

## Conservation of the Original Art for World War II U. S. Propaganda Posters

### ABSTRACT

The original art and layouts for propaganda posters created during World War II were treated and preserved in a multi-year project at the National Archives and Records Administration. Many of these posters are collages made with rubber cement, pressure-sensitive tape, plastic sheets, gouache, and other media, as well as large photographs, illustration board, and transparent papers. The project posed many technical challenges and raised intriguing conservation and archival ethical issues, including whether and how to maintain original materials and structures given their instability; how to retain text and image elements drawn on unstable plastics; and how to reestablish original placement of components with minimal clues for guidance.

Treatments were designed to resolve these questions while maintaining original materials and allowing the records to function and retain their original structure. This required different approaches, including Mylar overlays and special housings, as well as stabilizing or removing pressure-sensitive tape, mending transparent paper, and reattaching loose pieces. The project combines improved housing for stable items and stabilization treatment and housing for others. In addition, terminology for the stages of poster design are presented.

### INTRODUCTION

The treatment and rehousing of the original art and layouts for U.S. World War II propaganda posters are being carried out at the National Archives and Records Administration. The poster artworks are complex objects composed of many layers and a variety of materials all held together by adhesive and pressure-sensitive tape. *More*

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*Production* (fig. 1) is a poster artwork composed of a photograph of text and airbrush media on paper adhered to illustration board. Figure 2 is a diagram of the layers. Most of the poster art are collages of photographs, paper, and cellulose acetate on illustration board or other supports. Many types of media are present including gouache, graphite, airbrush media, charcoal, and colored pencil.

An archivist brought the approximately one hundred and fifty pieces of poster art to the attention of the conservation department because researchers were requesting

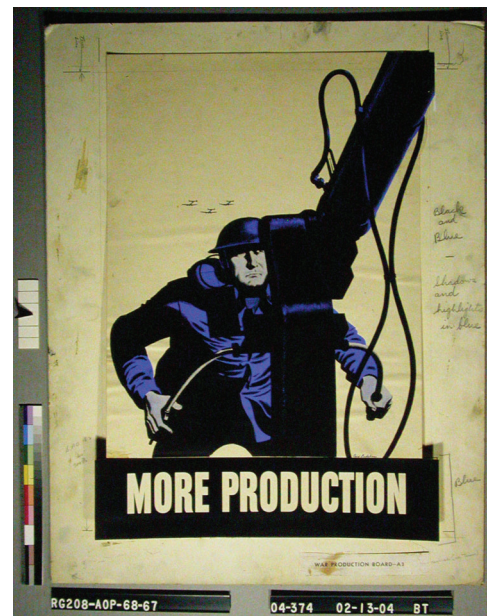


Fig. 1. *More Production*, photograph, airbrush media, paper, and illustration board, c. 1941–1945. 365 mm x 508 mm. National Archives RG 208-AOP-68-67. Before treatment in raking light.

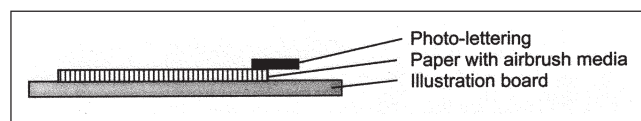


Fig. 2. Diagram of the layers of *More Production*.

them. They were difficult to serve to researchers because most were large — about two feet by three feet — and had detached pieces. The archivist wanted the posters minimally treated and rehoused as would suit their moderate intrinsic value and low reference use.

The poster art was created between 1941 and 1945 for the Office of War Information (OWI)'s Bureau of Graphics and their predecessor organizations. The OWI was responsible for disseminating information about the war to the public (National Archives 1950, 549–550). The Bureau of Graphics created posters about the need for secrecy, the importance of stateside industries, and good nutrition, as well as other topics. They designed posters in-house, contracted with artists, and worked with the Government Printing Office and other printers to produce posters. Many of these posters were printed as photolithographs (Bird and Rubenstein 1998). The Bureau of Graphics had a small staff of artists and administrators and a large “art pool,” a group of artists who did individual works for a nominal fee. The artists felt they were doing their patriotic duty by creating art and designs in support of the war (Office of War Information 1944, RG 208).

