

Op Ed — Our History Is Disappearing Under Our Noses - Literally! A Proactive Approach to Circumvent a Failing Preservation Technology

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I have spent my entire professional life — more than a couple of decades now — focusing on preservation, archiving materials, and ensuring access to library collections. With this unique focus comes an unusual perspective, one resulting from having watched as issues around preservation have emerged, and re-emerged. Just as the library community once observed the preservation problems with acidic paper (resulting in innovations around acid-free paper), we are now seeing problems with a preservation medium that emerged in the late 1920s and was still in use as recently as the mid-1970s: acetate-based microfilm.

Challenges around preservation are certainly not new. Starting early in the 20th century, inherent space and condition issues placed collections of books, bound periodicals and newspapers at risk. As a result, aggressive microfilming started in the 1930s in an effort to preserve centuries old print collections. At the time, acetate silver microfilm was the state-of-the-art medium used to preserve and protect volatile and cumbersome paper collections. Today, however, once highly regarded acetate film has become chemically unstable and is rapidly failing. This means that significant percentages of our historically significant, and in many cases, unique film collections across the country are now at risk. It's time to take decisive action.

When acetate based microfilm fails, as is currently the case in many public and university libraries, you smell a telltale vinegar aroma from the acetic acid gases. Some compare the smell to pickles, others to salad dressing; perhaps it's because I associate it with deteriorating collections, I personally think it just stinks. Acetate based microfilm, used from the late 1920s through the mid-1970s as a strategy to preserve print collections, will eventually go through a molecular change that results in the shrinking of the plastic base. As this occurs, the acetic acid environment that results will cause the process to accelerate

until the film either becomes so brittle it breaks into pieces or it fuses to itself resulting in what I call the hockey puck effect. Another clear sign of an issue is white powder on the boxes or the film itself; this means that gases have actually crystallized. In each case, our history is silently disappearing inside the cabinets and by the time it starts to smell it is sometimes too late to save it.

The process or condition I just described is known as Vinegar Syndrome and it WILL eventually happen to ALL acetate film. Even when stored under perfect conditions, acetate based film will only last 100 years. I don't know of any library environments that have maintained the perfect conditions that require less than 60 degrees and constant 40%

relative humidity for the storage of acetate film. The fact is that even if we could always keep our environment at a comfortable 72 degrees and 50% humidity, acetate film would start developing Vinegar Syndrome within 40 years. Considering when acetate film initially became the industry standard, it is clear that deteriorating film probably became apparent in some collections as early as 1970 and as recently as 2010.

What can you do?

I recommend a three step approach:

1. Test to evaluate the extent of the problem
2. Evaluate the affected content, and consider whether or not there is a desire to save it
3. Choose a remediation and content reclamation alternative

Microfilm as a preservation technology continues today, but thankfully silver microfilm manufacturers switched from acetate to a very durable polyester base in the mid

1970s. Reassuringly, polyester film has undergone scientific age acceleration tests that suggest it will last 500 years or more. Engaging a preservation service company who can use your own film as the input source to create a durable polyester copy is the quickest and lowest cost action you can take to save your historical information before it deteriorates. Digitization, or converting film to a digital format, is also a viable recovery strategy, although it is typically more costly and requires consideration of text capture, metadata creation, image formats and hosting solutions.

Citing a real life example, I recently had the opportunity to get involved with **Racine** Wisconsin's Public Library on a restoration project. Their heavily used collection of the



Racine Journal Times was deteriorating due to Vinegar Syndrome. Knowing that the Publisher did not have a complete collection and the reels they did have were in worse condition than those at the Library, **Racine Public Library** decided to not only replace their collection of service copies but also create an archive by also investing to create a negative copy for dark storage. The key to success for their project was early detection and swift action. They now have brand new service copies for patron use and negative archive to support long-term preservation.

Ben Franklin observed that "An ounce of prevention is worth a pound of cure." We have an opportunity to save our history and the valuable archives libraries worldwide have curated. It starts with the simple step of checking your microfilm collections for this deteriorating condition and coming up with a holistic preservation plan that ensures continued access to the valuable content in these archives for generations to come. 🐾