I CORNER REPAIR FOR CLOTH BINDINGS

The corners of old bindings are almost always in need of repair. Corners can become soft, abraded, or have board and/or cover material missing. Corners that are properly stiff and have their covering material stabilized can then go on to do their job of protecting the corners of the text itself. When corners are soft, injecting wheat paste into the binder’s board will in most cases provide the needed stiffening. Covering material that is lacking on the corners can usually be replaced with moriki tissue.

Needed:
- A syringe body of the Luer-lock style (this kind of syringe allows the needles to be locked onto it; available from farm supply companies or veterinarians)
- Luer-lock needles in a variety of sizes such as #18, #20, and #23 (the smaller the number, the larger the hole in the needle)
- Wheat paste and PVA (polyvinylacetate) adhesives
- Moriki tissue (a Japanese tissue; comes in assorted colors which is helpful for matching the cover materials of the books being repaired)

I.A. Technique for Stiffening Cloth Corners:
1. Fill the syringe body to the halfway point with paste. Make sure the needle is twisted securely into the syringe body.
2. Begin by injecting a small amount of paste into a damaged corner, always going gently to prevent the needle from stabbing through the covering material or the endsheet pastedown. (And mind your fingers! Point the needle in a direction so that if it were to poke through the book you would not stab yourself.) If the binder’s board on the corner can be separated into layers, use the needle or a microspatula to work some paste in between the layers.
3. Once injected, the corner should be shaped with the fingers to the desired form. Be sure not to give the corner a newer, squarer profile than would be appropriate for a book that is an antique, and also make certain the repaired corner looks in keeping with the book’s other corners.
4. If the paste and shaping adequately repairs the corner, all that is left is to dry the work.
Once dry, the corner can, if needed, be toned in with pigments to repair any discoloration present (see handout “Dyeing and Toning of Cloth Bindings”). If the corner has an area of missing cloth, that can be repaired using moriki as described in the next section.

![TIPS AND TRICKS]
- If the board is very thin, it may not be possible to use a syringe to deliver the wheat paste into the corner (the syringe may do more damage than good). In such situations, the microspatula may be the better tool, but only testing the corner gently with the syringe will tell.
- Always dry repaired corners in an elevated fashion. While drying, do not allow the outside of a repaired corner to rest in direct contact with any surface, as this may force moisture through the book’s cover material where it could cause a stain. Likewise the text must be protected from any corners that have been repaired: either insert waxed paper as a moisture barrier between the corner and the text, or prop the board open slightly to put space between the corner and the text.

![TIPS AND TRICKS]
- The corner should not be overly loaded with paste, since only a moderate amount is required to achieve the needed result. An over-abundance of paste can create stains on the covering material or the endsheet pastedowns.
- It is not necessary to work the paste between each layer of the binder’s board. By capillary action the paste will flow beyond where it is applied in the corner.
- Until you have significant experience, treat the lower back corner first and let it dry completely to make sure the moisture of the paste will cause no adverse effects on the original cover material.
- Once you are experienced, it is often possible to work on all the damaged corners before setting the book aside to dry. Handle the book carefully; repaired corners that are not yet dry are very vulnerable to being re-damaged.

I.B. Technique for Re-covering Cloth Corners in Moriki Tissue:
If the tip of the corner is missing a bit of cloth, this can be covered over with a small patch of a Japanese paper called moriki. Pick a color that matches the binding or is slightly lighter in color. If needed, inject the corner with paste first.

1. Tear (don’t cut) a narrow strip of tissue that is barely wider than the cover board is thick and with a length corresponding to the distance (along the board edge) to be covered.
2. Apply to the tissue first a layer of wheat paste followed by a touch of PVA. Then lay this tissue patch over the corner of the book. Do not use much PVA as it can act as a barrier to tinting the color of the paper at a later stage. The finished patch should cover the area lacking the cloth and extend only slightly onto the original cloth.
3. Work the tissue gently into place with a clean finger. Follow this a with light coat of paste applied atop the repair tissue and work the paste into the tissue with a finger. Allow this work to dry.
4. Once dry, tint the repair work as needed (see handout “Dyeing and Toning of Cloth Bindings”).