#### POSTER ART TERMS

*Poster art* is a poster in the different design stages before it is printed.

*Layout* is a proposed poster design. A very simple layout is called a “rough,” while a detailed layout is called a “comprehensive” (International Paper Company 1979, 65; Porte 1941, 92).

*Paste-up* and *mechanical* are two different terms for the final stage before printing. The final stage is a mock-up of the complete poster design adhered together on illustration board. It is photographed for printing and the image is used to create a photomechanical print (International Paper Company 1979, 65; Printing Industry Exchange 2005).

*Base art* is art adhered directly and completely to the illustration board of the paste-up (Printing Industry Exchange 2005).

*Overlay* is a transparent paper or plastic that is partially attached to the paste-up, so the paste-up can be viewed with or without this layer. Not all paste-ups have overlays. During World War II, overlays were typically transparent paper or cellulose acetate film. The overlays will usually have the text for the poster or notes on how the image is to be printed (International Paper Company 1979, 188; Printing Industry Exchange 2005).

*Copy* to a graphic arts printer is all the materials needed to print the poster, not just the text. This includes the paste-up and separate copies of continuous tone art, photographs, or text (International Paper Company 1979, 176).

#### TREATMENT PHILOSOPHY

The construction of the poster art is a reflection of its use as working drawings to develop poster ideas. It served to communicate information between the original artist and the government reviewers. A Graphics Division report reads, “A poster generally requires at least one revised layout or it may take three or four revamps and discussions before the desired result is achieved” (Office of War Information 1943, 2). This process created additions and revisions from a variety of people.

*Keep It Up Brother* (fig. 3) has an airbrushed image of a soldier. The artist was unhappy with the soldier's left hand, so a revision sheet was adhered on top. Figure 4 documents the positions of the revision sheet on the illustration board. The revision sheet has a hole cut in it to reveal the soldier's original head and part of his body. Additional drawing was rendered on the revision sheet to complete the poster design. A window mat was adhered with rubber cement to the poster (fig. 5). On the window mat is a note from a government reviewer. The construction of this paste-up shows the revisions that occurred with the poster art and the effort to conserve materials and the artist's time by revising the image instead of redoing it completely. This was in keeping with the United States' effort to conserve resources for the war.

It is important when treating these posters to respect their history as working drawings. The unstable materials used to make the works reflect their ephemeral nature as a step in a process. They have fingerprints and surface dirt that are important to their history and should not be removed. Maintaining as much of the original materials as possible is part of the treatment philosophy. This is particularly important in an archival setting where the informational content about the poster's creation is as important to researchers as the image. The poster art with the associated textual records are a window into the thinking of the government and the artists on the purpose of posters and their understanding of the war.

#### PRESERVATION APPROACH

The project began with a survey that was carried out by the archivists. The survey identified the main problems of flaking paint, detached pieces, and deteriorating modern materials. As a result of the survey findings, the poster art is being preserved through the use of surrogates, conservation treatment, rehousing, and a proper storage environment. The primary goal of conservation is to stabilize the poster art for photography and long-term preservation. Further treatment to improve their appearance such as inpainting and inserting toned fills will be undertaken if the posters are selected for exhibition in the future. The surrogates are 35mm color slides taken after



Fig. 3. Clayton Kenney, *Keep It Up Brother*. Gouache, graphite, airbrush media, paper, and illustration board, c. 1941–1945. 762 mm by 1016 mm. National Archives RG 208-AOP-114-113. The illustration board with the artist's drawing before any revision.



Fig. 4. The revision sheet and illustration board of *Keep It Up Brother*.



Fig. 5. *Keep It Up Brother* with its window mat that has a written note from a government official.

conservation treatment. The slides are made available to researchers first and then the original records are only served when the photograph is not adequate for their needs. Thirty posters are conserved and rehoused per year; this project will continue for several more years.

