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Book Repair Manual

This repair manual contains instructions for minor and major book repair techniques with instructions from a variety of sources.

For two of these techniques, write a brief analysis (approximately one page, single-spaced) comparing the two sets.

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Page Mend with Tape

Video from AmigosLibraryServ

Mending a Book with Book Repair Tape with Rebecca Elder, AmigosLibraryServ, 2009.

Found at <https://www.youtube.com/watch?v=EYC7mWsLow0>

Instructions from Carr Mclean.

Found at http://www.carrmclean.com/UploadedImages/Documents/REPAIR_LR.pdf

Mending Torn Pages with Tape

The easiest and quickest way to mend torn pages is to use a modern pressure-sensitive transparent tape.

Filmoplast P is especially good for thin book papers (such as India paper), dictionaries, or encyclopedias. Use it on old rare books where the paper is fragile.

Invisible Magic Transparent Tape is especially good for heavier book papers and colour printed children's books.

Required Materials

- Invisible Magic Mending Tape or Filmoplast® P Mending Tape or Document Repair Tape
- Plastic or Bone Folder



1 Pull a piece of tape from the roll at least 1/2" longer than the tear.

With Invisible Magic Tape: Without touching the tape to the page (it has an "aggressive" adhesive) carefully centre the tape over the tear. **With Filmoplast P:** Since Filmoplast P has a less "aggressive" adhesion, you can lay the tape on the tear and "re-align" it if necessary.

Allow the tape to extend 1/4" beyond the edge of the page.



2 Fold the remaining 1/4" of tape over the edge of the paper. Apply the tape to both sides of the tear. This will ensure that the tears are properly repaired.



3 To make the tape adhere properly, it should be rubbed down with a plastic or bone folder.

Hint: Never use cellophane tape for book mending. It turns yellow and will "bleed", causing two pages to stick together. Likewise, gummed transparent paper tape will yellow with age and lose its adhesive power.

Page Mend with Heat Set Tissue

Instructions from the OPC Basic Book Repair Manual

Ohio Preservation Council and the State Library of Ohio, 2009. Found at <http://opc.ohionet.org/opcjoomla/images/stories/bookrepairmanual.pdf>

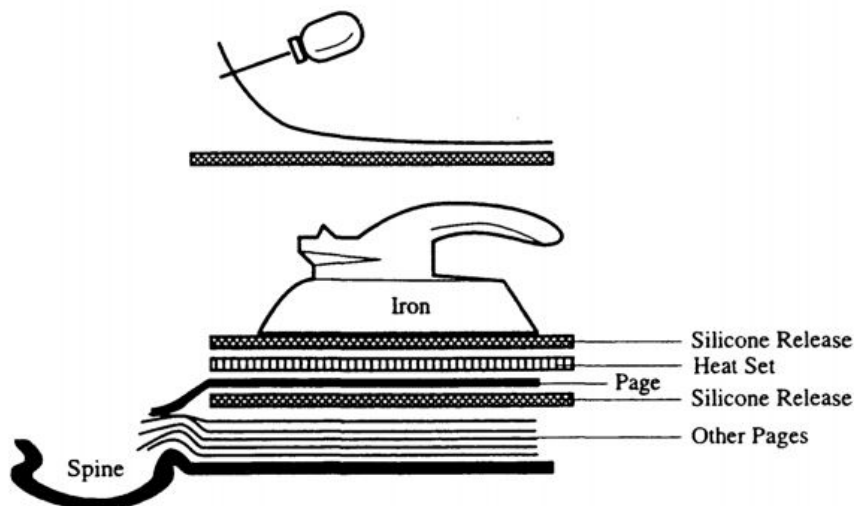
TEAR REPAIR

Two kinds of tears are found in books. The first kind is in the direction of the paper grain and referred to as a "straight" tear. The second kind refers to tears that are across the grain and have overlapping "feathered" fibers. It is not uncommon for both types to be combined when the tear is in two directions. It is important that text and/or illustrations be matched carefully when the mending is done. The methods of repair are heat set repair, Japanese tissue and archival tape.

HEAT-SET REPAIR

Mending can be done "dry" (without paste or PVA) with heat-set tissue. Lens tissue with acrylic adhesive on the back is mounted on a carrier. The adhesive is activated with heat and pressure. The tissue with its carrier is cut slightly larger than the size of the mend before being lifted off the carrier and placed over the tear. Silicone release paper is placed under and over the leaf being mended insuring that the tissue will not stick to other leaves.

When preparing heat-set tissue for straight tears the mend is reinforced with a small extension of the tissue that is folded under the back of the tear and attached at the same time. When mending a feathered tear the overlapping parts are first adhered together with PVA/paste before attaching the tissue. A small extension folded over the edge of the tear is appropriate. This is an easy repair, but it is not recommended for special or rare materials, as it is not easily reversible. Crompton, Cerex, and Neschen are known heat-set tissues.



Instructions from Society of Rocky Mountain Archivists.

Simple Paper Repair for Circulating Collections. Found at

<https://www.srmarchivists.org/resources/preservation/preservation-publications/simple-paper-repair-for-circulating-collections/>

Using “heat-set tissue” is an easy and quick way to mend torn paper. This commercial product is a transparent tissue coated with an inert acrylic resin. It requires heat in the form of a tacking iron to activate the resin and bond the tissue to the paper being mended. The mend can be easily removed with ethanol. This is not as strong a mend as the traditional Japanese tissue and starch paste but for circulating or small collections, it is much simpler and requires less dexterity and skill of the repairer. Also, this method precludes the drying time and care needed in a paste mend, since no moisture is introduced, Be sure to use a product that meets the standards of the Library of Congress.

The temperature of the tacking iron should be controlled at 190-200 F. It is unwise to rub the bare face of the hot tacking iron directly onto the tissue when attaching it to the mending area because heat and friction attract particles of acrylic onto the face of a fresh tissue mend . To avoid this effect, a thin piece of Japanese paper, silicone release paper or white polyester fabric can be used between the face of the iron and the heat-set tissue. For best results large mended areas should be pressed in a heated platen press for at least 8 seconds, using a temperature of 180 F at the surface of the mend. For small tear mends, hand pressure with the hot iron is usually sufficient to achieve consolidation.”

To repair a running tear: Tear a narrow strip of heat set tissue. The tissue need not be much wider than the tear (1/8” or so is usually wide enough). The tissue is torn rather than cut for two reasons: a torn edge repair is less visible than a cut edge; and a torn edge has some fiber extension which gives better adhesion. Position the tissue over the tear, let part of the tissue overhang the edge of the page; cover with a piece of release paper and use the tacking iron to adhere the strip. The overhang can now be turned over the edge of the page and adhered to the verso. That seals the edge of the tear.

Hinge tightening

Video from SULPreservation

Hinge Tightening with SULPreservation, 2011. Found at <https://www.youtube.com/watch?v=rUoks74OYYA>

Instructions from Northeast Document Conservation Center

Found at <https://www.minitex.umn.edu/Storage/Preservation/Repair/HingeTighten.pdf>



Basic Book Repair: Hinge Tightening

This procedure is for books that are sagging at the shoulders but do not have torn spines or endpapers.



Necessary materials: PVA in a tall skinny bottle, knitting needles, boards, weight, waste paper.

1. Place book on a piece of waste paper standing up with boards open.
2. Dip a knitting needle or bamboo skewer into the glue bottle and let drain a bit.



3. Insert needle or skewer into the hinge of the book and work around. Repeat on other side if needed or repeat from other end if the book is very tall.



4. Place a piece of wax paper between board and textblock. Close book and lay flat.
5. Bone in joint being careful not to tear the cloth.



6. Place book between two boards with knitting needles or bamboo skewers in the joints and weight. Let dry.



Tipped in Page

Video from SULPreservation

Page Tip-ins with SUL Preservation, 2011. Found at https://www.youtube.com/watch?v=jQjJXC8_VS4

Instructions from Conservation Book Repair: A Training Manual

Conservation Book Repair: A Training Manual by Artemis BonaDea. Alaska State Library, Alaska Department of Education, 1995. Found at http://library.alaska.gov/hist/hist_docs/conman/conman5.pdf

A. TIPPING-IN DETACHED PAGES

Tipping-in is one way to reattach a detached page or plate, errata sheet or replacement page. Tipping-in is not used to put a entire book back together. If too many pages are loose from the binding, the book should be resewn, sent to the bindery, or replaced. "Too many pages" can vary from book to book, but generally more than 3-5 pages is too many.

Tipping-in is generally used on text blocks that are adhesive bound with tightly glued spines. The tight spine keeps the book from opening flat and will help to hold the tipped-in page in place. See THE BASIC INFORMATION, page 7, for a full discussion of adhesive bound text blocks and how these text blocks are constructed.

While the general rule is to use paste when repairing paper, glue is used when tipping in a page. Paste can be a better bond between paper, but it is not as flexible as glue. Since the tipped-in pages need to flex and bend, flexible adhesive is very important.

