



# The Local Network

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Hebron Doll House Museum  
Hebron, North Dakota

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## POTENTIAL HAZARDS IN MUSEUM COLLECTIONS

### FLAMMABLE AND EXPLOSIVE ARTIFACTS

#### \* Firearms and ammunition

**Dangers:** All firearms should be considered loaded and therefore could possibly be a hazard. Hand grenades and cannonballs with shot inside could still be live.

**Safety storage and handling tips:** Store in a secure location. Never point a gun, loaded or unloaded, at anyone. Guns that are known to be loaded should be unloaded if possible, or if there is an unknown obstruction, it should be

clearly marked. Contact your local law enforcement to defuse hand grenades, cannonballs or other live ammunition, if possible.

#### \* Celluloid plastic and cellulose nitrate and acetate film

**Dangers:** Cellulose nitrate is found in old film (movie, X-ray, and photographs from the early 1950s and before) and is very unstable. It releases a sweet odor that is harmful to people and objects. Cellulose nitrate objects, particularly reels of film stored in metal containers, also have the ability to spontaneously combust. Cellulose acetate was also used in old film and releases a vinegar odor that is harmful to people and objects. Celluloid plastics (1870-1920) are also flammable, though rarely spontaneously combust. Over time they give off nitrogen dioxide, a poisonous flammable gas.

**Safety storage and handling tips:** Consider freezing cellulose nitrate film, and/or have it transferred to a more stable type of film. Do not use silica gel or similar products near cellulose nitrate or ammunition.

#### \* Pressurized artifacts - Old aerosol cans, foodstuffs (pop cans, canned goods)

**Dangers:** items under pressure always have the danger of exploding, which could cause harm to the item itself, the rest of the collection and you. The contents of these items are also often toxic, even if they may not have been originally.

**Safety storage and handling tips:** Depending on the item, you may wish to dispose of the contents and keep only the container. If you decide to keep the contents, make sure the items are isolated so if

it does explode, it will not damage other artifacts or people. Contact your local fire department or law enforcement for assistance or advice in disposing of chemicals or toxic materials.

## CHEMICALS AND MEDICINES

### \* **Glass fire extinguishers**

**Dangers:** While some were filled with salt water, many were filled with carbon tetrachloride, a liquid that vaporizes easily and can cause comas or death in humans.

**Safety storage and handling tips:** Store in a secure, stable environment.

### \* **Batteries**

**Dangers:** Old batteries may contain mercury or lead and may leak sulfuric acid, which can irritate or burn your skin or eyes. They also can release other harmful vapors and corrode. Even newer batteries found in electronic items can corrode within a short period of time.

**Safety storage and handling tips:** Wear nitrile gloves when handling (rubber gloves that do not contain latex for those allergies). Store in a secure location. If you need to dispose of an old battery, contact your local law enforcement or fire department for assistance.

### \* **Chemically-treated artifacts: arsenic, insecticides, herbicides, fumigants, preservatives**

**Dangers:** Many different chemicals have been used to treat certain types of artifacts to help preserve them and prevent mold growth or pest infestation. Insecticides and herbicides may also have been used around houses or other structures. Some chemicals used on artifacts in the past by museums include DDT, ethylene oxide, arsenic, pesticides, dichlorvos (Vapona), camphor, methyl bromide, and cyanide. Arsenic was commonly used on animal mounts before 1970 and also on ethnographic material. Ethylene oxide and DDT were commonly used on things such as medical instruments, books and animal mounts. Farming equipment may still have insecticide and/or

herbicide residues on them.

**Safety storage and handling tips:** Wear nitrile gloves. Handle by container or mount, if possible. Wash your hands after handling treated artifacts. If possible, store these artifacts away from other artifacts, and/or clearly mark artifacts that are known to have been treated or possibly treated. Consider all pre-1970 taxidermy mounts to be contaminated. Do not use taxidermy mounts for hands-on demonstrations, and keep out of arm's reach when on display.

### \* **Medical instruments, medicine bottles, thermometers**

**Dangers:** Some medical instruments may still be contaminated with human tissue or fluid. Medicine bottles may still contain the original drug, which may now be toxic. Mercury-filled thermometers are hazardous if they get broken. Either can become a bomb.

**Safety storage and handling tips:** Store or display drugs in a secure location. You may wish to dispose of the contents of medicine bottles and keep only the container. Contact your local fire department, Hazmat team or hospital for help in doing so.

### \* **PVC**

**Dangers:** PVC (polyvinyl chloride), mainly used in building materials, is also found in a wide variety of everyday objects such as raincoats, shatterproof bottles, balls, dolls, and life jackets. Over time PVC plastic breaks down and produces hydrochloric acid.

