

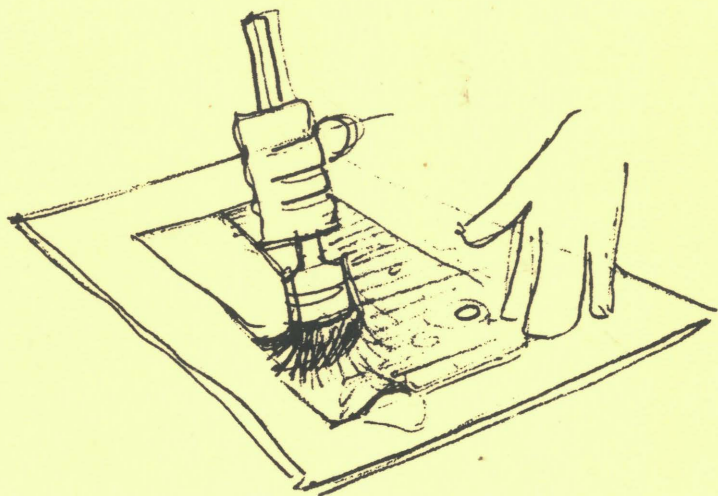
GUILD OF
BookWorkers



Summer 2006

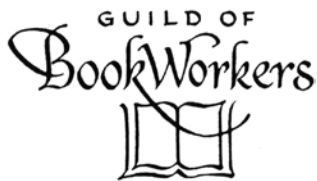
JOURNAL

VOLUME XLI • Number 1



Twenty-fourth
Standards of Excellence
Seminar

PROVIDENCE, RHODE ISLAND



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Bedford, Massachusetts

July 24, 2006

As the new general editor of the *Journal*, I would like to take this opportunity to express my thanks to the other members of the *Journal's* volunteer staff who have patiently and graciously helped me along this past year: Cara Schlesinger, Sylvia Ramos Alotta and Chad Johnson. In addition to their unflagging support, I had the cooperation of all the presenters at the Providence Standards Meeting, who responded promptly to the drafts of the articles sent to them. Pamela Barrios worked with Adam Larsson to be sure her text and sewing pattern diagrams illustrating the description of his seminar were accurate. Claire Grund also worked very closely with Mark Andersson to give a clear and careful account of this distinctive binding style. Cara Schlesinger did the same for Kiyoshi Imai. I attempted to do this for Nancy Southworth. Peter Geraty wrote a careful handout for his presentation, which has been abridged for the *Journal*. Sylvia Ramos Alotta drew a staggering number of detailed drawings for this issue, one of which graces the cover. Once again, I offer heartfelt thanks to all.

Finally, I would like to take advantage of my elevated position as general editor to dedicate this issue of the *Journal* to two people: my predecessor, Signa Houghteling, who has been a steadfast friend; and outgoing GBW President Betsy Palmer Eldridge, who has dedicated countless hours to preparing the Guild for its next century.

Dorothy C. Africa

24th Standards of Excellence Seminar

November 2004, Providence, Rhode Island

At the Standards of Excellence Meeting in Chicago in 1999 the Guild began a series of annual foundation sessions. These sessions are intended as "...comprehensive introductions to broad, general topics, given by instructors who are teaching in the field." The foundation session given at Providence in 2004 was by P.J. Saine, "Photographing Your Artwork." Mr. Saine exhibits his photography in galleries and museums, and lectures internationally. He is the author of *New Hampshire Rock Portraits*, Blue Plate Press, 2004. The video of this session is available through the Guild of Book Workers, as are videos of all sessions for the Guild Standards Seminars.

For further information see the Guild web site:
<http://palimpsest.stanford.edu/byorg/gbw>

THE CONSERVATION OF HISTORIC BINDINGS USING ADHESIVE AND NONADHESIVE METHODS

Nancy Southworth

Nancy Southworth is a book conservator in private practice in northern New Hampshire. She began her bookbinding career as an edition binder and then moved into conservation. In 1983 she interned at the Folger Shakespeare Library with Frank Mowery. As her interest in parchment conservation grew, she deepened her knowledge of the material by working with Abigail Quandt and the late Barbara Giuffrida. She now works primarily on parchment bindings and manuscripts for university libraries and private collections.

The seminar was given in two parts. The first part of the session was a presentation of various techniques used to address the common problems presented by these parchment bindings, both limp and hard board. After the break a series of slides provided discussion points for how these various treatments were used in specific instances. In this seminar the term “parchment” was used as a general term, whether the specific material was goat, calf or sheep skin. The seminar did not address repairs of manuscript folia or illuminations.

Nancy Southworth began her presentation with a brief exposition on the structure of parchment and how this is created in the process of its manufacture. In particular, the stretching of the skin reorganizes the arrangement of collagen fibers in the skin. This alignment of collagen fibers accounts for some of the sensitivity of parchment to moisture and humidity. These factors must be kept in mind when storing and repairing parchment, and also account for the kinds of damage frequently seen in parchment bindings.

As a private conservator, Nancy does work for both institutions and private individuals. She always begins her treatment of any book with a concise written assessment of its condition and a proposal for treatment. One copy goes to the owner of the book; the other is retained in her files for future reference. She has found these records to be a valuable resource for recalling previous treatments in evaluating and proposing new work.

She organized her survey of common treatments by distributing an outline on repairs and materials upon which she based her presentation. The first step in the process is usually a surface cleaning of the parchment covering. Surface dirt should be removed mechanically, without the introduction of moisture. This is done with pieces of dry eraser, moving with a gentle circular motion. She recommended a Mars plastic or vulcanized sponge eraser for this, but other kinds are also available. For more deeply embedded dirt, it may be necessary to use a cotton swab (roll-your-owns are cheaper) moistened with saliva or thick methyl cellulose. Avoid areas that are lettered or decorated since they may be damaged in the cleaning process. Not all covers should or need to be cleaned.

Frequently, parchment bindings have warped, cockled and/or shrunk over time. Since the material is moisture-sensitive, it is sometimes possible to remedy these problems by rehumidifying and stretching the parchment. If the binding can be removed from the text without damage this is easier to do, but humidification can be done in situ. Bear in mind that it can be difficult to replace a text block in its cover, especially after treatment. If the text is not removable, it can be wrapped in plastic wrap to protect it while the cover is humidified. To treat the parchment cover alone, Nancy advised layering it in a “sandwich” of moistened blotter and Reemay in a loosely sealed plastic bag. To avoid excessive moisture in the blotters, Nancy suggested putting a wet blotter between two dry ones and nipping them in a press. This will drive sufficient moisture into the two outer blotters. Weight should not be applied to the plastic bag, and the parchment should be checked about every five minutes. Nancy sets a kitchen timer to make sure she doesn’t forget, since it is important that the parchment does not become too wet. Another possible method is to put the parchment on a rack over some water in a photographic tray with a glass or Plexiglas sheet over the top. Care must be taken in this instance that vapor doesn’t condense on the underside of the covering sheet and drip on the parchment.

When the parchment feels sufficiently humidified, and only experience will define this, it can be stretched by drying it on a suction table or by pinning it out. Nancy described how to make a board for the purpose out of soft, porous composite building material painted on both sides. If there are tears in the parchment they should be mended, even if only temporarily, before stretching. The parchment is gently stretched by applying bull dog clips padded with mat board around the edges and fixing the clips to the board with pins made by embedding binder’s needles in

pieces of wooden dowel. The pins are inserted at an angle and the drying parchment will gradually pull the pins upright. It may be necessary to repeat the humidifying and stretching process a couple times, and there is a limit to how much shrinkage can be reversed. When dry, the material should be allowed to reacclimatize under weight for about a week. Nancy said she tries to keep the relative humidity in her work area at around 55%. If the work area is excessively dry or humid the parchment will be difficult to handle in treatment, and subsequent distortions may occur. Hardcover parchment bindings can also be humidified in a damp pack or humidity chamber. They should be dried under weight. If the book boards have warped, they can be stabilized by applying linings of Tengujo or Kizukishi Japanese tissue either over or under the pastedowns.

Mending tears and losses in parchment covers employs a number of materials and methods. Tears can be repaired mechanically by sewing them closed with parchment strips or thread, or by using adhesive to apply Japanese tissue. Patches of parchment can also be applied with either sewing or adhesive. Nancy prefers sewing for large mends, but noted that conservators differ in their preferences. Parchment can also be backed mechanically by tacketing conservation cotton, parchment, or alum taw linings behind it, or using adhesives. The same materials can be used for rebacking if needed. Toned and tinted Japanese tissue backed with conservation cotton can also be used for patching and reinforcing. The choice of method and selection of materials and adhesive depends on the condition of the piece and the wishes of the owner. Some people find mechanical repairs aesthetically jarring, but they avoid the cockling and puckering adhesive repairs can cause and they will last much longer than adhesives. Nancy uses Jade 403 PVA and Zen Shofu wheat starch paste most often in her work. Gelatin size is also commonly used by conservators.¹

Losses to the cover parchment can be addressed either by backing the material, or by filling in the area with layers of Japanese tissue. The fills can be left plain, or toned using dyes, acrylics, or pastels to minimize their visual impact. Layers of fill are built up gradually. Use a micrometer to check the thickness of the repair so it does not exceed the thickness of the parchment cover. Nancy recommends constructing a fill slightly thinner than the parchment, because if the repair is weaker than

1. Barbara Giuffrida wrote an excellent description of these mending techniques in Part Four: The Repair of Parchment and Vellum in Manuscript Form for the Book Conservation Workshop Manual. It was published in *The New Bookbinder*, vol 3, 1983. See also an article by Anthony Cains, "Repair Treatments for Vellum Manuscripts," *The Paper Conservator*, vol. 7 (1982/83).

the original, it should fail under stress before the original material sustains further damage. Three layers of fill are often enough. The first layer extends well beyond the underside of the surrounding parchment, the second butts up to the edge of the loss area, and the third extends about one eighth of an inch over the top surface. The fill is dried under weight and then toned, if desired, and sealed by a light application of Klucel-G or methycellulose. Nancy recommended the use of acrylic and pastel for small areas. The colors she finds most useful in her work are burnt and raw sienna; burnt and raw umber; yellow, green and golden ocher, and titanium ecru.

