			◆				
Lo Conga		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

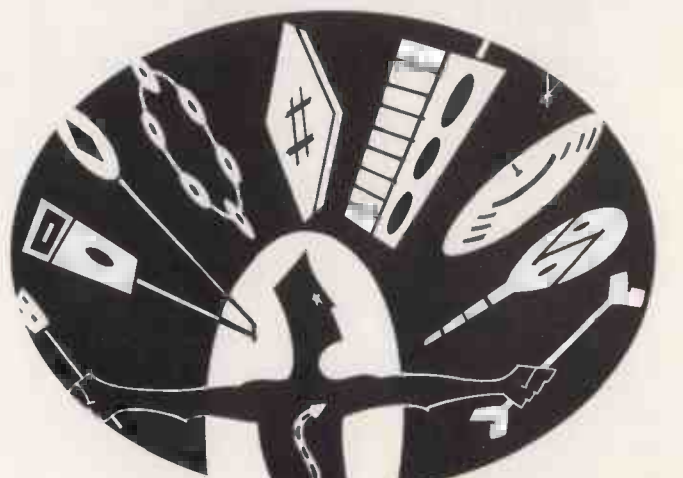
TIME SIG: 4/4T **BAR 1**

**PATTERN: 5b** **TEMPO: 98-105 BPM**

BEAT: 3 4

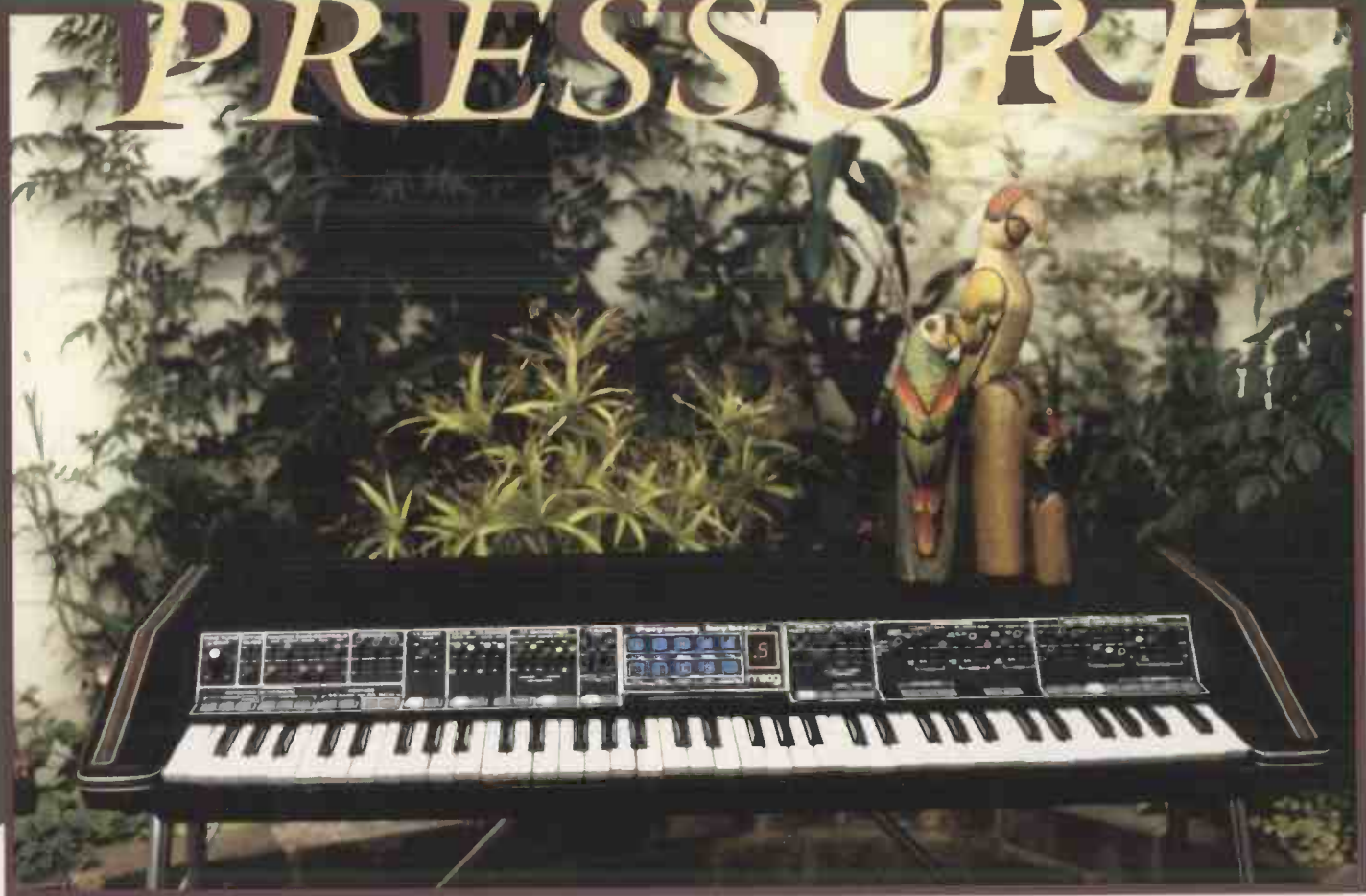
Clsd HiHat	◆	◆	◆	◆	◆	◆	◆
Open HiHat							
Ride Cymb	◆		◆	◆	◆	◆	◆
Side Stick		◆	◆				
Hi Conga			◆				
Lo Conga		◆					◆
Snare	◆			◆			
Bass Drum		◆			◆		◆

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





# POLY PRESSURE



PHOTOGRAPHY: PETER FORREST

**FROM LEADING THE PACK WITH THE MINIMOOG, MOOG FELL BADLY FROM FAVOUR WITH THE ILL-FATED POLYMOOG. WHAT WENT WRONG, AND WAS THE COMPANY'S FIRST POLYSYNTH REALLY A MISTAKE? TEXT BY PETER FORREST.**

IT'S NOT THE easiest task in the world to write a retrospective of an instrument which Julian Colbeck dismissed with such uncharacteristic ferocity in the first edition of *Keyfax* (before deleting it altogether from *Keyfax 2*). Let's face it, no-one's had a good word for the Polymoog in the last ten years - but I've got a few. I've just

spent a few weeks renewing my acquaintance with the beast, and I positively like it.

In the mid-'70s, there were monophonic synths (with the Minimoog the undoubted leader of the pack), the Clavinet, electric pianos and organs, and the odd string synth. What there wasn't was a proper polyphonic synthesiser, one with the degree of control you could get from a monosynth. The race was on to produce the first commercial polysynth, and Moog had started putting money into the task as early as the early-'70s. Their chief designer, Dr David Luce, asked for and received feedback from a who's who of then current keyboard luminaries, including Herbie Hancock, Stevie Wonder, Chick Corea, Jan Hammer, Patrick Moraz, Larry Fast, Roger Powell and Keith Emerson (plus Michael Tillson Thomas from the world of classical music). Moog incorporated their suggestions wherever possible into their design, producing the very first Polymoogs in the winter of 1975/76, and making many modifications

before production proper started (I believe) sometime in 1977. The effort reputedly cost them half-a-million dollars, which is probably peanuts to, say, Yamaha's R&D department nowadays, but was an extraordinary amount of money then. The question was, had they spent the money on the right things? With the benefit of hindsight, the answer has to be yes - and no. Some things they did absolutely right but others proved commercial liabilities which meant the Polymoog had only a very short time at the top of the heap.

The Polymoog is rather an oddball, and one which has certain similarities to the Yamaha CS80. Both sets of designers went to great lengths with keyboard control, and their instruments were far superior in this respect to the Prophet and Oberheim synths that came along afterwards and took away most of their sales potential. The Polymoog's keyboard isn't up to the wonderful feel and polyphonic aftertouch of the CS80, but it still feels good, even today. It's a strange length - 71 notes, E-D - which is slightly





**"ON THE POLYMOOG'S FRONT PANEL MOOG BOASTED THAT THEY'D DONE THE BEST ERGONOMICS JOB EVER, WITH ALL CONTROLS WITHIN FOUR INCHES OF THE KEYBOARD - IT'S TRUE."**

Y shorter than a JX10, but much better than your standard five octaves. (I believe early prototypes ran F-E, and were thus 72-note keyboards; they also had more spindly knobs and more sticky-up buttons.)

Couple this with the ability to split it into a (nearly) two-octave lower and four-octave upper section, and give it touch sensitivity and a very "un-plastic" feel, and you have the potential for a superior performance instrument. There aren't any pitch or mod wheels, admittedly - only a rather small and tacky ribbon controller placed awkwardly dead centre - but the Polymoog makes up for that with a vast array of foot pedal control sockets. It always seemed an anomaly that so many otherwise decent synths didn't give you the chance to use the dangly things at the end of your legs to alter sounds, and Moog obviously thought so too. Hence the Polypedal, a rather expensive unit with controls for filter, pitch, volume, sustain, triggering mode, modulation, and the ability to switch in and out an external synth. Even if you didn't have a Polypedal, you could do the same jobs with a shopful of other pedals and switches but you should be aware that the four switch sockets are non-standard jacks (marginally smaller than the standard quarter-inch) to prevent you mixing audio signal and control signal paths.

Talking of interconnecting, the other thing to remember is that we're talking long, long before MIDI. Consequently, the only synths you could hook up to the Polymoog (and play with the highest note on either the lower or the upper section) were other Moogs like the Minimoog, Micromoog or Multimoog, which used Moog's S-trigger system rather than the later standard V-trigger.

Back on the front panel Moog boasted that they'd done the best ergonomics job ever, with all controls within four inches of the keyboard. It's true, and if you've ever lunged at controls on an Oberheim or a Prophet 10, you'll appreciate this setup. All controls are on a steeply-angled panel at your fingertips. Additionally, the Polymoog has a good flat top to it which is ideal for perching another keyboard (or a few pints of lager) on. The controls incidentally, especially the sliders, are good and solid. My Polymoog must be getting on for 15 years old, and the worn numbering on the preset buttons testifies to a good deal of use, but all the sliders are still smooth and (largely) completely noise-free.

So the controls are robust and within easy reach of the keyboard - but are they useful? They are, but some more so than others. It was a good idea to include some sort of relative keyboard balance control, especially with the Polymoog's capacity to

split the bottom two octaves from the top four. But giving you three double-octave balance controls is silly. The top four octaves are bound to have the same sound, so any discrepancy in their relative balance just makes a run or chord crossing the change-over point sound like sloppy dynamics. More useful are a plethora of other controls by which you can differentiate the lower section of the split from the upper, including separate wave-shapes - either or both - square-wave pulse-width and modulation; relative amounts of sawtooth wave; decay time; and whether the resonator section and VCF affect either or both.

What this means is while you can't set up two completely different patches each side of the split point, you can make them sound surprisingly different. You can have a pizzicato double-bass line down below and a sustained pseudo-horn section above, or any number of other pairings of more or less usefulness. But if you find a mega-patch at your finger tips, out come the pen and paper. Yep, the only thing that's worse - and less reliable - than cassette downloading is human downloading onto what we old timers used to call patch sheets. There's actually something quite satisfying in filling in little black blobs on a genuine Moog patch sheet. What's less satisfying is setting the patch up again a week later and finding it just don't sound quite the same.

The Polymoog came just too early to benefit from the microprocessor revolution of the mid- to late-'70s, and consequently has precisely zero memories - worse even than the four miniature sets of faders the CS80 boasted. It also missed out on the other turning point of the era - the idea of having a limited (and thus cost-effective) number of voices assigned by a scanning micro-processor to whatever notes your fingers hit. What Moog did instead was what makes the Polymoog unique, but probably what made it so uneconomic to turn out that I gather they even halted production a couple of years before the Memorymoog superseded it. They designed a chip which included practically everything a synthesiser voice needs - two VCAs, a VCF, and an envelope generator - and then calmly shoe-horned 71 of the little blighters into the Polymoog - one for each note. The virtue of this is that you have absolutely unlimited polyphony - a bit of overkill, but not to be sneezed at if you're using a lot of notes with long decay, because it means that you can just keep on playing them without worrying if the next note you play is going to silence an earlier one mid decay. On top of this, each note is marginally different from its neighbours in subtle ways related to component tolerances and very much like

the subtle differences between piano strings.

The downside is that something had to be simplified if the Polymoog was going to fit into a normal size case, be reasonably affordable and avoid horrendous tuning problems. The solution Moog adopted caused a lot of controversy: they borrowed organ technology, and used a very high master oscillator for each of the 12 notes, dividing down to get the lower octaves. This led to accusations that the Polymoog was a glorified organ. It wasn't really true, because for one thing the touch sensitivity made it very un-organ-like and for another, the oscillators were phase-locked to VCOs which enabled them to be modulated in a way an organ couldn't be. But what it did was to set up some bad publicity which, when added to another quite reasonable popular prejudice of the time, was enough to shorten its commercial life considerably. The purists sneered - the Polymoog wasn't just a glorified organ, it was one of those dreaded preset synthesisers as well. Nowadays, you wouldn't get far selling a synth (or sampler) without an impressive load of sounds to go with it; but remember, this was in the days before the early Prophet 5's magnificent (if totally unreliable) 40 memories began our drift towards the "factory preset" syndrome.

It was all too much for a lot of people brought up on Moog modulators, or on the elegant little Minimoog. What made it worse was that, although some very acceptable traditional Moog sounds could be coaxed out of the Polymoog, they didn't spill out of it as they had from the Minimoog. The classic bass sounds in particular just couldn't be reproduced, no matter how hard you tried.

Of course the lack of a brilliantly punchy bass sound isn't the end of the world for a polyphonic synth, particularly when it was a reasonable assumption that most potential buyers already owned a Minimoog or an Odyssey. (Of those two monophonic princes, the Polymoog sounds to me more like the Odyssey. Don't ask me why.) What you got in the Polymoog was eight preset instruments - or modes, the designers called them, aiming that you should use them as starting points. String is a bit thin but OK as it stands; Piano was good for its time and sounds like a nondescript touch-sensitive electric piano; Organ is pretty poor (interesting when you think of the criticisms); Harpsichord is thin and unappealing (though apparently meatier in late models - s/n above 3000); Funk is not exactly superb but not bad either; Clav is reasonable; Vibes is hollow and weak; and Brass is good, though not up to Oberheim standards.

There are, the eagle-eyed will have





**“PEOPLE PRESENTLY PAY A COUPLE-OF-HUNDRED QUID FOR A MOOG PARAMETRIC - FOR THE SAME SORT OF MONEY YOU CAN GET THIS AND A POLYMOOG THROWN IN.”**

noticed, two more buttons I haven't mentioned. One is called Var, and enables you to free up all the controls to put your own sound in. The only trouble is, it doesn't stay in memory if you switch off the Polymoog, or even if you go to one of the presets and move a control or two. The second (.) button is a bit of a disappointment as well. Its function is simply to transfer the settings you've come up with as an adaptation to any of the original presets. This can be quite pleasing, but it's not what you would call a usable memory.

If the presets were the whole story of the Polymoog, then I'd agree that its consignment to oblivion was justified. (There was actually a purely preset Polymoog, brought onto the market a couple of years after the original Polymoog, and at a considerably more reasonable price. It had around a third of its big brother's controls, 14 average to good presets and the same quality keyboard. There's some confusion here, because Moog called this the Polymoog Keyboard, and renamed the original one the Polymoog Synthesiser. But the original Polymoogs were actually called Polymoog Keyboards. Put more simply, an early Polymoog Keyboard (like the one illustrated) is fully controllable. A late Polymoog Keyboard is not.)

It's the controllability of the full Polymoog which redeems it, and, I reckon, makes it a worthwhile instrument even today. For a start, you've got a good (and easily overdriven) filtering section, based round Moog's wonderful 24dB/octave system, and with variable keyboard scaling (eat your heart out, OBXa owners) and even sample-and-hold control of filter cut-off. Then you've got three-band parametric EQ, switchable to low-, band- or high-pass filtering. This actually comes in the audio output chain, rather than in the guts of the synthesis, but what it does is completely transform sounds with the push of a slider

or two, making a weedy reed warm and chunky, or a broad string wash into something ethereal. You do have to be a little careful that pushing the gain to its maximum may cause distortion, but even that can be a positive feature, giving warmth and power - particularly in beefing up the poor organ sound into a vastly overdriven Hammond lead sound.

Last but not least, there's one more unique feature the Polymoog has, that sets it apart from any synths except the big modular systems. This is its five separate outputs. I know that perfectly ordinary synths like the JX10 and multitimbral modules like the D110 have loads of outputs but hold on - the outputs on the Polymoog emanate from different sections of the one basic sound source.

Whatever you play comes out of four different outputs: one filtered by the settings of a particular preset; one filtered by the panel-controlled VCF; one controlled by the parametric EQ/filters that Moog call Resonators; and one which is the unadulterated sound of the voice chips. You have a neat five-way mixer for these four and an Aux sound which you can hook up via the socket-laden back panel. Thus, you can use them for separate sends for each section of the keyboard (by setting, say, the VCF to Upper Only and the resonators to Lower Only), but you can also have subtle blends of two or more of them. Whether deliberately or not, they are sometimes out of phase with each other, and this can enhance some of the sync sounds that the keyboard already produces.

For recording, you can put these different sounds through the separate outputs; or for live work you can simply blend them through a mix out (balanced XLR or unbalanced jack). Either way, you can produce subtle changes in tone colour or drastic turnabouts very easily and organically.

A good example of this is to be found in the Piano preset which, with some changes to the VCA, can produce a clean electric guitar impersonation through the resonance output and a dirty one if you whack up the gain. Alternatively you can get loads of different brass or string sounds by varying combinations of output, either as a live performance effect or mixed at your leisure from four tape tracks in the studio.

The microprocessor revolution and MIDI quickly consigned the Polymoog to the out tray. But it's far more pleasant to play than most reasonably-priced modern keyboards, the presets are helpful starting points, and it does have the unique combination of massive polyphony, multiple outputs and its inbuilt three-band parametric EQ. People presently pay a couple-of-hundred quid for a Moog parametric, and for the same sort of money you can get one and all the other bits of a Polymoog thrown in. Hook it up to some digital effects, be prepared to work at getting the feel of the controls and you can get a good variety of really acceptable sounds out of it, from subtly-changing string washes to fat filter brassy to screaming organ histrionics. All this and a little bit of history too.

As well as the famous players who helped in its development, other Polymoog users included Steve Winwood, Giorgio Moroder and, of course, Gary Numan. Not the most currently fashionable group of musicians, agreed, and I can't see the rehabilitation of the Polymoog happening overnight, but it may well come.

Picking up on MT's recent *Desert Island Keyboard* challenge, if I had to take just one keyboard to a desert island, then the "dreadful" Polymoog (Julian Colbeck) would rate above any number of modern synths, because it's got a decent keyboard and, once you crank up the filter or parametrics, you can get some pretty awesome sounds. Honest. ■

# STRANGE CHANGES



***Bizarre Inc's ability to marry pop sensibility to hardcore dance sound sees them currently straddling both the underground rave scene and the overground pop charts.***

***Interview by Simon Trask.***

BIZARRE INC MAKE THE SORT OF MUSIC that gives the average muso heart palpitations. Music which can send seismic tremors rolling across the dancefloor with its raw, hardcore sound and pounding

beats and yet also penetrate the upper regions of the pop charts with its catchy sampled vocal hooks and uplifting piano riffs.

To make matters worse, the three young musicians who make up Bizarre Inc - Dean Meredith, Andrew Meecham and Carl Turner - have no time for "real" instruments or the performing skills required to play them. Instead they're devoted to their collection of synths, samplers, drum machines and sequencers old and new, and spend many hours in the small upstairs room which has been set aside in Meecham's house as "the studio", experimenting with new sounds, searching for new vocal samples and programming the fierce rhythms and basslines which characterise their particular brand of dance music.

Yet far from being reclusive types who prefer the anonymity and safe living of studio life, Bizarre Inc frequently place themselves and their gear in unpredictable and volatile situations in order to play to youthful, enthusiastic dance crowds. As stalwarts of the rave scene for the past two to three years, the group have travelled the length and breadth of the country, "paying their dues" by playing their fair share of what Turner refers to as "really dodgy raves in tents, with dodgy sound systems" as well as many club venues.

Through their many live appearances the group built up a groundswell of popular support which took 'Playing With Knives', their second single for London-based independent Vinyl Solution, to the No 1 slot in numerous dance charts and to No 43 in the Gallup national chart in March of this year. More recently, their follow-up single, 'Such A Feeling' b/w 'Raise Me', topped the dance charts for several weeks and peaked at No 13 in the Gallup chart and No 9 in the Network chart, leading to the inevitable appearance on *Top of the Pops*. It seems that the distance from muddy field to hi-tech sound stage isn't as great as it once was. But is the underground sound of dance music really becoming more commercially acceptable?

"I don't know whether it's getting more acceptable", replies Carl Turner. "I think it's just that the underground following is getting so big it's throwing it into the charts."

"It is accepted now, though", opines Bizarre Inc founder Dean Meredith. "Whereas once it would have been 'What's that?', now it's just '90s dance.'"

I'm sitting with all three members of Bizarre Inc in the front room of Andrew Meecham's house in Stafford, having just been given a guided tour of the group's hi-tech recording setup and a demo of their recently-acquired - and, as it turns out, very aptly named - Studio Power RS500 speakers. Although Meredith and Turner each have their own collection of gear at home for working on tracks, it's at Meecham's house that they work together.

Not all that long ago, the group were making it known in interviews that the attentions of the pop marketing machine weren't welcome, fearing that it would lose them credibility with their underground following. However, with the commercial success of the past two singles, events have overtaken them somewhat. With a *Top of The Pops* appearance and a *Smash Hits* interview with Meecham (much to his ►



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embarrassment) under their belt, what direction are they headed in now?

"We don't think 'Right, we're in the charts so the next track's got to be commercial, we've got to be a pop band now'", says Meredith. "We'll just be ourselves and do what we feel is right when we're in the studio. If it gets in the charts, OK, but you can't predict something like that, really."

"Other people will probably put us in the category of being a pop band just 'cos we're in the charts", remarks Meecham, "but that's the way it is in this country. People do like to label things, but it's not needed."

**'PLAYING WITH KNIVES' HAS BEEN AN** influential track, its abrupt juxtaposition of techno and Italo-piano styles spawning a large number of what Bizarre Inc call "changeover" records.

"Putting a big piano break in the middle of a techno track was something nobody had done before", says Turner. "When people heard it they thought 'Yeah, it's so obvious, we've got piano records and we've got techno records, why don't we have piano techno records?' It's just that we were the first to have that notion."

It's a notion which owes not a little to the concept of a DJ cutting between two records. Rather than the more traditional musical approach of vertically integrating different musical styles, "changeover" tracks are about linear juxtapositions of different styles. Juxtapositions allow each style to remain readily recognisable and therefore easily assimilatable, but add the interest of contrast, abrupt change, and changes in dynamics.

With 'Such a Feeling' and 'Raise Me', Bizarre Inc again utilised the "changeover" concept. 'Raise Me' provides an extreme changeover from heavy techno beats to a sensual, dreamy vocal sample with no rhythmic backing - a quite enchanting moment.

"More than anything that was a bit of a piss-take", admits Turner. "So many people had picked up on the piano/techno changeover in 'Playing With Knives', and were cashing in on it by putting piano breaks in their own tracks, that we thought we'd see how far we could take it. So we went from the hardest bass into the most ambient vocal, the two extremes."

"That sample was quite a pain to sync", Meredith recalls.

"God, yeah, 'cos it actually changes bpm", adds Turner. "It starts off really slow, then it goes back into the beat, which is about 128. It was hard picking the beat up again."

I'd hoped to find out from the trio what track they'd lifted the vocal from, but it wasn't to be - though not through any reluctance on their part to reveal sources.

"It was off a dodgy album of a cappellas, so we don't know where the sample's from originally", Turner explains. "It was dead funny, we were in the studio and every now and then one of us would stop and go 'God, I think I know who it is' and mention some big name. But, seriously, we don't know who it is."

So you might get a phone call one day. . .

"We'll cross that bridge when we come to it", says Meredith.

"Yeah, use it first, and if there's any trouble pay 'em later", Turner adds. "It's not as if we go around trying to bastardise everything, though. We can only use a line if we particularly like it."

"That's it, if it sounds good and it works, we'll use it", says Meredith, neatly summing up the Bizarre Inc philosophy of sampling.

So do the group make much use of their Akai S950's time-stretching function to help bring errant samples into line?

"All the time, yeah", says Turner. "The vocal sample on 'Playing With Knives' is time-stretched - about 83%, I think."

Mention of this sample - an a cappella vocal phrase from Circuit's 'Shelter Me' - brings forth a story for our times from Turner.

"They didn't say anything about us using the sample, and we heard that they liked our record because it was so different. Basically, we'd used the sample to create a new song in a new way. But then they released their track again, called it the Retaliation Mix and used our bassline! It sounded like a remix of 'Playing With Knives'. Of course, we couldn't say anything."

It's a useful reminder that there are other ways to make someone pay for using a sample than asking for money.

