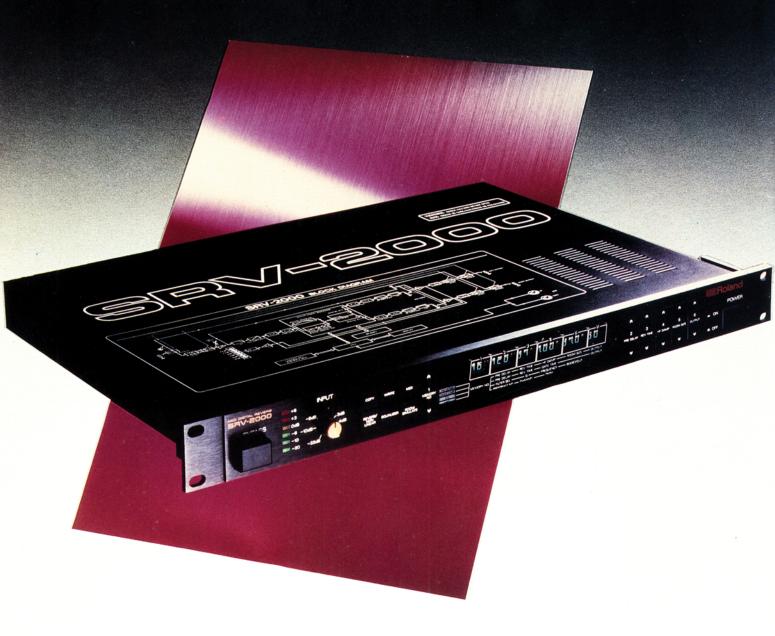
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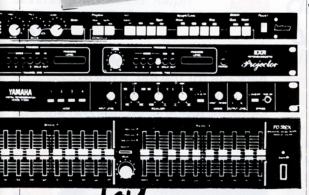


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Min

NOVEMBER 1985

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The Shape Of Things To Come

A chance to do some crystal gazing at product developments in the music/recording/visual fields.

The Programming People

Greater reliance on hi-tech instruments in the studio means there's more demand for people able to programme them. Paul Gilby spoke first to Karin Clayton about her recently formed agency that supplies programmers for studio sessions, and then to Fairlight programmer Simon LLoyd about his work.

MIDI The Universal Answer?

lan Gilby asks the question.

Casio SZ-1: The Next Logical Step

This 4 track MIDI sequencer is a step in the right direction for Casio but have the budget restrictions limited its appeal?

Yamaha REV-7. Yet Another Milestone

Low cost digital reverb comes of age according to Producer Robin Lumley.

WIN Sequential's Sampler

Invest some time and a 17p stamp in this competition and you could find yourself with an amazing amount of Prophet!

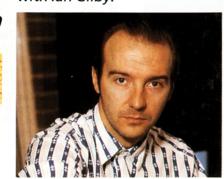
UMI-2B: A Soft Touch

Jay Chapman discovers why this 16 track MIDI sequencer package for the BBC B micro, described as the musical equivalent of the humble word processor, is receiving so much acclaim from studio users.



Midge Ure: A Man With A Gift

In between tours with Ultravox and appearances on Live Aid, Midge Ure somehow found the time to discuss the writing and recording of his first ever solo LP 'The Gift' and his No1 single with Ian Gilby.

















SSUE

VOLUME 1 ISSUE 1

Thoughts Of A Marathon Songwriter 42

You don't know his name but you'll have heard his refrains. Composer Paul Bliss writes hits for the best of 'em using a UMI-2B sequencer package and several synthesizers. Ralph Denyer finds out how.

CLUE Data

Beyond the razor-blade: HHB's innovative CLUE system provides an answer to the digital editing dilemma. Paul Gilby pieces together the story.

Classifieds

Alice In Switzerland

Two men, a girl and an electrical appliance meet under strange circumstances in the Swiss Alps. *Ted Fletcher* reports.

Time For SMPTE

Accepted as the synchronisation standard in the television and broadcast industry, this digital timecode is fast making inroads into the recording studio at all levels. Kendall Wrightson puts it all in perspective with

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"...I Nearly Joined The Foreign Legion!" 52

Engineer Dave Meegan recalls how depression helped land him a plum position at Trevor Horn's Sarm West Studios. Chris Allison listened with great interest.

Mainframe : Five

Minutes...

the start of this series.

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SOUND ON SOUND is published monthly by SOS Publications Ltd on the third Friday of the month preceding the cover date. **NEXT ISSUE ON SALE**

Synchronicity

The Bokse US-8 Universal

Always eager to expand their experiences, Mainframe duo Murray Munro and John Malloy talk to lan Gilby about the processes involved in the shooting of the promo video that accompanied their recent Polydor single release.

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NOVEMBER 15.

Syncronizer: Ian Gilby takes control.

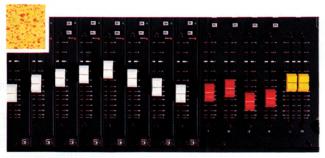
EDITS

Information, News, Gossip and Views.



Soundcraft Series 200B

Even though it had no serious competitor quality-wise, Soundcraft's original Series 200 mixer was somewhat lacking in the 'useful features' department. The newlyimproved 200B puts all that to rights as Dave Lockwood discovers.





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IAN GILBY EDITOR

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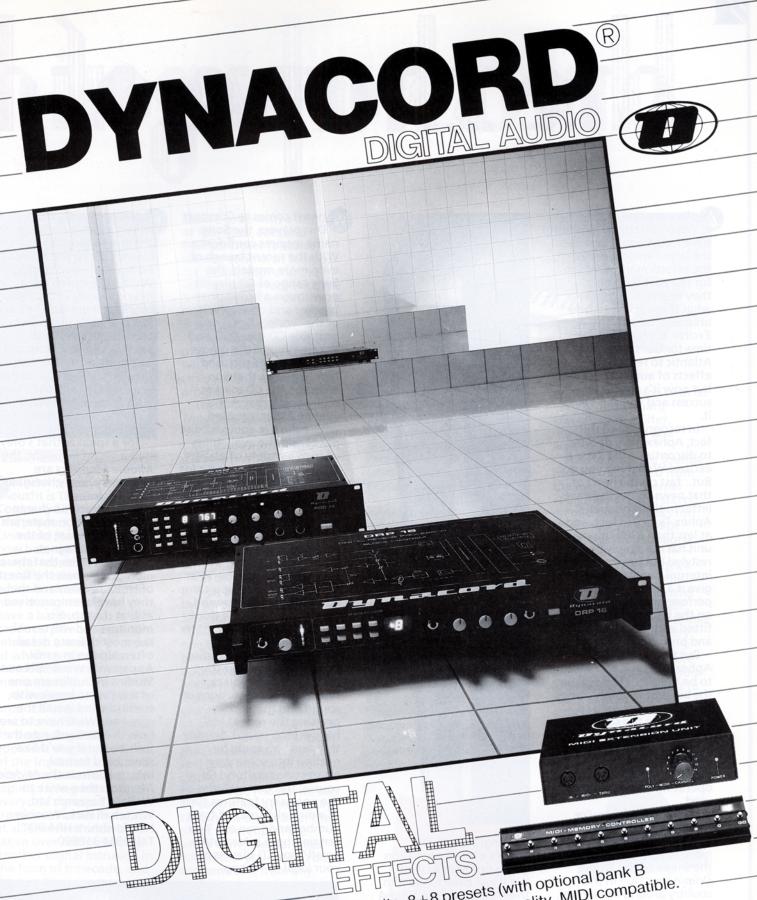
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Listed above are some of the features of the new Dynacord digital effects. For further information and your nearest dealer, contact: Washburn UK Ltd, 130 High St., Abbotsley, Cambs PE19 4UE. Tel: 07677-648

X

phex are one of those American companies that have traditionally occupied the upper-middle sector of the effects market, where for the past few years they've stood solidly by what they reckon to be a unique product – the Aural Exciter. It's taken some time for our side of the Atlantic to react to the effects of aural excitement but now it's a run a way success and you can't stop it.

In recognition of this fact, Aphex have decided to discontinue the *Type B* exciter! Well there you go. But...fast on the heels of that news comes the next letter in the alphabet, C-Aphex *Type C* in fact, and at less than £300 this new unit has not simply been restyled but has improved internal circuitry as well to give it a better noise performance. And round on the back panel it's now fitted with standard jack and phono connectors.

But that's not all. The Aphex Type A is also soon to be released. This will be the big brother of the range and will, we are lead to believe, use the same lownoise circuitry but with the added bonus of being a balanced unit which should enable higher operating levels to be used.

Well, now that you're totally excited about those new products, there's yet more news from Aphex in the shape of the Studio Dominator. Due in the country around November, the advanced information points out that it's an intelligent 3-band limiter incorporating a unique Transient Enhancement Circuit that actually increases your perception of transients whilst maintaining absolute peak



limiting. Sounds like there's a bit of excitation going on there as well. We'll just have to wait. In the meantime, the *Type A* and *Type C* are due soon and you can obtain further information on these products from Sound Technology Ltd, 6 Letchworth Business Centre, Avenue 1, Letchworth, Herts SG6 2HR. Tel. 0462 675675.

hen it comes to Compact Disc players, the **Sony** name inspires confidence. With the recent launch of even more models, the Sony range of CD players now covers a broad price bracket and offers the likes of the world's first portable CD, the D50, and the flagship of the range the CDP 502 ES pictured here. It seems that Sony envisage the CD market really going places this year and that, coupled with a drop in compact disc prices and the availability of such a variety of players, Christmas could sound a lot better for many of us.

Getting back to the CDP 502ES, it features a full micro controlled track selector which enables you to programme in your own track running order. Now, that's par for the course in CD land but what you can do with this system – and Sony probably don't think people would ever want to do this - is edit sounds directly off a compact disc. By punching in your start and stop points you can select very short sections of sound and then on pressing the repeat key, have it loop round. Sample that and you could be getting into some very interesting territory! Of course, this unit includes all the necessary features such as a digital display of track number and time etc. You can get more information on all Sony CD players at your local Hi-Fi shop.

onitor sound quality is very much a personal thing and therefore often susceptible to the 'current fashion' school of thought. Wellard Research are a new company in the field of speaker design and have just launched there first product, the Wellard Middle Monitor. It should be pointed out that these speakers are, in fact, active system each with their own built-in mosfet power amplifiers capable of generating 109dB SPL.

For a speaker that's only half a metre in height, the Middle Monitors are extremely heavy, weighing in at 42kg each.
Apparently this is due to the construction materials used and the size of the main driver magnet.

Wellard claim that these monitors surpass the finest of Hi-Fi speakers and that they have been conceived as first class studio monitors and will reveal the most delicate detail often hidden in a mix. Apparently Windmill Lane Studios in Dublin are one of the first to break with tradition and install the speakers. We'll have to see how the Wellards ride the fashion but if you'd like some hard factual information on the Middle Monitors then write to Wellard Research Ltd, Whitehall Park, Weobley, Hertfordshire HR4 8QT. Tel. 0544 318800.







et another new British outfit is **The Bokse** Company Limited. Their first product, the US-8 Universal Syncronizer, has now been available for several months and is actually reviewed elsewhere in this issue. We do hear though that they have a batch of four new products planned for release in a month or so, all of which continue the theme of control system manipulation.

As the amount of new products in the field of synchronisation increases, it's becoming more apparent that the facilities of the top-line studios and post-production suites are rapidly falling into everyone's grasp. The creation of modern music at all levels will soon be taken over completely by another digital intrusion in the form of timecode, and I'm sure their are many companies out there poised to get us all wrapped up and synchronised by next spring. So, from Bokse comes a new generation of some of the most affordable units to date.

The *Timecode Controller* will read and generate

SMPTE code with a display of Hrs, Mins, Secs and Frames. Other features include control of tempo, cue point, MIDI and the ability to interface with the US-8 Syncronizer which will enable you to drive other timebase clocks. An interesting option is that of programmable tempo with up to 64 possible changes and full MIDI program selection.

Their ATS-3, Active Timecode Splitter is a useful device that helps to solve those annoying situations where you want a timecode master clock controlling a variety of different units. Any one of three inputs, MIDI, Din Sync or Clock, may be selected and used to drive six outputs without any time delay problems.

On the MIDI side of things, Bokse are to release the MPS-7 MIDI Patch Selector and as the name implies this unit allows any one of seven MIDI inputs to be routed to any of seven outputs and is particularly useful if you want to avoid the task of constantly plugging MIDI Din cables in and out.

Finally, an ingenius box that's designed to put the feel back into fied rate clocks - the MIDI Humanizer. This device can be controlled by manually tapping in the beat of the music whereupon the unit's own internal clock will follow your feel. You can control it from any audio source such as a miked up hi-hat and even synchronise a live drum kit or other sound source to any MIDI controllable instrument such as a drum machine. Contact: The Bokse Company Ltd, The Old Bakery, Litlington, Nr Royston, Herts. Tel. 0763 852946.



he sudden, if not anticipated, arrival of affordable samplers has now commenced and they are coming as rack mounted or stand-alone units with integral keyboards. The Sequential Prophet 2000 sampling keyboard is the latest model to join the growing team and features a full five-octave velocity, sensitive weighted action keyboard. On the sound side, the Prophet offers 8voice polyphony with up to 16 different sound samples spread across the keyboard. Sample wise, it offers a full bandwidth of 20kHz giving 3 seconds of sample time over half the keyboard and for the longer 8 second sample duration, an 8kHz bandwidth. A rather nice inclusion from Sequential is a more traditional type

synthesizer section with its variety of on-board waveshapes, a filter, envelope shaper and arpeggiator.

All the resulting sounds may be transferred from the machine's internal 256K memory and stored on microfloppy disks for later use. On the MIDI front, the 2000 supports the standard MIDI parameters plus further options such as double-speed MIDI data transfer and the ability to both transmit and receive sound samples over MIDI. (very interesting)

You can find out more about the Prophet at your local dealer, and if you're really excited about sampling then why not enter our competition elsewhere in this issue to win the new Sequential sampler?



the programming people

The recording industry has recently embraced a new breed – the programmer. These skilled individuals, specialised in the operation of top-flight computer musical instruments like the Fairlight and Synclavier, find themselves in great demand by studios and record producers. Recognising this need, Karin Clayton has created a specialist agency – The Programming People – which offers clients the services of various expert programmers. Paul Gilby sampled her story and discovered how it all started.



SARM TIME

even years ago I started as a receptionist at Sarm Studios East in London and a few years later was promoted to Bookings Manager. Then around 1982, I was asked to move from Sarm East to Sarm West when we took over the old Island Records studios in Basing Street.

Basing Street Studios, as it was called then, was coming to the end of its heyday but Trevor Horn and Jill Sinclair, his wife and manager, who were involved with Sarm, decided to expand Sarm studios into it and completely revamp the building. And that was the start of a whole new Sarm empire that included ZTT Records as well.

I was there for about two years until last year when I decided that it was time to move on. Basically, because I'd spent seven years in studios and there was nowhere else to go – apart from owning my own studio which was a bit ambitious for me!

The thing was, whilst I was working at Sarm I was giving out information on a daily basis, and because I'd been in the business for seven years and I'd had so much contact with bands coming in and out of, what was by that time, three studios, I'd met so many people – bands, producers, engineers, record company men...all sorts of people. I had a book full of telephone numbers and, of course, everyone would use me as a central information bureau. Other studios would ring up saying they needed an engineer and asking if I could recommend someone. Young producers were even ringing me up to ask about royalty agreements for a B-side etc. So there I was sitting there giving out information all day long and not, in fact, making a penny out of it.

Sarm West, at this time, was gaining a reputation for state of the art recording through the work of producers like Trevor Horn and Peter Collins; people who were working with the new Fairlights and Synclaviers. The trouble was, they had the money to go out and buy the machinery but nobody ever knew how to use it, and there were all these frantic phone calls going on during sessions. We'd ring up Syco to get someone to tell us how to do so and so.

Obviously, demand grew for people who could operate that sort of equipment and some young chaps were wise to see this coming and they went off, got themselves the equipment manuals and went to Turnkey and places like that to learn how to use these machines."

NOISE TIME

In my house in London at this time lived a man called 'JJ', who was one of the first Fairlight programmers and who, it's probably fair to say, is one of the most experienced Fairlight programmers today in terms of actual application of the Fairlight. Other than working on many hit records, he's a full-time member of the Art Of Noise."

He's probably one of the more well-known programmers in the public eye isn't he?

"Yes. It's his catchy name 'JJ'. He's a bit of a crazy guy when it comes to ideas but he's become the sounds man on the Fairlight. JJ's had the Fairlight for years—his was one of the first models to come into the country. I remember it was set up in my dining room all the time, and it sort of intrigued me.

To cut a long story short, it became more and more apparent to me that there was a hole in the market for people who knew how to use this equipment, because the manufacturers generally didn't—they'd give you a quick demo—but they generally didn't have the time or the patience to spend days explaining things to you. And, of course, there was the added problem that the young chaps who were interested in this equipment couldn't afford to buy it."

PROGRAMMERS TIME

"So what actually happened was that I left Sarm to form a management company managing engineers and producersand towards Christmas of '84 I was approached by someone who had purchased a Fairlight and a Synclavier, and was starting to get lots of people wanting to hire the machines. But he had a problem, in so much as he never had anybody that he could send out with the machines when the client needed technical back-up. So he approached me and said: 'Will you help me to start scouting around Britain for young programmers, to train up? So we did a lot of scouting around, and interviewing people like Simon Lloyd, to find young programmers - who didn't have their own machines but could operate them.

Some of the hire companies kindly gave enough free time on the machines for the chaps to be able to go and play with them and learn how to use them. David Whittaker, at Turnkey, has been extremely helpful. He never objects to our chaps going up there and running the latest software etc, because obviously it benefits David.

We started *The Programming People* back in April '85, basically, because I felt that the programmer today had become as much an integral part of the recording session as the engineer or the musician. We try to provide the service of a programming agency because, really, it's a chore for a busy producer to have to waste his valuable time phoning round looking for the right people for a session."

So you've got your finger on the pulse and know where everybody is then?

"Yes. All clients have to do is phone us and say, 'Right, Saturday, in studio such and such, 10 o'clock start. Be there!' And we will."

SELECTION TIME

"I like to take on programmers that can play as well as programme because they're just so beneficial to the overall session. We try and match up somebody who is musically suited to the project as far as we can because they are often asked to throw in ideas and play on the records; they are not just strictly machine programmers. Simon Lloyd, for example, plays saxophone – in fact, he's a very good saxophonist – but also programmes the Fairlight and the Synclavier so he's got a tremendous musical knowledge – as all of them have in fact.

We've had hundreds of programmers contacting us – so many guys who have been sitting in back rooms studying away with manuals. Actually, those we were more interested in were the ones who had session experience and could handle a session under pressure and who had a good musical knowledge as well.

We've selected about 15 from the ones that have applied and of those, three or four are PPG Waveterm people; two or three are Synclavier men, and two or three specialise on the Fairlight. You see, the funny thing is that all this gear is very expensive yet it moves in and out of fashion very quickly. At the beginning of the year demand was all for Fairlight, then suddenly everyone wanted Synclavier. Then there was a big wave of the PPG stuff, and at the moment it's Emulator 2."

What about the DX7 and the rest of the Yamaha FM system?

"There is a demand for DX. We get asked quite a lot for it but most of the keyboard players now know how to operate those themselves because they've gone out and bought one and had time at home learning to programme them. Whereas few of them would have Synclaviers at home!

What we've actually managed to do is bring together programmers who previously didn't know each other but are now communicating between themselves. It's a case of: 'I've had a so-and-so problem on the Synclavier. How have you got around it?'."

So their whole knowledge has been pooled together for the benefit of all?

"Yes. One guy might know the PPG Wave inside out and the other one will know the Fairlight and they tend to swop: like, one'll teach the PPG to the Fairlight guy and vice versa. I think it's a healthy situation when they talk between themselves about the latest software and tricks of how to do this and that. I mean, they are surprisingly unselfish about their trade."

SESSION TIME

"There seems to be more and more demand now for programmers who can do a bit of everything and who actually stay on the project from start to finish. What the studios often do is supply the producer with a variety of machines hired in for the session and we would supply the right programmer for the job

 one programmer from start to finish, actually involved on the project rather than just coming in to do one specific task.

You see, a lot of producers are pretty busy and generally they've got their heads down in the studio and so they quite often appreciate someone coming along and telling them what's available. What we try to do when we take all the bookings - the programming session bookings - is we try to ascertain the clients' needs; what it is they're trying to achieve. Otherwise you sometimes find that somebody will book a Synclavier for a session and, in fact, we could do it quite easily on the Emulator and save them a hell of a lot of time and expense. So we try to do a little bit of preproduction planning whereby the programmer can take away a cassette of the track and do some programming out of the studio, so that when he goes back it all falls together."

EMOTIONAL TIME

"Debbie Kempson is now running *The Programming People* on a daily basis and has really taken over from me completely – my involvement is minimal these days. Other than looking after the administration of the bookings and organising the technical side, Debbie's very much involved in trying to match personalities on sessions. Nothing can be worse than people who don't get on in the studio.

If we know that someone is a particularly difficult person to work with – then we've got to give them the most patient of our programmers. Our job deals with people and not just

unemotional machinery and because they're human, confidence is an important thing too. We'll never let a programmer go onto a programming session unless he's absolutely sure that he can provide what the producer is looking for. And 99.9% of the time they can, fortunately!"

FINANCIAL TIME

How is the session charged out? Is it costed individually for each programmer, as obviously some have more experience than others?

"Well, somebody who has three years experience on the Synclavier and knows all the latest software and everything is going to cost more than somebody who programmes a Linn Drum. We do have a set scale of charges, and we also take a booker's fee of 12 ½% for finding the programmer.

We take commission from the programmer and from the client that we're providing the programmer for. So that way, programmers aren't paying us a huge commission for work being given to them and the clients aren't being charged a vast amount for the legwork we do for them."

Could you cite an example then in real pound notes?

"Well, we have a minimum charge for a programmer which is £200 for a 12-hour day. It ranges between £200 and £250 a day depending on the programmer obviously. And that's for a standard day. The other thing we try and do as an agency, for the programmer's sake, is to protect them from being worked 24 hours round the clock."

As it were, an inferred union structure.

"Yes. The clients have to pay overtime, if only to stop them from trying to get three days work out of the programmers all rolled into one.

The normal day session is extremely hard on the programmers because they're expected to provide a lot on the technical side as well as try and come up with creative ideas and sounds. Plus they have to sit around for hours while nothing happens — which isn't their fault. We just try and encourage people to plan a little bit better before hiring the gear so that they know what they want to do with it.

We also found when interviewing these programmers that they were letting themselves go out for far too little money really. They were on a much lower scale of fees than the session musicians – who at Musicians' Union rates, are on something like £54 for a three-hour session. I think that the programmers should be paid the same fees as musicians."

But doesn't the programmer receive a royalty payment?

"No. You don't get a royalty...you might get a credit on the album sleeve or whatever. You only get a royalty if you actually ended up writing the song which can be a bit of a moot point sometimes. Generally, the programmer's just doing overdubs and advising on the way in which things may be done. But sometimes a programmer may be called in and he ends up playing all the keyboards and composing the middle eight for a song as well, and it's part of our job to protect them from that situation."

FUTURE TIME

What about the future? Do you intend to expand the number of programmers you have on your books or is 15 enough?

'It's enough to keep the personal contact. Any more and it would become a little impersonal I feel. We like the programmers to call in and see Debbie here and keep us up to date so that we can see how things are going. We like everybody to feel they're part of a team really. It would be very difficult to know what everyone's up to if we had a lot more programmers. I think 15 is plenty. For example, if Simon's on a session and he suddenly gets flu, I'd like to know that the person I replace him with can offer the same expertise and follow the job through because, at the end of the day, we need to maintain our reputation as The Programming People."

☐ The Programming People have supplied programmers to work on a variety of projects by the following artists: ABC, Asia, Culture Club, China Crisis, Duran Duran, Peter Gabriel, Paul McCartney and Tears For Fears amongst others. They offer a 24 hour service and can be contacted through Debbie Kempson on 01-229 0055.



Debbie Kempson – a model of efficiency.



PROGRAMMER: SIMON LLOYD
(Fairlight and Synclavier) has
recently worked on sessions for
bands such as the Eurythmics,
Dead Or Alive, Dream Academy
and Kate Bush. In this brief sample
edited out of The Programming
People interview, Simon relates
the programmer's position.

