

Reel Connections - Issue #4

Why are My Grandparents Green?

A Weekly Sunday Newsletter from Stilson Video Services



Nobody should be remembered this way

One of the problems with waiting too long to transfer your old analog tapes is the colors can become very undesirable.

Many years ago, I remember a customer asking me why their grandparents were green on the DVD I created for them from their VHS tape.

It was an awkward moment, but a fair question and so I tried to offer a meaningful answer.

Basically, old analog videotapes — like VHS and Hi8, store images using **magnetic particles** on a tape. As those particles age, they **weaken and drift**, forcing a VCR to read the information differently than it used to.

Here are 4 reasons that happens:

1 | Magnetic particles break down over time

Analog tapes rely on iron oxide particles embedded in the tape. These particles store the color information.

As the tape ages, even if it's not played, the particles lose magnetic strength which makes the signal become weaker.

This typically causes:

- **reds to fade**
- **blues/greens to dominate**
- or sometimes an overall **washed-out, often pinkish appearance**

2 | Heat, humidity, and temperature swings accelerate decay

Analog tapes are **sensitive to their environment**. It's a red flag to learn that a client's tapes have been stored in an attic, damp basement, garage or barn.

Storing tapes in unstable places like these will more quickly break down the binder (the glue holding magnetic particles in place). As the binder degrades:

- particles loosen
- colors become inconsistent
- the tape's overall signal becomes unstable

This is a major cause of **blue tinting and loss of contrast**.

3 | Magnetic fields slowly “superimpose” themselves on the tape

This is yet another cause of degradation. Over decades, this causes:

- weird color lines
- shifted hues
- flickering colors

This is one reason some tapes look **too green or purple**.

4 | The chroma (color) signal fades faster than the luminance (brightness)

In analog formats, **color and brightness are stored separately**. Color information in the “chroma” signal fades faster since it is more vulnerable to time and temperature.

On the other hand, brightness (the “luma” signal) survives longer. This is why old tapes often **look blurry** on top of the weird looking colors.

So Can Anything be Done About This?

Absolutely — a lot, actually. For our clients who don't want to accept grinchy looking grandparents like the aforementioned customer, we can help in a few different ways. For her, we did a manual color correction which removed the excess green.

Oddly, post-transfer enhancement is a rare service today in the transfer industry even though we have more tools at our disposal than ever before.

- The first step is always getting the **best possible recording** of the original tape on a well maintained VCR. Sometimes, before that can happen the tape will need dried, or baked, to eliminate moisture which causes sticky shed syndrome. Beyond that, tape cleaning may be required.
- **Manual Color Correction** - after we have the best recording possible, we can go to work on the colors. This is an optional second step but can make a world of difference. As the color shift is typically not uniform across the spectrum, focusing on skin tones is a good place to start.
- **AI Enhancement** - at this point, AI tools are very good at some things and coming along elsewhere. Upscaling from standard resolution to high definition is a strength, along with eliminating noise in the picture. In certain situations, adding detail also works well.

I believe it is no longer acceptable to be stuck with the results of transferring old tapes in old VCRs. I **want customers to know they can choose to pass these precious images on to future generations the best way possible**.

Lives are important.

Our mission is to connect them to future generations the best way possible.

Finally, if you have a topic you'd like me to write about, let me know at stilson@stilson.com and I'll add it to the list.

— Bill Stilson

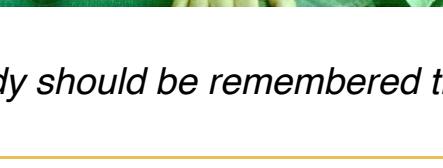
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216-595-5155

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