Track Record

The function of the Disk Operating System (DOS) is to keep tabs on where everything is kept on the disk. Without a DOS, programming would be very hard work

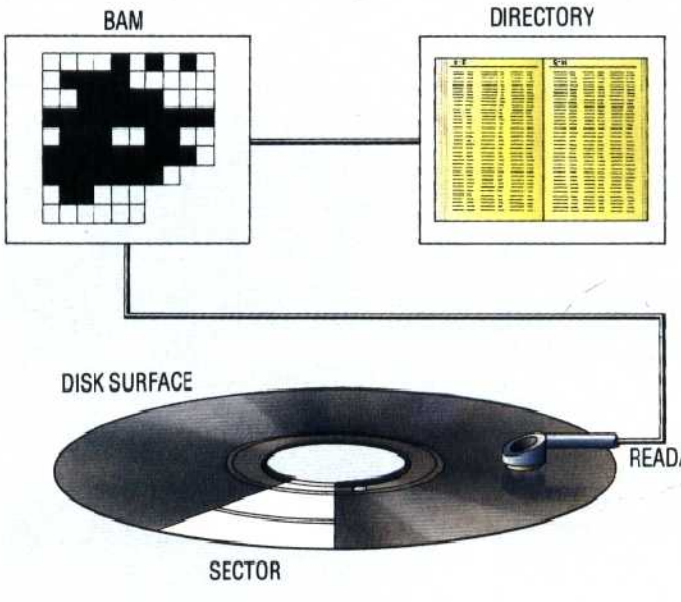
Before a computer is able to run any kind of applications program, it first needs its own internal set of programs to manage the various parts of its system, and to make sense of the instructions that comprise the user's program. This internal set of programs is called the Operating System (OS), and on most home computers this resides permanently inside the computer in the form of ROM memory. Generally, we are totally unaware that the Operating System is functioning, which is why we refer to it as being 'transparent in operation'.

If your system includes a disk drive then a large part of that OS will be concerned with the various disk operations. We call that set of routines the Disk Operating System, or DOS. You might see those three letters used in the names of proprietary products — Microsoft's operating system, for example, is called MSDOS. A DOS will typically come in one of three forms. It may comprise part of the ROM inside the computer. An example of this is the Sinclair Spectrum, which has the commands for operating the Microdrive (not really a disk, of course, but similar in operation) built in.

but offer considerable advantages over 'non-intelligent' disk units. For instance, they don't eat up valuable user memory, and can be left to execute a complex disk operation while the computer itself continues with the applications program.

Thirdly, the DOS may reside inside the computer RAM. This technique is increasingly popular in business systems, in which the disk drives are built into the computer, and there is plenty of RAM available (say, more than 128 Kbytes as standard). For the manufacturer, this has the advantage of eliminating the need to create a completely new set of ROMs every time there is a minor modification to the DOS, and the user benefits from a choice of one of a number of proprietary operating systems that will run on the same hardware.

But how does the DOS get into RAM in the first place? This question immediately arises when the system is switched on. The DOS needs to be transferred from the disk into RAM, but if there is no DOS in the computer to tell it how to control the disk, how can it load something into RAM? A program cannot 'pull itself into RAM by its own



Ring of Truth

The magnetic recording surface on a disk is divided up into concentric tracks and radial sectors. The intersection of a track and sector is called a block, storing typically 128 bytes. The function of the DOS, with the help of a directory and a Block Availability Map, is to keep tabs on what is stored in each block

KEVIN JONES

Another type stores the DOS in ROM within the disk unit itself. This is only applicable when the disk is an 'intelligent' device (such as the Commodore Disk Unit), meaning that it incorporates its own microprocessor ROM and RAM. These are more expensive to manufacture,

bootstraps', so the computer has to have a tiny program built into ROM, which it executes whenever the machine is switched on. This program is called the 'bootstrap' (from the analogy above) and is itself a very simple form of DOS. The bootstrap's job is simply to find the