

What happens to your home Video tape and cine film memories?

Every time videotapes are used their life expectancy declines. Even a single play mechanically reduces the picture quality, virtually unnoticeably - but over many cycles the degradation becomes obvious. The consequences range from loss of colour and sound quality to physical tears in the tape. So what exactly is videotape, its associated problems, and what can be done to preserve your memories recorded on videotape?

Videotape is a plastic ribbon on which a magnetized metal powder is held by a binder. Before recording, the particles are oriented randomly. During recording, the video heads create magnetism that re-orientates the particles in certain directions. Thus video signals are converted into magnetic patterns on the tape. When the tape is played back, video heads again pass over the magnetic powder and sense the magnetic variations and convert them back into a video signal. Video signals consist of millions of electrical oscillations each second. Each oscillation represents a tiny piece of your picture. If you lose just one of these for any reason, you will see a momentary speck on your screen rather than the piece of picture that belonged there. This momentary loss of picture is called a dropout.

Tiny particles of dust, dirt, smoke, loose powder from the tape, or debris from the cassette housing can get between the spinning video heads and the magnetic coating, causing loss of signal for a brief moment. Dropouts also result when some of the magnetic surface flakes off the tape, taking a piece of picture with it. A fold or a scratch on the tape is a million times larger than a dust particle and can cause picture disruptions lasting several seconds. Playing chewed up tape is also hazardous to your heads. The delicate spinning video heads can snag on a damaged area in the tape and become chipped. You will see a half snowy or totally snowy picture, and the only cure will be to replace the VCR heads.

On the opposite edge of the tape is the control track, a series of magnetic pulses that guide the spinning video heads so that they precisely follow the magnetic paths on the tape. Damage to this edge of the tape will cause your picture to roll or not track correctly resulting in a band of static to run across part of the picture.

Tape, being a long plastic ribbon, can contract and stretch depending on temperature, humidity, cassette tightness, and tension of the rollers inside your VCR. When the tape stretches or contracts even a small amount, it changes the positions of the magnetic paths, making it hard for the tape heads to follow. This sometimes causes your picture to jitter or to wave like a flag, especially at the top. As the condition becomes worse, your picture folds into diagonal lines. Sometimes this tape stretching causes your video player to track poorly, resulting in a band of static that runs across part of your TV screen.

Certainly, VHS and camcorder tapes, being made from chemical materials that will break down over time, will eventually have their ability to hold a magnetic signal adversely affected. The binder itself inevitably degrades by oxidation and hydrolysis and will fall off. How quickly they break down depends on how they were stored. According to Sony, tapes stored in ideal, constant temperature and humidity controlled environments can last up to 15 years with no degradation. Life expectation is highly dependent on storage conditions (controlled ranges of temperature and humidity). Almost no home users have these ideal conditions and therefore, degradation can be expected in less time, often 5-10 years. Also, fast approaching is the time when VCRs will no longer be widely used or even available. It's very likely that in the near future you may not have access to the equipment to play your tapes. So even making fresh copies of your tapes is probably not the solution; in any case there is a noticeable loss of quality by the 3rd or 4th generation copy.

Cellulose acetate film doesn't last as long as video polyester tape-- it's how the information is stored that's the difference. Optical on film is analogue and can withstand considerable degradation without losing the image. Video is more like digital in that after a point the image is lost entirely. If film is damaged at one spot, one frame is lost, whereas with videotape there will be picture distortion for 10 seconds or more because a frame is spread over several inches of tape. However, there are other problems with cine film, even if you have a projector. Over time there is noticeable colour degradation, splices tend to loosen, and handling film almost invariably produces scratches and wrinkles.

The solution

The solution to this problem of degrading and vanishing precious memories is to transfer them to DVD. DVD is a stable medium that can last a lifetime, and has all the benefits of a digital product as well. It is never too early to do this transfer.

When you choose YesDVD, you also get features you never had on tape or film, such as 54 Chapters on the screen as well as on the jacket, so you can go to the bits you want to see quickly, you get full personalisation for your disc and jacket titles, and you get Music Videos. These features make for a much richer viewing and sharing experience, and of course you can watch your video on almost every Home TV, as well as PC and Mac computers with DVD drives.