

Archival Products

NEWS

1858 Laws of Iowa: a Treatment Narrative

By Katherine Swift Kelly

The article describes the treatment of Laws of Iowa, 7th G.A., 1858, performed by Iowa State University Library's book conservator. ISU borrowed the volume from the Iowa State Archives to display during ISU's sesquicentennial celebration. The volume contains the act which founded the college.

In 2008, Iowa State University (ISU) celebrated its 150th anniversary. Among the many events commemorating the founding of the university was a display in Parks Library Special Collections which included some of the earliest artifacts documenting ISU's history. Special Collections had arranged with the State Archives (located at the State Historical Society of Iowa in Des Moines) to borrow the original 1858 act which established the State Agricultural College, later Iowa State University (Figure 1). On the basis of this act, a model farm was established in 1860, Iowa State College became a land-grant institution in 1864, and classes began in 1868.

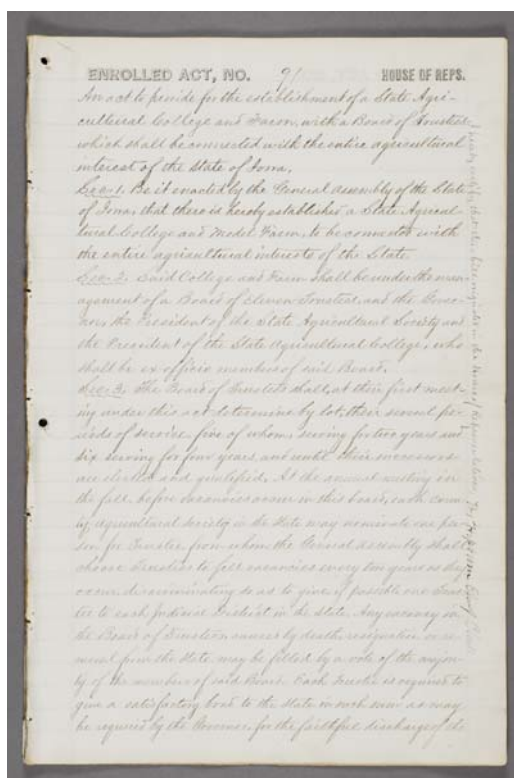


Figure 1: Enrolled Act, No. 91, reading "Be it enacted by the General Assembly of the State of Iowa, that there is hereby established a State Agricultural College and Model Farm, to be connected with the entire agricultural interests of the State."

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ISU Library is fortunate enough to have a well-equipped book and paper conservation facility, and as the State Historical Society does not, they asked us to repair the borrowed volume before returning it. Indeed, when the book arrived, we saw that it was in such poor condition (Figure 2) that it was easiest to simply remove the pages of interest and display them without the rest of the book.

ISU’s book and paper conservation lab was built in 1995 through generous funding from the Lennox Foundation, Tom Booth (ISU 1981) and Betsy Anderson Booth (ISU 1981). The 3,400-square-foot facility in Parks Library treats both circulating and special collections materials and is staffed by two conservation technicians who are experts both in book repair and in the functioning of the library. A well-equipped lab also needs a conservator, and that is where I come in. I joined Parks Library as their Collections Care Conservator in 2007 and was delighted to find a lab with all the resources necessary for performing advanced treatments.

My training began as a student book repair assistant for Mann Library at Cornell University in upstate New York. After working there for several years following my graduation, I entered the book and paper conservation program at the University of Texas School of Information. There I earned both a library degree and a Certificate of Advanced Study in Conservation of Library and Archival Materials. My final internship was completed at the Weissman Special Collections Conservation Lab at Harvard University. My work at Cornell, UT, and Harvard prepared me not only to perform a variety of



Figure 2: The *1858 Laws of Iowa*, before treatment

technical tasks but to make choices about the treatment of book and paper artifacts within the larger library context. The treatment of the *1858 Laws of Iowa* is an interesting example of how book conservation draws on a wide variety of skills and can involve complex decision-making. I have tried to describe in this article some of the challenges and rewards of conserving such a culturally important artifact.

Description of Book and its Condition

The *1858 Laws of Iowa* is a large (11" x 16") ledger volume compiling the handwritten acts of the Iowa State Legislature of 1858. It was bound in full leather, without much decoration. The most obvious damage to the book is the severe blackening of the leather on the front and back covers (Figure 3). At first glance, the book looks like it has gone through a fire, but old leather can also blacken just by getting too hot or by getting wet. One intriguing possibility is that this book could have been damaged in the 1904 fire at the State Capitol.