If the book spine is accessible, it should be cleaned with methyl cellulose or paste and relined with Japanese tissue or cotton cloth. Nancy recommended the use of Kizukishi or Sekishu for tissue linings. She uses slotted linings in cases where reattachment of the cover is needed. If the lacings are being repaired, relacing through the lining can reinforce fragile or patched areas of the cover. If the endbands need to be stabilized, they can be secured with paste and Japanese tissue, and anchored with thread sewn through the lining as well. Nancy noted that it is often necessary to patch parchment covers in areas around laced supports, and at the head and tail of the spine. If the original supports need replacement or reinforcement, Nancy uses slips of tawed skin or parchment, or rolled Japanese tissue secured by whip stitching with a curved needle. Sometimes there is room to slip the reinforcement under the original sewing over the original core. Care must be taken not to make the supports too large to fit back into the cover. The same materials are used for new endband cores, if desired. Nancy uses toned linen thread to sew back bead primary endbands and does not usually add a decorative secondary one for conservation work.

In many cases the pastedowns and end sheets in these bindings also need repair or replacement. Nancy observed that these end sheets were usually hooked, and it is important for the conservator to note the direction of the hook if the end sheets are going to be remade. Pastedowns should be lifted dry if possible, but various wet methods can also be employed. Soiled and torn pastedowns can be washed and repaired or lined with Japanese tissue and paste before being replaced in the book.

Often part of the treatment of fragile parchment bindings is the construction of a suitable enclosure to protect the book. Given the tendency of parchment bindings to curl and flex, boxes can include a special flap to put pressure on the cover when the book is closed. However, pressure

flaps can increase stresses on the spine area of the book, which should be considered when such a book is to be boxed.

The slides that Nancy used for the seminar illustrated the use of these techniques and materials. They generated much discussion among the audience about the various kinds of choices that must be made in treating these books, and the trade-offs that must be considered. Those in the audience with experience treating parchment bindings offered comments and suggestions from their own work.

Written by Dorothy Africa

MEDIEVAL LIMP VELLUM/LEATHER BINDINGS

Adam Larsson

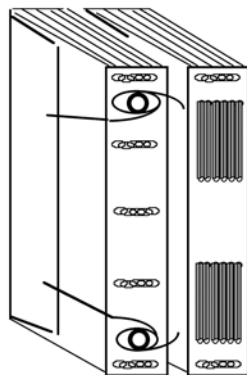
Adam Larsson was trained in traditional Scandinavian and French binding technique, as well as in book and paper conservation. He has worked as a book conservator at Uppsala University Library since 1992. Adam has taught and lectured on Scandinavian bookbinding and historical techniques for the past several years.

INTRODUCTION

In 1620, recently closed Swedish monasteries provided King Gustav II Adolf with manuscript collections that he used to found the University Library in Uppsala in Sweden. The University Library has a collection of more than 60,000 manuscripts, about 1000 of which are medieval. Roughly half of these are from Vadstena, the original monastery of the order founded by Saint Birgitta of Sweden in 1370 and inaugurated in 1430. Shelf marks and handwritten notes from nuns and priests aid in the determining the provenance of these volumes. The library believes that a few volumes taken from Vadstena were bound there.

Mr. Larsson presented slides of a group of about 30 bindings from the manuscript or “C” Collection of the University Library. All are bound with vellum covers and rigid spine plates. The signatures are sewn together with the cover and plate. These bindings are commonly small, religious texts measuring approximately 4 x 6 inches and containing 6-15 signatures, each signature generally consisting of 4 folios, mostly paper. Inner and outer folios of vellum were added to earlier signatures to protect the sewing, and in later volumes, vellum guards replaced the vellum folios. There are no title pages or endpapers. There is little decoration of the text or the cover.

Mr. Larsson demonstrated two systems commonly used to sew the rigid spine to the vellum cover and signatures. The first method creates visible rows of link stitches on the back of the rigid spine. The second leaves exposed thread on the back of the spine that is protected with additional thread woven over



and around it. This weaving also serves to tighten any sewing that might be loose.

The covers are made of coarse vellum or leather. In some cases there are several layers of vellum making up the cover, which is usually cut flush with the head and tail. Most of the volumes have fore-edge flaps. Turn-ins are not glued or sewn, but merely folded. Ties of sturdy thread are heavily waxed and sewn to the fore-edge flaps. The thread used for the ties would be wound around buttons attached to the rigid spine before it was sewn to the cover and signatures.

The materials traditionally used for the rigid spine plate in these bindings were horn, laminated leather, and wood. Only a few of the wooden spines have survived in the University Library because the wood tended to deteriorate and split. The one example of a wooden spine plate shown in the slides was covered on both sides with leather. The horn and vellum have aged well, although it is difficult to identify the type of animal from which they originated.

Mr. Larsson chose to use wood for our demonstration. The wood must be hard to reduce splitting and make it possible to drill the sewing holes. Any vellum can be used for the cover, but he often uses reindeer vellum from Finland, where it is produced for historic drumheads. He sewed with a number 12 linen thread.

The informational slide show illustrating the many variations of the basic techniques in the historical examples of these bindings, and Mr. Larsson's demonstration of some of the sewing patterns used in these intriguing structures, left the audience with an appreciation of medieval methods and a desire to learn the techniques. Instructions follow.

PREPARING THE SPINE AND SIGNATURES

For both the link stitch and the long stitch

The number of sewing stations will vary from the link stitch to the long stitch, but the preparation for both is the same. Signatures are folded and stacked, and the width for the rigid spine plate is measured. The signatures are not severely compressed, but held in the hand at the fore-edge for measuring. This allows the leaves to move more freely after the book is sewn. Holes are first drilled or punched in the spine plate to correspond with each sewing station, but only one row of holes is drilled for every 2 signatures. The spine is then used as a template for the cover and the signatures. All holes in the cover and signatures are prepunched.

ABOUT THESE INSTRUCTIONS

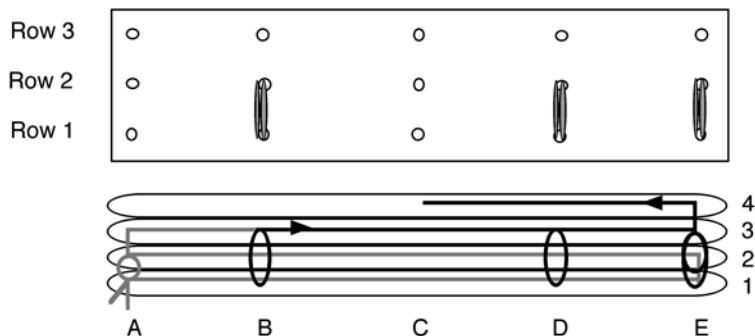
The sewing stations are marked with capital letters. Rows and signatures are marked with numbers. In practice, the cover is sewn onto the signatures with the spine plate, although, to avoid confusion, the cover does not appear in the diagram.

CONSTRUCTING THE LINK-STITCH

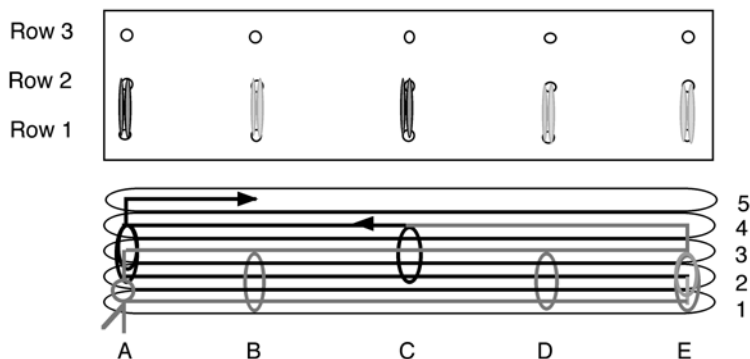
- The signatures are marked for sewing at 5 stations. A and E are kettle stations. B, C and D are equidistantly spaced between the kettles.
- One row of holes is drilled into the spine for every 2 signatures, corresponding to the sewing stations.
- It is convenient to have an even number of signatures.
- The first 4 signatures establish anchor stitches for links along the spine plate.
- The next 2 signatures establish links to the anchor stitches.
- The sewing then follows an easy pattern.



1. Enter signature 1 at kettle station A.
2. Exit kettle station E.
3. Climb to signature 2 at kettle station E.
4. Exit kettle station A.
5. Link with the beginning thread.
6. Enter signature 3 at kettle station A.
7. Place the spine plate and cover over the signatures.

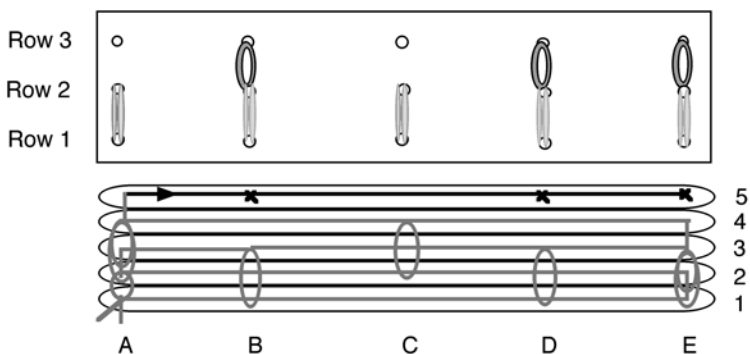


8. Exit signature 3, spine row 2, sewing station B.
9. Cross over the spine into spine row 1, signature 1, sewing station B.
10. Circle the thread in signature 1, exit signature 1, spine row 1, sewing station B.
11. Reenter spine row 2, signature 3, sewing station B, travel to sewing station D.
12. Exit signature 3, spine row 2, sewing station D.
13. Cross over the spine into spine row 1, signature 1, sewing station D.
14. Circle the thread in signature 1, exit signature 1, spine row 1, sewing station D.
15. Reenter spine row 2, signature 3, sewing station D, travel to kettle station E.
16. Exit signature 3, spine row 2, kettle station E.
17. Cross over the spine into spine row 1.
18. Make a kettle stitch beneath the cover with the existing thread between signatures 1 and 2.
19. Reenter spine row 2, signature 4, kettle station E, travel to sewing station C.