WORTH NOTING
Moriki comes in many colors, and it is advisable to have a number of colors on hand. Different suppliers often stock different ranges of colors, so, if possible, acquire sample booklets from all the suppliers that you can. Not only is color important to your purchasing decisions, but look for moriki papers that are flexible rather than stiff. Moriki from different manufacturers can vary in thickness and flexibility (often these two qualities are linked). There is no advantage to seeking the thickest moriki possible, for in making moriki repairs to a binding you can always add additional layers of paper to create a repair in the thickness you want, while it is difficult to make repairs to a small book if the moriki is too thick. Good colors to have on hand include a number of browns, tan, black, light gray, and mauve.
I.C. **Technique for Repairing Extensive Corner Damage on Cloth Bindings:**

**Needed:**
- All the previously listed supplies
- A small container of acrylic wood putty
- Binder’s board scraps and a grater to grind them into crumbs

If binder’s board on the corner is missing, you can reconstruct the corner in several ways. If the missing area is small, you can probably build up this area with wood filler and cover it with a moriki patch. If the loss is more substantial, adding ground up binder’s board to the wood filler can provide useful bulk to the wood filler. Additionally, it can be helpful to build up the missing portion in stages, allowing the putty to dry or nearly dry between applications.

1. Secure the board with the affected corner in a vertical position (held upright between two weights) so that the damaged corner is accessible.
2. If needed, inject the corner with paste.
3. Apply an amount of acrylic wood filler to the corner tip that (as near as you can tell) equals the amount of original binder’s board that is missing. With a microspatula, manipulate the wood filler so that it begins to take the appropriate corner shape.
4. Finish up the corner repair by applying a suitable moriki patch over the corner (as described in section I.B.) and complete final shaping of the corner before the wood filler had dried completely.

**THE SPITBALL ALTERNATIVE**

In place of wood putty under the moriki corner patch, you can place a piece of pasted moriki that is wadded into an appropriately sized spitball. This works better for corners that lack a small amount of board. (Hurling spitballs at the instructor will get you expelled from class.)

**TIPS AND TRICKS**

For corners missing an extensive amount of board, apply the putty in stages allowing it to dry in between applications. Sand or file the dried putty as needed to bring it to the proper shape. For these larger fills, it is advisable to use a piece of thin binder’s board lined with waxed paper as the support onto which the putty corner can be formed. Place this binder’s board support against the endsheet side of the board, and rest the board endsheet-side-down in order to do the work. This will help you better control the course of more extensive repairs.
II. ENDCAP REPAIR FOR CLOTH COVERS

When a book is pulled from the shelf, all too often it is by its headcap. Damage to endcaps (whether the head- or tailcap) tends to lead down the spine or into the joints, so catching and repairing this damage early can be the key to preventing the problem from worsening. Most endcap tears can be suitably stabilized using moriki.

**Needed:**
- Wheat paste and PVA glue
- Moriki (pick a color that matches the binding or is slightly lighter in color)

II.A. *Repairing Endcaps with Extensive Damage:*

1. Pick a moriki that is as close as possible to the color of the original binding (or that can be suitably dyed).
2. Tear a lengthwise strip of moriki equal to the width of the endcap plus enough to overlap onto both the front and back cover boards by approximately ¼”. The width of the moriki strip should be large enough to cover the damage on the endcap plus be able to wrap over the endcap and extend ⅛” - ¼” to the inside of the endcap.
3. Apply a layer of paste and then a layer of PVA to the piece of torn moriki. The paste layer slows the drying time of the quicker-drying PVA (thus giving you more working time).
4. Support the book in an upright position (use weights for this).
5. Lay the strip (adhesive side down) on the outside of the spine, centering it from side-to-side while allowing ⅛” - ¼” of the strip to extend vertically beyond the endcap (or beyond where the endcap would be if it were complete—you may have to use your imagination a bit here depending on how damaged the original endcaps are).
6. Gently open the book while maintaining its upright position. First, using a microspatula and/or a bone folder, tend to the tissue that extends beyond the endcap by working it into the hollow spine area behind the endcap. Next, the moriki that extends beyond the sides of the endcap needs to be worked onto the boards. Last, there will be a tuft of moriki at the top edges of the boards that will wrap just to the inside of the boards. On this last step you must take care to be sure the moriki doesn’t overlap onto the endsheet pastedowns. Work paste onto the tissue of this repair with your finger after the moriki is in place.
7. Once you are satisfied with the results, let the repair work dry.
8. After the endcap is dry, tint the moriki as needed. If the repair covered any decorative lines on the spine, these can be re-tooled (see *handout “Tooling Lines at Head & Tail of the Spine”*).
Steps in Repairing a Damaged Endcap Using Moriki

Not Just a Bunch of Fluff

When using moriki to mend damage to bindings, usually the paper should be torn rather than cut. In tearing, numerous long, fluffy fibers are revealed along the tear line. This feature, characteristic of long-fibered papers such as moriki, is vital to the surprisingly durable repair work that can be done with this material.