**Safety storage and handling tips:** Do not use for artifact storage or display.

## ORGANIC MATERIALS

### \* **Foodstuffs, plant material**

**Dangers:** Food in storage over time may attract insects or leak. Old canned food may swell or explode, spreading bacteria and damaging surrounding items. Plant material can also attract insects. Some Native American jewelry, rattlers, and Victorian jewelry may also contain seeds that

are poisonous.

**Safety storage and handling tips:** Consider disposing of foodstuffs and keeping only the container. Monitor for pests/insects.

\* **Mold**

**Dangers:** Many people are allergic to mold, causing normal allergy symptoms, but exposure to mold in large amounts for anyone can result in serious illness and even death.

**Safety storage and handling tips:** Store artifacts in a stable environment. Monitor temperature and humidity in the collections area. Practice good housekeeping; dust can attract moisture, which can lead to mold growth. Wear protective gear (mask, gloves) when working in an area with large amounts of mold.

**TOXIC MINERALS**

\* **Minerals and Fossils**

**Dangers:** There are many minerals that are poisonous or carcinogenic (asbestos, copper, lead, uranium, zinc). Some minerals are even radioactive (uraninite). There are some fossils that emit radon, which can cause cancer with long exposure.

**Safety storage and handling tips:** Store in a well-ventilated area. Place a warning label by minerals and fossils in the storage area. Wear nitrile gloves.

\* **Lead**

**Dangers:** Lead and lead compounds found in a large variety of objects are cumulative poisons. When lead corrodes, it creates a white powder that can become airborne and then may be inhaled or ingested, causing lead poisoning. Lead paint can do the same thing when it deteriorates or flakes.

**Safety storage and handling tips:** Wear a mask and gloves. Limit exposure time. Consider disposing of old corroding ammunition or store in a sealed container. Contact local law enforcement for safe disposal.

\* **Asbestos**

**Dangers:** Asbestos is a fibrous fireproofing material that may be found in a variety of artifacts (hair dryers, hot pads, chalkboards, ironing board covers) or in a museum building itself (shingles, tile, insulation). The danger is in the fibers. When disturbed, they may become airborne, and the inhaled or ingested. The fibers remain in the lungs and airways, and over time build up and lead to cancer.

**Safety storage and handling tips:** Wear nitrile gloves and a mask or respirator. In some cases it may be best to seal the asbestos fibers rather than try to remove them, which could disturb them and release the fibers into the air.

**GENERAL TIPS**

- Identify and label all potential hazards with “danger” and how it should be handled.
- Wear gloves to protect you from the artifacts, as well as to protect the artifacts from you.
- Limit time spent in enclosed storage areas.
- Keep storage and work areas clean.
- Store harmful artifacts in a secure location and display in locked cases.
- Before disposing of any potentially harmful, hazardous materials, contact your local law enforcement, fire department, or medical facility for help with and/or information on the proper and safe way to dispose of the materials.

**And Remember...** The health and safety of you, your staff, and your visitors is more important than any artifact in your collection.

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This information was compiled for the Governor’s Conference on North Dakota History, October 2006 by Emily Bradbury, collections intern and Jenny Yearous, Curator of Collections, State Historical Society of North Dakota.

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The 19<sup>th</sup> Annual Governor's Conference on North Dakota History will be held November 2-3, 2007, at the North Dakota Heritage Center in Bismarck. The conference theme is North Dakota railroad history. The 2007 and 2008 history conferences will commemorate the Lincoln Bicentennial by examining railroad and homestead history.



President Lincoln signed the Homestead Act in 1862 and the Charter for the Northern Pacific Railroad in 1864. The themes are part of North Dakota's

observance of the bicentennial of Abraham Lincoln's birth on February 12, 2009.

An all-day workshop Friday, November 2 will provide a practical, hands-on experience in disaster response with hands-on training in salvaging property and contents and working with rescue personnel. "Disaster Response: The First Critical 48 Hours," will be presented from 9 a.m. to 5 p.m. by Neil Cockerline, Director of Preservation services with the Midwest Art Conservation Center in Minneapolis. The workshop is

limited to 25 people. The \$75 registration fee includes lunch; the registration deadline is Friday, October 26. To register, or for more information on other workshops call (701) 328-2799.

Four authors will be presenting and signing their recent publications:

- ◆ Carroll Engelhardt, a retired professor of history at Concordia College in Moorhead Minnesota, is the author of *Gateway to the Northern Plains: Railroads and the Birth of Fargo and Moorhead*.
- ◆ Greg Gagnon, a professor of Indian Studies at the University of North Dakota in Grand Forks, is the author of *An Indian Chapbook* and *Pine Ridge Reservation: Yesterday and Today*.
- ◆ Don Hofsommer, a professor of history at St. Cloud State University in Minnesota, is the author of *The Southern Pacific and the Great Northern Railway*, and *Minneapolis and the Age of Railways*.
- ◆ Robert Larson, a retired professor of history at the University of Colorado, is the author of *Gall: Lakota War Chief*.

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