#### Reattaching Text and Image Layers

Detached or loose text and image layers are a common problem with these posters. This is of great concern because the layers could be misplaced, they could shift and damage each other, or their original placement could be lost. During conservation treatment, separated pieces for which the original locations could be confirmed are reattached. Reattachment is the best way to maintain the layers and the information about their layout. This treatment also returns the posters to their original condition. Detached pieces with questionable origins are housed with the object for future investigation.

Most of the separated layers were originally held together with rubber cement. "*We Shall Soon Have Our Storm Troopers in America!*"—Hitler. *What do YOU Say, AMERICA?* (fig. 6) is a paste-up with rubber cement residue on the support's recto and the layer's verso. The rubber cement on the poster has darkened and yellowed. On most posters, the rubber cement has not caused visible stains on the recto, because of the thick supports.

The rubber cement is not removed because of several factors. One factor is that the rubber cement is an original component of the poster art and it reveals information about the placement of elements. The second factor is the risk of damaging the media close to and covered by the rubber cement if solvents or mechanical techniques were used. The final factor is the large areas of rubber cement



Fig. 6. C. C. Beall, "*We Shall Soon Have Our Storm Troopers in America!*"—Hitler. *What do YOU Say, AMERICA?* Graphite, gouache, watercolor, paper, and illustration board, c. 1941–1945. 510 mm x 365 mm. National Archives. RG 208-AOP-197-196. Rubber cement adhesive is on the illustration board and on the verso of Hitler's head.

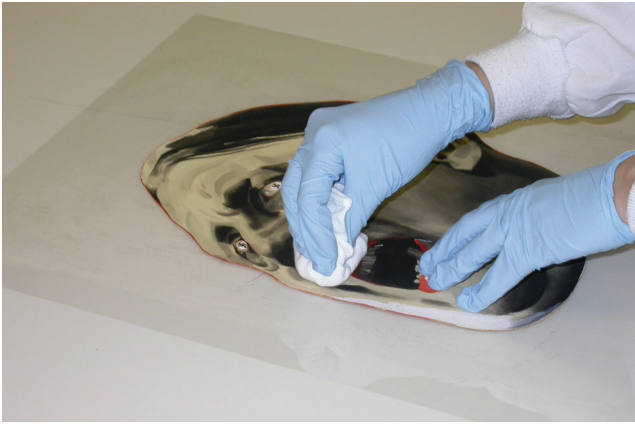


Fig. 7. The detached head is placed on the pasted-out polyester film and gently depressed to ensure complete contact with the paste. Photograph by Gail Harriman.



Fig. 8. The head is positioned on the illustration board and laid into place. Photograph by Gail Harriman.



Fig. 9. "We Shall Soon Have Our Storm Troopers in America!"-Hitler. What do YOU Say, AMERICA? after treatment.

and the inability to make substantial improvements for the time invested in treatment. A clear-cut benefit was not seen in partial reduction of the rubber cement when complete removal is not possible due to proximity of vulnerable media and the limitations on removal technique imposed by the thick board or paper. The only exception to this approach occurred when the rubber cement interfered with reattaching layers. In this rare case, the adhesive is reduced mechanically with a scalpel or sandpaper.

Most of the loose layers are reattached with wheat starch paste applied overall. The paste is sufficiently strong to hold the curling, heavy papers in place even when the rubber cement can potentially interfere with the adhesion. Japanese paper hinges are used to reattach thin papers or large, fiber-based photographs.

Hinges are used in these cases because the application of paste overall would result in cockling. Reversibility is a consideration. The thick papers reattached with paste can easily be separated mechanically in the future because of the presence of the rubber cement. In the case of thin papers, the mechanical separation would be a risk, so the use of hinges increases the reversibility.

