American Institute for Conservation
of Historic & Artistic Works
38th Annual Meeting
Milwaukee, Wisconsin
May 2010

Edited by

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VOLUME TWENTY
PREFACE


TSG POSTPRINTS is a non-juried publication. Submission of these papers to juried publications, such as the Journal of the American Institute for Conservation, is encouraged. The papers, chosen from abstracts submitted to the Meeting Chair, Denise Migdail, Textile Specialty Group Vice Chair for 2009-2010, are published as submitted by the authors. Editing of papers was done according to the Journal of American Institute of Conservation’s Guidelines for Authors and AIC’s best practices guidelines for print and electronic publications. Materials and methods presented within the papers should not be considered official statements of either the Textile Specialty Group or of the American Institute for Conservation of Historic & Artistic Works.

The Editors wish to thank the contributors to this publication for their cooperation and timeliness. Without their enthusiasm and hard work this publication would not have been possible. Special thanks are extended to Translation Services USA, LLC, for translating the abstracts into Spanish. Thanks also are due to Joel Thompson, who laid out the volume using Adobe Indesign.

Publication of this volume of the Textile Specialty Group Postprints is made possible with funding from the Harpers Ferry Regional Textile Group, organizer of conferences on textile preservation from 1978 to 1992.
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ABSTRACT - The supporting forms used to display the museum’s iconic costume objects at The National Museum of American History (NMAH) have changed over time, with varying impact on the objects. The author examines three suits and one collection of dresses, which have been exhibited repeatedly over a long time span. The investigation provides insights into the improved methods to display costumes as a part of the museum’s preventive conservation approach. As the exhibition history at NMAH shows, the mannequins, mounting materials, and the methods have been improved over time as better knowledge and materials became available. In retrospect, it is obvious that problems arose from once-current display techniques used in the past. By observing damage from the stress and strain to costumes from previous mounting, by selecting archival materials, and through a better understanding as to how the costume would have been worn on the accurate body shape of the period, it is possible to create a new form that is archivally sound and provides superior support. The importance of collaboration and the sharing of expertise and knowledge between the various museum disciplines are also recognized.

EVÁLUACIÓN DE LAS FORMAS DE APOYO DE EXHIBICIÓN DE TRAJES REPRESENTATIVOS EN EL MUSEO NACIONAL DE HISTORIA ESTADOUNIDENSE: GEORGE WASHINGTON, BENJAMIN FRANKLIN, ABRAHAM LINCOLN Y LAS PRIMERAS DAMAS: RESUMEN - Las formas de apoyo que se utilizan para exhibir los trajes representativos del museo en el Museo Nacional de Historia Estadounidense (NMAH, por sus siglas en inglés) cambiaron con el correr del tiempo, lo cual produjo diversos impactos en los objetos. El autor examina tres trajes y una colección de vestidos que se exhibieron en reiteradas ocasiones durante un prolongado lapso de tiempo. La investigación brinda una perspectiva sobre los métodos mejorados para exhibir trajes como parte de la estrategia de conservación preventiva del museo. Tal como lo indica la historia de exhibiciones del NMAH, los maniquíes, los materiales de montaje y los métodos mejoraron con el correr del tiempo a medida que surgieron mejores conocimientos y materiales. En retrospectiva, es obvio que las técnicas de exhibición pasadas que en su momento eran actuales causaron problemas. Al observar los daños que la presión y la tensión de los montajes anteriores causaron a los trajes, seleccionar materiales de archivo y mediante un mejor entendimiento de la manera en que el traje se habría usado en la forma corporal precisa del periodo, es posible crear una nueva forma acertada desde el punto de vista de la archivística y que brinde un soporte superior. También se reconoce la importancia de colaborar y compartir la experiencia y los conocimientos entre las diversas disciplinas del museo.

