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Article: Three chairs for leather conservation

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Source: *Objects Specialty Group Postprints, Volume Three, 1995*

Pages: 3-9

Compilers: Julie Lauffenburger and Virginia Greene

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## THREE CHAIRS FOR LEATHER CONSERVATION

Brian R. Howard and April H. Berry

### INTRODUCTION

This paper was the result of a grant application rejection, and the subsequent reapplication and approval for the treatment of a 17th century leather upholstered armchair.

The initial application appears to have been denied as the result of confusion over the use and function of the chair after treatment: was it to be used as a study and research artifact in its current unstable and deteriorated condition, or as an object functioning as an interpretive component in a historical setting?

Initial comments by the reviewing committee suggested that the original treatment proposal was too extreme, and that a more current, less invasive treatment option should be explored. These comments were based on the assumption that the chair would be placed in a study collection. If this were the case, the original treatment procedures were deemed inappropriate. It is important to note that with the addition of a statement concerning intended use, the treatment proposal was accepted as originally written. This points to the need for clarification of treatment options and the rationale for selection of specific treatments.

The grant writing process led us to reconsider the necessary factors required to evaluate an appropriate course of action for the treatment of artifacts in severely deteriorated condition. Several of the factors used in the determination of treatment choice are listed below. Certainly there may be other factors involved as well, but for the following situations these were the most important considerations. Please note that these are not in any prioritized order.

*Condition of the artifact*

*Degree of Originality*

*Intended Use (study, exhibition, etc.)*

*Curatorial expectations or requests*

*Provenance/History of Artifact*

*Environment in which the artifact is to be exhibited or stored*

Using these factors, we now will compare the treatment of three seventeenth century leather chairs, all of which were in severely deteriorated condition. They are as follows: a back stool with an American or English attribution; an upholstered armchair (for which the grant was written); and a Spanish colonial armchair.

The first two chairs are located at Pennsbury Manor, William Penn's home on the Delaware River in Morrisville, PA. Both of these chairs are on exhibit in the house, where they aid in the interpretation of the period and the lifestyle of William Penn in 17th century America. The

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Spanish colonial chair is owned by the Brooklyn Museum in New York, and is part of an upcoming traveling exhibition.

A discussion of the treatments for the three chairs follows, with treatment option selection based upon the evaluation and relationship to the previously mentioned criteria.

## **BACK STOOL**

The back stool is a simple four legged chair without arms. The stool is constructed from spiral turned front legs and stretchers. The lower half of the rear posts are also turned, and these members are mortise and tenon joined and pinned with wooden dowels. The stool is upholstered with a polyester printed fabric on the seat and back rest.

**Condition:** The chair is unstable due to an old insect infestation and numerous nail and tack holes; these weaknesses have caused two of the four legs to fracture and has compromised the structural integrity of the proper left seat rail. The piece has also been reupholstered using a modern polyester fabric. The exposed chair frame has been recoated with several applications of varnish and shellac.

**Degree of Originality:** The original upholstery and support materials had been replaced with modern materials.

**Intended Use:** The backstool is to be exhibited in a historic house/period room setting, and function as a part of a didactic backdrop.

**Curatorial Expectations:** The curator requested structural stabilization, and that the chair be reupholstered using materials appropriate to the period. It was also requested that after treatment the chair would appear in a condition that would be indicative of period use.

**Provenance:** Unknown, purchased from a used furniture shop in New York, NY.

**Environment:** Pennsbury has extreme humidity fluctuations, and the house is heavily used, in particular by large school groups. Therefore, stability and durability of the materials chosen for conservation becomes extremely important in the overall treatment approach.

**Treatment Synopsis:** All modern materials were removed to complete needed structural repairs. These materials were retained as part of the permanent file for this object. An additional factor used to determine this treatment was the physical evidence revealed upon removal of the modern upholstery. Original tack holes found on seat rails, posts, and crest rail were discovered which determined a decorative tack pattern which would be incorporated into the final phases of the treatment.

A non-invasive upholstery system was chosen based upon work of Leroy Graves in Colonial Williamsburg. This procedure was taken one step further by development of an upholstery support system which would allow the chair to serve as a functional object. This was achieved using polyester and fiberglass laminate panels for the back and seat foundations upon which an Ethafoam profile and show material were attached. Curatorial research indicated that options for reupholstery would include either turkeywork (a type of tapestry) or leather. Leather was chosen because a suitable textile was not available. The leather was "aged" by coating it with shellac, toning with dry pigments, and distressed before it was glued to the fiberglass panels. Brass tacks were inserted through fiberglass supports and adhered with Acryloid B-72. The undersides of the seat cushion and back were covered with linen and upholstery strap to create a finished appearance. The severely damaged frame was impregnated with 5% polyvinyl butyryl in ethanol. Areas of loss within the frame were reintegrated with a carvable epoxy, and toned to match the finish.