1. TIPPING-IN A SINGLE TEXT PAGE

Each book will accept a repaired or replaced page in a different way. Some pages will sit easily into the hinge area, others will slide in from the top or bottom of the text block. Practice putting the page into the book before gluing to see how the page goes in the best.

Often a repaired page cannot be replaced as far back into the spine as when the book was new. If the edges of the repaired or replacement page extend beyond the text block, the page can tear and need future repair.

If the page does not fit correctly in the text block, especially in the case of replacement pages, trim the height of the page so that the top and bottom edges will be flush with the edges of the text block. Use a sharp X-acto knife and straight edge to trim the margins as scissors will not give a straight edge.

Leave an oversized margin at the fore edge of the page which can be trimmed to the correct size after the page is tipped-in the book (page 64).

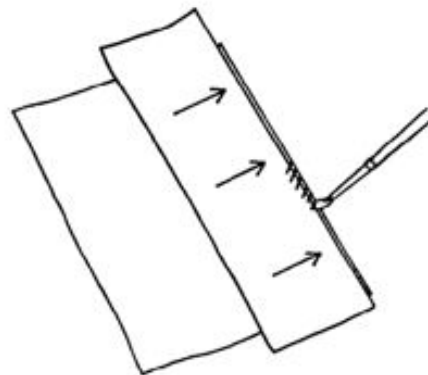
Applying Glue to A Page To Be Tipped-In

Several methods can be used to apply glue to a page; practice each one and see which works best. Often, different techniques will work in different situations.

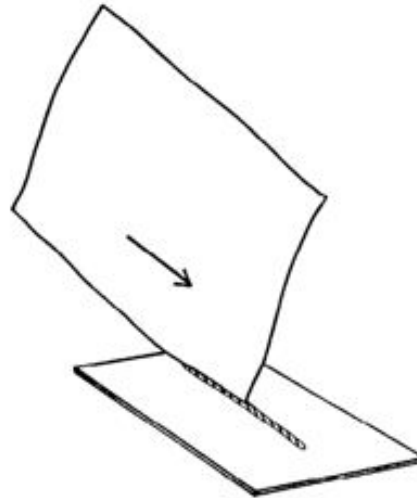
- 1) Using a very small paint brush apply glue to the edge of the page. Do not attempt to use a large brush to apply a small amount of glue. It is very difficult to control a large brush in such a small area and the glue could wind up in all the wrong places.



- 2) Use a piece of waste paper to mask the inner margin of the page. Leave approximately 1/16" exposed of the page exposed. Apply glue across the waste paper toward the edge of the page. Remove the waste paper before placing the page in the book.



- 3) Apply a 1/8" line of glue on a discarded shelf list card or a piece of stiff card stock. Draw the inner edge of the paper along the line of glue making sure the paper edge is covered in a thin, even bead of glue. If the page needs more glue, draw it through the glue again. If there are some areas that have too much glue and others that are not covered, draw the page over a dry piece of card stock to even out the adhesive.



Once the glue is applied to the page, carefully maneuver the page into the book. Use the technique that worked best when the page was positioned in the book before the glue was applied.

Put wax paper directly in front and behind the tipped-in page. Besides keeping moisture from traveling throughout the book it also protects the pages from excess glue that can adhere the pages to each other.

Put the repaired book under weight and let dry overnight. When the repair is dry, carefully remove the wax paper and make sure the page is securely attached in the book, then return it to the shelf.

Corner Repair

Video from Save Your Books

Corner Repair: Save Your Books, 2012. Found at <https://www.youtube.com/watch?v=aLM65Lq37i4>

Instructions from Conservation Book Repair: A Training Manual

Conservation Book Repair: A Training Manual by Artemis BonaDea. Alaska State Library, Alaska Department of Education, 1995 (pages 46-48). Found at http://library.alaska.gov/hist/hist_docs/conman/conman5.pdf

C. MENDING BOOK CASE CORNERS

The corners of a book take a great deal of stress and can be damaged while the rest of the case is still in good condition.

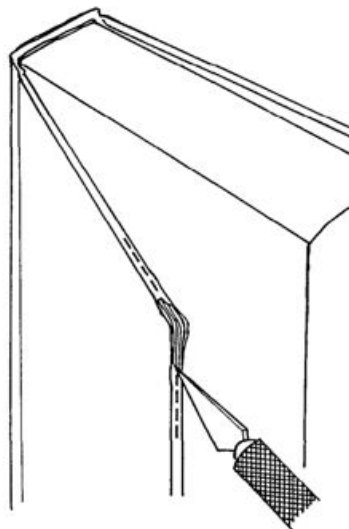
This is another repair that is often handled with plastic tape or purchased "repair wings." Applying tape or wings does not repair the corner; instead it adds a layer of tape on top of the problem. The adhesive on the tape can seep out or dry up over time, causing the plastic carrier to fall off. That can leave behind a sticky residue that is often impossible to clean up.

NOTE: If the book cloth has been worn off the top or bottom edges of the cover boards, replacing the book cloth at the corners may not be a wise use of time. Consider rebinding the book.

1. REPAIRING BOOK BOARDS CORNERS

The book board used in book case construction consists of many layers of board. If the book cloth is damaged or torn open at a corner, the different layers of board are often visible. When damaged corners are repaired with plastic tape, the book board is not repaired, it is only covered up. To truly repair the book corner, the various layers of book board must be glued to one another and the book cloth repaired or replaced.

In some cases the corners are damaged while the book cloth is still intact. Other times the book cloth will be torn or missing. In either case, cut through the book cloth on the top and fore edge of the board. Cut well past the damaged board into sound board and cloth.



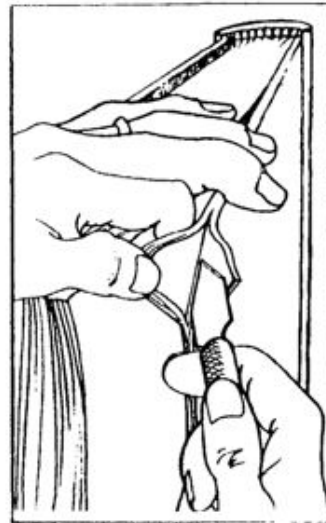
Separate the layers of board and use a microspatula or knife to apply PVA glue to several of the book board layers. The PVA will seep through the thin layers of board so every layer does not need to be glued. The number of glued layers depends on the condition of the book board.

If the original book cloth covers the corner, paint a small amount of glue on the wrong side of the book cloth and smooth it over the corner. If the book cloth needs to be replaced, follow the instructions for **Attaching New Corner Book Cloth**, page 48.

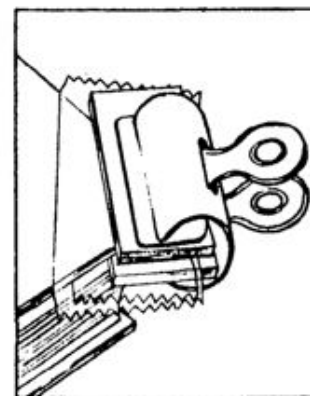
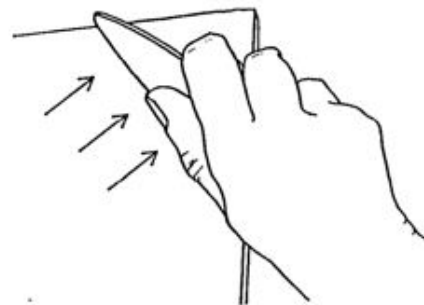
With fingers or a folder, press the book cloth onto the board, moving from the base of the repair up toward the corner edge. Wipe away any excess glue with a cloth or paper towel.

Note how much excess glue came out of the corner and use that as a gauge to decrease or increase the amount of glue used. A **small** amount seeping out is good because it means that the glue has reached all the layers of cardboard. Too much adhesive seeping out is wasteful and makes a mess to clean up.

For sharp flat corners, cover each side of the corner with wax paper or non-stick material and clamp between two pieces of book board using Binders or Bulldog clips (available in most office supply stores or catalogs). Use dense mat board or book board, not corrugated cardboard that will compress under the pressure of the clips.



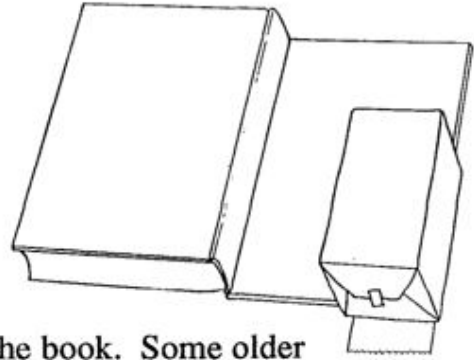
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reprinted from *Cleaning & Preserving Bindings & Related Works*

CONSERVATION BOOK REPAIR

Another way to achieve flat corners is to lay the repaired corner flat against the work table and weight it down with a paper covered brick.



Corners do not have to be sharp or flat to protect the book. Some older books may look more "natural" with rounded corners, especially when only one or two corners are repaired. If rounded corners would look better, mold the corners into position while the glue is wet and let the repair dry without weight or pressure.