1. INTRODUCTION

About three million objects in various materials, shapes, and sizes are kept at the National Museum of American History (NMAH), but only three-percent of them are on exhibit. Among them, a few high iconic garments have been displayed repeatedly over time at the Smithsonian Institution since the public always expects to view these objects whenever visiting the museum. Although the overall condition for these objects are still fairly sound, they are often distorted and worn with certain areas that are stressed due to improper support, mounting materials, and handling over the years. While it is likely that past supporting methods and mounting materials were up to the current standards and knowledge of conservation practices at the time, in retrospect, it is obvious that problems arose from some of these display techniques. This paper examines how the supporting forms used to display the museum’s iconic costume objects at NMAH have changed over time and how this has impacted the objects. This investigation will provide insights into the improved methods to display costumes as a part of our museum’s preventive conservation approach. The research was heavily dependent on previous photo
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documentation, museum records, and colleagues recollections since many of the exhibitions do not exist anymore.

2. BENJAMIN FRANKLIN’S THREE-PIECE SUIT

The purple ribbed silk suit worn by Benjamin Franklin consists of a matching waistcoat, breeches, and coat. This simple three-piece suit symbolized the new American republic look during the War of Independence when Franklin wore it in 1778.

Figure 1. Benjamin Franklin’s suit displayed horizontally without any support in Growth to the United States, 1964 to 1974. Courtesy of the National Museum of American History (NMAH), Division of Home and Community Life.

Elkanah Watson of New York received the suit from Franklin in Paris in February of 1778. He then gave the suit to the Massachusetts Historical Society in December or January of 1802-3. There was an agreement on a long-term loan (1963 to the present) from the Massachusetts Historical Society (MHS) to the National Museum of History and Technology (NMHT), now called the National Museum of American History (NMAH). This agreement stated that the suit would be exhibited in a new exhibit titled Growth of the United States and that the suit would be properly cared for and stored under the NMAH’s facilities and expertise. This first exhibition, from 1964 to 1974, displayed the suit horizontally without any support (fig.1). It was placed with the pieces of the suit overlapping each other. The lights were filtered using the methods available at the time. It was discovered during the closing of the exhibit in 1974 that the construction of the suit was stable, but the fabric’s dye condition on the surface was extremely fragile and unstable. The dye would come off whenever the suit was touched. Also, there were faded areas on the suit where the pieces overlapped, caused by light exposure during the exhibition. At that time, it was recommended not to exhibit the suit under any circumstances, but only to house it safely in storage as a study piece (NMAH Accession File).
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In 1982 the suit was dressed on a fiberglass mannequin to photograph for a publication (fig. 2). The front curve of the suit looked unnatural and showed a big gap between the waistcoat and the breeches. In addition, the proportion of the suit looked awkward. This lack of fit resulted because the fiberglass mannequin that was available was incorrectly shaped in the approved eighteenth century posture and did not support the suit precisely.

On January 17, 2006, when NMAH exhibited the suit to honor Franklin’s 300th birthday, it had been stored for about three decades. After a current condition survey was completed, the suit was found to be structurally sound and capable of being displayed. Various museum experts from the fields of art, science, costume history, and conservation concluded that approved environmental factors, a monitored lower light level, and the construction of a archivally safe display form could minimize further damage to the suit. The decision was made to display the suit for a maximum period of three months under a light level of 1.5 foot-candles (NMAH 2005).

The use of a muslin pattern of the suit constructed by an eighteenth-century costume reproduction specialist limited the handling of the historical suit while constructing a display form. Chemically stable Ethafoam plank was used to build a form from scratch. It was based on the measurements of the suit and an accurate eighteenth century stance and pose that did not create any undue stress on the suit. The fit was refined by using polyester batting to add to the necessary part of the body. Polyester stockinette was then used to cover the form to provide a finished product (fig. 3) (NMAH 2006).

Figure 2 (left). Benjamin Franklin’s suit dressed on a fiberglass mannequin for a publication in 1982. Figure 3 (right). Benjamin Franklin’s suit displayed on a custom-made Ethafoam form in Benjamin Franklin’s Suit in 2006. Photos courtesy of the NMAH, Division of Home and Community Life.
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The decision to exhibit the Benjamin Franklin suit provided a great opportunity to study and analyze it, particularly its fabric dye, in a way that had not been possible previously. Although it had long been established that the purple dye on the suit was unstable, a more intense study helped to understand more completely the nature of this problem and how advanced and accelerated the damage had actually become.