But wouldn't it be less troublesome all round to have a real live singer fronting the group?

"We prefer to use a sample over a real singer because singers are just such hassle", replies Turner. "If we did have a real singer we'd only want to make her sound like a sampler. We'd make her sing a line and then use it as a sample, pretend it was off an a cappella."

"I like the precision you can get using technology. With real vocals, drums and guitars it's just not tight enough for me, whereas with a sequencer you can concentrate on getting a sample in exactly the right place, moving it forward a bit, backward a bit. . . I know there's some purists who absolutely hate the way we work, but it's just working in a different way."

"Each to their own", says Meecham. "I don't think you should knock any sort of music, 'cos everyone's got their own taste and their own way of doing things. We don't go around knocking indie bands just because we don't like guitars. It's up to them. So, we don't think we should be knocked for what we do. For us, technology is what it's all about now. It's gone beyond the stage of buying a Fender guitar and a Yamaha drum kit - just buy a sampler, that's all you need."

"Everyone's getting samplers now", maintains Meredith boldly. "I bet Status Quo have got a sampler."

"They're bound to have", agrees Meecham, with a mischievous look in his eye. "Rick doesn't play his guitar riffs, they're in the sampler, aren't they? Three chords, innit?"

**IT SOON BECOMES APPARENT WHEN WE** start talking about the gear the group use that they look upon their collection of synths, samplers, drum >



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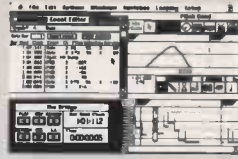
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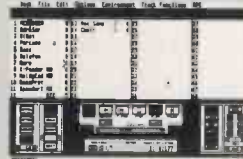
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➤ machines and sequencers as more than utilitarian devices, tools of the trade. They are genuinely enthusiastic about various bits of gear and the sounds they can get out of them.

Meecham started out modestly with a little Casio SK5 sampler and an old Yamaha PSS keyboard.

"My first proper synth was the Juno 6, and I loved it and loved it and loved it", he recalls. "Forget girlfriends. Then along came the SH101, which I bought from a doctor's son who didn't like it. After that I got the K1 and started getting into MIDI, and it just developed from there."

Other instruments to be found in Meecham's studio, aside from the all-important S950 sampler, include a Roland D110 ("rubbish for dance music; the sounds aren't there.") and a rather less common instrument, an Akai VX90 analogue synth expander ("nice brass analogue sounds, and a good bass sound").

Meecham's most recent purchase is a Korg M3R.

"I'm very impressed with it", he comments. "I got it for the pianos, strings, flutes and noises. With all the instrument samples it's got, who needs to go out and buy a flute when it's on the keyboard. Also, 'cos it's got all the effects in it, it really fills the room. It's a winning piece of equipment."

If there's one thing the group are short of, it's effects. A little Zoom 9002 is used for adding effects to analogue synths like the Juno6, but about the only effect Meecham considers worth using on it is the distortion.

Like Meecham, Meredith started out modestly, with a Casio SK5.

"My first real box of tricks was the E-mu SP12", he recalls. "It cost me £450. I've also got a Sequential Pro One, which is really nice for bass - I can spend hours with it just writing bass sounds."

"At the moment we're all into the Pro One - that wins for bass", Meecham comments. "We turn to the analogue stuff for bass every time. There's more feel and depth in analogue sounds. I think the digital stuff wins with strings and piano, though."

"All these new synths have analogue sounds built in, but you can never get the same sound out of them as the originals", maintains Meredith.

"They're just not as rich as the original analogue sounds", Meecham concurs.

"I've just had a 202 for a couple of weeks, and you can get some really amazing bass sounds out of that", continues Meredith. "I've got a JX3P, which has got some really nice brass sounds on it. It's a bit hard to program, though. I don't use it that much, actually. At the moment I've swapped it with a friend, for his DX27 and the 'Solid Bass' sound."

Meredith's complement of Roland gear includes every dance musician's favourite companions, the TR808 and 909.

"I paid a ridiculous price for the 909", he reveals.

"How much did you pay, Dean?" asks Meecham, obviously knowing the answer.

"Eight hundred pounds", comes the reply.

Come again?

"I phoned up every music shop you could think of and scoured the secondhand ads, but there just weren't any to be had", Meredith explains. "Eventually,

someone put me onto this rock guy who was selling one, but I had to pay over the odds for it. I wanted it that badly, though. And it *is* in good condition."

"We played about 12 venues before he'd take it out of the plastic wrapper", Turner jokes. "I've been after a 909, too, but you just can't get 'em. We always look through the free ads in Music Technology. In fact, I nearly got an 808 and a 909 that way, but they were already sold when I rang up."

"I got my 202 from there", Meredith reveals. "I like to look at those equipment lists you run with the interviews, too, just to see what other people use."

"It wins for me, your magazine", says Meecham.

Flattery will get you everywhere. Could we get back to discussing the gear that will appear in the Bizarre Inc equipment list?

"The SP12, Juno 6 and SH101 are what we use the most at the moment", says Meredith. "I think out of all the gear I've got, the SP12 is still my favourite. It's old, but it's a nice bit of gear - so quick and easy to use. Its sequencer is pretty good, too."

"Dean hates computers", says Meecham. "He can't be doing with the mouse and the screen."

"Yeah, I'm Anti-Computer Man", confirms Meredith. "I just MIDI all my stuff up so that it's synced, and fire it all from my 909."

In contrast, Meecham and Turner both use Cubase running on a 1040ST.

"Cubase is a matter of chucking blocks about the place and constructing it all", explains Meecham. "It's dead easy to use, and very visual - you can see your arrangement clearly on the screen. Both Carl and I liked everything about it, so we decided to get it."

#### ONCE THEY'VE GOT A TRACK PROGRAMMED

on Cubase at home and they're all happy with it, the trio head off for Out Of The Blue studios in Manchester for the recording proper. The studio has an Otari 24-track tape machine, a TAC Magnum desk and plenty of effects, while an Atari ST, Steinberg Cubase sequencing software, an Akai S1000 and S950, a Roland U220 and a Roland TR909 provide a useful level of compatibility with Bizarre Inc's home setup.

But still, what is it that draws them to Out Of The Blue in particular?

"The engineer", replies Turner.

"He is *Mr Engineer*", adds Meecham. "He eats and sleeps mixers, and he likes his Aural Exciter and his compressors, that's his life. He's got a big stack of effects."

"When we think the mix is perfect and everything's clean, he's always got something else to add to it", says Meredith. "He'll want another couple of hours on it, and he'll make it sound even better. He's there with all his effects and compressors and stuff, and he gets it just right."

"We'll have a bass sound that we've sampled and it'll be a bit noisy", continues Meecham, "and we'll say 'it'll be hidden in the mix', but he'll freak out. He'll spend hours getting rid of a bit of noise. We recorded 'Such A Feeling' at Square One studios, but we took him with us. He likes working with us, even though we give him grief from time to time. His name's Adam ➤





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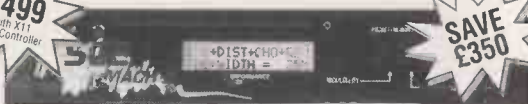
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↳ Lesser, by the way.”

The Bizarre Inc mixer of choice for at home and on stage is the Tascam MM1.

“It's very quiet”, explains Meecham. “We've never actually done a track using the MIDI muting on it, though, because it's far easier to do the muting within the sequencer.

“My only complaint about it would be that it could do with better EQ, though if you can get the right sound in the first place you don't need to EQ it that much, apart from the bass. But it's a good piece of kit - and it was a bargain. We're big bargain hunters, not that we've found many.

“Also, it's good for gigging because you can lob it in a Pod flightcase and away you go, it's very compact. When we go out live we're satisfied that our gear is working fine, it's just these dodgy raves. There's been times when we've said we wanted a proper mixer, and then when we've got there it's a little DJ mixer and we're putting keyboards and stuff through it. So now we put all our gear through the MM1, which gives us 20 channels including some stereo channels, and give the DJ a left and a right from the mixer output. The DJ usually controls the mix anyway. You go to a rave now and look at the stage and most of it's taken up with a big DJ console, with this guy surrounded by monitors while the bands are stuck away in some corner. A lot of the time you get there and there's no monitors for the bands.

“The good sound engineers are the rock engineers, but as for these young 'We'll go and buy a couple of

bass cabs and some mid-range and call it a sound system', they don't know what they're on about.”

“We always feel bad if we do a gig and the sound system doesn't come out right”, says Turner. “We feel like we've let everyone down, even though the crowd are still dancing and they love it, we don't feel satisfied in ourselves. When you get on a big live event it's brilliant, though, because they've got the money to spend on a decent sound system.”

“We're going to be doing a dance festival in Slough, and there's supposed to be 25,000 people there” reveals Meecham. “We've only ever done one open-air event, in Italy, and that was really dodgy. They'd built a scaffold construction and just lobbed planks of wood across it, so the planks were shifting apart as we were playing. Our MC put a leg through the stage when he was walking around.”

### FOLLOWING THE COMMERCIAL SUCCESS

of ‘Such A Feeling’, the next single will be a re-released version of ‘Playing With Knives’, with a new track on the B side. I get the impression that the re-release is more at the instigation of the group's record company than the group themselves. What's more, the seven-inch mix by Youth hasn't met with an altogether favourable response from the group.

“We're in two minds about his mix at the moment”, comments Turner diplomatically.

Unlike some groups, Bizarre Inc aren't keen on remixing their own tracks themselves.

“Generally, the version that we put out is our final version”, says Turner, “so we don't really do remixes once the track is out. But then we've done about six mixes to get to that final version. After that, we'd rather get somebody else's point of view. Obviously we try and get someone who we feel is going to be right for the job, and who we all like. But if we do remix one of our tracks ourselves, we like to make it completely different.”

Although it's the next single which is uppermost in their minds at the moment, Bizarre Inc are also putting together ideas for their first album, and have demo'd some tracks. But what future directions would they like to pursue?

“I'd like to do a garage track, something soulful with maybe a real nice vocal”, says Meredith.

“I'd really like to do a good vocal track”, Turner concurs.

“Big production”, adds Meecham.

“A big production would be nice”, agrees Meredith. “Maybe bring in someone from the States to mix it or produce it, put an American feel to it.”

This sounds like they want to go in a more conventional song direction, away from the hardcore instrumental tracks.

“We still want to be putting out some hardcore club tracks as well, 'cos they're fun to do”, says Meredith.

“That's where we started from”, Meecham adds. “We can't go away and leave our roots. But suddenly people are expecting us to be a chart band, and it's hard to try and keep that other side. We're scared of being laughed at, because we didn't intend for all this to happen, but I think if it starts happening you've got to go with it. You become public property, in a way.” ■

PHOTOGRAPHY: JEAN BERNARD SOHIEZ





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## VALHALA B103 M1 INTERNATIONAL GOLD CARD

Isn't it frightening how quickly we become blasé about technology? Five hours ago I was playing with the sounds on this ROM, thinking something along the lines of it being another 200 well-programmed M1 sounds - ethereal, powerful, and predictable. Worrying, isn't it? This begs a question: has our attention span for new sounds become so short, our appetite for new experiences become so over-whelming, that the "mega" keyboard of three years ago has become Dullsville '91? Or can you genuinely have too much of a good thing?

Enough rhetoric. Let's look at the catchily-named B103 from Valhala. As already stated, it's well programmed, and contains many typical M1-ish sounds. It also provides some fat, punchy patches, and the usual melange of percussion, pads, and pianos. So, in the time-honoured fashion, let's pick out some Reid faves. . .

Amongst the programs you'll find basses, strings, sound effects, organs, and many vocal-based sounds, but the following are my pick of the crop. New-agers should try 'Relaxation', 'Belly End', 'Friday 13th' (with its world's worst B-movie vampire organ), 'Pure Warmth' and the inappropriately-named 'Slow Mallet'. For punchy brass go directly to 'Tool 4 Mix', 'Make a Point' and 'QuiteNieve'. Hammond fans, meanwhile, should dive straight in with 'Amped Organ' - definitely the biz. Also worthy of mention are the cutesy 'Delay Play', 'Don't Delay', and 'YuleTime'; and the analogue-ish 'Sweep&Hold' and 'Won Digit'. However, if I have to level a criticism at these programs (and I most certainly do), it's that there's too much reverb on most of them. Shorten the reverb time and decrease the reverb balance to make many of these sounds stand up in a mix. On the other hand, if you're not competing against a screaming lead guitar, maybe they're just fine as they are. Personally, I'm afraid I remain to be convinced.

In previous Valhala reviews I haven't even bothered to mention the Combinations because the Programs were so good. This time, unfortunately, many of the card's strongest sounds are Combinations. These are an invitation to write soundtracks for TV shows like *Horizon* or *Life on Earth*. Try 'Novatron' (which captures the spirit of the old tape-playing monster surprisingly well), the floating

'Majestik', the gorgeous fat and rich (hi mum!) 'Rising!' and 'Room of Gold', and other sure-fire AV winners, 'Beauty Bell', 'I am a D50!', 'Autumn', and 'Massive'. All these patches are winners in their own right, the only problem is that they use two or more programs in being so. The upshot of this is that the polyphony of the keyboard is often restrictively limited. My personal solution to this would be to buy two M1/Rs - they've got an overflow mode. Then again. . .

So where does this leave us? Reasonably impressed, but marginally disappointed I'd say. Making allowances for personal taste, this card is almost everything that the first Valhala International Gold cards (B101 and B102) were. But therein lies the rub. If you've already bought an earlier Valhala Gold card, and you're going to be asked to shell out even more of your hard-earned sponds for this one, you've got the right to expect something a little different - something more innovative than this collection. After all, it's been over a year since the earlier cards were released, and variations (no matter how well put together) of old ideas simply won't cut the ice. On the other hand, if you don't have the earlier Valhalas, this ROM is as good as any other card on the market (and rather better than most). On that basis, it is a good buy but isn't it a shame that Valhala couldn't make you want to own all three? **Gordon Reid**

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## DJ FOOD

*Jazz Brakes Volume 1 (Ninja Tune: Zen CD1)*

Where the sample CD, as exemplified by the Datafile CDs, is a format designed purely for sampling purposes, with no musical reality of its own, the breakbeat album has always had some musical dimension to it. To begin with, it was essentially a compilation album bringing together pieces of music which contained popular breaks and samples (the *Super Disco Brakes* and *Ultimate Breaks & Beats* series of albums), then with the advent of affordable sampling it became possible to isolate the break from its original context and by repeating it, turn it into a backing track lasting several minutes (Simon Harris's *Beats, Breaks and*

*Scratches* series of albums) - a hi-tech version of a DJ cutting between two copies of the same record.

In the years following the release of 'Say Kids What Time Is It?', Coldcut have become master sample manipulators. During the past year, they've been returning to their DIY underground roots with a succession of records on their Ninja Tune label which cater to a discerning dancefloor crowd rather than to an amorphous pop audience. Included among these is *Jazz Brakes Volume 1*, now available on CD together with *Zen Brakes Volume 1*, an appealing collection of what I'd say were Larry Heard-influenced abstract instrumental house tracks.

The sleeve instructs that *Jazz Brakes* should be filed under "breakbeats/jazz", yet simply calling it a breakbeat album doesn't really do it justice. Rather, it exists in some strange middle ground between the artistic and the merely functional, a collection of jazzy-flavoured funky instrumental dance tracks structured around breaks and repetition, and therefore eminently sampleable, and yet able to stand up as tracks in their own right. One track is given over to a sequential playback of some of the samples used on the album, with gaps between consecutive samples to help you pick them out for sampling - a feature which has been common on breakbeats albums since Simon Harris's series, and which of course also now forms the basis of the sample CD format. Artistic breakbeat albums? Whatever next? **Simon Trask** *Jazz Brakes* is available from record retail outlets.

## HITSOUND PRODUCER SERIES SAMPLING CD

*Pascal Gabriel's Dance Samples*

The bandwagon is rolling. . . Yup, the "music industry" is finally waking up to the fact that - whether they approve or not - samplers are being used to more ingenious ends than simply recreating the sounds of instruments beyond the scope of synthesis. So it is that we find Roland releasing samples of their discontinued TR808 and 909 beatboxes for their latest Rhythm Composers and most manufacturers including "scratches" alongside the kicks 'n' snares of their latest digital drum machines.

Perhaps the most direct route to the samplers



(people not machines) of the '90s is through sample CDs - although even here the bigger boys are being shown the way from the ground up. First there was Ed Stratton's Datafile series which was aimed fairly and squarely (and accurately) at the dance samplists. Now we have Pascal Gabriel (he of S' Express and Bomb the Bass fame) with his Dance Samples disc. Next it'll probably be George Martin's Beatles Sample Collection. . .

But back to the endearing, if slightly wacky, Pascal Gabriel. Released through the Advanced Media Group, his disc sets out to provide you with a direct route to the sort of breaks, hits, stabs, voxes and fx which have helped him help others up the pop charts. And with a running time of over 70 minutes, most of it in glorious stereo, it's a pretty generous helping at that. Each track is between four and 13 events, so some shuttling is usually involved in getting sounds off, but it's no real hassle.

The breakbeats come fully documented in terms of bpm, and cover some very flaky '70s grooves through to some very beefy slammers. The older stuff would readily support a range of musical styles from funk to hip hop; the more modern-sounding loops are strictly house. Track 7 in particular sounds like being house gold dust - expect to spot 'City Beat', 'Manic Beat', 'Chill Beat' or 'Syncrobeat' on a single near you soon.

Percussion loops are probably one of the least-discussed samplers' secret weapons. Using a top line or percussion loop you can turn a pedestrian (and unsampled) beatbox rhythm into something a little special. Pascal knows it and he's letting you in with some tasty congas, timbales and tambourines.

An abundance of individual drum, percussion and electronic hits follow up the loops - check 'em out. Be prepared for it to take you a while. While much the same can be said of the bass, synth, stab, vocal and fx sounds, PGDS is definitely strongest in its percussive material. That's not to say the other material is poor, more an acknowledgement that there are other sample CDs around - not to mention synths themselves - from which much of this type of material can be gleaned. As such it's not what I'd call a "complete" sample CD, more of a beat-building tool.

One area in which Pascal Gabriel's Dance Samples breaks new ground is in its use of the RSS 3D sound treatment system. For those of you only recently back from the outer planets, RSS sets out to create three-dimensional sound placements using a conventional two-speaker playback system. In terms of this sample CD, this means that the last 15 minutes or so of sounds can - in theory at least - bring 3D sound to your music.

In practice, the effectiveness of these samples depends heavily on a number of elements - the replay system, the musical setting, even the sounds themselves. It's good to have them on board - and there's no doubt they add "space" to a mix, but how 3D they sound is best judged by you. Incidentally, this section of samples isn't

fresh material, it's earlier stuff that's been treated.

Another thoughtful provision of Pascal Gabriel's Dance Samples is the inclusion of a data section - five tracks of data for direct transfer to Akai S1000/1100. Thoughtful, certainly, but not that useful. AMG (decently) admitted that the data on the review disc wouldn't load.

Overall PGDS has to be worth checking out. The only way you're going to be wasting your time and money is if you still think a sampler should sound like an orchestra or you're seriously expecting the next Genesis Lp to get you on your feet. **Tim Goodyer**

**Price £49**

**More from The Advanced Media Group, Hurst Lane, Privett, Nr Alton, Hants GU34 3PL. Tel 073088 383.**



The second in a projected set of three Datafile sample CDs produced by Ed Stratton, this new CD continues in the same vein as Datafile One (reviewed MT, August '91), being again aimed at dance producers, DJs, programmers and musicians. As with Datafile One, you get upwards of 1000 mono samples spread across 99 tracks and offering a mix of breakbeats, drum and percussion samples, bass sounds, vocals, speech, and sci-fi/ambient fx.

In most cases, each sample has been recorded only once, with around one second of silence between samples; however, short percussion sounds are repeated once for convenience. Talking of convenience, the sample list in the accompanying booklet identifies each sample by category and description, and allows you to see at a glance which track on the CD a sample is located within. However, samples are indexed per track in the booklet but not on the CD itself, so, with anything from seven to 24 samples per track (the average is around the 11 mark), "zeroing in" on a particular sample isn't quite as easy as it could have been; you can help yourself out here, though, by noting down the time locations of samples as you use them. Incidentally, if you've yet to invest in a CD player but are thinking of doing so in order to take advantage of the burgeoning sample CD market, do try to get a machine which has an A-B Repeat facility, as it's a real boon for sampling (not to mention for transcribing music, but that's another story).

Like Datafile One, the new CD starts off with a collection of programmed and sampled breakbeats (only this time 100 of them, compared to 60 on the first CD). They're either one or two bars long, provide you with various tempos and styles to work with, and include plenty of very credible (and familiar) breaks. Although Stratton is best known as a house/techno musician through his

work under the names Jack 'n' Chill and Man Machine, there's a strong hip hop influence in his approach to sampling on the Datafile CDs, as well as in his choice of material - which is perhaps not surprising when you realise that back in the mid-'80s he was engineering on Mike Allen's twice-weekly hip hop show on Capital Radio and putting together the show's jingles using an Ensoniq Mirage.

Where Datafile One provided samples of the TR808, TR909 and TR727, Datafile Two turns the spotlight on a more recent Roland drum machine, the R8, and Alesis' HR16B. Also in the drum and percussion department are 35 sounds in the category of Miscellaneous House Percussion (including go-go bell, snap-clap, various snares, 808 bass drum boom and several bell trees), 14 in the category Kraftwerk-style Electro Percussion (bass drum and various snares, blips and zaps) and 12 Human Beatbox vocal samples.

Basses include various deep and funky sounds programmed by Stratton on his Juno 106 and SH101 synths and a selection of miscellaneous bass sounds including synthbasses, acid bass, woody bass, funk bass and DX bass. Many of the synthesised bass sounds are around three seconds long, so for most applications you can get away without looping them if you've got the memory to spare.

Perhaps inevitably, there's a multisampled Italo-house piano - plinky, bright and percussive - which is well suited to the characteristic staccato chording of the style; the ten samples aren't meant to be looped. Guitars come to the Datafile world in the form of several funky guitar breaks which naturally migrate towards the breakbeats, together with various electric guitar "stabs", string bends, riffs and sustained notes. Also new to Datafile Two is a sample category going by the, er, upfront name of Sex Vocals, offering various sampled groans and gasps of the female kind. Sung vocals are divided into ad-libs (mostly wordless phrases of the "Eee-ee-yeah", "Oh-aar-oh" and "Woo-oo-yeahhh" variety) and hooks (such as "I'm gonna get you!", "Squeeze me baby" and "Give it all you got!"), some male but mainly female.

Sci-fi & Film Atmospheric is a category which is not greatly explored on Datafile Two, and one which could perhaps be developed on the third Datafile CD. Where Datafile Two is particularly strong, however, is on speech samples (human, robot, cartoon and sci-fi, including many phrases which are well-known and popular within dance music) and fx samples (sci-fi techno, industrial, ambient, automotive and miscellaneous house/techno) which exhibit various degrees of "off-the-wall"-ness.

Datafile Two, then, is basically more of the same but different, with the same combination of rawness, cheekiness and honesty which made Datafile One so appealing. In fact, it complements Datafile One very effectively, and as such should appeal to the crowd who have been buying Stratton's first CD. **Simon Trask**

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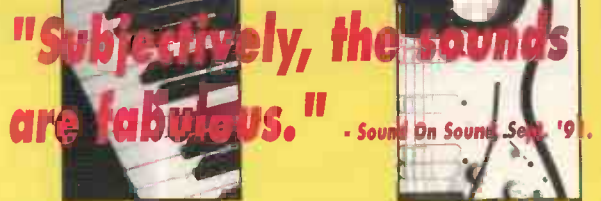
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# KCS OMEGA

Desk File Edit Options Environment Track Functions MPE

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2	Drums 2			A	14					26				
3	Bass 1			A	15					27				
4	Brass			A	16					28				
5	M Chimes			A	17					29				
6	Piano			A	18					30				
7	Vary 6	MU		A	19					31				
8	Vary 7			A	20					32				
9	Track 1	MU		A	21					33				
10		REC		A	22					34				
11					23					35				
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Load...  
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42  
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48

Dr T's Omega brings together four powerful programs handling everything from scorewriting to algorithmic composition - but how does the balance of integration and power settle? Review by Ian Waugh.

**W**HAT DO YOU want from a music software package? A powerful yet easy-to-use sequencer, graphic editing perhaps? Do you like the graphic song arrange mode in Cubase? What about a little computer-assisted compositional help and a scorewriter, too? These are the sort of features Dr T's reckon make up most musicians' "wish list" and, in traditional but unseasonal fairy-godmother guise, Dr T's have put them together in a single Atari package called KCS Omega.

The pack contains four disks holding around

1600K of data. They aren't copy-protected, which is good news. This is a new policy Dr T's are trying out and if it works - that is, if you don't give copies to your mates - it's a policy we may see spread to other Dr T's lines. I can't be the only muso who is heartily sick of dongles and key disks, so give it some careful thought...

