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INDIANA HISTORICAL SOCIETY COLLECTIONS ADVISOR

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Back to Basics

By Karen DePauw, coordinator, IHS Local History Services



Martin Collection, Indiana Historical Society

As the younger generations head back to school, I thought it would be a good idea to get back to basics. Refresher courses in best practices can be quite helpful now and then. When faced with the question of what to do with an object, a conservative approach to the environment is usually best. Read on to find out more about proper environmental conditions and the suggested levels for some of the major contributors to degradation in museum collections.

Light

Light levels are measured in lux (lumens per square meter) or footcandles (1 footcandle = 11 lux). Ultra Violet (UV) light is the most damaging, but all light can cause embrittlement, discoloration, bleaching and fading among other issues. The recommended light level for light sensitive items is approximately 50 lux.

Items most sensitive to light:

- Books
- Costumes and Textiles
- Dyed materials
- Feathers
- Film



ONLINE RESOURCES

[2.4 Protection From Light Damage](#)
(Northeast Document Conservation Center)

[Preservation Leaflets: The Environment](#)
(Northeast Document Conservation Center)

[Museum Collection Environments](#)
(National Parks Service)

FROM OUR LENDING RESOURCE CENTER

Collection Care: An Illustrated Handbook for the Care and Handling of Cultural Objects
(Brent A. Powell)

National Standards and Best Practices for US Museums
(American Association of Museums)

Small Museum Toolkit, Book 6: Stewardship: Collections and Historic Preservation
(Cinnamon Catlin-Legutko and Stacy Klingler, editors)

Find the resources above by visiting the Lending Resource Center [website](#).



Fur
 Ink
 Leather
 Paper
 Photographs
 Prints and Drawings
 Watercolors
 Wood

How to monitor?

Monitor using a light meter. Take readings in several locations and throughout the day (especially when the light level is affected by natural light). To generally detect whether or not UV light is present in the galleries, UV light detecting beads can be useful.



HOBO temperature and RH logger

Temperature

Temperature can negatively impact collections, whether too hot, too cold, or shifting too quickly. Collection objects tend to like different temperatures, but most can be quite happy with a consistent temperature between 64 and 75 degrees Fahrenheit as long as the temperature does not fluctuate too quickly or too frequently (+/- 5 degrees Fahrenheit). Note that higher temperatures result in faster chemical reactions and natural degradation. Thus, it is recommended to keep storage areas at colder temperatures (64 to 68 degrees Fahrenheit), while understanding that areas occupied by people, such as exhibit galleries, will need a slightly higher temperature to accommodate human comfort (68 to 77 degrees Fahrenheit is considered room temperature).

Items preferring colder temperatures:

Film (nitrate, acetate or color) = less than 32 degrees Fahrenheit
 Fur = 34 to 55 degrees Fahrenheit

How to monitor?

A simple mounted thermometer or thermostat can provide an accurate enough reading. Monitor storage areas and visitor areas separately when possible. Hygrothermographs or electronic dataloggers can also be used to monitor both temperature and relative humidity.



Simpson light meter reader

Relative Humidity

Relative Humidity (RH) refers to the percentage of water vapor the air *is holding* compared to the total percentage of water vapor the air *can hold*. The percentage of RH is, as the name suggests, relative to the temperature, meaning warmer air can hold more moisture than colder air. Higher RH can result in faster deterioration of objects, some directly like the corrosion of metals, and others indirectly such as mold growth (the potential for mold growth increases above 65 percent RH). On the other hand, RH that is too low can cause issues such as cracking wood and flaking emulsion on photographs. Great fluctuation in RH can speed up degradation as it encourages objects to be in a constant state of absorbing and releasing water. As a general rule of thumb, keep RH between 30 and 50 percent with daily fluctuations below 3 percent and seasonal fluctuations below 10percent (the shift should be made slowly).

Items requiring lower RH:

Archaeological materials, especially unstable metal and items with salt deposits
Remains (human or animal)

How to Monitor?

Hygrothermographs and electronic dataloggers, as mentioned above, monitor both temperature and RH. Other devices to measure just RH include psychrometers and hygrometers.

Remember, most damage is cumulative and irreversible. It is also a combination of the duration of time in less-than ideal conditions, as well as the intensity of those conditions. So, be careful when handling, storing and exhibiting items. Make sure they have adequate time to "rest" in the best conditions available between exhibitions. Tracking the time an object may be in less ideal conditions in the object folder can add an extra layer of protection, ensuring that items on exhibit or loan are regularly rotated.

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