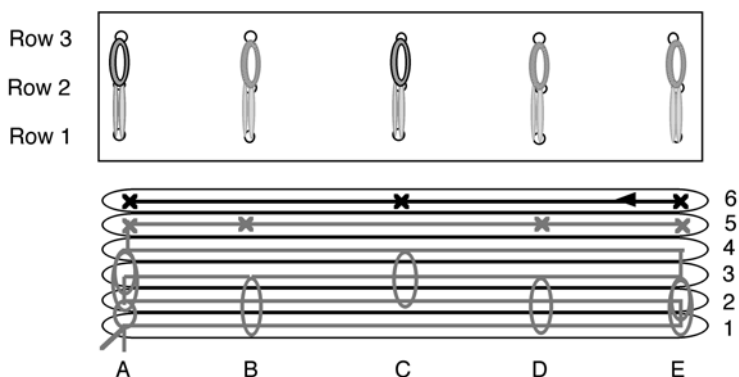


20. Exit signature 4, spine row 2, sewing station C.
21. Cross over the spine into spine row 1, signature 2, sewing station C.
22. Circle the thread in signature 2, exit signature 2, spine row 1, sewing station C.
23. Reenter spine row 2, signature 4, sewing station C, travel to kettle station A.
24. Cross over the spine into spine row 1, kettle station A.
25. Make a kettle stitch beneath the cover with the existing thread between signatures 2 and 3.
26. Exit spine row 1, kettle station A.
27. Reenter spine row 2, enter signature 5, kettle station A, travel to sewing station B.

There is now a row of anchor stitches on the spine, each corresponding with a sewing station. From this point, kettle stitches and links are made on the outside of the spine plate.



28. Exit signature 5, spine row 3, sewing station B.
29. Cross over the spine to link with the anchor stitches at station B.
30. Reenter spine row 2, signature 5, sewing station B, travel to sewing station D to exit.
31. Cross over the spine to link with the anchor stitches at station D.
32. Reenter spine row 2, signature 5, sewing station D, travel to kettle station E to exit.
33. Cross over the spine to link with the anchor stitches at kettle E.

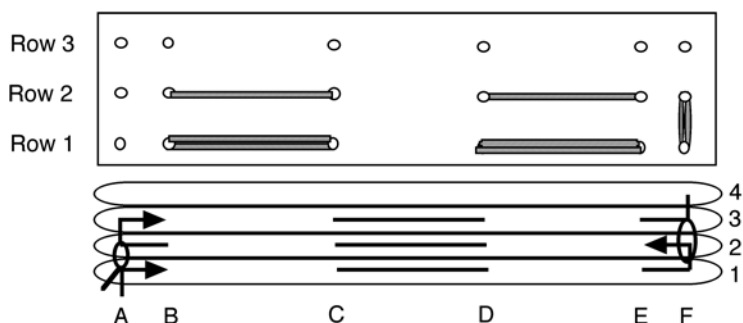


34. Enter signature 6, spine row 3, kettle station E, travel to sewing station C.
35. Exit signature 6, sewing station C, spine row 3.
36. Cross over the spine to link with the anchor stitches at sewing station C.
37. Reenter spine row 3, signature 6, sewing station C, travel to kettle station A to exit.
38. Cross over the spine to link with the anchor stitches at kettle A.

Continue this pattern for the rest of the signatures. Link odd-numbered signatures at stations at B, D and E. Link even-numbered signatures at C and A. To finish, reenter the last kettle spine hole and the last signature and tie onto the existing thread.

CONSTRUCTING THE LONG-STITCH

- The signatures are marked for sewing at 6 stations. A and F are kettles. Stations B and E are quite close to the kettles; C and D are equidistant between them.
- One row of holes is drilled into the spine for every 2 signatures, corresponding to the sewing stations.
- Each row of holes is sewn through twice.
- Anchoring stitches are established at the kettle stations between spine rows 1 and 2.



Signature 1

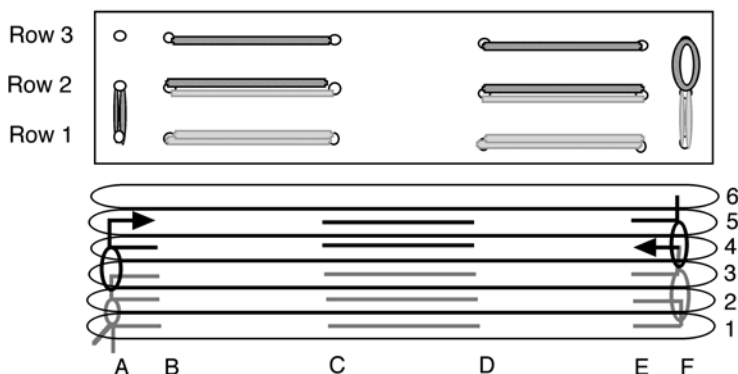
1. Enter signature 1 at kettle station A.
2. Exit signature 1 at sewing station B.
3. Place the cover and spine plate over the signatures.
4. Exit row 1 of the cover and spine plate at sewing station B.
5. Reenter row 1 of the spine plate and cover and sig. 1 at station C.
6. Exit sig. 1, row 1 of the cover and spine plate at sewing station D.
7. Reenter row 1 of the spine plate, cover and sig. 1 at sewing station E.
8. Exit the kettle station F of signature 1, but not the cover or spine plate at kettle station F.
9. Enter signature 2 at kettle station F.

Signature 2

10. Exit sig. 2, row 1 of the cover and spine plate at sewing station E.
11. Reenter row 1 of the spine plate, cover and sig. 2 at sewing station D.
12. Exit sig. 2, row 1 of the cover and spine plate at sewing station C.
13. Reenter row 1 of the spine plate, cover and sig. 2 at sewing station B.
14. Exit signature 2 at kettle station A, but not the cover or spine plate.
15. Tie onto the thread from signature 1.
16. Enter signature 3 at kettle station A.

Signature 3

17. Repeat steps 2–6 with signature 3, spine row 2.
18. Exit sig. 3, row 2 of the cover and spine plate at kettle station F.
19. Cross over to row 1 of the spine and cover and enter between signatures 1 and 2 to make a kettle with the existing thread.
20. Exit row 1 of the spine and cover.
21. Reenter row 2 of the spine and cover.
22. Enter signature 4 at kettle station F.

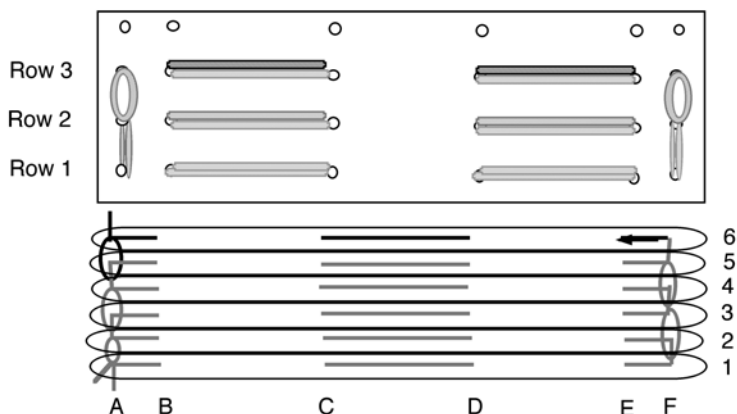


Signature 4

23. Repeat steps 9–12 with signature 4, spine row 2.
24. Exit sig. 4, row 2 of the cover and spine plate at kettle station A.
25. Cross over to row 1 of the spine and cover and enter between signatures 2 and 3 to make a kettle with the existing thread.
26. Exit row 1 of the spine and cover.
27. Reenter row 2 of the spine and cover.
28. Enter signature 5 at kettle station A.

Signature 5

29. Repeat steps 2–6 with signature 5, spine row 3.
30. Exit signature 5, and row 3 of the cover and spine plate at kettle station F.
31. Cross over to row 2 of the spine plate
32. Link with the anchor stitches on the outside of the spine.
33. Reenter row 3 of the spine plate and cover.
34. Enter signature 6 at kettle station F.



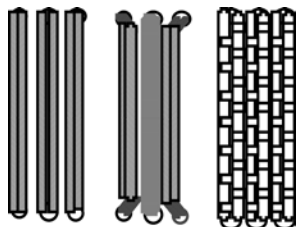
Signature 6

35. Repeat steps 9-12 with signature 6, spine row 3.
36. Exit sig. 6, and row 3 of the cover and spine plate at kettle station A.
37. Cross over to row 2 of the spine.
38. Link with the anchor stitches on the outside of the spine.

Kettle stitches will now be made on the outside of the spine. Continue the pattern for rest of the signatures. To finish, reenter the last kettle spine hole and the last signature and tie onto the existing thread.

WEAVING

As the purpose of the weaving is to protect the thread, any pattern that accomplishes this can be used. The pattern can be started at any point along the width of the spine, close to the kettle. The thread is anchored by a knot inside any signature and exits to the outside of the spine.



- The most common weaving pattern is pairs of thread braided together with a figure eight.
- A pair of braids may be linked by a center braid.
- An overall weaving pattern can also be used.

Written and illustrated by Pamela Barrios

HALF-LEATHER TRADE BINDING

Mark Andersson

Mark Andersson worked in archives for four years before leaving to attend the bookbinding program at North Bennet Street School. After graduation he worked at the University of Washington for four years. He was then a Fulbright Scholar in Sweden studying Scandinavian bookbinding and conservation practice. He returned to the North Bennet Street School to teach bookbinding and has been there since 1998.

PREFACE

This presentation was on a binding I was shown by my friend Bosse Carlsson, with whom I worked while in Sweden. Bosse was an apprentice-trained binder with enormous talent who did these bindings while he ran his own bindery in Uppsala during the 1970s. He was very generous with his time and it was great fun working with him, always with a lot of laughs. I was attracted to the binding because of its practicality, and because of how different its approach was from my training. It was also a lot of fun to execute, and can easily be modified and altered without changing the basic structure and philosophy. It's also a good way to work on leather paring, both with a paring machine and a paring knife. I need to thank Bosse for his generosity; Claudia Constanzo who did the prep work for my presentations and created my endsheet overview, and did a great job as always; and Claire Grund, of course, for writing this summary. Thanks to all.