Omega isn't a new program, but a collection of existing but updated Dr T's programs. There are so many parts that it is impossible to cover them all in any depth in a single review. Fortunately for loyal MT readers, you can pick up more info about several of the programs in past issues. Check out June '90 for



KCS and Tiger, and November '90 for Tiger Cub (which includes the Quickscore module).

In order to give a balanced view of the package we'll run through the major aspects of all the programs.

## IMMANUEL

ON OPENING THE box, the first thing you'll notice is individual shrink-wrapped manuals - four to be exact - for KCS v4.0, KCS Level II, Tiger and the Graphic Song Editor. The first three are punched for insertion into the binder - but the binder's too small! It'll only hold two of them. OK, good documentation is important but c'mon guys, let's have a binder big enough to put it in. The Graphic Song Editor manual is a stapled booklet, so that can sit next to the binder (and some loose pages) on your bookshelf.

While you're sorting through the manuals you'll probably be looking for one with "Omega" on the front - there isn't one. Instead, documentation covers the four programs mentioned above plus lots of utilities. You'll have to read the manuals - or the rest of this review - to see how they fit together.

## FOURTH GENERATION

KCS (KEYBOARD CONTROLLED Sequencer) in its various incarnations and variations has always been the flagship of Dr T's sequencer programs. It has 48 tracks with a resolution of 384ppqn and lots of powerful manipulatory features.

Power users can add Dr T's Phantom SMPTE synchroniser which lets you access 32 MIDI channels. Add C-Lab's Export MIDI expansion interface and you can access 64 channels. If you have a Fostex R8, you can sync it to KCS's transport controls. If KCS is also slaved to the Fostex via Phantom or smart FSK clock, you can control the whole system from the ST (they run out of sync during fast winds if they're not slaved).

We can take it as read that KCS does all the usual sequencer functions although, as with many Dr T's programs, you have to wrap your head around a few "different" concepts. For example there's an Open mode in which you can define up to 128 sequences, any number of which can play back simultaneously. A sequence can include commands to start and stop other sequences so you can build up pretty complex arrangements. You have to copy tracks from the Track Play screen to the Sequencer in order to use them - it does take a little getting used to.

Amongst KCS' interesting functions are velocity scaling, pitch transposition and inversion, and inversion of scale durations and controller data. One of my favourites is Time Reverse which reverses the order of events in a track - yes, it plays it backwards. Brilliant with Bach, interesting on drum tracks and especially effective on long runs of 16th notes.

If you already have KCS, you'll notice a few differences in v4.0. These include the multiple port outputs mentioned above and the replacement of Song mode with the MPE Song Editor (coming up). You can program KCS to auto load MPE modules on

booting, and run non-MPE modules from within KCS. You can designate more than one channel as a drum channel to prevent it transposing.

You can also install KCS as an application so you can run it by clicking on any .ALL (KCS song format) file, although this did clash with some of my TSR patches.

There are a few things I find odd about KCS. One is not being able to assign a track to a MIDI channel from the main screen - you have to go to the edit screen to do this. Another is the way it steps onto the next empty track during recording so you can't space out the parts by recording, for example, basslines on tracks 1-5, drum patterns on 10-15 and so on - all recorded tracks are consecutive.

After using the ST for a while you tend automatically to click on things to alter them. This doesn't always work as you might expect. For example, you select the effect that clicking on a track will have from the Track Function menu. Select Mute and the track mutes, select Erase and it erases it (you do get a confirmation prompt). To rename a track select Name a Track. Most alterable parameters are shown on the screen as plain numbers or text. There's nothing to indicate that they can or cannot be changed until you try clicking on them.

These are just observations. If they seem strange to me it's probably because of the way I'm used to working, although it must say something about KCS's slightly non-standard interface.

I was disappointed to hear a glitch during playback when accessing some menu functions. Obviously the program doesn't give interrupt priority to the playback routine. It's a minor point but be careful not to mess around when recording your sequences onto tape.

## ON THE LEVEL

KCS LEVEL II is essentially the same as KCS v4.0, but it additionally supports polyphonic aftertouch and has two extra features - PVG (Programmable Variations Generator) and a Master Editor. Both versions are supplied with Omega because Dr T's realise not everyone will use the extra features and the standard KCS uses less memory. You can always boot up Level II when required.

The PVG manual admits it's an experimental program - it's actually a deterministic/aleatoric/algorithmic composition program, depending on how you use it and the mood you're in at the time. Basically - no apologies for oversimplification - it comprises a series of pages containing functions such as velocity, pitch and duration. You can enter an amount by which these can change and give them a weight which determines the probability of them doing so.

There are some fascinating functions here, such as In Betweens, which creates a sequence based on linear extrapolations of two existing sequences (like the inbetweening used in cartoon animation). Ornaments adds notes "around" existing notes. This'll either turn you on or turn you off depending upon your predilection. Personally, I find it quite sexy although not so much that I'd miss my weekly Video

**"On opening the box, the first thing you'll notice is four individual manuals for KCS v4.0, KCS Level II, Tiger and the Graphic Song Editor."**

“Omega offers an awful lot of programming for your money, and the integration of MPE modules provides a versatile and flexible system.”

➤ View Mariella fix for it (yes, I'm a romantic, too).

It's a highly numeric business, and the main thing I'd suggest you bear in mind is this - neat mathematics do not groovy music make. The worst thing about it is the manual: it tells you what everything does but there are no examples, no Quick Start Tutorial. This is one for the experimenters.

The Master Editor contains six pages, only a couple of which are self-explanatory, so here's a quick run-through. Blend lets you mix data, Chords lets you arpeggiate chords, Controllers lets you copy controller data and thin it out, Tempo Changes lets you scale the tempo, Track Utilities lets you delete events and insert space into a track and Pitch Map can map any MIDI note onto any other. It's well worth booting up Level II when you're in an adventurous mood and have a few hours to kill.

## TIGER TAILS

TIGER - THE INTERACTIVE Graphic Editor - is a neat idea. It displays music data in graphic form and lets you edit it as such. You can draw in controller information and volume changes with the mouse and edit notes in usual graphic editor style. One encouraging thing about the note display is that the traditional horizontal bars which represent the notes have vertical stems to indicate velocity - very easy to edit.

Tiger is packed with features although, unlike the PVG, the main concept is easy to grasp. Thoughtfully, there's an Instant Gratification section in the manual. It can run as a stand-alone program or from within the MPE (more about MPE in a moment, honest).

## QUICK QUICKSCORE

QUICKSCORE, TOO, CAN run as a stand-alone program or from within the MPE. It's a cut-down version of Dr T's Copyist intended to display music in notation form and print it out - a task it performs reasonably well.

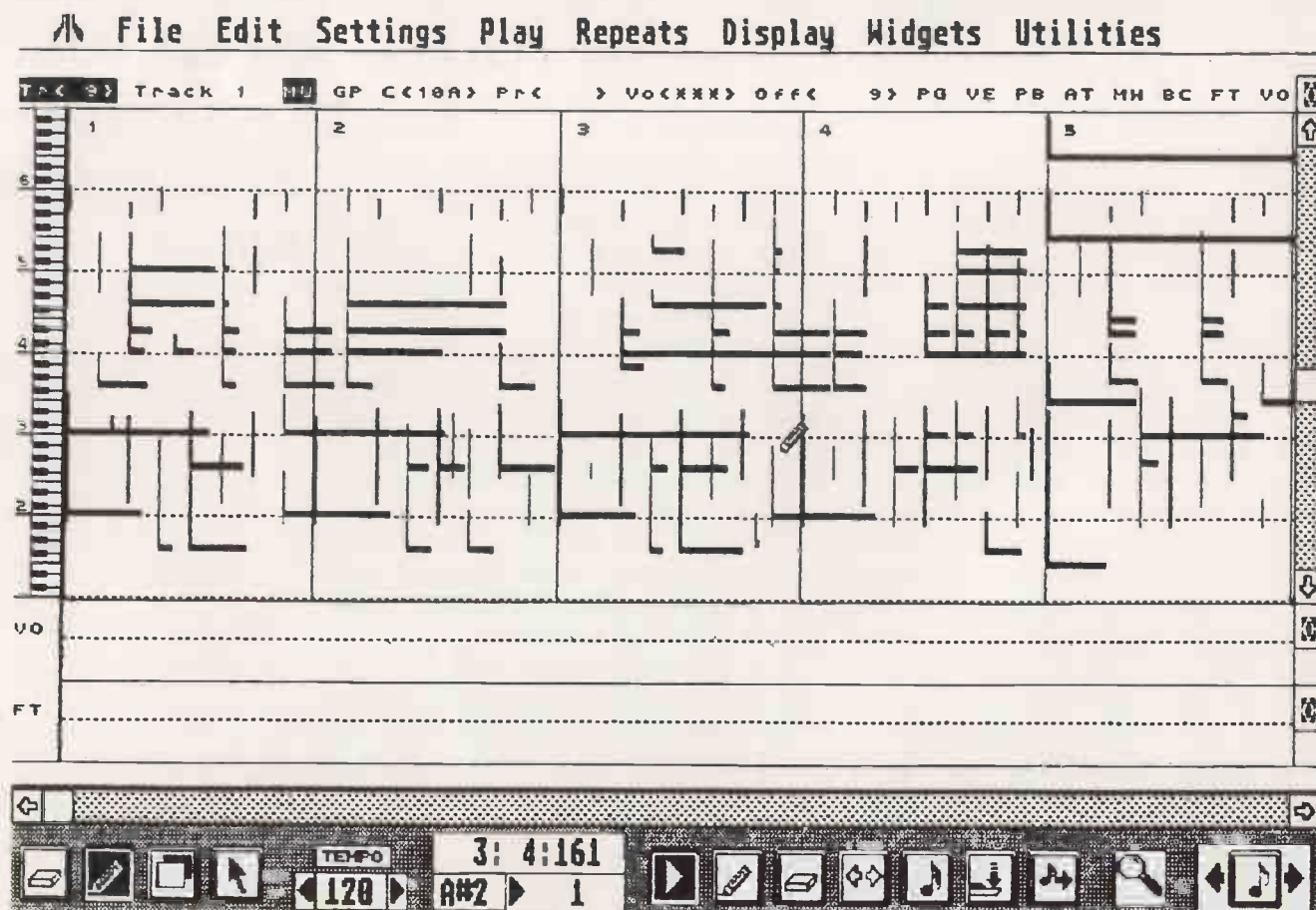
You can't edit the notes in notation form, however, and you can't add text, lyrics, chord or music symbols to the score. But you can set various display options for each track, such as the number of bars per line, the clef, quantise value, time and key signatures and whether syncopated notes should be shown tied over the beat.

My main niggle is the excruciatingly long time it takes to draw a screen's worth of notes - around 10-12 seconds per stave. In fact, it doesn't just draw the notes you can see but also the ones you can't. This speeds up the display when scrolling in certain directions but the process is still too slow. The screen of an averagely complex eight-part score took over a minute to draw. However, the output, even on a humble 9-pin dot matrix printer, is very good.

## GRAPHIC DETAIL

THE GRAPHIC SONG Editor is another stand-alone/MPE program. In operation it shares similarities with Tiger and in essence it's not totally unlike the front page of Cubase.

Before use, tracks in KCS must be copied to the Sequencer. They can then be selected and drawn into the Song Editor with the pencil tool. You can alter their length, position, velocity and pitch, move them





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around and generally have a whale of a time playing arranger, producer and God all at the same time.

A Skip Percentage function lets you create aleatory sections within a song. This can be used to give a percentage chance of playing a part such as a drum break or a riff fill. Interesting, eh?

A future version of X-OR, Dr T's universal voice editor (reviewed MT, November '89), will be able to receive a message from the Song Editor telling it to send an X-OR performance.

The manual has a contents list but, alas, no index. It does contain application notes which include using Song Edit to set up cues for film and video work. Obvious really. When the cues are set you simply plonk the required piece of music onto the cue.

## MPE & UTILS

MPE STANDS FOR Multi Program Environment and it allows up to eight program modules to be loaded alongside KCS, memory permitting. The neat thing is that these modules and KCS can share data so, for example, loading Tiger into the MPE gives it immediate access to the tracks in KCS.

If you have a text editor or word-processor, you can edit the KCS.INF file to stipulate which MPE modules should be loaded on startup. There's also a routine which allows any program to run from within KCS, although it doesn't use KCS/MPE memory and it can't share data with KCS. When you quit the program it goes completely, data and all, but KCS data remains intact. The routine won't be compatible with every program but it's nevertheless a useful utility.

In addition to the MPE-compatible programs already described, there are three MPE Utilities: Control Change will change one type of continuous controller data into another or into aftertouch information. Unsplit is a fix for the way KCS stores long notes to allow you to edit them. It shouldn't be necessary, but there you are.

Zero Duration gives all notes a duration of zero and removes note offs. The idea is that you use this for drum patterns to cut down on MIDI data, although the documentation is helpful enough to recommend that, as it violates - quite radically - MIDI guidelines, you don't use it. You know it makes sense.

As well as the aforementioned MPE utilities, you also get a collection of PD utils. These include a MIDI SysEx dump which can handle dumps larger than 5K (KCS's current limit) and save them as .SEQ files for loading into KCS. There's a program to convert between KCS .SEQ files and MIDI files (format 0). MIDI View lists incoming MIDI data in English (you'll be pleased to know you can filter out Active Sensing).

Music Calc is a calculator for figuring tape location at a SMPTE time code address from bar or beat numbers. However, as it only runs in medium-res when virtually all pro music programs use hi-res, I can't see it being used much.

The Injector Desk Accessory will read Caged Artist editor files and squirt them into your synth. There is also a Mouse accelerator - essential if you use the Atari mouse - and a RAM disk.

ONCE UPON A time Dr T's had a reputation for producing highly-numeric programs. They were feature-packed and powerful, but they weren't the easiest programs to get to grips with. They did, however, attract many devoted users among the computer-literate - users who revelled in the power and could handle the interface.

Times change. Over the past couple of years Dr T's programs have become more graphically orientated, and have shown a tendency towards integration. The MPE is definitely a "good thing", allowing users to add extra facilities to their setup as and when required.

The Omega collection contains a very powerful set of sequencing and programming facilities. As an "all-in-one" package, its major shortcoming is lack of notation editing. I know many musos prefer graphic editing (put a Tiger in your ST) and lack of notation editing won't bother them one little bit.

But a few do like to work with the dots. While the printed output from Quickscore is pretty smart, you cannot edit the score directly. Given the very slow screen updates, popping into the event editor for a tweak and back again is like watching paint dry. However, considering that even the cheapest notation/scorewriting programs cost around £200, perhaps we shouldn't be too critical.

You're going to hate me for saying this, but Omega is both more than the sum of its parts and also less than them. You get an awful lot of programming for your money and the integration of the MPE modules provides a very versatile and flexible system. However, it's the very modular aspect of the package which makes it lack a certain cohesion and some would say that the stand-alone programs like the SysEx dump, the MIDI File converter and the MPE utils should have been added to the main program.

And KCS is quite complex. Not, I'd venture to suggest, for the beginner. Remember, too, you will need more than 1Meg of RAM to make full use of the MPE.

KCS Omega is aimed at the professional and serious amateur. If you're a power user I'd say it's aimed at you, too, and a little computer literacy would be an advantage. By and large the programs retain a high(ish) degree of numeracy, and many of the screens are rather bland (functional, I think, is the word) although they're considerably more friendly than earlier Dr T's programs.

Some of the concepts may seem a little alien initially, and you'll have to read the manuals to get anything out of the programs, make no mistake. None of the programs are intuitive, but powerful they certainly are, make no mistake about that, either. ■

**Price £299 Including VAT**

*Owners of Pro 24, Creator/Notator or Virtuoso can purchase Omega for £179*

*Owners of Tiger Cub, Prodigy, Master Tracks Junior and others can purchase Omega for £199*

**More from Zone Distribution, 5 Abbeville Road, London SW4. Tel: 081-766 6564.**

**“Using the PVG is a highly numeric business, and I'd suggest you bear the following in mind: neat mathematics do not groovy music make.”**



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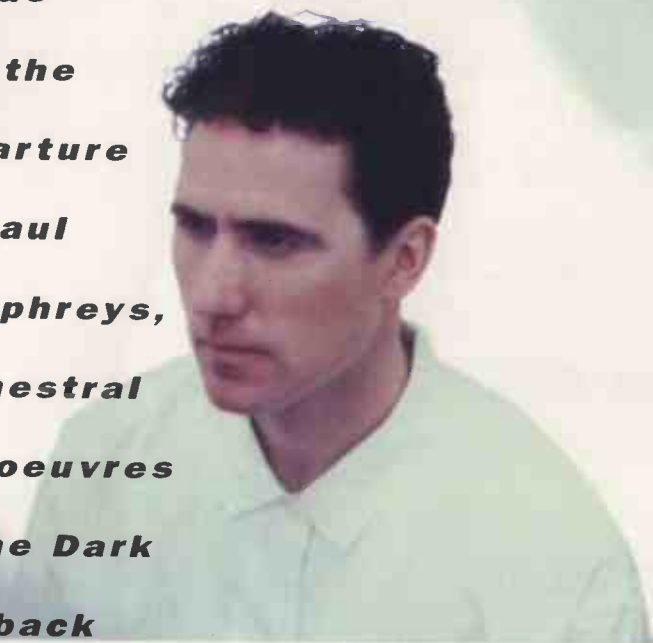
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# POWER IN THE DARKNESS

**After a  
five-year  
hiatus  
and the  
departure  
of Paul  
Humphreys,  
Orchestral  
Manoeuvres  
in the Dark  
are back**



**with a new album, a new tour and some new kit.**

**Interview by Tim Goodyer.**

FROM THE MOMENT ORCHESTRAL MANOEUVRES in the Dark first broke into the Top 20 (with 'Enola Gay' in 1980), you had to wonder if they were capable of doing it again. Taking advantage of the post-punk open-mindedness of the British pop audience, they took to the stage armed with a few synths, a tape recorder and a deceptively simple style of songwriting. So idiosyncratic was their sound, they could easily have been dismissed as a one-hit wonder. But they did it again - and again. First with 'Souvenir' and 'Joan of Arc' in '81, then with 'Maid of Orleans' in '82, with 'Locomotion' in '83, then 'Talking Loud and Clear' in '84. . . Most recently 'Sailing on the Seven Seas', taken from album number nine, *Sugar Tax*, has put OMD back into the charts - and teen magazines - in 1991. The sound is still unmistakably that of the band who penned 'Enola Gay', but much has changed in the intervening decade.

Taking precious time out of the few days between the close of an American tour and the opening of a

tour of Britain, Andy McCluskey seems happy to talk about the new album and the events preceding its release - including the departure of "the other half" of OMD, keyboardman Paul Humphreys.

"In thinking about it and analysing it over the last three years", he explains in his distinctive Liverpudlian accent, "what I've basically boiled it down to is that Paul Humphreys wanted to make some music that sounded like Paul Humphreys and not like OMD, because OMD was dominated by Andy McCluskey. There was all sorts of little intricacies but that, I think, is basically it.

"You know, when you're working with somebody you don't analyse how it works, you just get on and do it. Now I've had a chance to sit down and think about how we used to work. Although we wrote the songs together, and the parts were written by both of us, the basic direction of the band, the overall personality that was stamped on the band, was usually mine. Paul is a natural and intuitive musician, he writes and plays



things out of the top of his head. I'm the one who did all the thinking and grafting because I don't think I'm as gifted as Paul. So I'm the one who had to think 'why don't we do a song that would sound like *that*?', 'why don't we write a song about *this*?' or 'why don't we use these instruments?'. So I did the steering and the overall arranging and production, if you like, and Paul did the natural creative thing. Ultimately he just figured that he knew how to arrange songs as well, so why did I always get to do it? So he decided to leave and do his own thing. And having heard what he's done, it does sound as if he's done the right thing."

Cribbing from the official record company biog, the pair first met at school in 1968. They formed their first band together in 1977, and spent around 13 years working together as OMD. However you look at it, the split had the makings of a very difficult time.

"It was very difficult to begin with", admits McCluskey. "I think it was very difficult for both of us to begin with. It wasn't made any easier by the fact that we had lots of contracts to sort out. Once lawyers get involved they stir all the shit up because they want to make more money out of you. So it was messy and it dragged on but now everything's sorted out.

"I look back now and during everything that happened - Paul's departure, the year in which I was depressed and didn't do anything musical - I didn't want to stop. But it's a good thing I did because I had to have a rest. I'd had ten years of non-stop music and I'd run out of energy; I had no more enthusiasm or ideas left. Then I realised that I didn't have to work with just the same people any more. It was nerve-racking to start with because I didn't have anybody to bounce ideas off or get ideas from, but I also didn't have to put up with peoples' egos any more. I could go and work with anybody but I didn't *have* to use their ideas. If they gave me one I liked, I could use it, and if they didn't, I could throw them away without hurting them or upsetting them because a band member's pride wasn't in the way. I feel much more positive and enthused than I have for years.

"Paul and I were having trouble writing songs '86, '87 and '88 - that's why we released a *Best of*, to buy ourselves some time. On Paul's departure I was still having trouble writing songs because I was tired and depressed, and didn't have any energy. I was starting to think 'I can't do it with him, I can't do it without him, what the hell am I going to do?'. It was meeting a couple of people in town that got me kick-started again. We wrote a couple of songs that were used on the album and they sound *great* and it really renewed my enthusiasm. But without meeting these guys. . . I'm using all these cliches, but I hope you get the idea. I really needed something to get me going again, and writing two songs with other people - using some of their ideas - helped me get started. Once I got started I got enthusiastic and I was so relieved. It was like I *can* still write good songs, I *haven't* lost it. Once I realised that, away I went."

Stuart Kershaw and Lloyd Massett were the catalysts McCluskey had been looking for. They met at Liverpool's Pink Museum studio - where some of *Sugar Tax* was later to be recorded - and the original arrangement was for McCluskey to produce a song for

their band, Raw Untld. According to McCluskey, the project was "a complete disaster", but the team who were to write five tracks for the ninth OMD LP were together. McCluskey went on to write a further six without assistance and a further track was drawn from a band who had heavily influenced OMD from the outset: 'Neon Lights' by Kraftwerk.

Of the meeting with Kershaw and Massett McCluskey says: "I had a reggae song I was working

***"With this album I've gone back to the rigid feel of machine-generated rhythms set against the melodies and the choirs."***

on, and since they were a bass player and a drummer and I couldn't get the groove right, I asked them if they would come and give me a hand. And it just went from there."

Where it didn't go for McCluskey's new partners, however, was into the recording studio. And if there is blame to be attributed, it must lie at the feet of technology.

"Working with a computer, I had their performances recorded from the rehearsals and the songwriting. So when I actually got into the studio, it was just me and my Atari - plus whoever did the singing."

The result is a selection of songs which sit well in the tradition of early OMD. The melodies are simple and addictive, the rhythm tracks laden with electronic percussion, samples and rich synth pads. While many of the tracks represent likely contenders for the forthcoming Gallup charts, more experimental material is also in evidence. In addition to the cover of 'Neon Lights', a track called 'Apollo XI' forgoes a vocal in favour of samples taken from the first moon landing. Although Paul Hardcastle's '19' remains possibly the best recognised example of the "found speech" pop song, it should be remembered that the format has also been explored by other artists - including OMD. From '86's *Pacific Age* album, 'Southern' made powerful use of excerpts from the speeches of Martin Luther King. It's less emotive subject matter, perhaps, but 'Apollo XI' reaffirms McCluskey's willingness to experiment.

**APART FROM CHATTING TO MT, ANDY** McCluskey has to remix a 12-inch single and prepare a backing tape for a TV appearance before embarking on his UK tour. But if the description of his approach to making music and his studio-based lifestyle give the impression of a musician seeking perfection through technology, think again.

"Most people would think that anybody who'd done a whole album with only one live guitar take on it would be a perfectionist, but I'm quite the opposite", he comments. ➤



***"I used quite a lot of analogue stuff because it's difficult for samplers and digital synths to get the weight of analogue synths."***

➤ "Sonically, *Sugar Tax* is still not the best-recorded album in the world", he continues. "OMD will never win record production awards because of the way I work. I really don't like being in the studio. I like

writing songs and I like playing them live, the bit in the middle is a means to an end. I don't waste time in the studio, I just bash things down. I try to get a good engineer who will say to me 'I think that sounds a bit shit, actually Andy, I think we should try for a better sound', because I will throw down the first thing I've got and live with it. In some respects it's good because you get a really loose and vibey feel. I write four bars, repeat them to the end of the song and put a few snare fills in to say 'this is the chorus and this is the verse'. I think it keeps the interest factor together and as long as I've got a good engineer to keep some of my primitive urges under control it gets the energy into the record. Then I get somebody to help me mix it and hope that it will sound reasonably 'hi-fi'.

"I work in sections of two, four or eight. When I've got one bit right I'll say that's the verse and then I'll copy the drums over and write a chord change - in fact I usually take the bassline and transpose it, take the chords and transpose them. I don't even play the chorus or whatever, I just transpose the verse!

