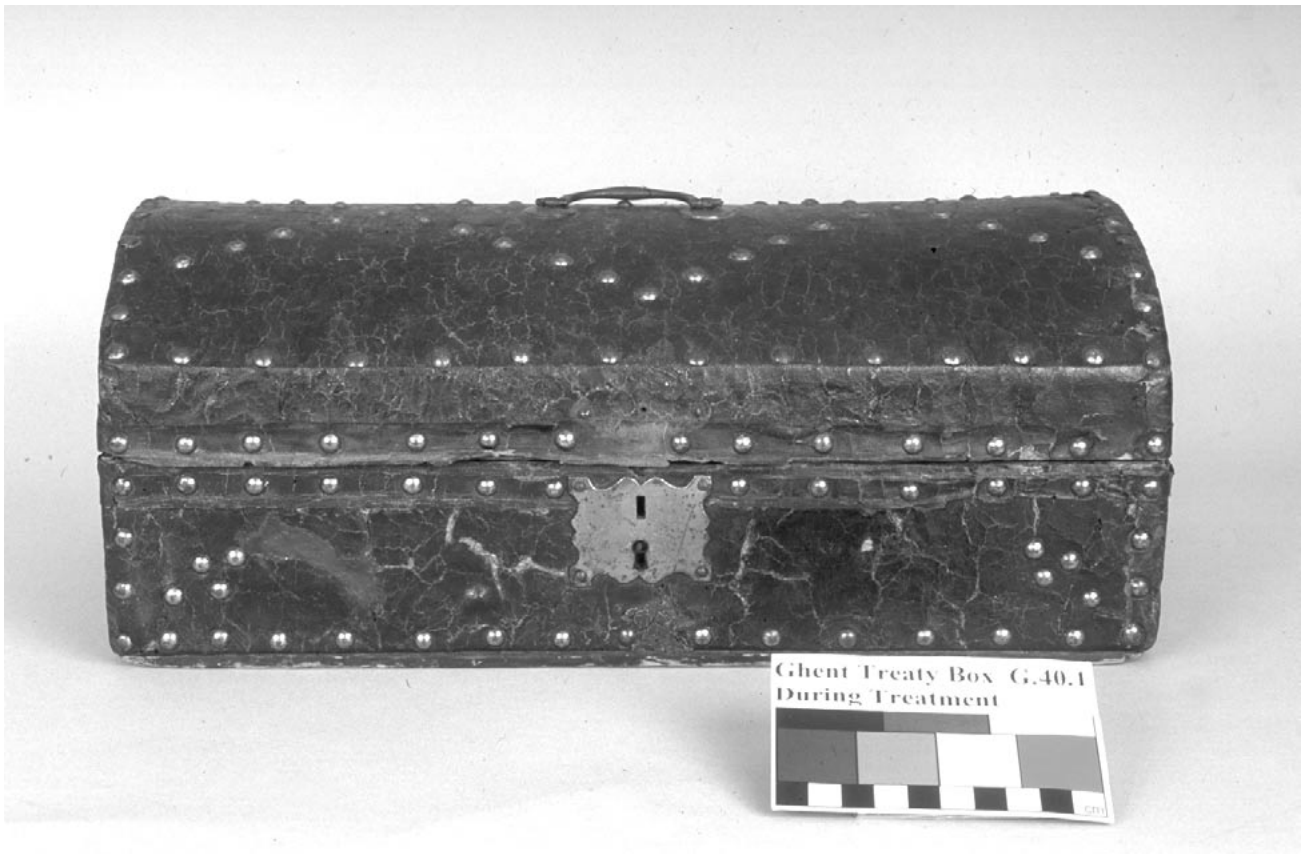

Figure 1. The Ghent Treaty box showing the pattern of decorative nails, position of the brass handle, lock plate, wax seal, and leather banding. The leather is cracked and shows an old pigmented resin fill on the left of the image.