–Mark Andersson

Hooked End Sheet Construction

Mark started off by showing us a completed example of the hooked end sheet he was going to be demonstrating. The hooked end sheet is simply a made fly leaf with a leather hinge on the inside and with kraft paper and super on the outside, attached to the hook.

Mark used a piece of Swedish marbled paper and Mohawk vellum to create the end sheet. Though he usually glues up the lighter of the two materials, he recommends always testing out a small piece whenever working with new or unfamiliar materials. He stressed the usefulness of mock-ups, saying that “there is no shame in trying out smaller things so

that you don't ruin larger things." In this case, since the Mohawk vellum is the lighter of the two materials, he cut it down so that it would also be smaller than the marbled paper. Had it not been an option to cut down the vellum, Mark recommended using silicone release paper to prevent the exposed glued areas from sticking to the press boards.

To glue up the Mohawk vellum, Mark used a 60/40 mix of PVA and methyl cellulose. He glued up the vellum quickly, starting from the center and working out towards the edges of the paper. Once glued up, he placed the vellum down on the marbled paper and quickly gave them a nip. This paper should ideally be left under weight for a few hours until fully dry.

At this point in his presentation, Mark took a moment to stress the importance of working quickly and of nipping a correct amount of time. If you over-nip, you risk adhesive being pushed through the paper; if you don't nip enough, the paper will likely wrinkle and not lie flat.

Working on a binders board surface, Mark folded the paper into a single folio section, keeping the marbled paper on the interior of the fold. According to many Scandinavian bookbinding books, the hook is traditionally 5-6 mm wide. He used a ruler to measure 5 mm in from the spine fold, then folded the hook over with a bone folder. The leather hinge will be placed inside this hook (see Illustration A).

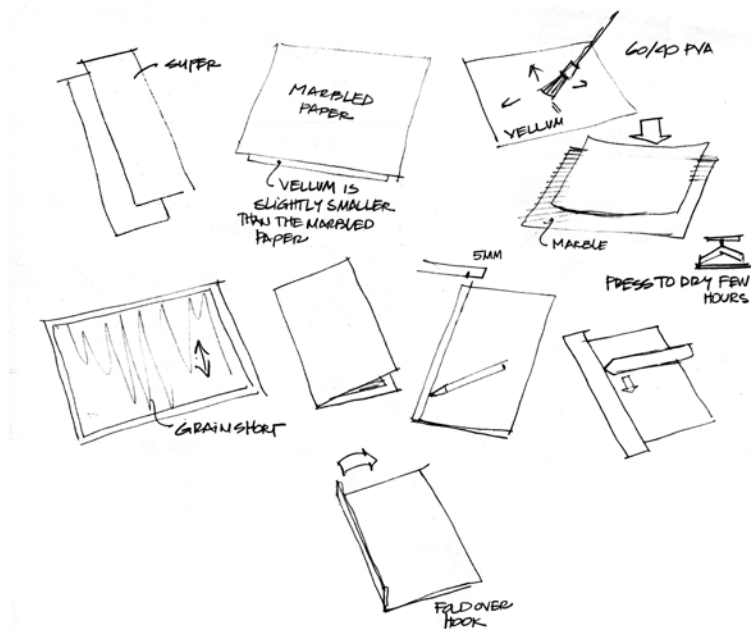


Illustration A: End Sheet Preparation

Creating the Leather Hinge

To pare down the leather, Mark used the new P&S leather paring machine. (Bosse just used his German paring knife for this, and all other paring in this binding.) In determining how much leather to pare, Mark made sure to pare a piece large enough for both hinges. He pared the leather so that it would approximate the thickness of his desired turn-ins. To determine thickness, he folded the leather in half and pinched it between his fingers. He then cut the piece in half to make the two hinges. Working on a litho stone, Mark used his French knife to edge-pare the 5mm that will extend into the hook. Carefully pared leather will reduce the thickness of the hook.

While working with the leather, Mark answered a number of questions from the audience. When asked by an attendee how big the leather hinge should be, he said that it simply needed to be large enough to sit in the hook and extend past the board edge, where it will disappear under the doublure. However, for those still itching for a more specific answer, the leather he used appeared to be about 20-25 mm in width. When asked why he didn't just use a micrometer to gauge the thickness, he affectionately referred to micrometers as the equivalent of training wheels. Though he admits that micrometers are invaluable when teaching someone how to gauge thickness, he thought that ultimately it was most desirable to be able to distinguish thickness by hand.

He now reversed the fold of the end sheet so that the vellum was on the interior of the fold. Brushing a small amount of PVA onto the hook, he carefully opened the end sheet so that it was flat, and then attached the leather hinge to the hook. As a reminder, it is the pared edge of the hinge that is being glued down. Since the sewing and the hook will ultimately hold the hinge in place, only a very conservative amount of PVA is needed.

Once the leather hinge was in place, Mark lightly nipped the end sheet, then re-folded it so that the vellum was once again on the exterior. He used a bone folder to reinforce the fold of the hook.

Creating the Board Attachment

For this hooked end sheet, Mark chose to make the board attachment out of super and kraft paper, placing the super down first, then the kraft paper. Both should stop approximately 1mm in from the hook edge. To attach the super, he first masked out the area with scrap paper, then brushed PVA directly onto the hook. (He chose to PVA the hook rather

than the super because the super is so porous.) He used his thumb to wipe away excess PVA before boning the super onto the hook. He also used PVA to glue out the outer 4mm of the kraft paper and then placed it down directly on top of the super. Opening up the end sheet so that the vellum faced up, Mark lightly nipped the end sheet again. The end sheet should be left under weight until fully dry (see Illustration B).

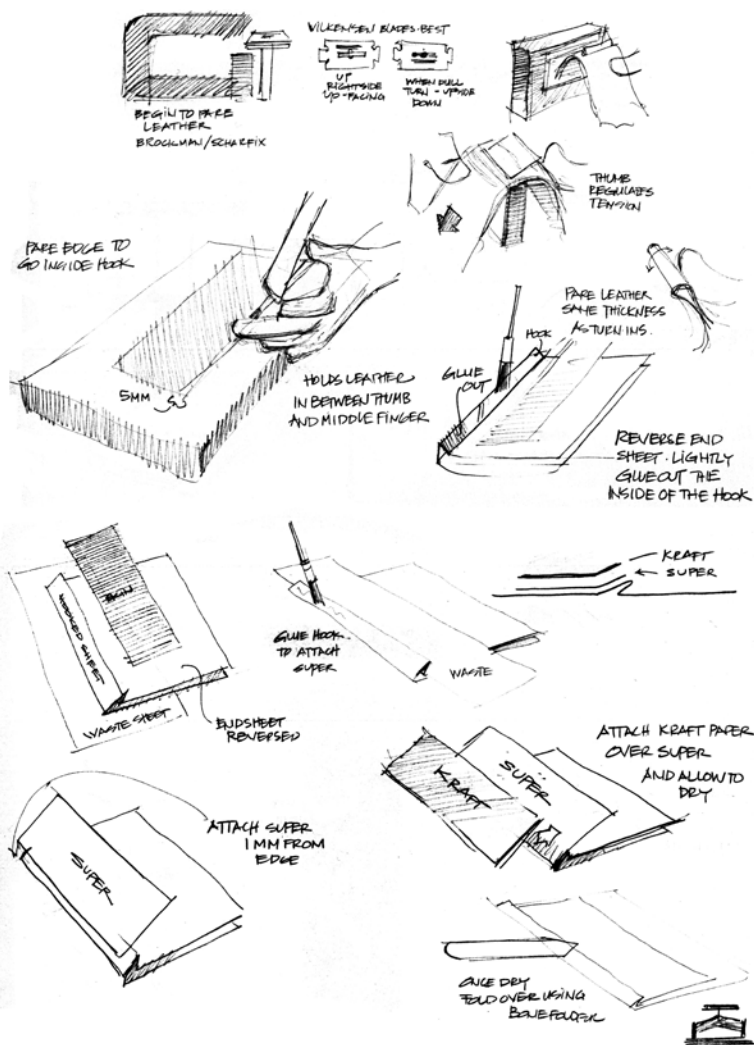


Illustration B: Leather Hinge and Attachment

Text block preparation

The demonstration text block was made up of twelve 3-folio sections of Mohawk Superfine paper. Mark trimmed the head and tail of the end sheets when trimming the text block, but did not trim the fore edge of the end sheet until after the book was sewn. This is because the hook forces the fore edge of the outer sections out requiring them to be trimmed, and it just makes sense to trim the end sheet fore edge at the same time. Officially, these books would have been trimmed in a guillotine.

To lay out and punch the sewing stations, Mark created a jig out of 20-point board. To make the jig, he drew a straight line down the 20-point board, and marked the head and tail boundaries of the text block on it. He wanted to have four sewing stations (disregarding the kettles), so he used a pair of dividers to divide the distance into five roughly equal parts—"roughly equal" because the stations should be slightly justified to the head, leaving the distance between the lowest sewing station and the tail about $\frac{1}{4}$ " larger than the others. Having figured out the distance with the dividers, he pencil-marked the location of the sewing stations on the jig, also marking the kettles about 8mm in from the head and tail. With a ruler and bone folder, he scored the 20-point along the line, folded it over on itself, and cut the edge of the jig flush with the head of the text block, leaving the jig long at the tail. He then placed the jig in the punching trough and used a pin vice to mark all the sewing stations, including the kettles.

For the covers, Mark cut two pieces of binders board to the head and tail height of the text block. He removed the hooked end sheets and sandwiched the text block between the pieces of binders board, being careful to jog it up to the spine and head. Placing the text block spine up in the lying press and using the 20-point jig, he transferred the sewing station locations onto the text block, tracing them across with a tri-square. Mark used an English dovetail saw to cut into the text block at the four sewing stations (not the kettles!) He planned to sew the text block on 8/6 cord; therefore he only sawed deep enough to allow the cord to sit either flush or slightly proud of the spine. When he first started sawing, he held the saw perpendicular to the spine. Once he made enough of an impression to prevent the blade from slipping, he angled the blade about 45 degrees to enlarge the hole, without enlarging the opening. The illustration nicely shows the trapezoidal shape of the holes. After sawing through the four sewing stations, Mark used an Olfa knife to slit in the kettles. He then removed the text block from the lying press.