"'Seven Seas' was written and programmed in less than 45 minutes - that's the way to do it! Stuart Kershaw who wrote it with me just happened to walk in the studio while I was doing it, and I said 'Listen, if I sing this in the verse, I've got two bars of blank. What am I going to do?' So he wrote the link and the chord progression for the chorus. And all the piano playing and the cheesy organ solo in the middle is completely unquantised - I just took it on the computer and that was it. It never got looked at again. And it worked."

Regardless of his views on technology, however, drawing McCluskey out about his equipment and working methods reveals that gear has been the key to the existence of OMD from the outset.

"It's funny really", he reflects, "from day one we had this tag of being a 'techno' or an 'electrical' band. We used the technology but we were always primitive, everything was played 'by hand'. If you listen to our first album, the timing slips a go-go because it wasn't sequenced or anything."

Even so, taking to the stage in 1986 with a Fairlight was hardly low-tech. . .

"It took me long enough to get used to the old Fairlight IIX", he recalls. "That was made redundant in '87/'88 by the table-top computers and the new music programs. It took me six months to get into the Steinberg largely because whoever writes and translates their manuals needs hanging. They are the worst manuals in the world. I hate reading manuals anyway, and to get to the last page and think 'what?'. . . The only way to learn a music program is to sit down with someone and have them show you how it works. So ➤





➤ once I learned the Steinberg, I was *not* in a hurry to learn anything else!

"Being a complete bloody Luddite, I learnt Pro24 as quickly as I could because I wanted to write songs on it. But it was always a source of dismay to me that, whenever I was in a studio with somebody else who knew how the program worked, they'd do something and I'd go 'how did you do that?'. They'd say 'oh, you

***"I really don't like being in the studio - I like writing songs and I like playing them live, the bit in the middle is a means to an end."***

just go to this page. . . ?' And I'd say 'bloody hell, I've just spent 20 minutes doing it like this!'. It was in the manual if I'd persevered with it, but I wanted to write songs.

"Having seen some of the others, I personally think that Pro24 v3 has got the best graphics. When you're sat looking at the screen for eight or ten hours, or however many hours a day it is, how it looks is as important as how it works. I like the Steinberg because it's chunky and solid, and there's a lot of dark areas.

"I could never get me head round Passport's Mastertracks. I don't like Cubase - although I can use it. I know Cubase is infinitely superior in its various uses and options to what Pro24 ever was. But it looks like Mastertracks: it's all white with little black bits on. It looks tinny and 'orrible, and I won't use it. So I'll continue to use Pro24 unless Steinberg do something more interesting with the graphics on Cubase. If they could make Cubase look like Pro24. . ."

Never mind the software, what about the hardware?

"The rest of the system is quite limited really. There's an S1000, M1 - the *Sugar Tax* album is the M1. Every single pad, I think is M1. Not just M1, but program 07, 'Symphonic' and program 27 which is one of the choral patches. Those two dominate the album.

"The S1000 and the Korg M1 were the two main instruments. I used two drum machines. For a lot of the percussion and hi-hats and things I used an RX5 - if you solo any of the cymbals you can hear the loops on them. The other thing I used was the little Alesis HR16 - again because it's a piece of cake to use. I love things which are easy to program. It's also a very real-sounding machine. The only trouble with it is that you really have to work at the hi-hats and the tambourine with the EQ to get any sort of top out of them. It's funny but I was talking to somebody who uses an Alesis and he asked me what it was I'd used for the hi-hats and tambourine. I told him and he said 'Bloody hell, I thought it was, you can hear it a mile off'.

"The rest of the stuff I've used is bits and pieces. There's a little Casio CZ230S - it's a lovely little machine but you can't edit on it unless you hook up a

computer to it. I wish you could edit on it, actually, because it's got some lovely sounds. The cheesy organ solo in the middle of 'Sailing on the Seven Seas' was done on that. It's also got one of those features where, if you don't send a MIDI signal through it for five minutes or something, it switches itself off. If you've got it in a chain you can find yourself thinking 'something's missing. . . ?' And you find the Casio's gone off and taken everything that was in the chain out with it. I also used a Matrix 1000, Super JX, TX81Z and a Proteus which I love. I've got a Roland D110 which I never use because it's such a pain to operate. It's a multi-function button nightmare, that machine, so it just sits there dormant in the rack. And that is it, that's what I used on the album apart from one live instrument - a guitar (Stuart Boyle) on 'Sailing on the Seven Seas'. Everything else was either played by the computer or was a vocal.

"Here's another gripe coming up: I hate multi-function buttons. Ever since the keyboard manufacturers 'went digital' and put multi-function buttons on everything, you have to go back to the manual and go 'OK, it's two up and three down, press this button, scroll that up and this down, flick to this page and scroll that up. . . ?' And the worst thing is that they call everything by different names - it's not ADSR any more, it's Breakpoint 1, 2 and 3 or T1, 2, 3, 4, 5 and 6. It drives me mental. That's why I like the old analogue synths: one knob did one thing. You could see the ADSR, you could see the volume control, you could see the filter. So now I use factory presets because I can't be arsed to get into the machine and edit it."

I suppose it's silly to point out that the old analogue machines you used in the early '80s didn't have any of these shortcomings. . .

"We used analogue a long time ago and when we were looking for new sounds, obviously we went for digital sounds. Then, of course, I was faced with the problem of having loads of analogue synths that weren't MIDI compatible. It's a pain trying to find somebody who can do a MIDI conversion for you and a lot of the conversions you can find seem to be rather dodgy - having to switch on while holding buttons down and count up the keys for the MIDI channel and all the rest of it.

"I've got all kinds of old Prophets and Jupiters that I'm definitely going to get done because I'm absolutely sick of digital sounds now. I'm definitely going more and more analogue. I did actually use quite a lot of analogue bass stuff on the album because it's very difficult for samplers and digital synths to get the kind of weight you get out of analogue synths."

**COMING UP TO DATE, THERE'S THE QUESTION** of preparing studio material for the road. McCluskey has stuck with his "traditional" role - that of singer and bass player - and recruited three fresh faces to help him out. The lineup of drummer Abe Juckes, and keyboardmen Nigel Ipinson and Phil Coxon that's about to do the rounds in Britain is the same one that toured the States.

"Abe and Nigel joined early on", McCluskey recalls.



"They were in all the videos and on *Top of the Pops* and everything. Phil only joined three weeks before the tour. He engineered on the album. I was away in America doing the video for 'Pandora's Box' and Nigel was in the studio auditioning people for the tour. He phoned me up one day and said 'Listen Andy, I was in here today and we auditioned four more people and I'm still not sure'. Phil was in the studio and said 'If you can't find anybody, I'll do it'. So Nigel said 'there's only three weeks before the tour, what do you think?'. So he was in.

"We rehearsed everything and made all the samples and backing tapes in three weeks flat. And to our surprise and delight, we didn't fall apart on the first night. It all worked. I was amazed.

"One thing I really underestimated was how much work there was to do, though. I'd lost all the old backing tapes, so for all the old songs we wanted to play we had to get the master tapes and make new backing tapes from samples of the original recordings. And of course, I had a new band who had to learn all the new songs - it wasn't like they knew all the old songs already so we only had eight to learn. We had to learn 21 songs from scratch and I didn't realise just how long that was going to take. Thank God (a) that they were prepared to work so hard and (b) that Nigel's a trained musician. He worked it all out by ear - I just gave him a copy of *The Best of* and *Sugar Tax* and said 'Sort it!'. He would say 'What key is 'Locomotion' in?' and I'd say 'Listen to the bloody record, I haven't got a clue'."

On stage the two keyboard players have almost identical systems: Ipinson plays a Roland A80 mother keyboard MIDI'd into a rack, an S1000 with 8Meg of memory, an MIR and a D550. He also has a Roland piano module as a safety precaution in case anything else goes down. Coxon's setup substitutes a Cheetah mother keyboard for the Roland and forgoes the piano module. Juckes drumkit, meanwhile, is half acoustic and half SDX loaded with custom samples. Most surprisingly, McCluskey is still using a four-track tape machine live - surely '90s technology would allow OMD to leave their old methods behind?

"Our very first gigs were just two of us and a four-track", McCluskey agrees. "This time I was going to go sequenced, but I didn't have the time to get all the programs and, to be honest, I didn't have the money to buy enough S1000s. We worked it out, and it would have meant several racks of S1000s which would have cost 15 or 20 grand, or something. And when I was getting ready to go on tour the album hadn't come out so I hadn't sold any records. I'd spent all me money making the album and I didn't know how successful it was going to be.

"It's a really nice, simple system", McCluskey continues. "We just have the four-track with track one as a click, track two for bass, track three is sequences and track four is any extra percussion. It's simple for us but poor old Abe has to listen to a click for 18 out of 21 songs.

"Once I'd decided we weren't going to go sequenced, I thought 'Right, we'll go digital'. And of course, nobody makes a four-track DAT machine. To get two DATs synced up was going to cost about ten

grand, and something like the Akai ADAM is expensive and you can only get 20 minutes on the cassettes. There was nothing digital that would work for us that was in my price range. The two Teacs were less than two grand - we're only using one but we've got them synced together in case one goes down."

At least it's a tried and tested system.

Going back to '86's interview, Paul Humphreys claimed the duo "wanted to try out some of our earlier ideas, but with 1986 technology".

"Did he really?", responds McCluskey, "that's what I've been telling people now.

"It's weird because in the mid-'80s we were going in two separate directions at the same time. We were using a Fairlight which at the time was state of the art - although now you can hardly give the buggers away - and we were using more and more acoustic instruments. With hindsight I think the band lost its direction. The more acoustic instruments we used, the more we lost the sound of the band. I'll probably tell you something different in five years time, but as of now I'm convinced that the distinctive sound of OMD is the juxtaposition of the rhythm technology - samples, drum machines and bass sequences - and the emotional side of the lyrics, melody, choral and string pads that float across the top. It's the tension created between those two elements that is the sound of OMD. The band lost the plot when we took away one of those elements - the electronics. The more acoustic we sounded, the less there was that tension that was the sound of the band. What I tried to do with this album was go back to the simplicity of the programming, the rigid feel of machine-generated rhythms set against the melodies and the choirs. I've had enough time to live with the songs on the album now that I think it works. I think the feel is back in." ■

## EQUIPMENT LIST

### RECORDING

Akai S1000 Sampler + Hard Drive  
Alesis HR16 Drum Machine  
Atari 1040ST Computer  
Casio CZ230S Synth  
E-mu Systems Proteus Sample Reader  
Korg M1 Workstation  
Oberheim Matrix 1000 Synth Module  
Roland D110 Synth Module  
Roland Super JX Synth Module  
Steinberg Pro24 v3 Sequencing Software  
Yamaha RX5 Drum Machine  
Yamaha TX81Z Synth Module

### LIVE

Akai S1000 (8Meg) Sampler (x 2)  
Cheetah MIDI Controller Keyboard  
Korg M1R Synth Module (x 2)  
Roland A80 MIDI Controller Keyboard  
Roland Piano Module

# S750 SAMPLER



Roland's latest sampler is considerably cheaper than their highly-rated S770 flagship, yet it's virtually the same machine. Can the S750 make inroads into a market already dominated by Akai's S1000?

Review by  
Simon Trask.

**O**N ITS RELEASE last year, Roland's S770 stereo 16-bit sampler garnered much critical acclaim. Unfortunately, although it was a dream of a machine, it was also a machine which most musicians could only dream of owning. An asking price of just under £5000 put it firmly beyond the financial reach of the majority and sealed its fate as a prestige machine for the minority.

Today, the S770 has another kind of value for UK owners: rarity. Although it's still being manufactured in Japan, Roland UK no longer import it. However, in its place comes a new "budget" version known as the S750. At £2995 the new sampler is significantly cheaper than the S770, if still not exactly cheap. Yet not only does it look the same as the more expensive machine, it also runs the same System software. The only differences between the two machines lie in the hardware: the S750 loses the S770's onboard 40Mb hard drive, XLR audio inputs and digital I/O connections, but can be fitted with up to 18Mb of sample RAM while the maximum amount fittable on the S770 is 16Mb. Like the S770, the "new" sampler is a stereo sampling machine, with 16-bit linear D/A and 20-bit linear A/D conversion, 24-bit internal processing and a choice of four sampling rates (48kHz, 44.1kHz, 24kHz and 22.05kHz), with a frequency range rated at 20Hz-20kHz (+0/-3dB) and

total harmonic distortion rated at less than 0.01% (A/D/A). It also uses Roland's Differential Interpolation method of fixed-rate sample playback to ensure signal accuracy and clarity when samples are played back even well below original pitch. In fact, the S750 sounds every bit as good as the S770 because basically it is the S770.

MT reviewed Roland's flagship sampler in some depth last year (MT, June-August '90). However, since that time Roland have considerably developed the sampler's System software (which of course is now common to both machines), adding many new features and enhancing many existing ones. They're now up to v2.03 software, compared to v1.03 when the S770 was reviewed last year. For reviewing purposes, then, the situation here is analogous to looking at the latest software revision of a computer-based sequencing package. I suggest you (re)read the original (S770) review for the full in-depth treatment of the machine, as that will give you the foundations on which this update review builds. If you don't have the relevant issues (shame on you), you can get photocopies of the review from our back issues department for a fraction of the cost of an S750.

## FREE SAMPLE DISKS

TO GET YOU started, the S750 comes supplied with a Tutorial disk and three Sound Disks. The former provides piano, harp, bass, string pad, voice and drum samples, while Sound disk one provides eight drum and percussion samples and Sound disks two and three together provide a sampled acoustic guitar.

In addition to these standard disks, Roland UK are providing 50 3.5" DSDD floppies of their own for free. When you buy an S750 you get a registration card to send to Roland; on receipt of this card, they send you the disks. You get a sample library to start you off, Roland get to build up a list of S750 owners. Samples include Moog basses, Dr Rhythm drums, sounds from the TB303, D50, JD800 and U20, Logan string synth, acoustic piano, strings, choirs, classical guitar, and a Composer disk containing drums and percussion, bass, piano, synth pad and lead synth. All sounds have been freshly sampled for the S750, and can be loaded into the sampler's default 2Mb of RAM.

Furthermore, Roland's offer of free copying time at their offices (see Newsdesk, MT May '91) still stands: you make an appointment to visit them, take along a generous supply of blank formatted floppies



or a SCSI hard drive, and copy as many samples as you can from their CD ROM-based sample library. All it'll cost you is the money to get there and back.

## DEVELOPMENTS

ESSENTIALLY, THERE ARE four levels of sample organisation on the S770 and S750. The Sample level handles sampling, sample editing and resampling, while the Partial level allows you to layer up to four Samples and route them through a Time Variant Filter, Time Variant Amplifier and LFO modulation (all digital processing). At the next level up, the Patch, you can assign multiple Partials to the keyboard to create multisplit textures. Finally, the Performance level is where you put everything together to create MIDI multitimbral setups consisting of up to 32 Parts receiving on up to 16 MIDI channels, with each Part being assigned one Patch. The latest software provides new and updated features at all these levels, though perhaps nowhere more so than at the Sample level. Although these developments are applicable to both the S770 and the S750, for the sake of convenience I'll be referring only to the S750.

The original software didn't provide all the sample editing facilities you would expect from a professional sampler, but this area has now been brought fully up to scratch. Clicking on Edit Sample 2 in the S750's Sound menu takes you to a whole new set of editing functions: Loop 2, Patchwork, Digital Filter, Comp/Expand, Time Stretch, Rate Convert and Wave Draw.

Loop 2 enhances the looping capabilities of the sampler with features like Auto loop find, sample scrubbing (the digital equivalent of manually moving a tape to and fro over the tape heads), quicker

selection of loop points, and a larger sample graphic display showing the beginning and ending of loop points in much greater detail.

Patchwork provides access to Truncate, Cut and Splice, Area Erase, Insert, Mixing and Combine functions. If you Truncate a sample to a different Sample destination, you've effectively got an Extract function, something which hasn't been available on the sampler until now - so for instance you can now extract individual words or phrases from a longer speech into different Samples, or extract individual drum sounds from a sampled breakbeat. Another new thing you can do with this Truncate function (as opposed to the one under Edit Sample 1) is set the From point higher than the To point, which gives you a reversed sample in the Destination Sample location.

Cut and Splice deletes the specified section of the Sample and butt-splices or fades the Before and After points (for instance, once you've extracted part of a Sample to a new location, you can get rid of the same sample data in the original Sample). Area Erase is the Cut without the Splice, allowing you to create silences within a Sample. Insert splices part of one sample into another Sample, while Mixing allows you to merge two Samples into one, with additional reverse, fade in/out and delay options, while Combine allows you to butt-splice or crossfade two Samples together.

The Digital Filter function allows you to impose a fixed filter cutoff frequency on a sample, with selectable low-pass/high-pass filter mode, resonance amount and level, and therefore permanently alter the frequency content of the sample; this includes a DC removal option in high-pass mode. Comp/Expand allows you to permanently change the dynamic contour of a sample, and allows you to set threshold, ▶



- ratio, level, attack and release times and normalise on/off.

Time Stretching was one of the most significant omissions from the original software, but that's been rectified now. This function, already available on Akai's S950, S1000 and S1100 samplers, allows you to alter the duration of a sample without altering its pitch. With a sampled rhythm, this has the effect of speeding up or slowing down the tempo of the rhythm without altering the pitch of the drum and percussion sounds.

You can time-stretch any section of a sample on the S750, with stretch ratio variable from 25% to

## **“You can now extract words or phrases from a longer speech or extract individual drum sounds from a sampled breakbeat.”**

400%. Ratios less than 100% speed the sample up, those more than 100% slow it down. An information box shows you the new sample time and length that will result from the operation, together with coarse and fine tune  $\pm$  values. If you think about it, once a rhythm has been sped up, you have to play it back at a lower pitch in order to play it at its original tempo - so, effectively, you've got a pitch-shift function as well. The coarse and fine tune parameters tell you how far away from the Original Key you have to play the sample to get the original tempo.

The Time Stretch operation works on “chunks” of the sample; the size of the chunks is decided by the S750, invisibly to the user, but fade length between chunks is another matter. You can select this Manually (by yourself), with or without the help of a Search function to detect possible lengths, or you can select Auto and let the S750 do it all for you. Unfortunately, Auto time-stretching can take a long time, and, despite what the manual says, doesn't always yield better results than doing it Manually. I found it was best to use Manual in conjunction with Search to try out various fade lengths, as this is a relatively quick process. For fairly short samples and small percentage changes, the Manual process only takes a few seconds.

Trial and error does seem to be the order of the day with the S750's Time Stretching. It's a pity, but you can't just set a ratio and expect the sampler to produce clean results (no warbling or ring mod-type effects) first time every time. Still, it's a very useful addition to the sampler's stock of techniques - and the fact that it doesn't always come up with perfect results can be put to good creative use (make a virtue of the imperfections).

A basic implementation of sample rate conversion has always been available via the Resample function, but the new Rate Convert page provides a more thorough implementation, with a choice of six sample rates - 48kHz, 44.1kHz, 30kHz, 24kHz, 22.05kHz and 15kHz - and a more informative display, showing, for instance, how different sample rates affect the coarse and fine tuning of the sample. As with the

other new sample edit functions, there's a Recover option which allows you to get your original sample back if you don't like the results of the conversion; and if there's not enough memory free for this option, a message pops up to tell you so and ask if you want to proceed.

Wave Drawing takes you down to the lowest sample editing level of all, allowing you to change individual sample words by “drawing” on the screen with the mouse. Basically, you get a graphic of the entire selected sample in the upper window, and a Scrub function allows you to “home in” aurally on any part of the sample in this window. As soon as you click with the mouse anywhere in this window, a vertical cursor line appears at the relevant position and a 270-word segment of the Sample to the right of that position appears in the much larger waveform display window which takes up the rest of the screen. You can now use the mouse to redraw any part of the waveform in this window, the idea being to get rid of any glitches in the sample by “smoothing over” them. The continuous waveform produced by Scrubbing this window will be raspy if there's a glitch, smooth if there isn't.

I successfully managed to remove even very slight clicks from a Sample using Wave Draw, but locating their position in the sample isn't as easy as it should be; I'd like to see an intermediate stage in which a highlighted section of the sample can be displayed in the large window, making it easier to “pin down” the offending glitch.

Leaping up to the Performance level, the Performance MIDI Map page allows you to map incoming MIDI patch changes to the S750's Performances, while the Part Map page allows you to see at a glance the settings relating to a particular Patch parameter for the Patches assigned to all 32 Parts, so for instance you can see the output assignment, stereo mix level or pan position of all Patches in the selected Performance.

The Module page accessible via Monitor at the Performance level originally just showed how many of the sampler's voices were in use, but now it also shows how many voices are being used on each MIDI channel. On the main Performance Play pages, there's now a keyboard graphic in the lower half of each page which shows you the incoming notes on a particular MIDI channel or Part (user-selectable) “played” on the keyboard. The Performance Common page now includes a useful information display box showing the number of files in memory for each level, the assigned master sampling frequency, master tune and Analogue Outs mode (a parameter programmable in the S750's System mode now allows you to treat the two rear-panel stereo out sockets as separate audio outs, optionally giving you eight rather than six separate audio outs).

As at the other levels, you can call up a file list by clicking on a little rectangle next to the Performance file name, Sort files into alphabetical order and use Blank to select the next available empty file slot.

Clicking on Edit Patch in the Com menu at the Performance level drops you down to the Patch level, where you can either edit a Patch or drop down to the ➤





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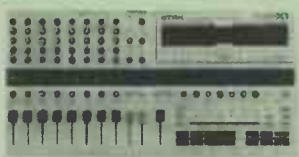
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- Partial and Sample levels; when you've entered the Patch level in this way, clicking on Exit takes you back up to the Performance level and the page you were last on.

The most exciting feature at the Performance level is Performance Resampling, which you can find on the Com menu when it's selected from a Performance Play page. Performance Resampling is a logical extension of the Resampling function at the Sample level - it's also one of those features that makes you think "Why hasn't anyone thought of this

## **"It's apparent from the additions and changes Roland have made to the user interface that they've listened to the suggestions made to them."**

before?". You get a sampling page like that at the Sample level, allowing you to set stereo/mono sampling, original key, sampling frequency and sampling time. If the Input parameter is set to Analog, you must change it to Int (for stereo sampling) or Int L or Int R (for mono sampling), which tells the S750 it must resample its stereo output signal internally (within the digital domain).

Performance Resampling allows you to sample anything from a single note played using one Part to a full-blown 32-part musical arrangement (which you can then trigger from a single note). You can sample chords, basslines, melodies, rhythms, giant sounds made up of several Patches, layered breakbeats. . . The applications are wide open. The only shame is that, as it gives the S750 a basic digital audio recording function, the sampler can't be synchronised to SMPTE or MTC.

When you record a Sample at this level, the S750 automatically creates a Partial and a Patch with the same name, so you can immediately put the new Sample into a Part in the current Performance. Similarly, if you "drop down" through the levels to the Sample level via the Com menus, the S750 will automatically create a Partial and a Patch for each Sample that you take.

Some other additions of note are the inclusion of an Analogue Feel parameter (as first introduced on Roland's D70 synth) at the Patch level on the Common page, the addition of a second set of five Jump pages, and the ability to copy envelope settings of your own into the Envelope Template window at the Partial level for use with the Partial TVF and TVA (though regrettably you still can't copy envelope settings to the Resample TVFs and TVAs). On the Disk Utility page in System mode, Volumes can now be assigned MIDI patch change numbers from 65-128. Disk operations have in general been tidied up and improved, but there still needs to be some way of saving and loading unlinked data as single files (such as a collection of samples which you've been putting together in a sample session). Saving a Volume to disk saves the entire contents of memory,

but when you load in a Volume, only data that's linked up to the Performance level is loaded, even if unlinked data has the Volume ID. Another feature I'd like to see is backup of Performance, Patch and Partial data to floppy disk, as unlike Samples these take up very little disk space - so if your hard disk crashes you've at least got this data backed up elsewhere.

An onscreen "notepad" would be a good idea, too, so that you could write up details of a session which could then be stored to disk as part of, say, a Volume file.

There are many many small changes and additions which I don't have room to list here, but suffice to say that they significantly improve what was already a very good operating environment.

## **FURTHER COSTS**

IF YOU'RE GOING to fork out nearly three grand for a sampler, you sure as hell want to get the most out of it. Unfortunately, to do this you're going to have to consider certain additional areas of expenditure, namely a monitor, onboard sample RAM and external storage media.

Let's take the monitor first. Although you can operate the S750 via its LCD screen, the sampler's software pages are actually designed to fit the larger display resolution of a monitor, and so you're always having to scroll up and down or jump to different areas of a software page in the LCD - which as well as being visually disorientating loses you the visual immediacy of being able to take in a whole page at a glance. But what really makes a monitor essential is the fact that new graphics pages such as Wave Draw simply aren't available on the LCD - instead you get the curt message "Only CRT". A monochrome monitor will set you back around £80, a colour monitor £200-250; if you can afford it, the latter is the best choice, not least because Roland's use of colour coding enhances the clarity of presentation of the software pages.

