

### *Some Additional Purveyors of Historic Holiday Houses:*

Landmark Trust: Book by writing to Shottesbrooke, Maidenhead, Berkshire, England SL6 3SW or by calling 01628 825925. The Landmark Trust Handbook is available from FPI at 28 Birge Street, Brattleboro, Vermont 05301 or via telephone at 802-254-6868.

Call the British Tourist Authority: 551 Fifth Ave., Suite 701, New York, NY 10176; 800-GO2-BRIT, and ask for books on “self-

catering” holidays, “farmhouse bed and breakfasts,” and “rural retreats.”

The National Trust: the 100-year-old-historic preservation organization of the U.K., offers 180+ historic cottages. Contact them at 36 Queen Anne’s Gate, London, England SW1H 9AS. Call 71-222-9251. In the U.S. dial 011-44 first when dialing England.

For Ireland, call the Northern Ireland Tourist Board: 1-800-326-0036 and ask for information on the Rural cottage Development and Marketing Company.

Each visitor’s comments left in the logbooks will help others to better enjoy that heritage. Most tenants immediately begin planning for their next Landmark stay. Will it be the Cloth Fair in London? What about the amazing 1835 Egyptian-style house in Penzance, Cornwall? Appleton Water Tower in Norfolk? Isn’t there a Charles Rennie Mackintosh house in Scotland and a 15th-century-parsonage in Oxfordshire? The Prospect

Tower cricket pavilion looks lovely... The options are many and tempting. *The Landmark Trust Handbook* is a catalog of promised pleasures for the cultural traveler.

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Jeanne M. Harold

## Disaster Mitigation for the Bertrand Collection Artifacts



*Weights for securing cups and dishes.*

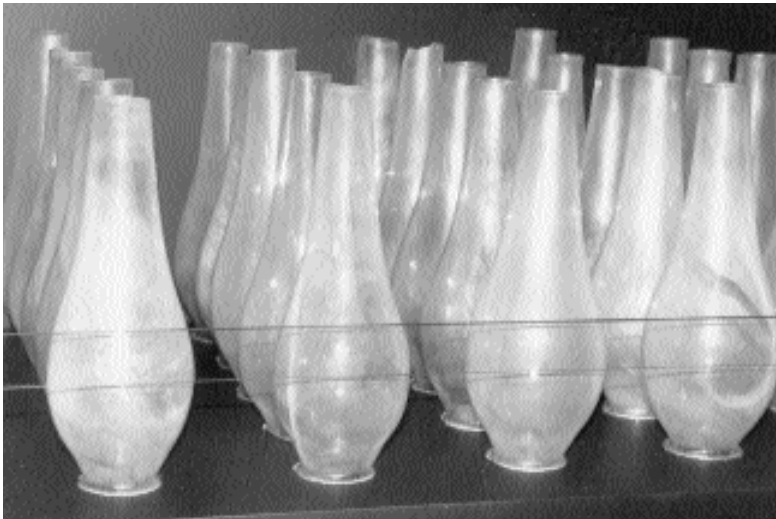
Imagine being a curator, collections manager, or conservator entering a display/storage area and observing over 7,000 rare, 130-year-old bottles filled with their original contents of liquors and foodstuffs sitting unrestrained on open shelving. Awe would probably be your first reaction, and then panic! This situation would certainly be a textbook case of “an accident looking for a place to happen.” Add to this scenario a fire-suppression system that releases gas at 400 psi, and you can close your eyes and hear the glass shatter.

This, indeed, was the situation at the Bertrand Museum at the DeSoto National Wildlife Refuge in Missouri Valley, Iowa. Many museum collections include problems which share similarities to the potential plight of the Bertrand bottles. These problems can be mitigated with some common sense, hard work, and lots of acrylic sheeting.

### *Background*

On April Fools’ Day, 1865, the steamboat *Bertrand* hit a snag on the Missouri River and sank 20 miles north of Omaha, Nebraska. The *Bertrand* was on her maiden voyage up the river, heading to Fort Benton, Montana, out of St. Louis, Missouri. She carried about 60 passengers and crew members—mostly supply traders eager to cash in on the lucrative trade with gold miners. She also hauled \$210,000 worth of cargo. The boat sank in 12’ of water. No lives were lost and passengers simply walked a plank to shore. Salvage efforts were undertaken, but eventually abandoned. As the boat became mired in the Mighty Mo’s murky bottom, there emerged a local legend of buried treasure—gold, mercury, and whiskey.

