

FIGURE 1 Detail of back of bergère.



FIGURE 2 Detail of front seat rail.

# FUNCTIONAL CONSERVATION UPHOLSTERY TREATMENTS FOR THE REAL WORLD

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## ABSTRACT

In November of 2000, the White House celebrated the 200th anniversary of its first occupation. In its history the White House has served as home to forty-one Presidents and their families. Aside from hosting dinners, receptions, and other functions, public and private, the White House welcomes over one million visitors each year. Unlike most museum collections, the collection of the White House is in constant use. This paper will discuss various alternative upholstery techniques, which are minimally invasive, and still allow these objects to be appropriately upholstered for their intended display and continued use.



## INTRODUCTION

Since 1933 the National Park Service has been responsible for providing off-site storage for White House furnishings. In 1992 the National Park Service Executive Support Facility moved into a state-of-the-art 100,000 square foot facility in suburban Maryland containing 40,000 square feet of temperature and humidity controlled museum storage and a modern conservation lab. In 1998 a full-time furniture conservator was hired to staff the lab. Many of the non-intrusive upholstery treatments performed since 1998 have been completed through the concerted effort of the staff conservator, in collaboration with private conservators and traditional upholsterers, under the supervision of the White House curatorial staff. This work has built on the earlier efforts of other private conservators who performed upholstery treatments for the White House.

The object of this paper is to convey the benefit of creating non-intrusive upholstery treatments that are functional, efficient, and affordable. This is not a novel idea, but what is unique about the White House collection is that a substantial number of pieces have the potential to be re-upholstered on a frequent basis, perhaps as often as every change of administration. Because of the potential for frequent change it is necessary to design upholstery systems that are uncomplicated so that show covers can be easily renewed. The benefit of systems which are easy to take apart and put together is that, even though the initial cost may be a little higher, the savings in time and money are realized the second, third, and fourth time an object is recovered.

Because the seating furniture in the White House collection is used, it is first and foremost imperative that it be structurally sound and be maintained in a condition that is consistent with its original intent. It is also necessary that it be able to withstand the rigors of daily use.



FIGURE 3 Bergère with plywood seat deck and back.

The earliest surviving furniture in the White House today dates back to the 1817 reconstruction. All of the original furnishings for the White House, including those designed by Benjamin Henry Latrobe (1809), were lost when the British burned the house in 1814. Probably the most important suite of furniture acquired after the 1817 reconstruction included fifty-three pieces of furniture ordered by President James Monroe and made by Parisian cabinet-maker Pierre-Antoine Bellangé. This suite included one pier table, two sofas, eighteen armchairs, two *bergères*, (closed-arm armchairs) eighteen side chairs, four upholstered stools, six footstools, and two screens. The original upholstery was described as a crimson silk with laurel leaves and eagles in two shades of gold. (It wasn't until the Van Buren administration in 1837 that the room acquired its current name "Blue Room" and was decorated accordingly.)

During the nineteenth century there were auctions of the "old" furniture when it became outdated or worn out. In the auction of 1860 during the Buchanan administration most of the Bellangé suite was dispersed and did not make it back to the White House for another one hundred years. It is Mrs. John F. Kennedy who is credited with really stirring interest in the historic furniture and furnishings of the White House in the twentieth century. In 1961 Mrs. Kennedy appointed a Fine Arts Committee to search for appropriate furniture once used in the Executive Mansion and for other appropriate furnishings that would enhance the White House. The Bellangé pier table was rediscovered in one of the basement workshops and restored to its original grandeur at that time. A Bellangé armchair was also donated to the White House the same year (1961). A suite of chairs was then reproduced from this original armchair and from an original side chair at the John Adams home in Quincy, Massachusetts to be used in the Blue Room. Since then three additional original armchairs, two side chairs, a sofa, and a *bergère* have been acquired and now replace some of the reproductions.