The next consideration is extra sample memory. You're simply going to be under-utilising the S750 if you limit yourself to the two meg it comes fitted with. The first additional expense here is Roland's RAS750E memory board (£158), which needs to be fitted before you can add any more memory. Following that, there's the cost of the sample RAM itself. Fortunately, the S750 uses standard Mac SIMM chips (100ns or faster access time), which are fairly cheap. Roland have opted for 4Mb SIMMs on the S750, but according to the manual you have to upgrade the memory in 8Mb steps, which means jumping from 2Mb to 10Mb to 18Mb. Eight megabytes of memory will cost you in the region of £320-360.

Even with just 2Mb of onboard sample memory, relying on floppies for data storage can be an exasperating business. A formatted double-density disk provides 640K of storage, a formatted high-density disk 1.6Mb, so you soon find yourself saving and loading across two or three disks. The S750 does its best to be user-friendly and informative here, but floppies are neither the most flexible nor the ►



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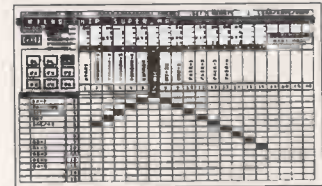
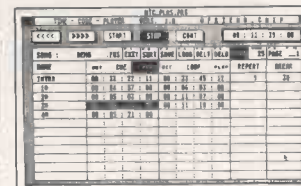


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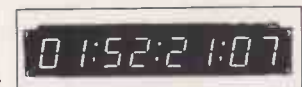
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**“As a creative sampling instrument operating on the boundaries of sampling and synthesis, the S750 is quite simply matchless.”**

➤ quickest storage option. So once you start thinking about adding on that next 8Mb of sample RAM, you need to think seriously about investing in a SCSI hard drive or even, perhaps, a magneto-optical drive.

While it may be tempting to start relatively cheaply with a 20Mb fixed hard drive for around £200, or a 40Mb fixed hard drive for £300-400, you'll fill them sooner than you think. As well as taking longer to fill, a fixed drive with a much higher storage capacity offers better value for money even if it's more

expensive upfront, as the cost per megabyte is significantly less than that of a lower-capacity drive. Alternatively, you could opt for a removable hard drive. A Syquest 45Mb removable will set you back around £500, but at less than £100 the 45Mb cartridges are very cost-effective.

On the subject of cost-effectiveness, magneto-optical disks cost £200-250 but offer a formatted storage capacity in the region of 600Mb, which works out very favourably against both fixed and removable hard disks. A magneto-optical disk drive (which for the S750 should be one using a Sony mechanism, apparently) will set you back in the region of £2000-2500. The disadvantage of such drives is that their read/write access times are slower than those of a hard disk so, if speed is of the essence, a hard disk wins out. An ideal system might consist of both a hard drive and a magneto-optical drive, with the former for day-to-day and live work and the latter for backup and archiving.

The optical drive market is anything but static, however. Pioneer and Panasonic have both developed all-optical drive mechanisms, and drives using these mechanisms are starting to appear on the market. In addition to being able to handle both erasable and WORM disks, all-optical drives aren't constricted by the presence of electromagnets, and so should allow faster access times and higher disk storage capacities as laser technology improves.

Look out for the arrival of small-format erasable optical drives, which use 3.5" single-sided optical disks cased like 3.5" floppies in place of the standard 5.25" double-sided disks. These smaller disks have a formatted capacity of 122Mb and will probably retail for around £80. And with less disk space for the drive to search, access times should be faster than for the bigger disks.

Further integration of digital storage media is on the cards for the future, as it seems at least two manufacturers are developing optical systems which can read CD ROM disks as well. For now, however, a CD ROM drive at around £700-800 is something else you should be thinking about, as the CD ROM disk has become the standard medium for distributing sample libraries in sampler-specific formats.

## VERDICT

THE S750 IS a top-notch professional sampler which can hold its head high in the face of any competition. The many software developments which have taken place since the release of the S770 have brought it up to speed in some areas - notably sample editing - and somehow improved on what was already an excellent user interface. And it's apparent from all the additions and changes Roland have made that they've really listened closely to, and acted upon, the suggestions made to them - there's a sense of real-world requirements having been noted and implemented. All in all, the S750 has a mature, rock-solid character which both exudes and breeds confidence.

Unfortunately, it still competes rather unfavourably on price terms with the S1000, and probably always will. Its direct competitor is really the more recent Akai S1100 (reviewed MT, May '91), which of course has the advantage of being library-compatible with the S1000. Both machines have faultless sound quality, but they differ in many other respects, basically through offering two very different conceptions of what a sampler should be. The S750 is very much the creative musician's instrument, benefiting greatly from Roland's excellence and long experience in the field of synthesis. Akai's strong point is digital recording, not synthesis, and accordingly the S1100 is more a pure sampler/digital recorder aimed at the A/V market rather than the creative musician. There are a number of professional features the S1100 has that the S750 doesn't: digital AES/EBU transfer to DAT, optical/coaxial digital I/O connections via an add-on board, SMPTE In/Out connections and SMPTE cue list software, and (not exactly comprehensive) built-in digital effects. With its cue list and SMPTE connections the S1100 is clearly designed to work in conjunction with Akai's DD1000 optical disk recorder. It remains to be seen how well Roland will integrate the S750 with their new DM80 digital recorder.

While we're making comparisons, the S1100 can be fitted with up to 32Mb of sample RAM compared to the S750's 18Mb, the S750 has 24-voice polyphony compared to the S1100's 16, the S1100 has stereo outs and eight individual outs while the S750 has stereo outs and six individual configurable as eight individual outs, and the S750 has the considerable advantage of monitor output and mouse operation compared to the LCD and front panel of the S1100.

To my mind, as a creative sampling instrument operating on the boundaries of sampling and synthesis and offering superb sampling quality and unrivalled operational clarity, the S750 is quite simply matchless. Which gives me an opportunity to close with a classic advertising cliché: the best just got better. ■

**Prices** S750, £2995; RAS750E memory board, £158. Both prices include VAT.

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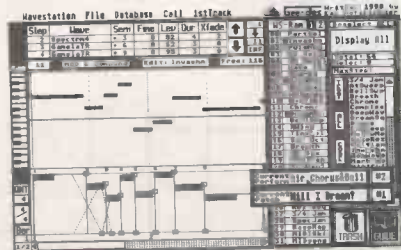
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## 1988

**JANUARY APPRAISAL:** Steinberg Time-Lock synchroniser; XRI XR300 synchroniser; Microdeal Super Conductor (Atari ST); Apple Hypercard (Mac); Korg DSM1 sampler; E-mu SP1200 sampler; Digidesign Q-Sheet (Mac); Simmons Silicon Mallet.

**MUSIC:** The Christians; Yes; Mark Stewart.  
**STUDIO:** Tascam Porta 05 multitracker.  
**TECHNOLOGY:** Picture Scoring (music for video); Made in Japan Pt 3; ARP Odyssey retrospective; The Art of Looping Pt 2.

**FEBRUARY APPRAISAL:** Compu-Mates R100 DrumDroid (Atari ST); Alesis MMT8 sequencer; 360 Systems Pro MIDI Bass, Bit By Bit MIDIDrummer (Atari ST); Ensoniq SQ80 synth; Yamaha RX7 drum machine; Korg DRM1 drum expander.

**MUSIC:** Clmfe Fisher; Don Airey; Brian Eno.  
**STUDIO:** Orinoco Studio.  
**TECHNOLOGY:** Sydney Music Conservatorium; Why Just Intonation?; The Art of Looping Pt 3; Massive Memory (hard disk data storage).

**MARCH APPRAISAL:** Kawai K1/K1M synth; Technos Acxel Resynthesiser; Korg 707 synth; Drumware S900 Soundfiler (Atari ST); Zyklus MIDI Performance System; Alesis HR16 drum machine; Elka MK88/MK55 MIDI keyboard controllers; Intelligent Music M (Atari ST).

**MUSIC:** The Beatmasters; Talking Heads.  
**STUDIO:** Akai EX90R reverb; Stephen Hague.  
**TECHNOLOGY:** Resampling; Multi Mode (MIDI mono mode for Ensoniq ESQ1 & SQ80); Local Area Networks (MIDI networking); NAMM Show Report.

**APRIL APPRAISAL:** Korg M1 and S1 (previews); Paradigm Omni-Banker (Atari ST); Hybrid Arts EZ-Score Plus (Atari ST); Akai EW2000 & EWV2000 wind controller and voicing module; Akai MPC60 drum machine/sequencer/sampler; Simmons SDX electronic percussion; Hybrid Arts GenPatch patch librarian (Atari ST).

**MUSIC:** Art Of Noise; Jellybean Benitez; Really Big Men (April Fool).  
**STUDIO:** 2nd Sense Studio; Johnny Hates Jazz.  
**TECHNOLOGY:** All About Additive Pt 1 (additive synthesis); ARP 2600 retrospective; Alternative Strings (string samples); Frankfurt Show Report; Public Library (Public Domain Software).

**MAY APPRAISAL:** Cheetah MD8 drum machine; GMR El Board DX7 upgrade; Voyetra Sequencer Plus III (IBM PC); Blank Alchemy editor (Mac); Axxess MIDI Mapper; Dr T's MRS (Atari); Yamaha TX16W sampler; Groove Jupiter 8 & Juno6/60 MIDI updates.

**MUSIC:** Aswad; Steve Nieve; Peter Erskine.  
**STUDIO:** Tascam MTS30 synchroniser; Ian Levine.  
**TECHNOLOGY:** A Vocal Chord Pt 1 (sampling the human voice); Multitasking; All About Additive Pt 2.

**JUNE APPRAISAL:** Yamaha WX7 MIDI controller; Yamaha MIDI Grand; Roland S550 sampler; E-mu Emax SE HD sampler; Kawai K1 synth; SARO Musigraph scorewriter (Atari ST); Passport Master Tracks Junior sequencer (Atari ST).

**MUSIC:** Three Wise Men; Thomas Dolby; Simon Limbrick.  
**STUDIO:** Twister programmable automation computer; Andy Richards.  
**TECHNOLOGY:** A Vocal Chord Pt 2; MIDI In the Mix; Shaping The Wave (synth programming).

**JULY APPRAISAL:** Clavia Ddrum 2; Drumware GenWave/12 (Atari ST); Korg M1 workstation; Steinberg Pro24 III sequencer (Atari ST); SDA Promidi Studio System (IBM PC); 4-Operator FM editors.

**MUSIC:** Blue Mercedes; David Torn; Scritti Politti.  
**STUDIO:** The Sound Workshop; Secrets of Timbre (mixing sounds).  
**TECHNOLOGY:** Bass, How Low Can You Go? (sampling the electric bass); Lure of the Jingle (jingle writing).

**AUGUST APPRAISAL:** Yamaha G10 guitar synth;

Ensoniq EPS sampler (preview); E-mu Emulator III sampler (preview); Oberheim Matrix 1000 expander; Roland S330 sampler; Steinberg's The Ear (Atari ST); Kurzweil HX1000/SX1000 expanders; Dr T's MPE (Atari ST).

**MUSIC:** Jean Michel Jarre; Ellis, Beggs and Howard; Act.  
**STUDIO:** APRS Report; Digitally Yours... (digital sound).

**TECHNOLOGY:** DIY Single (recording your own single); Exclusive Information (explaining SysEx); Vocal Coding (vocoders).

**SEPTEMBER APPRAISAL:** Digital Music Corp MX8 MIDI processor; Casio VZ1 synth; Roland D110 L/A expander; Casio PG380 guitar synth; Roland Octapad II; Simmons Portakit; Digidesign Turbosynth (Mac).

**MUSIC:** Michael Shrieve; Kevin Saunderson; Claire Hamill.

**STUDIO:** Norman Cook; RIch Bitch Studio.  
**TECHNOLOGY:** BMF Report; Copycat Crimes (sampling and the law); Fun in the Waves Pt 1 (additive synthesis).

**OCTOBER APPRAISAL:** Akai S1000 sampler; Cision MCV20 MIDI/CV Interface; Digigram MIDImic; Casio DG100 Digital Horn; Ensoniq EPS sampler; Roland D20 synth; Dr T's Fingers sequencer (Atari ST).

**MUSIC:** Big Audio Dynamite; Bomb The Bass; Phil Thornton.

**STUDIO:** JL Cooper Mix Mate automation system; Phil Harding and Ian Curnow; Roland E660 EQ.  
**TECHNOLOGY:** Virus! (computer viruses); Prophet 5 retrospective; More Fun in the Waves; Art of Glass (samples from glasses).

**NOVEMBER APPRAISAL:** Cheetah MS6 expander; Yamaha YS200 synth; Kawai Q80 sequencer; MIDIssoft Studio sequencer (Atari ST); Softwind Synthophone; Digigram Studio 24 and Big Band sequencer (Atari ST).

**MUSIC:** Gentlemen Without Weapons; Coldcut; Alan Ayckbourn.

**STUDIO:** SRC/AT synchroniser.  
**TECHNOLOGY:** Music TV (writing TV soundtracks); Korg Mono/Poly retrospective; We Are The Management (music biz' management); Map Rap (MIDI mapping).

**DECEMBER APPRAISAL:** Dynacord CLS222 Leslie speaker simulator; Coda Music Finale scorewriter (Mac); Akai S1000 sampler; Yamaha C1 computer; Pandora Power Tools Korg M1 editor (Atari ST); Yamaha G10 guitar synth; Hybrid Arts EZ-Track Plus sequencer (Atari ST).

**MUSIC:** Information Society; Juan Atkins; Baby Ford.  
**STUDIO:** Lexicon LXP1 reverb.  
**TECHNOLOGY:** Record Profits (record royalties); Oberhelm SEM retrospective; On the Boards (bulletin boards); Psycho Killer (the Psycho Mobile).

## 1989

**JANUARY APPRAISAL:** Roland U110 expander; Intelligent Music Mididraw (Atari ST); Akai S950 sampler; Dr T's D110 editor (Atari ST); Dr T's Tunemsmith (Atari ST).

**MUSIC:** Renegade Soundwave; Yello; Steve Reich.  
**STUDIO:** Battery Studios; Tascam 238 8-track multitrack cassette.

**TECHNOLOGY:** Interactive Music; Memory-moog retrospective; MIDI Files.

**FEBRUARY APPRAISAL:** Soundbits 3D editor (Atari ST); Steinberg Twelve sequencer (Atari ST); C-Lab Creator/Notator sequencer/ scorewriter (Atari ST); Roland R8 drum machine; Dr T's SampleMaker (Atari ST).

**MUSIC:** Hubert Bognermayer; S'Express; Lizzie Tear.

**STUDIO:** DACS MIDI Patchbay; Symetrix 511A gate; Toa MR8T 8-track multitrack cassette.

**TECHNOLOGY:** Roland TB303 retrospective; AES Report; Bring The Noise (microphone survey).

**MARCH APPRAISAL:** Roland Super-MRC Software; Songwright IV (IBM PC); Oberheim Cyclone arpeggiator; Hollis Trackman sequencer (Atari ST); Turtle Beach SampleVision (Atari ST); Dr T's, Soundbits, Drumware & Steinberg Kawai KI Visual Editors (Atari ST).

**MUSIC:** Frazier Chorus; Marshall Jefferson; Shriekback.

**STUDIO:** Roland R880 reverb; Fostex RB 8-track

recorder; Roland RE3 Space Echo.

**TECHNOLOGY:** The Human Touch (programming "feel" in drum patterns); Frankfurt Show Report; The Secrets of Computer Composition Pt 1 (algorithmic composition); NAMM Show Report.

**APRIL SOLD OUT APPRAISAL:** Microdeal Replay sampler (Atari); Oberhelm Systemizer; Hybrid Arts EditTrack sequencer (Atari ST); Philips Pias & Groove MIDI Merge Boxes; MIDI Merge D50, D50 Captarel (Atari ST); Hybrid Arts L100; algorithmic composer (Atari ST); Steinberg Synthworks (Atari ST); Akai XE1 drum machine; Intelligent Music Realtime Arranger; New Order; Stig Mjollsson (April Fool).

**STUDIO:** 360 Systems Audio Matrix 16; Alesis Quadraverb reverb.

**TECHNOLOGY:** Mellotron retrospective; MIDI In Control; Further Secrets of Computer Composition Pt 2.

**MAY APPRAISAL:** Ensoniq EPS-M (preview); Roland W30 workstation (preview); Studio Electronics MIDImoog expander; AB Software Midistudio (Atari ST); Yamaha V50 synth; Elka CR99 MIDI disk recorder; Roland CD5 CD ROM; Akai MX76 MIDI keyboard controller.

**MUSIC:** Pascal Gabriel; DJ Mark the 45 King; Fon Force.

**STUDIO:** Akai AR900 reverb; Pete Hammond; Digitech DSP 128 Plus reverb.

**TECHNOLOGY:** The Small Print Pt 1 (MIDI Implementation charts); Real Time MIDI; Moog Source retrospective.

**JUNE APPRAISAL:** Yamaha TQ5 expander; Roland A50 & A80 MIDI keyboard controllers; Opcode Vision (Mac); Bit By Bit MIDIDrummer (Atari ST); Ensoniq VFX synth (preview); Technart TUK200 pitch-to-MIDI system; Yamaha RX8 drum machine; Aphex Feel Factory humaniser.

**MUSIC:** Soul II Soul; Cutmaster Swift; Front 242.

**STUDIO:** dbx SNRI noise reduction.  
**TECHNOLOGY:** Time Exposure (synch-ronisation codes); The Small Print Pt 2; Synclavier update Pt 1; Korg MS20 retrospective.

**JULY SOLD OUT APPRAISAL:** Dr T's MRS (Atari ST/Amiga); Roland R5 drum machine; Musicsoft MIDiman MIDI tape recorder interface; Roland D5 synth; CDP MIDIGrid (Atari ST); Roland U30 workstation; Yamaha DD5 MIDI controller; HB Engraver scorewriter (Mac); Ensoniq VFX synth.

**MUSIC:** Manic Street Preachers (Devo); Beatmasters; Animal Logic; Stewart Copeland/Stanley Clarke.

**STUDIO:** Korg A3 reverb; DigiTech IPS33 pitch shifter.  
**TECHNOLOGY:** Exclusive Performance (applications of SysEx); Synclavier update Pt 2; DAT's Life (explanation of Digital Audio Tape).

**AUGUST APPRAISAL:** Roland U20 synth; Roland GR50 guitar synth; Steinberg Cubase sequencer Pt 1 (Atari ST); Anatek Pocket FX; Hollis MIDIman (Atari ST); Musicsoft Syncman sync unit.

**MUSIC:** Living Colour (Vernon Reid); KRS One; Ray Lema.

**STUDIO:** XRI XR400 MIDI patchbay.

**TECHNOLOGY:** On The Beat (drum machine programming: basic pop and rock patterns); Music By Design Pt 1 (algorithmic composition applications); Synclavier update Pt 3; Microtonal Musings (microtonal tuning).

**SEPTEMBER SOLD OUT APPRAISAL:** Korg M3R/RE1 synth and programmer; Cheetah Master Series 7P MIDI keyboard controller; Lab Expander 1000 (Atari ST); Steinberg Cubase sequencer Pt 2 (Atari ST); Steinberg Musical (Atari ST).

**MUSIC:** A Certain Ratio; Simon Harris; Arthur Baker.

**STUDIO:** Yamaha FX500 multi-fx processor.

**TECHNOLOGY:** On The Beat Pt 2 (the importance of the hi-hat); Music By Design Pt 2; BMF Report.

**OCTOBER APPRAISAL:** Kawai K1 II synth; C-Lab Explorer 32 (Atari ST); TDM Virtuoso (Atari ST); Roland Pad5 MIDI drum controller; Music-X (Amiga); Casio VZBM expander; Pandora D110 Editor (Atari ST); EMR Studio 24+ (Achimedes).

**MUSIC:** The Blue Nile; Les Adams; Ed Williams.

**STUDIO:** JL Cooper FaderMaster.  
**TECHNOLOGY:** On The Beat Pt 3 (embellishing the earlier basic patterns); Using MIDI Controllers; Media Link (the MIDI Local Area Network).



**NOVEMBER APPRAISAL:** Studiomastr MA36 MIDI Analyser; E-mu Proteus sample reader; Dr T's X-Or (Atari ST); Roland Rhodes electronic piano; TC Music Publisher (Atari ST).

**MUSIC:** Can; 808 State.  
**STUDIO:** Tascam MM1 mixer; ART Multiverb II multi-fx processor.  
**TECHNOLOGY:** Commodore Amiga Profile; CEDAR (digital restoration of old or damaged recordings); On The Beat Pt 4 (further developments of basic grooves).

**DECEMBER APPRAISAL:** Yamaha SY77 synth; Atari STacy; Ensoniq VFX-SD workstation; Hollis Trackman II sequencer (Atari ST); Kawai K4 synth; Wal MIDI Bass MIDI controller; Korg T1 workstation; Steinberg Avalon (Atari ST); Keynote Chameleon (Atari ST); FM Melody Maker (Atari ST).

**MUSIC:** Gary Chang; The Art Of Noise.  
**STUDIO:** ART SGE multi-fx processor.  
**TECHNOLOGY:** The Analogue Sampler; Karl Steinberg; On The Beat Pt 5 (the triplet).

## 1990

**JANUARY APPRAISAL:** Waldorf Microwave expander; Roland CM Modules; Yamaha SY77 synth; Alesis Datafiler.  
**MUSIC:** Beloved; Jesus Jones.  
**STUDIO:** Lexicon LXP5 multi-fx processor.  
**TECHNOLOGY:** MIDI Merging (MIDI datastreams); On The Beat Pt 6 (funk); Spatial Awareness (3D sound imagery).

**FEBRUARY APPRAISAL:** Clares Armadeus (Archimedes); Quinsoft FB01 Librarian (Atari ST); Musitronics MEX (D50/D550 enhancement); E-mu Systems Emax II sampler; Cheetah MQ8 sequencer; SDA TOPAZ (computer-controlled recorder).

**MUSIC:** WBTM Music; Prince Paul (Stetsasonic).  
**STUDIO:** Sansui WSX1 multitrack recorder.  
**TECHNOLOGY:** On The Beat Pt 7 (reggae); The Performing Art (performance applications of MIDI controllers); The Software Syndrome (viruses and avoiding them); Roland Super Jupiter retrospective; MacWorld '89 Show Report.

**MARCH APPRAISAL:** Dynaware Ballade (IBM PC); Gajits Sequencer One (Atari ST); Proteus Editors (Dr T's & IMS Protezoa for Atari ST); Passport Designs' Encore (Mac); Quinsoft 4-op Editor; Yamaha TG55 expander; Caslo FZ20M sampler.

**MUSIC:** Adamski.  
**STUDIO:** Alesis Midlverb III digital reverb; Yamaha Studio 100 Series Studio modules.  
**TECHNOLOGY:** Adrift On An MTC (MIDI Time Code); On The Beat Pt 8 (South American rhythms); Stakker; The Performing Art Pt 2; Oberheim OBXa retrospective.

**APRIL SOLD OUT APPRAISAL:** Mark of the Unicorn Performer v3.2 sequencer (Amiga); Replay Pro (Atari ST sampler); Steinberg Cubase v1.5 sequencer (Atari ST); TD-1000 (Atari ST); Roland R8M ROM cards; Yamaha SY22 synth (preview); Yamaha SY5 synth.

**MUSIC:** Alvin Fielder; Gerald; The Grid.  
**STUDIO:** E-entide H3000 Ultra-harmoniser.  
**TECHNOLOGY:** Music of the Spheres (April Fool); On The Beat Pt 9 (Brazilian rhythms); The Big Picture (cinema sound); The Performing Art Pt 3.

**MAY APPRAISAL:** Dr T's T-Basic (Atari ST); Rhodes Models 660 & 760 keyboards; Boss DR550 drum machine; DMA Classical Collection (classical music MIDI sequences).

**MUSIC:** Beats International; Gyorgy Ligeti.  
**STUDIO:** Icon Research APB1 MIDI patchbay.  
**TECHNOLOGY:** Clocking In (SMPTE guide); On The Beat Pt 10 (Afro-Cuban, Salsa and Latin-jazz rhythms); Frankfurt Show Report.

**JUNE APPRAISAL:** Dr T's KCS sequencer (Atari ST); Dr T's TIGER (Atari ST); Quinsoft Trax (Atari ST); MIDItemp PMM88 MIDI patchbay; Akai XR10 drum machine; Roland S770 Pt 1 sampler; Korg Wavestation synth (preview); Roland D70 synth (preview).

**MUSIC:** Fluke; Tears For Fears.  
**STUDIO:** Fostex 454 mixer; Vestax MR200 cassette multitrack.  
**TECHNOLOGY:** Effective Action (MIDI control of fx processors); On The Beat Pt 11 (Go-go).

**JULY APPRAISAL:** Magnetic Music PRISM (IBM PC); Passport Mastertracks Pro4 sequencer

(Mac); Armadillo A616 sampler; Roland S770 sampler (Pt 2); Yamaha SY22 synth.