Where the leather is not blackened, it exhibits a condition called “red rot” where the leather has turned powdery and unstable. Over the years, the resulting red dust has been tracked into the pages by careless fingers. The leather spine piece is entirely missing.

Inside the volume, the damage is much less obvious. The paper is still creamy white and strong. Each page is ruled in blue and has a printed header in black ink. Almost every page is written on in black manuscript ink and some have annotations in pencil. Some of the pages appear to have been folded into fourths horizontally and then unfolded prior to being bound. Others have holes punched in the spine edge, possibly an earlier method of gathering these records. Each page is a little brittle around the edges, particularly when the page extended past the rest of the volume, but in general, the text pages are in pretty good shape. The page attachment, however, is shot—the sewing is broken and the volume has separated into several large chunks (Figure 4). In addition, the boards are detached from the text.

Treatment Performed

Because of the value and unique nature of this object, I wanted to be very careful in how I approached the repair. This was not a mass-produced book that could be replaced. This is a unique artifact, one-of-a-kind and irreplaceable. Also, as the founding document of our university, it holds a special importance as an object. We can microfilm, photocopy and digitize it all we like, but people will still return to and be interested in the original book. No doubt, when the 200th anniversary rolls around in 2058, we will once again borrow this book and display it for the edification of our grandchildren and great-grandchildren.

My first step was to carefully examine and fully document the condition of the object. As it happened, I had recently purchased a digital photo-documentation system for our conservation lab. While my profession has mandated photographic documentation for decades, digital cameras are still a new technology for the field. Through the generosity of the Lennox Foundation and Betsy Anderson Booth we were able to purchase a state-of-the-art digital camera, camera equipment and computer station.

Although the old binding was no longer serviceable, I thought that it was important to keep it. It tells a story about the object, testifies to its age and social context, and may even be evidence of a fire in the State Archives! However, the sorry state of the leather made it a hazard to the object. A researcher who handled the covers and then the pages would quickly make powdery, red fingerprints throughout the book. To prevent this, I consolidated the leather on the boards with a waxy cream conservators call “red-rot cocktail” (Figure 5).

The next step was to disbind the volume, to take it apart into the individual leaves and folios. To do this, I cut out the original sewing and scraped off the old, brittle adhesive. For most books, one can clean all the pages at once, but for the *1858 Laws of Iowa*, each page or folio required individual attention. As I worked, I inspected each page for tears and cleaned up the occasional soot



Figure 3: Front cover, before treatment



Figure 4: Opening, before treatment



Figure 5: Consolidating the original leather



Figure 6: Repairing pages and building the gatherings with kozo tissue

smudge and leather dust using high-quality eraser crumbs.

The original volume was bound using a method called “oversewing” where the thread grips each page close to the inner margin. While strong, this sewing method did not allow the book to open very well, and as the paper became fragile with age, it caused many small tears and cracks to appear. I decided to re sew the volume in a more gentle manner by creating center folds and gatherings from the original pages, and then sewing through the folds. This will allow the book to be opened and used for many more years, even as the paper ages and becomes more fragile.

Because the book was originally made out of single pages and folios, all in a stack, I had to do a fair amount of work to create this new structure. Each center fold was created by attaching two leaves or folios together with kozo tissue and wheat starch paste (Figure 6). The paste is made from very finely milled flour that has been purified to remove all protein, fat and additives. It is cooked with water and then thinned down as needed. We use wheat starch paste for conservation work because it is strong, reversible and will not turn yellow as it ages.

Kozo tissue is a thin paper made from the long, strong fibers of the mulberry plant. Most of our tissues are from Japan (and you may have heard of Japanese paper being used

No step was remarkably difficult, but the entire process was quite complex and called on many of the skills that I have developed as a book conservator.

