

Treatment Report

Author: Hamilton, Jay, Madison

Title: *Federalist*

Imprint: 1817

Collection: Personal collection

Binding Dimensions (cm): 21.7 x 13.2 x 4.2

Textblock Dimensions (cm): 21 x 12.2 x 3.3

Date Examined: September 7, 2008

Date Treatment Completed: March 23, 2009

Conservator: Helen Kuncicky

Instructor: Chela Metzger

Treatment Objective

The goal of this treatment is to explore treatment methods for special collections book conservation including disbinding, washing, bleaching, sizing, and guarding. The volume will then be re sewn and rebound.

Description

The volume is a tight-back, laced-on-boards binding covered in full leather, which appears to be contemporary to the textblock. The boards are made of unshaped 3 mm binder's board and the covering material is dark brown, vegetable-tanned calfskin. The title is gold-tooled on the spine, along with decorative gold-tooled lines in place of raised bands. There is no other decoration on the cover.

The textblock is sewn in a two-on pattern on three sawn-in cords. There are no spine linings on the textblock, which is slightly rounded with a shallow shoulder. The endbands are originally cream and brown striped, stuck-on textile endbands, with a cord core.

The textblock paper is machine-made, wove, medium-weight, cream-colored paper. The endleaves are tipped-on, of the same paper as the rest of the textblock. The front endleaves are single-folio and the back endleaves are double-folio. The text media is printing ink.

There are plates on pages 71 and 295, and there is tissue interleaving of a smaller size than the textblock on these two pages and the title page.

Condition Summary

The binding is in poor condition overall, with little structural damage but severe damage to the materials. The binding causes a restricted opening, which could be potentially damaging to the structure if forced. The covering material is abraded, stained, scarred, and distorted, with white spots which suggest previous mold activity. The boards are intact and securely attached to the textblock, but are slightly delaminated and bent at the corners. The gold tooling on the spine is abraded and faded.

The textblock is in poor condition overall. The sewing is intact and is not loose or damaged, however it has been re sewn, as evidenced by an unused set of holes in the spine of each section. The original sewing was completely removed prior to re sewing. The textblock paper is brittle,

stained, and has surface dirt and accretions. There is severe brown discoloration near the edges and around the textblock. The paper is also torn and creased. The tissue interleaving is yellowed but otherwise intact.

The text media is in good condition, with some offsetting onto adjacent pages. There are iron-gall ink notations on the first page and page 64, and graphite marks on the back pastedown and endsheets.

The tail of the spine exhibits black marking which appears charred. Due to the pattern and small area of charring, it is likely that this is due to water or other liquids causing acid hydrolysis which "burned" the leather covering on the spine.

Photo Documentation

Photo documentation was completed with a Nikon digital camera. Images include overall shots of the book in spectral light and during-treatment shots in ambient light. The images document the book's condition before, during, and after treatment.

Testing

The iron gall ink on plate 1 was tested for water solubility by placing a drop of water directly on the medium. No visible change was observed.

Treatment Proposal

1. Disbind.
2. Wash, bleach, and size sections of the textblock.
3. Guard sections as needed.
4. Resew.
5. Reline spine as needed.
6. Reattach original endbands.
7. Reattach front board with new leather on spine.

Materials Used

1. Ethanol
2. Precipitated wheat starch paste mixed 1:4 with distilled water, cooked 20 minutes (Colophon)
3. Methylcellulose 2.5% (Methocel)
4. Webbed polyester sheets (Hollytex)
5. Calcium hydroxide
6. Gelatin
7. Hydrogen peroxide 3% commercial solution
8. Sodium borohydride
9. Sekishu tissue
10. Machine-made Kozo natural paper
11. Linen thread
12. Airplane linen
13. Lascaux 498 HV (Talas)
14. Sellaset liquid leather dyes (brown, black)

15. Liquitex acrylic soft body paints (C.P. Cadmium Yellow Medium, Quinacridone Crimson, Raw Umber, Ivory Black, Cadmium Red Medium)
16. 100% isopropanol