A senior research textile conservator on the Smithsonian staff joined in to monitor any color and fading during the exhibition using a non-destructive tool, a Minolta-Konica CR300 tristimulus colorimeter, calibrated to a white tile at D65 (Ballard 2005). Initially planned research to analyze the dye pigment and any other residue on the suit and to stabilize the dye condition has still been pending because of the lack of the staff resources and time limit.

3. GEORGE WASHINGTON’S UNIFORM

The three-piece buff wool uniform consists of a coat, waistcoat, and a pair of breeches that were actually worn by General Washington, but were from different time periods and were not worn together. The waistcoat and breeches were from the period of the Revolutionary War, but the uniform coat was from around 1789, after he had resigned from the Continental Army to become the nation’s commander-in-chief. This conclusion was reached after study of the proportions and construction details of the uniform pieces. The uniform was held by the Columbian Institute and the National Institute and subsequently housed in the Patent Office before arriving at the Smithsonian in 1883. During the war years of 1942-1944, the Smithsonian packed up many of its treasured artifacts and sent them to the Shenandoah Valley for safekeeping. Otherwise, the uniform has become one of the iconic museum objects, and it has been on display almost continuously since 1944 (NMAH 2004).

Photo documentation of Washington’s uniform on display at the Smithsonian started in May 1888 when Mr. John Noah modeled wearing the uniform and holding a sword (fig. 4). In 1944, the uniform was exhibited on a hanger without any padding (fig. 5), and later in the Arts and Industries building before moving to NMHT once it opened in 1964. It was typically displayed on a succession of mannequins with a head resembling the general. They were often made of clay or fiberglass with realistic faces, hairstyles, and hands (fig. 6). As most costumes on view at NMAH belong to someone who is well recognized, visitors often try to relate the real person to the detail of the mannequin’s face and hairstyle rather than focusing on the costume. When the new exhibition The American Presidency was planned to open in 2000, the project team including curators, designers, educators, conservators, and other experts well understood this point. In order to discourage this tendency, the majority of costumes for this exhibition were displayed on forms made of Ethafoam without heads, hands, and any other exposed body parts.

The latest mannequin used to display the uniform until 2000 was made of clay over a steel armature, which was heavy and had a hard and rigid surface. The mannequin was padded with cotton batting using duct tape to hold it in the place. Joints such as the wrist, neck, and hips were stabilized with duct tape. The steel armature gradually became bent and crooked due to the heavy weight of the mannequin over time. It was apparent that the clay was not an easy material to carve, cut, or add to in order to achieve the proper eighteenth-century posture. Improper mounting materials and the incorrect body shape of the inflexible clay mannequin caused the stress and strain on certain areas of the uniform, including the near upper shoulders of the coat and the upper thigh of the breeches.
Figure 4 (top left). George Washington’s uniform modeled by a museum staff member in 1888. Figure 5 (top right). Washington’s uniform displayed on a hanger in 1944. Figure 6 (bottom left). Washington’s uniform displayed on a fiberglass mannequin until 1999. Figure 7 (bottom right). Washington’s uniform displayed on a custom-made Ethafoam form in ‘American Presidency’ in 2000. Photos courtesy of the NMAH, Division of Armed Forces History.
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For the American Presidents exhibition in 2000, the collaborative efforts of the curators from Military history and Costume along with the costume conservator led to a support form made from a carved Ethafoam plank that presented the eighteenth-century general’s uniform more accurately (fig. 7). The Ethafoam form was carved precisely to create the dropped and backward shoulder position that was typical of eighteenth century men’s posture. It helped to eliminate the pressure on the front chest and upper back of the coat so it smoothly fit on the body. Also, there were wrinkles caused from the short length of the thigh support on the upper front areas of the breeches, which was corrected with a new mounted form and with an accurate posture of the eighteenth century gentleman. In addition, a pair of reproduction boots based on George Washington’s reference record was commissioned from a eighteenth century boot reproduction specialist in order to provide increased advantage to the form’s appearance and pose.

