

Remember that big table in the last (fourth) article in this series? Lets look at the data in one line of that table a little closer:

| | | | | | |
|------------------------|-----|------|-----|------|------|
| Disk Size (inches) | 5¼ | 5¼ | 3½ | 3½ | 3½ |
| Disk Capacity (kbytes) | 360 | 1200 | 720 | 1440 | 2880 |
| Maximum Root Entries | 112 | 224 | 112 | 224 | 240 |

Notice that the most common current formats, 5¼ and 3½ inch DSDD disks (360k and 720k), show a maximum of 112 root entries. What exactly does that mean? Well, here is an experiment I did to illustrate that. If you are so inclined, you can do the same experiment.

I took a freshly formatted 360k disk and created a file on it, using the DOS command COPY CON 1. That command says in effect, "whatever the human types on the keyboard, put into a file named 1". I entered just one keystroke, the capital letter A, then pressed Ctrl-Z. This keystroke combination tells DOS the human is all done, and to close the file. When I then gave the command DIR, it showed a single entry, a file named 1 which contained just 1 byte.

I did all this again, this time creating a file named 2. Again, it occupied only a single byte of disk space. I repeated the process 7 more times until I had 9 files, named 1, 2, 3, 4, 5, 6, 7, 8 and 9. Since my goal was to create over 100 such files, I employed a little trick from then on to save time. Instead of creating each file individually, I issued the command COPY 1 10, COPY 1 11, COPY 1 12, and so on, until I had 19 files. Then I typed the command COPY 1? 2?, the COPY 2? 3?, and so on, until I had 99 files on the disk. I continued with these file manipulations until there were exactly 112 files present on the disk, named 1 through 112. The DIR command showed that there were 112 bytes in 112 files. If I looked at any one of the files with a word processor or just by typing the contents to the screen, each file contained just the letter A in it.

Then the final experiment. I typed COPY 1 113 and pressed the ENTER key. After a pause, DOS sent me an error message:

Cannot make directory entry - 113 0 files copied

Thats it! In the root directory of any DSDD floppy, you can have ONLY 112 files, *no matter how much space is left on the disk*. So the simple message is, if you are cramming a bunch of files on a floppy, even if there is plenty of unused space on it, be careful when you get in the vicinity of 100 files, because 112 is the absolute limit for this type of floppy!

There is a work around. While the root directory is limited to 112 entries, subdirectories have no such limit. You can stuff hundreds of files in a subdirectory on a floppy, so long as their combined space does not exceed the space available on the disk. The message here: if you want to put more than 112 files on a 360k floppy, create a subdirectory and put them in there. Type MD MYFILES to create a subdirectory named MYFILES, then type CD MYFILES to put yourself in that directory. You can then copy files to your heart's content! Happy computing! Stan