EVOLUTION

"I was a sax player for a number of years, playing with various bands, one of which was The Members. About three years ago, we were recording with producer Martin Rushent at his Genetic Studios. During the down-time on the sessions I became interested in the Fairlight which the studio had and spent a lot of time acquainting myself with the system. After we'd left the studio I was still very interested in the computer side of music and started to study manuals and read all the magazines. Eventually I moved across from saxophone to Fairlight and started to do some programming. I've moved on to Synclavier now and have been spending around two days a week at Turnkey working on their new polyphonic sampling system; it's one of only three in the country at the moment. So, if I'm asked to do a session on the polyphonic Synclavier, I'll know the system inside out - you have to keep well up on these things.'

Do some of the programmers find that they're in demand because of their sound library?

"Yeah! Cos if you've got hundreds of sounds like about a year's worth of sampled bass drums, snares, bass guitars, this, that and the other; it's a huge sound library. I've got about two dozen of each drum and lots of percussion and cymbals – all sorts. So, if anybody hires a machine without any samples in it already, it's going to take them two or three days to do the sampling. If you've got someone with a library of good samples, it saves a considerable amount of valuable studio time.

All the programmers have their own set of samples on disk and obviously the better your sound library, the more you're in demand and so you get a reputation for being suited to certain types of work."

SAMPLING RIGHTS

If you're on a session working for a producer and you create various sounds for him – say, for a Fairlight. Will he allow you to take the samples away and add them to your library?

"It depends. Generally, there's no problem because you're sampling with them and the easiest thing to do is to give them a copy and keep a copy for yourself. I've never had any problems about that. If they want disks of particular sounds that they use on the session, they can have them."

I suspect an awful lot of people want what they've already heard?

"They do, yeah ... People still want the same Fairlight orchestral sounds they've heard for the last few years. It's alright but we like to give them some new sounds as well which they haven't heard before.

It seems a pity in some cases when producers go for off-the-peg sounds that are so well-known. They're actually paying for an instrument that's capable of generating a phenomenal variety of different sounds and all that they want is a programmer to call up the presets.

It does happen, though part of our job as programmers is to disseminate information about what all these machines can do and try and make studios and producers more aware of their potential." So what kind of work have you been doing away from the studio?

"I recently did the new Zanussi TV ads with the Fairlight. It already had some synth work on it and they just wanted a few effects. We worked on the ad, which was basically a set built around a 2001 theme with astronauts etc. and a view of doors opening and the washing machine coming out of the space ship. They spent a huge amount of money on that ad which was filmed down at Shepperton Studios. I worked on it for three days giving them various spacey effects for the overdubs.

Recently, I've been working on a couple of films as well but it would be nice to get more video work. These machines are particularly suited to that sort of work now that they all run SMPTE code because you can synchronise the sound to the visuals."

Is your time outside the studio spent gleaning information from manuals and sorting out new sounds?

"It is actually. You're involved in a continuous process of updating your sound library and keeping in touch with the software developments. The forthcoming Fairlight Series 3, is a good example. When that comes onto the market early next year there's going to be one hell of a demand for it, so I'm planning a visit to Fairlight in Australia and hope to do some work on it out there before the system is made available in the UK."

This all sounds as though a programmer's life is a fairly hectic one?

"It very often is. All the sessions I've done to date have been high pressure all of the time with almost no down-time at all, which is the way it should be. You can quite often find yourself doing a long 12 hour session with almost no breaks, just the odd cup of coffee and that's all. It's certainly very tiring at times but also very enjoyable!"

"There are certain very rare moments in the recording studio when you realise that a series of barriers you've been used to living with have just dropped." M ay 1984, and those were the words used by record producer Rupert Hine to describe his initial studio link-up of MIDI-equipped instruments during the recording of the first highly successful Howard Jones album.

Having previously struggled in the studio with the incompatibility and rapid obsolescence of past musical equipment, Rupert Hine was struck by the awesome potential of the Musical Instrument Digital Interface and how its widespread acceptance could drastically alter the way we conceive and play music in the future. And all this from a highly provocative five-pin DIN connector?

THE WAY WE WERE

Until the advent of MIDI in early 1983, the electronic musical instrument manufacturers of the world had been merrily producing their own wonderful synthesizer and drum machine systems all to the neglect of the user who not unnaturally wished to plug different makes of instruments together in the pursuit of musical composition. This one system mentality, so adamantly pursued by manufacturers in the naive hope that it would promote brand allegiance, resulted in the likes of Roland, Korg, Yamaha and Moog products being of little use to each other. It was primarily the American company Sequential Circuits who proposed that this madness stop and that all manufacturers' systems should talk to each other via common computer software on a level that would allow any electronic instrument to interface with any other, regardless of which company designed and built it.

The result was MIDI, a universal digital interface whose implementation has consequently accelerated the application of synthesizers and drum machines in today's music to a point where what were often considered to be the tools of the 'cosmic music' fraternity, such as Tangerine Dream, are now the de facto standard in modern recording studios.

WHAT'S IN A NETWORK?

As MIDI was born out of a need to interface keyboard instruments, the transmission of data relating to pitch, note duration, modulation and dynamics were of the highest priority. The inclusion of timing information, however, meant that tempo-based devices like sequencers and drum machines were also drawn into the system and a new, far-reaching communications network was formulated.

Today, the importance of the interface has been acknowledged by the whole of the

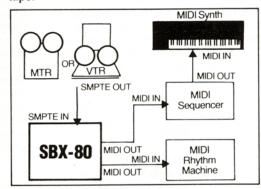
equipment manufacturing industry with the inclusion of MIDI on everything from a budget drum machine to the likes of the ever popular PPG Wave 2.3 sound synthesis keyboard. Even the well established Fairlight CMI now sports a MIDI retrofit due to the pressure of popular demand.

The production of software-based multitrack MIDI sequencers – the Yamaha QX1 and Roland MSQ700 are fine examples – have resulted in what is, to all intents and purposes, a new means of recording synthesizer-based music that removes the need for tape yet still permits the techniques of multitracking, overdubbing and track bouncing to be used.

The inescapable truth of the matter is that MIDI has slipped in through the studio backdoor and quickly established itself as an integrated system with the potential means for total sound control that extends from sound source creation (synthesizers), through signal processing and routing (MIDI channel designation), to the final mastering stages.

However, it is beyond the bounds of the current MIDI specification to offer a truly effective means of synchronising sound generating devices to audio tape. SMPTE timecode, on the other hand, has long been accepted by studio personnel as the professional standard for tape synchronisation through its ability to identify and locate unique time events on tape.

Why not then combine the attributes of both SMPTE and MIDI? With the appearance of the Roland SBX-80 Sync Box, the problem of MIDI to tape synchronisation has finally been solved. Capable of both reading and generating a SMPTE timecode and converting it to MIDI timing data, the SBX-80, under direct SMPTE control, can act as the system master clock to drive slaved MIDI equipment in perfect synchronisation with all other sound sources recorded on the multitrack tape.



An example MIDI recording set-up: overcomes the need to commit audio to tape until the very last stage.

THE UNIVERSAL ANSWER?

MULTIPLE BENEFITS

If synthesizer production work forms the core of your current studio output, then first generation sound quality, direct to master facilities and increased track capacity without the need to install a second multitrack machine and locking device, are some of the highly attractive benefits offered by a MIDI to tape link-up.

For those of us who strive for audio excellence, MIDI has everything to offer. Granted, the all-digital studio may well be visible on the horizon but there's no need to clear out the tape recorders quite yet...

The addition of an eight track MIDI sequencer extends the capacity of any multitrack tape recorder and relieves the burden upon the number of audio tracks available for vocals, guitars and further acoustic sound sources. Of course, future MIDI sequencers may well offer far more than eight tracks – Jellinghaus' 12-track studio software and Umusic's 16-track UMI-2B system are already leading the field. Even so, if the reasoning behind your decision to uprate your track capacity is purely to record more synthesized/sampled sounds – then think again!

With a MIDI sequencer of some description and a high quality eight or sixteen track machine, the professional recording or audio-visual studio can successfully reap the rewards of increased track capacity, with no loss of quality, whilst still retaining some of that precious budget for extra effects and MIDI equipment.

ALL UNDER CONTROL

The creative need for programmable devices and standardised hardware has long been recognised in the recording studio. After all, it was the high cost of studio time, ironically. that helped spawn the development of the time-saving SSL Total Recall console designed to offer a more efficient, cost-effective recording procedure with the reinstatement of emphasis firmly upon the creative as opposed to technical considerations of the recording session. MIDI technology has the potential to expand upon this concept through interlinked programmable noise gates, equalisers and digital delays to offer an enhanced degree of creative control to the studio engineer and producer, that is unrivalled by existing control systems.

The Yamaha D1500 digital delay is a case in point; when a particular voice patch is selected on a suitably connected MIDI instrument, the device remotely selects a delay effect

stored in memory which has been preprogrammed by the performer, engineer or whoever, to suit the newly chosen instrument voice.

Again, using a MIDI sequencer and MIDI equipped digital reverb such as the Yamaha REV 7 or Roland SRV-2000, it would be possible to programme changes of room ambience and generate basic gating effects by rapidly switching reverb memories in time with the music, or indeed with each new note or voice as required. All relevant program data can then be stored digitally in the sequencer and reverb memories, with recall and editing of every parameter of the whole performance instantly available at the push of a button, over and over again.

Text by Ian Gilby.



Several studios have already taken steps towards a fully integrated recording system operating along those lines described, for not

Roland's S

only does the application of MIDI result in greater control of both instruments and effects but combined with the increased use of digital audio mastering, it also assures outstanding audio quality. And as technology marches on, the demand for middle ground, general music studios is fast disappearing. More than ever before, specialisation is the key to survival—and MIDI is one means of achieving it.

Roland's SBX-80: solving the problem of MIDI to tape synchronisation once and for all.



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CASIO SZ-1 SEQUENCER THE NEXT LOGICAL STEP



verywhere you look, there are MIDI synthesizers and drum machines. For all its faults, the standard has done a tremendous amount for studios and players, opening up hundreds of new possibilities and easing equipment interconnection problems which previously bedevilled creative musicians. Unfortunately, there hasn't been much available in the way of stand-alone MIDI sequencers Roland's MSQ-700 previously dominated the field until Yamaha released the QX7 and now along come Casio with the SZ-1.

Who would have thought that Casio, pioneers of the home keyboard market, would eventually turn their attention to professional synths and peripherals? Bringing to bear the manufacturing power and enormous research and development facilities that have already helped make them the world's largest manufacturers of portable keyboards, Casio look set to do as well with the Z Series machines as they have with their home keyboards.

The innovative VL-Tone, CT-201 preset keyboard, and CZ-101 phase distortion synth, have each marked a notable leap forward in music technology. Coupled with a longstanding devotion to playerfriendly compositional aids like arpeggiation and one-finger chord systems, the introduction of the SZ-1 Sequencer seems to be the next logical step for Casio, offering MIDI sequencing at a bargain basement price. The sad news is that, in order to keep the price down to an affordable £295, the SZ-1 has been simplified to the point where some users may well find it inadequate for their specific needs.

Casio's flagship synthesizer, the CZ-5000, already sports a useful onboard eight track sequencer capable of controlling external instruments as well as its own internal voice circuitry. The SZ-1 offers fewer facilities than the CZ-5000 but as a self-contained, dedicated unit, it will nevertheless have greater appeal if what you're looking for is straightforward control of your current equipment set-up.

by Chris Jenkins

In short, the SZ-1 is a four-note polyphonic MIDI sequencer ideally suited to drive Casio's own CZ-101 synth operating in Mono mode (four voices, each playing a different sound monophonically). Facilitywise, an LCD display gives most of the necessary status indications to guide you through operations. It's rather difficult to read in low light conditions, but that's a fault shared by the displays on more expensive instruments including Yamaha's DX7 and the PPG Wave 2.

The rear of the SZ-1 features a cartridge port, 7.5 volt DC power socket, start footswitch socket, a tape dump DIN socket, two MIDI Outs and one MIDI In. The two Out sockets are necessary because the CZ synths (among others) aren't fitted with MIDI Thru sockets. Were it not for the dual socket arrangement this would make life difficult for multikeyboard owners unless, of course, you possess a MIDI Thru box.

The SZ-1 can be powered by five 1.5 volt batteries, making it an ideal match for the superbly portable CZ-101, or via its 7.5 volt DC power socket which would be a safer bet if prolonged studio use is anticipated. Batteries have to be left in the sequencer at all times if you wish to preserve the sequences you've just programmed into the memory. Should you forget this, there are two ways of storing patterns; either by fast tape dump, or in RA5 RAM cartridges which are much handier to use (though inevitably more expensive if you go through lots of them).

Complete sequences can be dumped and reloaded instantly using the optional RA5 memory cartridges. The tape dump facility has Load, Save and Verify functions, but it's inadvisable to rely on tape loading of sequences under typical stage conditions. A full memory set can be loaded from the tape in around a minute. There's some likelihood that it will soon be possible to dump informmation to a Commodore 1541 disk drive, since another enterprising company, Passport Software, has already developed a CZ-101 data dump program and will probably be looking at doing the same for the SZ-1. In the meantime, you can select the sequence storage mode you require using the Cartridge/MT pushbutton on the top right of the main control area.

On the back of the SZ is a Touch Data On/Off switch which allows you to select whether memory-eating touch response information sent out by the synthesizer is recorded or not. Obviously, this needs to be set to the off position if you're using a CZ-101 or other non-responsive synthesizer.

Also found on the back panel is the Clock Ext/In switch, allowing you

to select whether the sequencer clock speed is controlled by another sequencer or drum machine, or alternatively by its own internal tempo setting.

RECORDING ROUTINES

There are two Sequence recording modes and four Track selectors available on the SZ-1. To go over basic ground (which will no doubt be familiar to most of you, so forgive me if I appear patronising), MIDI supports up to 16 control channels along which music information can be independently passed. Before starting to record a sequence, you need to select the channel to be used by hitting the MIDI button and incrementing the Up/Down buttons (which, together with the Enter key, control the input of most information). The resulting channel number appears on the LCD display.

Recording in real time is straightforward – just press Record/Real Time and Play, then begin playing. To aid good timekeeping there's a metronome click audible through a tiny built-in speaker to improve synchronisation, but it's not really loud enough to my ears and there's nothing you can do to increase its volume. A flashing LED would surely be of greater benefit.

As you play, the LCD display counts off elapsed bar numbers. Should you make some mistakes, as on most tape recorders, the punch-in feature allows you to drop into record mode to replace a specific portion of the incorrectly played sequence, then drop out once your correction is complete. Naturally, this can be done as many times as you like with no subsequent reduction in sound quality – in effect a solid state tape recorder.

Once you've finished recording a track, you use the transport controls as you would any tape recorder. For instance, Rev counts backwards through the bar numbers to return you to bar zero and Fwd counts forward through the bars

naturally. Having completed one track, you can reselect from the remaining Track buttons (each one of which has an LED which lights when it's active) and record the next monophonic sequence. This can be achieved using a different MIDI channel, which opens up the possibility of running four different synths off the SZ-1 simultaneously. Some synthesizers, such as the CZ series or Sequential's SixTrak, can play several different voice sounds monophonically on different MIDI channels ('multi-timbral' or 'monomode'). You could then use three tracks controlling a CZ-101 to play a bass line, harmony and effect, whilst plugging in a DX7 or other synth for a touch responsive lead line. The control combinations are fairly extensive and afford plenty of variety.

In step time, or Manual mode as Casio prefer to call it, the SZ's left-hand control group is implemented. The pitches of notes (up to 3600) are entered from the attached synth keyboard as in real time mode, but the note length is set manually using the nine various note value keys (crotchet, minim etc) and the Rest button. This programming method is obviously slower than real time input, but gives correspondingly more accurate results – especially if your playing skills err on the dodgy side!

For repetitive music, the Bar Copy facility's Insert, Delete and Copy keys allow you to quickly build up compositions from a 'library' of stored sequences. It's also possible to use the overdub function to add to existing sequences, though you have to be aware that there's a danger that you might run out of voices to play with. Total memory capacity is 1800 notes (real time) and 3600 (step time), expandable to 7200 via the additional RAM cartridge.

TEMPORAL SHIFT

One problem with the SZ-1 is that the tempo, which on the internal clock is variable from 40-256 beats per minute, cannot be programmed to vary within a sequence. Although this restriction can be overcome by using a drum machine with programmable tempo as the master clock, it's a silly omission. After all, the great advantage of sequencers is that they enable flawless compositions to be replayed at breathtaking speed, far beyond that possible for manually played patterns. Programmable tempo should therefore be given more priority on future updated models.

There you have it. The SZ-1 is a cheap and simple intro to MIDI sequencing, particularly suitable for existing CZ-101 owners. However, users with larger keyboard set-ups might find the 1800 note memory and four note polyphony too limiting, though at £295 you should be able to find an application for it. Perhaps the most interesting aspect of the SZ-1 is that it heralds a whole series of hi-tech, low cost products from Casio, including a digital drum machine, sampling keyboard, and who knows what else. I'm sure the SZ-1 could turn out to be the centrepiece of a complete studio SOS system.

Contact: Casio Electronics Ltd, Unit 6, 1000 North Circular Road, London NW2 7JD. Tel 01-450 9131.

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10 MOSLEY STREET, NEWCASTLE UPON TYNE, NEI 1DE. Tel: 0632 324175 ROCK-CITY

The term 'studio quality' often infers a studio price tag but that's certainly not the case with this affordable digital reverb from Yamaha. Record producer/musician Robin Lumley was so impressed with the host of facilities it offered that he was moved to put pen to paper...

had recently begun to think that the term user-friendly had been overworked and quite often misapplied in the case of most hard and software musical and computer-related equipment on the market today. Yet, searching through both the operations manual and the glossy brochure accompanying this new digital reverb unit from Yamaha, I can find no trace of the phrase. But if ever a unit deserved to be dubbed user-friendly, this is it.

The REV 7 has obviously absorbed an inordinate amount of careful thought and research time in its pre-production phase, with a heavy dose of effort being spent on who is eventually going to use and operate it.

The asking price of the unit is quite absurd in value for money terms, being only £1040 plus VAT; and I mean absurdly low! Can't see many retailers offering discounts on this one. You'll see what I mean if you read on ...

OPERATIONAL FEATURES

It's a high quality reverberation unit essentially, suitable for studio or stage use. The format is standard 19" rackmountable, with the make-it-go buttons on the front panel, and the plug-it-in-to-something holes on the back.

So far, so normal. But the number and permutations of the ways it provides reverb effects is certainly not normal. It does almost everything imaginable (and sometimes unimaginable) to an input signal in terms of reverb, echo, phase and flange, and in such an easy, clean and accessible manner that you'll wonder how you ever did without one. At this point, you may have gathered that this is a somewhat favourable review, but it's hard to exclude superlatives whilst writing about the REV 7. You only have to hear one to appreciate why.

When a signal is sent into the REV 7 reverberator via the balanced jacks or XLRs, it is first EQ'd, then metered, then passed into an Analogue to Digital converter. Any stereo input is mixed to mono prior to being processed into a reverb signal. However, the direct, or source signal, remains in stereo. The

effect is then created within the Digital Signal Processor, which is the very heart of the unit.

The processed signal is then converted back into a stereo format reverb signal (regardless of whether or not it started life in mono) by two Digital to Analogue converters, which create two slightly different Left and Right reverberation patterns. This analogue end result is then mixed with the direct signal using the mixer control.

When I referred to effect just now, I should, of course, have said effects because before you even have to start dreaming anything up, there are already 30 various built-in presets in the memory for you to use. In addition, memories 31 to 90, the user programs, are there for you to invent and store your own reverb creations. With a back-up lithium 5-year battery on board, there's no chance either that anything of yours is dumped when the mains is off. The presets (1 to 30) are unaffected anyway.

USER-FRIENDLY

Enter that well-worn phrase again. The front panel of the REV 7 is a doddle (if you'll pardon the vernacular) to understand. Even I figured it all out in under five minutes, and I usually have trouble opening a tin of baked beans!

Direct Recall buttons permit instant access to all 30 presets, as well as the first seven user programs. These 30 presets, by the way, cover a vast range of possible effects... various size halls, simulations of mechanical reverb devices, recording studio-type acoustic environments, stereo delays, and a range of flange/phase modulation effects. And if there is nothing there that is exactly what you want to hear, it's easy to programme something of your own.

RECALL

There are five ways of recalling information from the unit:

1. **Direct Recall**. Presets 1-30 and programs 31-37 appear at the touch of the number-buttons and a liquid crystal display tells you what you've recalled.

2. **Numeric Recall**. Press the Memory key, and then the numeric key to select programs 1-90. The advantage here is that the same operation is required for all programs, preset or self-created.

3. +/- Key Recall. This method allows you to 'scroll' through all 90 programs, which is very helpful if you're searching for something soundwise and you can't remember where in the banks you've parked it. Simply press the Memory key, and then the +key to step through the programs in an upward direction numerically, or press the -key to come back down again. Quite logical.

4. **Remote Recall**. Each REV 7 comes, at no extra cost, with a small hand-held remote control box. This is very useful for a keyboard player or guitarist who wants

to stay out front during a performance, and not have to keep nipping back to the effects rack to change a program. The unit reproduces the functions of all the Direct memory recall keys on the front panel of the main unit, and can be used along with the front panel controls at any time, if you wish.

The fifth and final way of recalling information on the unit is with MIDI. As on their D1500 delay, it is possible to select any effect stored in the Yamaha REV 7 memory by pressing a voice/patch select key on a MIDI keyboard, connected via an umbilical MIDI cable to the rear panel DIN socket. As a keyboard player myself, I find this a highly desirable feature as, for example, a DX7 synth can create virtually endless varieties of voices, each of which require different reverberation effects. The MIDI control allows you to pre-arrange the ideal effect so that it's automatically recalled when you select the voice – and that's a handy feature I can say.

PROGRAM CREATION

Each of the REV 7's 30 preset programs can be modified over an exceptionally broad range to create your own new effects that can be stored in the 60 user program memory banks.

As each preset incorporates up to seven variable parameters, you can fiddle away for hours obtaining very different treatments from just one preset, let alone the other 29! You can alter the Reverb time, First Reflection delay and level, Diffusion, Liveness, Initial Delay time, Room size, Modulation frequency and depth, and you can even modify the reverb time of high and low frequency

ranges separately inside the same source signal.

The REV 7 also has an on-board 3band parametric EQ, with overlapping frequency ranges

(50-700Hz; 350-7kHz; 2-20kHz) to enable you to modify the characteristics of the processed sound (but not the original source sound). Rather unusually for Yamaha, the parametric equalisation settings cannot be stored as part of a reverb program which would have been a useful time-saving option otherwise.

After recalling a preset from the memory, you can instantly edit any or all of the above parameters to create new effects. This editing is only temporary unless you store the data into the user program memory ie. in numbers 31-90. If you decide not to store your new sound, the preset will automatically return to its original values as soon as you recall some other program. The storage process is so simple, too. Just press the Memory key, use the numeric keys to type in the destination number (31-90), then press the Store key and you can punch up that sound whenever you like, just as if it was a preset. Fortunately, you can't wipe out the factory presets (1-30) by accident when storing, as they are automatically protected internally.

The remote control box, unfortunately, only gives you access to the first seven user programs, so Yamaha suggest you move your most-used or favourite programs into the range 31-37. This you do simply by recalling the program you wish to move, assigning it a new number, and carrying out the storage procedure – a facility that proves handy when arranging effects in a particular order ready for a session.

QUEUING UP

In conclusion, I would like to point out that this unit offers a fully professional specification making it suitable for recording studios at all levels. It's also likely to be equally at home on the road as part of an effects rack either at a mixing console or as part of an on-stage

Being digital, of course, it's extremely clean sound-wise. It also cries out for you to experiment with new sounds ...it's a kind of reverb synthesizer in its own right if you're prepared to sit and play with it. And if you don't, you'll definitely be missing out. Some of the presets feature gating effects, and I managed to invert these to obtain 'backwards echo', a process that used to take me hours in the studio, turning the multitrack tape upside down! Now that's what I call progress.

So, the price is right, the demand is going to be high, and you'd better get in the orders queue PDQ!

Finally, thanks to HHB Ltd for providing the facilities to review this unit.

REV 7 SPECIFICATION

Presets 30 User Programs 60 Reverb Time (RT) 0.3 to 9.9 sec on Mid band High Freq RT 0.03 to 9.9 sec Low Freq RT 0.12 to 23.7 sec Initial Delay 0 to 99.9ms First Reflection 0 to 99.9ms Diffusion 10 steps Reverb Bandwidth 20Hz-12kHz

Dynamic Range Reverb:78dB/Delay:84dB MIDI Control Channel/Program number



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OMPETITION

SEQUENTIAL PROPHET 2000 SAMPLING KEYBOARD



ENTRY DETAILS OVERLEAF >

ENTRY FORM

Entering this exclusive competition can make you the proud new owner of a prestigious Prophet 2000 keyboard valued at almost £2,000. To ensure that this wonderful prize goes to a deserving winner, we have put together a range of questions designed to test your knowledge of Sequential products.