In 1968, two treasure hunters, using a flux-gate magnetometer (a type of metal detector), dis-



Acrylic straps for shelves with lamp chimneys, bottles, etc.

covered the wreck in a cornfield on DeSoto National Wildlife Refuge property. In the next 2 years, 150 tons of cargo were excavated and a treasure trove of tools, clothing, quicksilver, food-stuffs, and housewares was exhumed. These objects are now on display in combined storage/exhibit areas in a visitor center maintained by the U.S. Fish and Wildlife Service. These storage/exhibit areas are environmentally controlled, and can be viewed by the public through glass walls.

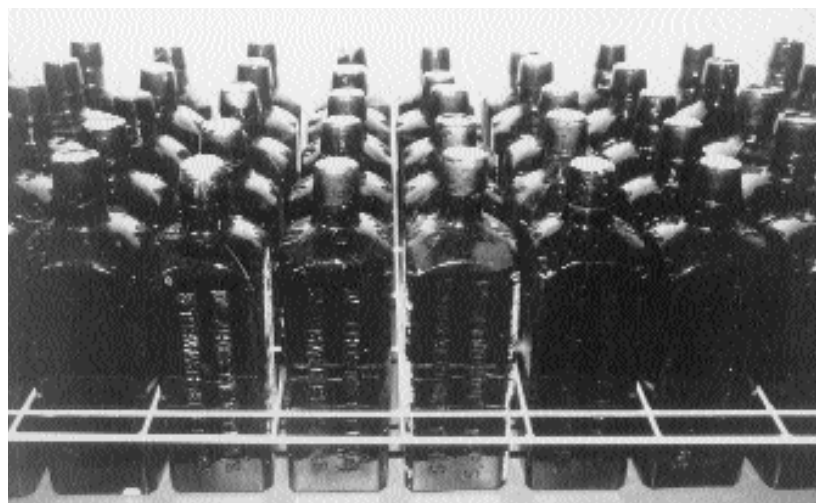
#### Objectives

Along with the bottles on shelving, there are numerous other assemblages of fragile objects exposed to disasters or accidental mishaps. These include: glass lamp chimneys and fonts, lanterns, porcelain dinnerware, glass tumblers and shot glasses, tin cups, and tin and copper coffee pots. Safeguarding all of these various artifacts became a priority for museum staff. Numerous modes of dealing with the prevention of damage were devised, all of which involved different levels of difficulty in construction. The span of preventive applications ranges from the mere rearrangement of the collection to installing restraining appliances.

#### Implementation

- Initially, objects were rearranged where possible to avoid damage. For instance, bottles that were barely visible to visitors were moved from top shelves (these are closest to the nozzles where the gas from the fire-suppression system is released). The most fragile objects were moved as far away

Wire grids for securing shelves of Bitters bottles.



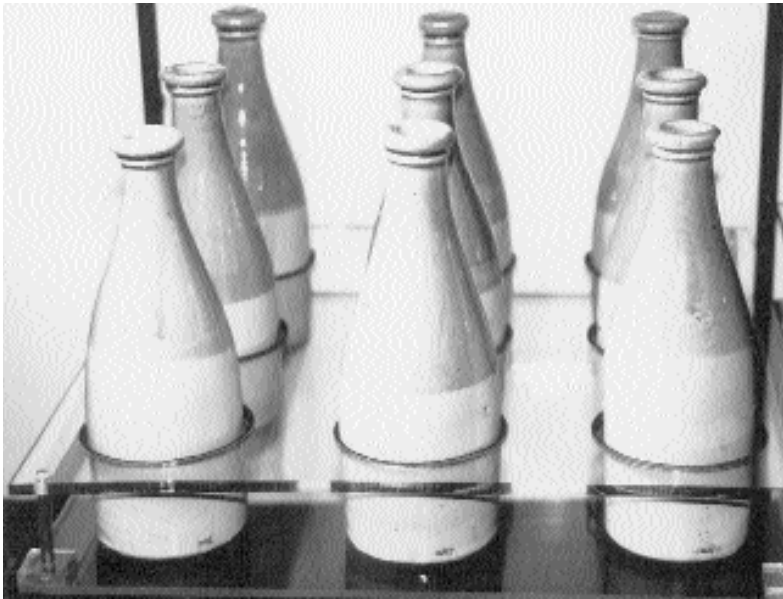
from the nozzles as possible. Many were rehoused inside steel cabinets.