Retreating the Treaty Box: Dealing with Deteriorated Materials and Aged Acrylic Consolidant in an Historic Document Box

Leroy Graves, Heather Porter, and F. Carey Howlett

Abstract

The Ghent Treaty box is a small document box that was made in 1814 to carry the treaty that ended the War of 1812 between Britain and America. The wooden box is covered with leather and decorated with brass nails. Many of the original materials had become badly damaged and required conservation treatment in 1973. This early treatment had many positive results, but has subsequently contributed to the continuing physical and aesthetic problems associated with the box. The Ghent Treaty box was recently conserved at the Colonial Williamsburg Foundation to stabilize the materials and improve its appearance in preparation for display at the Octagon. This paper outlines the history of the box, the effects of the previous treatment and details the materials and techniques used at Colonial Williamsburg to re-treat the Ghent Treaty box.

Introduction

The box used to carry the treaty ending the last hostilities between the United States and Britain was retreated in the conservation laboratories at Colonial Williamsburg. The small, leather-covered document box, measuring 15 inches long, eight inches deep and six inches high, was made in 1814. Originally, the leather was stretched over the wooden box and held in place using decorative brass nails, spaced approximately one inch apart. The nails are positioned along some of the outside edges and form a cross pattern over the domed lid. There is a brass bail handle on the top, and a brass lock plate and two red wax seals on the front of the box. *(fig. 1)* The interior is lined with printed book pages made of rag paper, overprinted with a repeating pattern of small black dots and rings. A small brass plaque inside is inscribed "IN THIS CHEST / THE TREATY OF GHENT / WAS BROUGHT TO WASHINGTON / BY / HENRY CARROLL, SECRETARY TO HENRY CLAY / 1814."

History

A long and frustrating series of protests between Britain and the United States over British interference with American shipping forced President James Madison to ask Congress to declare war on Great Britain on June 1, 1812. Battles raged across the northeast and south of the young United States for two and a half years and ended with the signing of a treaty dated December 12, 1814, in Ghent, Belgium. The uncertainty of travel made it necessary to send three separate copies of the treaty across the Atlantic to ensure the safe arrival of one. The first copy to arrive in Washington was carried in a small document box, now known as the Ghent Treaty box,

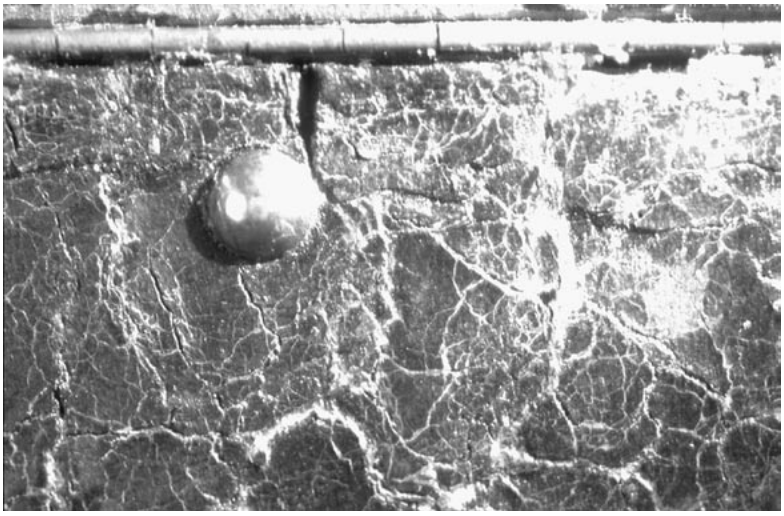

Figure 2. Detail of the leather before cleaning showing the white bloom over the surface and deposits of old consolidant in the cracks between pieces of damaged leather.

by Henry Carroll, secretary to U. S. Secretary of State Henry Clay. The treaty was delivered to James Madison at the Octagon, which served as presidential residence and temporary headquarters after the British burned the White House. On February 17, 1815, President Madison signed the treaty, making the copy carried by Carroll the official document ending the war of 1812. The treaty itself is preserved in the National Archives, while the Ghent Treaty box was passed down through generations of the Carroll family. In 1940, the family donated the box to the Octagon, now the Museum of the American Architectural Foundation.