Treatment Performed

1. Lifted the leather spine covering from the textblock. Faced the bottom three panels of the spine with heat-set tissue using ethanol to set the adhesive, to prevent the leather from breaking during lifting.
2. Attempted to clean the textblock spine with wheat starch paste, to no effect. Continued cleaning the spine with methylcellulose.
3. Cut through the paste down, leather, and sewing supports to remove the front board.
4. Pulled the first fifteen sections from the textblock, cutting through the sewing thread and breaking the glue apart between sections.
5. Mechanically removed the tipped-on pages of Plates 1 and 2 and the tipped-on interleaving on the two images.
6. Washed the removed fifteen sections in calcium-enriched distilled water at pH 8, in two baths of 20 minutes each. Air-dried the washed sections on Hollytex-lined drying racks for several days.
7. Re-sized two sections (5 and 6) by soaking in a warm 0.05% gelatin bath for 20 minutes. Air-dried the re-sized sections on Hollytex-lined drying racks overnight.
8. Washed nine sections (7-15) in calcium-enriched distilled water at pH 9 for 5 minutes.
9. Bleached three sections (7-9) in a 1% hydrogen peroxide bath for 10 minutes.
10. Bleached three sections (10-12) and Plate 2 in a 3% hydrogen peroxide bath for 5 minutes.
11. Bleached three sections (13-15) in a 0.25% sodium borohydride bath for 10 minutes.
12. Washed the bleached sections (7-15) in calcium-enriched distilled water at pH 9 for 5 minutes.
13. Air-dried all bleached sections (7-15) on Hollytex-lined drying racks overnight.
14. Collated and folded all dried sections (1-15) and left under weight overnight.
15. Guarded broken sections (1-3, 5, and 6) with Sekishu and thinned wheat starch paste, using a template to recreate the correct size of each folio.
16. Guarded the outside of all remaining sections (4, 7-15) with Sekishu and thinned wheat starch paste.
17. Re-punched the most recently used sewing holes and sewed the treated sections (1-15) together with waxed 18/3 linen thread, using the original two-on sewing pattern.
18. Lined the untreated section of the textblock with machine made Kozo paper and a 60:40 mixture of wheat starch paste and methylcellulose.
19. Applied the same wheat starch paste/methylcellulose mixture to the treated section of the textblock, then rounded and backed, lining up the head and foredge and matching the round to the untreated section.
20. Washed the endbands in distilled water for 15 minutes and pulled off any leather still adhered to them.
21. Hitched the treated and untreated sections of the textblock together with waxed 25/3 linen thread, using a single-hole link stitch and sewing through the original sewing holes.
22. Lined the entire textblock with machine-made Kozo, using a 60:40 mixture of wheat starch paste and methylcellulose.

23. Lined the textblock with an overhanging textile layer of airplane linen, adhered with Lascaux.
24. Trimmed the linen lining and sewing supports to 1-inch margin on front side and to edge of textblock spine on back side.
25. Mended tears and losses in situ with machine-made Kozo, using wheat starch paste thinned with distilled water.
26. Lifted the leather covering off boards 1 inch in along the spine edge.
27. Lifted the head and tail of the pastedowns, 1 inch in from the spine and 1 inch in from the head and tail.
28. Attached the front board to the textblock by gluing the overhanging linen lining to the board under the lifted leather using Lascaux.
29. Reattached the original endbands over the linen lining using Lascaux.
30. Dyed a piece of undyed calfskin to use for the new spine covering.
31. Pared edges of the new spine leather.
32. Pasted the new leather spine covering to the spine of the textblock and the front of the boards, under the lifted original leather and lifted pastedowns, using wheat starch paste.
33. Toned the leather on the spine with water-thinned acrylic paints.
34. Glued down the lifted leather on boards and lifted areas of the pastedowns using Lascaux.
35. Sanded and trimmed the original spine piece.
36. Glued the original spine to the new spine covering using Lascaux mixed with wheat starch paste.
37. Removed the facing and adhesive residue from the original spine using ethanol.
38. Consolidated the board corners using wheat starch paste.
39. Glued down all edges of the lifted leather and original spine using Lascaux.
40. Consolidated the original leather on spine and board edges with Cellugel thinned with 100% isopropanol.
41. Toned the visible areas of new spine leather with water-thinned acrylic paint.

Length of Treatment: 32 hours

Effects of Treatment

- The iron gall ink on Plate 1 exhibited some fading and haloing after washing.
- The ethanol used to remove the facing on the spine caused a slight but noticeable darkening of the leather.