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Inside

Call for General Session Papers

AIC members interested in presenting papers during the General Session of the 2006 Meeting, should contact Eliza Gilligan at [redacted]. Details relating to the submission process can be found on our website at www.aic-faic.org. The deadline for submission of abstracts is September 16, 2005.

Hazardous Holdings, AIC Archives Discussion Group June 12, 2005, 3:45 – 5:15 p.m.

Compiled by Susan M. Peckham, Co-moderator, Paper Conservator, National Archives and Records Administration

Many archival collections contain more than paper—they often include eclectic materials that might carry specific health hazards. Past research by Catharine Hawks and Kathryn Makos revealed some of the more common hazards found in collections, especially ethnographic and natural history collections. A summary of their research can be found at: http://aic.stanford.edu/sg/cipp/postpr ints2001.html#hawks. But, despite the broad focus of the research, it has yet to reach the archives and book and paper groups. Conservators who work primarily with paper-based materials are at risk for exposure to radiation and pesticides such as arsenic, and for contact with potentially infected biological materials, blood borne pathogens, and specific chemicals.

The 2005 AIC Archives Discussion Group met in Minneapolis on Sunday, June 12, to discuss hazardous holdings. The panel was moderated by Linda Blaser, Preservation Officer, National Archives and Records Administration. Panel members provided images and descriptions of hazards and outlined resources for devising methods for handling hazardous materials safely. Presenters and discussants found that although the hazards are situation specific, solutions designed to prevent or minimize exposure are similar to those faced by conservators in other fields. Summaries of some of these situations are found below, along with answers to some of the questions that discussants found they had in common.

Armed and Dangerous

Eileen Blankenbaker, Objects Conservator, U.S. Holocaust Memorial Museum, Washington, DC

Handling hazardous materials and how these materials affect nearby objects is a concern for the conservators at the United States Holocaust Memorial Museum (USHMM) because of the large number of items that might have been contaminated during wartime. Eileen Blankenbaker made the following astute point: "It is not just ethnographic artifacts that could be exposed to pesticide or other hazardous materials but artifacts connected to wartime, epidemics, natural and man-made disasters that may harbor residues that can be problematic. It's often helpful to look at related items or clues in a collection, archive, or other documentation that may lead one to question what exactly is contained in the collection."

The Holocaust Museum staff works with many artifacts rescued from concentration camps, such as the 4,000 shoes it has in its collection, and the rotating collections of uniforms on loan from museums at former camps. At some point, most of the uniforms have been cleaned and they are not considered hazardous. However, the potential for contamination exists because historical records show that, during the liberation of the camps, Allied troops used DDT sprayers to kill typhus-spreading lice. Although shoes in the USHMM collection tested negative for pesticide residues, these items are handled with appropriate personal protective equipment (PPE) to prevent skin

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fall out and cause damage. This was a major advance in stretcher design. Jim perfected the folding stretcher so that large paintings could be handled more easily. He once made a very large stretcher—nine feet, seven inches by 48 feet—for a painting at the Brooklyn Museum. To strengthen the stretcher so it would retain its proper plane, Jim knew to back it with a strong aluminum channel. He would also make oval stretchers when provided with a template. But the stretchers were only one part of his diverse business.

Jim was a master at solving problems related to moving paintings. He could maneuver a large painting into a small elevator or space while the nervous owner held his breath. He could take out a window and hoist a large painting through it if the painting could not fit into or on top of an elevator. He also made excellent crates for shipping artwork and advanced the craft of crate-making.

Jim's attention to detail, his promptness, his quiet and polite manner, and his ability to solve problems put him in great demand; he was well-known in the New York art world. But as busy as he was, he always inquired about people he hadn't heard from in awhile. "How is Mama?" or "What have you heard from Mama recently?" he would ask and everyone knew he was asking about Caroline K. Keck who had moved to Cooperstown. Caroline had advised Jim in the early years of his career and Jim always felt a deep affection for her.

Jim advanced the handling, packing, and shipping of artwork to new levels of care and skill and will always be remembered for the high quality of his work, his solutions to difficult problems, his calm demeanor and great diplomacy. He shall be missed.