Conservation Treatment

During the 190 years since the box was made, a quantity of wood has been lost because of damage caused by wood boring beetles (*Anobium* sp.). The original leather shows visible signs of red rot and much physical deterioration, possibly because of long-term exposure to poor environmental conditions. Some of the decorative brass nails have green corrosion products at the interface between the brass head and the leather. Copper corrosion is a chemical reaction that can occur in acid or basic conditions, and might have been caused by fats and oils in the leather, or any dressings or coatings applied to either material.

A previous conservation treatment, completed in 1973, addressed these problems and consolidated friable leather and insect-damaged wood using an undocumented acrylic resin. The liquid was brushed onto the surface until it saturated the leather and parts of the wooden box. Once the resin dried, the leather and wood bonded together. However, over the past 25 years, the resin bond has failed in some places and pieces of flaking and damaged leather are lifting away from the wooden box. In addition, because the excess residue of resin was not removed, it has subsequently dried on the surface and formed an unsightly white bloom over the leather and between the cracks in the damaged areas. *(fig. 2)* Today, the leather retains a plastic handling quality caused by the synthetic consolidant. Because of the historical significance of the box, the first conservators decided to fill only the two largest areas of loss in the leather using putty made from a mixture of the resin and pigments, which formed an extremely hard material. *(fig. 3)*

Recently, extensive conservation treatment was undertaken at the Colonial Williamsburg Foundation to stabilize the Ghent Treaty box and improve its appear-

Figure 3. Detail of the back before conservation showing the degraded condition of the leather,areas of loss and old large resin fill.

ance in preparation for display at the Octagon. The treatment was carried out by Leroy Graves, Head of the Upholstery Conservation Laboratory at Colonial Williamsburg and Heather Porter, a graduate intern from the Royal College of Art/Victoria & Albert Museum Conservation program. The conservators retreated many of the problems that initiated the 1973 treatment but, also had to reverse some of the unpleasant aesthetic results of that early conservation work.

During treatment, the leather was again adhered directly to the wooden box. Conservators considered the advantages of supporting the leather on a separate lining material but it was almost impossible to remove all of the brass nails, attachments and leather, without causing considerable further damage and loss of original materials.

The acrylic adhesive Lascaux was chosen to adhere the leather because it has a range of good working properties. Two or more grades of Lascaux can be mixed together to alter the mechanical properties of the dry film, including the stiffness and surface tack. Lascaux can be used as either a wet emulsion or left to dry and reactivated with heat or solvents. Importantly, the effects of aging have been well researched and documented and conservators are confident that Lascaux is a stable material when stored or displayed in a controlled environment. A mixture of 360HV and 498HV was used in a ratio of three parts 360HV:one part 498HV.

Adhesive was inserted behind the leather using a small spatula or dentist tools in open areas and injected using a hypodermic needle where the leather was loose but not broken. Moisture in the adhesive allowed areas of thinner leather to be adjusted to reduce the size of cracks between damaged pieces. Small areas of leather were held down under silicone release paper, using finger pressure, until the initial bond was strong enough to hold the leather to the wood. A heated spatula iron was used selectively to hold down tiny flakes of leather, particularly on the lid where the leather was still intact. This technique eliminated the need to apply weights and permitted work on several small areas at a time. However, old leather that is wet and heated simultaneously can shrink suddenly, so this process was very carefully monitored at all times to prevent this irreversible effect. Heat was discontinued at the first sign of distortion. Many of the thicker pieces of leather were stiff and distorted and needed humidification to increase their flexibility. These areas were softened under Gortex, using damp blotting paper with Mylar over the top to prevent evaporation