Conservation Treatment



Figure 7: The mended gatherings



Figure 8: Sewing the gatherings together



Figure 9: Sewing the gatherings together



Figure 11: Text block in the job backer



Figure 12: Covering the case

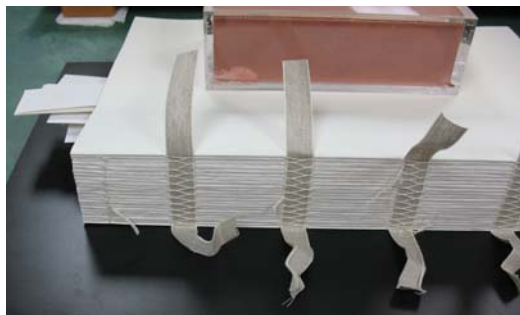


Figure 10: The text block re-sewn

for mending), but the particular tissue was made at the University of Iowa Center for the Book by papermaker and researcher, Timothy Barrett. His repair tissue was a good color match for my text pages and was thin and strong enough for making the center folds. As I worked through the 658 page volume, I also mended innumerable small tears at the paper edges. For this I used an extremely thin Japanese tissue that I had prepared in advance with a water-remoistenable adhesive coating.

When all the mending was done, I had 20 folded gatherings, each of about 34 pages (Figure 7). Before sewing them together, I decided to make a 1/4-size model of the book to work out some of the difficulties of rebinding. Conservators frequently test out binding ideas by making a small model of the final work. This lets us polish our technique without risking the original object. In this case, I wanted to see how much tension I could apply to the sewing as it passed through the thin repair tissue and how well I could control the swelling at the spine. With all that tissue, I was concerned that my book would end up being excessively wide where the sewing was. Constructing the model let me know that sewing through the tissue would pose no difficulty and that the swelling of the spine could be adequately managed.

With the lessons learned from the model and a clear plan in place, I then moved on to sewing the original volume back together. I ran the thread through the center of each gathering and around four wide supports made of linen tape. A wooden sewing frame, a traditional piece of bookbinding equipment, helped maintain even tension across the linen supports (Figures 8-10). I

added new endpapers to help protect the first and last pages.

The spine of my book did, in fact, become significantly thicker than the rest of the text block. Most book spines are the page folds and threads stacked on top of one another. In addition to this, my book had a lot of mending tissue right at the spine. This is why books have rounded spines; it spreads that swell out over a larger area. One of the questions that I explored with the model was if I could spread the swelling out enough to make the book appear normal.

The process of creating a curved spine is called “rounding and backing.” To do this, I put wheat starch paste on the spine to soften it, gently rolled the spine into a curve, and placed it in a machine called a “job backer” (Figure 11). This tool pinches the book just below the swell of the spine, helping to define the curve and create a nice crease for lining up the cover boards. A typical next step would have been to gently hammer the spine into the desired shape, but the age and fragility of my book inclined me against that. Instead, I took great pains to position the spine well by hand and then relied on the pressure of the job backer to set that shape.

The next step was lining the spine. A spine lining is a material, usually paper or cloth, that is glued onto the spine of a book to strengthen it and to help control the opening. I always line my spines first with wheat starch paste and tissue. This creates a water-reversible barrier layer that allows the book to be easily taken apart and rebound if necessary. This layer is not very strong though, so the next layers of cloth and paper are what really control how the book opens. I tried to line the spine with few enough layers that it remained flexible, while not so few that it opened too freely and stressed the sewing at any particular place.

One of the things that I explored with my model was how the final book would look. I wanted something that was period-appropriate. A slick, modern cover would clash with the object, as would a fine French leather binding tooled in gold. I also needed the binding to be a reasonable

undertaking for my skill level and the available equipment, so I chose not to reproduce the original full leather binding. Instead, I chose a split board case with half binding in cloth and paper. “Split board” describes how the cover boards are made up of several layers of material. Some of the spine linings extend out from the spine and are sandwiched between those layers, making for a very strong board attachment. The “half binding” refers to what is protecting the cover boards—the spine and corners covered in cloth (Figure 12), and the boards covered with paper. The paper I chose was also made by Iowan papermaker, Timothy Barrett. His case paper is very strong and makes for an attractive cover. I felt that this style of binding—cloth spine, paper sides, extra strong attachment between text and boards—would not be out of keeping with this book’s origins, and in fact, would resemble many stationery bindings from its time period.

The next step was to build a clamshell box to house the re-bound volume together with the original boards (Figure 16). The box is attractive and keeps all the pieces together but is quite heavy—with the book and boards inside, it weighs 19-1/4 pounds! The finishing step was to add matching labels to the book and the box.