**MUSIC:** Propaganda; Martin Rex (Neneh Cherry/Beatmasters).

**STUDIO:** Alesis 1622 mixer; Tascam 644 Midistudio.

**TECHNOLOGY:** A New Master (DAT: assessment/DAT machine roundup); On The Beat Pt 12 (unusual time signatures).

**AUGUST APPRAISAL:** Dr T's Copyist Apprentice (Amiga); Hybrid Arts' SMPTETrack II sequencer (Atari ST); Twelve Tone Systems' Sound Globes (IBM PC); Cheetah SX16 sampler; Roland S770 sampler (Pt 3); Roland D70 synth; MIDITest 5 MIDI lead tester.

**MUSIC:** Coldcut; Chick Corea.  
**STUDIO:** ART Multiverb III multi-fx processor.  
**TECHNOLOGY:** On The Beat Pt 13 (drum solos); Sequential Prophet 600 retrospective.

**SEPTEMBER APPRAISAL:** Dr T's Beyond sequencer (Mac); Passport Mastertracks Pro sequencer (Mac); Steinberg Proteus Synthworks (Atari ST); Korg Wavestation synth; Audio Architecture Function Junction MIDI patchbay.

**MUSIC:** Double Trouble; It's Immaterial.  
**STUDIO:** Fostex MTC1 MIDI Time Code controller.  
**TECHNOLOGY:** Big Blue Music (IBM PC in music); On The Beat Pt 14 (hip hop); Yamaha CS80 retrospective.

**OCTOBER APPRAISAL:** Ensoniq SQ1 synth; Roland CF10 & CN20 modules; Q-Logic MIDI Metro digital metronome.

**MUSIC:** Jerry Harrison; Jeff Rona.  
**STUDIO:** JBL Control 1+ monitors/SB1.  
**TECHNOLOGY:** MIDI Moves (MIDI specification); On The Beat Pt 15 (house); Sequential Pro One retrospective; BMF Report.

**NOVEMBER APPRAISAL:** Dr T's Tiger Cub (Atari ST); E-mu Systems Proformance 1/+ expander; Evolution Synthesis EVS1 expander; Yamaha DD11 drum machine; Anatek Studio Merge MIDI merger; Roland MV30 sequencer, synth and automated mixer.

**MUSIC:** Bass-o-matic; Derrick May.  
**STUDIO:** Tascam 688 Midistudio.  
**TECHNOLOGY:** On The Run (MIDI running status); Dave Smith Interview Pt 1; The Sampler & The Soul (an alternative view of sampling).

**DECEMBER APPRAISAL:** Passport Trax; Steinberg Midex+ (Atari ST); Roland SPD8 drum machine; Celestion SR1/SR3 monitors; MIDItemp MP44 MIDI data recorder; Track Ball Round-up.

**MUSIC:** Jason Rebello; Stereo MCs.  
**STUDIO:** Roland Kerridge.  
**TECHNOLOGY:** On The Beat Pt 16 (slower rhythms and treatment of voices); Oriental Intrigue (Tascam profile); Dave Smith Pt 2.

## 1991

**JANUARY APPRAISAL:** Digigram Proscore (Atari ST); Dr T's Tiger Cub (Commodore Amiga); Geerdes SY77 Softworkstation (Atari ST); Invision Protologic expander; Korg S3 rhythm workstation Pt 1; Roland MC50 sequencer.

**MUSIC:** Meat Beat Manifesto; Tangerine Dream.  
**STUDIO:** Studiomastr Pro Line Gold mixing desk.  
**TECHNOLOGY:** Visions of the Future (Brian Johnson/Impro-Visions).

**FEBRUARY APPRAISAL:** Steinberg SY77 Synthworks (Atari ST); Alesis SR16 drum machine; Korg S3 Pt 2; Ensoniq EPS16 Plus sampling workstation; Seiko MR1000 sequencer; AMPLE software albums.

**MUSIC:** Steve Coleman; Unique 3.  
**STUDIO:** Caslo DAT DAT recorder.  
**TECHNOLOGY:** On The Beat Pt 17 (jazz); Retroaction (MIDI retrofitting); UKMA (UK MIDI Association); E-mu Emulator I retrospective.

**MARCH APPRAISAL:** C-Lab Creator/Notator v3 sequencer/scorewriter (Atari ST); Roland MRM500 MIDI file convertor; Yamaha TG33 expander; Cheetah MD16 drum machine; Anatek Pocket Sync; Roland MV30 Studio M music production system.

**MUSIC:** Starship; Working Week.  
**STUDIO:** Alesis Microverb III reverb.  
**TECHNOLOGY:** On The Beat Pt 18 (more jazz); Performing Musician: Endangered Species? (the role of sequencers in modern music).

**APRIL APPRAISAL:** Accupower UPS; Audio Fast De-Composer (April Fool); Anatek Pocket Sequencer; Akai DD1000 magneto-optical disk recorder; IVL Steelrider 4000 pedal steel MIDI interface; AVR Pro-Series 12 sampler (Atari ST); Cannon Research Frontal Lobe Korg M1 enhancement.

**MUSIC:** Jean Michel Jarre (Live); Dream Warriors; Manu Dibango.  
**STUDIO:** Alesis Quadverb Plus multi-fx processor.

**TECHNOLOGY:** On The Beat Pt 19 (African rhythms); En Routing (MIDI patchbays); Postcards From The Edge (preliminary Frankfurt report).

**MAY APPRAISAL:** C-Lab Notator Alpha, Midia and Aura educational software (Atari ST); EMC SY55 Manager & Librarian (Atari ST); Akai S1100 sampler; Yamaha QY10 sequencer; Steinberg Cubeat (Atari ST); Kawai XD5 expander.

**MUSIC:** David Sylvian; Rain Tree Crow.  
**STUDIO:** Cause An Effect (sound treatment).  
**TECHNOLOGY:** Frankfurt Show Report; Moog Taurus Pedals retrospective.

**JUNE APPRAISAL:** Kawai Spectra synth; Roland JD800 digital synth; Passport Designs Encore (Atari ST); Quinsoft VZ-ED (Atari ST); Phillip Rees PSP drum expander.

**MUSIC:** The Orb; Basscut.  
**STUDIO:** Soundcraft Spirit Studio mixer.  
**TECHNOLOGY:** Hey, Mr Tambourine Man (making convincing tambourine samples); On The Beat Pt 20 (deep African rhythms); Raising The Standard (General MIDI spec and Roland's GSS system).

**JULY APPRAISAL:** PG Music Band-In-A-Box (Mac/IBM/Atari); Roland JX1 synth; Yamaha RY30 drum machine.

**MUSIC:** Bomb The Bass; Man Machine.  
**STUDIO:** Tascam Porta 03 cassette multitracker.  
**TECHNOLOGY:** On The Beat Pt 21 (diverse patterns); The Sound of Chaos (fractal mathematics); Thanks for the Memory (effective synth memory management).

**AUGUST APPRAISAL:** Peavey DPM3 SE/SX digital synth/sampling interface; Gajits Sequencer One/Hit Kit (Amiga); Hammond XB2 organ synth; Pandora Inspiration (Archimedes); Groove MC Lite MIDI-controlled stage lights; Roland Tentrax (Atari).

**MUSIC:** Yello; LFO.  
**STUDIO:** P&R Audio PB40 patchbay; CEDAR De-Clicker signal processor.

**TECHNOLOGY:** On The Beat 22 (miscellaneous); Shipwrecked! (the famous choose the keyboards they'd want if stranded on a desert island); ARP ProSoloist; Korg Sigma & Roland SH2000 retrospective; Techno Pop (Dan Goldstein's personal view of the last decade); Designing The Future (10 years of Roland UK); Making History (edited highlights of ten years of MT).

**SEPTEMBER APPRAISAL:** Oberheim Drummer interactive drum pattern sequencer; JL Cooper Sync-Link Mac MIDI Interface; Hybrid Arts' SMPTETrack Gold (Atari); Forefront Technology FT3 patch commander; Voce DM164 MkII organ module.

**MUSIC:** Nightmares On Wax; Incognito.  
**STUDIO:** Peavey 308s monitors.  
**TECHNOLOGY:** On The Beat 23 (miscellaneous again); IMS Report; Question Time (alternatives to MTC and MIDI Clock).

**OCTOBER APPRAISAL:** Yamaha SY99 synth; E-mu Systems Pro/cussion maximum percussion module; Datamusic Fractal Music (Atari); Casio RAP1 personal music system.

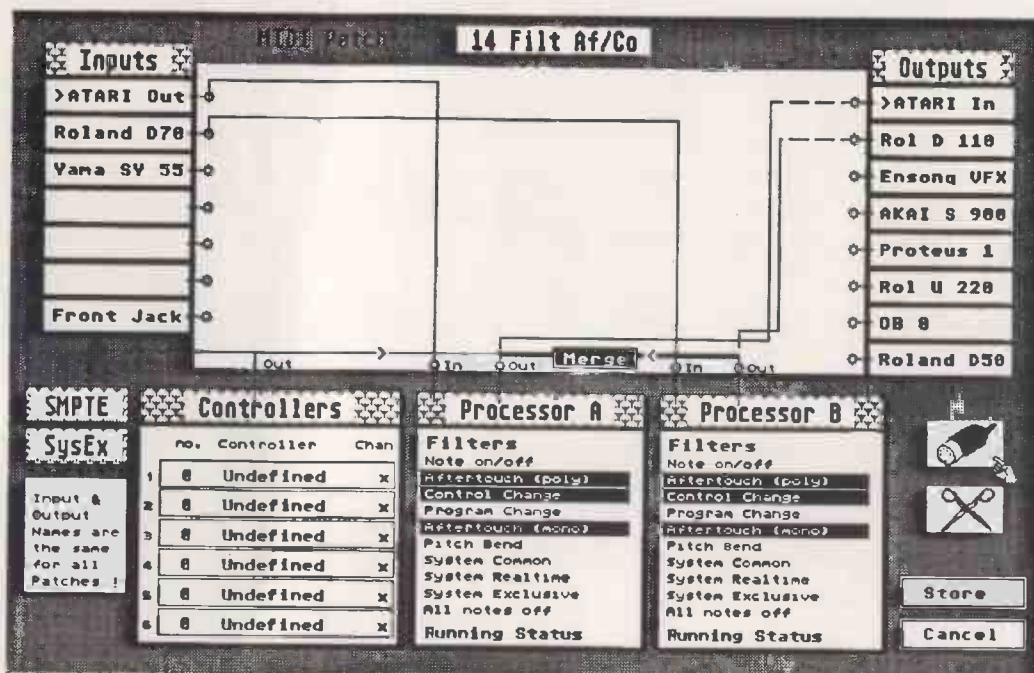
**MUSIC:** System 7 (Steve Hillage); The Farm.  
**STUDIO:** Korg A5 performance signal processor.  
**TECHNOLOGY:** On The Beat 24 (double bass and snare drums); Screen With A View (Microsoft's Multimedia Windows for the PC); Power Play (mains power).

**NOVEMBER APPRAISAL:** Quinsoft Kawai K4 editor (Atari); Oberheim Strummer keyboard-to-guitar chord converter; Korg O1/W workstation.

**MUSIC:** Michael Hedges; BEF (Martyn Ware).  
**STUDIO:** Mark of the Unicorn 7s MIDI mixer; Plasmeq Systems ADAS hard disk recording system.  
**TECHNOLOGY:** On The Beat Pt 25 (various); Multibrality Made Simple (what it is, what it's for and what's wrong with it).

OWM  
BACK

# SMP16



As the keyboard workstation's star wanes, that of the highly evolved patchbay waxes. Currently leading the field is Anatek's SMP16. Review by Ian Waugh.

**I**TEGRATION: THAT'S WHAT we need. It's all very well decentralising government but it's far easier dealing with one bureaucrat than half a dozen, don't you think? The SMP16 is a bit like that - a centralised office, not a bureaucrat. Inside its 2U-high rack-mount exterior lies a multi-function machine. Let's see how quickly we can run through a description of parts.

Operation is based on the tried and tested system of menus and sub-menus. There are 13 main menus and most have only three sub-menus so it's difficult to get lost. An extra large 16 x 2-character LCD tells you what the current menu/sub-menu is and indicates the parameters which you can alter. If you can't see this from the other end of the studio you need glasses.

To the right of the display are four cursor buttons arranged in a diamond. Use these to increase and decrease the value of parameters and to move the LCD cursor from one parameter to another. To the right of the diamond are six function buttons used to move forwards and backwards through the menus, enter a sub-menu, execute the current command, reset the data to its lowest possible value and to exit from a menu.

On the back of the unit are six MIDI In sockets, eight MIDI Outs, 16 pairs of unbalanced audio in and out jacks, in and out SMPTE sockets, a Mac interface and a female DB9 connector for use with Anatek's 6 Slider Remote (not supplied) which provides inputs

for variable MIDI controllers. There's also a fuse and a power socket - the lead is not fixed to the unit.

On the front panel are two extra pairs of audio ins and outs which are mapped onto sockets 15 and 16 on the back. A second MIDI Out 8 socket is mapped onto MIDI Out 8 on the back and a MIDI In F (for Front) is the equivalent of MIDI In 7.

## THE BASICS

LET'S LOOK AT the MIDI patchbay first. The menu you need is Edit MIDI Patch Routing & Merge. Hit Enter and you get a list of the eight MIDI Out sockets waiting to be assigned In sockets. You can switch off routing to a socket altogether, assign it one of the six In sockets on the back or to one of the processors labelled A and B (more about these in a moment).

Socket F appears on the right of the display where it can be assigned to Processor A or B. In fact socket F can *only* be assigned to a Processor which, in turn, can be assigned to a MIDI Out on the left of the display. This may appear a bit convoluted but there's a reason for it, which we'll get to in a moment. To help you remember what gear is connected to which socket, you can name the Ins and Outs. You can name everything except the A and B processors and the F socket which are designated, naturally, A and B Processor Out and socket F.

Merging any of the MIDI Ins is possible, and is accomplished by merging the output of Processor B with that of A. An arrow in the main display shows if Merge is on or off and the references to Processor A in the In line in the display turn to M for Merge. You may have to run through the procedure a few times before it begins to gel.

It's a good idea to work out what equipment you're going to plug where and name the sockets accordingly. It will make future use much easier.

Processors A and B can be programmed to filter out unwanted MIDI messages. These include Note On and Off (treated as one message), Aftertouch, Control Change, Program Change, Pitch Bend, System Common, System Real Time, System Exclusive and All Notes Off.

Running Status may be enabled/disabled for each Processor, too. It would have been useful to be able to filter out Active Sensing as I know this screws up



# THE ULTIMATE STUDIO ACCESSORY?

## CREATIVE RECORDING III

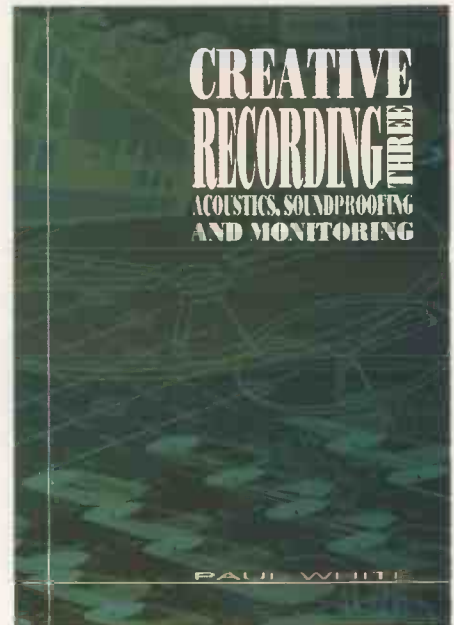
### Acoustics, Soundproofing and Monitoring

This, the third volume in the Creative Recording Series, approaches the usually complex subjects of soundproofing and acoustic treatment in a down-to-earth way making it the ideal starting point for DIY studio construction. In non-technical English, it explains how sound escapes from, or leaks into, recording studios and offers remedies ranging from simple wall treatments to details of how to build your own room-within-a-room studio. Weak areas are identified with specific sections covering doors, windows and ceilings. Acoustics is often regarded as a black art, but again, creating a good listening environment is well within the scope of the DIY studio owner. Different approaches are explored with several practical techniques for improving your listening room, regardless of your

space or budget limitations. Finally, the thorny subject of monitoring is demystified: What size monitors should you use in a given room size? How big an amplifier do you need to drive them? Should they be active or passive? How and where should they be mounted? Again, all these questions are answered in easy-to-understand English.

If you haven't yet bought Creative Recording I and II, you may like to know that volume I looks at the applications of studio effects units and processors while volume II shows you how to mic up just about any instrument or voice you might encounter including the normally tricky drum kit.

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Audio Patches	
1 Direct	26 NOT IN USE
2 Vice versa	27 NOT IN USE
3 6 x 2	28 NOT IN USE
4 4 x 3	29 NOT IN USE
5 NOT IN USE	30 NOT IN USE
6 NOT IN USE	31 NOT IN USE
7 NOT IN USE	32 NOT IN USE
8 NOT IN USE	33 NOT IN USE
9 NOT IN USE	34 NOT IN USE
10 NOT IN USE	35 NOT IN USE
11 NOT IN USE	36 NOT IN USE
12 NOT IN USE	37 NOT IN USE
13 NOT IN USE	38 NOT IN USE
14 NOT IN USE	39 NOT IN USE
15 NOT IN USE	40 NOT IN USE
16 NOT IN USE	41 NOT IN USE
17 NOT IN USE	42 NOT IN USE
18 NOT IN USE	43 NOT IN USE
19 NOT IN USE	44 NOT IN USE
20 NOT IN USE	45 NOT IN USE
21 NOT IN USE	46 NOT IN USE
22 NOT IN USE	47 NOT IN USE
23 NOT IN USE	48 NOT IN USE
24 NOT IN USE	49 NOT IN USE
25 NOT IN USE	50 NOT IN USE

MIDI Patches	
1 Direct I/O	26 NOT IN USE
2 Vice versa	27 NOT IN USE
3 6 x 2	28 NOT IN USE
4 4 x 3	29 NOT IN USE
5 NOT IN USE	30 NOT IN USE
6 NOT IN USE	31 NOT IN USE
7 NOT IN USE	32 NOT IN USE
8 NOT IN USE	33 NOT IN USE
9 NOT IN USE	34 NOT IN USE
10 NOT IN USE	35 NOT IN USE
11 NOT IN USE	36 NOT IN USE
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15 NOT IN USE	40 NOT IN USE
16 NOT IN USE	41 NOT IN USE
17 NOT IN USE	42 NOT IN USE
18 NOT IN USE	43 NOT IN USE
19 NOT IN USE	44 NOT IN USE
20 NOT IN USE	45 NOT IN USE
21 NOT IN USE	46 NOT IN USE
22 NOT IN USE	47 NOT IN USE
23 NOT IN USE	48 NOT IN USE
24 NOT IN USE	49 NOT IN USE
25 NOT IN USE	50 NOT IN USE

**The program is absolutely useless without the hardware and it's free so why have Anatek chosen to frustrate us with unnecessary and restrictive copy protection?"**

quite a few pieces of gear. In use, you'd set up a filter to remove Program Changes in Processor A, say, and then use the Edit MIDI Patch Routing & Merge menu to assign one of the Ins to A and then assign A to one of the Outs. It may appear rather involved and you do have to get your head firmly around the routing concept in order to make best use of it.

With Anatek's optional 6 Slider Remote connected to the MIDI Controllers socket, up to six MIDI controller messages can be sent to connected devices. Any MIDI Controller may be assigned to any of the six Controller Numbers. The MIDI Controllers are named where names are given in the MIDI spec and the numbers are shown in both decimal and hex. You assign them to MIDI channel and transmit the data using the external control.

The data is routed through Processor A again, giving it any other data. The manual suggests you disconnect unused Controllers to avoid transmission of erroneous information. In other words it suggests you don't try to transmit two different sets of controller data at the same time.

The audio patchbay works in a similar way to the MIDI patchbay. The 16 ins and outs are accessed through four displays each showing four pairs of sockets. Like the MIDI patchbay, the outs are fixed and you alter the inputs they are assigned. You can connect any in to any out or disconnect the outs from the routing. You can name the ins and outs, too.

Two sets of ins and outs for 15 and 16 allow these connections to appear on both the front and back of the unit. The ins are summed so, for example, assigning in 15 to an out routes anything connected to both the front and rear sockets. Same with the 16 ins. At its simplest, this could function as a 2:1 line mixer.

The manual suggests using the duplicate 15 and 16 outs for simultaneous recording on different tape decks, although a more common use may be for monitoring or patching to a signal processor.

you can also set the System Exclusive device ID number, should you have more than one SMP16, and instigate a SysEx Bulk Dump. You can turn SysEx reception off, too, to prevent the accidental overwriting of settings.

The SMP16's SMPTE facilities are quite comprehensive. It supports all six formats - 24, 25, 29.97, 30, 29.97 drop frame and 30 drop frame. You can set the start time before striping a tape. It defaults to 00:59:30:00 giving you a 30-second lead time and starting you on the hour.

On playback, the SMP16 can generate MIDI Time Code, Direct Time Lock or Enhanced Time Lock as well as MIDI Sync. These are merged with the input assigned to Processor A, again, which you can route to any of the MIDI Outs. When you're in the SMPTE display (when it's generating other time code), the SMPTE code being read is displayed in real time. Using MIDI Sync requires a little more setting up as you have to give the SMP16 Song Start and Tempo information (Song Position Pointer info). You do this from another menu which lets you select any of ten Songs which can be stored in memory. You can select up to ten different tempo changes in the song.

You get a SMPTE readout while MIDI Sync is being generated, too, but, unlike the other time codes, you can't exit this display while Sync is being generated. There's also a useful Jam Sync SMPTE option which will re-write SMPTE code over a dropout.

### PATCHING UP

HAVING SET UP a MIDI or Audio patch, you can save it to memory. MIDI and Audio patches are saved separately and there are 50 slots each for MIDI and Audio storage, all of which may be named.

To change a setup you need to load the patch back into main memory. You can also select a patch via MIDI using Program Change messages. There is a Show Currently Loaded Patches option in the main menu which does just that.

It's all very helpful but I can't help but wonder why it's necessary to load and save patches to memory at all. This is where a more informative display would be useful. It could show the actual patch name and number above the routings. To make a new setup current you could simply scroll to it in the main display.

### MIDI & SMPTE

UNDER THE MIDI Utilities Setup & SysEx menu you can set the MIDI receive channels for MIDI Program Changes and Audio Program Changes.

### MAC INTERFACE

YOU CAN CONNECT the SMP16's Mac interface to the modem or printer port on your Mac. It operates at 1MHz so you may need to change the speed in your sequencing software although most default to 1MHz.

Your Mac is now connected to the In 1 and Out 1 sockets. The manual warns not to plug anything else into the SMP16's In 1 socket in case a hardware merge occurs but you can connect equipment to the Out 1 in which case it will receive the same data as the Mac, the socket acting as a MIDI Thru unit.

### THE SOFTWARE

A MANAGER/EDITOR PROGRAM for the Atari ST is bundled with the SMP16. It was written by EMC (of numerous Manager/Editors fame including the SY/TG55 Manager reviewed in MT, May '91) and forsakes GEM for its own interface.

You can make a backup of the program and install it on a hard disk but the original disk must be in the drive on booting. This is paranoia in the extreme. The program is absolutely useless without the hardware and it's free so why have Anatek chosen to frustrate us with unnecessary and restrictive copy protection?

For the hardware and software to talk to each other, the currently-active MIDI patch must have a routing from the selected MIDI Input to Processor A. Once you select a patch which doesn't have this connection you lose touch with the hardware (even via a program change) and you will have to make adjustments to bring it on line again by hand. To ensure constant contact, it would make sense to assign one of the MIDI Ins to Processor A in all patches.



The main screen shows the names of all 50 MIDI and Audio patches plus the ten Songs. You can Copy, Swap and Delete patches. Switch on the Auto Send flag and any changes are automatically sent to the SMP16.

Highlight the Edit button on the bottom of the screen and click on a patch to edit it; this takes you to the edit page where connections are made with a Jack Plug (for Audio) or MIDI Plug (for MIDI) tools and broken with a pair of scissors - very neat. The complexities of the MIDI patches in particular are shown in the Edit page which includes the Processors and Controllers. The Audio routings are fairly straightforward. You can edit the names here, too - far easier than using the SMP16's buttons.

Unfortunately, you can't perform all operations from the computer. For example, there's no Bulk Dump request. This must be instigated manually from the SMP16 and if you're not quick the option will time out before it receives it. You can't set the receive channels for MIDI and Audio Program Changes from the software, either.

It would be nice if the SMP16 reflected the edit functions in its display. Some synths do this. Apart from being very reassuring, it can help strengthen the user's understanding of the device. The SMP16 doesn't even let you know when it's receiving MIDI data.

The software manual is so short it was deemed unnecessary to include page numbers (there are ten small pages of instructions) and suffers a little from EMC's less-than-perfect English. However, as with other EMC Managers, if you're familiar with the hardware, the software is relatively easy to follow. This means that you need to familiarise yourself with the SMP16 first - editing software helps you understand the hardware.