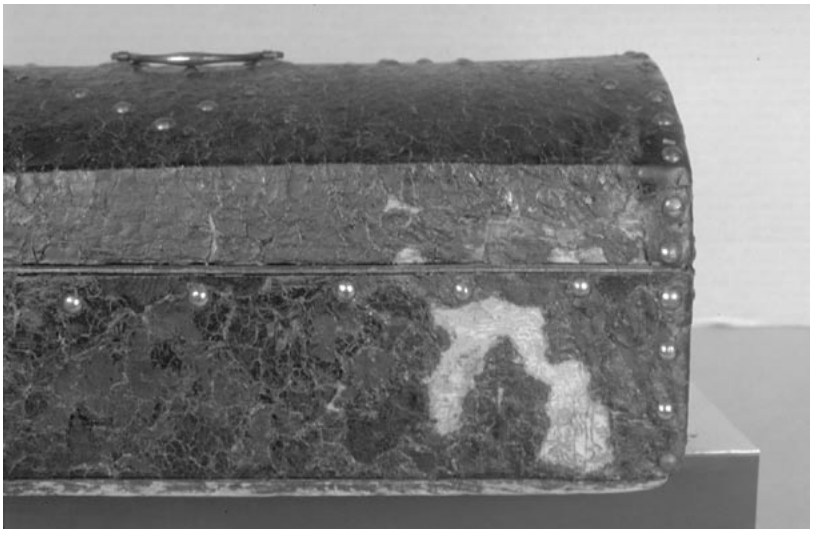

Figure 4. Detail during conservation.The leather has been adhered to the wooden box and new leather is integrated into some of the losses.The old solid fill has been removed,exposing the wooden box underneath.

of the water. When the leather had become more flexible, adhesive was inserted and a small bag of lead shot was placed over the area to help shape the leather until the adhesive was dry. Liquid adhesive residue was wiped from the surface using a damp cotton cloth.

Leather banding was originally secured around the bottom of the lid and top of the base with decorative brass nails. Some of the banding had been lost and the edges were curled and brittle. Because of the original method of attachment, it was not appropriate to adhere the banding to the main leather covering. Therefore, pieces of Japanese tissue paper were inserted behind the banding to bridge the areas of loss, support the remaining banding, and provide a foundation for new fills. The paper was toned using acrylic paints and coated on one side with a thick layer of Lascaux adhesive, which was allowed to dry. Silicone release paper was inserted under the banding between each pair of brass nails to help the individual pieces of Japanese paper slide into position. The Lascaux was then heat activated using a small flat spatula iron (set at 80°C)and, after bonding, the silicone release paper was removed. Adhesive was exposed in the areas of loss and these sections were filled with more color matched Japanese paper, again using heat activation.

Once all the materials had been supported, the second stage of the treatment could progress. After consultation with curators at the Octagon, the decision was made to remove the white bloom over the leather surface and fill the areas of loss, returning the Treaty box to an acceptable aesthetic condition for display. The old solid resin putty fills and other areas of unsightly friable wood powder and dry adhesive were removed. *(fig. 4)* New vegetable tanned, undyed leather was colored to blend with the original using aniline dyes. The new surface was ar-

Figure 5. Leroy Graves cleaning the leather under a microscope using cotton swabs, dampened with Stoddard solvent and acetone.

Figure 6. During cleaning the dark surface coating and residue of old consolidant are removed and the leather appears lighter in color.

tificially aged by applying several coats of shellac and flexing the dry leather to make the shellac crack, producing an effect similar to the old, degraded surface. Small pieces of artificially aged leather were cut to the same shape and thickness as each missing area and held in place using Lascaux. The original leather was cleaned with cotton swabs dampened with Stoddard solvent, which slowly softened the wax and lifted away the white resin. To increase the effectiveness of the cleaning process, a tiny amount of acetone was added to the Stoddard solvent. However, the addition of too much acetone could bleach the natural color out of the leather and make it very brittle, so this process was carried out under a microscope. *(fig. 5)* The cleaning process produced a very porous leather surface that needed to be sealed with a thin layer of shellac before a new wax coating was applied. *(fig. 6)*

All of the brass attachments including the decorative nails, lock plate and handle had tarnished since they were polished during conservation in 1973. Each brass nail was isolated from the surrounding leather with small pieces of Mylar. One at a time, the brass nails were polished using a combination of the two mild abrasive cleaning pastes, Pre-Lim surface cleaner and Autosol. A small amount of each polish was allowed to dry into a powder by waiting for the solvents to evaporate. Then the dry powder was carefully rubbed onto the surface of each brass nail. The excess cleaner was removed with dry cotton swabs before the nail head was wiped over with Stoddard solvent to take away any residue. The brass nails were coated with Incralac lacquer to seal the surface and help prevent further tarnishing. *(fig. 7)*