#### TREATMENT OF A BELLANGÉ BERGÈRE

In March 1999 one piece from the suite, a *bergère* (see figure 6 for an overall image of the chair after treatment), was sent to the furniture conservation lab for treatment because of its bleached and frayed show cover on the out-back and arm-pads (*fig. 1*). This *bergère* is normally placed in the Blue Room in a window with southern exposure and had been upholstered in 1995 before the windows in the room were covered with UV protective film. It was decided when the *bergère* came into the conservation lab that this would be an opportune time to develop a non-intrusive upholstery system. The opportunity was also taken to return the chair to its original form with a down seat cushion and flat inside arm panels. We used a suite of Bellangé furniture in the Briar Rose Room at Buscot Park in Berkshire, England as an example; and also the original bill of sale which listed a detailed accounting of each item including the





FIGURE 4 Inside of arm showing wooden blocks and Dual-Lock strips.



FIGURE 5 Inside of arm showing upholstered panel removed.

down feathers used for the seat cushion. Since there are seven other original Bellangé upholstered pieces now in the collection, we felt that this treatment could serve as the prototype for the remaining chairs.

The seat rails, seat back, and armrests exhibited extensive damage from many campaigns of re-upholstery (*fig. 2*). The inner frame members on

the closed arm of the chair were in good condition, but were determined to be replacements. The seat rails and other areas damaged by upholstery tacks were consolidated with Aquazol (poly[2-ethyl-2-oxazoline] MW 200,000), 10% solution in ethanol injected into the more deeply damaged areas and then with a brushed-on solution to prevent future splintering.

The in-back (*fig. 3*) was made of birch plywood and held in place with three stainless steel screws through the lower rail (a later addition) and three stainless steel screws through a horizontal block attached to the underside of the crest rail. The front face of the plywood in-back was rabbetted around the outside edge to provide a place for the upholsterer to tack in his muslin after building up the back. A two-inch Ethafoam (closed-cell polyethylene foam made by Dow Chemical) frame was hot melt glued to the in-back and the center was packed with horsehair. A layer of cotton batting was built up on top of this and then covered with the muslin. The show cover was secured around the edge of the in-back with upholsterer's Heat-N-Bond Super Hem double-stick fuseable web tape and the gimp was attached with hot melt glue.

The seat deck was also made of birch plywood, cutout in the center, and screwed into four blocks



FIGURE 6 Bergère after treatment.

of tulip poplar, which were fit between existing corner blocks to create a tight fit (*fig. 3*). The seat was created by stapling Dimetrol, high-strength woven seating support material (DuPont Polymer Products), over the opening in the seat platform and then hot melt gluing a tapered Ethafoam wedge on top of the front of this platform. A heavy (.020" thick) Nomex aramid liner (DuPont Critics Choice Fine Arts Packaging) was tacked to the front edge of the plywood deck to provide a flat face to attach the show cover. The Ethafoam wedge was built up with cotton batting and covered with muslin, which was stapled to the top edge of the plywood. The show cover was glued to the Nomex liner with Heat-N-Bond tape and tacked once in each corner, and the gimp was attached with hot melt glue.

Plywood bases were made for the armpads as well with Nomex liner stapled to the face of the plywood on the sides. In order to seat the plywood bases properly, a layer of polyester resin was applied over a polyethylene film on the arm, and then the plywood was clamped down on top of the arm with light pressure to key each plywood base to its respective arm. The armpads were made out of Ethafoam blocks. Two holes were drilled through each pad and its plywood base so these removable pads could be screwed to the arm and easily removed in the future. The armpads were then finished off in the same way as the seat and in-back.

Because the wooden inner frame on the closed arms and the lower rail on the back were replacements it was decided that they could be used to help support the new upholstery system. Wooden blocks were attached to these horizontal frame members with stainless steel screws (*fig. 4*). These blocks were cut and fit to accommodate the depth of a two-part plastic hook-and-loop material known as Dual-Lock (3M Industrial Tape and Specialties Division). One strip of Dual-Lock was attached to these recessed blocks with hot melt glue and staples and another strip was attached to a  $\frac{3}{8}$ " plywood birch panel to secure the upholstered panel in place. The show cover was secured around each panel with Heat-N-Bond tape and the gimp



FIGURE 7 Adam Hains armchair showing bent plywood back with curved aluminum bars and attached wooden frame.

was attached with hot melt glue. These panels can be easily removed for re-upholstery (*fig. 5*).