The competition questions are spread across the first two issues of SOUND ON SOUND. They require a small amount of background research on your part and to point you in the right direction, we suggest you scour the pages of our current issue, read the relevant product brochures or even visit your local Sequential stockist...

QUESTIONS: PART ONE How many MIDI modes are available on Sequential's MultiTraks synthesizer

and what are they?
2. Name the four sound expansion cartridges currently available for Sequential' Tom drum machine and list all of the sounds on any one cartridge.
Cartridge I
Cartridge 2Cartridge 3Cartridge 4
Sounds
3. What is the total memory size of the Prophet 2000?
4. How many tunings are available for every sound on the Tom drum machine?
5. How many preset sounds are there on the MultiTraks?

WHAT TO DO

Once you've collected what you consider to be the correct answers, fill in the relevant spaces above, cut out the page (sorry, no photocopies accepted) and keep it in a safe place. By that time the second edition of SOUND ON SOUND will no doubt be available on your newsagent's shelves. Inside it you'll find Part 2 of the competition, containing the final set of questions, the competition rules and full details of where to send your completed entry. (SOUND ON SOUND Issue 2 will be on sale November 15th.)

REMEMBER: Keep your answers safe. You'll need to post them to us along with the answers to Part 2 in next month's issue.

PROPHET 2000 SAMPLING KEYBOARD COMPETITION

ROPHET 2000 SAMPLING KEYBOARL





A SOFT TOUCH

Recognised as one of the most user-friendly systems around, this real-time/step-time MIDI sequencer runs on the BBC B micro and is gaining rapid acceptance amongst professional users for its versatility

ou've managed to acquire, at great cost relative to your income, a couple of MIDI controllable synthesizers, hopefully at least one of them multi-timbral. You've borrowed a drum machine from the guy next door and the dreaded overdraft is sufficiently small that the bank manager is expected to avoid cardiac arrest for a month or two. The ghetto-blaster is seemingly to be locked forever in record-pause mode awaiting the mega-mix of your latest musical masterpiece. If only you had the necessary three or four sets of hands and could manage to play all the parts through correctly now and again – I mean take 12 is so tedious, not to say embarrassing! Oh, yes, and halfway through the fifth layer of sound-on-sound (the recording technique not the magazine!) you remember that the singer's voice dictates that the song must be played in the key of C# (how many sharps? - good grief!) ...

Scenario 2

You run a 48-track studio. You've spent thousands on digital multitrack recorders, computer controlled mixer, the latest outboard gear, aerobic baffle decompensators, cat-flaps and so on, only to discover that the four letter word that has superseded PUNK is MIDI. Vince Clarke has just walked in with eight CZ101s under his arm clutching his latest epic on a floppy disk and the nearest size slot you've got is the post box on the front door

Scenario 3

Chapman discovers why

You've bought some hardware/software that acts as a MIDI control package. Your problems vanish ... well, ok, some of your problems vanish!

MIDI RULES OK

MIDI will not solve all of your problems of course, and it will in fact create some of its own. In general terms, like most tools of any trade, it is a combination of the quality of the tool and the competence of the person using it that dictates the level of satisfaction with the end product.

The success or otherwise of a MIDI control package must mainly be judged in terms of what it can do for the musical user and how easy it is to

Ease of use is particularly important since any powers of concentration that must be applied to using the package must be siphoned off from, and therefore ultimately detract from, the actual creation of the music. A further point to be considered in any review must of course be whether the item represents good value for money and I'm afraid this does not automatically mean that the item in question has to be cheap.

So, the question is: which MIDI control package? Hopefully, this review should help you consider the suitabilty of the UMI-2B in the moments before the money burns a hole in your pocket or you pluck up courage yet again to approach the bank manager on bended knee.

PREREQUISITES

Dedicated MIDI sequencers such as the Yamaha QX1 provide MIDI interface, software, computing power and data storage. The UMI-2B provides the first two of these but not the last two. So, what else will you need as well as the UMI-2B?

The minimum configuration required is a BBC model B microcomputer (or a suitably upgraded model A), a monitor or television and a suitable cassette recorder – if you already own these then the bill you'll be faced with at the end of the day just reduced considerably! However, price wars in the micro sector mean that ordinary model Bs can be found at considerably discounted prices and secondhand ones can be picked up for well under 300 pounds. The new BBC B+ and the even newer 128K version will also do the trick (though the UMI doesn't take advantage of the extra memory at the moment).

The BBC micro deals with computing power and short term data storage (ie. until you switch it off!) but what about the long term saving of song and other data? Well, it is possible to save songs and DX7 patches on either cassette or disk. Cassette storage is a real pain in the neck – it is slow and often prone to errors and I can't recommend it to professional users – or to my worst

enemy, come to think of it. I hasten to add that this is a problem with the medium, common to all computer (synthesizer, drum machine) users who are forced to use cassettes for data storage, and is in no way a fault of the UMI-2B. A decent data recorder, a cassette recorder purpose-designed for use with a microcomputer, will cost about 30 pounds and give you far less heartbreak than the old valve reelto-reel you've had stored in the loft since the end of World War 2. I used to use the cassette recorder in my hifi - and there's always that Sony digital recorder if you're Scenario 2 (joke, folks, joke).

Floppy disks are the better choice for long term storage and, in common with most systems, you would be well advised to buy two disk drives for ease of making backup copies of all data disks – one disk alone could easily store hundreds of hours of work so making back-up easy is not a bad idea. Double-sided 80-track drives will give you the largest capacity in terms of storage space but are more expensive than smaller capacity single-sided drives. Note that a single-sided 40-track drive can still handle the storage requirements of the UMI system without problems - in fact, if you don't wish to store your musical doodlings, you don't need a disk or cassette drive at all because the UMI software comes in an EPROM that fits inside the micro.

For most BBC micros you will also need to buy disk interface chips and a Disk Filing System EPROM which were not automatically fitted in the BBC micro, although I believe the new BBC+ versions have the DFS kit fitted as standard. There are a number of different DFS kits available which are more or less compatible with the official Acorn product. The UMI-2B is guaranteed to work with the Acorn kit and should work with the more compatible of the others - if it doesn't that's the fault of the DFS and not the UMI-2B: so check out the DFS before buying! A minimum cost of perhaps 200 pounds for the complete drive/DFS combination should be budgeted for.

Coming back to the visual display requirements, it is worth pointing out that the UMI software uses the BBC's Mode 7 screen display which is capable of a similar display to that used in teletext-based systems (such as Ceefax, Oracle and Prestel). This mode uses the least possible amount of the micro's rather scarce RAM - the standard BBC model B only has 32K bytes which is needed for storing your song data, whilst still allowing the use of colour for text and limited block graphics. Colour is used extensively, and very effectively, by

the UMI software and whilst the package can be used successfully with a monochrome monitor or television set, colour is definitely to be recommended!

As Mode 7 is a low resolution display, it's unnecessary to spend hundreds of pounds on a colour monitor as most portable colour televisions will do the job nicely. Once you have a micro other applications apart from MIDI (eg. word processing) are likely to come to mind which may require higher resolution monochrome or colour graphics so a medium resolution colour monitor might be a good idea if you can afford one.

PACKING LIST

What do you get for your money? Well, depending on whether you've shelled out on the more expensive option or not, your trembling fingers should unpack the following items:

Aries-B20 RAM expansion board, control EPROM and manual (optional extra)
UMI-2B Operating Instructions Manual
UMI-2B Interface
(ie. the UMI hardware)
UMI-2B EPROM
(ie. the UMI firmware)
I'll discuss all of these fully in a

moment. If you're not really into computing buzz words then don't read the rest of this paragraph – it might put you off for life! The interface (or hardware) is the box shown in the main photograph with the blue button on top, electronics inside, legends identifying the sockets along the rear edge, and the two ribbon cables for connection to the sockets on the underside of the BBC micro. If you want to know why the term hardware is used, try dropping it on the drum roadie's head and observe what dents.

The EPROM is a chip which holds the UMI computer program (or software) that tells the computer and interface what to do to make them perform together as a sequencer. The EPROM is called firmware because it effectively encapsulates software in hardware – by the way you, the user, are the liveware in the system and, of course, your string vest is underwear!

As a final piece of suspense before discussing the UMI-2B itself, let's consider the place of the Aries RAM board in the system.

THANKS FOR THE MEMORY

It is very important in any MIDI control system to have sufficient RAM (memory that is readable and

writable) available to store and edit a reasonable amount of music. Whilst it would be possible to quote figures based on how many MIDI events a system can store, there are many variables involved which may qualify any quantitative estimate and perhaps a more useful measure is based on practical experience of the use of the system. Quite simply I managed to doodle happily over recording a song (typical chart single material), driving three polyphonic synthesizers and a drum machine (DX7, TX7, JX-8P and TR707), without using more than 50% of the memory space available in the standard BBC micro – thanks principally to the song chaining facilities available on the UMI-2B system (of which more later).

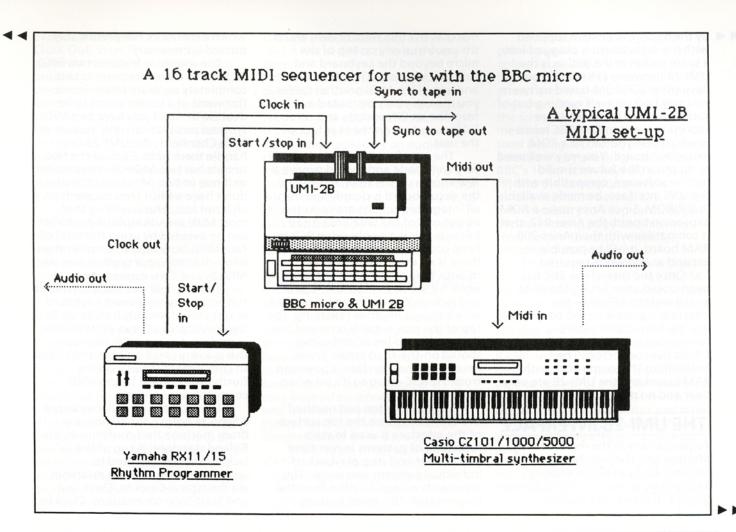
If you are into 20 minute epics which don't repeat verse, chorus, verse, middle 8 etc, and/or have a couple of 6-voice multi-timbral synthesizers and like to drive your drum machine *live* from your MIDI sequencer, and/or like to hear lots of sixteenth note triplets at 200 beats per minute, and/or you are well into St.Vitus dance on the pitch and modulation control wheels – not to mention delighting in the spacegrabbing horrors of after-touch; then you probably *will* need more memory!

The Aries board extends the BBC micro's RAM by 20K (over 20,000) bytes giving far more space for your song data. By way of comparison, we can note that the Yamaha QX1 can use its disk drive to supplement internal memory during the playing of a song whereas the UMI-2B requires the song data to be completely loaded beforehand. This means that the QX1 can handle far larger pieces of music than the UMI-2B but, unfortunately, costs several times as much as the UMI-2B!

DO YOU HAVE THE RIGHT CONNECTIONS?

For those of you who break into a cold sweat at the thought of changing a light bulb or, heaven forbid, taking the lid off your computer, don't worry: take your BBC micro along to the London Rock Shop. When you buy your UMI-2B, they will fit the necessary bits inside the micro and show you how to connect the interface. Those of you with a bit more courage or a friend experienced in the art of chip manipulation, can do-it-yourselves. There is no soldering involved so care and concentration should carry the day

If you have bought the Aries RAM board option, the BBC micro's 6502 processor chip is removed and plugged into the Aries board which then plugs into the socket vacated





by the 6502. The EPROM supplied with the Aries board is plugged into a spare socket in the BBC as is the UMI-2B firmware EPROM. If you have other (EP)ROM-based software, you may find yourself running out of sockets - there are three spare sockets in the standard BBC micro – in which case you can fit a ROM expansion board. You may well need to do this in the future should further software, compatible with the UMI interface, be made available in (EP)ROM. Since Aries make a ROM expansion board, the Aries-B12, that is compatible with their Aries-20B RAM board, it will be possible to expand as and when required.

Once the case of the BBC has been closed after fitting the RAM board and the EPROMs, the interface is placed on top of the case and the two ribbon cables connected to the user port and 1 MHz bus connectors. The instructions that come both with the RAM board and the UMI-2B are very clear and no problems should arise.

THE UMI-2B INTERFACE

As you can see in the main photograph, the interface itself is a rectangular box (30cms wide by 14cms deep by 4cms high). Its colour scheme of cream and brown

matches the BBC micro's own and it sits unobtrusively on top of the micro beyond the keyboard and function key strip. The ribbon cables and any of the MIDI or other cables you use can easily be routed away from the six DIN sockets and seven 1/4" jack sockets on the rear face of the unit.

The interface is tidily designed, very well made and should survive a few knocks on the road. Internally, the circuit board is cleanly laid out, all integrated circuits are socketed, all but one of the wire links (used because this is a single-sided PCB to keep costs down) are sleeved and there is no evidence of any last minute fudges to make the thing work – it's a clean machine! The DIN and jack sockets are board-mounted which should improve reliability. The top of the case is easily removed (no flying cables to break and curse) should on-the-road repair prove necessary. The interface is powered from the BBC micro so it's on when the BBC is on.

The blue button just north of the UMI-2B logo on the top surface of the interface is used to start recording of patterns in real-time and to start and stop playback of individual patterns and songs. This represents a simplification from the original UMI-1B's three buttons

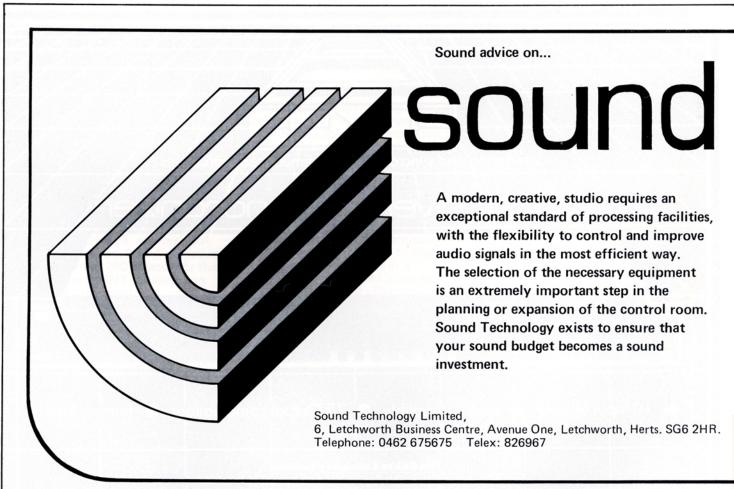
which experience has presumably proved unnecessary.

The interface features two 6850 ACIAs and therefore permits two completely separate MIDI circuits (for want of a better word) to be dealt with. So, if you have two MIDI synthesizers that can only receive on MIDI Channel 1, the UMI-2B can handle them both. Each of the two circuits has two MIDI Outs in parallel so if one or two of your synthesizers don't have a MIDI Thru connection, all is not lost; also it is likely that most MIDI speed/response problems can be avoided by using the total of four MIDI Outs available rather than daisy-chaining your synthesizers via MIDI In and Thru connections.

There is only one MIDI In which I felt was a pity since most keyboard players could sensibly handle up to two keyboards at once on real-time recording, for example. However, this is a very small quibble and I have to compliment Umusic on the flexibility afforded by the MIDI

connections provided.

The last of the six DIN sockets is a Sync-24 output for driving any drum machine that conforms to the Roland standard. A trio of the 1/4" jack sockets are devoted to synchronisation of drum machines via the typical Clock In, Clock Out and Start/Stop connections. Clock In



expects a minimum of 2 volts and Clock Out, Start/Stop, and Sync-24 all generate normal 5 volt signals. It is possible to use the system's internal clock or to synchronise to an external clock. In the latter case it is possible to select 24, 48 or 96 pulses per quarter note as the clock rate to be recognised. So, the UMI-2B can synchronise with many, if not most, drum machines and sequencers and in nearly all cases the system dictates the tempo which is convenient.

I was a little surprised to notice that the UMI-2B does not actually send the MIDI real-time codes required to drive a drum machine that could only sync via MIDI. Typically, such machines can actually be played direct (or 'live') via MIDI in the same way an expander unit can, so this should not worry most users.

Two more jack sockets are used to allow synchronisation with a tape recorder. The Sync Out sends a 3kHz signal gated on and off to the tape. Since 3kHz is an audible signal, Umusic suggest that it is possible to perform precise tape edits by reference to this 'sync code'. A tape synchronisation facility is not to be overlooked in a MIDI system since it can effectively multiply all but one track (the one with the sync code) on your tape recorder by the number of synthesizers available. I gave the

UMI-2B a good workout in this area and it worked first time and every time.

The last two jack sockets are designated Clik Out and Trig Out. Whenever the UMI-2B is playing or recording, or you need a count-in, it is possible to have the beats, or subbeats, emphasised by an audible click from the BBC micro's loudspeaker. Trig Out is simply a 5 volt pulse synchronised with Clik Out which could be used, for example, to drive a non-MIDI sequencer. The click can be made to sound on every crotchet, quaver, semi-quaver or their dotted equivalents.

THE UMI-2B SOFTWARE

Well, you've been very patient to have read this far. The hardware is flexible and well thought out but it's the software that's the brains behind the whole operation. The software quite literally makes or breaks the whole package and I'm very pleased to report that Umusic and the software man himself, Lynton Naiff, are very much to be congratulated on this product!

The EPROM (mine was Version 4.17A) is packed with useful features. Quite literally packed, in fact, since only 52 bytes of the over 16000 available remain unused!

The main menu is shown in photograph 1 and, as you can see, colour is used very effectively to highlight different sections of the screen and to group related choices together. Displayed on the left of the screen (above the version message) are the main menu options used during recording and playback. Selection is by pressing one of the BBC's 10 function keys (f0 through f9) and the correspondence is quickly learnt. In normal use, it is not even necessary to keep returning to the main menu page and moving from option to option directly becomes quite automatic.

The first point to make is that because the software is in a EPROM inside the BBC micro, it doesn't have to be loaded from tape (very slow ...) or disk (fast - but you have to find the disk and the software would take up 16K bytes of your valuable RAM). In fact, it isn't loaded at all the correct ROM socket is switched on and control of the system handed over. All you have to do is switch on the BBC micro and monitor and type *UMI followed by the RETURN key. Very quick, very efficient and dead easy!

Default values for the length of the sequence pattern, the click frequency, the count-in length and so on, are easily altered from the >>

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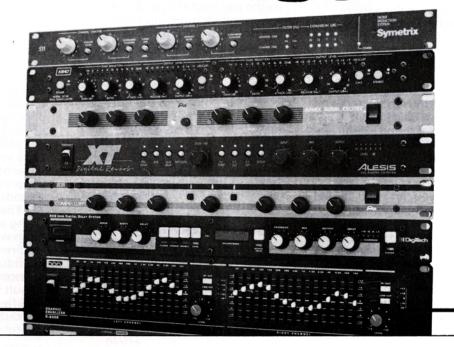
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■ main menu with the cursor keys being used in a consistent manner throughout the system to select and alter parameters. The defaults section can be seen in the lower right quadrant of the screen in photo 1. Note that it is possible to make the system ignore keyboard after-touch when required, since masses of memory-eating data is transmitted by a Yamaha DX7, for example, if you happen to be a little heavy-handed when playing but are not intending the DX7 to actually respond to after-touch.

PATTERN RECORDING AND EDITING

Real-time recording (photograph 2) follows a click count-in (once the button on the interface has been pressed) of up to nine beats or can auto-start when you start playing the synthesizer. Once the tempo is firmly established in your head the auto-start option comes into its own. It is possible to have up to four patterns playing simultaneously during recording which lets you get into the *feel* of the music as you build up the piece.

In a future release of the software you will be able to supplement the count-in with the playing of the pattern leading up to the start of the one you are about to record. As soon as the pattern is recorded it loops until the button is pressed again and can be sent out to any specified MIDI channel to try out on the different synths attached. The pattern can also be sent out to all synthesizers during recording which is useful where two or more synthesizers contribute to one sound as otherwise, the musician would have to imagine the overall effect or would have to keep swapping MIDI cables about between recording and playback.

If you overrun the pattern length, which could leave notes hanging on, there is an edit option to tidy the pattern end up for you. If you are unhappy with the result of your real-time virtuosity it only takes one key press to prepare to re-record the same pattern with the same simultaneous patterns playing; again the system shows its efficiency and ease of use. Don't forget that it is always possible to reduce the tempo for the difficult bits and bring the piece back up to speed later. Furthermore, you can build up the pattern by overdubbing. Each overdub can consist of more notes being played, and/or the introduction of extra pitch bend or other controller information and even patch changes! Only when you are happy with the overdub is it merged permanently into the pattern. As with many real-time input facilities there is the ability to

auto-correct (round off) timing errors to a variable precision – this is an edit menu option (see photograph 4).

Step-time entry is also catered for (photograph 3) and again the option is very easy to use. Your main synthesizer's keyboard is used to toggle notes on or off on the five column (one per octave) display in the upper left of the screen and you then assign a key velocity value, if required, and the number of steps (or a gate length of 10%, 30% or 75% if the notes are to be less than one step long) to the note or chords selected. This use of a musical keyboard, rather than the micro's QWERTY keyboard, for note selection is definitely to be recommended

Once one of the 127 available patterns has been filled via real-time or step-time input, it is possible to edit it. The edit options are shown in photograph 4. Option 0 (erase notes) uses a 5 octave grid in a similar manner to step-time input and steps you through the pattern (from chord to chord not step to step) playing the notes which you toggle off to erase them – see photograph 5. The combination of step-time input, real-time overdubbing and erase deals quite satisfactorily with most editing requirements but is occasionally a little tedious eg. the only way to adjust key velocity with any accuracy is by re-entry of the whole pattern in step-time. Alternatively, since reentry even quite a few times via overdubs (assuming a velocitysensitive keyboard) is so easy, most people will not see this as a real problem.

As has been mentioned, the use of MIDI pitch bend and modulation controllers eats memory in prodigious gulps and the UMI-2B thoughtfully provides some succour via the pac mod and pac bend options which gradually reduce the number of bytes devoted to a controller effect. Each time the user applies a pac, the pattern can be replayed to judge whether the controller effect has been lost or damaged. In this way, the optimum use of memory is assured. If a pattern has been successfully recorded in terms of the notes played but a pitch or modulation effect was messed up, it is possible to erase just the effect (and to rerecord it via an overdub of course). If any of the auto-correction, pac or erase controller facilities have been used in error then the retrieve option will undo the damage.

CHAINING

In a nutshell – phenomenal! One of the principal reasons that the UMI-2B manages with a fairly small amount of RAM is its chaining ability. Patterns, containing up to 127 note polyphony (if your synthesizers can handle it), can be copied, transposed, played serially and in parallel tracks and looped to order. All of the 16 tracks can be assigned any of the 16 MIDI channels and the load of sending out 16 tracks-worth of sequences over MIDI is split between the two ACIA's in the interface avoiding MIDI speed problems – the track assignment page is shown in photograph 6.

The first track is used as a navigation routemap for the UMI-2B (see photograph 7). This is an important feature if tracks are to be mainly silence (just a bit of brass on the end of the chorus, for example) so you don't waste memory storing the silence – the navigation track will kick the relevant pattern into action at the right moment.

You can define repeat sections with first and second time bars, or repeat to fade, as well as both coda and sign sections. When putting the chain together both insertion and deletion of patterns is possible making song building extremely easy. Chains can be copied to other chains with both transposition and pattern offsets applied. The pattern offset cleverly allows related patterns to be played in parallel from different tracks (and therefore MIDI channels) so that if you write the bass lines corresponding to the keyboard patterns 1, 2 and 3 on patterns 11, 12 and 13 then the bass track is just a copy of the keyboard track with offset 10 - cunning, eh?!

NOTIFICATION

There is a Notes page for you to keep track of what synthesizer is supposed to be playing what sound, on what track, and this information will appear at various points in the package to help you confirm that you're doing what you think you're doing! For example, if you specify a pattern to be played back when you are doing a real-time recording, then the name of the synthesizer that the played pattern will be sent to, will appear in the green box (see photograph 2). A nice feature for use on the road allows auto-loading of a song specified on the Notes page so if each song contains the name of the next one then a single key press will load the next song in seconds from disk.