The leather seat and back panels could then be easily removed to reveal the original chair frame, yet present an artifact that was appropriate to the period room settings found at Pennsbury Manor.

## **LEATHER ARMCHAIR**

This high backed armchair is upholstered in Russia leather, stuffed with a base fiber, and backed with linen. The leather has been painted, decorated with silver leaf, and varnished. Currently the edges of the leather are trimmed with an embossed leather strip attached with brass tacks.

**Condition:** The upholstery on the chair is in unstable condition. On the leather back are two large, complex tears and there are large areas of loss on the bottom, the proper left side, and the upper proper left corner. The leather is desiccated and stiff, and red rot is evident in some areas. The cellulosic fiber stuffing is exposed, and protrudes through the tears in the leather on the chair back.

The powdery linen on the reverse of the chair back is torn and stained, and a complex tear in the rag paper backing is visible through the tears in the linen. The leather used to cover the seat is less damaged. The exposed grain side is cracked and there are losses to the surface of the grain layer. There is a 7" tear on the front edge of the seat, and the interior stuffing is visible. The embossed leather stripping has severely disintegrated and only fragments of the decorative edge stripping remain. The chair frame appears to be in stable condition, with the exception of a break in the proper right stretcher above the intersection of the lower horizontal back support. Glue blocks and braces had been added to the underside of the chair for additional support. The proper right front leg has been broken, and poorly repaired using a putty-like material which has shrunk and cracked over time. The overall condition of the chair is unstable and unfit for exhibition in a historic house or period room setting.

**Degree of Originality:** While it appears that the original upholstery is intact, complete with the original wrought nails, the embossed leather stripping is a later addition as indicated by the modern wire shanked upholstery tacks used to hold the decorated leather strips to the frame.

**Provenance:** Virtually unknown - purchased ca. 1983 in Chester Co., PA and used sporadically as an office chair. It was donated to Pennsbury Manor in 1991.

**Curatorial Expectations and Intended Use:** Pennsbury desired an exhibitable piece of furniture to complete the late 17th-early 18th century furnishings at their historic site. The Director of Pennsbury applied for a grant for treatment, and the initial treatment proposal included partial removal of leather upholstery, stabilization of underupholstery, lining and reapplication of the upholstery.

The granting institution felt that the integrity of the chair, unusual because so few seventeenth century pieces of furniture retain original leather upholstery, would be compromised by the proposed treatment. It was recommended that chair be placed in storage, on its back, for study and research.

This was unacceptable to Pennsbury for several reasons: a study collection did not exist; there was very limited storage space; and the gift was conditional upon its display or exhibition. The grant application for the chair was resubmitted using the same treatment proposal; however, statements were added explaining the treatment rationale and notification that if the treatment was again deemed unacceptable, the chair would be returned to the donor. The proposal, as originally written, was accepted.

**Environment:** Pennsbury has extreme humidity fluctuations, and the house is heavily used, particularly by large school groups. Therefore, the stability of the materials and the resilience of the treatment weighed heavily in the choices made prior to conservation.

**Treatment Synopsis:** The leather upholstery was removed from the chair back to allow for tear realignment, lining, and to add supplemental support needed to transfer the weight of original stuffing away from the leather upholstery itself.

The reverse of the leather was powdery, flaking, and required consolidation in order to stabilize it for a backing procedure. Pliantex, a 5% solution of ethyl acrylate in ethyl acetate, was applied by brush to the flesh side of the chair back. The consolidant was chosen for its flexibility and non-staining properties. The tears were repositioned with sutures made of Reemay coated with Beva. It was critical to maintain the convex contours in the leather panel or it would become impossible for it to be reattached in its original position on the chair frame.

The cellulosic fiber stuffing was slightly reshaped by hand, and encased in a contoured bag of spun bonded polyester. This was further reinforced using a sling or cradle of the same polyester.

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The top of the sling was attached at the top rail of the chair back to support the weight of the flax stuffing.

Areas of loss in the leather panel were compensated with new pieces of skived mineral tanned leather. These leather inserts were attached with Beva 371. The leather inserts were colored using a mixture of microcrystalline wax/rosin toned with dry pigments.

