

Article 8 in this series deals with a floppy disk problem. Have you ever gotten a 5-1/4 inch floppy in the mail from a friend or software house, put it in your drive to do a DIR, and received a message to the effect that DOS is unable to read the disk? Wow, what a feeling! Bad disk! Someone in the US Post Office must have passed it through a magnetic field during its journey to you! Right? Well, maybe not.

Standard 5-1/4 inch floppies are interesting mechanical, as well as digital, devices. Next time you have a bad disk that needs discarding, teach yourself something about its make-up before you pitch it in the wastebasket. First, insert a couple of fingers in the large center hole, and turn the disk inside the plastic jacket. Notice that there is some resistance? You will see why in a moment, after a bit of surgery. Now do this. Place the whole floppy on a hard desk surface. Using the side of a pen or other smooth tool, press down along the edges to flatten down the edge crease, the way you would flatten down a folded piece of paper along the fold. Press hard, and do it around all four sides. Now, put your fingers in the center hole and try to turn the disk inside the jacket again. Notice how hard it is? If you pressed really hard to flatten the edges, you may not even be able to rotate the disk. It may buckle first.

This article was prompted by a similar scenario the other day. A floppy arrived from a member of Emergency Government in California. It had an important document on it, and I was really upset when my machine could not read it. I had visions of a phone call, then a wait for several days until a new disk arrived. However, things got brighter when I discovered that it was just a mechanical problem, not a demagnetized disk. The US Mail had somehow flattened the disk, perhaps because it was in the bottom of a heavy mailbag with several hundred pounds of paper pressing on it. None of my machines had drives that could overcome the friction and turn the disk inside its jacket.

How did I overcome the problem and read the data on the disk? Surgery was required. Using my fingers, I pushed the disk over to one side of the jacket's interior. This can be done because the disk itself is only 5-1/8 inches in diameter, while the jacket is 5-1/4 inches. So I moved it over away from one edge by 1/8 inch. Then, with a sharp scissors, I cut along one entire edge, about 1/16 inch in. Now the "envelope" was open and I could take out the "letter". Using care to only touch the center of the disk - near the hole in the hub, I worked out the disk onto my table. Once it was out, I inserted my fingers in the jacket and spread apart the two surfaces, especially near the edges of the jacket. Then, using a pencil as a tool to push the disk around on my work surface, I slid it back into the jacket. I used my fingers, then, to center the hub opening of the disk in the opening of the jacket. Then, into the drive it went, and my machine was able to read the data! I made a quick copy on my hard drive, discarded the original disk, and made a copy on a new disk.

Try the surgery yourself, but cut around three sides instead of one. When you open the cut jacket, you will see that the disk turns in a jacket that is lined with a white, fuzzy stuff, sort of like tissue paper or glass cloth, which has been glued to both interior surfaces. The white surface is supposed to rub lightly against the disk, cleaning it of all dust and dirt as the disk turns. Unfortunately, the cleaning surface will also "grab" the disk if the jacket is flattened for any reason.

So, next time you have a disk that your machine is unable to read, make sure it is not just a mechanical problem before you go to the trouble of getting a replacement. If it is mechanical, try the procedure outlined above to recover the data. Be careful, however, not to touch the disk with your fingers anywhere but near the hub - the drive heads never reach the hub during reads or writes. A single fingerprint on the data part of the disk can and will destroy the data. Also, be sure you do not inadvertently turn the disk over when replacing it in its jacket. If you do, it will be turning in the wrong direction, the data will be read backwards, and your machine will tell you that you fed it gibberish. Unlike a phonograph record, a disk drive reads data from both sides of the disk at once; flipping a disk over is sure to befuddle DOS.