Rebacking / Spine Repair

Comparison of Reback Instructions

One thing I have noticed while seeking out sets of repair techniques is that none of them include exactly the same materials, methods, or steps. It seems that it is common in this field for conservators or repair technicians to follow a set of basic guidelines regarding quality of materials, but so long as their repairs do not compromise the integrity of the book, they may complete the repairs using any number of methods.

This, and personal preference, makes it somewhat difficult to compare two sets of instructions, especially for a more complex procedure like the reback.

Context

The Conservation Wiki and the video tutorial provide a good amount of context for the repair by outlining the problem and explaining terms for items or processes that will be used, while the Alaska State Library instructions provide minimal context and use an abundance of conservation terms. This indicates that the first two are likely geared toward beginners, and the third is intended as a reference manual for experienced archivists.

Quality and Usability

Even though the Alaska State Library handbook seems to be intended for people more familiar with conservation terms, its instructions are very detailed and painstakingly described. In my personal opinion, it is almost too much detail to be helpful if I planned to use it as a reference each time I made this repair. I would use this if I had questions about a specific part of the process (especially why we do things a certain way) but while the illustrations and detail are helpful, it is a little cumbersome to follow these instructions. On the other hand, the instructions do contain helpful reminders (paying attention the grain of the paper, why it is important not to fold the book cloth flaps back when you peel it up from the shoulders of the books) and a few ideas I had not considered as workarounds to some of the methods we used in class. In particular, this method describes using rods to help set the joints of the book, rather than using the ridged boards we used above and below our books when we put them in the press.

The Conservation Wiki contains minimal detail, instead providing more of an overview of the process of rebacking. While I could probably improvise on how to complete the steps they suggest as part of the process, the lack of explanation makes these instructions also difficult to use. The instructions provide inexact measurements (“The new spine material is measured to match the height and width of the book plus two or three inches”, “The spine stiffener is cut to fit the book’s dimensions”) but establishes the correct sequence of actions the conservator must take.

The video linked in this section is the most useful reference material in my opinion. For physical procedures like these, demos and video tutorials are usually the best way to see how to complete a process, especially if one has not done it in a while.

Conclusion

Rebacking continues to be a difficult process for me. There are many steps, and while not all instructions contain the same steps or sequence of steps, it is useful to have three resources that I could use for different purposes. For a beginner, the video and Wiki are helpful for context and an overall idea of the process, but the Alaska State Library handbook provides more explanation for why each task is performed and why certain tools or materials are used instead of others.

Instructions

Video from NewMedia UFM

Book Reparation and Conservation: Cloth Spine Replacement/Reback (Workshop 6) from NewMedia UFM, 2013. Found at <https://www.youtube.com/watch?v=vNWHhuSnk5Y>

Instruction set 2 from Conservation Wiki

Found at <http://www.conservation-wiki.com/wiki/Reback>

Reback

The term **reback** refers to the means by which a damaged book spine is replaced in order to prevent separation of book components. A trained conservator should be involved in the completion of this process so that further wear is prevented. ^[1] The new spine itself may also be referred to as the reback. ^[2]

Related Terms

[Board Reattachment](#)

Translations

English	Reback
French	
Spanish	
Portuguese	
Italian	
German	
Russian	
Arabic	

Spine Damage

The reback process may be warranted for damage that includes wear, cracks, or tears along the spine and/or along the hinges of the book so that the [boards](#) are either partially or wholly separated from the spine. ^[3]

Replacing the Spine

Tools

Certain tools may be useful during the reback process, including scissors, a boxcutter, metal ruler, mini spatula, bone folder, book press, and brushes. ^[4] A proper adhesive like Archival PVA glue should also be used. ^[5]

New Spine Material

The new spine material is often chosen based on the type, color, and texture of the material used in the original book cover in order to maintain the original appearance of the book. ^[6] It is important that the new spine be created from nonperishable materials for the sake of preservation. ^[7] Materials like paper, cloth, and leather are often used in creating the new spine. ^[8]

Process

The original spine, if still attached, is removed from the book. ^[9] The new spine material is measured to match the height and width of the book plus two or three inches. A spine stiffener is also used, as the new spine material may not be sturdy enough to function alone. The spine stiffener is cut to fit the book's dimensions and glued in the center of the new spine. ^[10] The book cover is partially lifted from the boards at the hinges so that the new spine can be fitted underneath, allowing the new spine to be better attached to the cover, boards, and book in general. ^[11] Adhesive is applied to the uncovered board, the new spine is adhered, and the lifted cover is glued back over the new spine. A book press is then used to set the newly added spine. ^[12] If the original spine is considered salvageable, it often will be adhered over the new spine in order to maintain the book's original appearance. ^[13] The original spine is trimmed to fit the new spine in a way that none of the information on the spine is lost. ^[14]



original spine adhered to new spine; image courtesy of Jacquelyn White and <https://jacquelynwhite.wordpress.com/2013/04/10/bound-book-repair-spine-removal-part-2/>



cover lifted from board, Archival PVA painted on board, new spine on left, ready to be attached; image

Instructions from Conservation Book Repair: A Training Manual

Conservation Book Repair: A Training Manual by Artemis BonaDea. Alaska State Library, Alaska Department of Education, 1995 (pages 79-98). Found at http://library.alaska.gov/hist/hist_docs/conman/conman5.pdf

B. REBACKING A CASE BOUND BOOK

Books with worn cloth joints or loose, flapping spines can be repaired by replacing the original book cloth spine.

Before rebacking a book, check the condition of the original crash in the hinge area. If more than 1/4 of the crash's total height is broken, replace it before rebacking the book. That procedure is covered in RECASING A CASE BOUND BOOK.

Two methods of rebacking are illustrated in this section. The first method, **REBACKING WITH BOOK CLOTH ON THE OUTSIDE OF THE ORIGINAL BOOK CLOTH**, puts the new book cloth on the outside of the old book cloth with the turn-ins glued on top of the original endpapers. This method can sometimes be faster but the new spine can be difficult to position well since it is constructed off the book. From a cosmetic point of view, more of the repair shows because the book cloth is on the outside of the original book cloth. This method is also described in *Books Their Care and Repair* by Jane Greenfield. These instructions and Ms. Greenfield's drawings are reprinted with her permission.

In the second method, **REBACKING WITH THE NEW BOOK CLOTH UNDER THE ORIGINAL BOOK CLOTH AND THE TURN-INS UNDER THE END PAPERS**, the new spine is constructed on the book with the turn-ins glued under the end papers. When the original spine is replaced, the new book cloth shows in only a small portion of the joint area.

Often different methods work for different books so practice each method, then decide which to use on a particular book.

1. PREPARING A BOOK TO BE REBACKED

Remove the Original Book Cloth Spine

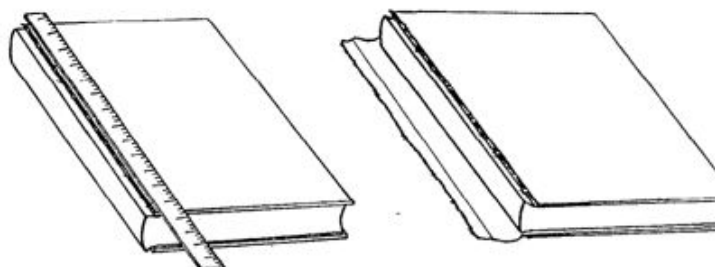
If the print or decoration on the spine is legible, save the spine to glue to the new book cloth spine. If the print or decoration is not legible, discard the spine after it is removed.

Carefully remove the original spine if it is still attached to the book.

If the cloth in the joint is broken or terribly frayed, gently pull it loose.

If the original spine is more firmly attached to the case, lay a straight edge $1/16$ - $1/8$ " from the spine edge of the front board and use a knife to cut through the cover cloth.

Be careful not to cut through the crash or the end paper and try not to trim away any print or decoration on the cover.



Turn the book over and repeat on the other side.

Check the Original Crash

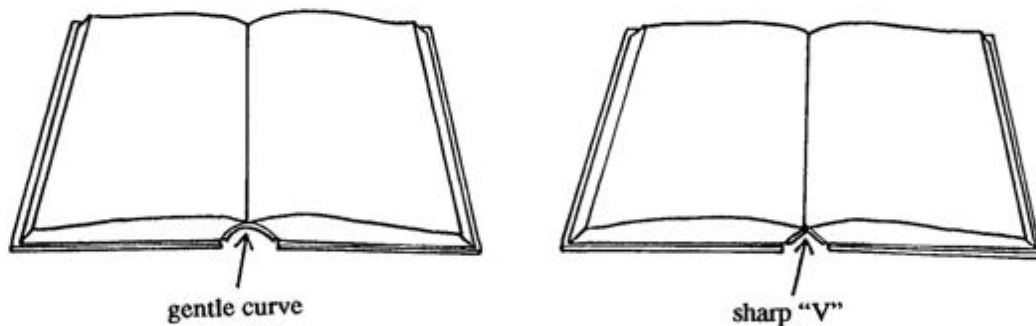
If more than $1/4$ of the total height of the original crash is torn or broken, it should be replaced before the book is rebaked. That procedure is covered in RECASING A CASE BOUND BOOK, page 99.