Conclusion

In total, the treatment took approximately 90 hours to complete. No step was remarkably difficult, but the entire process was quite complex and called on many of the skills that I have developed as a book conservator. I needed to evaluate the object: its initial manufacture, current condition and future storage and usage. I considered a variety of treatment options and evaluated each for outcome and feasibility. The treatment path that I chose posed certain physical challenges which had to be overcome, and even in endless repetition, the work required close attention to precise details.

While being a book conservator is not a job suited to everyone’s taste, it certainly helps if you take pleasure, as I do, in the little things. There is something very satisfying

about cleaning old adhesive off of a spine. Even when it is somewhat laborious, you know that you are clearing away the bad and preparing your object for the good. The page repair and creation of the gatherings was by far the most tedious step, but there was satisfaction to be had in arranging my work area and work methods so as to work efficiently. My greatest concern with this book was that the swelling of the spine would result in a strangely shaped object. I enjoyed thinking through the problem, devising and testing a solution and then achieving a successful result.

I also appreciated the opportunities that this treatment afforded me to demonstrate techniques and materials to my coworkers. This treatment was the first to utilize our new digital photo-documentation system, the first to use remoistenable tissue, and it was an occasion to discuss leather consolidation, clamshell box making and the split board binding structure with others in the lab. An ISU student in the textiles and apparel program, working on an independent study on preservation topics, learned cleaning techniques and helped clean some of the pages. Lastly, it was an excuse to pull out and operate a little used typesetting machine for printing labels in gold. The icing on the cake!

Katherine Swift Kelly was previously the Collections Care Conservator for Parks Library at Iowa State University. She is currently based in Arlington, VA and can be contacted at katkelly12@yahoo.com.



Figure 13: Detail of the top of the binding



Figure 14: After treatment



Figure 15: Opening, after treatment



Figure 16: Final box for book and original boards

Making a Spine for a VeloBound Book

By Karen Jones

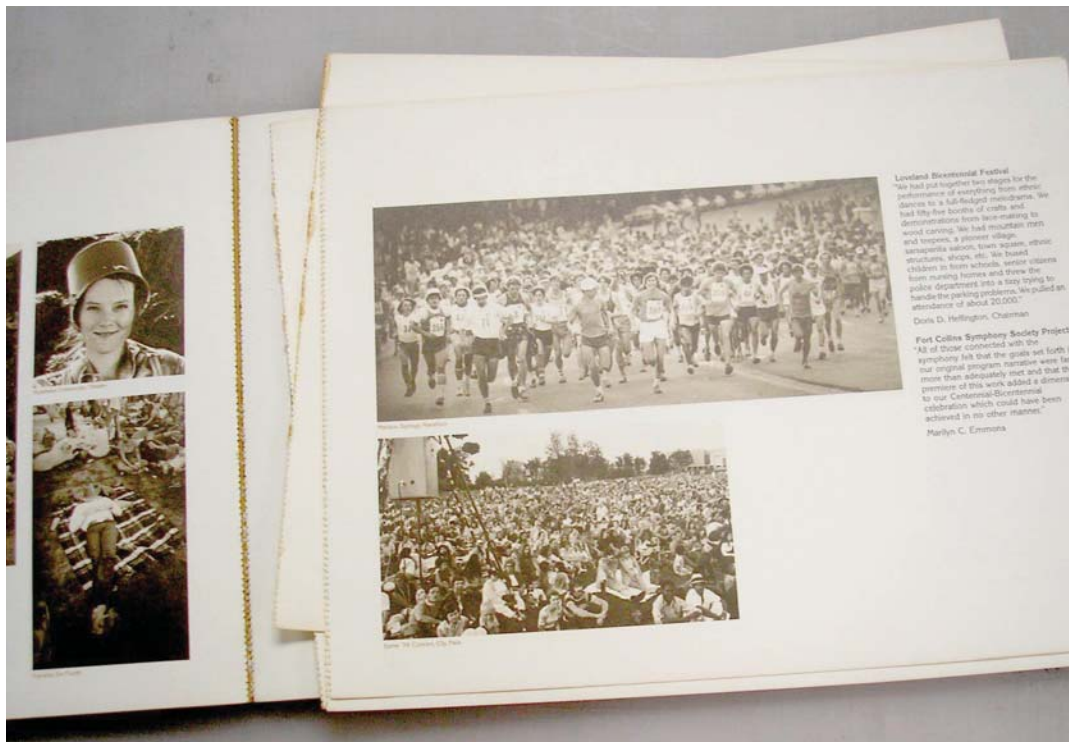
The Archival Products hinged board covers have proven to be very good protection for our VeloBound materials.

