



Figure 1. Detail of the exterior, post crash. Note the SUV entry hole to the right of the front door.



Figure 2. Structural  
engineers propped up  
the sagging structure.

# SURVIVING DISASTER: EXAMINATION AND TREATMENT OF A LATE 18TH CENTURY DESK AND BOOKCASE FROM THE BUTLER-MCCOOK HOUSE

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## ABSTRACT

During the early morning hours of August 4th, 2002, a sport utility vehicle crashed through a wooden fence and into the south parlor of the recently opened and revitalized Butler-McCook house, the last 18th-century house in Hartford, Connecticut. The Antiquarian and Landmarks Society's house museum had opened two months earlier after a four-year, \$1.3 million restoration. The SUV landed sideways in the south parlor. The force of the collision caused major damage to the house and collections. This paper will focus on the examination and treatment of a late 18th-century desk and bookcase severely damaged in the crash. The type and extent of the damage sustained is unusual and will be discussed. The treatment includes cleaning, consolidation, fabrication of lost elements, fills, inpainting and re-saturation of the existing natural resin coating.

## INTRODUCTION: THE BUTLER-MCCOOK HOUSE AND GARDENS

The Butler-McCook house on Main Street in downtown Hartford, Connecticut, is the city's oldest surviving residence. The house was built in 1782 by the physician and paper manufacturer Daniel Butler and his wife Sarah. The Butler-McCook House & Garden represents an unbroken chain of ownership from its construction in 1782 until its transfer to the Antiquarian & Landmarks society. Anson and Francis McCook, brother and sister, bequeathed the house and collections in 1967 and 1971 respectively. The bequests, both of which included modest endowments, were to facilitate the home being opened to the public as a historical museum. In addition to being Hartford's oldest house, the homestead also contains Hartford's oldest intact collection that includes furniture, Japanese armor, fine American paintings, antiques, and Victorian period toys. The restored Victorian garden is the only surviving domestic commission by the landscape architect Jacob Weidenmann, designer of Hartford's Bushnell Park and Cedar Hill Cemetery. The Butler-McCook house has survived for over 200 years, withstanding the effects of time and the threats of urban renewal. When it reopened on June 15, 2002 after a four-year, \$1.3 million restoration by the Antiquarian & Landmarks Society, it seemed poised for some of its best days.

## DISASTER STRIKES

During the early morning hours of August 4th, 2002, an SUV crashed through a wooden fence and into the house's south parlor, causing major damage to the structure and collections. (fig. 1) The 21-year-old driver was treated for minor injuries and was charged with driving with a suspended license and driving an uninsured, unregistered car.

The most widespread structural damage was to the south parlor, the hallway and the main staircase. Structural engineers were called in to prop up the sagging structure. (fig. 2) Plaster dust and debris blew through literally every corner of the lower and upper rooms. (fig. 3) The debris was so prolific that the mostly volunteer staff had to fill boxes with fragments so that they could be sorted through later. (fig. 4) A collection of Japanese armor was severely damaged when a piano was pushed from the force of the crash through the wall of the south parlor and into the library, smashing through the glass showcase containing it. Many paintings were damaged as well, including a portrait of Eliza Royce Sheldon Butler and a



Figure 3. Surviving objects from the north parlor. Note extensive plaster dust.



painting of nearby Talcott Mountain by William Wheeler.

#### AN 18TH CENTURY DESK & BOOKCASE

An 18th century desk and bookcase from the Butler-McCook house disaster was brought in to the lab for conservation treatment. The piece had been severely damaged as a result of the accident and had multiple detached fragments. (fig. 5)

Along with the main case sections came an assemblage of parts. The second desk drawer of the lower case was detached from the dovetails with fragments still attached to the drawer sides. The proper left door panel had broken in three pieces with one part still attached to the door. Pieces of the bracket feet were detached and parts were lost.

The drawer damage was puzzling, as we could not quite figure out how it had become detached from

Figure 4. Boxing up debris for sorting.  
Note destroyed marble fireplace.



Figure 5. Overall image of desk and bookcase, pre-treatment.

the sides. There was a corresponding backboard detached from the case, but there was no impact marks on the back of the drawer itself. (fig. 6)

The desk lid had severe scratches and gouges, the result of being peppered with shattered glass from built-in showcases where the collection of Japanese armor had been displayed. Two astragal moldings from the upper case were missing.