In the course of this project a method for applying the wheat starch paste developed in order to effectively apply an even coat of paste to detached layers. With this method, layers did not have time to respond to the moisture in the paste before they are placed under weight. The wheat starch is cooked the day it is used and very little water is added to it after straining. This produces a thick and strong adhesive. Figures 7–9 illustrate this method being used to reattach a layer, depicting Hitler's head, to an illustration board support. The paste is applied with a *hake* brush to a clear polyester film and allowed to air dry for approximately ten minutes to reduce the moisture content. The detached layer is placed onto the paste and gently depressed to ensure even application and to allow any excess adhesive to be forced out. Then the layer is removed from the polyester film, positioned over the primary support, and laid in place. Lastly, it is transferred to a blotter stack. This method results in securely attached layers while limiting dimensional change due to moisture exposure. It also prevents seepage of adhesive from under the layer onto the primary support, because any excess adhesive is removed earlier.

#### Treatment of Pressure-Sensitive Tape

Pressure-sensitive tape is present on the poster art both as mends and as a vehicle for creating the original artworks. Tape is removed when it functions as a mend and is not original to the record. When the tape is attaching original elements and is in good condition, it is left in place. If original tape is detaching or causing other problems, the carrier is removed, the adhesive reduced mechanically or with solvents, and the carrier reattached.

For example, the poster *Let's Finish the Job* had a paper overlay attached to an underlying support with pressure-sensitive tape. The tape was originally applied to the overlay sheet so that it was difficult to fold it back to view the text. The tape carrier was removed with heat and the pressure-sensitive adhesive was removed mechanically with a natural-rubber eraser square. The detached carriers were secured back onto the object with methyl cellulose.

Methyl cellulose successfully reattached the tape carriers, because the carriers were cellulose acetate, which allowed the methyl cellulose to dry and bond to the carrier. It created a shiny adhesive layer that was convincing as tape adhesive. The tape carrier, which was restricting the opening of the overlay, was only partially reattached, allowing the overlay to open easily. Because the reattached carrier is a weak hinge that only attaches the overlay in two places, Japanese paper V-hinges were added at the top edge for a more secure and controlled access. The overlay in *Let's Finish the Job* is closed in figure 10 and open in figure 11.

#### Mending of Transparent Overlays

Many of the transparent paper overlays are torn and have suffered losses because of their inherent vulnerability as thin, weak paper meant to be manipulated. Figure 12 is an overlay before treatment. Overlays typically have the poster's text and/or printing instructions on them. Transparency of this material is required so the information on the surface and on the underlying poster can be viewed simultaneously. Overlays must be strong enough to be handled so the underlying art can be viewed without them. The solution is to mend them very minimally so that the tears and detached pieces are stabilized and then encapsulate the entire overlay using clear polyester film.

The whole length of a tear is secured with wheat starch paste. Then Japanese paper mends are applied at the ends of tears and where tears change direction. The localized application of mending paper supports the paste used to secure the majority of the tear. The Japanese paper mends are a type of remoistenable tissue made in large batches at the National Archives with an adhesive mixture of wheat starch paste and methyl cellulose cast on a thin paper. Tearing the remoistenable tissue is not recommended because the torn fiber edge can be absent of adhesive. The recommended method is to cut the remoistenable tissue into thin strips and drag each mend through small droplets of water on a work surface. The activated strip can then be used for mending. Once all tears are stabilized as in figure 13, the overlay is encapsulated in polyester film.

#### UNITED WE ARE STRONG

The poster *United We Are Strong* (figs. 14–15) incorporated many preservation challenges encountered