The current software allows the saving and loading of complete songs which is an obvious requirement. Unfortunately, individual patterns and the UMI-2B's performance parameters (all those default values which you may have modified, like the pattern length and click frequency) cannot be saved separately on the version I had for

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UMI users Vince Clarke and producer Eric Radcliffe.

UMI USERS

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Vince: "If you are looking for something to sequence, say, a bank of eight Casio CZ101s, then UMI-2B is the answer. I tend to use my UMI for overdubbing."

Eric: "I use it for entire songs having all 16 MIDI channels running. The UMI-2B gives me a home system whereby I can hear a complete song on a few inexpensive keyboards so that I can check that the music is right before I come into the studio. It saves me money because we now spend more time in pre-production and just turn up in the main studio with our floppy disk, plug into another UMI-2B, and we're off and running. It can save weeks of studio time at X pounds an hour, and I shouldn't really say that because we own two recording studios!"

For a player's view of the UMI-2B, read what songwriter/performer Paul Bliss has to say in this issue.

◄ review. Pattern saving can be particularly important when you need memory temporarily for an edit (which will then be freed) in order to hold the whole song in order to play it. Also you may want to transfer patterns from one song to another. These features are to be made available soon in a future release of the software.

The current software also boasts a DX7 voice dump facility which I understand is to be generalised to other synthesizers in the future. For the moment, a single voice or a full bank of 32 voices can be loaded or dumped and the London Rock Shop can supply a set of 10 floppy disks containing some hundreds of new voices in related sets (brass, pianos, guitars, etc) for the DX7.

CONCLUSION

To be honest, my first reaction to the UMI-2B was that it seemed very expensive – particularly if you have to buy a BBC micro! Somewhat grudgingly at first during the review period, I had to admit to myself that value for money, and not just the actual price, is what matters.

For your money, you will get a highly professional product which does exactly what it sets out to do in a very efficient and extremely userfriendly manner. It is worth considering the point that the whole set-up, computer and all, costs less than many of the synthesizers that it will most probably be used to control! The system is continually being enhanced through software updates and has the professional and enthusiastic support of the London Rock Shop. Highly SIOIS recommended.

The UMI-2B system costs £495 inc VAT without the Aries memory expansion board, and £575 inc VAT with it. Distributed exclusively in the UK by: The London Rock Shop, 26 Chalk Farm Road, London NW1. Tel. 01-267 5381.

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In between world tours with Ultravox and appearances on Live Aid, multi-instrumentalist Midge Ure has somehow found time to write and record an excellent solo album entitled *The Gift*. We spoke to him at home in his studio where he explained how the album was put together.

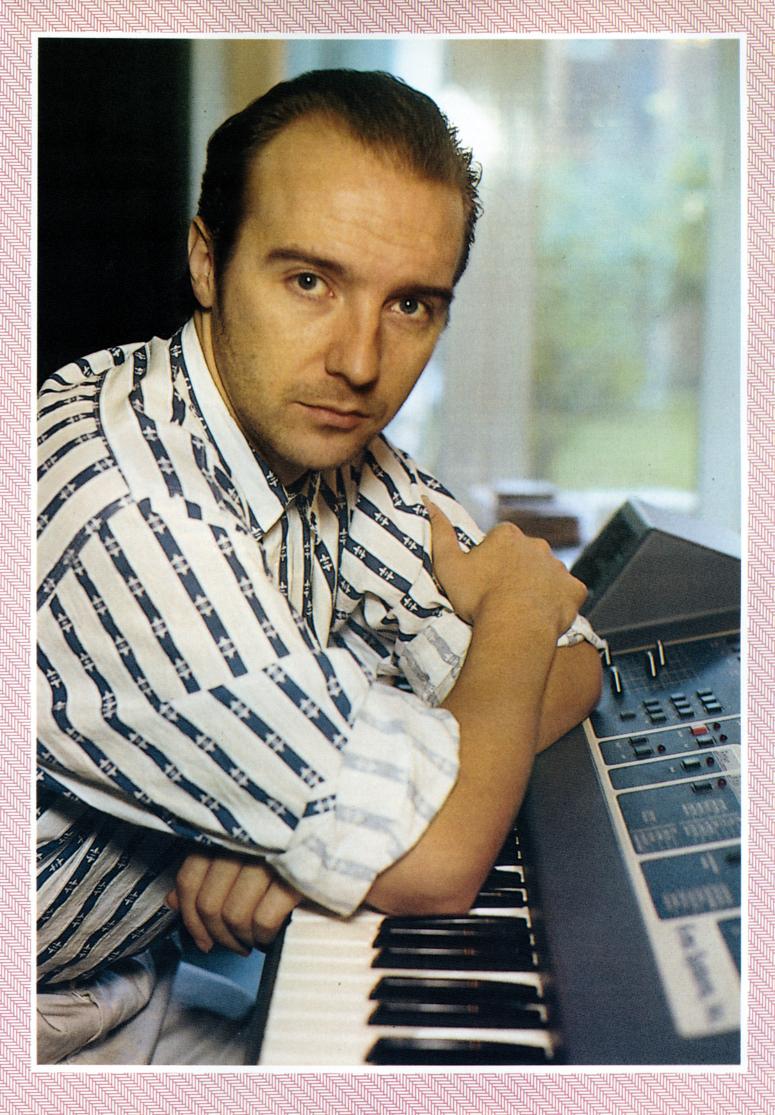
Text: Ian Gilby. Photography: Ralph Denyer.

MINORIA SIII

album three years ago when I released my first solo single (a version of the Walker Brothers' hit No Regrets), but I never found the time. It wasn't until November '84 that I began planning this album and then the Band Aid Christmas single took priority, so I shelved the idea. What had initially started out as a two to three month project eventually turned into a six month one because of my involvement with Band Aid – and that is much longer than I like to take over recording any album."

The songwriting itself was staggered over a similar period since Midge had no reserve of reject Ultravox songs to fall back on. "What most solo albums are usually comprised of," he explained "are rejected songs from previous band albums. Ultravox only write the right amount of material for each album we're working on and we tend to scrap things as we go along; we don't ever finish a track and then say it's not good enough to make the album." And that for Midge, meant writing a whole new collection of songs for the project.

With The Gift, Midge Ure manages to produce an altogether more convincing music than we've come to expect from Ultravox of late. Listening to the album, it's easy to recognise specific elements of the Ultravox group 'sound', in particular the famed tiers of synthesized string parts, but as Midge says, "it's very difficult to separate the two. What I hear on my solo album as being Ultravox-ish is me! I can't change that fact. That's how I sound."



■ Judged simply as a statement of what he is personally capable of creating outside of the inevitable musical confines of a successful band structure, *The Gift* is certainly a fine achievement. Stylistically, the album covers a wide range of material from out-and-out instrumental music—the oriental flavoured 'Edo' (surely destined to accompany innumerable future TV documentaries on the Far East); to an excellent cover version of a rock classic—Jethro Tull's 'Living In The Past'; then to the powerful, yet sad, social commentary of 'Waste Lands'.

Mixed with these are several instantly memorable tracks ('She Cries' is one) that would undoubtedly make potential hit singles (were they released), so I asked Midge who was responsible for the choice of the less than obvious first single release 'If I Was'.

"I chose it" came the reply. "I just think it's a good pop song. I don't discriminate between pop or rock music, I just believe that a good song should always be well-crafted and, to my mind, that's true of 'If I Was'. There's some better stuff on the album sure, but as an initial single it's quite a good track. People don't expect to hear me singing an out-and-out pop song I'm sure and I felt it was a suitable thing to immediately establish the solo album as different from Ultravox. It was either that or releasing one of the instrumental tracks..."
With the single nestling in the No.4 slot of the UK charts at the time of writing, it seems the British public firmly agree with his decision.

LIVING IN THE PAST

Midge's appreciation of a well-crafted song is the main reason for including on the album a cover version of 'Living In The Past' – a Jethro Tull tune that first caught his attention at the ripe old age of fifteen. "It was around the time when I was forming my first bands back in Scotland, and that song really stood out for me. Probably because it was one of the first ever songs by a bonafide rock band to successfully cross over to the singles market and become a hit. And it has stuck in my mind ever since "

Midge's version of the song departs radically from the original recording except for his vocal rendition which emulates the dry, up-front production style so characteristic of Tull's original. The result, for me, is one of the best Ure vocal performances yet captured on record and, in an age when even the best vocalists are rarely heard without their voice first being processed through expensive ADT and reverb devices, to expose himself like that was a brave move indeed. It only goes to show how surprisingly good a vocalist he actually is.

"I went for a very intimate vocal sound on that track in particular" he said. "To achieve it, I had to sing quietly, close-up to the studio microphone which I don't normally do. I usually stand well back and belt it out, especially when I'm going for the high notes like on 'Vienna'."

The overall arrangement of the song is quite different to Jethro Tull's. The bass part, for example, is newly composed and played by Level 42's Mark King who really has helped add sparkle to the track. How, I asked, did Mark's involvement in the project come about?

"I happened to bump into him last year when Ultravox and Level 42 were appearing on the same TV show and whilst having a few drinks at the bar, I asked him whether he'd kindly play on my solo album if I ever got around to doing something in the future. He accepted, I mainly think because he really enjoys playing different types of music, though people only know him for his slapping funk bass style. He actually played the bass on 'If I Was', which is probably the simplest bass line in the world – and you wouldn't expect Mark King to play anything like that – but it's very effective on the record."

COLLABORATORS

A solo record is usually a chance for established recording artists to show their expertise (or lack of it) on instruments with which they are not generally associated. Fortunately, Midge was wise enough to recognise his own musical limitations and, instead, enlisted the help of those more able to translate his ideas of how a particular bass or drum part should sound, into a musical reality. A decision that has produced an altogether more enjoyable and certainly less indulgent collection of music.

So, apart from Mark King and himself, which other musicians contributed to the recording?

"They were mainly bass players and drummers. People like Mark Brzezicki of Big Country, who'd impressed me on a recent Steve Harley session I did; Nigel Ross-Scott, who plays bass with Reflex, and Lindsay Elliott, who used to drum for Cockney Rebel and who I've known for some time."

"I handled the keyboards, guitars and vocals myself but I did make a conscious effort to get away from the sequenced bass lines that Ultravox are so well known for. I thought the best way of doing that was through the influence of other musicians. A solo album, for me, should always be a solo effort and that's certainly true of *The Gift* because every idea on it originated in some way from me. But I see no point, for example, in bringing in a musician of Mark King's calibre and forcing him to stick rigidly to the notes you've already composed! That would be a dreadful waste of his talent."

"MIDI I find baffling...I really do."

"With the drummers, for example, I already had guideline drums programmed into a Drumtraks purely to give the players an indication of where the build-ups and fills would occur in each song. But they were then totally free to expand on that guide, which they did, and the end result was always more interesting having the benefit of the human touch."

"Every song used a pre-recorded click-track to drive sequencers but I didn't want to use only machinery because you can tell it's just a machine. It would have been too easy to use programmed drums. Half the challenge of making the album was working with the other people. And that was the most exciting part as well."

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INSTRUMENTAL BREAKS

■ The Gift features three instrumental tracks: 'Edo', 'Chieftains' and 'Antibes'—which was recorded on the Caribbean island of Montserrat using a Casio CZ-101! Hardly what you'd expect from a musician whose public profile is so closely allied to the role of frontman/vocalist. What comes as even more of a shock to the system is Midge's revelation that his initial intention was to produce an album that contained five songs and five instrumentals!

Somewhere along the line, however, matters were diluted somewhat but he decided to retain three of the instrumentals, even though he was well aware that "more often than not, when you get a couple of instrumentals on an album, it means the guy's run out of ideas!". The reason for their inclusion? Simple: "I like instrumental music. I find it very easy to listen to and it allows you to use your imagination in a way that most pop music doesn't. It's refreshing."

Part of the power and appeal of instrumental music undoubtedly lies in its ability to conjure up images in the mind. Yet it functions superbly too as a reinforcement to the visual image. This is never more prevalent than in the hypnotic television advertising and jingle markets where a good music track is recognised as being a vital element of a successful commercial.

Prime examples of this approach have been the stylish Levi jean commercials that exploded across our television and cinema screens a few years back. Anyone remember the first 'Rivets' advert featuring an Ultravox-style synthesized soundtrack and filmed explosions in a sun-drenched quarry? Well, the man responsible for the music was Midge Ure, though that first foray into the advertising business wasn't a particularly enjoyable one as he explained.

"I don't know if I'd ever do it again.
Working with advertising agencies is the pits...
just awful! You're usually dealing with half a
dozen people who all agree with each other,
none of whom have a clue what they're talking
about, musically. Nevertheless, I rattled off the
music quickly and was really pleased with it. I
think it went very well with the visuals because
I was given the finished visuals to write the
music to, which is a rare occurrence, so I'm
told. Normally, you're only given a written
outline of what the finished visuals may be like
and have to create something to complement
them."

THE CREATIVE INPUT

Creatively-speaking, Midge Ure never appears to be stuck for an idea, whether it be for a song or one of the many Ultravox promotional videos he has produced. But what, I asked him, shapes a song's development?

"Well, there are a million ways to come up with song ideas. They may be sparked off by a particular riff or chord sequence or simply a mood. But once I've got a basic idea or a feel for a song, then that starts to dictate how the lyrics are going to follow. I might, for example, have a seed of an idea in the back of my mind

but no clue how to go about recording it. So, I begin crafting the music in the studio, working layer by layer until eventually, the lyrics start to form where the verses and chorus will appear. It all becomes apparent as you're doing it usually—a bit like painting by numbers."

As the lucky owner of a fully-equipped studio in his back garden, I wondered whether the Ure songwriting method was helped at all by the nature of multitrack recording?

"Very much so. Using my own 24-track studio as a writing tool is great. I still use a Yamaha keyboard with a built-in drum machine, which I keep at home in my kitchen, purely for coming up with basic song ideas, but nothing ever takes shape until I actually start working in the studio."

"I begin by putting down a SMPTE timecode on one track, and recording a very basic snare and bass drum part on tape as a guide. Then with everything I put down after that, I'm always looking to get a high quality sound on tape as it will potentially be something I keep."

"I tend to do a *lot* of track bouncing—even though there are 24 tracks ava lable—to build up a sound. I may record four or five instruments all playing the same phrase but in various octaves, then do a stereo bounce of the lot, simply to get closer to what I hear in my head. I used to do that a lot on string machine parts with Ultravox but on *The Gift* I used mainly sampled string sounds from the Emulator 2. Working that way, you force yourself to make decisions half way through the recording process of how things will sound in the mix and bounce tracks when required. It's very good training having your own studio."

Good training it can be, but it can easily create a whole new set of problems for the musician if not careful. "Initially, when my studio was built, like everybody else, I thought I'd do everything in it myself. But you get too involved. Everybody I've talked to who has a home studio tried at the start to do it all themselves but ended up getting too involved in the technical side of things. Then their playing side goes all to pot! That's why I have an engineer come in and help me when I wish to do some real recording."

Concentrating on the musical aspects of the recording seems to have paid dividends for Midge and listening to the album (recorded in his Chiswick studio and mixed at Air Studios in Montserrat), there's nothing amiss in the audio quality department either.

BIRTH OF A TRACK

Taking, as an example, the oriental-sounding instrumental track 'Edo' from his album, Midge set about explaining just how it was pieced together in the studio.

"It started off as two romantic melodies -

the very 'breathy' sounding one and the one played on a koto in the middle section. At the end of the song the two melodies cross over perfectly and I was very pleased with that effect. But it didn't start to sound Japanese until I started to use a koto on it (laughs)! Although I love the koto sounds you get on a Yamaha DX7, for instance, I wanted to use a

real koto, so you'd hear the fingers scraping

across the strings. If you listen to 'Edo' on

headphones, the track really opens up when the koto comes in because of the ambient way it was miked up. Once it started to sound Japanese, I just followed through the imagery and used Japanese flutes and various instruments which I sampled from a collection of compact discs I had of Japanese tunes."

Sampled sounds are used tastefully and to great effect on many tracks from *The Gift*. So what did Midge think of the technique?

"I find sampling great fun but it's got a jokey image through people over-using the classic 'Orch 4' Fairlight preset which we've all heard a million times before. I like the idea of sampling odd items like pots and pans to form rhythm tracks. In fact, we recorded my metal garage door being banged and sampled that on the Emulator 2, then wrote a pattern into the drum machine and used that to trigger the Emulator. It produced this odd Burundi-like rhythm which I used as the basis of another instrumental on the album called 'Chieftain'. I also sampled the anvil sound on 'The Gift' using a Powertran MCS-1 as my Emulator 2 was away having its software updated."

Something else Midge found himself doing whilst recording the album, was sampling the guitar. "I'd record a guitar solo played through a Rockman and break it down into one-or two-note pieces, mainly string bending noises or really fast vibratos. Then I'd sample those bits I wanted and play them back at half speed from the Emulator keyboard, totally out of context. Then I'd start constructing the solo again but by playing it from the keyboard, in stereo, using those samples." If you're intrigued to hear this technique in action, take a listen to the guitar solo on the track called 'When The Wind Blows' from *The Gift*. It's quite an arresting sound.

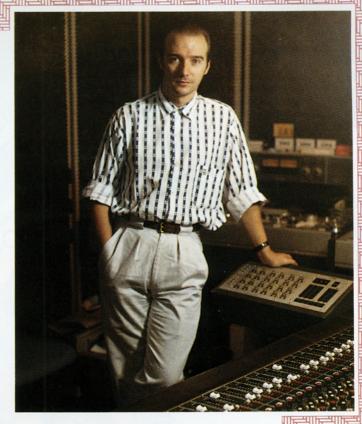
THE TECHNOLOGY TRAP

As a recording artist, one benefit of owning your own studio is undoubtedly the freedom it brings you to experiment with equipment. And one criticism levelled at people, like Midge Ure, who utilise the latest technological instruments on their albums, is that they often lack imagination when it comes to using such devices to anywhere near their full creative potential. The studio, Midge reckons, certainly helps him overcome that problem:

"It took me over a year to get into the PPG, for example. I really started to hate the thing and it was so complex to use, as ordinarily, you never have the time in someone else's studio to learn how to use it. But having one around my studio and having time to actually use one, everything just suddenly clicked into place and I began enjoying it and appreciating the sounds it made."

"The DX7, on the other hand, I still think is impossible to programme! I can't be bothered with it. It's capable of producing some great sounds I admit, but Casio have now come up with some synthesizer that's just as good I feel – and a lot easier to work. I'm a great advocate of user-friendly instruments you know!"

Continuing on the theme of instrumentation, Midge had this strong viewpoint to express: "Just because there's a wealth of keyboards, drum machines and samplers on



the market doesn't automatically mean your guitarist sitting in his bedsit has got to go out, sell his guitar and buy the stuff. He doesn't have to use it. It's there if he wants to use it."

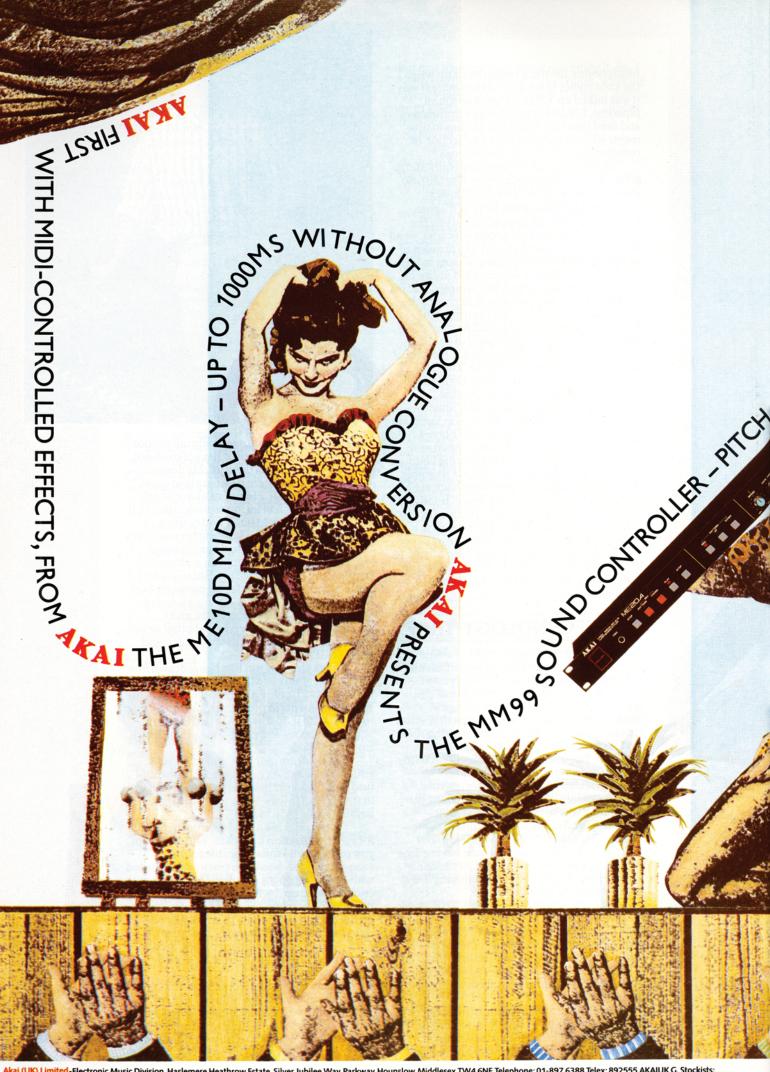
"It's like MIDI. He doesn't have to get sucked into it or feel he has to understand it if he doesn't want to. MIDI, I find baffling...I really do." (Well there's honesty for you!) "It's too in-depth for me. If it had been around when I bought my first synthesizer then I would have grown up with it. But to start to understand all the aspects and parameters of MIDI now is beyond me. My head is full of musical notes and arrangements, and I shouldn't have to be worrying whether or not there's a ten millisecond delay on such and such a MIDI channel."

Midge Ure may not like being drawn into the technical side of MIDI but, like everyone who relies so heavily on the application of hitech instruments in their music, he must come to terms with it. Just as he has had to learn about timecodes and click-tracks in order to run his studio.

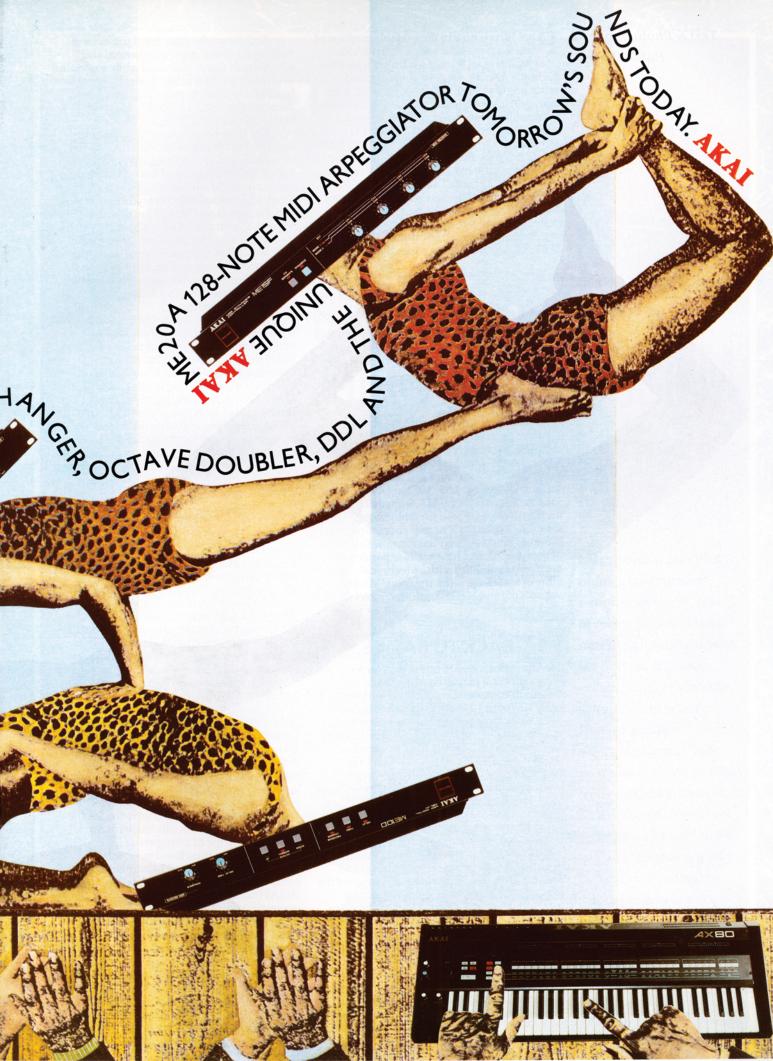
"Using drum machine and sequencer codes is an absolute nightmare at times but I find myself unable to avoid getting caught up in that side of things. Even so, it's still less baffling to me than MIDI!"