4. ABRAHAM LINCOLN’S THREE-PIECE OFFICE SUIT

The Smithsonian received a black silk office suit consisting of vest, trousers, and coat worn by Lincoln from the widow of Mr. William Morris Hunt in 1894. Hunt was a Boston artist who painted Lincoln’s posthumous portrait in 1865. Thomas Pendel was the White House doorkeeper who delivered the Lincoln suit to Hunt upon the request of Mary Lincoln. Pendel was about the same size as Lincoln and posed in the suit for the artist. The portrait was eventually destroyed in a fire, but Hunt’s sketch done at the time still survives (Rubenstein 2009).

Lincoln’s suit had been stored for a couple of decades in the Smithsonian Castle storage until 1920 when it was displayed on a hanger without any support for a short time (fig. 8). In 1959, the 150th anniversary of his birth, the Smithsonian started an exhibit on Lincoln (Rubenstein 2009). The suit was displayed on a fiberglass mannequin with styled hair and realistic face and hands a couple of times in the Arts and Industries building before NMHT opened in 1964 (fig. 9). In 2000, only the coat without the other two pieces was chosen to be displayed for the exhibition American Presidency. The overall construction condition of the suit was stable and fair, but the silk surface was unstable. Whenever the suit was handled, the black fibers came off from the degradation. Also, the weighted silk lining of the coat was severely degraded and split all over. Therefore, the entire lining was overlaid with Stabiltex to stabilize the splits.

Figure 8. Lincoln’s office suit displayed on a hanger, circa 1920s. Courtesy of the NMAH, Division of Political History.
The coat skirt both at the front and the back has a permanent distortion diagonally because the coat has been displayed before 2000 without closing the buttons at the front opening. Also the fiberglass mannequin did not adequately support the coat at the shoulder area, so the coat had hung loosely. In 2000, a commercially purchased Ethafoam mannequin was customized to create a realistic nineteenth-century body shape by modifying the shoulder areas to drop and pull backwards and by adding polyester batting to make the upper chest thicker and more curved. A muslin underskirt was made to support the coat skirt. In order to celebrate Lincoln’s 200th birthday, the latest exhibition *Abraham Lincoln: An Extra Ordinary Life* opened in spring 2009. This is the biggest display yet at NMAH focusing on Lincoln and his office suit, and the form created for the 2000 exhibition was reconfigured to display the entire suit (fig.10).

5. FIRST LADIES’ DRESSES

Cassie Mason Myers Julian-James, a leader of Washington social society, established a costume collection for the Smithsonian Institution in 1912. She collaborated with Rose Gouverneur Hoes, a descendant of President James Monroe, to develop an exhibition of costumes of the ladies of the White House. By 1914, fifteen dresses were collected from the friends and families of former first ladies and, at the same year, the exhibition *The Collection of Period Costumes* was opened in the Smithsonian’s Arts and Industries Building. The first ladies exhibition intended simply to show the dresses of the hostess of each presidential administration, but the collections kept growing and became the most popular and the longest running exhibition at the Smithsonian.
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By 1931, there were costumes representing a presidential wife or hostess for each past administration (fig. 11). In 1955, the First Ladies Hall exhibition featured the first ladies’ gowns with appropriate historical backdrops in the form of popular period rooms. In 1964, when the new NMHT opened the exhibition, personal accessories and White House china and furnishings were added to the gowns (NMAH 2009) (fig. 12).

Starting in 1987 the first ladies exhibition was closed for five years to prepare a new exhibition. For the first time, a costume conservator was hired in the centralized Conservation Department (now Preservation Services).
to prepare museum-wide exhibitions. A team of interns, technicians, and private contractors under the direction of the costume conservator prepared the new first ladies exhibition by treating the dresses and mounting them on a new set of mannequins. The condition of the many of the dresses was fragile, dirty, damaged, and degraded due to many years of displaying them in an uncontrolled environment and without adequately supportive and archivally sound mounting. With the beginning of the first ladies exhibition in 1914, the dresses were displayed on mannequins made of a clay torso with some type of wooden support.