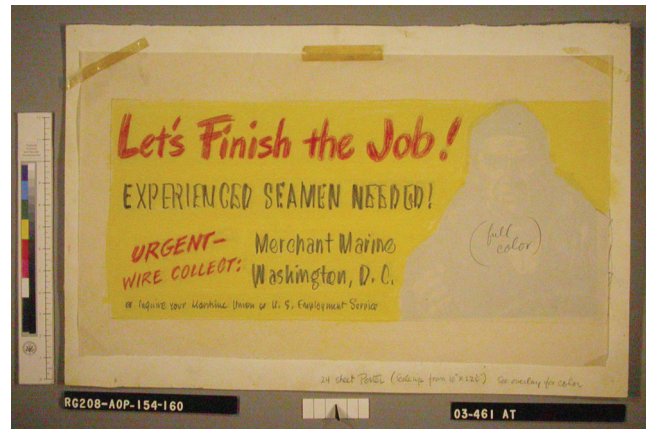


Fig. 10. *Let's Finish the Job!*, photograph, color pencil, pastel, graphite, and paper, c. 1941–1945. 429 mm x 649 mm. National Archives RG 208-AOP-197-196. After treatment.

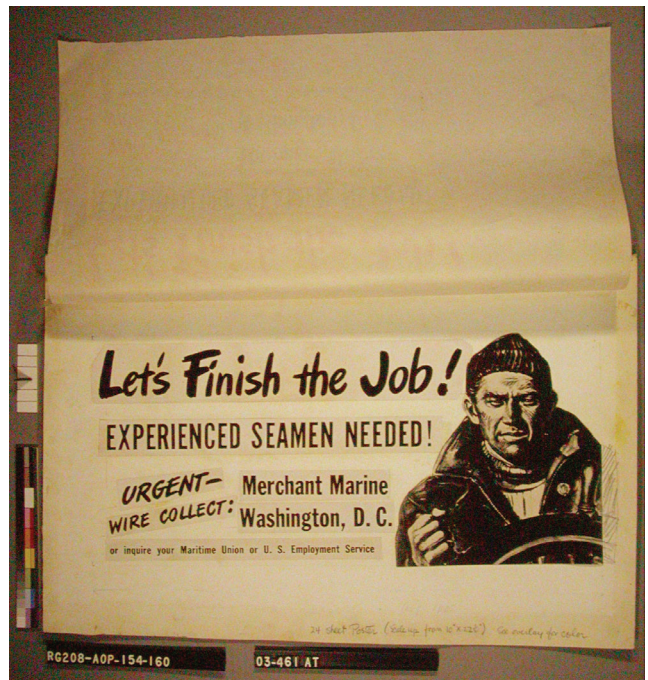


Fig. 11. *Let's Finish the Job!* after treatment with the overlay lifted.

throughout this project. This work was comprised of many layers of materials held on with failing rubber cement adhesive and pressure-sensitive tape. The primary support was illustration board on top of which printed flags from many countries were adhered with rubber cement. Much of the rubber cement had failed, leaving detached flags. On top of these flags were four complex portraits, each depicting one of the following world leaders: Winston Churchill, Franklin D. Roosevelt, Stalin, and Chiang Kai-shek. Each leader's face was drawn onto a transparent plastic film with a grease pencil. A waxy paper cut-out shaped like each leader's head was attached with

pressure-sensitive tape to the verso of their portrait on transparent film. The four films were held on to the illustration board and the flags with pressure-sensitive tape. The transparent films were severely cockled and brittle with flat areas anchored by pressure-sensitive tape.

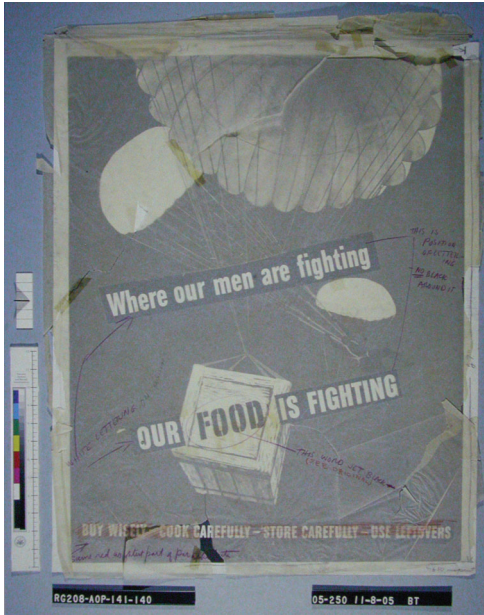


Fig. 12. *Where Our Men Are Fighting/ Our Food is Fighting/ Buy Wisely*. Transparent paper overlay with color pencil notations and original photographic enlargement of drawing, c. 1941 -1945. 559 mm x 711 mm. National Archives RG 208-AOP-141-140. Before treatment.