The leather back was completely lined with two layers of Reemay that had been flock-sprayed with Beva 371. This backing was attached to the consolidated flesh side of the chair back using heated tacking irons; the newly lined leather upholstery was then repositioned over the stuffing. Beva was then applied to the edges of the chair frame, and the edges of the upholstery were heat-set to the chair frame.

The seat upholstery was not removed. Tears in the leather were repaired with new skived leather inserts, and filled with microcrystalline wax/rosin toned with dry pigments.

The torn linen on the reverse of the chair back was covered with a new piece of linen that was pressure-fit by inserting the edges of the new textile between the original fabric and the chair frame.

When the embossed leather tape trim was removed, evidence of an original trim was found in localized areas. The modern replacement trim was so deteriorated that upon consultation with the curator a decision was made not to reattach these remnants on the seat back. With curatorial assistance, a more appropriate gimp was attached to the chair back using Acryloid B-72. A matching gimp and fringe was also applied to the lower edges of the chair seat, over the older leather tape, attaching it to the tack heads with 50% Acryloid B-72 in acetone.

The unstable front leg was reinforced using a carvable epoxy putty, and toned to match the surrounding finish. The break in the horizontal back support was repaired using hot hide glue. Note: The embossed leather trim and decorative brass upholstery tacks were not removed from the seat rails in order to maintain a physical historic record of previous alterations.

## **SPANISH COLONIAL CHAIR**

The armchair is constructed from turned front posts, stretchers, and sawn rear posts. These members are mortise and tenon joined and in some instances pinned using wooden dowels. The tooled leather seat and back are stretched across the frame and tacked into position using wrought nails and decorative tacks.

**Condition:** The chair is in unstable condition. The frame is cracked and split, and all glue joints are loose. The leather is severely deformed, torn and brittle. Oozing oils are evident overall.

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The flesh sides of the seat back and chair back are extremely friable.

**Degree of Originality:** Two-thirds of the mahogany frame has been replaced. Based upon tool and saw marks, these replacements appear to have been executed in the 20th century. Seat support straps are made from pieces of rawhide and embossed leather which had been cut from some other decorated leather panel. The leather upholstery appears to be consistent with the period of manufacture; however, it is impossible to say with any certainty that this leather is original to the chair frame.

**Intended Use:** This chair was conserved for exhibition in a gallery setting. Given its fragility and degree of damage, it was considered unexhibitable in its current condition. Therefore, treatment for stabilization and aesthetic purposes was required.

**Curatorial Expectations:** The chair was required to be in stable condition for travel and exhibition purposes and the appearance needed significant improvement.

**Provenance/History of the Artifact:** The chair was collected during the 1940s for The Brooklyn Museum.

**Environment:** The chair, part of a traveling exhibition, is expected to be subjected to at least moderate climatic changes during transportation from venue to venue.

**Treatment Synopsis:** Due to the extreme and severe deterioration of all elements, it was necessary to completely disassemble the chair. All splits and fractures were repaired using hot hide glue, and where necessary, inserts made from mahogany were added.

The leather was first cleaned using swabs dampened with saliva to reduce accumulated grime, and some oozing oils.

The leather chair back was removed, and humidified using slightly dampened blotters applied to the reverse or flesh side of the panel. The leather was then allowed to dry slowly under weights, while maintaining a shape consistent with a pattern of use. After consolidation using a 5% solution of Pliantex, the flesh side of the leather chair back was lined with Reemay which had been flock-sprayed with Beva 371. Using a heated tacking iron, the Reemay lining was attached to the chair back. Thin chrome tanned leather was then attached to the reverse of lining. The leather was adhered, flesh side out, to create an appearance similar to the original panel, prior to treatment. All old repairs and inserts were left intact.

The seat required a less invasive treatment. Beva coated Reemay sutures were applied to the reverse in order to mend tears. The exposed, or top side, was filled using microcrystalline wax toned with dry pigments. The leather was reattached to the frame with the original tacks.

## **CONCLUSION**

The purpose of this paper is to illustrate, review, and consider the necessary factors required to evaluate an appropriate course of treatment for objects which are to complement historic settings; many of these factors, which in part dictated treatment, are interrelated and interdependent. Having been through this process, and having had a treatment proposal rejected for being too radical, we have found that the context and rationale for treatment need to be as fully understood and explained as the specifics of the treatment itself. We, as conservators, bear this responsibility and also that of extending to our colleagues the professional courtesy of withholding criticism until full consideration is given to the factors determining treatment choice, or the parameters within which they work.

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