A little more thought could have made this a superb hardware/software team. As it is, it merely does the job. Lack of certain facilities suggests that the software was written after the hardware was designed. Oh for integration. Apart from which, I would have thought it essential for a program such as this to be able to run as a Desk Accessory. As it is you could be constantly switching between this prog and your sequencer to change settings - not very practical, especially as you have to insert the program disk each time. A veritable missed opportunity for friendliness.

Although the ST software comes bundled with the SMP16, a Mac Manager is currently under development. Let's hope they at least give it System 7 savvy.

## VERDICT

THE SMP16'S BIG LCD is nice but finer resolution offering more information would be nicer. Although you can assign routings by name you can only do so while viewing one output at a time. The global view only shows numbers and letters and there's no way of telling what's connected to what without selecting the naming page and running through the assignments.

However, the object of using a patchbay like this is

to set up regularly-used configurations where you know what's connected to what. I've been using a mechanical routing device (Philip Rees 5 x 5) which is now too small for my setup, but the advantage is I can see at a glance on the front panel what's connected to what. Even so, I sometimes have to double check connections and routings when something doesn't do what it's supposed to do. Although, perhaps, as bits of gear are commonly being added to (for review) and removed from (when the manufacturers want them back) my setup, my situation may not be typical. However, studios must be in the same situation, even more so, with clients bringing their own equipment in every day.

So, remove the instant visual one-to-one information by putting the routing in a box with a numeric display and you're never *completely* sure that you've made the right connections. This is one reason why I've resisted the temptation of a programmable MIDI patchbay. Is a module not working because some spurious data burst reset its device ID number or have you, indeed, simply not patched it into your setup correctly? The visual feedback of the software is an immense help here.

And is it only my setup which requires more ins than outs? Most MIDI patchbays have more outs than ins. I tend to connect all the sound-producing devices to a MIDI Thru box (thereby freeing lots of Out sockets) but I need separate Ins for two-way communication with voice editor and librarian programs. This is more a comment on MIDI routing devices and the way I suspect many people use them rather than on the SMP16.

Having got (some of) my personal problems off my chest, back to the SMP16. It has a lot of features and as an all-in-one MIDI and audio patchbay it must be a tempting proposition, especially if you need SMPTE. If you have a Mac that's a bonus. However, I don't think I'd like to set it up without the front-end software. Not that it's particularly difficult to set up but it can tie your logic centres in knots. The object of the exercise, after all, is to make life easier.

Overall, however, I can't help feeling that somehow the whole thing could have been made rather easier and more intuitive to operate. A higher resolution LCD would have been worth its weight in gold and a better tie-in with the software could have resulted in an immaculate front end. The opportunity was there.

That said, the SMP16 does cram a lot of functions into its case. Tot up the cost of the parts which make up the whole and I think you'll find you're getting a fair deal if not a spectacular one - and there's the convenience of having all the bits in one box.

Having taken the time to get to know the SMP16, I can appreciate its benefits. While I may not have jumped over the fence towards programmable patchbays, I'm tottering. . . ■

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# M I D I M E R G E R S

*why they won't work  
and how they do*

**MIXING AUDIO  
SIGNALS IS EASY;  
MIDI DATASTREAMS  
ARE ANOTHER  
MATTER  
ALTOGETHER - BUT  
MIDI MERGING CAN  
MAKE THE  
DIFFERENCE  
BETWEEN A GOOD  
SETUP AND A BAD  
ONE. TEXT BY DON  
ERSKINE.**



THERE'S AN ENGLISH proverb which warns "you can't get a quart into a pint pot". Some believe it to have originated in Olde English hostleries but it actually has its origins in the magick art of merging MIDI information.

Coming up to date, the purpose of a MIDI merger is straightforward: it's a "black box" which combines two MIDI signals, allowing control of, say, an expander, simultaneously from a keyboard and sequencer. A simple merger has two

So in Figure 1, if a key is pressed on the synthesiser or the sequencer is run, a note will play on the expander. There are other common applications for mergers. In the above example, the keyboard player may play along while the sequencer is running. If the expander is multitimbral, the sequencer and keyboard can use different voices.

If the two controlling devices are both instruments, say a MIDI wind controller and a keyboard, two players can share one

Figure 1 Typical MIDI Merging

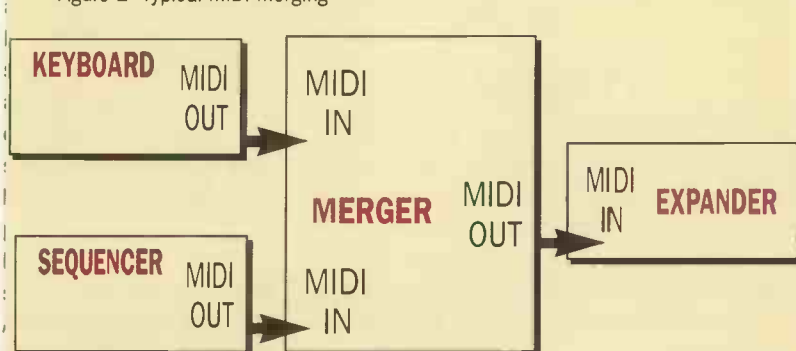






ILLUSTRATION: GARY THOMPSON

Upon seeing a status byte at Input 1, the merger starts sending the message (after a short internal delay due to processing). The message arriving at Input 2 has to be stored inside the merger until transmission of the first message is complete, and then it too is sent. In other words, when two MIDI messages clash, one has to be delayed by the merger.

Herein lies another problem. How long can a MIDI message last? The answer is, surprisingly, forever. There's nothing in the MIDI spec that prevents sending, for example, a Status byte, and then waiting 100 years before sending the remaining two data bytes. The receiving expander should wait patiently for a century and then act upon the complete message.

In reality a three-byte MIDI message may well last longer than the theoretical minimum of 990 microseconds. For example, MIDI real-time bytes may have been filtered out of the incoming data stream, leaving a gap, or the transmitting device may simply be slow. Worse still, one input channel may be receiving a 4000-byte System Exclusive message, lasting over a second in duration. Thus MIDI messages can last quite a long time in reality.

In the meantime, the merger has to store the information from the other input in a buffer until it has decided that the message on the first input is complete. Then it can send the stored message(s), at the same time buffering anything that then arrives at the first input. But how large should this buffer be?

If, for example, the merger has to wait a whole second before transmitting a buffered Note On, the keyboard player is going to get a few funny looks from the lead singer and drummer, and no more gigs. So one particular rule is that the input data buffers of a merger need not be all that large, a few dozen bytes at the very most. If a lot of data needs to be buffered, it's delayed for so long it becomes musically useless, and is better thrown away. Imagine a gig during which

In theory, both MIDI channels could be carrying MIDI information all the time. Unlikely, but in MIDI terms strictly legal. Try to combine both signals into one MIDI data stream, and information will inevitably be lost or delayed due to the bottleneck caused. Two MIDI leads can carry twice as much information as one, and there, as they say, is the rub.

More practically, as most MIDI information arrives "on the beat" during a piece of music, a merger must combine

the messages so they do not mess each other up. Figure 2 illustrates this problem. In this example, two different three-byte messages, such as Note Ons, arrive at the two inputs at the same time. If the merger simply alternates between the bytes of the two incoming messages, the two messages become confused; the expander would see Status byte X without Data bytes, then Status byte Y followed by four Data bytes. Figure 3 shows what should happen.

Figure 2 Incorrect Merging

**Input 1**

STATUS X DATA A DATA B

**Input 1**

STATUS Y DATA C DATA D

**Output**

STATUS X STATUS Y DATA A DATA C DATA B DATA D

**Input 1**

STATUS X DATA A DATA B

**Input 2**

STATUS Y DATA C DATA D

**Output**

STATUS X DATA A DATA B STATUS Y DATA C DATA D

- the synthesiser stops playing notes for four seconds, and then plays 40 notes at once. . . Is that the stage lighting, or has the keyboard player's face gone red?

The exception to this rule is when both inputs are used for SysEx messages, in a situation other than live performance. If two long messages clash, and are corrupted because the merger buffer is too small, then the merger has failed to perform. The sensible solution is to arrange things so that these clashes don't occur in the first place - don't make two voice dumps at once, for example.

Clearly, then, there are times when a MIDI merger simply has to discard incoming information. How elegantly a particular merger copes depends upon the quality of the unit. The merger, ideally, has to become an intelligent MIDI filter, only discarding something when it has no other choice.

If a sequencer allows real-time MIDI input whilst it is playing (as most do), then the sequencer itself is performing the merging function. The rules of merging still apply, be it by a dedicated merge box or computer software. As perfect merging is in principle unachievable, a few ground rules are needed to make practical merging as painless as possible. If the following MIDI features are particularly important to your MIDI application, these guidelines should help you evaluate a merger for its suitability.

## SYSTEM REAL TIME

HIGHEST PRIORITY SHOULD be given to System Real Time messages, as their name implies. A System Real Time message arriving at one merger input can be neatly inserted into the middle of any message arriving at the other input, with no problems. The MIDI spec is designed that way. Fortunately, System Real Time messages are always only one byte long.

Some System Real Time messages are

best not merged from two inputs; MIDI Clocks for example. If two synchronised sequencer outputs are being merged, and both send Timing Clocks, then the merger would output two lots of clocks, effectively doubling the clock rate. Ideally, MIDI Clocks should only be sent by one source. An intelligent merger might automatically look for clocks at one input and ignore subsequent clocks at the other to avoid this problem.

Active Sensing is a curious message. It's an optional facility, and exists only to reassure a receiving MIDI device that it's still connected in the absence of any other MIDI signal. In other words, it only need be sent when both merger inputs are inactive, otherwise it can be discarded. For that reason, Active Sensing has the lowest priority of all when MIDI merging. Other System Real Time messages such as Start, Continue, and Stop will occur so rarely in a live MIDI data stream that they do not present a problem in practice.

## SYSTEM EXCLUSIVE

SYSEX MESSAGES LONGER than a few bytes should be interrupted by the merger if a higher priority message arrives at its other input. A Note On is (usually) more urgent than a voice dump, for example, and should be given priority. This will, however, corrupt the SysEx message, making it useless. This is one of the prices you pay for merging. Figure 4 illustrates the point.

If a System Exclusive message is interrupted in this way, the receiving device will automatically ignore it, as the interrupting Status byte will have the effect of cancelling the SysEx message. An intelligent merger must filter out the rest of the incoming System Exclusive message once it has been aborted, otherwise the orphaned SysEx data might end up tagged onto the end of a Note On, with embarrassing results.

If a SysEx message has to be buffered

in the merger, then it may be lost due to buffer overflow. As a rule, avoid using long SysEx messages through a merger - you're asking for trouble, especially in a live performance. Program the voices before the start of a song, and instead use Program Change to select the chosen patches.

If SysEx messages must be sent in a performance, for example for synthesiser parameter control, try to send them in passages of the music where there is little MIDI activity, and it has a greater chance of getting through. This is very hit-or-miss though, and is difficult to achieve live. One exception is when only one input of the merger is actually in use, and the other input is inactive. This might occur when you keep your voice library on one device, and sequences on another, using a merger simply as a junction box to avoid unplugging leads. Another scenario is where MIDI outputs from two MIDI controllers in a home studio are merged, and only one controller is played at a time.

If only one input is active at a time, a good-quality merger should pass everything, even long SysEx messages.

## SYSTEM COMMON

TUNE REQUEST IS no real problem to a MIDI merger, as it is a single-byte message that does not occur with great frequency.

End of Exclusive (EOX) is normally attached to the end of a SysEx message, and is thus treated the same as the rest of the message. If it appears by itself, it is an error and the merger can discard it anyway.

Song Select will normally only occur at or before the beginning of a song, and is thus unlikely to clash with other MIDI information.

Song Position Pointer is rather like Timing Clock, in that if such messages arrive at both inputs, they are probably the same and information from one input could be discarded. If they are not the same, then the two MIDI sources are out



**Input 1**

SYSTEM EXCLUSIVE MESSAGE

**Input 2**

NOTE ON

**Output**

SYSTEM EXCLUSIVE MESSAGE

NOTE ON

ABORTED →

of sync, which is a problem that is nothing to do with the merger. The merger would have to cope with sequences stopping and starting, however, so the best solution is to prevent two lots of Song Position Pointer information reaching the merger by filtering one out. Alternatively, the filtering may be performed within an intelligent merger.

The same argument applies to MIDI time code Quarter Frame messages, where excess messages would confuse the receiving device anyway.

## CHANNEL INFORMATION

NOTE ONS WILL be filtered out or delayed by the merger, if too many arrive in a short space of time. Note Offs (or Note Ons with zero velocity) should be given priority over Note Ons, because stuck notes are worse than missed ones. This may occur on a beat, especially if you have been quantising a sequence, and all Note Ons want to occur at once. If this is a problem, it serves you right for writing boring mechanical music. Try pushing or retarding the beat on a few channels - or the merger might do it for you.

Note Ons should only be lost in the most exceptional of circumstances. They shouldn't be delayed after their corresponding Note Offs, but if they arrive at different inputs a merger will have difficulty coping.

One well-known eater of MIDI channel bandwidth is the notorious Pitch Wheel. On some synthesisers, pitchbends seem to be sent by the thousand if you so much as look at the pitch wheel. When the going gets tough, a good merger might discard or delay some information in preference to delaying Note Ons at the other input.

If you try to merge two pitch wheels on the same MIDI channel, you're unlikely to get musical results. Exactly the same arguments apply to Channel Pressure.

Continuous Controllers similarly may have to be thinned out. The problem here

is that an all-important value such as centring or zeroing a controller may be missed. A merger has no way of spotting these particular values, as they are not defined in the MIDI spec.

A particular breed of Channel message is the Channel Mode message, which affects the Omni On/Off, Mono/Poly Modes, Local Control, and of course All Notes Off. Incidentally, all Channel Mode messages also function as All Notes Off messages. They have an important effect on the operation of the receiving device, and therefore should have high priority through a merger.

That said, the MIDI specification does say that if Note Ons are being received on one merger input, then any conflicting All Notes Off messages received at the other input should be filtered out by the merger.

If a Channel Mode message is received whilst other messages for that channel are still buffered inside the merger, it's generally a good idea for the merger to discard such data in the buffer. However, there are arguments against doing this, as important messages like a Patch Change could thus be lost.

Just when it seems that things are difficult enough, the MIDI specification throws up a really nasty problem - Running Status. When a particular Channel message is used repeatedly in succession, such as Pitch Bends, MIDI allows the sending device to avoid repeating the Channel Status byte until it changes. Figure 3 illustrates this. In this example, repeated Poly Pressure Status Bytes on Channel 2 are legitimately left out.

This feature was included in the MIDI specification to reduce the number of bytes transmitted. The problem is that it has the effect of making MIDI Channel messages of indeterminate length. If a three-byte message arrives at the input of a merger, it cannot be sure that it is the complete message. The merger has to assume that this is not so, and keep a tag on the Running Status of both inputs. If the merger is mixing two Running Status

messages, it will have to jump from one input to another, adding extra Status bytes each time it swops (see Figure 6). In other words, merging can actually *increase* the amount of MIDI data. This is a harsh test for a merger.

In summary, a good merger is not simply a box that crudely mixes two data streams, but a device that intelligently arbitrates between messages, sorting out the priorities of individual messages, and, as a last resort, filters out information in a way that causes least musical damage. A good merger should cope without ever generating MIDI errors, but this is no mean feat.

Messages should be given priority by the merger, according to their importance. If the merger's buffer is nearly full, low-priority messages should be aborted or discarded in favour of higher-priority messages. Data will be lost, but MIDI errors will be avoided.

The message priorities can be listed in approximate order as shown in the table below:

Priority	Message
Highest	System Real Time
	All Notes Off & Mode
Messages	Note Off
	Note On
	Controllers, Pressure, Pitch Wheel, Program Change
	System Exclusive
	Active Sensing
Lowest	

As an alternative to intelligent filtering, a merger may be "programmable". This allows you to select for yourself the messages you want filtered out, improving flexibility at the expense of making the merger more difficult to use. >

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## ➤ MERGE A TROIS

YOU MAY WELL be wondering how mergers manage to work at all. In the strictest sense they can't, but in practice, there are enough gaps in normal MIDI data streams to allow merging without the joins being too obvious. It is this fact that allows even badly-designed mergers to work - usually.

It should now be apparent to you that while it's unlikely any available MIDI merger obeys all the above "rules", a good merger should come pretty close. Of course, you can make things even more interesting by trying to merge three MIDI signals. It's not impossible, but your success will again depend on how busy each input is. A practical problem is that mergers with three inputs are not readily available; two inputs are complex enough. So how can three signals be merged?

Figure 7 illustrates one solution. Two two-input mergers are used. Two MIDI signals are combined in one merger. The resulting merged stream is then fed into a second merger, where it is combined with the third MIDI signal. In fact, there's no reason why yet more mergers cannot be cascaded, as long as the inputs are not so busy as to overload the output. A slight delay will occur in each merger as it processes its inputs, however.

If a merger tries to save time by filtering out Undefined Messages, it's cheating. Undefined Messages are incorporated in the MIDI spec to allow future development of MIDI, and are not MIDI errors. Already, a new message has been added to the original specification, Reset All Controllers, and others will surely follow. The merger must cope and be "future proof".

Before buying a merger, try to experiment to see what it does with things like pitchbend, SysEx messages and ordinary Note On/Off messages. Ideally, try it with your own equipment. Above all else, a good merger should not leave you with notes stuck on.

In reality, a handy companion to a merger is a device with a "panic" button - one that sends Note Off and All Notes Off messages on all channels when disaster strikes. Such a device should also have a MIDI In, otherwise you'll need yet another merger to mix it into the MIDI datastream. When selecting a merger, pay attention also to its construction: whether it has a power supply or needs batteries, the quality of connectors, and the number of outputs providing the merged signal. Better mergers may also have MIDI Thru outputs from their inputs. A really versatile

FIGURE 5 Running Status

A1 is the Polyphonic Key Pressure Status Byte for MIDI Channel 2.

**A1 34 23 A1 55 23 A1 3C 76 A1 45 34 A1 76 45 A1 4F 6D**  
 \* \* \* \* \*

Becomes:

**A1 34 23 55 23 3C 76 45 34 76 45 4F 6D**

Saving 5 bytes

\* are Status Bytes that can be left out using Running Status.

FIGURE 6 Merging Running Status Message

Merging:

**81 34 23 55 23 3C 76**

with:

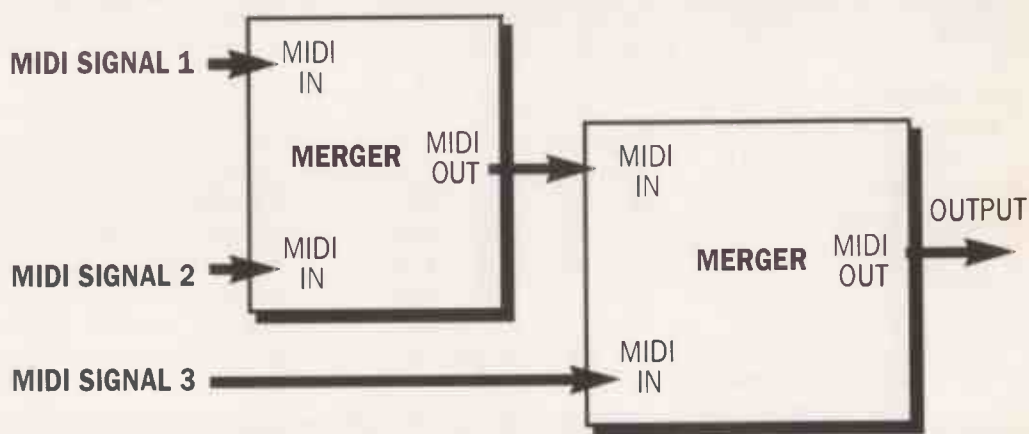
**E2 45 34 76 45 4F 6D**

Becomes:

**81 34 23 E2 45 34 81 55 23 E2 76 45 81 3C 76 E2 4F 6D**  
 \* \* \* \*

\* are extra status Bytes that have to be added by the Merger.

FIGURE 7 Merging Three Signals



merger will perform filtering of the inputs before merging, (controlled by switches) or even be programmable, via its own SysEx messages, from a computer.

As long as you use it sensibly, a well-designed merger can be installed in your setup and forgotten about. If you do get

problems, this article should help you trace them, and hopefully find a cure. On the other hand, if you must send Sample Dumps at the same time as playing 32-note polyphonic chords, don't blame your merger for whatever your audience throws at you. ■

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**KAWAI K1**, boxed, with manuals, immac cond, £350 ono. Tel: (0992) 892317.

**KAWAI K1**, boxed, good cond, £275 ono. Steve, Tel: (0923) 779842, after 6pm.

**KAWAI K1**, plus RAM card, many patches on ST disks, £320 ono; Yamaha DX100, £110 ono. Both mint cond, with all manuals etc. Richard, Tel: Stafford (0785) 818066.

**KAWAI K1M**, excellent cond, with 1000 Kawai sounds on Atari or Kawai disk and Kawai Q80, or will swap for a D110 and K1R. Scott, Tel: St Albans (0727) 810033.

**KAWAI K4**, 16-bit synth, drums, fx, RAM card, plus Atari ST editor, boxed, £450! John, Tel: Exeter 434779.

**KAWAI K5** synth, with RAM card, as new, £450; Kawai K1M, mint cond, £220. Kev, Tel: (0270) 258392, eves only.

**KAWAI K5** synth, 15-note multitimbral, 5 separate outs, mint cond, £400. Scott, Tel: 041-336 6947.

**KAWAI K5**, 2 cards, Atari editor, manual, £600 ono. Joe, Tel: (0904) 793464, eves only.

**KORG DS8**, with f/case, perfect cond, plus free Casio FZ1

sequencer, £400 ono. Matthew, Tel: 081-349 9640.

**KORG EX800**, poly module, fat warm analogue sounds, as new, with rackmounts, £120. Steve Topping, Tel: 081-788 7118.

**KORG POLY61**, analogue synth, excellent cond, £250. Tim, Tel: (0977) 780728, anytime.

**KORG POLY61**, 6-voice polysynth, excellent cond, fat sounds, £200 ono or swap for MIDI master keybd. Steve, Tel: (0782) 630021, eves or weekends.

**KORG T1**, mint cond, home use only, sensible offers over £2400. Tel: (0788) 575348.

**KORG T3**, limited home use, boxed, manuals, stand, £1700; Boss DR550 drum machine, £125. Stu, Tel: 091-536 7491.

**KORG WAVESTATION**, £900 ono; Korg M1, £850 ono; Roland D50, £550 ono; Roland D110, £250 ono; Roland MKS50, £200 ono; Linn 9000, £800 ono; Emulator II+, £1200 ono. Daemion, Tel: 071-373 4198 or 081-679 4592.

**KORG WD6000**, £250; Roland U220 sample playing module, £399. Bernois, Tel: (0273) 726219.

**LARGE MOOG** modular system, pristine cond, offers; rare analogue equipment, similar cond. Bob, Tel: (0726) 67836 or 65404.

**MOOG SOURCE**, classic monosynth, fully programmable, yours for only £200. Graham, Tel: (0604) 843536.

**ROLAND A50** master keybd - does everything, 4 splits, with adjustable velocity curves on each, assignable sliders, sends SysEx data etc, excellent synth weighted action, 73 notes, £599. Tel: (0707) 55594.

**ROLAND A80** mother keybd, boxed, vgc, £800. Peter, Tel: 091-274 2407.



**ROLAND ALPHA JUNO 1**, good cond, boxed, manual, £200 ono. Mark, Tel: (0993) 841608.

**ROLAND D10**, home use only, vgc, £375. Tel: (0260) 280131.

**ROLAND D10**, excellent cond, £480 ono. Rex, Tel: (0978) 861139.

**ROLAND D10**, perfect cond, hardly used, swap or p/x for X7000 or FZ1 or offers. Neil, Tel: (0925) 755948.

**ROLAND D110**, excellent cond, hardly used, £270. Tel: Darlington (0325) 465812.

**ROLAND D110**, £300; Kawai K1, £300; Steinberg Synthworks for D110 and K1, highest offer; Toa KD1 combi amp, highest offer. All home use only, A1 cond. Tel: 081-343 1811.

**ROLAND D110** multitimbral synth, £300 ono. Tel: Norwich (0603) 760426 or 760527, days; 860024, eves.

**ROLAND D110**, good cond, plus extra sound card, £400; MC202, £40. David or Sean, Tel: (0494) 452028 or 449562.

**ROLAND D20**, good cond, home use only, f/cased, with manuals and stand, £800. Adrian, Tel: (0303) 239284.

**ROLAND D20**, good cond, £650 ono. Phil, Tel: (0742) 343833.

**ROLAND D20**, plus hard case, excellent cond, only 8 months old, £550 ono. Neil, Tel: (0782) 533289.

**ROLAND D20** and case, £595; Yamaha TG55, plus gold card, £345; Oberheim Matrix 1000, £335; Alesis MMT8 sequencer, £149; Korg Poly61 monosynth, £135; Roland R8 drum machine, plus 808 card, £400; JX8P, £375. John, Tel: (0455) 848478.