To transfer the sewing stations over to the end sheets, Mark once again turned to the punching trough. He placed the first section into the hook of the end sheet and then punched the holes through with a pin vice, angling them in towards the hook so that the holes would not be seen on the leather hinge. He repeated the same process with the last section and hooked end sheet. He then punched a secondary hole approximately 1 cm away from each of the four sewing stations. The purpose of this is to give the thread more to hold on to in the sewing. It is irrelevant whether the holes are all punched towards the head or tail. Note that this is only done on the end sheets and the sections within them, not on the entire text block!

With all the holes punched, Mark returned the end sheets and seated sections to the text block. He sewed the text block on 8/6 cord, using a portable sewing frame called the All-Ligator. The All-Ligator was invented by Per Cullhed, a colleague of his in Sweden. The All-Ligator's size, ease of use, portability and ability to maintain tension are some of the reasons why Mark prefers it over sewing on a traditional sewing frame.

The text block was sewn just as a book would be sewn on linen tapes. Mark used waxed, 25/3 linen thread for the sewing. He restated the need to really bone down during sewing and to err on the side of using a thinner, rather than thicker, thread. Too much swell is a common problem when sewing this kind of structure, due to the thickness of the hook. To add more thread, he used a weaver's knot, tying off on the inside of the sections.

Rounding and Backing

Placing the text block face down, spine slightly over the edge of the work bench or a press board, Mark used hide glue to glue up the spine. Once glued up and squared, he trimmed back the end sheets and the seated first and last sections so that the fore edges were even with the rest of the text block. He then marked the shoulders on the text block using a small pair of dividers and a pencil. With the text block sandwiched between binders board, board edges flush with the shoulder marks, Mark then placed the text block spine-up into the lying press for rounding and backing. He used hide glue to attach machine-made end bands and a spine lining of cotton felt. The cotton spine lining was glued on felt-side down (see Illustration C).

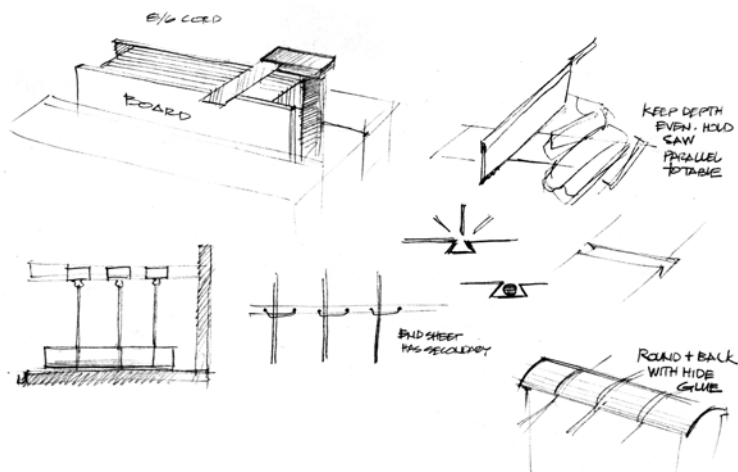


Illustration C: Making the Text Block

Attaching the Covers

Mark cut binders board for the covers, leaving them long on the fore edge and about 1mm or less proud of each end band. He used his French knife to cut back corners, making them slightly larger than normal to accommodate for the thickness of the leather he will be covering with. Placing the text block between the covers, he squared everything up and marked the cord location on the outside of the binders board. Removing the binders board and using an Olfa knife, he made small slits only through the kraft paper in order to pull the cords through. With the cords now sitting between the super and the kraft paper, he placed a scrap piece of board between the cords and the super and cut the cords back to a length of approximately 1". Starting about 3 mm past the shoulder, he splayed the cords out with a pin vice and then lightly thinned them using an Olfa. The reason for starting 3mm past the shoulder is so that the cords retain their full thickness as they come out over the shoulder.

With the binders board covers in place and squared to the text block, Mark pasted out the outside spine edge of the binders board cover to a distance approximately equal to that of the cord length. Using his bone folder, he splayed the cords out onto the cover, taking care that they were evenly splayed down. He then brushed paste onto the board again, this time extending just slightly past where the splayed cords end. He smoothed the kraft paper down and then repeated the same process on the other cover. Once dry, he folded the kraft paper back just shy of where the cords end, and tore off the excess.

To cut the fore edge of the covers, Mark brought out a Swedish tool called a *formeringslinjal* (pronounced *for-mare-ing-lin-y'all-er*). Basically a series of square rules with differing widths of the small end of the "L," it is used to determine the head and tail square so that it can be easily transferred to the fore edge. Once Mark found a measurement that matched his existing head and tail square, he positioned it on the fore edge of the text block and traced the boundary with a pencil. He used the Kuttrimmer to make the final cut (see Illustration D).

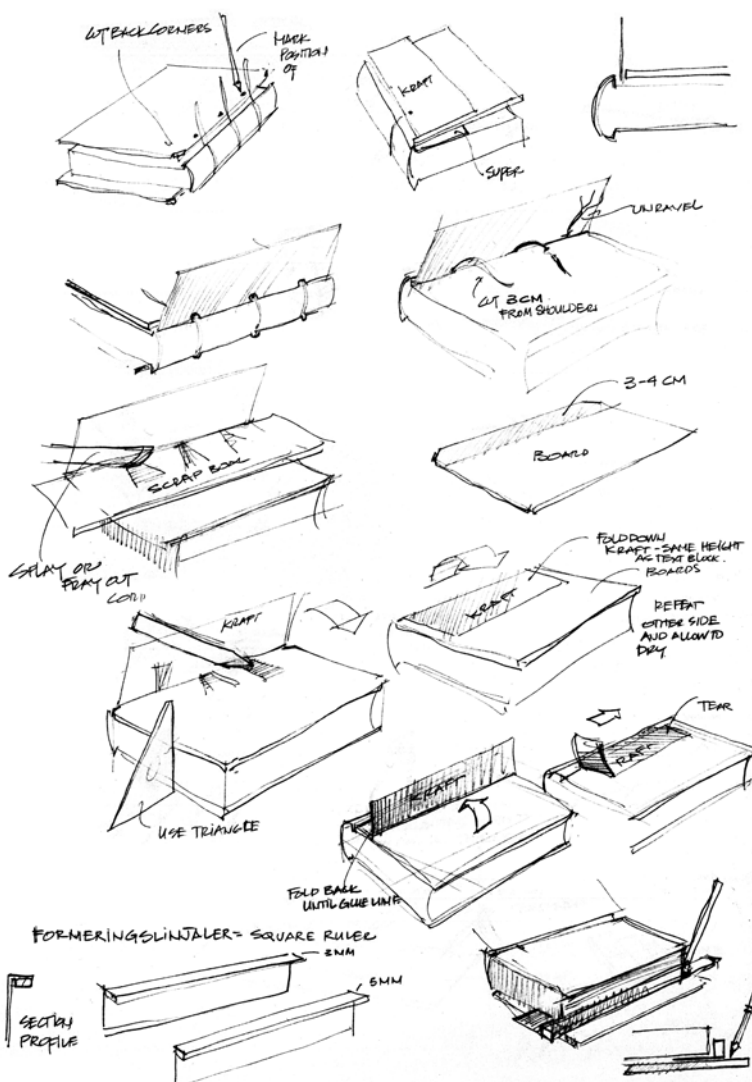


Illustration D: Board Attachment

Creating the False Raised Bands

With the covers in place and cut to the final size, Mark placed the book in a lying press and cut a 10-point spine strip to the height of the boards. These bindings did not usually have “barts.”¹ This spine strip is what Mark uses to attach the false raised bands, which he makes with full thickness leather, cut with a spring gauge. The thickness, placement and number of false raised bands are purely aesthetic. He used a tri-square to draw the layout onto the spine strip, then glued the leather strips down with PVA, purposefully leaving them oversize so they hung over both sides of the spine strip. He used the tri-square again to insure that they were straight. Once dry, he cut the excess leather off with his French knife, trimming the bands at an angle to create a nice transition between the spine and the covers.

Leather Preparation

Measuring off the book, Mark created a paper template from which to cut the leather. He accounted for an extra cm or so at the head and tail for the turn-ins. He traced the boundaries of the template onto the leather and cut it out with scissors. Centering the spine strip on the leather, he marked the boundaries with a white grease pencil and then, placing the spine strip to the side, edge-pared the entire piece with his French knife. He went back and pared more aggressively along the head and tail, starting the pare just slightly inside the spine strip boundaries. Keep in mind that the turn-ins should be the same thickness as the leather hinge. Where the leather extended onto the covers, he feathered out the edge so that it would be a very subtle and smooth transition from the leather to the board.

To thin out the joints, Mark laid the leather over a wooden dowel and lightly sanded over the joint with a sandpaper block. He stressed that it is up to the individual binder to decide how much to thin the joints.

To help the leather conform to the shape of the false raised bands, he created a template from binders board. Mark placed the spine strip next to a squared-off piece of scrap binders board (wider than the leather) and marked the locations of the false raised bands on it. He transferred

1. A 'bart' is constructed by extending the spine piece at both head and tail above the level of the boards. The terminals are then deeply notched and trimmed into a semi-circular form where they extend beyond the height of the boards. When the cover leather is in place on the book, this extension is then knocked forward to make a head cap above the end bands at the head and tail of the spine. These head caps are commonly found on Scandinavian, German and French bindings.

the marks across the binders board using his tri-square and then cut out the pieces on the Kuttrimmer, keeping those pieces that represented the space between the bands. To test the fit, Mark placed the leather over the spine strip and checked to see if the binders board pieces fit snugly in between the raised bands. Once satisfied with the fit, he used masking tape to secure the pieces together to create his template (see Illustration E).