"Timecodes are a fundamental necessity for synchronisation purposes. Without them, you run in to all kinds of problems. For example, one of the album tracks we recorded without laying down a timecode first, so we couldn't sync up the Emulator's sequencer to play a sampled cello part that I wanted to put on the track. And I couldn't physically play the cello part using the Emulator 2 because I'm not a good enough keyboard player. So we ended up scrapping the whole track and starting again."

Whatever the problems encountered during the making of the album, *The Gift* conclusively proves that Midge Ure is a fine songwriter who is not afraid to use whatever tools he has available to realise his ideas. And that is something he can be proud of.



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Text & Photography by Ralph Denyer.

P aul Bliss is now in the enviable position of being a successful songwriter with his own professional quality studio set-up within his home. During a period in which most recording acts write their own material, he's managed to rack up some 30-plus name cover versions from his catalogue of around 85 songs. They include 'Murphy's Law' (Al Jarreau), 'Heart Attack' (Olivia Newton-John) co-written with Steve Kipner, 'Starfleet' (Brian May), 'Innocent Eyes' (Air Supply), 'Take Good Care' (Barbara Dickson), 'I Used To Love The Radio' (Bucks Fizz), and 'Dancing Shoes' a current Japanese Number One by Seiko Matsuda. Record producers John Farrar, Phil Ramone and Chris Neil are always among those willing to give a Paul Bliss song a listen.

Thoughts of a Marathon Songwriter

The main pieces of equipment in his recording system are a Soundcraft mixing console and 24-track recorder, a Yamaha DX7, three TX7 modules and RX11 drum machine, a Roland Juno 106, an Oberheim OB8 synthesizer and DMX drum machine, and a recently acquired Ensoniq Mirage sampling keyboard. The piece of equipment, however, that Paul says has become the "heart of the system", and has greatly expanded the creative possibilities and the technical capability of his set-up, is the Umusic UMI-2B sequencing and MIDI controller/interfacing package.

With the sophisticated instruments around today, it's so easy for the would-be songwriter to have his attention drawn away from the real reason for buying them to make music. Songwriting, as Paul McCartney will gladly tell you, can be a lucrative business and there are few finer examples than Paul Bliss of a musician who has managed to fuse together the creative power of computers, synthesizers and songwriting skill with such resounding commercial

success.

BACK TO BASICS

Paul never intended to be exclusively a songwriter and played bass guitar and keyboards in an assortment of bands during the early 1970s. In 1974 Paul was asked to join a band called Dog Soldier as a bass player and they recorded an album and toured in America. His first effort at songwriting was a track on the album called 'Giving As Good As You Get'. Dog Soldier weren't exactly a megagroup and so when they disbanded in 1975, Paul wasn't exactly inundated with offers and found himself at a bit of a loose end. He subsequently spent a while working at Soundcraft assembling mixing consoles.

In the mid-seventies Paul made the move to keyboards. This was really a means to an end in that he was becoming more aware of the importance of songwriting and wanted to write material for the Bliss Band which was a group he'd formed featuring himself as singer/songwriter/keyboards player. "That's all the move to keyboards was really, a way of finding different chords and inversions to give me ideas to write songs. When the Bliss Band started I thought: Hang on! Keyboards can't be that difficult. Writing songs on a bass guitar—as even Paul McCartney must find—is very difficult. I'd always played a bit of acoustic guitar but keyboards took my fancy."

Activity on the Bliss Band project was initially limited to writing, rehearsal and recording of demo-tapes and while some kind of recording deal was being sought, they all had to make a living. Just a year after taking them up, Paul found himself also playing keyboards for David Essex.

The Bliss Band never expected to do much in the UK. Heavily influenced by the musicality and songwriting style of Steely Dan's Walter Becker and Donald Fagen, they represented the antithesis of Punk and New Wave which dominated everything that was then happening on the UK music scene. Though a great deal of time and energy went into trying to secure a USA recording deal, after writing for three years and having the band together for over two, Paul had almost given up hope when fate took a hand and a deal was struck through a somewhat circumventive route.

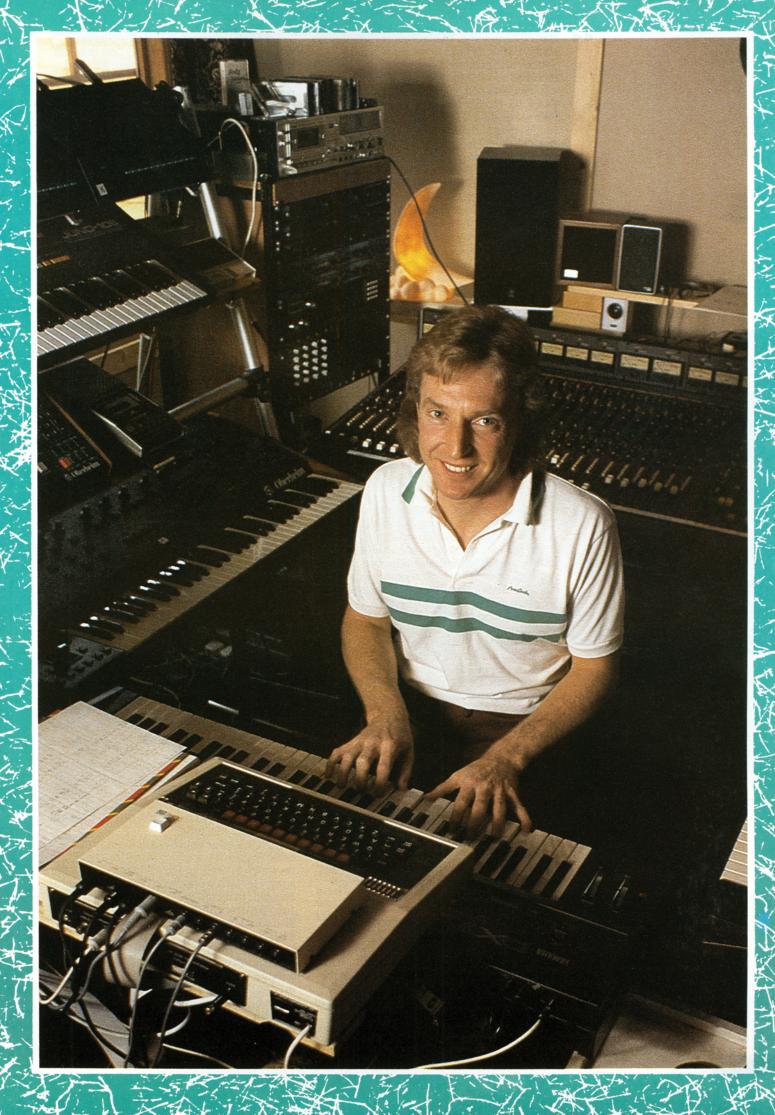
"It was a really strange connection because Jeff Baxter happened to be here on tour playing guitar with the Doobie Brothers and heard the tape of our band at a record company in Manchester. It had been sent there by a friend of a friend and I didn't even know. So it was a really big coincidence." Baxter got in touch and said he wanted to produce the band and, with the added momentum of having the guitarist's name attached to the project, a deal was struck with CBS Records in the USA and two albums were released there.

BREAKING COVER

By the end of 1979 the Bliss Band had called it a day. Paul was hiring out his services as a keyboards player with Essex and others, but a lack of inspiration meant he was no longer writing and considered the albums dead and gone. "It had it's shot and that was it. Then in 1980, Michael McDonald and Patrick Henderson produced a girl called Amy Holland who was unheard of at the time and they recorded the song 'How Will I Survive' from the second Bliss Band album and that was the first time I'd had a song of mine covered by another artist."

"I heard it and thought it sounded quite good. I played it to a few people in England but nobody was particularly excited by it. Nevertheless, it still made it as a Top Twenty single in America which made me think: Hang on! I didn't even try to write the song specifically for anyone. Shortly after that, Uriah Heep cut a song off the same album called 'That's The Way It Is' and Graham Bonnet recorded the same song. And all of a sudden there was all this interest in me as a songwriter."

Though the Bliss Band material was published by CBS's April Music, Paul's contract with them terminated when CBS (USA) Records failed to take up the option to renew the recording contract. Then session guitarist Phil 'Willie' Palmer – also in the Bliss Band – was playing on Sheena Easton's first album and therefore learned that record producer Chris Neil was looking for material for the project. Phil and Paul quickly dashed off a couple of songs together and one of them, called 'Take My Time', became the album's title song. Paul went to April Music with the song and reached a new agreement with them. "Then," he explained, "all sorts of things



Thoughts of a Marathon Songwriter

started happening. The Nolans recorded some songs, Barbara Dickson recorded a song which I also produced, and Roger Daltrey

recorded some songs."

Paul was still playing keyboards for David Essex, the Hollies and others while at the same time seriously considering the possibilities of songwriting and the avenues open to him. April Music then introduced him to American Steve Kipner who had just had a colossal commercial success in that he wrote 'Physical' for Olivia Newton-John, a woman who has brought a smile to the face of more than one or two songwriters' bank manager. 'Physical' had just been one of the longest Number One records in the USA, staying at the top of the charts for ten weeks. Paul needed little persuasion to spend some time co-writing with Kipner. "Later that year I went out to America to do some writing with Steve and that's when we wrote 'Heart Attack' which was a Number Two hit in America for Olivia Newton-John. It was also on her Greatest Hits album which sold really well. And that really along with the smaller hits that I'd had – got me accepted as a songwriter and people actually started saying to April Music: Have you got any Paul Bliss songs?"

AWORTHY INVESTMENT

Paul made a conscious decision to put together his own professional quality 24-track studio in direct response to the royalties he started to receive from 'Heart Attack' during 1982. He considered various financial options before coming to a logical decision.

"I decided to invest in myself and thought the best way of doing that was to invest in a studio. As a writer or writer/producer your chances of having a longer life in the industry are much greater than as an artist. So, looking at the long term I thought: OK! How can I best develop my talents?" Paul decided to "invest in technology". "I'm not saying that the equipment makes you write songs. But what it can do is give you the inspiration to do something that if you're just sitting there with an acoustic guitar, you may not be able to bring out. I know I can't just sit there at a piano or holding an acoustic guitar and write songs, I need to hear something to inspire me."

Paul originally worked with a Teac 4-track recorder for a year or so before graduating to a Fostex 8-track machine. "Then it seemed silly for me to then go to 16-track when the actual difference between that and the 24-track package I eventually bought was minimal." As the console was fundamentally the same, the cost differential was between £4,000 and £5,000. Paul settled for the Soundcraft 'Producer Package', based on the Soundcraft Series 1600 mixing console and the Series 760 24-track tape recorder.

Paul used the Fostex 8-track recorder with a Soundcraft Series One console, an Oberheim DMX drum machine, DSX sequencer and an OBXa synthesizer which was later superceded by an OB-8 synth. "It all worked very well for about three years but the technology moved so quickly that in the space of two years it became a bit of a dinosaur." Paul used his Fostex 8-track/Oberheim system for virtually all of the music he wrote and recorded for the children's animated TV series 'Starfleet'.

"All the incidental music for 'Starfleet' was done on my 8-track system. I cut the front and end titles at Riverside Studios. All I had was the OBXa synth, the DMX drum machine, and I think I used a vocoder as well. I'm still very proud of what I did and I think it sounds pretty good."

UMI AND ABBC

During 1984 Paul had bought a BBC-B computer and colour monitor. Just when he, myself and many others had more or less given up hope of seeing any software/hardware with any serious musical applications for the BBC-B, like a beacon in a storm, along came the UMI-2B package (see review in this issue).

As Paul already owned the computer and monitor he had only to invest in the UMI-2B package itself, optional disk drive and disk file system (a lot more reliable, faster and easier to use than cassette storage) and the Aries memory extension board. He is pleased he opted for the larger memory version of the UMI as he's had occasion to use close to half of the operating memory capacity, which would otherwise have taken him to the limit of the more basic package. Also, the Aries board version has a spare socket allowing new ROM upgrades to be added.

It is no exaggeration to say that Paul Bliss is ecstatic about the UMI package, the cost-effectiveness and user friendliness of which is unchallengeable. He'd like to do another TV or movie soundtrack, feeling that he is now far better equipped to work on such a project. Paul finds that one of the beauties of the UMI is that he can use it to expand his system to a very useful 38-track recording set-up!

THE RECORDING METHOD

Paul explained the basics of how he uses the equipment to aid his songwriting.

"The way I usually work is to first set up some kind of rhythm – whether it is the rhythm that I'll eventually use or not – and then start playing around with chords, riffs or whatever and seeing what springs to mind. I record everything onto UMI – the drum parts and the rhythm keyboard parts, and gradually arrange the song before I commit anything to tape. That is usually about four or five different parts: bass line, drum machine, keyboards or whatever. Once I'm reasonably satisfied with the shape of the song, I put that down on to tape, using the UMI sync-tone first, then I do a mix of all those parts in stereo on two tracks of the 24-track machine."

At this stage Paul has a guide-mix of a basic rhythm track which provides a structure on which to work and develop the idea for the song. He starts working on tape at this point as he needs to record the vocals to develop the song structure further. At about this time he also adds any guitar parts or any other non-MIDI instruments. A major reason for this method of working to the guide-mix on tape is that it is not possible to drop in at any point in a song if the sync-pulse recorded on tape is driving the UMI. You have to go to the beginning of the sequence. But with the sequence for the five or so UMI rhythm tracks also saved to disk from the UMI, they can be adjusted and altered at a later point and

subsequently re-recorded to the UMI sync-

track already on tape.

So having reached the point at which he's recorded the guide rhythm track, vocals, and guitars etc, Paul goes back and listens to the rhythm track. "If I like it-fine! I just reset the mixer's input channels and whatever and then when I come to mix, cut all the synthesizers and drum machines live to the quarter-inch master. So then I can re-EQ, re-balance, change the synthesizer voices, even change the parts if I want to. You can change the complete song once you've got the overdubs done and it expands the 24-track system to a 40-track system." In fact, since Paul acquired the UMI, none of his final mix drum machine or synthesizer parts are recorded on the 24track tape, hence avoiding a tape generation quality loss and reducing track separation problems by recording them direct to quarterinch master tape.

Working the way he does as a songwriter, Paul finds the system excels in that at virtually every stage of the development of a song, all the synthesizer and drum machine parts can be updated easily. "If you find that you don't like a certain snare sound or whatever, you can change it on the UMI without having to worry about levels and all the associated problems of

recording to tape."



"As a writer/producer your chances of having a longer life in the industry are much greater than as an artist."

"I tend to write songs that are fairly well structured with intro, chorus, verse etc, purely because that is a commercial format that works reasonably well. So pretty much, I can get the whole arrangement of a song on the UMI. You could quite easily cut a demo direct to master if you could sing a complete vocal live while using the UMI system. If you could just give the vocal performance there wouldn't be a problem. With me there would be because I'm not the world's greatest singer. But for someone who can sing and give a good performance in one take, it would work beautifully and the sound quality would be superb because your vocal and UMIsequenced instruments are just going direct to the master tape.'

Paul uses virtually all of the UMI facilities. "The only one I don't use is the Fine Adjustment which lets you modify the speed at which a sequence plays back. If a synth part, for instance, has a delayed attack so that consequently it sounds as if it is behind the beat, you can pull it up and bring it forward in time to sound exactly on the beat. But that's something I haven't used myself, as I don't find

that a particular problem.'

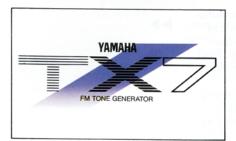
I mentioned to Paul that when I experimented with a UMI system I found that in real-time, the auto correction key - which corrects the player's errors in timing to the nearest correct measure - was one that I used quite a lot. "I use that," he said with a laugh, "all the time. That's another strong feature. With the Oberheim sequencer I used to have, I could either play in real-time or real-time autocorrected and once you've decided on one of those options, you can't change back to the other. With the UMI system, if you play in realtime, you can leave it like that or auto-correct. Then if you do decide it sounds too mechanical, you can retrieve what you played originally. You also have the option to use step-time sequencing which is really handy as well."

Paul hasn't found any limitation with the length of the section that can be sequenced at any one time. This is set by the user and can be up to 64 measures long though Paul can't recall using more than 32 measures and says he has not had any problems due to a song sounding fragmented. "I tend to write songs in sections anyway. For example, a verse will be 16 bars long and I'll probably sequence that in two parts, purely because the second part may change through the song but the first part will probably remain the same."

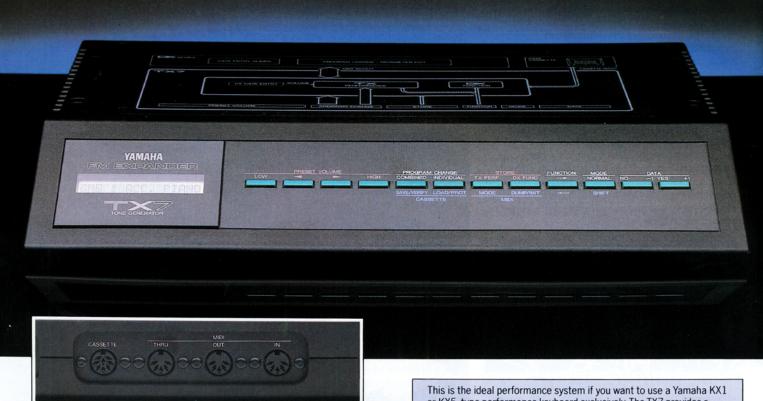


Though many UMI owners take advantage of the option of using a drum machinecommonly a LinnDrum-to drive the system, Paul prefers to use the UMI's own internal clock, as he explained: "I find that the sync-totape feature on UMI is very good and what I do is record all the drum parts via MIDI, not actually on the drum machine itself. Since the Yamaha RX11 I use has MIDI In and MIDI Out, I either record the drum part directly from the drum machine or via a DX7 - which gives you a velocity control - and record them as sequences on the UMI, not sequencing the drum machine itself. Therefore, the whole song comes up in sequences on the UMI, whereas most people tend to use the sync-tone from the UMI to drive their drum machine or even use the drum machine to drive the UMI, which is what I used to do with my Oberheim DMX.

"I don't think there are too many people using the system like that because there are certain problems which I've managed to overcome. But it really does give you the sequencing power of something like a Synclavier or a Fairlight. And to have the whole song on a floppy disk and not to have some of it stored on cassette for a drum pattern or whatever, is just superb.' SOS



SECOND LEVEL COMPOSITE PR



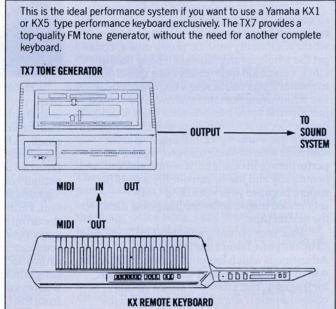
The amazing musical fidelity of Yamaha's DX range of FM Digital synthesizers needs no introduction—there can hardly be a recording studio or professional keyboard player in the country without a DX7. Now Yamaha have produced the **TX7** FM Digital MIDI Expander, designed specifically to enhance and enlarge the already awesome capabilities of the DX7.

If you are a DX7 owner, the **TX7** should undoubtedly be your next step. For less than half the price of a second DX7 it more than doubles your existing creative potential—in real musical terms. Via MIDI the **TX7** combines with your DX not only to extend its existing facilities but to introduce you to a whole new dimension of FM programming.

dimension of FM programming.

Composite Programming. The first level of FM is the kind of detailed sounds we are used to hearing from the DX7 and DX9. The second level opens the door to a whole new set of FM programming techniques which involve the complex interreaction of different harmonic patterns between DX and TX.

Original sounds are synthesized by breaking them down into their component parts. A note from an acoustic guitar, for instance, consists of various elements—the fundamental frequency, its harmonics, the percussive sound of the nail plucking the string, the string striking off the fingerboard, the damping of the string at the end of the note etc. The combination of DX7 and TX7 vastly increases the wealth of detail your sounds can capture. This can be described thus.



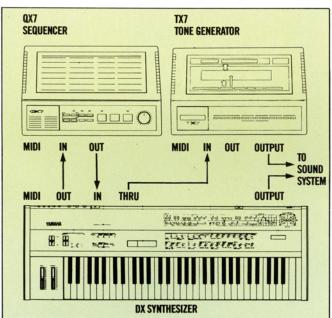
Think of each operator as a digit in a six-digit combination lock, then increase the number of digits to 12 to represent the addition of **TX7**. You have not merely doubled the number of combinations but have increased it factorially. Sort of like a DX7?

The TX7, like the DX7, has a 32-voice internal memory filled with an exciting new set of factory voices. It also has a tape storage facility making it possible to create inexpensively a large library of sounds on normal cassette tapes. In addition to storing all the standard voice parameters, you can also store all the performance control settings such as voice attenuation and

FM SYNTHESIS OGRAMMING



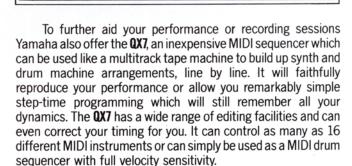




note limit (a sophisticated keyboard split).

Pitch bend, modulation wheel, after-pressure and breath control parameters can all be stored as an integral part of each preset. On top of this the TX7 has on-board a second set of 32 memories to allow such performance parameters to be stored with respect to the DX7's presets.

All this means avoiding the horrifying discovery in the middle of a solo that the pitch bend range is not what it should be! It's all there in memory for you. And for total performance control even the volume balance of the TX7 can be assigned to the data entry slider of your DX7.

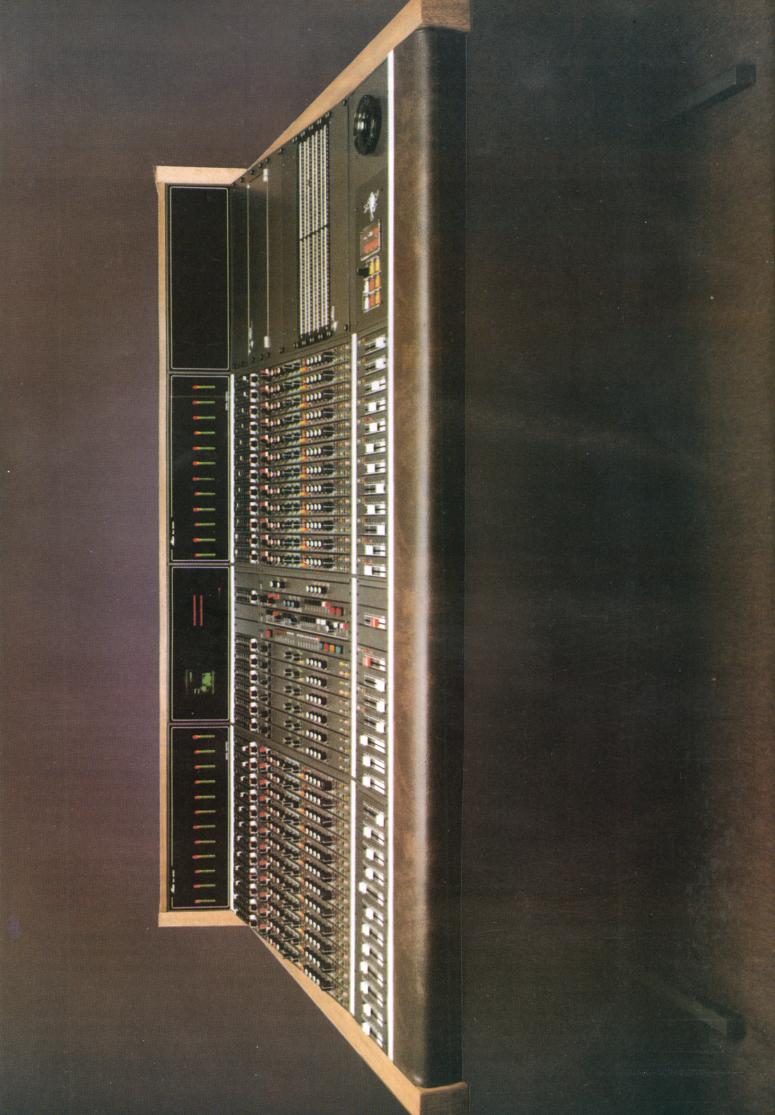


Without the assistance of such sequencers, many professional musicians would be incapable of producing the polished performances that we all take for granted. In fact you'll be surprised how easy it is to make your tracks sound tight and professional with a little help from the QX7.

