



## Special points of interest:

Articles on microfilm preservation include

Adelstein, P.Z., "Preservation of Microfilm," *Journal of Micrographics*, Vol. 11, No. 6, July-Aug 1978, 333-337.

Kesse, Erich, "Condition Survey of Master Microfilm Negatives, University of Florida Libraries," *Abbey Newsletter*, Vol. 15, No. 3, May 1991.

Puglia, Steven. *A Short Guide to Nitrate Negatives: History, Care, and Duplication*. Andover, MA: Northeast Document Conservation Center, 1986.

On line sources include

[NEDCC](#)

[ALA Preservation Microfilming](#)

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**Preserving the Past  
for the Future**

# Preservation Tips

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## Monitoring Microfilm Collections . . . By James Gross

Many local library's and archives have microfilm collections.

While some researchers may prefer the convenience of accessing data via electronic files or paper, it is a fact that a percentage of collections are housed on microfilm and will likely remain with us in the near future. The latest trend in data storage is a migration from existing media, including microfilm, to scanned images. While this trend is acknowledged, the purpose of this article is to make the reader aware of an existing problem, deteriorating microfilm. If important microfilm collections are not analyzed for preservation purposes, will countless microfilm rolls be forever lost?

In this short article we will examine some issues facing microfilm collections and share some thoughts on possible solutions.

The Library of Congress Information Bulletin (May 2007) referred to the issue of damaged or unstable microfilm collections as a "ticking time bomb."<sup>(1)</sup>

The majority of preservation issues do not manifest themselves in the newer microfilms. Most of the preservation problems deal with the older films. For example, when older films start to deteriorate, they begin to give off a strong vinegar smell. This acetate decomposition is caused by a chemical deterioration known as the "vinegar syndrome."<sup>(2)</sup> Once this deterioration accelerates, the film on the reel can become brittle and break apart in ones hand. If left unchecked, the film itself will eventually begin to stick together. For severely decomposed film, salvaging it could prove to be extremely difficult, if not impossible.

Prior to the 1950's, experts were aware of the problems associated with cellulose nitrate film. Steps were taken to transfer these films to acetate-based film. The vast majority of film deterioration issues have been with nitrate and acetate based film. The instability of nitrate and acetate based film led them to be phased out and/or transferred to polyester-based films. Polyester-based films have a shelf life of over 500 years if processed and stored correctly.

Microfilm instability is not new. Institutions such as the Library of Congress and the George Eastman house (Kodak film is used in microfilm), have been aware of film preservation needs. So, if some institutions are aware of film preservation concerns, why hasn't there been a concerted effort to create and implement a film collection Continued, page 2

## Dust and Air Quality

Institutions have long realized that particulates can affect their collections. But the EPA estimates that we are spending about 90% of our time indoors – almost as much time as our collections. Studies also suggest that this indoor air in many commercial buildings is up to five times more polluted than outdoor air. So the quality of the museum or library's air can

be as important to staff and patrons as it is to collections.

Airborne particulates come in a variety of forms ranging from plant pollen and airborne bacterial to fiberglass and combustion particles. Motionless, human beings alone shed up to 500,000 particles per minute. When active, this level can reach up to 45,000,000 per minute. Humid-

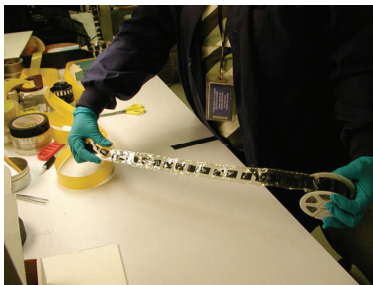
ity and temperature also affect the generation of these pollutants.

Particles tend to diffuse very quickly into the surrounding air, making source identification challenging.

Although expensive, particulate analyzers can often be rented Continued page 2



Example of deteriorated microfilm, above. Photo below shows initial preservation efforts. Photos courtesy of Kathy Miller, Preservation Specialist, National Archives, College Park, MD.



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preservation plan?