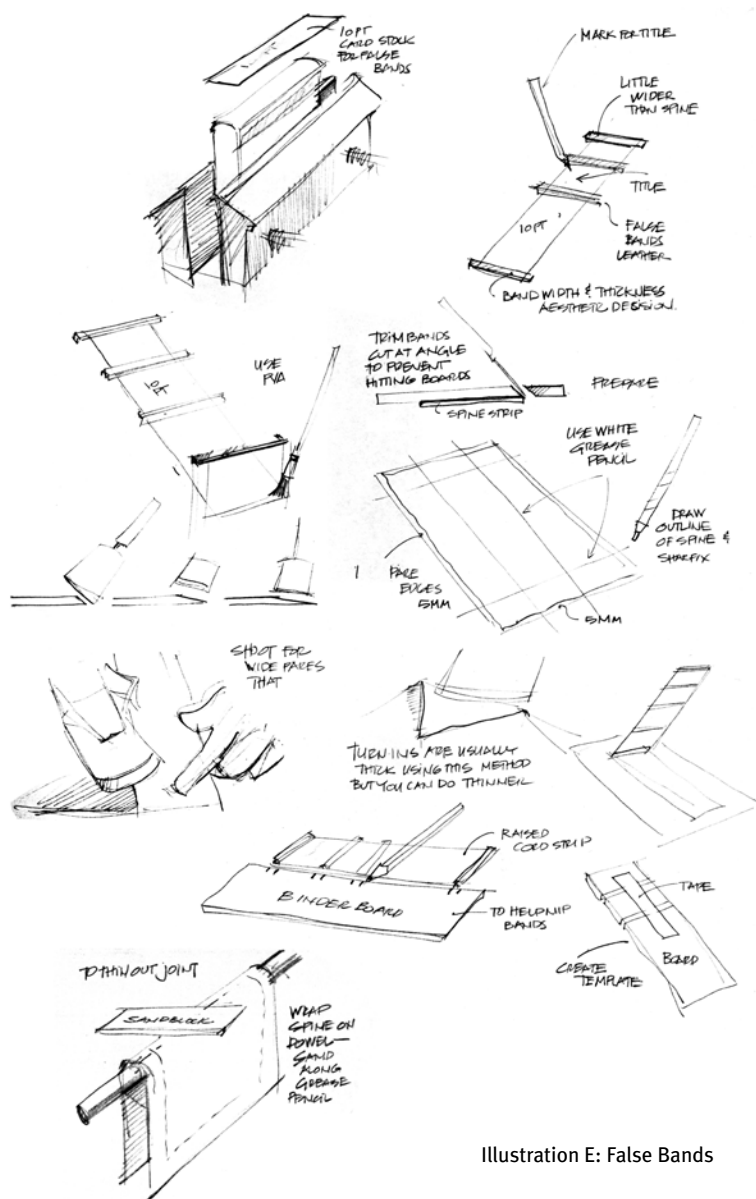


Illustration E: False Bands

Attaching the Leather to the Book

Mark pasted out the spine strip and then placed it face down on the leather; he was very careful to have it line up correctly with the pared areas. He then flipped it over and placed the template down between the false raised bands. He lightly nipped it to coerce the leather around the bands. After nipping, he removed the template and used his bone folder to bone around the bands one last time.

Before attaching the leather to the book, he slit the kraft paper at the head and tail to allow for the leather turn-ins. Mark pasted out the leather, avoiding the head and tail turn-ins. Holding the book in one hand, he lined the spine strip up with the book and smoothed the leather down onto the covers. In the real world, he would then place the book under weight to dry and come back to do the turn-ins later. However for demonstration purposes, he continued by pasting out and completing the head and tail turn-ins.

To create the head caps, Mark placed the book in a lying press and used a loop of string to push the leather down into the back corners. He also used his bone folder to help knock over the head cap. For the final step, Mark held the book on a litho stone (head cap down), and slightly dragged the book across, while shaping the head cap with his bone folder. This step is crucial in preventing the head cap from extending higher than the boards. Once satisfied with the shape, he repeated the same process on the other side (see Illustration F).

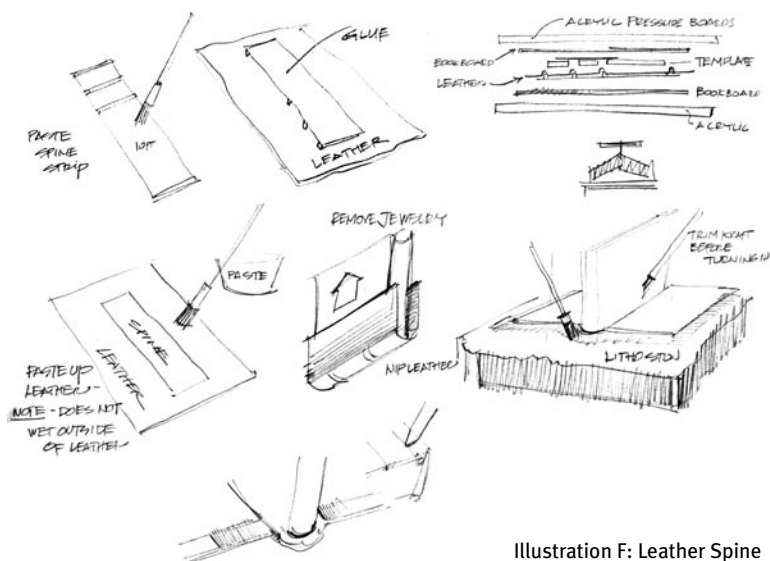


Illustration F: Leather Spine

Leather Corners

To lay out the corners, Mark had a series of corner templates that he had made out of binders board, following the templates which Bosse used. Using these templates, Mark traced all four corner boundaries onto the leather he had pared earlier. He cut the individual corners out with scissors and then edge-pared them with his French knife. Placing the individual corners flush against the covers, he traced the board outline with a grease pencil. He used his French knife to further pare down the corners so that they equaled the head and tail spine turn-ins. The edge that will sit on the cover was given a very wide and feathered pare.

To accommodate for the added thickness of the leather corners, Mark used his French knife to nick off the interior edge of the board. He then pasted out all four corners on his litho stone and lined them up with his marks on the covers. He did the head and tail turn-ins first, and then folded over the fore edge turn-ins, using his bone folder to shape them.

He then put in fences to protect the text block and placed the book under weight until dry.

At this time, he brought out another tool that he was introduced to in Sweden. Called a *horningslagninghammer* (pronounced just as it looks), it is used to both pleat and hammer down cloth corners. To riotous applause, he demonstrated its use, and even passed it around for all to marvel at. Is there no end to his tricks????

He continued with a text block where the leather had already been given time to dry. Using dividers to find the narrowest point where the leather met the board, he transferred the measurement to the spine and all four corners, then used a straight edge and bone folder to mark these boundaries, where the edges of the decorative paper would be placed. Rather than trimming off the leather outside of these boundaries, he used his bone folder to compress the leather so that it would all but disappear under the decorative paper (see Illustration G).

