Digital Recording

ADATs and DA88's have now virtually killed off analogue reel-to-reel machines, but what are the real advantages?

Perhaps the most surprising thing about digital multitrack recorders, is that they were so long in coming (the affordable ones, anyway). By the time Alesis released their first ADAT machine in 1992, stereo DAT machines had already been around for four years, with the original R-DAT format actually proposed back in 1983.

But the problems which beset Alesis in the development of their 8track digital recorder postponing its delay for some 18 months after an already lengthy R&D period left no-one in any doubt as to the technical difficulties which had to be overcome.

Format-itus
One of the major problems was the choice of recording medium. Like Tascam, whose 8track DA88 machine was developed around the same time as ADAT, Alesis faced a choice between using an existing tape format or developing an entirely new one. Alesis opted for the tried and trusted technology of SVHS tape cassettes already widely available through the domestic VCR market. Perhaps because of this, ADAT got a head start of around six months over its rival, the DA88 though the two were broadly similar in terms of audio performance.

Should you have been considering a move into digital multitrack recording at that time, your choice was by no means limited to Alesis and Tascam machines or even to a digital tape format. By the early 90's, directtodisk recording systems were already a realisable goal for anyone with a PC or Macintosh, and a large enough hard drive.
Digital sound cards were available for both machines (and falling dramatically in price as far as the PC was concerned). Furthermore, with a largescreen graphical interface at your disposal, editing on a dtd system promised to be far more intuitive.

Not only that, but being a 'non-linear' system (unlike tape) you also had the advantages of random access: being able to move instantly to any point in a recording for playback or editing. Although ADAT and DA88 tapes were in cartridge form, you experienced exactly the same delays as reel tape when it came to getting from one position in a recording to another.

The benefits...
So where does the attraction for machines like ADAT and the DA88 lie, given such stiff competition? Well, using a digital multitrack tape machine actually provides you with 8 'physical' tracks, each with its own output which can be independently mixed or processed.

By contrast, direct-to-disk computer-based systems (with the exception of more advanced hardware/software packages like Pro Tools), offer only two outputs - with on-screen tracks having to be mixed down to a stereo output signal.

From the point of the established commercial or home studio, there is also the over-riding advantage of being able to simply unplug an existing analogue machine and stand a digital multi-tracker in its place. Chances are, all the input and output levels will match, and the machines feature almost exactly the same transport controls, recording level meters and monitoring systems. A studio taking delivery of an ADAT or DA88 in the morning could be up and running the same afternoon.

Better still, there's no steep learning curve to get past and that counts for a lot. As many manufacturers have found to their cost, you cannot simply ignore public familiarity with certain technology and disregard traditional perceptions of the way things work. You only have to look at the graphic imagery used in computer user interfaces for evidence of that. This is where digital multi-track tape scores heavily over rival hard disk systems. It is offers recording in a form people are familiar with through reel-to-reel and cassette machines. No backing-up problems, no system crashes - and no weighty instruction manuals to wade through.

But the advances over analogue tape systems are even more pronounced. Digital multitrackers offer significantly improved recording quality, lower noise, a more convenient tape format and much more accurate editing and control facilities. In fact, so marked are the improvements in these areas, many 16track analogue studios have opted to change to an 8track digital format, making use of the ability to bounce down tracks (with no loss in signal quality) to compensate for having fewer tracks. In any case, one of the features of both the ADAT and the DA88 is that they can be run in pairs (or even greater combinations) to achieve the required number of tracks.

The choice is yours...
If this sounds like the sort of technology you'd be comfortable with as the central component in your recording setup, you'll be happy to learn your choice now is a little broader than the two original machines. Alesis unveiled its successor to ADAT, the ADATXT, a little over a year ago, and joining them as development partners, Fostex have their own ADAT-format machine, the RD8.

Both offer significant improvements over the original ADAT, many of which are now coming onto the secondhand market, which provides you with an additional (somewhat cheaper) route into digital multi-tracking.

As for Tascam, they have again adopted a different approach to Alesis. Instead of bringing out a successor to the original DA88, they extended the range to include the less-expensive DA38 a machine sharing the same basic design, but with additional features intended to appeal to the recording musician and domestic studio user.