The **TX7** and **QX7** have both been designed specifically to work as a unique system with the DX7 although they will also work with any other MIDI instruments. But, then again, there's nothing like the real thing.



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he image of the Swiss to the average Brit is one of leather trousers, snow on impossibly high mountains, cows with bells on, cuckoo clocks and ski holidays - they hardly rate as master producers and innovators in the hyped-up world of the music business. But Switzerland is a prosperous country bordering on Germany, France and Italy - at the heart of Europe; but maintaining an independence outside the Economic Community. It is in a unique position to serve industries in its neighbour countries including the music

GREENWOOD STUDIOS

Glenn Mueller (anglicised to Glenn Miller - and he's heard all the jokes) is fortunate enough to be based in a classic picture postcard village about 15 miles from Basle up in the mountains. Nunningen has a population of about 2000 with five 'Gasthaus' restaurants (excellent pubs to you and me) and very little else.

At 32, he has been in the music business for more years than he cares to remember, first as a musician playing bass and keyboards, then as a producer under short term contract to the major record companies in France and Germany. In 1983 he decided to take the big jump and instead of commuting with his production projects to the big commercial studios of Paris, London and Munich, he decided to modify the design of his yet unfinished house in Nunningen to accommodate a recording studio in the basement (not too difficult if the house is on the side of a mountain!).

His experience and expertise leaned heavily (!) towards electronic creation of sounds both by using synthesizers and by modifying real sounds of instruments - when I first heard his work, the phrase 'heavy plastic rock' came to mind, but I was doing him an injustice; many of his sounds are quite beautiful.

Glenn's first set-up consisted of a standard Soundcraft 32 channel console linked to an Otari 24-track tape machine, all crammed into a tiny control room with synthesizers and outboard gear occupying about half of the available space; the other half filled with overstuffed furniture - Glenn likes to be comfortable in the long session hours and believes in his friends and customers being comfortable too.

The studio area was large enough for the largest of drum kits provided everybody else kept close to the walls and sat still. Three walls were acoustically treated with studding and rockwool infill and surfaced with proprietory acoustic panels. The floor was carpeted but the largest single wall was left as it was – and hardly surprising, as it is a patio window double glazed with armoured glass and looking out over a Swiss valley with a small country church in the distance and a skyline of incredibly beautiful mountains.

Storyline: Two men, a girl and an electrical appliance meet for the very first time under strange circumstances.

Location: A small village in the Swiss Alps.

Props: Georgian reproduction furniture from Harrods and an Audi 200 Turbo.

Music: Courtesy of Glenn Miller.

Director/Cameraman/Scriptwriter: Ted Fletcher.

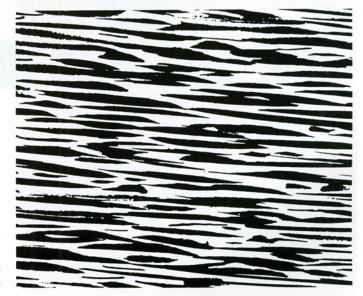
ALICE IN SWITZERLAN

Outside the window, the patio joins an immaculate lawn where tired musicians can lay in the sun on hot summer afternoons (yes, it does get hot in Switzerland). The studio is a little technical oasis in the Swiss countryside – with neighbours far enough away and well mannered enough not to complain about the constant repetition of a difficult riff in the small hours of the morning.

Glenn admits that it was always in his mind to use the lower areas of the house for experimental professional work but with a sudden but steady increase in production work, a

fully working studio became a necessity.

The original equipment was more than adequate for his first 'solo' assignments, but success with the record companies meant that the technical demands increased and the desk was not up to the performance that Glenn required for the production of commercial masters needing multiple desk passes and highly complex mixing techniques. (Absolutely no offence to Soundcraft whose desks are excellent for performance and value.) He had read about work going on in Windsor on digital control of analogue sound consoles by Alice and decided to visit our factory to talk to the engineers.



■ A demonstration of the Silk series console at Silk Sound in Berwick Street, London, convinced him of the performance potential of digital control, and within a week, work was starting on a new Silk destined for Greenwood Studios, Nunningen.

BLACKWOOD STUDIOS

In the centre of the city of Basle almost next door to the International Hotel is another studio owned by Helmut Edinger, again a musician whose career took him towards commercial production and jingle writing. Helmi and his studio are as different from Glenn and his, as chalk and cheese; Helmi works to deadlines, he makes good commercials and deals with companies and businessmen of the city and adjoining countries. Glenn makes rock and roll records, he works all hours of the day and night and doesn't care how long it takes as long as it's right. The two are great friends; and for their sectors of the market their approaches are both right!

Helmi's studio is large and opulent, designed to give the correct impression to the customer from the front door, along the panelled hallways to the studio itself.

A large anteroom to the studio control room is luxuriously fitted with Georgian reproduction furniture from Harrods; huge settees and armchairs around tasteful low tables scattered with up-to-date magazines from the surrounding European countries.

The control room is very large by commercial production standards, with spacious areas of purpose-built woodwork filled with grams, cartridge machines and acres of bolt-on digital delays, noise reduction systems, compressors and limiters and all the other necessities of life.

The centrepiece of the control room, however, is the new Alice Silk DCA console with the room lighting tastefully arranged to show off the massive array of channel control switching indicators, the light column meters and the central VDU display.

The studio area at Blackwood is divided into two: an acoustically treated area close to the observation window is used for commentary and dialogue recording with TV monitors for film and TV work, and a slightly larger area to the rear,

The first week was a chaos of sessions during the day; laying down tracks, with reduction sessions in the evenings, interspersed with training sessions and attention to the desk by Steve owing to the time scale being too short to complete debugging before delivery. The desk settled down as Glenn grew in confidence and in a very short time the twin automation computers were being fully used for the purpose for which they were designed.

The time scale on Helmi's mixer was much less stringent. Final testing and de-bugging was stretched over a period of three weeks giving ample time for many interested parties in the recording business to visit Windsor to be impressed by the unsung advanced computer technology – as a company Alice are not big on shouting about their achievements.

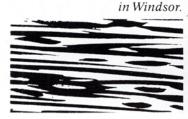
As a special treat(!), my co-directors allowed me to deliver the console myself – another truck across Europe. With a trailer behind a trusty Audi 200 Turbo, the trip from Windsor via Dover, Calais, Belgium, Luxembourg and up the Rhine valley to Basle took 18 hours non-stop except for petrol and driver changes.

After that long on the road, trying to stay awake, it was disappointing to say the least to find that the doorways were too narrow to get the console into the control room! The console was stripped down into about six bits and an enormous team of giant Swiss removal men gently manoeuvred the various assemblies (connected together by looms of spaghetti) into their final positions. A couple of hours with soldering iron and prayers and the power was turned on; the lights came up and the computers indicated a 'ready' state – we had got away with it

Even after the protracted test period at the factory, debugging was a formidable task. After the strip-down, every signal path had to be checked again in case of damage and in case the 18 hour battering had produced another batch of faults. In reality there were few; an odd dry joint came to light and a microphone transformer developed a short from one winding to the case. A broken wire under the main mother board took five hours to find (the effect was a digital malfunction – only sometimes!), fixing it took another couple of hours, and then many more hours to check that the repair had not caused more problems. But this sort of thing is par for the course on a console as complex as a Silk.



An anxious Glenn Mueller (right) being possessive about his console at the Alice factory





acoustically treated in a slightly more 'live' manner, is suitable for music recording. The studio is truly multi-purpose with a highly adaptable microphone patching system on wall boxes, and enough acoustic screens to make anything possible.

OVERLAND EXPRESS

The two Alice DCA desks were manufactured together, with Glenn's being delivered first. It was trucked across Europe by Glenn himself, eager to use the advantages of digital control on an urgent series of album tracks. The installation was supervised by Alice's Steve Dove – one of the Silk designers – and the first session was under way within three days of the console being manoeuvred into position in the tiny control room.

The console was pronounced fit to run and Helmi was let loose on it to experiment for a week. A short return flight to Switzerland after the burn-in period allowed me to fix a few odd digital funnies on both desks and that was that; Glenn and Helmi could get on with the serious task of earning an honest crust and making the Silk mixing consoles pay for themselves.

SWISS TECHNIQUE

Glenn Mueller of Greenwood Studios is a widely travelled engineer with experience of the best studios in the world, particularly those in London. His generalised method of recording with a conventional band (if there is such a thing) is, first, to listen to the sounds that the band create with their own instrumentation. This process can take days, with discussions and trial recordings in the quest for the 'magic' that will set the band apart from the average.

Basic recording is conventional with drums being laid down on several tracks with spares left for overdubs. Tracks are layered onto the 24-track with either track 1 or track 24 set aside for SMPTE timecode for the automation system. The adjacent tape track is used for one of the bass guitar tracks—this is done essentially to avoid any 'spill' from the SMPTE code affecting the remix—the crosstalk is in the tape machine not the mixer. As far as possible, the instruments and vocals are recorded 'flat' with no attempt at enhancement of any kind; trying to equalise and process a signal that has been treated in any way is a sure step towards disaster.

Glenn makes great use of MIDI control, not only for the operation of synthesizers, but also by recording cue information onto a spare track and using it as an additional automation aid; in some cases controlling sequencing synthesis to achieve first

generation quality within the remix.

Mixing is where the art really comes in. When all the musicians are safely tucked up in the local 'Gasthaus', the tracks are individually studied for the additions and effects that have to be made to them, and the final mixing planned. The Alice console is fitted with a system of 16 total switching combinations which can be pre-programmed and accessed at any time with the pressing of a single row of buttons. This allows major desk reconfiguration to be carried out even during mixing. The solid state memory fader automation allows the engineer to forget about tricky fades and cuts and the central VDU gives him information about desk and fader status all the time.

Equalisation is again kept to a minimum. As Glenn so rightly says, "the best sounds are the sounds that are made in the studio. Equalisation can be used to make a sound more convincing, but no equaliser will make a bad sound good".

Trial mixes are done to set up the correct MIDI drive information and synth programming, further mixes are then tried to correct fader automation timings and when all are done, mixes are made simultaneously onto a Sony digital F1 onto cassette as well as onto ½ inch tape—the sound is only ever right if it sounds right on all mediums and in a variety of environments.

The Alice DCA desk has a signal path that is completely analogue – nothing new in that, however, the whole path is balanced, giving extremely low noise and high overload margins. This is particularly useful to Glenn who makes great use of dynamics and sudden instants of silence in his work; noise gates are not the only answer!

The monitoring system at Greenwood is both conventional and powerful. The loudspeakers are Tannoy HPDs, a tried and tested driver, fitted into purpose-designed enclosures suspended above the glass that separates the control room from the studio. They are driven with 4000 watts of 'Acuphase' amplifiers via some impressive 60 amp cooker cable! The argument is that one can always turn them down; but the transient power is there when needed. My best description of the sound is 'like fine cut glass'. Further banks of heavyweight amplifiers drive the studio foldback systems and a small quality monitoring system in the next room.

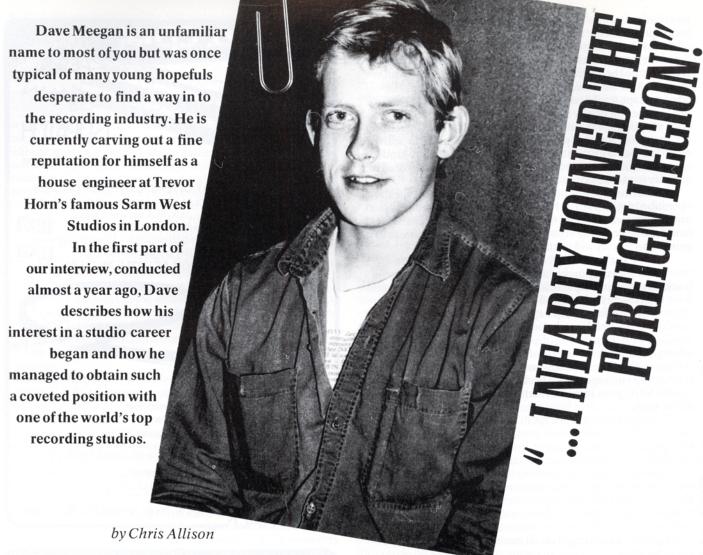
As a true professional, Glenn insists on supervising the cutting of his own masters, and whenever possible, comes to London to 'Tape One' studios where he can judge the suggestions of the cutting engineer on a known monitor system.

At Blackwood Studios in downtown Basle, Helmi Edinger has installed a similar monitoring arrangement. Although it is by no means necessary for the general run of speech recording, the power reserve is a killer for impressing the clients (as well as being essential for some of his more unusual music sessions).

Commercial spot recording is one of the most difficult fields of the recording business to be in by virtue of its sheer variety. One day Helmi could be doing simple voice-overs for the Co-op (one of his long running contracts), the next could be a village brass band or some motorcycle effect (or both). In very many ways his work is a direct parallel to that of Robbie Weston at Silk Sound in Berwick Street, London, the place that gave its name to the Alice Silk DCA concept, and where this avenue of digital control first started.







When I was fifteen at school in Ireland, I got together my own radio station with some equipment my uncle gave me and ran it off a car battery! That's when I first got really interested in sound. I carried on at school and passed my exams, the Irish equivalent to 'A' levels, then decided to go into computer programming and ended up on a college course. My heart was still in music though, and I flunked out at the end of the first year."

"I always knew I wanted to work in a professional studio but it was just so difficult to get into one. I recognised that fact and was prepared to do something else for the meanwhile. So, I got a job in a nightclub and a day job in a brake shoe factory; the significance of the brake shoe factory being that it was built next door to the place I really wanted to work a studio!"

As it happened, in the nightclub there was a four-track recording studio which was owned by Eammon Andrews nonetheless. So, when an engineering job came up there Dave quickly applied and got it.

"At that time, the studio dealt mainly with the recording of commercials but I soon enticed local bands to start making demos there. I then went to the local bank and secured a loan of £2000 which gave me the opportunity of setting up my own studio at home. At this stage I was earning more than I am now, but I still wasn't happy and kept pushing people for a job at either of the two main studios in Dublin: Windmill and Lombard."

"Eventually, Lombard gave me a go at engineering and, fortunately for me, I was asked back again and again. But I still wanted to get into Windmill Studios. I decided to go to France for a while with an ex-girlfriend (I mean, she was my girlfriend when I left, but by the time I got back, she was an ex-girlfriend!). I was so depressed, I nearly joined the Foreign Legion!"

"That little incident gave me the incentive I needed really to make the move to London because I was still eager to get into a top-class studio. When I arrived there, I bought a directory from Foyle's bookshop in Charing Cross Road called *The London Guide To Studios*. Then I traipsed around every single studio it listed, looking for a job."

As a result, Dave was given several job interviews but it was Sarm Studios in Basing Street who called him back for a second one which he undoubtedly reckons to be the toughest he's ever experienced.

"I was interviewed by the Board of Directors which included...(pause for a sharp intake of breath)...Trevor Horn, Gary Langan, Julian Mendelsohn and Jill Sinclair to name but a few! It lasted for what felt like three years at the time but was only really about half an hour long. Needless to say, I was extremely happy when they took me on as a tape operator."

Faced with a golden opportunity to discover what this group of dignitaries (all renowned for the high work standards they personally set themselves) look for in a prospective employee, I enquired about the topics they discussed.

"They wanted to know exactly what I thought a job at Sarm would entail; what I knew about microphones; what I knew about lining up the tape machines; who I had worked with previously and whether I played an instrument. They then asked me what I really wanted to do, what I expected from the Company and what I thought the Company expected from me."

The first six months of Dave's time at Sarm West was spent helping to build up the interior of the, then new, studio – working extremely hard. On one session alone he worked for 40 hours non-stop to show his dedication and to help complete the project. An act which partly resulted in him being taken extremely ill.

Dave amusingly likens his first months as a tape operator to being down the pit and never seeing the light of day, but carefully stressed that it's most definitely not a cushy or glamorous number. So what type of thing

did he get up to?

"Well, you could just operate tape machines and make coffee all day, but it really depends upon what you get yourself involved with."

"I tended to concern myself with helping set up the guitars and keyboards. In the studio, your approach to help must be a subtle one. You certainly don't dive in feet first. If you don't take the initiative, however, it is more than likely that no-one will ask you. Engineers and producers never like 'pushy' people. So, if you don't think you can help constructively then don't bother, as it will only slow down the session. If, somehow, you can help speed up the recording process because you're familiar, say, with a particular piece of equipment, then a producer, obviously, will be more than pleased, as they are often very time-conscious people."

Sarm Studios are acclaimed for being at the forefront of recording technology, so I was keen to uncover Dave's thoughts on the subject. Did he think the technology of the studio environment rather overwhelming for someone who may well have just left school and is starting out as a tape-op?

"As far as the technology is concerned, I don't think even an SSL computerised mixing desk is too complicated for someone of that age, as they are likely to be well into computers anyway." "My firm belief, though, is that nobody of that age should be allowed to work in a pro studio unless they've worked for at least a year beforehand. Simply because it sets them up with the right sort of attitude to deal with the kind of problems they're likely to face all the time in a studio."

At the end of the day though, Dave reckons you have simply got to be prepared to be walked all over for your first year and a half as a tape-op, "until you earn yourself some respect. If you're not prepared to accept that fact, then you may as well forget being a tape-op."

Having graduated from such a position himself, I was interested to learn what Dave deemed to be the important factors that make a good tape operator? Technical ability? Artistic ability? Getting on with everyone? What did he feel would impress a studio manager?

"Someone with the initiative to work things out without being told and who sees things to be done in the studio and does them. For instance, if there are dishes in the sink – wash them up!"

"You should definitely know about the equipment and the technical side before you actually enter the studio, as everyone will expect you to start working straight away."

An ability to get on with people is essential too. The studio is a confined area with no room for prima donnas – unless you're the artist that is. But in Dave Meegan's opinion, the most important quality required of any studio personnel is undoubtedly "the ability to remain calm when everyone else around you is going crazy!"

Since the above interview took place, Dave Meegan has worked alongside such notable record producers as Peter Collins and Trevor Horn on sessions by artists such as Yes, Nik Kershaw, Killing Joke, Stevie Wonder, and Frankie Goes To Hollywood. He has also earned himself enough respect as to be asked to play the Fairlight CMI on several sessions.

In Part Two, Dave brings us up to date on his situation and tells us whether the initial ideals he held on entering the studio business have been fully realised.

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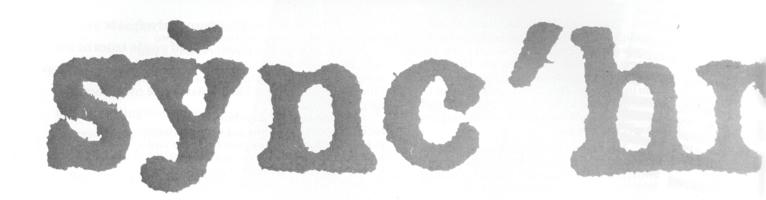
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Bokse US-8 Universal Syncronizer

iming and triggering functions on electronic instruments often appear to receive considerably more attention from would-be owners than the sound generation facilities they may have on offer. The ability to interface one device to another is undoubtedly important but surely, if you are talking about musical instruments, the sonic performance ranks top of the list? After all, you may be pleased that you can hook up a voice expansion unit to your MIDI sequencer, but if the sound it creates is terrible you are unlikely to want to use it!

But the changing techniques of recording have placed even greater emphasis on whether or not a device is capable of being sequenced or having its tempo and/or voice circuitry controlled by external means. Those that can't have been forced pretty much to one side and stamped 'obsolete' through no other reason than interface incompatibility – not because they were found particularly lacking sound-wise.

Which is where a device like Bokse's US-8 Universal Syncronizer enters the picture, since it allows successful interfacing between several generations of electronic music hardware. Think of it as an electronic patchbay routing clock rate/trigger information from one device to another instead of audio signals, and you won't be far wrong.

By connecting an instrument such as a drum machine (running at the manufacturer's preset clock rate of 48 pulses per quarter note, for example) to the relevant input socket on the US-8, the timing data it sends out is converted automatically by the Syncronizer to whatever format you select from the options available as outputs. All you need do is choose whatever output suits the device you wish to have controlled by the drum machine, connect it to the US-8 and you're in business. It really is as simple as that to operate.

The Syncronizer has been purpose designed so that it offers almost all variations (past and present) of triggering standards, meaning previously incompatible devices can be given a new lease of life instead of being confined to the junk heap.

The unit can be configured either as a converter of timing data, under direct control of whatever 'master clock' instrument is connected at the input, or, alternatively, act as the 'master clock' itself simultaneously driving a system of attached instruments at a given tempo. When doing

the latter, the Syncronizer is used in its Auto mode.

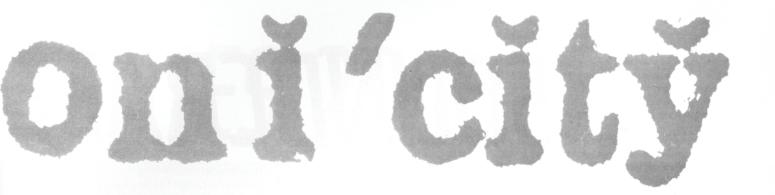
FEEL ON TAP

A unique 'Tap-Cue' facility becomes available in the Auto mode enabling devices connected to the US-8 to receive a four beat count-in before commencing to run. What happens is that the front panel 'Tap-Cue' button below the display is pressed momentarily four times using your finger—one tap on each quarter note beat. The unit averages out the time between each quarter beat then it starts to run exactly when the fifth beat would have sounded.

It was this excellent facility that quickly warmed me to the Bokse US-8 since it allows the operator to set the running tempo by relying on musical 'feel' as opposed to having to coldly punch in a beats per minute count for the tempo, which is hard to relate to. You can do that as well on the US-8—the facility is there if you want it. Either way, the programmed tempo is continually displayed as a beats per minute readout, changing as and when the tempo changes.

Whilst on the subject of the display, a readout is given as confirmation of any action you take,





by Ian Gilby.

whether selecting input/output clock rates, Auto mode or tempo variations.

VERSATILITY

The US-8 really is a versatile machine that has obviously had a lot of attention lavished on it during the design stage. This shows up in the sheer number of output variations which are available either from the six front panel jack sockets (12, 24, 48, 96, 384, plus Variable pulses), Sync 24 and MIDI (real-time info only) DIN sockets or from the three rear panel jacks. The latter provide different fixed voltage level pulses at their outputs and are used for clocking old-style drum machines and synthesizers. There's a rotary knob for these, so you have complete freedom to set the output rate from 12 to 96 pulses per quarter note to suit. Flexibility is the keyword of this machine remember.

On the input side, Hi and Lo jacks are supplied which accept clock rates of 12, 24, 48 and 96 pulses per quarter note. The DIN socket marked 'Sync' is suitable for Roland Sync 24 devices and Korg (48 pulses); though a special lead needs to be made up for use with old Korg products.

The inclusion of MIDI expands

the interfacing possibilities enormously, allowing something like Roland's MSQ 700 Sequencer to clock pre-MIDI instruments like Sequential's Pro One monosynth. A MIDI Thru socket is provided meaning that a MIDI Output from a drum machine can be connected to the US-8's MIDI In socket and the timing data converted to clock appropriate devices connected to the jack outputs (up to nine devices running simultaneously), whilst an output from the MIDI Out or Thru sockets can be used to clock any other device that interfaces only via MIDI. That's what I call a powerful control system.

Tape synchronisation is also a very useful feature of this unit. It's achieved by taking the 96 pulses clock output and recording that onto a tape track. Replaying the output of the recorded pulse train into the Lo jack input will drive the US-8 in sync, but you will need to reset all connected sequencers etc. to the start, if the sync track coming off tape is interrupted at all.

The final outputs are both related. 'Variable' selects pulses to occur on programmed note value intervals (minim, quaver etc.) as opposed to the standard quarter notes, whilst the 'Click' output is the audio equiv-

alent of 'Variable' and can be usefully used to drive drum synth modules, or for use as a metronome guide. This 'Variable' output is the best one to use when clocking old system drum machines like the TR808, for stepping keyboard arpeggiators and for triggering mono synthesizers such as the Mini-Moog.

SURPRISE SURPRISE

It's very easy to be underwhelmed when first confronted with Bokse's Universal Syncronizer, but it is one of those devices that with familiarity continually surprises you by its total lack of limitations.