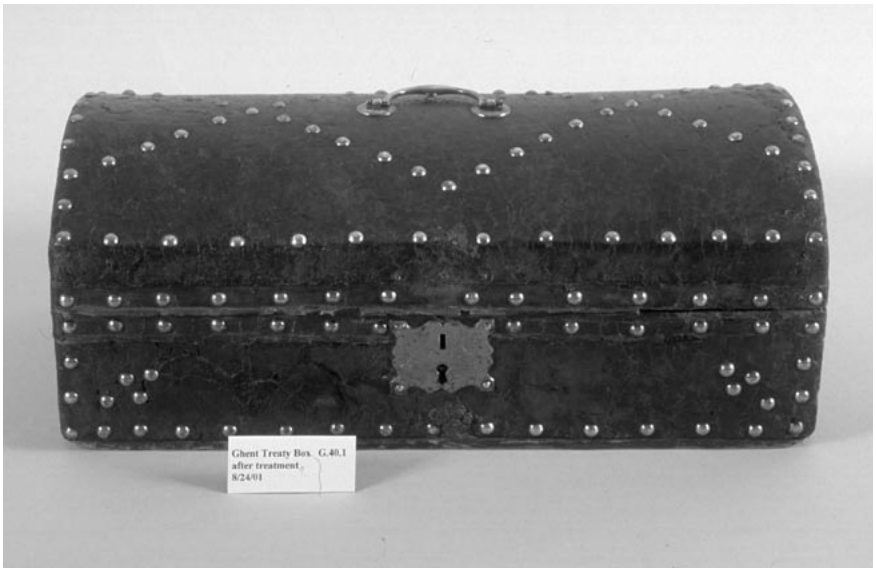

Figure 7. After conservation. All the brass nails and attachments have been cleaned and lacquered. The leather has been coated with a wash of shellac before a new wax coating was applied.

The conservation work carried out at Colonial Williamsburg successfully stabilized all of materials on the Ghent Treaty box and dramatically enhanced its appearance for display at the Octagon. Due to the

fragile nature of the materials, recommendations have been made to display the box in a stable environment with controlled temperature and relative humidity. Eventually, the box will be displayed with the Treaty inside and therefore two specially designed black steel brackets, measuring 1¼ inches wide, have been made to support the open lid. The brackets sit flat on the bottom of the box, extending up the back edge, bend backwards slightly to accommodate the vertical depth of the open lid and are shaped into a curve corresponding the inside of the lid. Each bracket is covered with heavy linen, adhered to the surface with PVA (Polyvinyl acetate)adhesive. The visible side, which faces inside the box, is covered with new rag paper and Xeroxed with small text to simulate the original. The paper is colored with dilute acrylic paints and the pattern of dots has been reproduced with black acrylic paint, applied with a small cork. The reverse sides of the brackets that rest directly on the original paper lining are covered with Marvelseal® 360 barrier film. Marvelseal® 360 is a laminated film of nylon, aluminum, and polyethylene, and is used because it resists the transmission of water vapor and other atmospheric gasses. The film is applied with the polyethylene on the contact surface and heated from the nylon side to melt the polyethylene and secure the bond with the adjacent linen. The brackets are inserted into the box while the lid is fully open and supported by the original linen straps. The brackets are lowered down at a diagonal angle and twisted round until they sit parallel to the sides. The lid is then lowered down onto the brackets for safe display. *(fig. 8)*

Conclusion

Although there were some aesthetic problems caused by the 1973 conservation treatment there is no doubt that, without it, much more of the original leather would certainly have been lost in the intervening years. The early consolidant succeeded in bonding the friable materials together, reducing the loss of original materials and making the leather more stable to handle during conservation at Colonial Williamsburg. The retreatment of the Ghent Treaty box is a humbling reminder that, in spite of our own best efforts to use appropriate materials and the most advanced treatment techniques, our own work is impermanent. The negative processes of deterioration, combined with the continual positive advancements in the conservation profession, will ultimately result in the need for further retreatments.