—Suzanne Sack,
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Hazardous Holdings *continued from page 1*

contact, inhalation, and contamination of personal clothing.

Recently, conservators at the Holocaust Museum installed a special exhibition called *Deadly Medicine, Creating the Master Race*. Artifacts from Hartheim Castle, a euthanasia center that was part of a program where the disabled were killed, include a doctor's coat, an asbestos mitt, and a case with personal belongings retrieved from a pile of burned and buried items. The artifacts were shipped to the museum in open plastic shopping bags within a cardboard box, allowing the asbestos fibers from the mitt to contaminate all artifacts in the box. After confirmation that the fibers were asbestos, a conservator vacuumed the doctor's coat and the other artifacts with a HEPA vacuum inside a large extraction hood while wearing PPE. The asbestos mitt remained double-bagged until installation and the installer also wore PPE. After unpacking, the extraction hood was thoroughly cleaned, and after the exhibition the interior of the case will have to be handled and treated as hazardous waste.

Medical equipment, including a broken syringe, unused needles, vials, and a metal container holding sterilizing liquid, was donated to the museum along with a collection of nurse's records and artifacts. Questions to consider when handling used medical equipment for potential exhibit and storage include: What is/was stored in vials and other containers? Do viable pathogens remain in used or broken syringes? How does a conservator know when to obtain such specific information? According to Alan Hawks at the Walter Reed Medical museum, a durable microbe is the major danger inferred from a broken syringe. Microbes such as anthrax or tetanus can survive for years, and these microbes can be found not only in used medical equipment, but also on soiled, dirty textiles or other dirt-containing artifacts.

Other advice to consider is: Beware of mercury leaks from broken thermometers, keep tetanus vaccinations up to date, and consider decontamination procedures. Decontamination includes: basic hospital decontamination procedures that may endanger the artifact, and commercial gamma irradiation used to prevent anthrax contamination by the U.S. Postal service. These experiences illustrate that the conservator often has to be an advocate for safe artifact use and handling while also determining a way to defuse difficult situations.

Question posed at the Archives Discussion Group Panel Discussion, *Hazardous Holdings*

Who is responsible for protecting part-time, contract, or volunteer conservation workers in situations where there is a known risk of exposure to presumed hazardous material?

The OSHA regulations are pretty clear that any employer, including museums and conservators, needs to evaluate the potential hazards in the workplace and implement the appropriate programs. OSHA generally considers any worker who is compensated to be an employee, therefore there is generally no distinction between part-time and full-time workers. Federal OSHA does not generally cover volunteers, unless they are compensated in some way and would therefore be considered employees. Some states may include volunteers under their definition of employees. While volunteers may technically not be covered under OSHA regulations, ethically and from a liability-perspective, employers or institutions may be considered responsible. The determination of whether OSHA regulations are enforced by federal OSHA or state OSHA is determined by whether or not a particular state is an "OSHA State Plan" state, where the state has presented and OSHA has approved a plan for the state to monitor and enforce regulations. The OSHA website lists OSHA-approved states (http://www.osha.gov/fso/osp/index.html).

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How to Recognize Radioactive Artifacts in an Archives

Susan Lee-Bechtold, Research Chemist, National Archives and Records Administration, College Park, MD

Examples of radioactive artifacts found in record holdings include raw ore samples; spent uranium oxides (in the noses of non-nuclear bombs); heating mantles from decorative and camping lanterns; radium paint on gun sights; cathode ray tubes from computer monitors and TVs; some yellow, orange, and red pre-1971 Fiestaware; natural zircon or treated topaz, beryl, and tourmaline gemstones; and even the sealed ion source from smoke detectors. In paper-based collections, a radioactive source might include absorbent paper onto which radioactive ions in a solution were once spilled. In some instances, a photograph or other reproduction of the radioactive artifact may suffice for records purposes. Radioactive materials are considered hazardous waste and require special disposal, but radioactive items that are parts of collections can be kept, if stored properly. In order to dispose of hazardous waste, the facility must apply for an EPA number, which is not difficult, and a hazardous waste contractor will then remove and dispose of the items. If radioactive materials are found within a collection, the international symbol for radiation (a black or magenta tri-foil with yellow background) is required for proper labeling. It is also imperative to shield a radioactive object so that an employee who handles records or artifacts adjacent to the object, is exposed to only background levels of radiation.