At £350 it represents tremendous value for money, is sturdily built and compact. If you're a studio owner or hi-tech user, for that money you could probably afford to buy one and keep it for those rare eventualities when you suddenly need to trigger a Korg MS20(!) from your RX11 drum machine. But I'd be very surprised if that was all you ever did with it ... it's simply too useful!

Contact: The Bokse Co. Ltd., The Old Bakery, Litlington, Nr. Royston, Cambs. Tel: 0763-852946.



SOUNDCRAFT

The Soundcraft Series 200B represents a welcome and well thought out upgrade to the original Series 200 design, with a number of useful additional features being incorporated, along with a measure of cosmetic and structural restyling.

he desk, which supersedes the old model, is fully modular on the input side (one input channel per module), ensuring good serviceability, with a separate output module featuring four group outputs and a dedicated stereo mix

Three mainframe sizes are available, accommodating up to eight, sixteen or twenty-four input modules, with the eight channel format being sufficiently compact to be offered as a nineteen inch rackmounting unit. Partially filled frames are likely to be available, enabling the owner to start with a smaller number of modules, if necessary, and then expand the system at a later date.

The length of the channel strips, at eighteen inches, is certainly not excessive in view of the comprehensive facilities included, however, the employment of relatively small control knobs and switches, and the judicious use of colour-coding and ergonomic layout, has managed to maintain an uncluttered aspect in spite of the compact dimensions.

The original Series 200 desks were rectangular in section, and lay flat in use, sometimes making the

meters and some of the legending difficult to read from the operating position; most users have probably finished up, like myself, semi-permanently propping up the back edge of the desk, and so would welcome the new sloped design of the 200B. The end-cheeks have been made wedge-shaped, creating a preferable working angle, and also allowing more space on the rear connector panel, which was rather densely packed in the old model, tending to become difficult to use for frequent patching simply through lack of space between adjacent connectors.

associated with Soundcraft desks has given way to a new dark grey finish, with a lighter tone used for the controls and switches – not so distinctive, I feel, but certainly very functional and easy on the eye. The quality of construction, both mechanical and electronic, is most impressive, giving confidence in the desk's ability to withstand the rigours of heavy use in mobile situations. The mainframe panels are rigid, without being excessively thick and therefore weighty, and the input channel modules seem to deflect only a little when subjected to pressure in the centre (sometimes a weak point in a less ruggedly constructed modular desk).

A substantially built, free-standing, external power supply unit is employed, feeding the desk via a decent length of cable equipped with some very positively locking connectors. Keeping the PSU components out of the desk not only assists in achieving noise-free operation, but also significantly helps to minimise the dimensions and weight of a compact desk.

MODULAR DIVISION

The standard input module accepts a mic input via its balanced, female XLR connector (wired Pin 2 'hot', Pin 3 'cold', Pin 1 ground), with the >2kOhms input impedance ensuring compatibility with just about any normal stage or studio microphone. 48 volt 'phantom' powering for condenser mics is featured, and has been made individually switchable for each channel – a good idea, as it facilitates the use of a mixture of balanced and unbalanced signal sources if necessary. The 'Line' selector switch activates the line input, a balanced, stereo 1/4" jack, with a 10kOhm input impedance, allowing the direct connection of synthesizers and drum machines with no 'loading' or level matching problems. Both Mic and Line inputs employ 'electronic balancing', which offers advantages in minimising phase shift and ensuring optimum transient response, compared to a regular, transformer-based, balanced front-end.

The input 'Gain' control, which heads the module, operates in conjunction with a useful -20dB Pad facility (effective only on the Mic

input), and has a more than adequate range for any likely working situation.

AGAINST THE TREND

The excellent equaliser section remains unchanged from the original Series 200, and rather goes against the contemporary trend favouring 'sweep' Mid controls. Four EQ bands are provided, with fixed centre frequencies, offering 15dB of cut or boost to the input signal. The wellchosen frequencies, 60Hz, 250Hz, 5kHz and 12kHz, with a shelving characteristic in the LF and HF bands and the classic 'bell-shaped' response curve in the mid-bands, results in a very smooth, musical EQ, which can be used almost instinctively, rarely producing harsh and unnatural effects. The subtle interaction of the controls facilitates more complex response tailoring than would at first appear to be possible with fixed bands, and despite the apparently greater flexibility provided by a high 'Q' swept mid-band, I feel that a fixed EQ of this quality is often subjectively preferable in use. An 'EQ In/Out' switch would have been a very nice addition, but its absence is compensated for by the inclusion of centre-detents on all the EQ pots, making zeroing easy and precise.

Four auxiliary sends are provided and, impressively for a desk in this sector of the market, their operation can be tailored to the user's requirements by positioning a series of push-on links on the input channel PCBs. There are three options for each pair of sends: 1 Pre-EQ/Pre-fade, offering a feed of unmodified programme; 2 Post-EQ/Pre-fade, for regular foldback applications in PA or recording where the musicians will probably wish to hear the effect of any EQ used, but with their mix remaining independent of any fader alterations: 3 Post-EQ/Post-fade, the normal arrangement for overall treatment effects such as echo or reverb, where the 'send' level needs to vary in accordance with the fader setting, so that when a channel is faded out of a mix, it does not continue to feed an effect and still be audible via its return line.

In most conventional music recording applications, one pair of Post-EQ/Pre-fade, and one pair of Post-EQ/Post-fade auxiliaries is almost certain to prove the most

SERIES 200B

Report: Dave Lockwood. Photography: Mark Ewing.



useful arrangement, but, as versatile a product as this, is highly likely to find its way into some very different applications, such as theatre, video and broadcast work, where the ability to tailor this aspect of the desk to custom requirements would prove invaluable. Alternatively, it would be possible to select all four auxiliaries to operate as Post-EQ/Pre-fade sends, thus offering up to four additional, independent group outputs! The versatility offered in this area of the

design shows an awareness of the diversity of use to which these desks are suited, and could significantly enhance their operation in some of the less basic applications.

EXTRA ROUTING

Lack of signal routing facilities was perhaps the most criticised aspect of the original Series 200 design, and logically, that area has been amended in this model. It is now possible to route a signal to Groups 1 and 2, Groups 3 and 4, or directly to the main stereo mix bus (or even all of these at once). Routing to a single group is achieved in the normal fashion, using the centre-detented Pan pot, panning fully left for odd numbered groups, and fully right for evens.

The extra routing is a more significant addition than it may initially seem, for on a desk with a sufficiently large number of

 modules, it considerably increases the feasibility of using spare input channels for the monitor mix during both track-laying and overdubbing. The channels to be used as tape returns can be routed straight to the stereo bus, whilst live input signals are sent to tape via the groups; the advantage of this method being that it offers the full input channel facilities for use on the monitor mix, allowing trial EQing during playback, and more importantly, giving access to a post-fade effects send, for adding reverb – perhaps the single most useful aid to judging the progress of a recording as it is built up track by track.

A 'Channel On/Off' switch is present, supported by an adjacent green LED. The switch is satisfactorily quiet in operation (regretably, not true of every desk on the market), facilitating its use to cut channels in and out of a mix, without altering fader settings. All the auxiliary sends are muted by the 'off' condition, unless pre-selected to Pre-fade/Pre-EQ mode, which seemingly would guarantee an uninterrupted feed regardless of channel status.

The essential 'Pre-Fade Listen' facility is featured, enabling a signal to be 'soloed' in the monitoring, even with the fader closed if necessary, and without interrupting the main programme paths. The PFL signal is taken after the insert point return, but before the On switch, and can be used for checking quality, cueing-up an external source, or even just a confirmation of signal presence before introducing a channel into the mix. The effects of any outboard processing patched at the insert point can be monitored in isolation in this way, which can assist in checking for side-effects from compression or gating during recording. The 'PFL On' condition is indicated by a red LED located in the master module of the desk, which is both larger and significantly brighter than the rather inadequate one provided on my original Series 200; this one being as

impossible to overlook as it should be.

A 'peak' LED on each channel serves as an input overload indicator, detecting the signal level at the insert point send, and illuminating 4dB below the onset of clipping.

The channel, group and master faders are all high quality, long-throw types, giving fine resolution, with a consistently smooth action, making them really a pleasure to use. The channel modules are quite narrow, but so are the fader tops and this, combined with their high profile, makes it possible to easily operate quite a large number of channels simultaneously if necessary.

SLAVE TO THE MASTER

The master module, conventionally located at the right-hand end of the desk, contains the four group outputs, the main stereo bus and auxiliary master controls, the metering, and the tape return channels. Four standard VUs are provided, reading the output of the four groups, but with the lower pair of the square layout (groups 3 and 4) able to be switched to read the mix bus or a temporary monitor source, such as a PFL signal. The meters are quite large, internally illuminated, and with the new angled working surface, very easy to take in at a glance.

Beneath the VUs lie the monitor channels – because of the disparity between the number of groups and the number of returns, there are four dedicated tape returns and four group monitor/tape return channels. Although apparently included mainly to cater for multitrack work, this area of the desk is, in fact, far from redundant in other modes of operation. Returns 5 to 8 offer a rotary Volume control and a Pan facility, for achieving balance and stereo positioning in the monitor mix whilst track-laying. A send to Auxiliary 1 is provided, operating before the tape return level control,

for the provision of an independent foldback mix, and the PFL facility also extends to the return channels, allowing soloing within the monitor mix

Returns 1 to 4 have the same Volume, Pan, Aux 1 and PFL facilities, and with their 'RET' switches selected, will operate as identical tape returns. With these switches deselected, the group output becomes the monitor source, being heard via the level and pan controls. When the 'SUB' switch is pressed on one of these four channels however, the output of the group fader below bypasses the return volume control and accesses the main stereo bus via just the pan pot, creating the possibility of up to four individually panable subgroups within a mix, or two stereo subgroups if pairs are panned hard left and right. Additionally, if the 'RET' switches on these channels are activated whilst operating in subgroup mode, any input to the return socket can be fed into the group via the monitor volume control. This can be regarded as an effects return that is unique to each subgroup, enabling groups of signals and their effects to be faded in and out of a mix on a single fader.

Each of the four auxiliary buses has its own master level control, located within the output module. Overall send levels to external processors or amplifiers can be controlled in this way, and the signal soloed into the monitoring and metered via individual 'AFL' switches. The facility is designated 'AFL' (After-Fade Listen) rather than PFL in this instance, as it operates after the level control at this point in the circuit.

NEW ADDITIONS

The presence of a 1kHz oscillator with its own level control is very useful. It routes to all group and auxiliary buses and can assist with fault-finding and setting-up optimum interface levels. It would be nice to have a couple of additional



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¶ frequencies, perhaps 100Hz and 10kHz, to extend its use to tape machine calibration and placing basic line-up reference tones on tape, but I realise that the manufacturer must compromise somewhere to make a high quality product like this affordable.

A most welcome addition to the 200B's facilities is an on-board talkback system, using an almost invisible, flush-mounted electret microphone, with its own gain control. The switching is arranged to make it possible to talk into both auxiliary and group buses, enabling simultaneous cueing and 'slating' (recording titles and take numbers on tape for identification purposes),

or to talk just to Auxiliaries 1 and 2, the most likely choices for foldback, communicating directly with musicians via headphones.

Original Series 200 desks had no dedicated Control Room monitor outputs, the high impedance headphone socket having to be used for this purpose. This has been amended on the 200B; the 'Monitor Level' control now sets the level into both the monitor amplifier feeds (separate, unbalanced, sockets for left and right signals) and the front panel-mounted headphone socket which, logically, silences the speakers when a plug is inserted. The '2T' switch facilitates listening to the return signal from the stereo

mastering machine, for playback or monitoring via the machine's input circuitry – if meters 3 and 4 have been switched to 'Monitor Source' they will then also display the return level.

A pair of master faders, equipped with yellow fader-tops, completes the control line-up (group fader-tops are red, inputs are white, making errors unlikely in spite of their close proximity). They are placed very close together and can easily be operated simultaneously with one finger, whilst maintaining their advantage over a ganged mix bus fader in that they can be separated if necessary to correct (or create!) level differences between the two channels.

VALUABLE INSERTION

On the rear panel of the master section it is good to see insert points provided for the mix bus, facilitating easy connection of a device such as a stereo compressor to process the whole mix, without having to interrupt and re-patch the feeds to the mastering machine. The main stereo outputs and group outputs 1 to 4 appear on the connector panel as standard 3 pin, male, balanced XLR connectors (wired Pin 2 'hot', Pin 3 'cold', Pin 1 ground). Users with 'semi-professional' multitrack and mastering machines that use unbalanced inputs can simply wire Pin 3 also to ground (preferably at the tape machine's end of the cable, Soundcraft suggest).

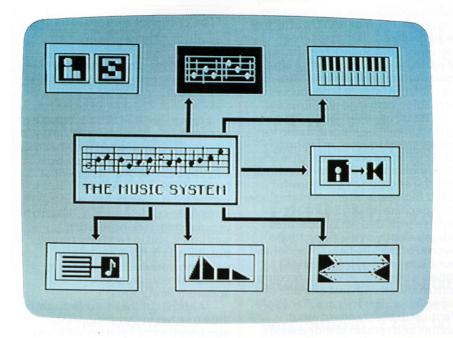
The 'Tape Return' sockets and the input channel 'Line In' sockets are also balanced, using stereo 1/4" jacks, wired tip-'hot', ring-'cold', sleeve-ground, but a conventionally wired mono jack plug works perfectly well with unbalanced equipment.

The insert points, on both the input channels and the mix bus, also use stereo jacks, but these are unbalanced, with both the send and return incorporated into a single, switched socket. The wiring follows the current convention for this type of connection, with the send on the ring, the return via the tip, and the sleeve as common ground.

It is possible to use the input channel insert points as Direct Outputs, in order to increase the available number of tape sends, simply by inserting a stereo jack plug, wired with the ring as the 'hot' wire of the output and the sleeve as ground. The tip, if left unconnected, will keep the break-jack contacts open, and prevent the signal passing into the routing section. However, it can be advantageous to link the tip and the ring of a stereo jack used in this application, as this maintains continuity for the signal within the channel, thus enabling the peak LED and PFL functions to remain

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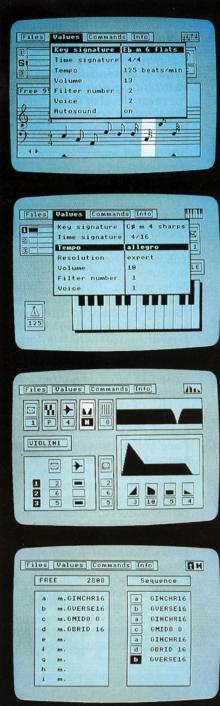
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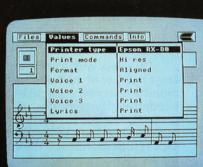
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operative. This is useful not just for the soloing facility, but also because it allows metering of the signal level at the insert send point (via the PFL switching), giving an indication of the record level of the direct output. The recorder's own meters could be used for this purpose but budget multitrack tape machine meters are often small, inaccurate and, especially when compander-type noise reduction is employed, difficult to usefully interpret.

By leaving all the channel's routing switches de-selected when taking a direct ouput in this way, the signal can be prevented from appearing also as part of a group output, regardless of the channel fader setting. This was not possible in the old Series 200 where group routing could not be totally deselected, necessitating the channel to be switched off (which unfortunately also mutes the auxiliaries), or great care to be taken to keep the fader closed, to avoid unwanted mixing of signals.

PARALLEL FEEDS

For eight-track use, Soundcraft suggest that the four groups can be parallelled at the multitrack to simultaneously feed tracks 1 and 5, 2 and 6 etc, although I feel that this rather wastes some of the inherent flexibility of this desk, in prohibiting recording on certain combinations of tracks. More useful, perhaps, would be a simple patchbay, or even just a connector box, with all the multitrack sends permanently connected, and to which any combination of the four groups, auxiliary groups, and direct outputs can be patched, as desired.

"...the versatility offered shows an awareness of the diversity of use to which these desks are suited."

On a desk with a sufficiently large number of modules, where the monitor channels are unlikely to be needed as effects returns, it is perfectly feasible to parallel the multitrack outputs to feed both the tape return sockets and the line inputs of channels 1 to 8, thus facilitating track-bouncing and mixdown without the need for any re-patching.

Although the Series 200B normally interfaces at standard professional line level, +4dBu (ref. 0.775V), provision has been made for user-selection of the alternative -10dBV (ref. 1.0V) format (Tascam, Fostex etc, operating level). The procedure is well documented in the comprehensive User Manual supplied, only requiring the

alteration of internal switches and PCB jumpers, rather than the substitution of resistors, as on the earlier model.

STEREO LINE MODULE

The Series 200 design proved to be effective not just in music recording and PA applications, but also in the specialised fields of A/V, theatre and broadcast work. It makes sense therefore, that Soundcraft should now offer a dedicated Stereo Line Input module, with full facilities for the control of stereo tape sources, turntables, cartridge machines etc.

The EQ has been amended on a this module to be more suitable for pre-recorded sources, offering a 10kHz HF and a 60Hz LF (each + or 15dB, with a shelving characteristic), with the addition of a very useful 100Hz high-pass filter (ultimate slope 12dB per octave). An EQ In/Out switch is included which operates independently of the filter. Phase reversal of the left-hand channel and mono summing of left and right signals is possible, as well as feeding both channels with just one side of a stereo input. The four auxiliaries are identical to the standard input module and remain as mono sends, however, the Pan facility is retitled as a 'Balance' control, and has a restricted range of + or - 5dB, for stereo programme balance correction.

An accurately matched, long-throw stereo fader completes this module, which represents a significant addition to the range of facilities available on this versatile desk. Stereo modules require their own rear connector panel, which occupies the width of two channels, making these units most suited to use in pairs, although presumably, there is no reason why a single module should not be used with a blanking plate.

OUT IN THE FIELD

The review model, an 8-4-2 with standard input modules, was used for location recording sessions feeding a Sony PCM-F1 digital system. I have used an original Series 200 Soundcraft desk for this purpose for some eighteen months now, and as expected, the same impressively clean, open quality was evident in the sound, along with the extremely low noise floor essential for working in this format.

The mic amps remained sufficiently quiet at high gain settings to facilitate the use of low sensitivity, high-quality dynamic mics, even with distant sound sources, if desired, whilst no frontend problems were encountered in using 'hot' condensers to close-mike a loud horn section. Heavy EQing

inevitably increases the noise content, but when a sound requires drastic attention, common sense, as well as good engineering practice, dictates that extreme equalisation should only be a last resort, and that mic positioning, or microphone choice, should always be investigated first

"The compact dimensions are a distinct asset to mobile users, or anyone with a restricted working

area."

Although I had the advantage of already being familiar with the basic layout of these mixers, I feel that the 200B is an instantly likeable, user-friendly desk, with all its essential features able to be readily understood, even by an inexperienced operator. Yet it is in no way a system lacking in extra subtleties, and in fact offers many possibilities for the inveterate patching enthusiast who likes to stretch his equipment beyond its

apparent limitations.
Another of the many thoughtful little touches in this design is the numbered write-on strip, which runs the length of the frame below the faders and is repeated at the top of the desk, making rapid channel identification much easier when operating the controls in that region.

SUMMING UP

The high-performance electronics, and the sophisticated range of facilities featured in the 200B, are most impressive in such a cost-effective package. The compact dimensions, of all mainframe sizes, are a distinct asset to mobile users, or anyone with a restricted working area, and have been achieved without compromising operation in any way. The simplicity of configuring the desk for some very specific user-requirements is certainly a bonus at this level of the market, and should enhance the acceptance of this model in a wide variety of applications. Overall, I feel that the amendments to the original Series 200 design represent a useful extension of the capabilities of the desk, rather than just a cosmetic upgrade. The Series 200B undeniably leaves an impression of all-round quality, and certainly maintains the excellent reputation that Soundcraft products in this field currently enjoy.

The Series 200B 8 channel rack-mounting version reviewed is priced at £1350 plus VAT. Contact: Soundcraft Electronics Ltd., Unit 2, Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts WD6 5PZ. Tel. 01-207 5050.

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CLUE as beyond the

t present digital recording falls firmly into two distinct fields: that of multitrack digital and that of stereo digital mastering. Multitrack digital is still far too expensive for all but the top flight professional studios and even they often use hired machines. But digital stereo mastering, with units such as the Sony F1 and 701ES, offers the quality of digital audio at a price almost anyone can afford.

THE DIGITAL DECISION

However, the real problem that exists for the majority of F1 and 701 users is that of editing. And it's this point alone that is holding back a lot of people from going 'digital'! For those who have no experience of these systems, let me outline the problems.

Point one: you don't ever cut the tape with a razor blade, so obviously this presents an immediate problem if after a session you decide that you want to change the running order of the tracks.

Point two: because of the way in which the sound signal is digitised and recorded on tape, any attempt to execute drop-ins results in a very audible click. So, when faced with these two major obstacles, it's no wonder that some people have, perhaps not through choice, been unwilling to buy a digital system even though the obvious benefits of greatly improved sound quality are so desirable.

ENTER THE CLUE

With all the benefits offered by digital recording, it's not surprising that someone would eventually develop an editing system that would enable you to overcome the problems.

The CLUE (Computer Logging Unit and Editor) has been developed for that very purpose by HHB Hire & Sales' technical division and provides one of the most realistically priced systems to date. It would be unfair to say that it is the only system, as Sony themselves have the DAE 1100 Digital Audio Editor but at £15,000 plus, it's out of reach of all but the few and is actually the system used for the preparation of Compact Disc masters.

However, at £4100 the CLUE system isn't cheap either, but this is not just a technological advance on the razor blade and splicing block.

The facilities of CLUE go beyond the requirement of simple editing, for as the name implies, it is also a logging machine.

As you can see in the main photograph, the system comprises a computer, which is Apple software compatible and a rackful of various pieces of equipment. Sitting on top of the rack are a couple of Sony SLF1E video tape recorders which in this application are being used to record the digital audio. The rack itself contains at the top, a Sony PCM-701ES digital audio processor which is responsible for all the digital audio conversion; below that is the main CLUE hardware which is housed in a 4U box and comprises two disk drives, level and routing controls and the main computer board.

This set-up represents CLUE with its minimum equipment configuration. So, having described the hardware we can turn our attention towards what you can do once the software is up and running.

The system is divided into two sections: logging and editing.

As a logging system, CLUE will give you very precise information about what is on any particular tape and where it is. Logging can be performed either while making a recording, which is obviously important if it's a live session and you need to mark the start of each song for later examination; or you can log any previously recorded material by playing it through and marking points of interest as you go.

WHICH MENU?

The whole CLUE software system revolves around a series of screen menus which tell you precisely what is happening, when it happened and what courses of action are available to you at the time. So, if you're logging a tape, the screen display would look something like the one in the colour photograph.

The data shown is quite straightforward and lists the tape number you're working on, the take recorded on that tape, its start time and take length. Below is the name of the song and immediately underneath is an area for comments about the particular take you're working on. The rest of the screen contains areas that show details of any 'marks' placed during a logging session and alongside these marks are the various position times. You can go back and select any mark position and CLUE will automatically locate the point on tape and do one of two things when it finds the point. It will either locate a mark and stop ready for further action on your behalf or it will automatically go into a play mode if instructed to do so. This is particularly useful when you wish to rehearse the same section of music over and over again.

At the bottom of the screen is a prompt area telling you what action is available ie. (F)wd means forward, (B)ack means backwards etc. These commands are easily remembered mnemonics so that you can quickly learn the system and then by hitting the appropriate letter key on the computer the command will be executed.

Finally, on the bottom line is all the relevant timing information.

Count gives you an indication of the position from the beginning of the tape which you will have set to zero at the start; Time is set at the beginning of each take and gives you the local time within a take whilst Left gives you a readout of the tape duration in hrs – mins – sec left to run. This is particularly useful when trying to assess whether or not a you can squeeze that last song on tape!

Within the various menu options there are a number of possibilities but CLUE, as the name suggests, will always make you aware of the situation. Any data generated by the user, be it song titles or 'marks', will be remembered and stored on floppy disk for later retrieval. CLUE always knows where it is on tape, due to the use of a control data track which the system records onto the video cassette tape on one of the normal analogue audio edge tracks. So, because the track has unique code along its length, the software is able to reference any song or take data to a counter number and through control of the video tape transport wind the tape in any direction to locate a particular position on tape.

For those of you who would like to work with SMPTE code, you can obtain a special card to insert into the main circuit board that enables any external machines to be locked via SMPTE directly with the digital audio.

