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Media Preservation: A Case Study

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Abstract

This article is an overview of methods used to preserve content on video tapes which have mold build-up.

Keywords

video tape preservation, mold, baking, tape repair, salvage, restoration

Author Bio & Acknowledgements

Paul Grippaldi was co-founder and CEO of Fast Forward, San Francisco's largest video and audio tape duplication company in the 1980's and 1990's. He founded Digital Revolution in 2004 to specialize in Media Preservation and Archival Services. He is the President of the Northern California Production Council, a member of the Society of California Archivists and the National Academy of Recording Arts and Sciences.

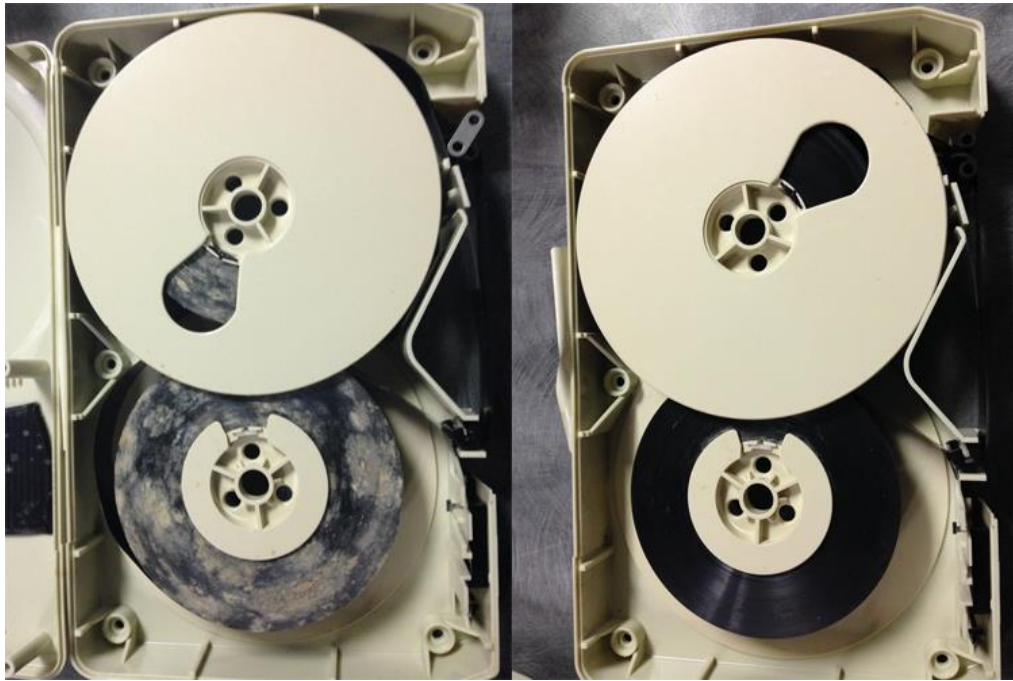


Figure 1 Severe mold build-up & after baking and cleaning

After owning and operating the largest tape duplication facility in San Francisco in the 1980's and 1990's, opening Digital Revolution 12 years ago seemed like a natural move. (see <http://www.digitalrevolution.tv/>) Our mission was to help our clients transform into an all-digital environment with the highest possible quality and customer service. We now digitize every video & audio tape/disc format, including film, slides, photos, posters etc. Media preservation is an exciting field with lots of great history and stories to tell. It also has its challenges.

Case Study:

Actor Burt Reynolds is the subject of the newest documentary by Mile End Films. They asked Digital Revolution to digitize seven 3/4" Umatic Tapes of television shows in which he appeared. These tapes were particularly old and several had varying degrees of mold build up from being stored in a damp environment. Oxide-based tapes gain moisture over time. With 3/4" Umatic tapes dating back more than thirty years, we perform the following preparation before attempting playback:

- Bake
- Hand clean
- Transfer the reels to fresh 3M Broadcast Color Plus shells

We assume that tapes this old have not been played for decades. Therefore, we also fast forward and rewind the tape in order to loosen it up. This helps the tape roll evenly without having sticking points.

All of these procedures need to be done carefully and thoughtfully. In the case of moldy tapes, we use gloves, a mask and hand clean the entire length of the tape with an alcohol cloth.

- Baking gets the moisture out of the tape so that it does not stick in the machine or rip oxide off during playback (sticky shed syndrome).

- Since oxide-based tapes decompose relatively quickly, cleaning them keeps the machine playback heads from clogging and makes for a more residue-free transfer. Alcohol acts as a good cleaner and also kills mold.

- 3M Broadcast Color Plus tape shells are made of all plastic non-moving parts so the tape tracks more accurately in them. We keep them in stock as part of our transfer tools. Other tape shells have moving parts and springs that can dry out over time and cause poor quality playback.

Playing this type of tape can be particularly tricky. It is important to have a machine that has manual Tracking and Skew functions. Tracking adjusts the variation in the tape path vertically. Skew adjusts the slack in the tape. If these functions are not set properly the video quality can be uneven.

The client's file format preference was Pro Res 422 HQ. This is a high resolution digital capture popular with video editors. It's also a solid archival file format. The client was happy with our first set of digitized tapes. They had transfers done in other parts of the country during the same time period. We told them to send us all of their "hopeless" tapes, which they did. Two dozen more ¾" Umatics arrived, all of them with mild to severe mold build up. The programs were of particular interest to the filmmaker and included The Mike Douglas Show, The Tonight Show, awards shows, Riverboat, Love American Style, Burt Reynolds Late Show, outtakes from Smokey and the Bandit, etc. They contained some interesting footage of him performing with three great loves of his life: Dinah Shore, Sally Field and Bernadette Peters.

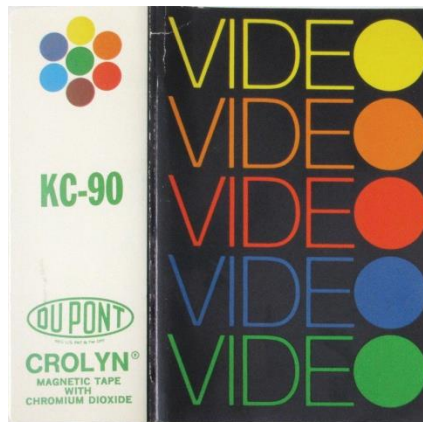


Figure 2 Off-brand tapes deteriorate more rapidly



Figure 3 3/4" Umatic oxide-based tape

The tapes spanned 1977-1983 and were manufactured by various companies including Sony, 3M, and DuPont. Some of them had to be baked longer than normal and hand cleaned several times because of excessive mold and moisture. Consequently, we were able to get all of them to play properly except for the two DuPont brand tapes. DuPont was not in the tape manufacturing business very long. We have also had DuPont video tapes in other collections such as Chevron that had decomposed so badly that they were unsalvageable. Unfortunately, all magnetic tapes will eventually suffer the same fate.

Please contact us at www.digitalrevolution.tv if you have any related media digitizing questions. If you don't know what type of media you have send us a photo and we will help you identify it. Levis Case Study: <http://www.digitalrevolution.tv/press-index/#/press/>