The proper left rear bracket foot had a 2 3/4" loss, and the proper right rear foot bracket was detached,

with the entire foot loose from the glue block. The proper right front leg knee block on the case side was detached and had an old loss.

By far the most challenging and disconcerting damage to the desk and bookcase was prevalent throughout the lower case. Here the glass shrapnel had damaged both the coatings and the wood. Some of the nicks were very shallow, while some areas were gouged with considerable loss to the wood. There were also old repairs to the drawer fronts that had been opened up again. (fig. 7)

While discussing the treatment options with the curator Beverly Lucas, it was concluded that prior to the accident the desk was considered in sound condition and had not required any treatment. Therefore, the goal of the treatment would be to bring the desk and bookcase back, as much as possible, to the "pre-disaster" condition. The undamaged areas of the upper case, when minimally cleaned and waxed, would be used as a reference point.

The treatment included consolidation, cleaning, fabrication of lost elements, fills, inpainting, and final re-saturation and gloss modulation.

#### TREATMENT

The detached door panel was re-aligned and re-glued, and small pine spacers were attached in the rabbet of the doorframe to accommodate for shrinkage and to provide a gluing surface for the astragal moldings.

There were multiple areas of embedded glass throughout the case, and these fragments had to be extracted using tweezers and dental picks. (fig. 8)



Figure 6. Detail of unusual damage to drawer, pre-treatment.

The losses to the feet were replaced with mahogany and carved for an exact fit. Small losses were perimeter isolated with paste wax, sized with fish glue and press filled with Mohawk epoxy putty, using Plexiglas to press and Mylar as a release. Mohawk epoxy putty was chosen for its smoother final consistency as compared to Araldite. The fills were then trimmed to level with a crank-neck chisel.

Two new astragal moldings were fabricated out of mahogany and toned to match the existing moldings using shellac, earth pigments and Orasol dyes. The new moldings lacked the slightly crazed surface of the original, so a fine dental impression material was used to take a mold of the existing surface characteristics, and this firm mold was used to impress the new mold-



Figure 7. Lower proper left side of desk, pre-treatment. Note extensive "shrapnel" damage.



Figure 8. Removing glass fragments from the drawer fronts.



Figure 9. Desk and bookcase after treatment.



Figure 10. Desk and bookcase after treatment.

ings with the fine crazing evident in the originals. Careful timing was needed to ensure the shellac coating was sufficiently tacky (but not wet) to take a good impression.

Visible examination of undamaged areas showed that the finish had good overall film thickness and gloss. The finish was fairly dirty and had a fine crazing but was quite transparent. UV analysis suggested that the lower layer of the finish was shellac,

with a later upper layer of a plant-resin varnish. Drips evident on the waist molding of the lower case exhibited an orange fluorescence. This orange fluorescence was also seen peeking out from behind worn areas of the carved feet. Four cross section samples were taken from various areas on the upper and lower case, and analysis using a Zeiss Axioplan 2 compound light microscope revealed that the desk and bookcase consistently had what appears to be a white fluorescing size coat, a continuous orange fluorescing base coat, with subsequent additions of a whitish fluorescing top coating. The coatings were sensitive to polar solvents.

Aqueous cleaning solutions were tested, and an emulsion of 60 ml distilled water, 20 ml Micro 90 and 90 ml naphtha, proved to be an effective way of cleaning the coatings. After cleaning, various methods of re-saturation and inpainting were researched and discussed. In order to fulfill the treatment goal, i.e. to return the desk and bookcase back to the "pre-disaster" condition, it was decided that what was needed was a method of re-saturation that would bring back an acceptable level of transparency and gloss to the damaged areas, while not obscuring the subtle patina and surface topography on the non-damaged areas. Therefore techniques of abrading and re-padding or solvent re-forming were avoided. A final consideration was that the desk and bookcase might be waxed at a later date by museum staff unfamiliar with the object's treatment history. It was decided that the technique of non-abrasive re-saturation with B-72 presented to the Wooden Artifacts Group by Arlen Heginbotham in 2001 would be an appropriate treatment. After cleaning, the larger fills were completed and the entire piece was re-saturated with solutions of 5 to 15% B-72 dissolved in a mixture of 95 parts Cyclosol 53 to 5 parts xylenes. The varnish was applied with a broad flat brush and worked thinly and evenly, in multiple directions, with continued feathering of the brush until the varnish was almost dry.