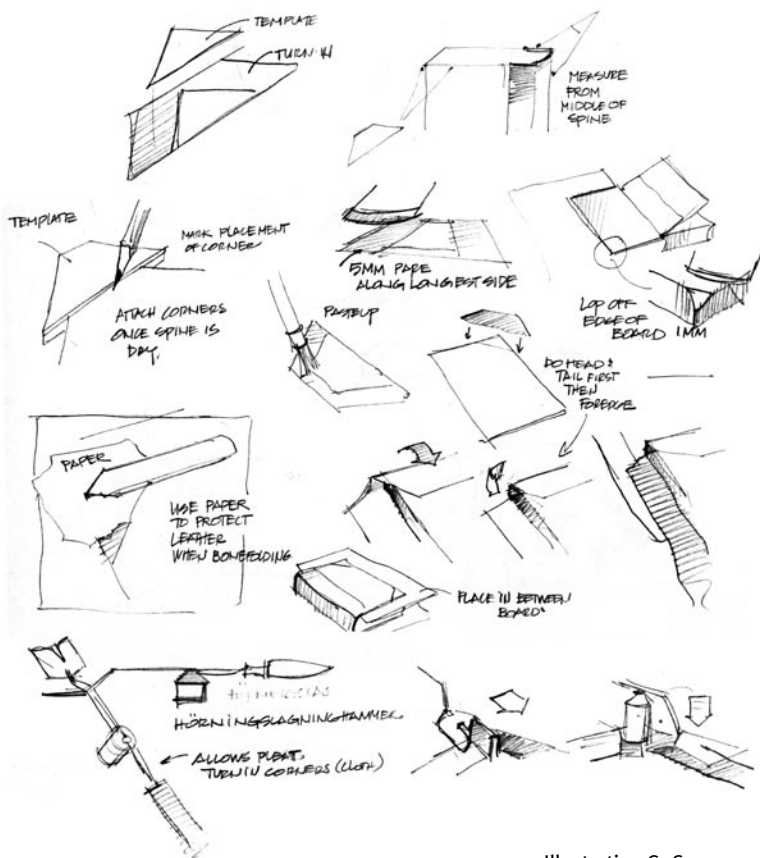


Illustration G: Corners

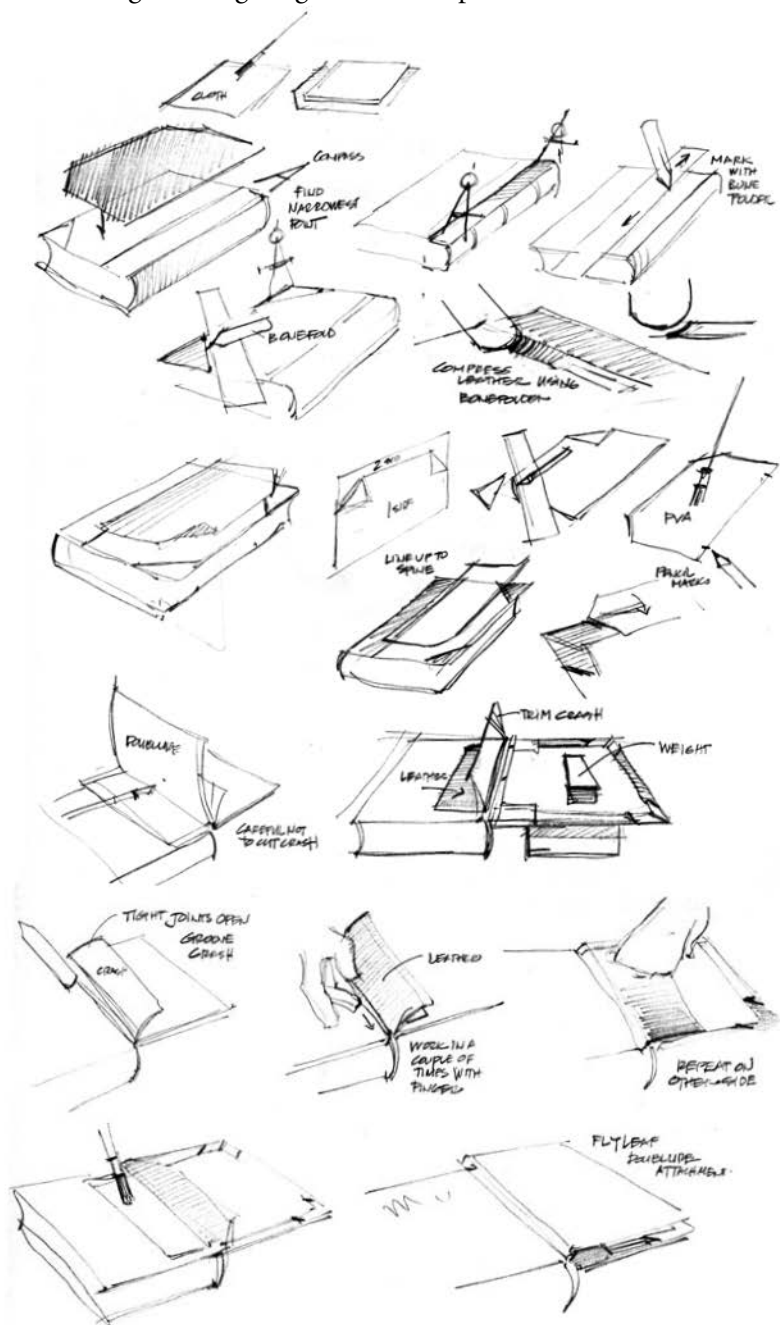
The Final Stretch

To cover the boards, Mark chose a decorative paste paper. After using the Kuttrimmer to cut the paper to the correct head and tail height, he placed the paper flat on the cover and took the remaining fore-edge measurements right off the book. Since the covers should be identical, he placed both pieces of paste paper back to back and cut their fore edges simultaneously. Mark used straight PVA to glue the paste paper to the book.

Using an Olfa, he very carefully scored and removed the marbled paper that would become the doublure. He was very careful not to cut all the way through the marbled paper when scoring it, for fear of damaging the super. It is also important to note that he removed the marbled paper as close to the shoulder as possible.

As this is a tight joint book, the super and the leather hinge are attached while the cover remains open. Therefore, Mark first trimmed the

super back to prevent it from extending beyond the leather hinge. Due to time constraints, he chose to use 60/40 mix to glue down the super and the hinge. After gluing down the super, he used his thumb to really



smooth the leather hinge down along the shoulder. He pointed out that timing is very important when deciding at what point to close the cover, after gluing down the hinge. If you close it too soon, the hinge will pop away from the shoulder and wrinkle. If you wait too long, the cover will never fully close. To see if the hinge is dry enough, try shutting it and checking to see if the hinge has popped away at the base of the board. When ready to close, be sure to protect the text block with a fence. Flip and repeat on the other cover. Once both are done, leave under weight until dry (see Illustration H).

The final step is attaching the doublures. The book is set up just as when gluing down the hinges. Measuring off the book, Mark trimmed the doublure to the correct size. He then used PVA to glue it down. At this point, he would normally leave the book in this position and allow the doublure to dry under weight (see Illustration I). However, to up the Wow! Factor of his demonstration, he went straight ahead and attached the second doublure. As if this wasn't risky enough, he even passed this still wet book around for all his eager participants to handle. What a guy.

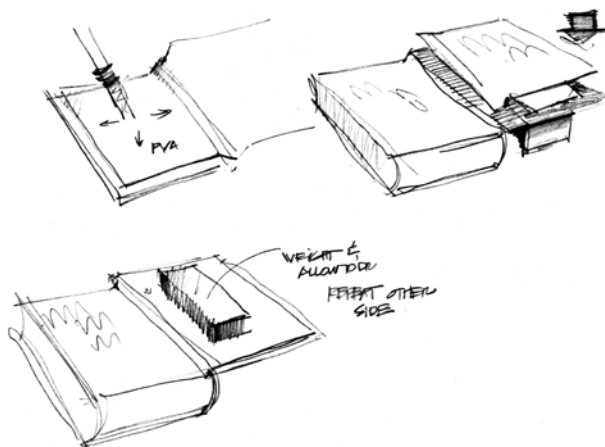


Illustration I: Doublure

Written by Claire Grund

JAPANESE POUCH/FOUR HOLE BINDING (FUKURO TOJI)

Kiyoshi Imai

Kiyoshi Imai is employed at the Northeast Document Conservation Center in Andover, MA, as a book conservator. He studied book-binding at the North Bennet Street School in Boston where, he now often teaches workshops. Kiyoshi has traveled to Vietnam several times with a Japanese-based document conservation and restoration team, where he has taught workshops on conservation treatments and disaster recovery, and participated in surveying the conditions of library collections.

Kiyoshi Imai opened his session with a discussion of features typical of Japanese stab-bound books, and he displayed a book from the 1920s as an example. Such books open left to right and read top to bottom. The pages are folded at the fore edge, which is marked with bibliographical information used to identify and assemble the text.¹ A typical Japanese book is stab-bound through four holes, and its pages are held together not only by the thread but by an inner binding fixed with twisted paper, which ensures that if the sewing breaks and the cover falls off, the text block is still held together. On the front cover, a vertical label bearing the book's title is placed near the fore edge, running from the upper left corner approximately $\frac{2}{3}$ the height of the book, and about $\frac{1}{5}$ its width. (Kiyoshi commented that when he tries to convert the Japanese design to an English-opening book it never looks as good to him as on a book that opens the Japanese way!) The head and tail corners of the text block at the spine are protected with small pieces of cloth (see Illustration A).

Having introduced us to the basics of the structure, Kiyoshi began his demonstration of the binding—showing us not only a step-by-step binding but his pleasure in making books in this traditional manner.

Preparing the cover

A laminate of two sheets of paper forms the sheet from which the book's cover is made. The outside paper itself should be heavy and strong.

1. *Han shin (hashira)*: The information can include the title, volume number and collation for the book. Sometimes, and commonly in the nineteenth century, the engraver's name was included so that the publisher could calculate payment. See Motosuke Hironiwa and Chiyoji Nagatomo, *Nihon Shoshigaku o Manabu hito no Tameni* (Kyoto: Sekai Shisousha, 1998), 180-81.

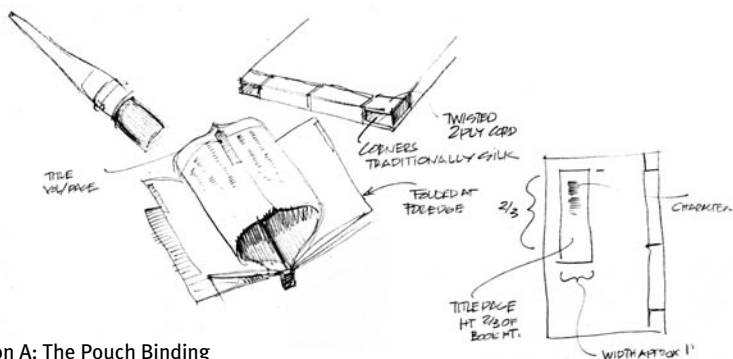


Illustration A: The Pouch Binding

RK29, a machine-made paper, is good, and so is *kozo*. Kiyoshi prefers to use solid colors rather than patterns for the outside of the cover, because the decorative sewing tends to get lost against patterned paper. (He has tried to find out what is used to color the *kozo*, but so far he has not been able to extract that information from the paper-makers.) For the inside lining of the cover, he uses a thick, heavyweight *kozo*. Even when the cover paper is thick, Kiyoshi recommends lining it for the added support, unless the lining process would damage the paper. In a brief side remark, Kiyoshi noted that contrary to common belief, Japanese paper does indeed have grain. The molds in which it is made are suspended by two strings and so can only be shaken to and from the body—hence, the fibers line up into grain. Japanese papers tend to run grain short, along the chain line.

The first step in preparing the laminate is relaxing the paper. Kiyoshi uses polyester film as the surface on which he wets his paper (and cloth, as later demonstrated), because it makes for very easy removal and cleaning. Lay the cover paper on a sheet of film and spray it with water. Soak the paper so it will relax and slide against the polyester film if it needs adjusting, and then blot it. To absorb the excess moisture, Kiyoshi uses a roll of paper towels as a round blotter, rolling it across the sheet and discarding the wet paper towels. On another sheet of polyester film, paste the lining paper out with a very weak, watery wheat starch paste—thick paste makes the paper stiffer and less flexible. For more control of the paste brush, Kiyoshi uses a broad, flat brush and holds it by the base rather than the handle.

Now lift one of the films, with the paper still on it, turn it over, and place the paper on the other piece. (You don't really need to worry about closely aligning the sheets because the dry laminate will be trimmed to size.) Brush this "sandwich" with a dry brush to get all the air bubbles

out, and then remove the film by rolling the top sheet into a cylinder—it peels off the paper as it is rolled back. Reverse the laminated paper onto blotter, roll off the second film sheet, and cover the laminate with another sheet of blotter. Put the pack between press boards and weight it. Change the blotters in about five minutes. The blotter paper should be changed at least three times so the laminate dries thoroughly and doesn't stick to the blotter (see Illustration B). (Kiyoshi does not use synthetic fabric such as Reemay between the paper and the blotter. He changes the blotter frequently enough that they're not needed, but he also finds that they leave marks on the laminate.)

When the laminate is dry, a protective coating is applied to what will be the outside surface. Kiyoshi uses 4% methyl cellulose (40 g. in 1 liter of water) to paste out the laminate, and then lets it air-dry. (In Japan, *konnyaku* is used to size and protect paper—it is made from the starch of Devil's Tongue root, which results in a gluey paste that dries like jello.) When dry, burnish the sheets—Kiyoshi lays the sheet on marble and rubs it in a circular motion with a ceramic bowl. You can also burnish with agate—any smooth surface works well, but his particular favorite is that bowl (see Illustration C). The burnishing makes a big difference to smoothing even already smooth papers; it also makes the paper more dense and therefore stronger, and prevents as much dust from collecting. (Of course, if you want a matte finish or your paper is textured, don't burnish it. The methyl cellulose will still protect it.)