Some agencies have found it useful to screen incoming records from energy or military agencies. Radiation levels of materials in a collection can be detected with a small hand-held monitor available from a laboratory safety supplier, or by hiring a specialist to do a radiation survey using a geiger counter or similar instrument. Screening information can be found by contacting universities, hospitals, and companies that drill for oil. These entities use radioactive materials, and must either have the capability to check them, or a contract to have the materials checked regularly. Information can also be found at http://www.erads.com/radprot.htm.

Question posed at the Archives Discussion Group Panel Discussion, *Hazardous Holdings*

What is considered "safe" exposure to mold? What is considered a safe exposure limit ?

Many conservators have expressed concern about mold levels and occupational exposure. There are no specific regulatory standards for allowable concentrations of mold or fungi. Some guidelines have been generated by the ACGIH, AIHA and other consensus-standard-setting organizations, however, they refrain from applying specific numerical limits.

Professionally, fungi are generally evaluated with respect to two factors—concentration and the types of organisms present—and results should be evaluated to see if they make sense or can be explained. Indoor concentrations should be at levels near or below outdoor levels and the types of organisms should be generally similar. Indoor levels in excess of outdoor levels suggest an indoor source of fungi contamination. Surface and bulk samples may indicate the presence of fungi recognizing that there is a background or "normal" level of fungi. Samples from suspect areas should be compared to control samples from areas that have not been affected by fungi growth.

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Question posed at the Archives Discussion Group Panel Discussion, *Hazardous Holdings*

Some conservators have expressed concern about continued exposure to environmental hazards and the potential for individual increases in sensitivity. Is there evidence that increased sensitivity to particular chemicals or mold can result from multiple exposures?

Some chemicals are known to be sensitizers—chemicals which may, after repeated exposure, cause people to develop an allergic reaction in normal tissue. The chemical reaction is typically through an immunologic mechanism, and not noticed upon initial exposure, with strong reactions noticed to later exposures. Sometimes sensitized individuals will have to completely avoid these chemicals. Typical sensitizers include isocyanates, anhydrides, acrylates, and aldehydes. The best defense against sensitization is a workplace evaluation of the potential exposure to chemical sensitizers as part of a comprehensive health and safety program, including the material safety data sheets or MSDSs.

Fungi exposure is not truly comparable to chemical sensitization, but there are allergic effects associated with fungi exposure that are more pronounced or more noticeable in allergically sensitive individuals.

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Evidence of Rodent Infestation

Jo Anne Kilgore-Martinez, Cariño Conservation, New Mexico

Rodent infestation is common in paper-based collections. Signs of such infestation include droppings, gnawed paper edges, deep yellow urine stains, debris or nesting materials such as paper scraps, and feathers. Since Hantavirus Pulmonary Syndrome (HPS) was identified in the early 1990s as the cause of numerous deaths in the Four Corners region of the United States, HPS has been linked to rodents and their droppings and urine residue. Conservators who handle rodent-infested materials must take proper precautions because HPS can be transmit-

ted to humans by direct contact with infected deer mice or inhalation of virus particles from the urine or droppings of infected deer mice. HPS causes death in 45% of cases (Department of Interior report). The virus is not thought to be viable after 14 days; however, every Certified Industrial Hygienist that was consulted, advised always handling affected records with PPE.

When there is known or suspect evidence of rodent infestation among records or research materials, take the necessary precautions, including the use of appropriate PPE and the isolation of the items in a rodent free environment for a minimum of 14 days. Use a 10% bleach solution to clean exterior box surfaces, work surfaces, tools, and PPE, and employ a HEPA filtered vacuum cleaner to remove debris and airborne particles. In spite of precautions, contact a local Certified Industrial Hygienist and local Departments of Health for necessary assistance.