Lining the Text Block Spine

When the book cloth spine is removed, examine the paper spine liner attached to the text block.

This paper spine liner consolidates the signatures of the text block and helps evenly distribute the stress of opening the book. Many modern book manufacturers do use enough paper liners or a good quality of paper to line the spine. In many instances, the paper spine liner is not even completely glued down.

Many libraries do not replace the paper spine liner when rebacking books. Taking the time to replace the spine liner ensures the book will function better and last longer.

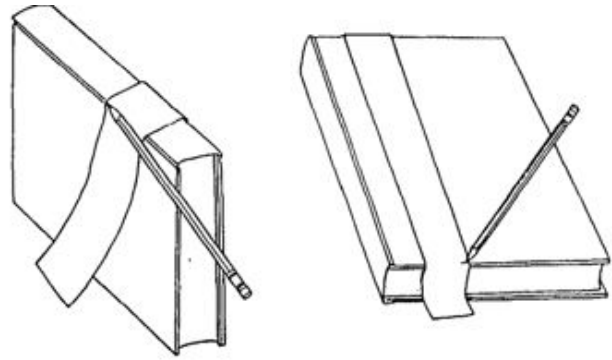


Open the text block to the center of the book and see how the spine arches. Does it form a gentle curve or a sharp "V"? When a book opens with a sharp "V", all the stress of opening the book is concentrated in one place. A gentle curve evens out the stress of opening the book.

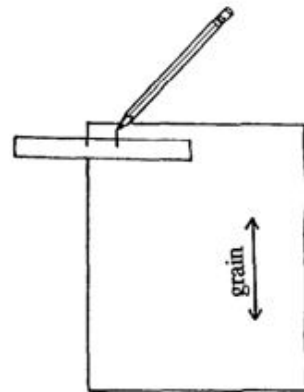
If the original paper liner is not adhered to the spine of the text block, remove it by gently pulling it away or scraping it away with a dull knife. Be careful not to damage the crash or the sewing threads. It is not essential that all the paper be removed.

If the original paper spine liner is well adhered but not heavy enough to form a gentle curve when the book opens, add additional paper liners to create the gentle curve.

Measure the thickness of the text block from shoulder to shoulder (measurement A) with a strip of paper. (See page 37 for information on MEASURING A BOOK.) Save this measurements until the repair is completed.

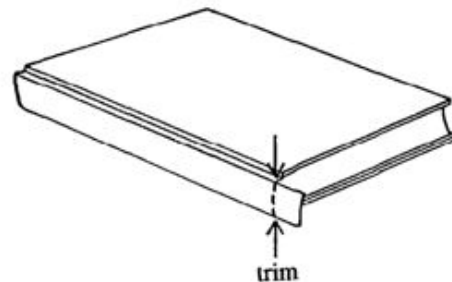


Transfer measurement A to the spine liner paper and cut a strip of spine liner paper. The cut strip should be longer than the height of the book boards. Remember the grain of the spine liner should run up and down the spine of the book.



It is best to use a medium weight paper to line the text block spine; two or three layers of thin paper is better than one thick layer. Acid-free papers such as Permalife, Mohawk Superfine or Japanese repair tissue can be used. The paper spine liner must have the grain running from the head to the tail of the book and should be the exact height and width of the text block spine.

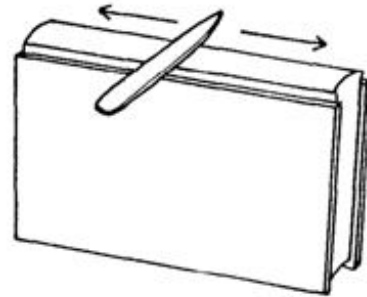
Lay the spine liner against the spine of the text block, mark the height and then trim the spine liner to the exact height of the text block.



Apply adhesive to the spine liner paper in a star burst pattern (page 34) and position on the text block spine.

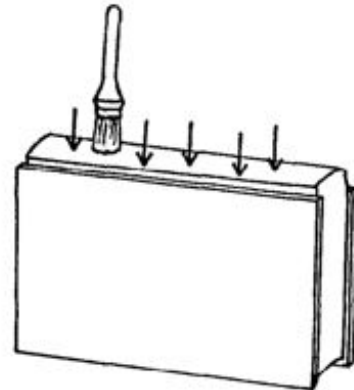
Firmly attach the paper spine liner to the text block spine using one or both of the methods below.

1. Use a folder to rub the paper spine liner to the text block spine. Make sure the paper liner is well adhered to the text block; pay special attention that the edges (sides, head and tail) are firmly attached.



OR

2. A 1" stencil brush makes a good tool to firmly attach the spine liner to the text block. Use an up and down tapping motion to work the spine liner into the text block. Pay special attention that the edges (sides, head and tail) are firmly attached.

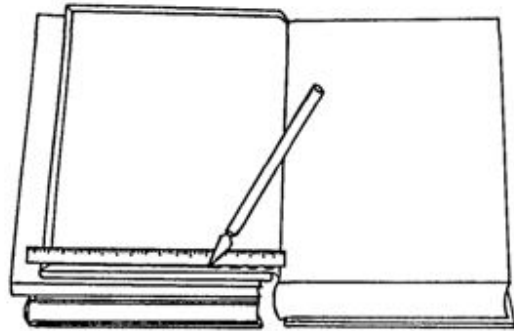


Let the paper liner dry then open the book. If the open text block forms a "V" instead of a gentle curve, repeat the procedure. Many books need more than one layer of paper liner, especially if they are large or heavy.

METHOD TWO: Rebacking With Book Cloth Under The Original Book Cloth

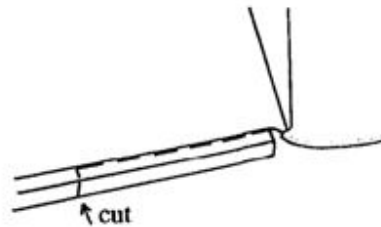
Lifting The Endpapers

Support the book with another book or a stack of boards.



Use an X-acto knife or scalpel and ruler to cut through the book cloth along the edge of the endpapers at the head and tail. The cut should be about 1 - 2" long.

At the outer edge of the first cut (away from the spine), make a second, 90-degree cut across the book cloth from the edge of the endpaper to the top of the book board.



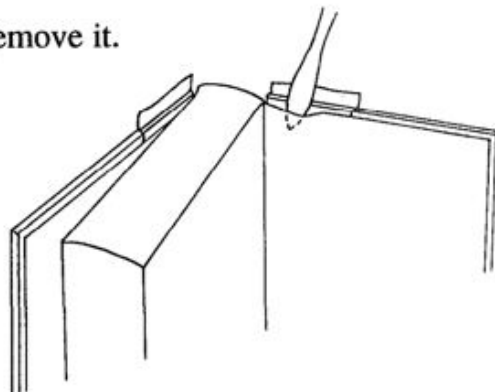
Use a knife or microspatula to lift the book cloth away from the book board.

If necessary, clip through the original book cloth turn-in at the hinge to allow the cloth to lift up. DO NOT clip through the endpaper or the crash.

Repeat this cut at the other end of the cover and on the opposite book board.

If the turn-in in the spine area is completely loose, remove it.

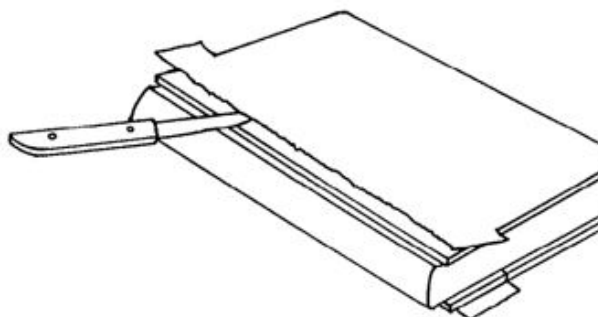
Insert a microspatula or dull knife between the original turn-in under the endpapers (the part of the book cloth cut but not lifted above and the book board. The original book cloth turn-in will support the endpaper as it is lifted.



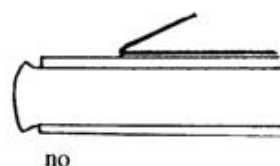
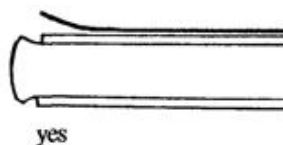
Loosen only a small amount of the endpaper as more can be separated later if needed.

Lifting and Trimming the Original Book Cloth

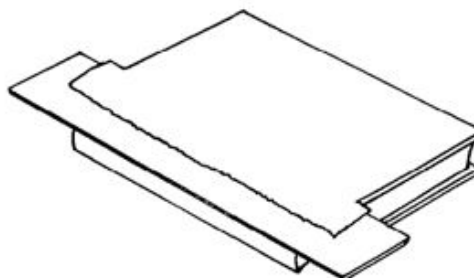
Gently lift the book cloth away from the board by sliding a folder or dull knife under the book cloth on the outer cover.