**ROLAND D50**, cards, full f/case, manuals, plus Steinberg D50 editor, packed with sounds, home use only, £700. Martin, Tel: (0892) 667311, days.

**ROLAND D50**, home use only, 2 Valhala Gold ROMs, 1 RAM card, manuals, £545. Michael Richards, Tel: 081-802 3435.

**ROLAND JUNO 6** analogue polysynth, £135 ono; Roland SH101 synth, popular dance sounds, only £60; Yamaha YS100, £170 ono. All mint cond, home use only. Alan, Tel: 051-677 8696.

**ROLAND JUNO 6**, 6-note polyphonic synth, non-MIDI, home use only, £150 ono. Brian, Tel: Kent (0474) 533914.

**ROLAND JUNO 6**, £140. Russell, Tel: Hereford 840649.

**ROLAND JUNO 60**, excellent cond, with manual, £400; 3-tier keybd stand, adjustable, £100. Tel: (0992) 440838.

**ROLAND JUNO 60**, plus JSQ60, good cond, f/case, manuals, £260 ono. Richard, Tel: East Midlands (0536) 513158.

**ROLAND JUNO 106**, plus manual, mint cond, offers pls. Tel: (0734) 580764.

**ROLAND JUNO 106**, perfect cond, £280; Yamaha RX21, good cond, £100. Tel: Tyneside 091-237 2495.

**ROLAND JUPITER 6** MIDI synth, excellent cond, home use only, plus full heavy-duty f/case, £350. Tel: 051-733 2684.

**ROLAND MKS10**, MIDI piano expander, good cond, £75 ono. Steve, Tel: (0782) 630021, eves or weekends.

**ROLAND MKS20**, MIDI digital piano module, 2U rack, 64 brilliant sounds, plus RAM cartridge, acoustic electric pianos x5, Clavinet, Harpsichord, mono stereo output, MIDI in/out/thru, parametric EQ, chorus, tremelo, boxed, manual, must sell. Paul, Tel: 081-361 0421.

**ROLAND SH101** synth, c/w mod grip set, as new cond, £120. Tel: 021-444 7320.

**ROLAND SH101**, needs fixing, hence £25. Russell, Tel: Hereford 840649.

**ROLAND SH101**, £80; MC202, £80; JX3P, £190; DR550, £100. All excellent cond. Ian, Tel: 051-708 8371.

**ROLAND SH101**, perfect cond, manual, £100. Martin, Tel: 071-254 3652.

**ROLAND SYSTEM 100M**, 140 dual VCA and LFO module, best offer; Synergy digital keybd, w/manual, 4 ROM cartridges, several broken keys hence best offer over £400, works but might be considered for spare parts; Steiner mono analogue synth, collector's item, £150. Tom, Tel: 081-961 3314.

**ROLAND U20**, £650 ono; Alesis MMT8 sequencer, £180 ono. Dean, Tel: Walsall (0922) 32275.

**ROLAND U20** keybd, 128 sample sounds, home use only, plus 1 ROM card, case, £485. Tel: Barnsley (0226) 714252.

**SEQUENTIAL PROPHET VS** keybd, with very rare s/w update, boxed, with manual, vgc, ultimate analogue synth, £1300. A Prentice, Tel: 031-440 1797, 9am-4.30pm.

**YAMAHA CLP560** piano, 6 months old, immac cond, current model,

£1195. Tel: (0332) 841163.

**YAMAHA CLAVINOVA CVP3**, 76 keys, 16 rhythms, £600 ono. Tel: 081-575 8185.

**YAMAHA CLAVINOVA CVP20**, £600; Proteus/1 sample player, £450; Alesis Quadverb, £250; Roland PR100 digital sequencer, £200. All as new. Tel: (0909) 566695.

**YAMAHA DX7**, with manual, book and 2 RAM cartridges, mint cond, home use only, £450; Roland TR626 drum machine, boxed, mint cond, home use only, £150. Ian, Tel: (0943) 600725.

**YAMAHA DX7**, ROMs, RAMs, QX7, Fostex X15, MN15, mains adaptor, stands, home use only, £625 ono. Michael, Tel: 071-251 2128, work.

**YAMAHA DX7S**, mint cond, boxed, with manual etc, inc luxury f/case, £400; Kawai K1m, boxed, £200; Roland SH101, £80. James, Tel: Chelmsford (0245) 250148.

**YAMAHA DX7S**, £450 ono; Roland Jupiter 6, £400 ono. Both home studio use only, immac cond, boxed. Tel: (0926) 490708.

**YAMAHA DX11** synth, £300; Yamaha EMT10 AWM expander, £150; Yamaha EMT1 digital reverb, £95. All for £500 or exchange for Roland E15. Tel: High Wycombe (0494) 526960.

**YAMAHA DX11** synth, great voices, excellent cond, £225; Roland Juno 106, f/cased, great bass sounds, £275; Torque 5W practice amp, £20 or swap the lot for SY22. Edward, Tel: (0609) 83427, after 6pm.

**YAMAHA DX27**, £130; Midiverb III, £100. Tel: (0272) 238611.

**YAMAHA DX100**, home use only, £100. Andy, Tel: (0277) 225071, after 7pm.

**YAMAHA FB01** module, £100; Yamaha TX7 module, £150; Korg PSS60 programmable super section, new, boxed, £200; Steinberg Synthworks FB01 ed/lib for ST, £50; Bars and Pipes Professional for Amlga, inc sound kits and multimedia kits, £250. Mike, Tel: (0602) 274369.

**YAMAHA FB01** expander, £90. Len, Tel: Faringdon 240732.

**YAMAHA PS10** electric piano, 6-octave weighted keys, perfect cond, solid sound, £160 ono. Alan, Tel: 051-677 8696.

**YAMAHA PSR48** MIDI keybd, dual voices, accompaniments, programmable 100 voices, 100 styles, transpose switch, pitch switch, built-in drum machine, 25

sounds, full-size keys, 49 fx etc, 8mths warranty, exc cond, original box and packaging, must upgrade, £200. Tel: (0484) 541357.

**YAMAHA PSR2000** MIDI keybd, 100 voices, touch sensitive, rhythm section, recorder, as new, with original packaging, Quik-lok keybd stand and pedals, £400 ono. William, Tel: (0235) 522859.

**YAMAHA PSS460**, mini keybd, vgc, no MIDI, only £50. Ian, Tel: (0438) 351608.

**YAMAHA PSS680** keybd, boxed, manuals, power supply, vgc, £80. Andy, Tel: (0253) 751722, eves.

**YAMAHA PSS680** MIDI keybd, 100 rhythms, 100 voices, programmable drum machine, sequencer etc, £80 or will swap for other MIDI equipment. Tel: (0484) 541357.

**YAMAHA PSR4600**, 2 months old, genuine, c/w box, manual, pristine cond, £600. Tel: (0204) 657833.

**YAMAHA SY22**, 6 months old, with psu, headphones, manual, boxed, 64 extra sounds, only £600. Ian, Tel: (0438) 351608.

**YAMAHA SY55**, new, still boxed, with stand, case, foot pedal, RAMs, manuals, £650. Tel: (0388) 776046.

**YAMAHA SY77**, plus 2000 extra sounds, immac cond, boxed, £1340. Jason, Tel: (0252) 725272.

**YAMAHA TG33**, 32-note polyphonic, vector synth module, £360; Korg DW8000 digital analogue synth, with MEX8000 memory expansion unit, £340; Akai ME25S programmable MIDI note separator, £40. Swap all for Wavestation. Paul, Tel: (0772) 39124.

**YAMAHA TQ5**, £140; Roland TR626, £120, manuals, cables, leads etc. Jamie, Tel: 041-954 2832, anytime.

## SAMPLING

**AKAI S900**, good cond, s/w update available, £550; Aphex Type C aural exciter, £200; Music Craft amp, 250W, £300; Studer quarter-inch machine, vgc, £500. Mr Pendse or Mr John, Tel: 081-905 4370.

**AKAI S950** MIDI digital sampler, as new, hardly used, £950 ono. Neti-Neti, Tel: 071-272 7302, 24 hrs.

**AKAI S950** sampler, full memory upgrade, 31 secs full bandwidth, excellent cond, 100s of disks, £950. Tel: 081-863 2156.

**AKAI X7000**, plus 20 disks, home

use only, £395 ono for quick sale. David, Tel: (0253) 853972, eves.  
**CASIO FZ1**, 16-bit sampling keybd, mint cond, boxed, disks, manual, £620. Tel: (0703) 220152.  
**EMAX** keybd sampler, good nick, £800; Korg A3 multi-fx, £450; Symetrix parametric EQ preamp, 3-bnd overlapping frequency, £125; Apple Macintosh MIDI s/w. Tel: (0938) 888578.

**EMAX SE**, with SCSI interface, with library, £800 ono; Syco dual 45Meg drives, 19" rackmount, £800; 9 45Meg cartridges, £55 each or £450 the nine. Ian, Tel: 081-556 7888.

**EMULATOR III**, 8Meg, plus rackmount Reco optical disk drive, 1200Meg library, both mint cond, can deliver, £6800 ono. Giles, Tel: (0242) 575607, anytime.

**E-MU PROTEUS**, perfect cond, £400. Dave, Tel: York (0904) 635453.

**E-MU PROTEUS/1**, 1U rackmountable 16-bit sample player, boxed, as new, w/free Steinberg Twelve ST sequencing s/w, £495. Tel: Tyneside 091-253 2460, eves.

**ENSONIQ EPS**, 4x memory expansion board, £200; with SCSI, £250. Terry, Tel: 071-703 7133.

**ENSONIQ MIRAGE**, c/w disks, £400 ono. Adrian, Tel: Sheffield 555460.

**MICROVOX** sampler, with a Commodore 128, plus disk drive, c/w sound library, perfect cond, quick sale needed, hence £125. Paul, Tel: (0923) 53133.

**ROLAND S10**, with 70 disks, £350. Russell, Tel: Hereford 840649.

**ROLAND W30** music workstation, £950 ono. Alan, Tel: 021-355 1331, days; 021-350 1356, eves.

## SEQUENCERS

**ALESIS MMT8** sequencer, excellent cond, boxed, manual, £120 ono inc delivery. Steve, Tel: (0288) 361273.

**ALESIS MMT8**, 8-track sequencer, mint cond, power supply, manual, £150. Tel: (0703) 220152.

**OBERHEIM DSX** digital polyphonic sequencer, c/w lead, £200 ono. Stuart, Tel: 051-546 5639.

**ROLAND MC50** sequencer, £360; Yamaha TG55 synth, £300; Kawai K1R synth, £160; Fostex keybd mixer, 16-channel, £200; Alesis EQ, £120; Roland GS6, £120; Casio CZ1000, £80. Renaldo, Tel: (0236) 33238.

**ROLAND MC300**, with Super-MRC s/w, vgc, boxed, manuals, £300. Eddie, Tel: 081-643 6401.

**ROLAND MC500** sequencer, with performance s/w, good cond, £295. John, Tel: Exeter 434779.

**ROLAND MC500II**, £465 ono; Lexicon PCM70, £1350 ono. Tel: 081-462 6261.

**ROLAND PR100**, excellent cond, with application books, £200 ono. Andy, Tel: (0482) 503228.

**ROLAND TB303** bassline, boxed, manuals, vgc, £150. Steve, Tel: (0952) 595581.

**ROLAND TB303** bassline, £200; Transcendent 2000, needs attention, £60; Yamaha CS15 monosynth, £100. Graham, Tel: (0604) 843536.

**3 ROLAND MC4B** micro composers, w/manual, OP8 i/f for Jupiter 8, MTR100 digital tape recorder, plus cassettes, two custom CV-controllable lag processors (portamento), £500, may split; Simmons SDS6 analogue drum sequencer, cracked front panel but works, £75. Tom, Tel: 081-961 3314.

**YAMAHA QX1**, 8 outputs, 80,000-note capacity, disk drive, £475 or swap for Ensoniq Mirage keybd with MASOS. Paul, Tel: (0344) 429163.

**YAMAHA QX5**, home use only, £95 for immediate sale. David, Tel: (0253) 853972, eves.

**YAMAHA QX21**, digital sequencer, vgc, £100. Ben, Tel: (0734) 402107.

## DRUMS

**ALESIS HR16**, immac cond, £170; Yamaha REX50 multi-fx, immac cond, £200. Ian, Tel: (0450) 73178.

**ALESIS SR16**, boxed, with manuals, as new, £200. Dave, Tel: Bradford (0274) 621723.

**ALESIS SR16**, 3 months old, £240. Kevin, Tel: (0270) 872558.

**BOSS DR220A** drum machine, fully programmable presets, custom or combination patterns, great sound, immac cond, with soft case, £60. Tel: (0484) 541357.

**BOSS DR550**, 16-bit drum machine, mint cond, boxed, manual, power supply, £140. Tel: (0703) 220152.

**KAWAI R50** drum machine, MIDI, good sampled sounds, extra sound chip, boxed, manual, good cond, £100. Tel: (0782) 336574.

**KAWAI R50** drum machine, £120 ono. Tel: Lincoln (0522) 531800.

**KAWAI R50E**, sample drums, bass, hits, inc box, power supply, manual, £160 ono. Jonathan, Tel: Staffordshire (0782) 563079.

**ROLAND HANDIPAD PAD 5** trigger pads, 2 sets, nearly new, £200 ono. Neti-Neti, Tel: 071-272 7302, 24 hrs.

**ROLAND R5**, boxed, vgc, £200. Peter, Tel: 091-274 2407.

**ROLAND R5**, human rhythm composer, as new, boxed, £300. Eddie, Tel: 081-643 6401.

**ROLAND R8**, boxed, manuals, warranty, PM16, PD11 and 4 PD31s, Premier double-braced stands and case, £1000 ono. Mark, Tel: 081-337 6365.

**ROLAND R8**, 6 months old, boxed, manuals etc, £450. Dave, Tel: (0264) 332843, after 6pm.

**ROLAND R8** drum machine, £430; Roland D50 programmer, PG1000, £135; Kawai K1R, 2 RAM cards, £245; Roland DEP3 reverb, programmable, with digital delay, £200; Fostex 160 £290. All with manuals, boxed, immac cond. Tel: (0642) 484359.

**ROLAND R8M** drum module, £395; Contemporary Percussion, Jazz Brush, Electronic and Mallet sound cards, all for above, £20 each; Roland TR727, £100. Both immac cond. Tel: 081-863 2156.

**ROLAND TR505**, £100, no offers. Andy, Tel: Bolton (0204) 58837.

**ROLAND TR505** digital drum machine, vgc, power supply, £100. Ben, Tel: (0734) 402107.

**ROLAND TR505** rhythm composer, as new, must sell, £115 ono. Tel: 091-529 4788, anytime.

**ROLAND TR606**, good cond, compatible with SH101, TB303, MC202 etc, £90. Graham, Tel: (0604) 843536.

**ROLAND TR626**, boxed, as new, £150. Tel: (0877) 30528.

**ROLAND TR626**, manual, no box, excellent cond, home use only, £120 ono. Tel: (0789) 764172.

**ROLAND TR626**, superb cond, £100. Andy, Tel: (0277) 225071, after 7pm.

**ROLAND TR707** and TR727, manuals, power supplies, £140 for both; Yamaha RX15, £90. Andy, Tel: (0933) 224439.

**ROLAND TR707**, great MIDI spec, 8 individual outs, £120 ono. Phil, Tel: 081-694 8072.

**ROLAND TR707**, excellent cond, full MIDI spec, individual outs, £100 ono. Tibor, Tel: Luton (0582) 581997.

**ROLAND TR808**, good cond, £350

or swap for TR909, Linn 9000 or Jupiter 8. Graham, Tel: (0604) 843536.

**SIMMONS SDX**, zone intelligent pads x7, inc bass drum, cymbal, snare, also hi-hat pedal, £170. Steve, Tel: 071-581 7999.

**SIMMONS TMI**, Roland Pad80, £250; Korg DDD1, £100; Pearl rack: Dave, Tel: 071-473 4445.

**YAMAHA RX11** drum machine, good cond, individual outs, MIDI etc, £100 only. Conrad, Tel: 081-348 3664.

**YAMAHA RX17** drum machine, boxed, manuals, psu, excellent cond, £100. Andy, Tel: (0253) 751722, eves.

**YAMAHA RY30**, brand new, unused, 1 yr guarantee, £325. Bill, Tel: (04022) 23345.

## COMPUTING

**APPLE MAC PLUS** and external floppy drive, £650; Apple Mac SE2/20, £900; MTI Mac SMPTE/MIDI interface, £250; Yamaha MJC8 patchbay, £175. Tel: 081-679 4592 or 071-373 4198.

**ATARI 1040ST**, Philips CM8833 colour monitor, Epson LX800 printer, as new, £600 ono. Bryn, Tel: (0844) 279733.

**ATARI 1040STE**, SM124 mono monitor, mouse, C-Lab Creator, all items boxed, mint cond, £500. John, Tel: 071-790 6929.

**ATARI 1040STF**, monitor, C-Lab Notator/Unitor, SMPTE, latest v3.1, could split, £600 the lot. Tel: (0926) 490708.

**ATARI 1040STFM**, plus SM125 hires monitor, Steinberg Cubase, Dr T's D110 editor, with voices, £550 ono; also assorted FZ sample disks. Tel: (0533) 742109.

**BBC.B** computer, with UMI sequencer, 4.17A version, disk drive, colour monitor, spare disks, as new, £500. Tel: Cambridge (0223) 60486.

**C-LAB CREATOR**, v3, brand new, £150; Tascam MTS30 MIDI tape sync, £50. Mike, Tel: (0744) 35567.

**C-LAB CREATOR**, v3.1, Atari, £180; Dr T's KCS Level II, Atari, £75; Director S, for Roland S50, £30; Philips CM8833 colour monitor, £99. Terry, Tel: (0420) 84030.

**C-LAB EXPORT**, £90; C-Lab Unitor, £250 ono. Tel: (0789) 764172.

**DR T'S D110** editor, plus 2000 sounds, £40; Mididrummer v2, plus manual, £20; D10 ROM cards, Natural Variations and Unique D



sounds, £50. Andy, Tel: Leeds (0532) 430177.

**DR T'S KCS** Level 2, Atari original, manuals, £75 ono; Sinclair Spectrum 48K, plus Micon interface, s/w, Peavey monitor, £75 ono; GBS reverb, £35; Roland TR707, £109 ono. Write: Paul Donaldson, c/o 1 Millfield Rise, Bexhill, East Sussex TN40 1QY.

**IBM AT286** computer, 640K RAM, serial and parallel ports, 360K/1.2Meg floppies, colour monitor, excellent cond, £450 or offers. Marcus, Tel: 081-852 6662.

**JORETH MUSIC SYSTEM** for Commodore 64, MIDI interface, Composer, Linker, System 7 editor, cost over £400, must sell, £80 ono. Tel: 091-529 4788, anytime.

**MAC IICI 540**, with standard keybd, Raftaax 19" mono monitor, Performer s/w, £3750 ono. Giles, Tel: (0242) 575607, anytime.

**MIDI SYSTEM FOR SALE:** 1Meg Atari STE, with mono monitor, loads of s/w, Roland D110 expander and Roland PC200 controller keybd, all as new, £750 the lot, or may trade for EPS or W30 sampler. Brian, Tel: Bradford (0274) 630000.

**STEINBERG ROLAND D10** ed/lib, with 2000 sounds, £50. Paddy, Tel: 051-263 6936.

**STEINBERG SOUNDWORKS** for Casio FZ1, FZ10M, FZ20M, for Atari ST, invaluable for editing/looping, lots of great features, £140. A Prentice, Tel: 031-440 1797, 9am-4.30pm.

**300MEG SCSI DISK**, with Atarl fast ICD DMA interface, power supply, clock, all in case, £500. Tel: (0926) 490708.

## RECORDING

**ALESIS MIDIVERB II**, £120; Yamaha RM602 recording mixer, £100; Fostex X15, 4-track, with adaptor, £100. All good cond. Tel: 081-863 2156.

**ART MULTIVERB II** multi-fx unit, perfect cond, £230 ono. Tel: (0272) 565737.

**FOSTEX B16**, x2, plus Fostex 4030 sync, entire package, £3000 ono. Steve, Tel: 071-700 4743.

**FOSTEX M80**, £750. Phil, Tel: (0253) 824720, after 6.30pm.

**FOSTEX MODEL 20**, 2-track recorder, boxed, hardly used, as new, £450. Tel: 061-797 8976.

**FOSTEX MODEL 80**, plus Seck 12:8:2 mixing desk, home use only, £1295 ono. David, Tel: (0253) 853972, eves.

**FOSTEX R8**, 8-track with MTC1 MIDI controller, £1100; Studiomaster Proline Gold 16:4:8, with MIDI muting, £1100; Roland GR50 guitar synth, plus GK2 controller, £750; Casio RZ1 sampling drum machine, £100. Mick, Tel: (0422) 380534.

**JVC 6:2** mixer, excellent cond, £65. Tel: (0727) 868023.

**MXR** dual comp/lim, £75; EXR Exciter, dual, balanced, £75; Great British Spring stereo reverb, w/psu, £30; Vesta Fire RV1 rackmount spring reverb, £25; Simmons Clap Trap, £45. Tom, Tel: 081-961 3314.

**NOMAD REDDIMIX**, 3U rackmountable 8:2 stereo mixer, as new, £150; 8U rack frame, £25. Tel: 091-253 2460, eves.

**ROLAND DEP3**, smooth digital reverb, with user-friendly knob, studio use only, £100. Andy, Tel: (0277) 225071, after 7pm.

**SANSUI WSX1**, 6-track recorder, built-in fx and mixer, immac cond, f/cased, £600 ono. Denice, Tel: (0672) 63073.

**STUDIO ITEMS**, Studiomaster IDP1 stereo MIDI programmable dynamics processor, compression/expansion, simultaneous gating, fades, real-time MIDI control, top spec, as new, £299; JL Cooper PPS100, latest s/w, SMPTE read/write, MTC/clock/Song Position Pointer, 2-channel event generation/muting, £110; Philip Rees MIDI thru box, unused, rugged, £35. Steve, Tel: 081-788 7118.

**STUDIOMASTER SERIES III**, 16:8:2 mixer, perfect cond, home use only, £950. Martin, Tel: (0892) 667311, days.

**TASCAM 38**, Studiomaster Proline 16:8:16:2, Ampex and loom, £900. Steve, Tel: (0904) 629570.

**TASCAM 246**, 4 months home use only, £400. Chris, Tel: 091-482 5391.

**TASCAM 246**, 4-track portastudio, 6-channel mixer, dbx, 10 hrs home studio use, immac cond, boxed, £400. Tel: (0926) 490708.

**TASCAM MM1**, 20-track recording desk, full MIDI memory to memorise mixes, 2 aux inputs, nearly new, £500. Jaylear, Tel: 081-785 2440.

**TASCAM PORTA 02**, 4-track studio, as new, £300 ono; Alesis Microverb II, £70. Doug, Tel: (0222) 223707.

**TEAC A3440** 4-track, with dbx RX9 unit, remote control, as new, £550. Tel: Cambridge (0223) 60486.

**VALLEY DYNAMITE** comp/lim/exp, top US quality, little used, £275 ono. Marcus, Tel: (0304) 823125.

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**MAGAZINES:** Music Technology, the first until recent issues, 4 issues missing, plus a few E&MMs, offers. Neil, Tel: (0925) 755948.

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**YANIGASAWA Y500** tenor sax, £600. Chris, Tel: 091-482 5391.

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**LEGION** by Mark Shreeve, no longer published, urgently wanted. Write: Owen Philp, 47 Headly Rd, Lipuck, Hants GU30 7NS. Tel: (0428) 727524.

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**ROLAND TR909** rhythm composer. Ian, Tel: (0293) 613129.

**ROM CARDS** for Roland U110. Tel: (0727) 868023.

**SEQUENTIAL CIRCUITS STUDIO** 440 sampling drum machine, cash waiting, can collect. Graham, Tel: (0604) 843536.

**SEQUENTIAL PRO1**, Roland MC202, Roland Juno 60. Tel: Merseyside (0744) 35567.

**VOCODER INFORMATION**, regarding, for example, creative use of Korg DVP1, also information on perfecting use of MIDI mics, you could earn yourself hospitality in Venice. Write: Bruce Borham, Dorsoduro 955, Venezia, Italy.

**WANTED:** any Casio FZ10 editor, cash waiting. Chris, Tel: (06333) 64516.

**YAMAHA WX11** wind controller and Kawai K5M. Carl, Tel: 081-675 4916.

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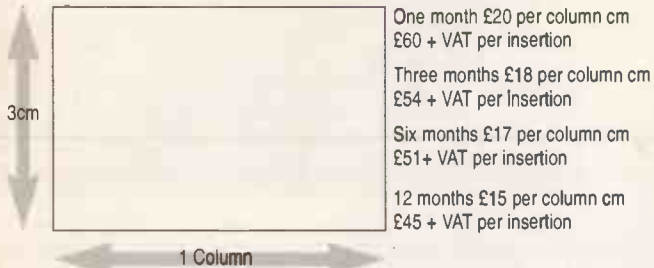
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