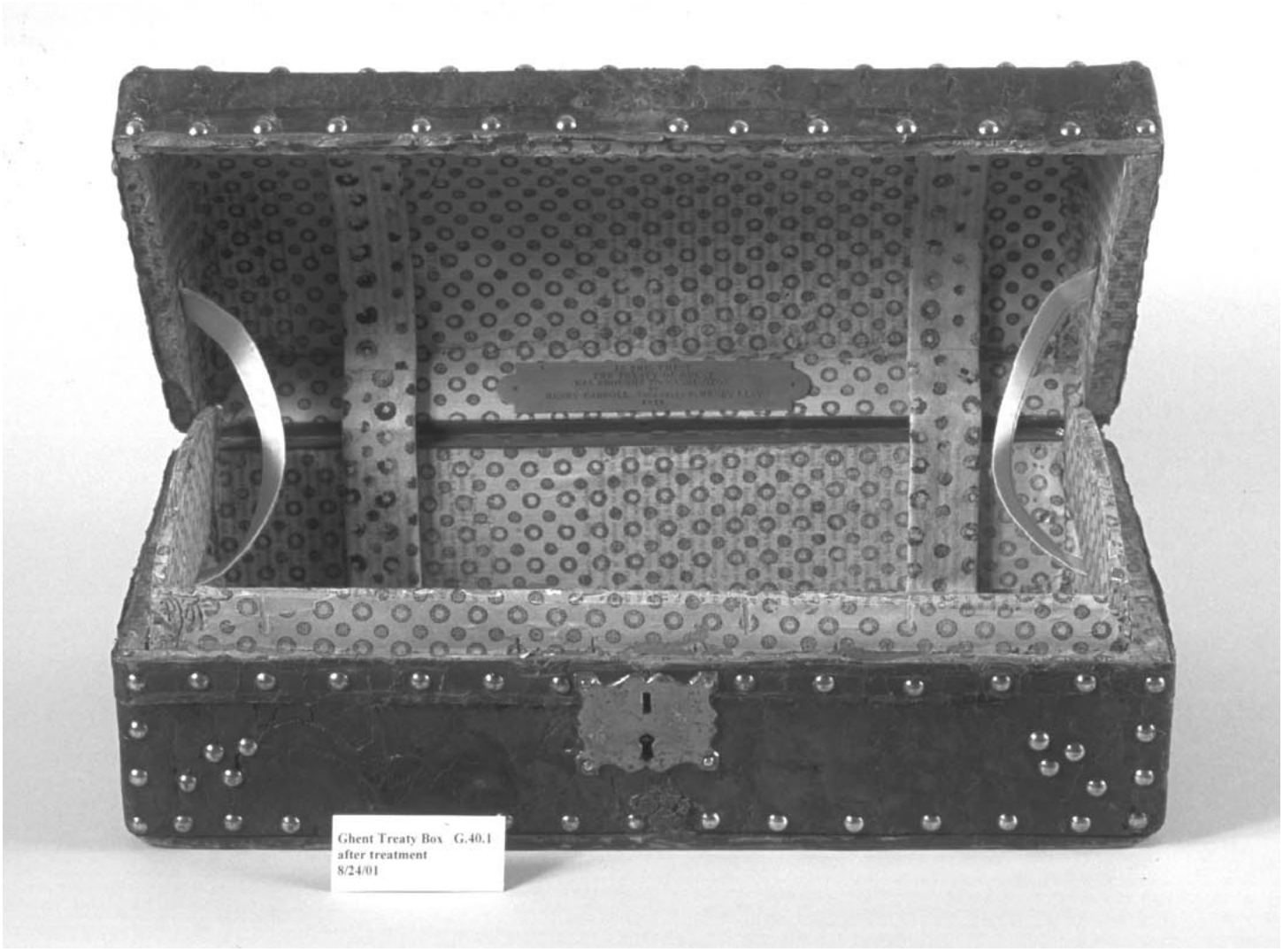

Figure 8. After conservation. Inside the Treaty box, showing the paper lining, small plaque and position of the two brackets made to support the open lid.