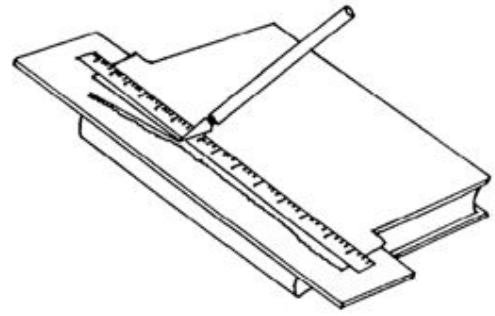
Lift the book cloth only as far as the cut at the top of the endpaper will allow, lifting a thin layer of book board with the cloth if necessary.



Try not to crease the book cloth as it is lifted or the crease line will show when the cloth is glued back in position.



Insert a piece of thin cardboard between the original book cloth and the book board to use as a cutting surface.



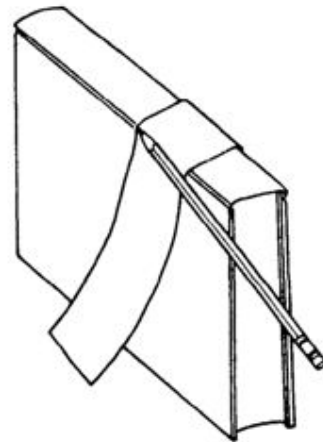
Place a straight edge along the ragged edge of the book cloth and use an X-acto knife or scalpel to trim the book cloth away from the hinge area.

Try not to trim away any print or decoration on the cover.

Turn the book over and repeat on the other side.

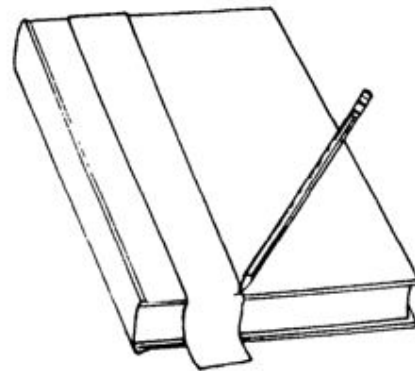
Measuring the Text Block Spine

Use a strip of paper to measure the width of the text block spine (measurement A), then add 1 - 2" to each side of the spine measurement marks.



The exact amount added to measurement A depends on how much of the original book cloth is trimmed away from the cover board. It's better to have this measurement too wide as any excess can be trimmed away later.

Use the same technique to measure the height of the book boards (measurement B) then add 1" to measurement B.



Reinforcing the Spine of the New Book Cloth

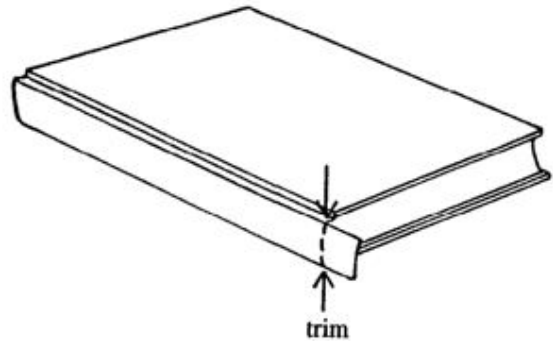
The spine area of the new spine cloth should be reinforced with an acid-free paper such as Bristol, Mohawk Superfine paper, or several layers of acid-free bond paper.

The spine inlay should be the same width as the text block spine and the height of the book boards, not the text block. It is a common mistake to cut the spine inlay the same height as the text block, which is shorter than the book boards.

Cut a spine inlay the width of the text block spine (original measurement A) and longer than the height of the book boards. It will be trimmed later. The grain of the spine liner must be parallel to the spine of the text block.

Double check the width of the spine inlay paper by laying it against the text block spine. It should fit the spine from shoulder to shoulder without curving into the joint area.

Trim the spine inlay to the correct height. Remember it should be the height of the cover boards, not the text block.



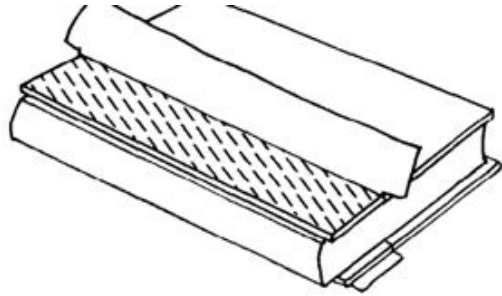
Choosing and Attaching One Side of the New Book Cloth Spine

Choose a piece of book cloth that is a close color match to the original book cloth.

If a close color match isn't possible, select a color that has the least amount of contrast, i.e., black book cloth on a dark blue book would be less noticeable than light blue book cloth.

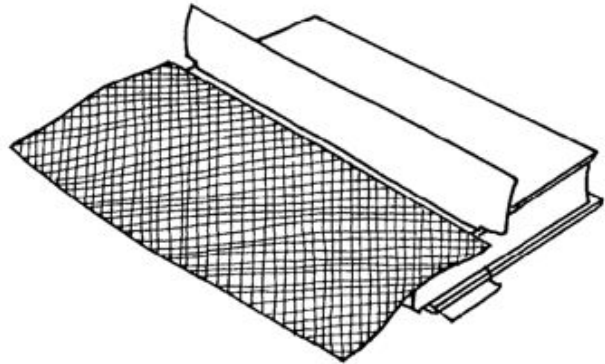
Transfer measurement A and B to the book cloth. Be sure the grain of the book cloth is parallel to the spine of the book. Cut the new spine piece.

Turn back the original book cloth on one cover (be careful not to crease it). Brush PVA glue on the exposed board. Work the glue all the way back into the area where the original book cloth and book board are still attached.



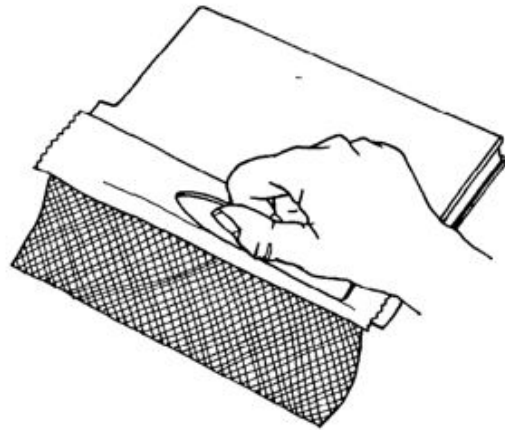
DO NOT put glue in the joint area.

Lay the new book cloth on the glued book board, with the right side up. Use a folder to press the new book cloth onto the board.



DO NOT glue down the original book cloth.

Work the cloth into the joint with the long edge of a folder. Protect the new book cloth with a piece of Hollytex or wax paper if necessary.



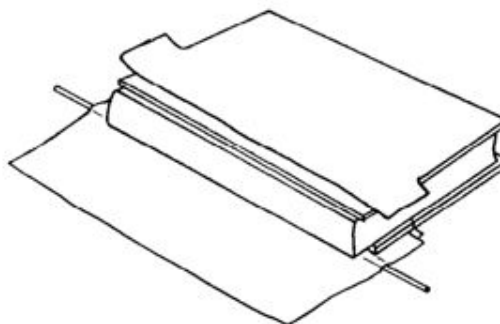
Insert rods in the joints and put under weight. Let the book dry for at least 10 minutes, so the glue will set.

Measuring the Width of the Joint

After the glue has set, use one of the following methods to mark the width of the joint. This gives the position of the spine inlay on the new spine cloth.

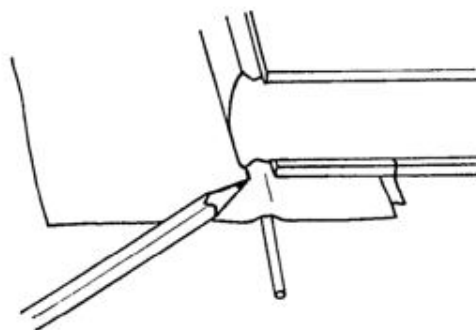
Method 1:

Lay the book on the work surface with the new spine cloth against the table, wrong side up.



Slip a rod into the joint against the table, press down gently on the joint area.

Mark the position where the shoulder of the text block spine meets the new book cloth.

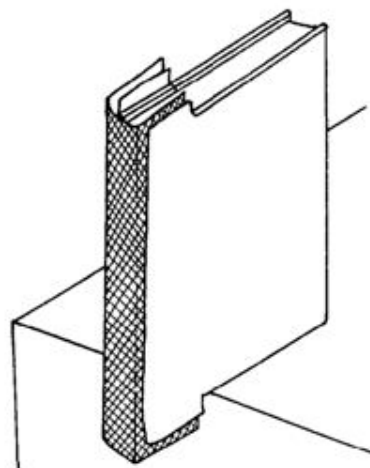


Repeat this measurement on the other end of the book.