The reality is microfilm collections often suffer from neglect. As a storage medium, it just doesn't have the appeal that other mediums, such as electronic databases, do. Also, libraries and archives, for the most part, have limited staffs and budgets. Their staff is empowered to focus on taking care of the current patron requests. They may not even have a qualified staff person dedicated to the microfilm room or collection.<sup>(3)</sup>

What about possible solutions? First, the library or archives needs to examine their collection priorities. They must determine if the age of their microfilm collection warrants a professional examination. Then, they can seek outside expertise to facilitate microfilm preservation training for their staff. Trained staff is a critical component of the preservation program. One option is to contact the state archives, the Library of Congress, or the

National Archives for assistance. A trained film expert can go thru a collection and list which films need leader, which need to be re-boxed, and which films are suffering from advanced decomposition. The decaying films could then be set aside for additional preservation efforts.

Libraries and archives housing valued microfilm collections should create a preservation plan. This plan should include an analysis of the film collection and a list of those films in need of special attention. A preservation survey of the film collection would be a practical first step.

In closing, it is clear that some libraries and archives need to spend more time and effort if they wish to ensure the long-term survival of their microfilm collections. An investment in qualified staff would probably be a good idea. While many institutions are currently exploring the feasibility of converting from microfilm to digital, the vulnerability of digital media is still an acknowledged

issue. Suzanne Dodson (2005) notes that "all of these electronic media are short-lived and are not suitable for preservation purposes."<sup>(4)</sup> Regardless of future digitalization plans, unless microfilm collections are housed in environmentally safe conditions, checked for the usage of acid-free boxes, and monitored for film decomposition issues, a library or archive director may one day be faced with a microfilm preservation catastrophe.

<sup>(1)</sup> Van Der Reyden, Dianne, "The Preservation Directorate at 40," *Library of Congress Information Bulletin*, Vol. 66, No. 5, May 2007, 96-99.

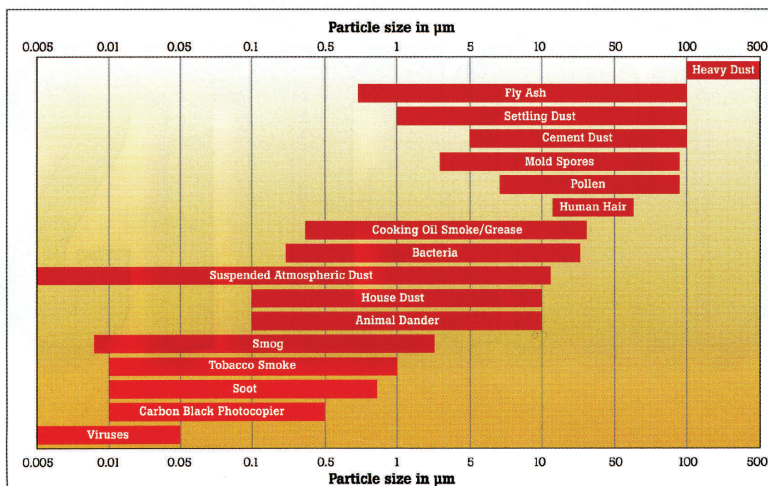
<sup>(2)</sup> Dodson, Suzanne Cates, "Silver Halide Film: Good But...", *Microform & Imaging Review*, Vol. 34, No. 1, Winter 2005, 18-21.

<sup>(3)</sup> Madsen, Debora, "A Case for Professional Level Staffing for Microforms," *Microform & Imaging Review*, Vol. 35, No. 3, Summer 2006, 103-104, and De Stefano, Paula, "Moving Image Preservation in Libraries," *Library Trends*, Vol. 52, No. 1, Summer 2003, 119-123.

<sup>(4)</sup> Dodson, Suzanne Cates, "A Film is a Film is a Film-or is IT?...Microfilms- How to Evaluate for Use and Purchase," *Microform & Imaging Review*, Vol. 34, No. 1, Winter 2005, 18-21.

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and may assist in determining the level of concern for an institution. One such instrument is the Fluke 983, which records temperature, relative humidity, and a six channel particle display.

In general an investigation should begin outside the structure, in order to establish baselines.

Interior readings, however, can be higher than these outdoor readings and still not indicate a problem since there may be more potential particle sources, smaller diffusion area, and relatively unsophisticated filtration. With museum quality filtration, however, you should see a reduction in particulates.

In cases of mold, particulates will often be very high – reflecting the mold spores in the air.