In 1992 when the new exhibit *First Ladies: Political Role and Public Image* opened, the focus of the first ladies exhibition had been drastically changed by incorporating women’s history scholarship and the roles and contributions of the first ladies (NMAH 2009) (fig. 13). The exhibition recognized the field of costume conservation and one small room was designed to display the scientific research and conservation treatment procedures performed on a selected dress. The design of the new exhibition gallery focused on controlling the environmental factors so the dresses could be displayed under a low light level reading below 3 foot-candles and in dust free cases. Fiberglass mannequins without the heads and hands were selected to display the dresses so that the public could focus on them without distraction from any other details of the body parts as previously when the hairstyles, faces, and hands were made to resemble the first lady. Each mannequin was mounted with conservationally sound materials and each dress was supported with the appropriate underpinnings. Furthermore it was decided as a part of a preventive conservation policy that the dresses would be rotated every six months to provide relief from continuous display. Because of the lack of the museum resources and the budgets however, the Smithsonian was not able to afford to change any of the dresses until 2006.

In the summer of 2006 the museum was closed to the public for a major building renovation. During this time, every object on display was packed away. In fall of 2008 the center part of the museum was reopened without the first ladies gallery. The permanent first ladies exhibit was not scheduled to reopen until the next phase of renovation was completed. Due to the strong demand from the public to see the dresses however, a temporary display entitled *First Ladies at the Smithsonian* was newly prepared and installed in the west wing.

When the museum closed in 2006, the dresses from the 1992 exhibition were evaluated to see which one could be reused for the new temporary exhibition that was to open in 2008. Even though the 1992 exhibition was prepared and supported by strong conservation effort, unfortunately the dresses were strained, stretched, and/or distorted because the fiberglass mannequins were rigid and the mounting did not precisely support the gowns for such a long duration on display. The dressed mannequins were heavy, but were supported with a one-half
inch diameter rod. As a result, they gradually became bent and crooked over time. For the exhibition in 2008, the fiberglass mannequins were altogether abandoned and the new forms were constructed of Ethafoam without any heads or hands (fig. 14). Fortunately, the muslin patterns previously made were still available for the most of the dresses, so the handling of the fragile dresses was minimized for the new mounting process.

The high popularity of this first ladies gallery led the museum to add one more gallery to feature first lady Michelle Obama’s inauguration gown (fig. 15). The newly added exhibition *A First Lady’s Debut* opened after Michelle Obama officially donated her inaugural dresses to the museum. The forms for this exhibition were constructed to match the previous 2008 exhibition (NMAH 2010).

6. CURRENT PRACTICES AND CONCLUSIONS

It is difficult to judge specifically how these historic costumes became damaged and distorted because it was a combination of the usage of improper materials, mounting method, storage, display, and environment. As many of these costumes continue to be on constant display, the best way to prevent further damage is to support them with inert materials in a controlled environment, while correctly interpreting the period body postures and mannerisms. NMAH either purchases commercially available Ethafoam (Dow polyethylene foam, 220 density) figures for more modern costumes or constructs custom forms from carved Ethafoam plank with an aluminum or steel support rod depending on the posture or gesture. Some merits of the mannequins made of Ethafoam are that the foam is lightweight, inert, and easy to adjust size and to handle. All museums aim to display the costumes in the proper manner and without causing further damage, yet the selection of the mannequins can be based on the museum’s philosophy. NMAH is a history museum and its main purpose is to use mannequins which will unobtrusively display and support the historic costumes properly. Some museums, on the other hand, select mannequins that will be used to further interpret the costume.
The exhibition history at NMAH shows that the mannequins, mounting materials, and the methods have been improved over time as better knowledge and materials became available. By understanding the correct body shape and stance for the time period, by selecting archival materials, and through a better understanding as to how the costume would have been worn, it is possible to create a new form that may provide adequate support for many years without causing further damage. Another critical factor is to collaborate and to utilize the expertise and knowledge from the various museum fields.

ACKNOWLEDGEMENTS

The author would like to thank to the museum staff from the division of Home and Community, Political History, Armed Forces History, and Collections Documentation who shared and provided these valuable photo images and information. Special appreciation goes to Karen Harris, who was previously a costume conservator and a costume curator at NMAH and provided helpful references and expertise for creating the mounting forms for the exhibitions.
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