Method 2:

The joint width can also be measured with the book upright.

Protect the new book cloth by supporting the text block on the edge of the work table or a pile of books.



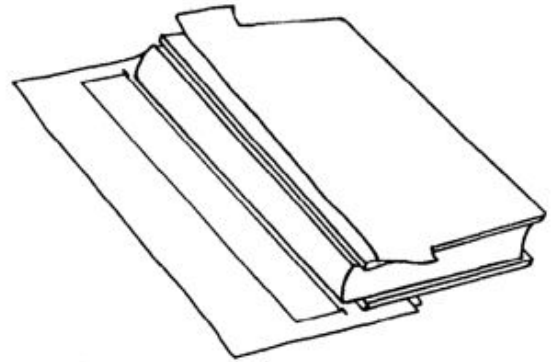
Wrap the new book cloth around the spine and press the new cloth into the joint with your fingers.

Mark the position of shoulder on the new book cloth. Repeat on the other end of the book.



Lay the paper spine inlay on a piece of waste paper and apply glue in a star burst pattern.

Use the pencil marks to position the glued spine inlay onto the wrong side of the new book cloth spine making sure the inlay is even with the top and bottom edges of the cover boards.

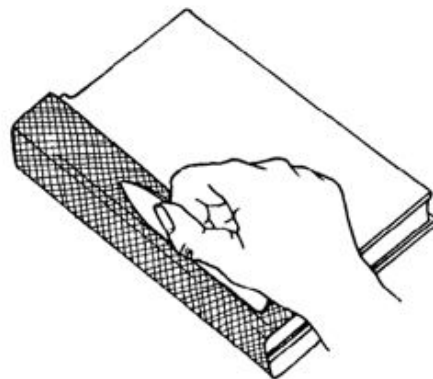


Attaching The Second Side of the New Book Cloth Spine

Cover the spine inlay with wax paper or Hollytex and blotters. Apply weight and let dry.

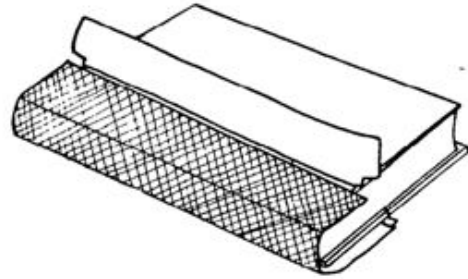
When the spine inlay is dry, gently wrap it around the text block with the new book cloth on top of the original book cloth.

Use the long edge of a folder to work the cloth into the hinge area.



Lift the original book cloth and lay the new spine cloth in place.

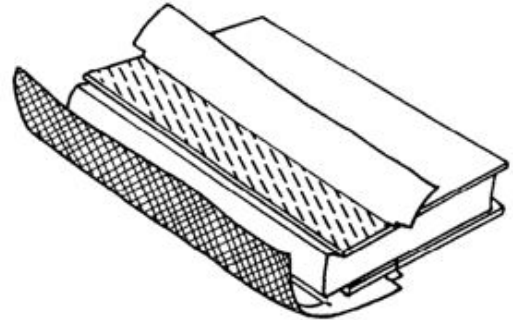
If the new spine cloth is too wide to fit, trim it down.



Lift up the new book cloth and apply PVA glue to the book board.

Work the glue all the way back into the area where the original book cloth and book board are still attached.

DO NOT put glue in the joint area or glue down the original book cloth.



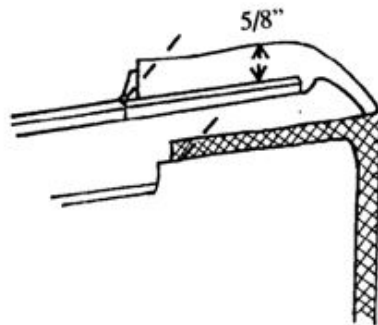
Lay the new book cloth back in place. Work the cloth into the hinge area with the long edge of a folder.

Protect the cloth with wax paper or Hollytex if necessary.

Put the book under weight to dry for at least 10 minutes so the glue will set.

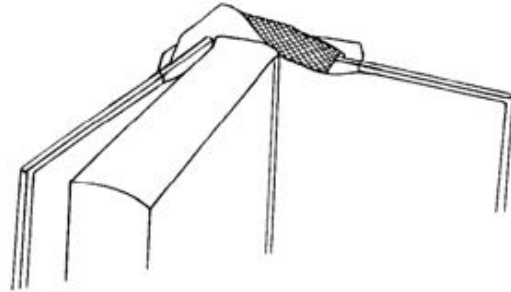
If the new spine cloth extends past the top or bottom of the book more than 5/8", trim it down.

Clip the points off the corners for ease in turning-in.



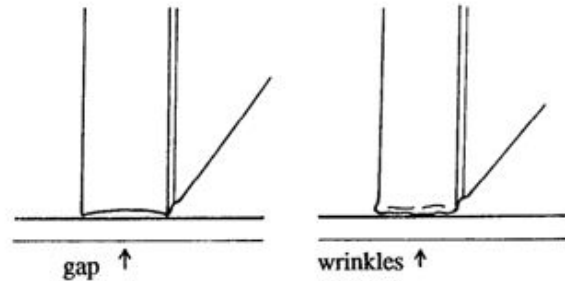
Protect the bottom extension of spine book cloth by placing the book on another stack of boards or another book.

Carefully tuck in the right side of the turn-in, then the spine area, and finally the left side of the turn-in.



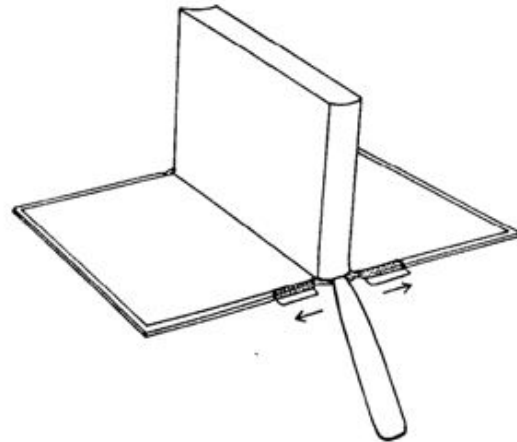
With the entire patch tucked in place, gently crease the top edge of the patch along the boards and in the spine area with your fingers.

Set the book on the work table to check the position of the turn-in area. The edge of the new spine book cloth should be level with the original boards so it rests flat and even against the table.



If there is space between the table and the new spine book cloth or if the book cloth wrinkles against the table, the turn-in is not correct. Readjust the turn in. Check it again.

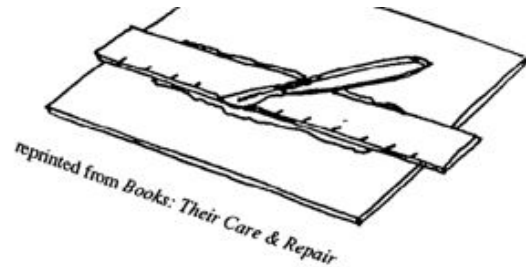
When the turn-in is positioned correctly, lay the book on its spine. Use a folder to crease the turn-in in position. This crease sets the turn-in position and makes it easy to reposition it once the glue is applied.



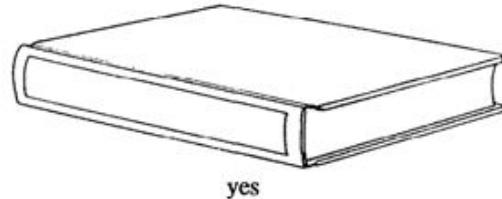
Unfold the turn-in, brush on PVA glue, and carefully refold.

Use a folder to crease the glued turn-in into its previously creased position.

Trim the frayed edges with a straight edge and X-acto knife, taking care not to remove any of the letters or design.

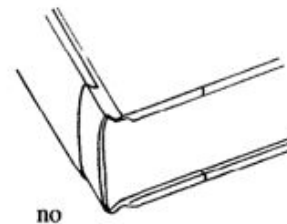


Lay the original spine against the new book cloth spine to check for a proper fit.



The original spine should not extend into the hinge area as it will add bulk that will inhibit the cover from opening freely.

Trim the original if it is too wide.



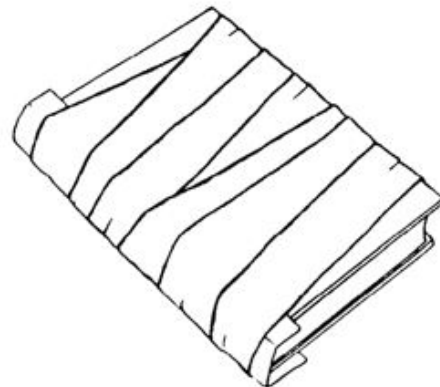
Lay the original spine wrong side up on a piece of waste paper and apply PVA glue in a star burst pattern.

