

Why did my Hard Drive Crash/Fail?

Hard Disk Drives are a basic component of most computer systems. They are a device containing any number of polished metal discs and some devices called heads that read and write data to these magnetic surfaces. In very much the same way information is stored on audio cassettes, these drives write Zeroes and Ones to the discs in a logical pattern dictated by the Operating System (Windows 98, XP, etc.).

Most of the drives in desktop computers today have hard drives spinning these discs at 5400RPM to 7200RPM so the clacking noise we associated with our computers comes from the motor moving the read/write heads back and forth to read this information off the discs as they spin by. The actual innards of these drives looks much like a record player with the needle being the read/write head. The big difference is that data is stored all over the surface of the drive and is not accessed as we listen to songs, in a sequential manner, but rather can be spread through the discs surface requiring that head to jump from the inner edge of the discs to the outer edge and back quite frequently.

Most hard disc failure is caused by the motor failing to move this head appropriately and can be attributed to a mechanical failure of the motor. Other common failures are that the polished surface shows signs of wear and the data stored on the areas that can no longer hold the magnetic coating is lost. The most severe problem is a head crash when the read/write heads touch the surface of the discs themselves. This is something that should never happen and rarely does but the term "hard drive crash" has become synonymous with hard disc failure in general.

Now that you have a basic understanding of what your hard disc really is and what the failures that happen are a result of, the next step is to understand that the manufacturers of these devices EXPECT failure and are not terribly bothered by it within reason. To them (the manufacturers), a failure rate of 3%-5% over a 3 year period is acceptable. To the average user, this is ridiculous as we can't lose 3%-5% of our data in 3 years AND 3%-5% of us can't afford to lose everything on our hard drive every 3 years. The sad fact is that these devices are not intended to be used for safe keeping but rather for temporary storage and regular use. Although hard drives are covered by a manufacturer's warranty and is generally replaced for free, your data is NOT restored by the manufacturer, and they make NO claim that they will even try.

If your data is important, **YOU MUST BACK IT UP**. Backing up data can be done in a multitude of ways but the most common is on CDR or CDRW media. The media is inexpensive, drives are also low cost, and the process is not very complicated. Do yourself a favor, protect yourself from being in that 3%-5% without a backup.

We at TCS hope this proves useful to you and ask that should you have troubles with the instruction provided, find that this information wasn't informative enough, or wish to request information on additional topics, that you contact us at any time.

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