The out-back panel was made in much the same way as the panels for the closed arms, but with finger holes cut into it to allow it to be pulled off after the upholstery has been removed. The completed chair is seen in figure 6.

#### TREATMENT OF “FRENCH” CHAIRS

The second treatment involved the creation of an upholstery system for curved back “French” style chairs. This system was first developed for a French armchair in the collection with a possible Jefferson provenance and then used again on a pair of armchairs attributed to Adam Hains and possibly used by George Washington while he lived in Philadelphia.

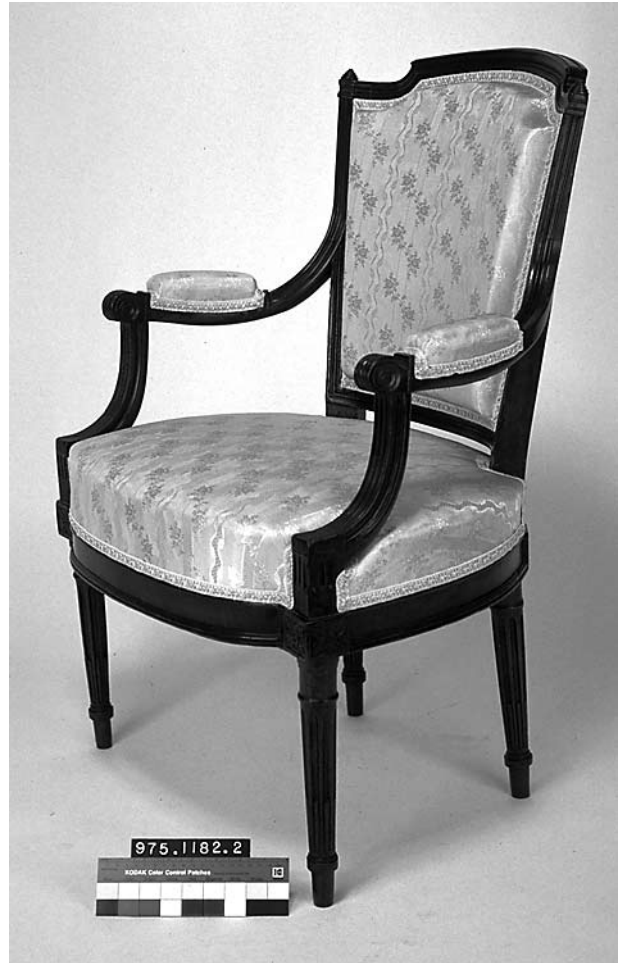


FIGURE 8 Hains chair after treatment.

The seat decks were made in a similar fashion to that of the Bellangé chair. The back, however was made of a  $\frac{3}{16}$ ” piece of marine or airplane grade plywood which was bent and clamped into a form matching the curve of the chair back. Then three pieces of aluminum bar stock were bent to match the curve of the form as well and riveted to the bent plywood (*fig. 7*).

A wooden frame was glued onto the curved plywood in-back, and the rest of the cushion was constructed in a somewhat traditional manner around this wooden frame. The show fabric was stretched over the panel and adhered with Heat-N-Bond tape, and the gimp was applied with hot melt glue. The entire back panel was secured to the chair frame with four staples (*fig. 8*).

The Hains chairs did retain a small amount of original upholstery material, the armpads. These were encased in a linen cocoon and attached to the arm with strips of Velcro to hold the pads in place on top of the arm, and via sewing strips stapled to the side of the arm to hold the pads down firmly. The show fabric was hand-sewn to the sewing strips, and the gimp was applied with hot melt glue.

#### CONCLUSION

Because the furniture in the White House is used for its intended purpose and because of the possibility of frequent re-upholstery of some of the pieces in the collection, it is of the utmost importance that upholstery systems be developed that are minimally invasive, but which allow these objects to be appropriately upholstered for display and continued use. These treatments show minimally-intrusive systems in use. They also show that collaborations between conservators and traditional upholsterers can be mutually beneficial, and that more importantly, they are to the advantage of the objects.