During the application of adhesive to a torn moriki strip, try to coax the fibers outward to their full extension. These fibers will then be ready to grip onto the original binding wherever they overlap it. The benefit of doing this is twofold. First, these long fibers work themselves deeper into the original binding materials to a greater degree than a solid piece of moriki would, thus creating a very secure attachment between the original binding material and the repair material. Second, the long fibers are less substantial visually than would be a solid piece of moriki and the resulting repair is often quite unobtrusive, if not invisible.
II.B. Repairing Endcaps that are Slightly Bent or Lightly Tattered:

1. Tear a piece of moriki wide enough to extend across only the spine and tall enough just to cover the damage and still fold in to the inside of the endcap by a small amount.
2. Coat one side of the moriki strip first with wheat paste and then with a small amount of PVA.
3. Attach the moriki onto the outside of the endcap. If you can, bring the moriki up to a tooled line--this makes a good place to stop as it will make it hard to see the edge of the moriki repair. [Note: If you must extend the repair over a tooled line, consider tooling a new line where the original had been.]
4. Fold the moriki to the inside of the endcap. Use your microspatula, fingers, and bone folder to achieve the shape the book would have had before the deterioration occurred. Give the repair a light coat of paste. [Note: Looking at other similar books of the same period will help you to see what should be on the book if so much of the original is missing that you can't tell what it should look like.]

TIPS AND TRICKS

If the endcap is bent and deformed, but not torn, you can often remedy this with little intrusion on the binding. Apply some wheat paste (no PVA!) to the area of the endcap to be treated. Use your microspatula and bone folder to train the endcap to its correct shape. If the endcap is reluctant to keep its new form, add a narrow moriki strip (the color of the binding) to the INSIDE of the endcap to provide support. Use paste and a little PVA to adhere the strip. Be careful not to stretch the damp endcap to a taller profile than it was originally.

II.C. Repairing Endcaps with Tears that Extend into the Spine:

1. Tear a piece of moriki about ¼" wide and twice as long as the tear.
2. Coat one side of the moriki strip first with wheat paste and then with a small amount of PVA.
3. Attach the moriki onto the outside of the endcap, using any tooling or decoration present on the spine to help hide your repair work. [Note: If the repair strip will cover titling or significant decoration, attach the repair strip at a point above these features. The tear will be repaired from the underside (see next step) so you can sacrifice a little strength on the outside in this case.]
4. Fold the moriki to the inside of the endcap and work into position. Give the repair a light coat of paste.
III. SPLIT JOINT REPAIR FOR CLOTH COVERS

If the boards are not detached and the text is still well attached to the cover, it is often possible to stabilize a minor split in the outer joint area and thereby avoid or postpone more extensive restoration work. When there is a split in the joint, the headcap and tailcap are often damaged as well. On cloth covers, careful application of moriki tissue can many times create a suitable repair that looks good and is long-lasting, provided the book is used sparingly and gently. Usually it’s best to repair the endcaps prior to repairing the joints. When looking at a book, if you feel you ought to repair the joint(s) first and the endcap(s) next, try it in that order. Generally it works best to repair the joints after repairing the endcaps. [Note: Remember, if the boards are fully separated at the joint or are nearly so, this joint repair technique is likely to be inadequate as a repair. The repair technique described in “Reattachment of Boards for Loose Hollow or Tubed Bindings” from this workshop will remedy a loose board on a cloth binding as will the cloth reback which is taught in our “Advanced Cloth Binding Restoration” course.]

Needed:
- Wheat paste and PVA glue
- Moriki (pick a color that matches the binding or is slightly lighter in color)

III.A. Steps for Repairing a Split Joint where the Board is Still Attached:

1. To repair a split cloth joint, tear a strip of moriki to a length slightly longer than the split and wide enough to extend from the face of the board onto the spine by 1/8” or a little more. Tear the moriki rather than cut it to give a feathered edge that will blend into the original materials easier than would a cut edge.
2. Apply a layer of wheat paste to the moriki followed by a thin layer of PVA. PVA is a very grippy adhesive and also remains flexible even when dry. This characteristic is very important when moriki repair work is done in those areas of a binding (such as the joint area) that will need to stretch and flex when the book is opened and closed. Once the moriki is placed over the split, it is advisable to work wheat paste through the tissue using your finger.
3. Let dry fully. Before opening the book for the first time, moisten the joint area with a wet cotton swab, and as you flex the cover open, use your fingers and bone folder to establish the location of the joint.
4. Tone in with pigments as needed. (see handout “Dyeing and Toning of Cloth Bindings”).