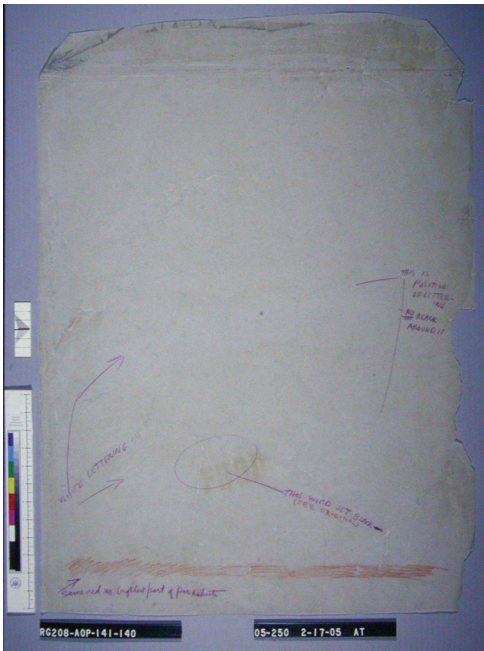


Fig. 13. *Where Our Men Are Fighting*, overlay after treatment and before encapsulation.

Releasing the tape completely would have resulted in the film curling and becoming more distorted. Additionally, the media on the film's surface were extremely vulnerable to abrasion. A successful conservation treatment required the films to remain stretched in process.

The archivist searched for a printed version of the poster, but was unable to locate a copy. This paste-up may never have been printed. The paste-up was examined closely to observe the absorption of the red component of the ink into the plastic overlay for what it revealed about the location of the flags. The flags and the primary support



Fig. 14. *United We Are Strong*. Ink, grease pencil, airbrush media, clear plastic sheets, paper, printed flags, and illustration board, c. 1941 -1945. 864 mm x 565 mm. National Archives RG 208-AOP-94-93. Before treatment.

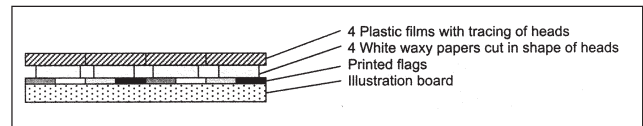


Fig. 15. Diagram of layers of *United We Are Strong*.



Fig. 16. *United We Are Strong* after treatment in its portfolio with the detached flags in polyester sleeves.

were examined for distinct patterns in the adhesive stains that were visible on both. With this information, a map of the flags' locations was made. Duplicate copies of the same country's flag and different countries' flags with the same location of red meant the exact location of many flags were not known even though some information about which flag belonged in a space was found. The flags had been air-brushed with black paint to varying degrees. The paint was important to identify the exact flag for the location.

Several options were considered. One was hinging all the flags to a best-guess location. The flags would have to be hinged, not directly adhered to the board, since their locations would only be an educated guess and reversibility was very important. This option was not selected because the four films with the tracings of the leaders' heads would need to be removed for hinging. This would endanger their vulnerable state. In addition, this poster was not scheduled to be exhibited, and this treatment did not add to the information available about the poster. In fact, it would obscure the questions surrounding the flags' locations. In the end, the loose flags were not reattached. A map of the known flag's locations is stored with the object. The flags are stored in Mylar strips. These elements are housed in a portfolio together as illustrated in figure 16.

In a similar situation, Brenda Bernier, a senior paper conservator at the National Archives, worked on a past-up with detached flags (figs. 17–18). She created a transparent polyester film overlay that held the flags in the correct location. For each flag, two ultrasonic welds were made in an L-shape and the top layer of polyester was slit to allow the flags to be inserted and removed. Figure 19 diagrams the construction of the overlay. This was not possible with *United We Are Strong*, because the flags abutted each other allowing no room for the ultrasonic welds.