As mentioned earlier, CLUE is more than a logging unit. With such powerful and accurate control of the tape transport system, a whole series of musical parts from all over a tape may be typed in, then the system will move between the various sections and play them through in the predetermined order. Effectively reordering the material. There is, however, a delay between parts as CLUE shuffles around the tape looking for the relevant sections.

When you approach this sort of use you are not that far off a full-blown editing condition. We mentioned previously the difference in attitude towards the editing of video as opposed to traditional analogue tape. The most notable difference is that with ordinary tape you can mark up the section of tape to be removed—say a false start to a song. Having done that, a smart bit of razor blade work on a block and you can cut out the offending piece. However, the story is very different with video editing.

EDITING BY NUMBERS

All editing with video tape systems is always performed with two VTRs (video tape recorders). This is because there is no tape cutting and, consequently, each part of the song you want to assemble has to be transferred in the correct sequence and pieced together.

Now, if you adopted this technique with analogue tape you would start to lose audio quality as a transfer to another tape puts another generation of tape noise on the recording. But we're dealing with digital audio here and, as we know, you can transfer as many times as you like digital-to-digital and there's no quality loss.

So the mechanics of the situation go something like this. You place your source tape in a VTR and dedicate that as the master source machine. You then put a clean tape in another VTR which will be known as the copy recorder. Having done this CLUE is now in control. Find the

take you want to transfer and locate its beginning. You now put the copy recorder into record mode and by responding to the CLUE menu prompts you make a perfect transfer across to the copy recorder in real time(!). So, if the section is five minutes long that's how long it takes. Then locate the next section to be transferred. It's at this point that the system as an editor comes into its own. If you're purely interested in reordering the track sequence of a recording then it's a straightforward matter of moving the copy tape on a few seconds to give you the required gap between songs. However, if you want to actually edit, things get a little more interesting...

CLOSE TO THE EDIT

Technically, there are a number of quite complex things happening. Practically-speaking though, the procedure is that you locate the sound to be transferred. This is done by roughly finding the point where you wish the edit to start and then using the cursor left/right arrows to adjust the sound until you finally home in on a suitable point. CLUE likes the edit point to be just prior to a transient in the sound. This fine searching is done at an extremely precise level - literally a frame at a time, so you can therefore get down to one twenty-fifth of a second accuracy on edits.

When you have chosen the precise edit points on both the source and copy VTRs, you can check them for compatibility by listening to the sound at that point and if they are fairly similar you're likely to get a good edit. To perform the edit you first of all select from the menu the edit prompt and then respond to further prompts of (A) nalogue or Digital. At this point you could choose analogue and take advantage of being able to process the sound through an external effects unit ie. stereo reverb. However, this means that the sound is first taken back into an analogue form for the processing to take place. So, to get the best transfer and edit you select digital mode and CLUE does the rest.

The procedure is as follows. After pressing (D) igital, CLUE backs up the source recorder by about 6 seconds and puts it in pause mode,

noting the counter pulses. Then the copy recorder is set in the pause mode. Approximately half a second back from the edit point a mark is set and the copy recorder's timer is set to zero. Both the source and copy recorders are then released from pause mode and just as they reach the correct speed, the software notes the position of the edit about to arrive and on the exact frame it switches the copy machine into record and the transfer begins at the precise point you selected. This whole procedure is performed automatically by the system and gives you an idea of the level of sophistication CLUE is capable of achieving.

APPLICATIONS

Obviously anybody who has the money and is working with digital recording is going to find the CLUE system invaluable. But what of its broader uses?

As the quality of digital recording is so high, CLUE would be well suited to archive sound purposes, not only for the quality and editing functions but also for the automatic logging of the sound data held on floppy disk. Any sound could then be found very guickly by accessing a library disk, placing the correct tape in the machine and then letting it do all the searching. And as the system is computer controlled, the usual facilities of a computer printout are also available for a more permanent record of sounds on catalogue. The same is true of a collection of digitally recorded samples for loading into a sampling keyboard.

At the 8 track studio level, the cost of a CLUE may be prohibitive, yet there are some people with a commercial mind who have researched their local studio activity and seen an opportunity to provide a low-cost digital editing service to all of the local studios who are now moving towards digital mastering.





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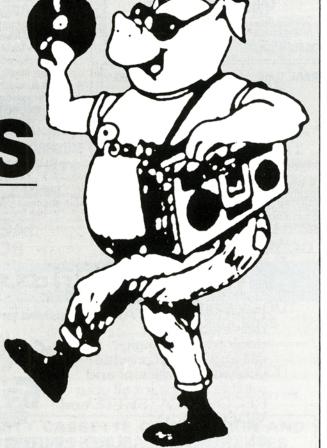
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The standardisation of timing and synchronisation data for instruments took a giant step forward with MIDI. Now it looks to be happening again with SMPTE, so we invited Kendall Wrightson to provide a series that explains what SMPTE is, why we all need it and what we can use it for.

Time for SMPTE DOR15:11:03

The electronic musical instrument market has been growing at a staggering rate over the last ten years. As technology has developed so prices have fallen and demand for products increased. In addition, at the start of the current decade, electronic Pop music really took off commercially which caused a complete revolution in recording methods and attitudes further reinforcing demand.

Part one

The abilities of the latest range of budget Japanese instruments are quite staggering, as a larger market allows their mass production methods to be utilised. At the other end of the scale, top-flight computer musical instruments, seem capable of doing everything except compose the music itself.



But in the rush to produce the definitive machine, manufacturers merrily invented their own timing 'standards' for their drum machines, sequencers and arpeggiators.

A Sync Out jack on one manufacturer's machine could mean a TTL level clock pulse running at 24, 48, 64, 96 or 120 pqn (Pulses per Quarter Note). Alternatively, one might discover that a clock signal is of the FSK (Frequency Shift Keying) variety. Further, the Stop/Start Input jack might be electrically positive or negative going, or even integrated with the clock signal into a five pin DIN socket.

A few manufacturers introduced 'Converter Boxes' or 'Sync Boxes' that converted between one standard and another. However, the increasing growth of the market and technology acted as the catalyst to start inter-company negotiation.

MIDI

Discussions took place between the major synth manufacturers to evolve a 'universal synthesizer interface'. These discussions consequently resulted in the adoption of the Musical Instrument Digital Interface (MIDI) in 1982/3. The MIDI specification, as well as defining synthesizer Note On/Note Off protocol (which was also a minefield), included Stop/Start/Continue messages, a synchronising clock and several messages regarding Song Position. These are known as 'System Real-Time Messages'.

However, the MIDI spec suggested that the minimum requirement was to allow one synthesizer to play another and any further MIDI implementation was to be left entirely to the manufacturer's discretion. This was an unfortunate decision because it caused vast confusion amongst the public as they discovered that their instruments still resolutely refused to sync to each other due to incomplete MIDI implementation.

SYNCTO TAPE

Manufacturers have recently grown wise to the uses of MIDI Real-Time Messages and have started to develop the humble Sync Box into a machine that not only solves incompatibility problems, but, with the addition of SMPTE timecode, also cures some of the perennial problems involved in the current trend to 'sync(hronise) to tape'.

Syncing to tape is the process of driving instruments from a pulse code (click-track) recorded onto one track of a multitrack tape machine. The instruments need never be recorded onto the multitrack recorder, going instead straight onto the master along with the recorded vocals and real instruments. Further, this method allows extra parts to be added, or replace existing machine parts in a recorded piece. No wonder we keep getting all these 12inch remixes! However, syncing to tape has its own difficulties. Firstly, precisely accurate timing becomes critical-a 10 millisecond (0.01s) delay would be clearly noticeable-and you'll need a Sync Box of one sort or another for sync code conversion should you require different clock pulse rates to drive various instruments. Secondly, each time the tape machine is stopped, it must be rewound to the beginning of the track and any drum

machines/sequencers reset. Finally, the tempo of the piece cannot be changed without rerecording everything!

SMPTE

Recording a SMPTE timecode onto tape instead of a standard clock pulse provides a method of overcoming these problems. However, before we discover how, it is necessary to find out more about the SMPTE code itself.

Just as MIDI is the interface standard for electronic musical instruments, so SMPTE is the timecode standard in the television and film world. The initials S.M.P.T.E. stand for Society of Motion, Picture & Television Engineers.

SMPTE was developed (by NASA) out of a need to 'label' each frame of video or film with a unique reference number. It is a digital code which counts up in frames, seconds, minutes and hours. Once recorded onto video tape or 'burned into' film, events or 'hits' that require sound effects to be added at that point can be labelled. In other words, as the videotape is run, a display either on screen or as part of a separate unit counts up from 00:00:00:00. If the tape is stopped at a moment of interest, the SMPTE display will also stop. So, for example, you discover at 00:15:11:03 that Bobby Ewing snuffs it! 00:15:11:03 is read as 0 hours, 15 minutes, 11 seconds and 3 frames.

If the SMPTE code was also recorded onto one track of an audio tape recorder, then video and audio become 'locked' together. Two audio tape machines can also be locked in this way to achieve a higher number of tracks. So, for example, it is possible to link two 24 track machines together to achieve 46 tracks (since one track on each 24 track is taken up by the code).

I'VE BEEN FRAMED

Television pictures are composed of 625 lines here in Europe and a complete scan (all 625 lines) is called a 'frame'. You can think of a frame as similar to a frame of film. These frames are transmitted at the rate of 25 per second so if you watch a SMPTE display counting up, you'll see that when the frame count reaches 25, the seconds increment by one and the frames start counting from zero again eg. the display changes from 00:00:15:25 to 00:00:16:00.

In America, just to make life more interesting, the frame rate is 30 frames per second which means that US television programmes shipped across to the UK have to be compensated for time-wise, so five frames every second are discarded which resulted in the adoption of the SMPTE drop-frame standard.

More often than not, SMPTE drop-frame mode is detected by the timecode reading device and so requires no manual adjustment by the user. (More of this in later issues.)

So how can SMPTE be applied to solve the problems of synchronising incompatible drum machines and sequencers? The answer lies with that unassuming 'Sync Box' mentioned earlier – a SMPTE generating/reading device which is currently the most intelligent form of the synchroniser species available. And it is this we shall cover in detail in Part Two.

MAINFRAME 5 Minutes...

n lighter moments, Mainframe's Murray Munro and John Malloy like to refer to themselves as "a two-piece synthesizer band from Hemel Hempstead". But they have

always been more than just that...

From their first self-financed single release in 1983 which broke new ground through its inclusion on the B-side of a graphics display program to run a computer, to their current involvement in the development of the Greengate DS3 Sound Sampler, John and Murray have always shown a healthy regard for the do-it-yourself philosophy. And very successful it has proved too in several unforeseen ways. Take the Sampler, for example.

... on the making of their video





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DANCE CRAZE

As the public face of the Greengate company, they decided to produce a demo record to show off some of the unit's abilities to potential clients. Copies of the resultant 12-inch single – a glorious pastiche of Trevor Horn's pioneering sampled recording work with Frankie Goes To Hollywood - called (Into Trouble With) The Noise Of Art, somehow fell into the hands of several influential DJs at London dance clubs who liked the instrumental record and played it to death in their clubs. The result, according to Mainframe's Murray Munro, was that it inadvertently became "... a dance floor smash! We had nightclubs up and down the country – even from New York – ringing us up and saying, 'Have you got a copy of this record? Can you please ship us some?'. We couldn't believe it. It became a cult hit and to this day it's still being distributed."

It also attracted the attention of various Polydor Records personnel who frequented such establishments and liked what they heard enough to report back the discovery to their A&R men.

To cut a long story short, the whole sequence of events culminated in John and Murray, in their capacity as Mainframe, signing a record contract with Polydor. Their first single for the company was a driving, up-tempo track called '5 Minutes' which received a lot of national airplay upon release and reached the number 92 position in the UK music charts.

True to form, Mainframe felt they needed a further means of promoting their single and settled for producing a video based around the unusual lyrical content of the song. John Malloy takes up the story.

""5 Minutes' began as a fairly straight pop song—I think the lyric went something like: 'And I heard it on the radio and I saw it on TV'—typical Buggles stuff don't you know! But we were stuck for words to the last line and I came up with the phrase 'Uncle Eric held the key' just as a joke. We rather liked it ... so we scrapped all the other lyrics, kept the Uncle Eric theme and wrote the remainder of the song around that."

"One day," Murray continued, "I recorded some vocals and stuff off the radio and, using the DS3, sampled a few people saying odd little phrases like: 'He said it' and 'So he said, let's cut!'. They were all totally meaningless but seemed to fit in with the other lyrics we had which basically revolved around a kid's uncle stealing his designated five minutes of fame – a variation on Andy Warhol's idea."

So, the duo had a strong lyrical foundation on which to base the video, but they still had to derive a complete storyline that tied in with the lyric content.

"We spent a good few hours" said John,
"trying to figure out something that would
be significant enough to get national
newspaper coverage for the boy in our
story, and that was also a bit quirky and
'English'. The only thing we could think
of was the discovery of King Arthur's
sword Excalibur, so that became the
basis of the story."

"Then we sat down, worked out how the storyline would develop, and typed it up to form a rough outline known as a 'treatment'. Then we handed that to the video people at Polydor."

SHOWTIME

What happens next with most pop videos is that the band are shown a series of show-reels – examples of a film director's past work – and select the director they wish to use. He then has to come up with the idea for the finished video and often only has a week at the very most to originate something because the rest of the time he has to get on with pre-production planning etc.

This wasn't the situation, however, with Mainframe since they already had a well-prepared storyline which gave the director considerable scope for developing a variety of shots. The video was produced by a company called Gothic Audio Visual and directed by Stuart Orme who was responsible for Genesis' 'Mama' video and Phil Collins' 'You Can't Hurry Love' amongst others. What attracted him to the Mainframe project was the challenge of working on a 'period' set, since the guys had decided the story would take place in the 1950s and, to give it all the feeling of an old B-movie crime thriller, would be shot in black and white.

"We wanted it shot on 16mm black and white film stock originally, not colour film simulating black and white because there is a subtle difference. So we were a bit worried when they did shoot it in colour but it turned out well in the end – quite a good transfer from film to video. It still looks modern though – the texture, the contrast, is slightly wrong, I think. There's nothing you can actually do about that using modern film stock as it has a wider dynamic range to allow for more contrast and so it looks sharper and cleaner."

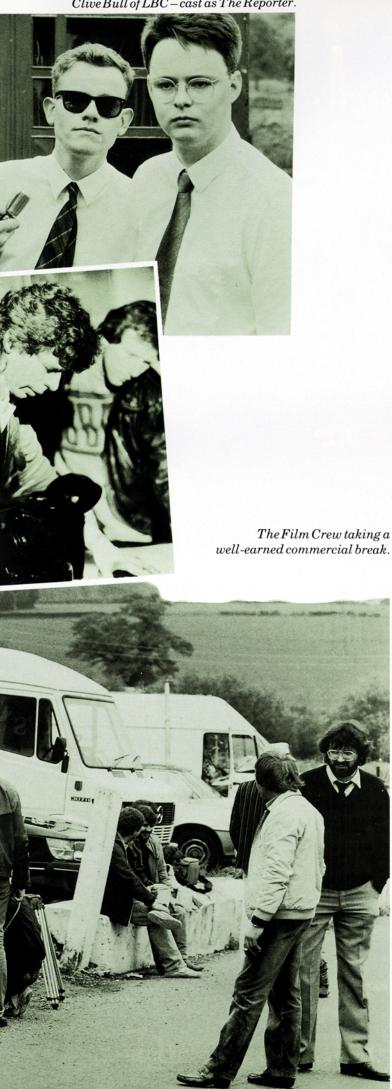
BUDGET

Polydor allocated a budget of £15,000 to the production which in film terms isn't an awful lot and meant that the filming all had to be completed in one day. With almost 24 different main shots appearing throughout the four minute video, everybody involved had their work cut out from the start. Luckily, the Mainframe duo did a lot of the groundwork themselves in preparation for the shoot, as Murray explained.

"We found the location, built some of the props and got hold of the cars. That was just a question of going down to the shop, buying a copy of *Classic Car* magazine and phoning people up. We didn't realise at the time that it was the job of the production company to do all of that!"

The day's filming, which began at seven in the morning and ran through to midnight, took place in Great Gaddesdon, a small village near the group's Hemel Hempstead home—the perfect location in John Malloy's opinion: "If we hadn't found it I don't know what we would have done!





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Pete Murray with evil Uncle Eric.

◄ It's an old feudal village and there's a lady who owns most of it including the Manor House which became the Big House that Eric, the central character in our story, lives in."

Having supplied the director with a breakdown of the script detailing what they felt needed to be in each scene, he created what is referred to as a 'shooting script' to indicate exactly what had to be done at any particular point in the day. This, essentially, was to ensure that lighting conditions remained static throughout each individual scene but also to order the movements of cameramen and lighting technicians so that they knew in advance what was required of them on various shots.

With such tight schedules and budget restrictions in operation for a location shoot like theirs, Murray highlighted one rather shocking fact: if it pours down with rain you still have to do it. No matter what! There's no money available to do it all again. (Now you know why so few pop videos are filmed outside the studio.)

EDITING

Other commitments prevented Murray and John from being physically present at the editing stage of the film, but the way in which the shots had been constructed from the very beginning meant they could leave things to others, as John explained.

"I think with '5 Minutes' it didn't matter so much that we weren't involved with the editing because the story was the type that just floats – it's not one of those videos where everything has to happen directly in sync with the music to give you the sort of sound to light effect. And so the editing was more like editing a conventional film. There were only a few frames here and there that had to be synchronised with the music."

TRANSFER

Although we have been talking about the shooting of a video, '5 Minutes' was actually shot on 16mm magnetic film as opposed to video tape, then finally copied to the video format once the editing stages had been completed. It was during this transfer process that the finished picture on screen was converted from colour to monochrome with the image contrast being adjusted continually to achieve the highest quality picture.

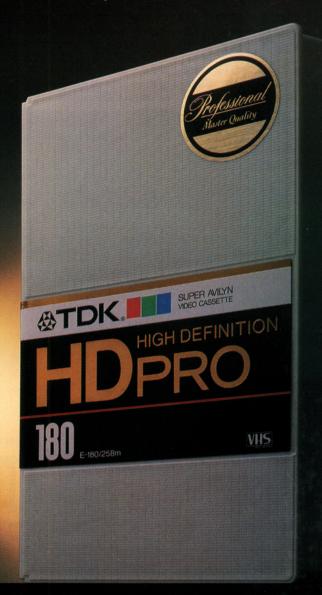
All in all, Mainframe were very pleased with the finished video which was screened on various pop programmes including Europe's Sky Channel and BBCTV and which helped get their music over to a wider audience than they could ever have hoped to have reached by other means.

"Stuart Orme, the director, did a really wonderful job for us—he was great. The end result looks just about how we'd imagined it!" they said. But true to the spirit that sets them apart from the mainstream, even now, Mainframe still believe that £15,000 is too much to pay for a video (try telling that to Michael Jackson!). "We still think we could have done it for less. And hopefully—when we do the next one—we will hire in the cameramen and the lighting guys, but we will do the production ourselves."

You wouldn't would you?

If you've spent restless nights thinking over the script, made amendments as you let in the cat and made the early morning tea – lived through eight cups of lousy coffee at the casting session – found the props – agreed the crew – eaten yet another client lunch at "L'Escargot" frozen at the shoot in Scotland and put on a few more pounds eating too many bacon butties—lived through the celebration drinks after the "wrap". agreed the rushes in a

nylon padded hell at eight the following day—listened to the client's recommendations—and finally—finally edited the thing—you surely wouldn't want to dupe it on to any old cassette would you!?



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UMI-2B EXTRAS

Omitted from Jay Chapman's otherwise extensive UMI review in this issue are a few points about its future development. Due soon is another hardware unit called the *UMI Converter* that offers MIDI control of the more traditional CV/gate type synthesizers.

The London Rock Shop who market the UMI have told us that the *Converter* is able to turn certain old analogue synths into touch-sensitive instruments. On a similar point there are ru-

mours of some new software for the UMI that allows you to display Ensoniq Mirage sound samples graphically on the BBC computer screen ready for editing.

For those of you who would like a closer look at the UMI system as well as other computer products, then this year's *Acorn User Show* at Westminster Centre Hall, Storey's Gate, London SW1 is the place to be on Friday and Saturday 22nd & 23rd October between 10am and 6pm.

TREVOR HORN

Yes, it seems Trevor Horn and his main man, engineer Steve Lipson, have been up to their usual recording mastery on the latest Grace Jones single *Slave to the Rhythm*.

Apparently, the boys had to wade through loads and loads of backing track material which had been recorded over in America. The purpose of this exercise was to find just

the right phrase for sampling into their Synclavier. It's said that the selected snippet was but a few beats long and that once captured in the Synclavier memory, was used to construct the whole backing track.

Well it just goes to show, yet again, that some people will travel the world to find a musician with the right feel. I suppose you could call it the ultimate edit – beats the old reel-to-reel and razor blade doesn't it!

WHO IS THIS MAN?



Pee-wee Herman is a mystery to us here at *SOS*. Now it could just be our own ignorance – so you must excuse us if you're a dedicated fan – but this advert has been running in the back of an American magazine and we couldn't resist telling you all about it, or more to the point asking you who the hell he is? Maybe

readers out there can enlighten us on the virtues of Pee-wee but why should anybody want to buy a pair of souvenir giant underpants? Finally, the question remains – is he into MIDI? Any answers would be gratefully received at our normal address – oh, and please don't forget the zip code!

SOUND TECHNOLOGY

Things have been fairly active on the equipment side of the music business this year and the latest name to emerge is Sound Technology Ltd of Letchworth, Herts.

Set up by three members of the old Atlantex company – Bob Wilson, Dave Scott and Tony Williams – we are told they will be working very closely with a selected band of some twenty to thirty dealers around the country and will represent the all-American lines of Aphex, Dod, Symetrix, Ashly, Oberheim, Sundholm and Alesis. Further details of products and their full address may be found on page 6.

LIVE MUSIC

As music is more or less the reason behind all of you buying this recording and musical equipment I'm sure there are many of you who would like to know about some of the more interesting concerts you can attend in October.

Electronic Music Now

This is a series of concerts which form part of the Arts Council Contemporary Music Network tour and before you think this stuff isn't for you just read on...

Electronic music, historically, is firmly rooted in the more serious(?) side of music rather than pop. However, since the synthesizer as we know it, arrived some years back, pop music has embraced it as its very own and forgotten where it came from, musically speaking that is. Anyway the chaps on the more serious side have continued to produce electronic music although it's very much behindthe-scenes activity to most people. Nevertheless, they do get up to some interesting things.

For instance, FM synthesis and sampling have been around for some time in these circles. Most of the music is created in University environments where the Fairlights and big computers live; but it takes a man like Tim Souster to drag it out into the open and give the public an opportunity to hear what's going on.

So, if you've never been to a concert before of this sort of electronic music, then take the time to do so this October. You'll either hate it and never

go again or you'll find it an enjoyable experience and possibly broaden your taste. Either way, if you get really bored there's always lots of interesting equipment to look at and the quality of sound reproduction at these sort of concerts is usually excellent.

Electronic Music Now will feature pieces by various composers such as Tim Souster's 'Work' for the BBC computer, Music 500, and live piano; Denis Smalley's 'Tides for stereo tape' for tape recorder and speaker diffusion plus other pieces for live instruments, voice and computer-generated sound.

You can obtain further details from the venues themselves: October 23rd – London Bloomsbury Theatre 01-387 9629; October 25th – Bristol Arnolfini 0272 299191; October 28th – Nottingham University 0602 506101; October 29th – Sheffield Leadmill 0742 754500 and October 31st – Liverpool Bluecoat Concert Hall 051-709 5297.

Boddy Music

If your tastes lie firmly outside the more purist electronic music, then the following concerts could be for you: (October 26th at 8pm). Tonal Productions present Ian Boddy with support act Paul Nagle at the Caribbean Association Hall, Woodbridge Road, Ipswich.

And Ian Boddy is also playing at the Riverside in Newcastle Upon Tyne on November 3rd with the assistance of keyboard man David Berkeley and support act Eternal Moon.

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Sony has acknowledged that this acceptance by professional users necessitates a change of

policy towards these products. Accordingly they have upgraded them from the domestic catalogue, and, realising the need for professional support and all that that entails, have appointed HHB as specialist dealers to represent them in the pro-audio market.

We are proud to announce this appointment, and happy to assure our customers of continued availability of the PCM range. The re-instatement of the PCM production line has been very largely due to pressure from end-users, who are after all the motivating force in the audio world. So if you are involved with audio recording and are still unfamiliar with Sony digital, then you owe it to yourself to call HHB – the No.1 name in Digital Audio.

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