QUICK TIP

If the split in the joint extends into the endcap area, plan to take the joint repair tissue to the beyond the endcap area and around to the underside of the joint. This gives a very secure repair in this area. Be sure not to make the underside extension so long that it protrudes onto the endsheet pastedowns on the inside.
If the dried moriki repair wants to lift away from the book cover, try applying heat. Use a tacking iron set to medium and press the repair back into place. If there is dry PVA under the repair in that area, the heat will reactivate it and make it stick. Use a piece of release paper between the tacking iron and the moriki (we retain and use the release paper from the back of heat-set tissue). Be sure to do a small test first to make sure the tacking iron won’t mar the binding, and, if it does, reduce the heat, use less pressure and/or apply the heat only for a very short time. If heat doesn’t make the repair stick, gently work some PVA under the lifted area (a microspatula or the edge of a rounded scalpel blade is useful for this) and let the repair dry under a fan, applying pressure to the area every few moments for the first minute to encourage the repair to stick.

We are often asked: Should I repair the corners first or last? Do I need to let the endcaps dry before I fix the corners? There are no hard and fast rules for these questions, but some general guidelines can be given that will help you in determining a sensible order for the needed repairs.

- If the inner hinges are loose and can be repaired by the method described in the handout “Tightening Loose Inner Hinges of Cloth Bindings”, leave this repair until last. The looseness of the inner hinge area will give you extra space in which to make repairs to the endcaps.
- As mentioned earlier in this handout, usually you want to repair the endcaps and then tend to any splits in the outer joint. We say “usually” here because you may find some books on which it makes more sense to repair the joints prior to any endcaps repairs. The more experience you have (hint: practice bookbinding just as you should have practiced your piano scales) the easier it will be for you to make this particular decision. It is worth noting that it can be helpful to repair the endcaps and joints in the same repair session, especially if the split joint extends into the endcap area.
- The corners can be repaired first or last. Repairing them first does get them out of the way and relieves you from realizing at the last moment that the corners of the book still need repairing. If you do repair them first, they need to dry completely before you move on to the other repairs. It’s all too easy to damage a damp corner when manipulating the book into a position where you can repair an endcap or a joint.
- However you choose to make your way through the needed repairs, it is absolutely necessary that your repairs be 100% dry prior to any dyeing or toning that you undertake.
Tips and Tricks

• If the original binding included a tooled line at the endcaps, this line may have been eroded by damage or it may have been masked by a moriki repair. If possible, when making a moriki repair to an endcap, try to end the moriki just short of the decorative line (this will help visually to hide the repair). If the original line has been obliterated, you may want to re-tool the missing line. Re-tooling a line can also serve to mask the edge of a moriki repair.

• If the moriki starts drying out while you’re still working with it on the book, apply a little paste to the outside of the moriki with your finger tip to help maintain its workability.

• If you open the cover of a book on which you’ve made a moriki repair and find that the moriki severs at the flexing point of the joint, simply add a small moriki patch over the split while the cover is fully extended. Allow this patch to dry completely with the book cover wide open. Once dry, slightly dampen the area and then ease the cover closed, all the while tending the area with a bone folder to help it achieve the proper final shape.

• Sometimes the damage to endcaps or outer joints extends beyond the immediate area of the endcaps or joints in a way that is advantageous for making moriki repairs. For example, if the endsheet pastedowns are coming away from the inside of the cover, it may be possible to work a portion of your moriki endcap repairs behind the lifted pastedowns. This will give a more secure repair than would otherwise be possible (obviously the lifted endpapers will need to be readhered in place once the moriki work is done and dry). Similarly, if the cover cloth is lifting on the boards along the joint, moriki in the joint might be eased under this cloth for a more seamless joint repair. In short, be alert for ways in which you might use damage within the binding as a location under which to anchor some of your moriki repairs. For the novice, at least, it is better not to attempt to lift original materials in order to create a space for a moriki repair, although after some experience is gained such methods may be used to enhance the look of the finished repair work.