ON THE WRITE TRACK

Disk drives have made possible many of the advances in applications software of the past few years and have enabled anyone to construct the kind of database that was formerly the preserve of mainframe computers. However, there are problems among the benefits, and chief among these is the incompatibility of data formats.

When you buy a box of fresh disks, they can't be used straight away. They must first be formatted for your particular micro and although the basic principles of formatting are the same, the details vary from machine to machine. As a result, disks from one machine generally can't be used on others, even though the information on the disks would be acceptable to a variety of machines.

Formatting is a bit like ruling lines on a blank piece of paper before writing on it. A new disk is a flexible plastic disk with a magnetic coating. To use the disk, the micro writes information that divides it up into a set of concentric tracks and sub-divides these with 'pie-slices' into sectors. Some disk drives format with 40 tracks of data, others wih 80. Some have two read/write heads and therefore format both sides of the disk, others write and read on the upper surface only. This is known as *soft-sectoring* because the sectors are marked by the formatting process. *Hard-sectoring* uses a series of holes punched around the inner edge of the disk to mark the sectors, but this is a technique that has almost died out.

Once these divisions have been made, only about a third of the disk's surface is allocated to storing information. The last variable in how much data fits on a disk is *density*. For any given area, a double-density disk packs in twice as much as a single-density disk and so on. As a result, the capacities of floppy disks vary from around 90 Kbytes for a single-sided, single-density disk right up to 1.2 Mbytes on a double-sided, double-

Four Formats

Even though they use the same type of disks, the BBC Micro, Dragon, Commodore 64 and Atari all format their disks differently. The number of separate files that can be stored on the disk depends on the operating system. Notice that the positioning of the DOS's list of files on the disk (the catalogue track) is on the outside edge on a BBC disk and a central track on the other machines. The central position is usually preferable as the disk head will, on average, have less far to go when it's moving between the catalogue track and actual data tracks, making the whole process of accessing the disk quicker

Dragon

No. of Tracks	40
Sectors/Track	18
Bytes/Sector	256
Files/Disk (Max.)	Unlimited
Catalogue Track	20 (Back up 16)

Commodore 64

No. of Tracks	35
Sectors/Track	17 (Near Middle)
	21 (Outside)
Bytes/Sector	256
Files/Disk (Max.)	144
Catalogue Track	18

BBC

No. of Tracks	40
Sectors/Track	10
Bytes/Sector	256
Files/Disk (Max.)	31
Catalogue Track	0

Atari

No. of Tracks	40
Sectors/Track	18
Bytes/Sector	128 Disk Handler Format
	125 Disk File Manager
Files/Disk (Max.)	64
Catalogue Track	20