Position the original spine over the new book cloth spine.

MAKE SURE THE SPINE IS RIGHT SIDE UP TO THE TEXT BLOCK.

Cover the original spine with a piece of wax paper or Hollytex and rub down with a folder.

With the wax paper or Hollytex still covering the spine, wrap the book snugly in an elastic bandage (the kind used for a sprained ankle). Pull the bandage tight as the book is wrapped. The bandage will apply even pressure over the entire curved spine.



Recase in original cover

Video with Aran Galligan

Book Repair – Recase with Aran Galligan, Sojourner Truth Library, 2011. Found at <https://www.youtube.com/watch?v=6r8Mg4g-0IY>

Video from J Godsey

Simple Spine Repair: Reattaching text block to the case with J Godsey, 2014. Found at <https://www.youtube.com/watch?v=V8cYh96ASCg>

Reback off the book

Video from SUL Preservation

“Full” Reback (Spine Repair) from SULPreservation, 2016. Found at <https://www.youtube.com/watch?v=LG4A5AU8BCw>

Double Fan Adhesive (DFA) Binding

Comparison of DFA Instructions

The two DFA instructions I chose to include are set of video tutorials by Meg Kramf, from “Pesky Cat Papercraft”, and a set of written instructions from Dartmouth Preservation. I chose these two because when I was searching for video tutorials, I really appreciated how Meg demonstrated how to use makeshift tools (like binder clips) to clamp the pages of the book in place if you don’t have access to a line press, like Dartmouth Preservation has. The “DIY at Home” approach is something I will probably use more often in my personal explorations of conservation and book repair work.

Context

Dartmouth Preservation includes a short paragraph at the beginning explaining the purpose of this repair technique and the materials that should be used to complete it. Throughout her tutorial, Meg provides many explanations regarding why this repair would be needed, as well as why she completes certain steps or uses certain materials (why to use PVA rather than Elmer’s Glue, etc.).

Quality and Usability

These instructions are very similar, likely because DFA binding is a fairly straightforward repair technique. The pictures in the Dartmouth Preservation instructions are not very useful at the beginning, but by the time the conservator starts using the line press, the pictures more accurately demonstrate the proper technique for this repair. I also like how Dartmouth’s instructions go further than we did in class and provide instructions for creating a new case and attaching it to the text block, steps I would need to know if I worked as a practicing repair technician or manager of repair technicians.

Meg’s tutorial is more detailed than the Dartmouth instructions. When it comes to the double fan step of the process, being able to watch her actually fan the pages over and apply the glue helps me understand the step better than Dartmouth’s pictures and description of the process. While I might not take her advice on what materials to use if I was working in a professional conservation setting (binder clips, sponge brushes, etc.), I think she provides a good example of how you can complete a simple book repair like this without needing to purchase expensive materials. I would have been interested to see how she removed the spine of the book in the first place, because that seems like the hardest part of this process to complete without specialized equipment.

Conclusion

Both these instructions are useful guides to completing a double-fan adhesive. As I mentioned with my other analysis, I typically prefer video tutorials when first learning a technique, but text and images when I return to complete the technique again in the future and only need something to reference. I feel the same about this – despite the few differences between the two instruction sets, I feel that together they provide me with a good understand of the purpose, steps, strengths, and weaknesses of a DFA.

Video with Meg Krampf

Binding loose leaf sheets using the double fan method with Meg Krampf.

Part 1: <https://www.youtube.com/watch?v=RO6NGw8oNCQ>

Part 2: <https://www.youtube.com/watch?v=uHFV3aAMBjw>

Instructions from Dartmouth Preservation

The following instructions for Double-Fan Adhesive Binding (2016) are found at <http://dartmouthpreservation.blogspot.com/2016/05/double-fan-adhesive-binding.html>.

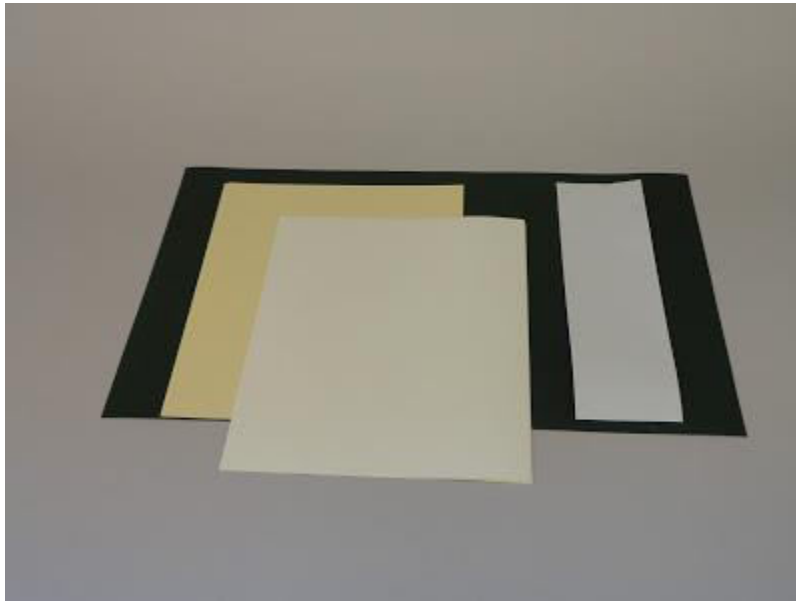
The Double-Fan Adhesive Binding is a treatment we use in Preservation Services for new single sheet items with a good gutter margin such as theses or to repair worn out adhesive bound books. Good margins are important as the process will trim 1/16" all around when finished.

MATERIALS

2 endsheets: cut to Height (H)
2 20-point boards: cut to Width (W) x Height of book
(Can stack endsheets and boards to cut on guillotine)
Cloth lining: cut to H x [spine thickness + 2"]
Covering cloth: cut to H x [(W x 2) + spine thickness]
Double-sided tape
PVA glue
Tyvek *optional*

PREPARE

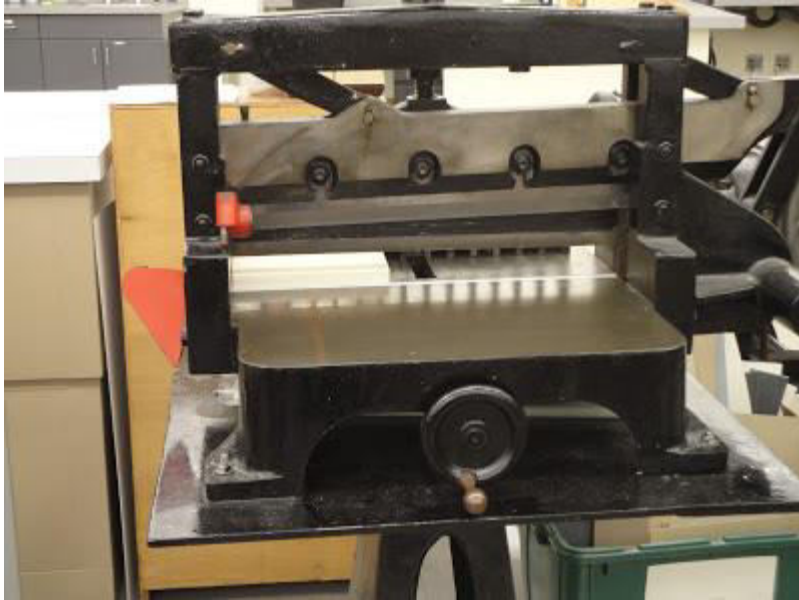
Trim out of old case, leaving case intact, if possible.
Mark upper foreedge of text with pencil mark (gets trimmed off later).





Put rough-cut boards and endsheets into position with endsheet folds at foreedge to remain intact when cut.
Cut spine off.