## HOUSING

Each poster is custom-housed in a sink-mount portfolio. This type of housing protects the vulnerable surfaces and allows for safe handling of the often large and heavy artworks on illustration board. The top cover and bottom support are constructed of corrugated blue board. Corrugated blue board creates a rigid and lightweight support for oversized objects. The edges of the sink mount (fig. 20) are also constructed of corrugated blue board covered with ten-point board to create smooth edges. The sink is made deep enough to prevent the portfolio cover from touching the surface of the poster art. The artworks are not attached in any way to their protective housing. The sink mount helps to keep each poster secure in its portfolio and allows the poster to be removed so it can be examined.

Two styles of portfolios are made. The tab style (fig. 21) is made with a thin strip of archival paper that a researcher



Fig. 17. Brenda Bernier lifting polyester overlay containing detached flags of *The United Nations Fight for Freedom*. Gouache, airbrush media, print flags, and illustration board, c. 1941–1945. 997 mm x 451 mm. National Archives RG 208-AOP-91-90.



Fig. 18. *The United Nations Fight for Freedom* with polyester overlay holding detached flags in correct position.

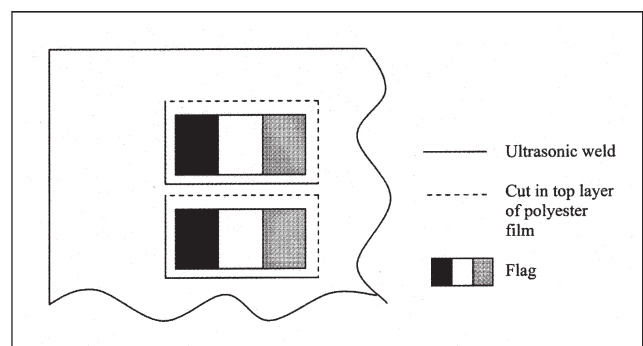


Fig. 19. Diagram of polyester film overlay showing the ultrasonic welds and slits used to create individual Ls for each flag.

uses to lift the artwork and slide his hand under it for safe removal. Poster art on thin paper received the tab style, because a thin paper can slide under a hinged edge. The second style is a hinged-edge portfolio (figs. 22–24); it allows access to the artwork with a hinge that folds back.

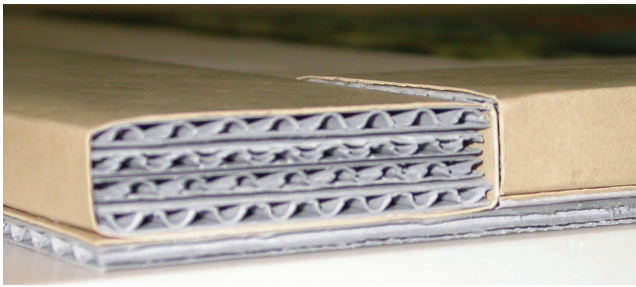


Fig. 20. Walls of the sink mount are corrugated blue board covered in ten-point board.



Fig. 21. A tab style portfolio. The tab is the white paper strip visible on the right side of the image.

The hinge is made of Tyvek adhered with polyvinyl acetate. This style was used with works on board. Both portfolios are stored horizontally in flat-file drawers.

## CONCLUSION

This project primarily focuses on the stabilization and rehousing of poster art for long-term preservation and public access through photographic surrogates. More extensive treatment can be done in the future to improve aesthetic appearances of the poster art. This process was guided by choices to safeguard individual objects while maintaining as much of the original material and structure as possible. This philosophy was adopted because the posters are not just a visual experience. They and their textual records document and reveal a creative process that linked private citizens and government officials in an effort to inform and involve the public in the war effort.

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Fig. 22. A hinged-edge portfolio with the hinge closed.



Fig. 23. A portfolio with the hinge partially opened



Fig. 24. A portfolio with the white, Tyvek hinge completely opened.

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