VeloBind is a type of bookbinding often offered at copy and print shops. Velo binding involves punching several small holes along the edge of an unbound book. A strip of plastic with rigid tines is inserted into the holes from the top of the book, and a strip with corresponding holes is placed on the back with the tines protruding through. The book is then placed in a machine that holds the book tightly while the excess length of the tines is cut and the tips melted to seal the bind. The term "VeloBind" is a trademark of the General Binding Corporation, but is regularly used generically to refer to this process.—*definition from Wikipedia*

For many years the Jefferson County Public Library system has used a GBC VeloBinder for quick in-house processing of new materials received unbound or in loose-leaf binders, or failed adhesive bound soft-cover publications. These failed bindings are usually less than 1" thick, but 8.5 x 11" in area (Photo 1).

These materials generally do not circulate and most are considered long-term in-house reference. We have found that VeloBound materials don't stand up well to book drops. These materials are not considered worth the cost of commercial rebinding where a hard cover and new leaf attachment are specified. The Archival Products hinged board covers have proven to be very good protection for our VeloBound materials.

One disadvantage of this type of binding is the lack of a titled spine visible from the



1. Damaged binding

shelf. To solve that problem, we utilize the original spine of the damaged book or create and print a new spine. Either way, the application procedure is the same.

- If the book is damaged, remove the soft cover either by peeling or cutting it off the text block. Trim the spine piece away from the sides of the cover so that the depth of the cover spine matches the depth of the text block (Photo 2). If you are creating a spine, it is helpful to draw a box to size around your design so that you can fit it and cut it out accurately (Photo 3).

- Use the VeloBinder to punch the text block, covers and hinged board covers if used (Photo 4).

- Add punch-able extensions to the cover spine with pressure sensitive tape. The tape must extend beyond the punched holes, approximately ½" beyond the width of the spine on each side (Photo 5). I use Kapco Easy Bind® for a few reasons: it is very thin and relatively stable; the matte finish precludes glare, especially if the original spine already has a glossy surface; and the release strips on the tape aid in measuring and placement.¹

I remove the release strips as I go through the following procedure:

- a. Apply one tape extension/flange to either cover making sure that titling is properly placed. Rub the tape down onto the cover.
- b. Using a VeloBind comb tine or an awl, punch through the tape one hole at a time (Photo 6). To stabilize the text block and make it easier to draw the spine flange, round to the other side of the book, push the comb through the holes you just made, going almost through the text block but without letting the points of the tines protrude beyond the block. If you are using a hinged board cover, make sure it is in place before pushing through the comb.



2. Trimmed components ready for VeloBinding



3. New spine printed and cut out



4. Textblock and covers punched



5. Spine adhered to tape



6. Tape adhered to cover; poking holes with VeloBind comb tine

If you are using a hinged board cover, make sure it's in place before pushing through the comb.

MAKING A SPINE FOR A VELOBOUND BOOK – *continued*

c. Remove the remaining release strip and pull the spine up and onto the remaining cover. Rub down the tape as above. As before, the flange must extend beyond the punched holes (Photo 7).

d. Pierce through the tape from the outside, (see “b” above); don’t punch all the way through the text block (Photo 8).

• Push the comb that is already in place all the way through and finish the VeloBinding process (Photo 9 & 10).



7. Removing release strip before applying tape to other cover

FOOTNOTE

1. 3M #887, #850 tapes (or equivalent) will also work. Since VeloBinding is not an archival preservation technique (punching holes in the binding edge!), I don't consider the use of an inert pressure sensitive tape to be problematic in this procedure.

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8. Poking holes through tape on rear cover

For further information, specifications and prices about Archival Products Hinge Board Covers go to www.archival.com/productcatalog/hingeboardcovers.shtml or contact us today to receive a sample for your consideration for an upcoming project. Contact Molly McIlhon, Account Representative, at mollym@archival.com, 866-658-1083 or Janice Comer, Division Manager, at janicec@archival.com, 866-518-1081. We will be glad to send one to you.



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9. Comb pushed completely through textblock and covers



10. Completed VeloBindings

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