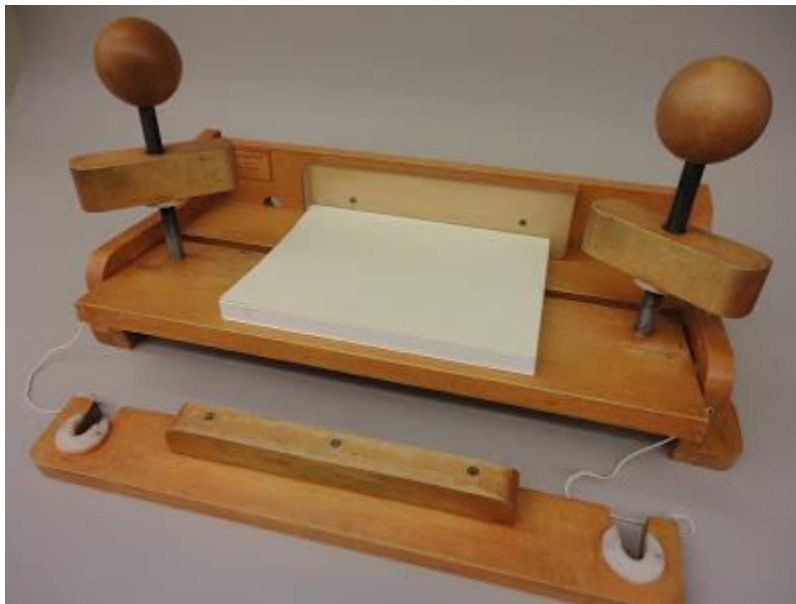




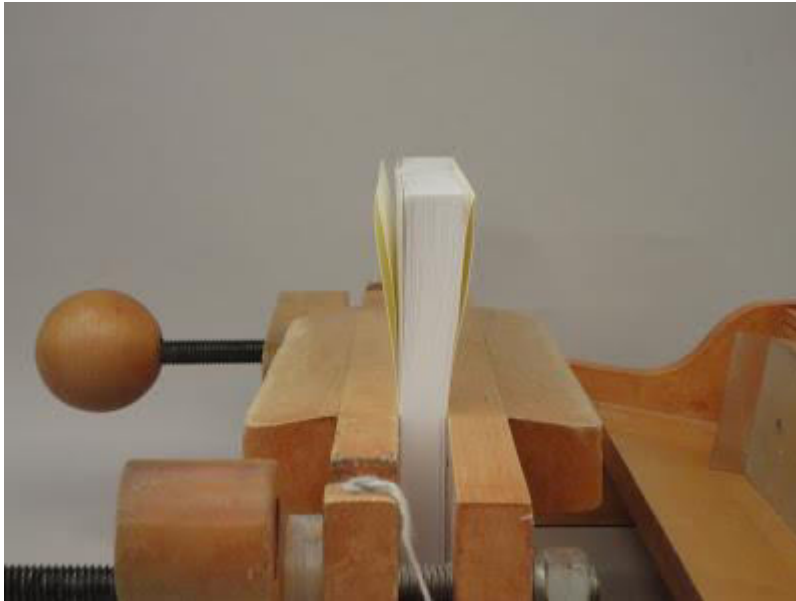


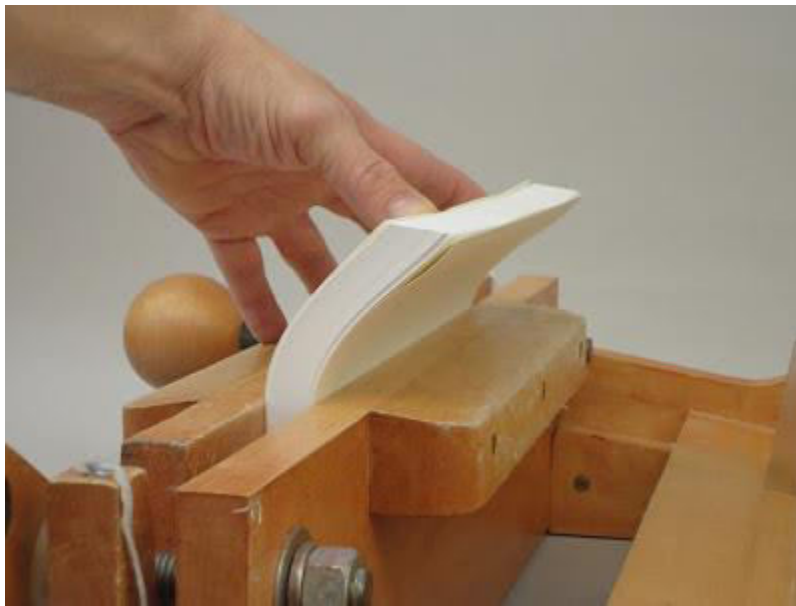
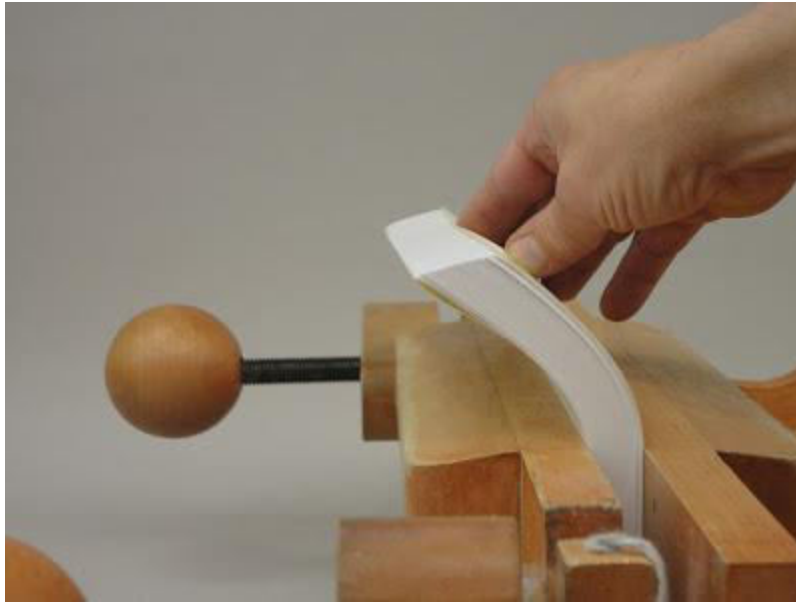
DOUBLE FAN GLUE

Clamp into press screwing in the pressure equally. Three loose bars are in the press (one has an L-shaped piece attached) with usual sized books. Can remove one or more for bigger (wide and tall) book.



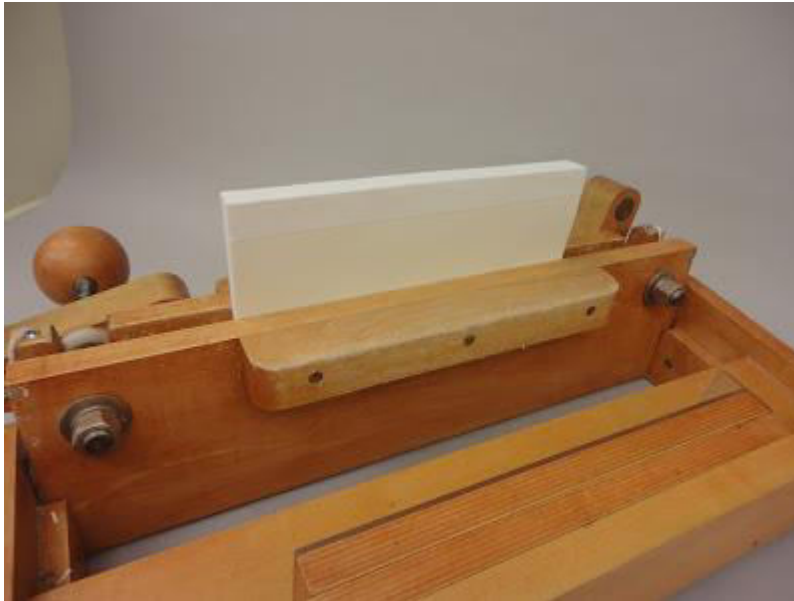
Tip up the book to work on it. Glue the spine once as it is straight up. Fan it left and glue. The fan it right and glue. Squeeze the glued spine into shape.





CLOTH LINING

Glue up lining and set on evenly, pinching and pulling and smoothing. Set onto spine and let dry about one hour.



BOARDS

With a pair of dividers run a score line $\frac{1}{4}$ " from the spine edge head to tail on each board. Run a strip of $\frac{1}{2}$ " double-stick tape down the inside edge of the score line. Flip the board over and glue the board up. Now place glued side of board down onto text block lining up the spine with the double stick tape edge along the spine edge. Nip for 30 seconds in press.



COVER WITH CLOTH or ORIGINAL PAPERBACK COVER

With new cloth:

Cut cloth to $H \times [(W \times 2) + \text{spine thickness}]$.

Crease at the first spine fold. Then make another fold 1/4" from this line (toward the foreedge). Make the other spine fold, and then the 1/4" fold from that line (toward the foreedge).



Test fit the cover if cloth. Clip off excess before gluing. Put tattle tape onto spine *cloth*. Glue up the boards, peel off the double-stick tape backing. Press board going from spine to foreedge. Nip 30 seconds in press. Let dry one hour under weight.





Prepare old case materials to reattach:

Trim out spine, old plate from old cover and reattach. If the spine is porous, line the back with Japanese tissue. If barcode is on board make sure to save and reattach. If old cover is not usable in one piece, trim front and back covers to size and glue onto new cloth.

Once textblock is dry, trim no more than 1/16" from the head, tail and foredge on the guillotine. Do a visual double check of margins to make sure where cutting is safe.





RECASE

Paperback cover:

Take a piece of Tyvek cut to $H \times [\text{spine thickness} + 2"]$ and glue over spine area of cover covering the $1/4"$ folds by $1/2"$ or so.

Clean the joint area. Put tattle tape onto the spine of case. Recase the book. Trim if needed.

VARIATIONS

Kerfs (do before put on cloth liner)

On a very thick book, could put on a second liner and then make kerfs (saw marks) cut into the spine at an angle. Could glue in some thick sewing thread, leaving them longer and then glue them down to the sides.