

Genealogical Society of Utah

The **IN**side Story

Although it sounds like the title of a bad science fiction movie, “vinegar syndrome” poses a serious threat to older microfilm collections. Starting in the 1930s, microfilm was manufactured on a cellulose acetate base. Structurally, one problem with acetate film is that the acetyl groups that make up the cellulose acetate chain can detach in the presence of moisture, heat and acids. They combine with water to form acetic acid – the compound that gives vinegar its familiar odor. Once in this condition, acetate microfilm becomes brittle, curls, shrinks and buckles. Images degrade and can be lost. Once the Genealogical Society of Utah got a whiff of vinegar, they knew they had to act quickly.

The Society began acquiring microfilm in 1938, nearly 30 years before the vault was built. During that time span, the acetate masters were stored in a variety of conditions. Thanks to their micrographics experts, the Society was familiar with the vinegar syndrome and knew they must act before the problem got any worse.

The Church of Jesus Christ of Latter-day Saints – doing business as the Genealogical Society of Utah – stores birth, death, census, probate, land, tax, marriage and many other kinds of valuable records related to genealogy and tracing family histories. Wayne Crosby, the Manager of the Granite Mountain Records Vault (GMRV) in Salt Lake City, Utah, oversees an operation housing and safeguarding approximately 3.5 billion images on microfilm.

“The Genealogical Society of Utah contacts archives around the world and offers to film their paper records,” says Crosby. “We provide record custodians with a microfilm copy at no cost, as well as off-site storage by keeping the master at GMRV. In return, custodians grant us

permission to provide access to their records. Researchers can order a microfilm copy through a network of nearly 4,000 family history centers worldwide. The GMRV duplicates approximately 900 to 1,000 rolls of microfilm each day to be used by researchers.



Kodak Direct Duplicating Microfilms

The 65,111 square-foot Granite Mountain facility keeps film in a 30% humidity and 65°F temperature-controlled environment to help assure the greatest longevity. Ongoing and rigorous quality assurance testing is done to identify and correct any problems that may occur

with microfilm. And in 1997, through the use of monitoring strips and other planned checks, the first instances of vinegar syndrome were discovered.

“After discussion, we determined our most prudent course of action would be to begin a process of updating and transferring all of our older films to polyester-based microfilm,” notes Crosby. “We knew it would be a huge undertaking, and Kodak was very helpful to us in determining effective ways and means to accomplish this goal.”

Situation

The Genealogical Society of Utah houses over 2.3 million rolls of microfilm in the Granite Mountain Records Vault. Some of this original microfilm dates back to the 1930s. In 1997, the Society made its first discovery of a roll of microfilm that they believed was experiencing the “vinegar syndrome,” a debilitating and potentially fatal affliction for cellulose acetate-based films.

Objective

Transfer vinegar syndrome-affected microfilm – and eventually all acetate-based microfilm – to more stable, state-of-the-art, polyester-based microfilm from Kodak.

Solution

Transfer to Kodak Direct Duplicating Intermediate Microfilm 2470, a polyester-based film with an anticipated life of 500 years under proper storage conditions, assisted by technical advice from document imaging experts at Kodak.

Comments

“Kodak has been extremely helpful in assisting us in the implementation of this remastering program. We needed a simple, cost-effective way of remastering 300-400 rolls a day. Kodak’s experts provided great suggestions when we began and have since continued to help us fine tune the process.”

*– Wayne Crosby,
Manager of
Granite Mountain
Records Vault*

kodak.com/go/docimaging

Technical Assistance From Kodak

"We visited Granite Mountain several times and helped the Society evaluate their collections to determine the best setting specifications and film to use," says Bob Breslawski, a Technical Associate with Kodak. "We worked with their in-house technical staff to classify films in terms of density and uniformity, and then select the appropriate printer exposure and print film type to achieve optimum results. They have a great range of film conditions, in terms of image quality and physical standards, because it's come from so many sources." Kodak and Society personnel have worked together to set background and D-min density targets tailored to the various conditions of different collections. "The technical expertise and dedication of Society QC and production personnel helps them achieve the highest level of quality possible, contributing immensely to the value of their collection," adds Breslawski. "This preservation effort is a major, positive contribution to human history."

Once films that were considered in jeopardy were transferred, the Society began the immense task of updating their entire archive of acetate film. "We began by going chronologically through our collections and thus far have completed 450,000 rolls," Crosby says. "We remaster 80,000 acetate rolls per year and will

continue for another ten to twelve years. We believe our remaining acetate film has a life expectancy of 80 years, and since we're now working on film from the 60s, none of our masters are in danger of being lost anytime soon."

The process has been aided by the use of printers developed by the National Archive, specifically for use with acetate films. Although slower, these printers handle the film in a more gentle fashion, important when acetate film has become brittle.

Unique Advantages of Kodak Microfilm

Most of the updating is being done on Kodak Direct Duplicating Intermediate Microfilm 2470, a micro-grained, polyester-based film with an anticipated life span of more than 500 years (under proper storage conditions). "The Kodak 2470 Film offers unique advantages for a project like this, based on the varying conditions of the Society's films," says Breslawski. "2470 Film – because of its low contrast and design as an intermediate direct duplicating film to create print film masters – is ideal for optical optimization of most of their collections. This is a unique product, offering characteristics and flexibility not offered by any other film or manufacturer."

Crosby adds, "The 2470 Film is a very good product. Our archived films have a wide

range of densities and contrasts. The 2470 Film does an excellent job of capturing the light and dark areas, and I believe gives us superior results."

In many instances, based on a specific film, the goal is simply to minimize image loss and maintain as much image quality as possible. In a few cases, Kodak Direct Duplicating Microfilm 2468 is utilized when an increase in contrast is desired.

As the updating continues, Crosby expresses appreciation for the efforts of Kodak and their micrographics experts. "About four years ago, we worked with folks from Kodak to change our print mastering program. The results were, for example, a new D-min target range that gives us greater probability of consistently capturing every image. They offered heavy technical consulting and training in areas like quality control, duplicating methods, setting specifications and so on. Kodak has been extremely helpful in assisting us in the implementation of this remastering program. We needed a simple, cost effective way of remastering 300-400 rolls a day. Kodak's experts provided great suggestions when we began and have since continued to help us fine tune the process."