After a 24-hour drying period, shallower depressions were filled using mahogany-colored Modostuc that was applied slightly proud and then

leveled using a firm foam sanding block with a slightly damp cloth stretched around as "sandpaper" replacement. These fills were leveled with no abrasion to the surrounding surface.

After the re-saturation with B-72 and fills were complete, inpainting was carried out using Golden fluid acrylic colors. When necessary, minor toning was accomplished using Orasol dyes. In order to seal in the inpainting and give a final unifying appearance, some of the severely damaged areas were lightly airbrushed with a 5% solution of B-72 for a final re-saturation.

The hardware, not original to the piece, was cleaned using a solution of 5% formic acid, followed by a final polishing with Solvol. The hardware was then coated with a thin 10% solution of Incralac in xylene.

This treatment proved to be very effective, allowing for successful re-saturation and inpainting of the severely damaged areas, while retaining the existing surface characteristics or patina of the old finish. A final light coat of paste wax and selective buffing allowed for gloss modulation, and provided a subtle finishing touch.

Although challenging, this treatment was successful in returning the Butler-McCook desk and bookcase to its "pre-disaster" condition as much as possible. At certain angles or in particularly harsh lighting some areas of the damage were still detectable, but in the low light levels of the period house setting, the overall effect was of a "well cared for but old" appearance. If at a later date more advanced treatment techniques are developed, the underlying surface has not been disturbed, and re-treatment can be carried out with relative ease.

On a very positive note, the Butler-McCook house has once again undergone restoration through generous public and private donations. Tours of the house resumed during the restoration of the south parlor and library, and conservators from many specialty groups were involved in conserving the damaged collections.

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## MATERIALS

Cyclosol 53: Guard-All Chemical Co., P.O. Box 445, Norwalk CT. 06856, (203) 838-5515

Golden Fluid Acrylic Colors: Golden Paint, New Berlin NY, 13411, [www.goldenpaints.com](http://www.goldenpaints.com) (607) 847-6154

Incralac: Conservation Resources International, LLC, 8000-H Forbes Place, Springfield Virginia 22151 (800) 634-6932

[www.conservationresources.com](http://www.conservationresources.com)

Micro-90: Industrial Products Corp., P.O. Box 70, Burlington NJ 068016 (609) 386-8770

Modostuc: Perigrine Brushes and Tools, P.O. Box 200, Wellsville, UT 84339, (435) 245-5830

Mohawk epoxy putty sticks: Mohawk Finishing Products Inc. (800) 545-0047  
[www.mohawk-finishing.com](http://www.mohawk-finishing.com)

Omega Series 40 Varnishing Brushes: Perigrine Brushes and Tools, P.O. Box 200, Wellsville, UT 84339, (435) 245-5830

Orasol Dyes: Kremer Pigments, 228 Elizabeth Street, New York, NY 10012 (212) 219-2394 or 1-800 995 5501 Fax. 212.219-2395

Paraloid B-72: Rohm and Haas Co., Philadelphia, PA. 19105

Solvil: Conservation Resources International, LLC, 8000-H Forbes Place, Springfield Virginia 22151 (800) 634-6932

[www.conservationresources.com](http://www.conservationresources.com)

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## ABOUT THE AUTHOR

Tad Fallon has 12 years of experience in the restoration and conservation of furniture and wooden artifacts. In 1993 he received a BFA from the Fashion Institute of Technology's Restoration of Applied Arts Program. He completed the Smithsonian Institution's Furniture Conservation Training Program in 2000 and held an Internship at the Metropolitan Museum of Art's Sherman Fairchild Center for Objects Conservation, where he assisted in the conservation of 19th century New York furniture for the "Art and the Empire City" exhibition. Most recently, Tad was a participant in the WAG Furniture in France study trip in 2001 and is currently a furniture conservator in private practice with the firm Fallon & Wilkinson, LLC, 240 Scotland Road, Baltic, CT, 06330.