- Weights constructed of lead or steel shot encapsulated in double layers of heat-sealed, one-inch polyethylene tubing were inserted into coffee pots, bowls, tin cups, and dinnerware. These weights are unseen by visitors, but lessen the chance of the objects moving or falling if shelves are bumped or shaken.
- For the shelving with bottles, glasses, lamp chimneys, and fonts, one-inch-wide acrylic straps were installed from shelf end to shelf end. These straps, made of 1/4" thick Plexiglas™, attach to the shelves with brass screws and prevent the objects from falling over the edges in a domino effect. As an added advantage, the straps are the first thing to be "bumped" into by staff or researchers, thus preventing the objects from being damaged.
- Top shelves that were immediately visible to museum guests and had bottles lined upon them are secured with welded brass-wire "grids" which encompass each bottle and fasten to the shelf rims with brass screws. These grids are painted the same color as the shelves, and are then coated with inert, resin "plasti-dip" to prevent abrasion with the bottles.
- Finally, bottles displayed on small acrylic shelves that were located directly behind the glass walls were retrofitted with a series of custom acrylic restraining shelves. These shelves paralleled the existing shelves and provided cut-outs fitted to each bottle. The objective was to hold the objects in place, much as a test-tube holder restrains racks of test tubes. One-quarter-inch-thick restraining shelves were connected to the original shelves with brass rods. The threaded ends of the rods screwed into threaded holes in the corners of the restraining shelves. The unthreaded ends



Above, exhibit cubes before disaster mitigation restraint appliances were installed.

Below, exhibit cubes after appliances were installed.



popped into holes drilled into the original shelves' corners. Cutouts were lined with black polyester felt to minimize light refraction and abrasion.

#### *Conclusions*

In developing this system of weights, straps, grids, and restraining shelves, we were able to avoid the use of adhesives, sticky waxes, or costly individual mounts. Although some of these appliances are visible, they are not highly disruptive to the museum visitor's view. Some aesthetic compromises are necessary in preventing loss or damage to exhibited artifacts. All supplies needed are easily accessible, affordable, and final products can be fabricated and installed by technicians, volunteers, or interns. Disaster mitigation can be tackled with

a minimum amount of technology, some qualifying dexterity, and a lot of enthusiasm.

Supplies needed to complete these tasks are listed below. For further reading, refer below.

\*\*Special thanks to Museum Curator, James B. O'Barr and Refuge Manager, George E. Gage.

#### **Supply List**

steel/lead shot (#6 or 7): local sporting goods store

brass rods and wire: local hardware store

brass woodscrews (countersunk): local hardware store

polyester felt (moleskin): local fabric store

acrylic sheeting: local plastics supply company

PlastiDip™: PDI Inc.  
P.O. Box 130  
Circle Pines, MN 55014  
612-785-2156

1" polyethylene tubing: U.S. Plastics Corp.  
1390 Neubracht Rd.  
Lima, OH 45801  
1-800-537-9724

#### **For Further Reading**

Agbabian, M.S., S.F. Masre, R.L. Nigbor, 1990, "Evaluation of Seismic Mitigation Measures for Art Objects." *GCI Scientific Program Report*, Marina del Rey.

Fenner, Gloria, 1982, "Artifacts Under Pressure: Effects of Halon Gas Release in a Collection." *Curator*, 25/2, pp. 85-90, American Museum of Natural History.

Harold, Jeanne M., 1994, "Save the Bertrand Bottles: A Display Restraint System." *Exhibitionist*, Vol. 13, No. 4, pp. 42-43, National Association for Museum Exhibition.

Podany, Jerry C., 1991, "Safeguarding a Collection and Building from Natural Hazards." *Perspectives on Natural Disaster Mitigation: Papers Presented at 1991 AIC Workshop*, pp. 51-67, Washington, DC.

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