Fire Consequences

Nancy Stanfill-McCarty, Senior Preservation Specialist, National Personnel Records Center National Archives and Records Administration, St. Louis, MO

Mold is often seen in collections during the aftermath of disaster recovery. When a fire broke out on the sixth Floor of the National Personnel Records Center (NPRC), in Overland, Missouri in 1973, one-third of the rescued records were treated, but were still found to contain abnormally high levels of inactive mold spores 25 years later. Since these records are used almost daily by NPRC staff, the Preservation Program developed the following solutions.

All records being pulled are checked by the preservation department staff for mold containment. Then, based upon the records' condition, they are routed to a fume hood room that is dedicated to vacuuming records with a HEPA vacuum. Once the records are vacuumed, they are either routed out to the requesting staff member, or given further treatment in the preservation department. All vacuumed records are moved to a new registry, over which Preservation maintains control, and are stored in a regulated environment of 60 degrees fahrenheit and 40% Rh. While this approach is slow, it is necessary for preservation.

Blood-borne Hazards found in Paper-based Collections

Susan Peckham, Paper Conservator, National Archives and Records Administration

On occasion, conservators and preservation professionals care for records that have identifiable blood contamination. Questions have arisen regarding disease transmission to humans from records that contain blood. When handling records with dried blood, a general policy includes wearing gloves while encapsulating the documents in a stable polyester sheet. HIV does not survive on environmental surfaces; hepatitis B can survive on environmental surfaces at least 7 days and still cause disease; and hepatitis C can survive at room temperature somewhere between 16 hours and 4 days★. In the case of record-handling, these pathogens will not be of great concern to most persons. However, since hepatitis A is transmitted via the "oral-fecal" route, people responding to an emergency or disaster involving, for example, broken sewer pipes, should be made aware of possible contamination from hepatitis A. For example, Pam West, Crew Chief of the National Park Service National Capital Region Museum Emergency Response Team, recommends that its Team members receive the combination Hepatitis A/B vaccination. For more information, contact the Red Cross for blood-borne pathogens training.

★*References are from the US Centers for Disease Control and Prevention, and Canadian Centre for Occupational Health and Safety*

Summary

These case studies are just a portion of the meeting presentations and many of the presentations included examples not described here. Glen Ruzicka, Director of Conservation at the Conservation Center for Art and Historic Artifacts (CCAHA), explained CCAHA's structure for dealing with health and safety issues with descriptions of employee training and CCAHA's chemical hygiene plan. Ruzicka also discussed how the Center complies with OSHA regulations, including the OSHA arsenic standard as it applies to the conservation of 19th and early 20th century silked documents containing arsenic. Susan Lee-Bechtold provided a list of historically-used paste additives. Eileen Blankenbaker's several examples, including degrading cellulose nitrate film and artifacts, a bloody book from Sudan, live ammunition, DDT sprayers, medical equipment, and Zyklon B, demonstrated how understanding original use and method of manufacture helps museum conservators undertake more sophisticated problem-solving while maintaining worker safety. Other speakers, such as Linda Blaser, focused on the specific treatment procedures and policies they created for their institutions, especially for mold contamination, containment, and remediation. Presentations in their entirety will be published in the *2005 AIC Book and Paper Annual*.

A bibliography is available from Linda Blaser [redacted] or Susan Peckham [redacted]

Grants, Awards, and Fellowships

How Would Federal Formula Grants for Museums Work?

AIC has joined with AASLH and other cultural agencies in seeking funding for federal formula grants for museums. We will continue to provide updates to you as this work continues.

The federal government uses formula grants to the states to achieve broad national purposes while allowing for regional and local differences. Such grants leverage, rather than replace, state and local funding for those purposes.

Libraries, historic preservation, the arts, and many social and health services receive such funding. The American Association for State and Local History (AASLH) is inviting state, regional, and national museum service providers and their members to join with it in obtaining such funding for museums. The Council of State Historic Records Coordinators is leading a similar effort