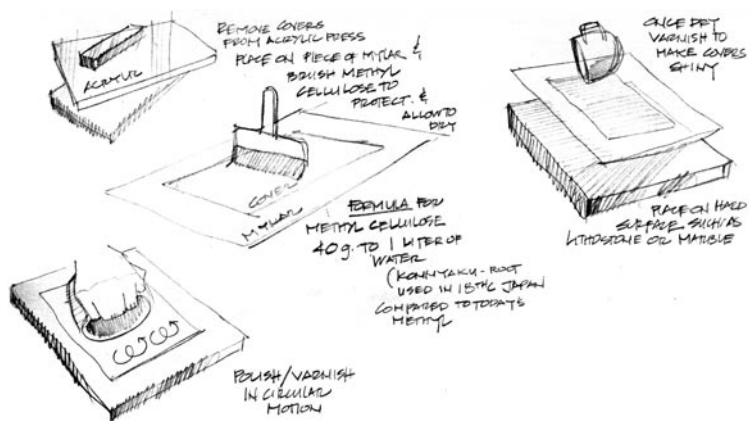


Illustration C: Burnishing the Cover

Preparing the corner cloth

For the demonstration, Kiyoshi lined silk cloth to use for covering the corners of the spine. (He confessed that he hates lining cloth, so for his own work he uses book cloth.) He used *uso mino* paper (also a *kozo*)—while thinner paper can be used, he finds this easier to handle.

The first step is to wet the silk. Lay it on polyester film and brush it with water, blotting after a minute. Be careful to fix the damp fabric so it is straight and the pattern is properly aligned—because fabric stretches in every direction, Kiyoshi advises avoiding patterns with straight, long lines. Paste out a sheet of lining paper (much larger than the cloth to be lined) on another sheet of polyester film, using a thin, smooth layer of very thick paste, then remove the pasted paper from the polyester film by placing a bamboo ruler along the edge of the sheet and lifting. Secure the cloth polyester film with a weight so it doesn't slide, then gently lay the pasted lining sheet on the cloth, brushing out the air bubbles with a dry brush as you roll it down. Finally, pound the paper with a dry round paste brush so that the paper fibers lock into the cloth.

Now that the cloth has been lined, turn the polyester film over, paper side down, and roll the film off the lined cloth. Then turn it cloth side up and apply wheat paste around the extending edges of the lining paper, placing a tab of scrap paper on one edge to be used later for removing the cloth from the *karibari* board on which it will dry. (A traditional *karibari* board is made of cedar lined with paper and waterproofed, but Kiyoshi uses sheetrock lined with thick Japanese paper and waterproofed with polyacrylic so the paste doesn't stick.) Place the lined cloth onto the *karibari* board, rubbing the extending edges of the lining paper with a bone folder to secure the mounting onto the board, and let it dry. Conservators dry lined cloth face out in order to touch up the cloth if necessary, but Kiyoshi prefers to mount the cloth face down in order to protect it as it dries. When the cloth is dry, remove it with a bone folder slid first under the scrap-paper tab and then around the pasted edges (see Illustration D).

Preparing the thread

The thread used in sewing the book is made from strands of several colors twisted together to coordinate with the book's design. Twisting also serves a functional purpose, strengthening the thread in two ways: by shifting the tension to the diagonal, and by shortening the thread about 10%, so it has more fiber for the length. Kiyoshi normally uses six-strand

BACKING SILK FOR CORNERS

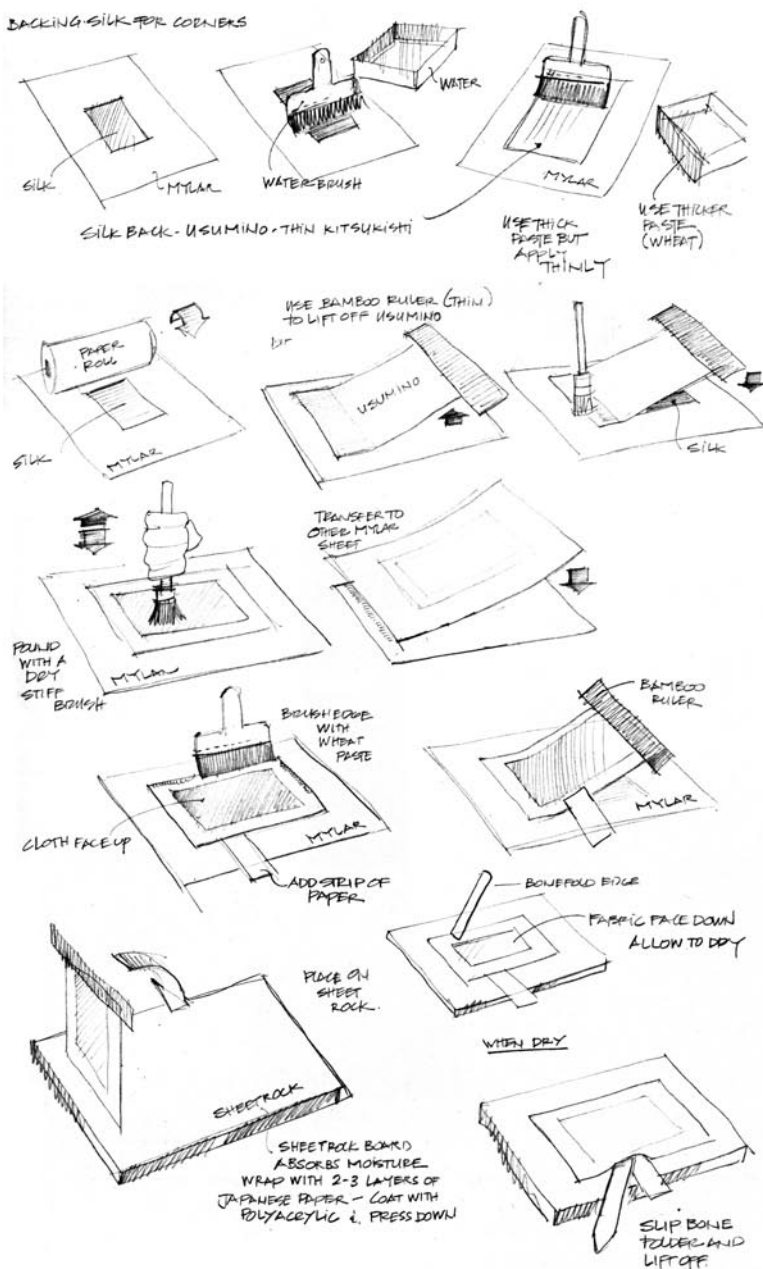


Illustration D: Corners

cotton embroidery thread, though silk is traditional. He twists together three colors, having separated each original color into three two-strand threads, so his final sewing thread is six strands. The thread length should be at least three and preferably four times the height of the book for a simple four-hole structure. More complex designs need more length.

To do the twisting, knot the strands together at the top, tack the knot to a board, then wet the thread by dipping it into water along the length. When twisting multiple threads together, the direction of twist should be reversed each time the thickness is increased. Machine thread is twisted clockwise, so when twisting your own color combination, twist counterclockwise to lock the separate strands together tightly. (Nylon thread, Kiyoshi notes, doesn't work so well.) When you've twisted the whole length, tack it down at the end to dry taut (see Illustration E). This takes a while, but it can be very relaxing!

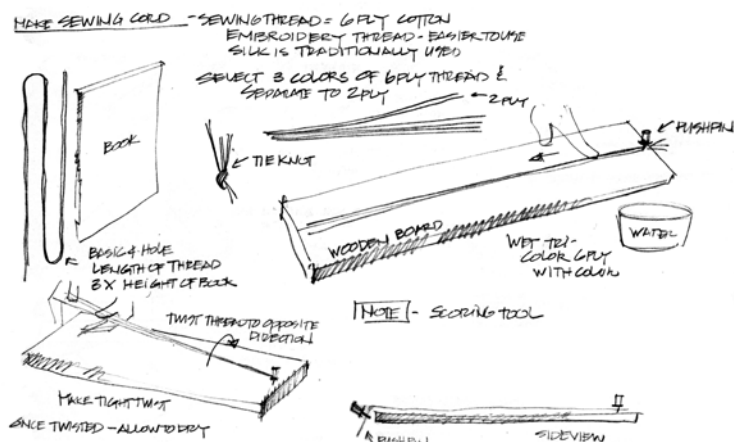


Illustration E: Making Sewing Cord

Inner binding

The inner binding secures the text block by means of small twists of paper. Use a heavyweight paper; Kiyoshi used the same paper for his twists as he did for the cover liner. To make the twists, take a strip of paper 10 cm (4") long and 2 cm (1") wide, and cut it in half with a diagonal cut across the center, so the two resulting strips have one flat end and one pointed end. Thoroughly wet each piece in water, pinch the point, gently twist it to the top, and let it dry (see Illustration F).

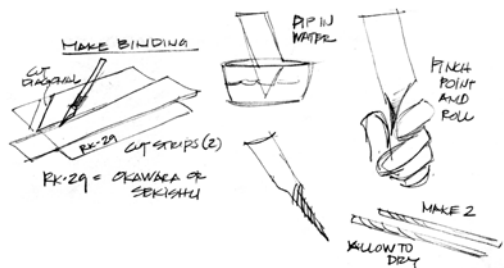


Illustration F: Binding Twists

The text block Kiyoshi demonstrated on was made of *warahan-shi* paper, from Hiromi Paper. It is a soft and flexible paper with a smooth surface on one side, good for pencil and ink². To begin, Kiyoshi lines up the text block flat on a piece of binder's board and jogs the fore edge square against a brick placed on the board. Remember, in Japanese books the folded side is the fore edge.

Now two holes must be punched for the paper twists. Kiyoshi uses an ingenious homemade tool for marking where the sewing holes are punched. He has created a “Nail Head Gauge”—a three-inch length of wooden dowel with a brass nail driven into each end. At one end the nail protrudes 9 mm and at the other 12 mm. These are typical measurements used in placing holes for stab binding. To mark the distance from the spine, place the end of the dowel with the 9 mm protrusion against the spine and gently mark the paper with the nail head, then punch through with an awl. Kiyoshi has reshaped an awl to punch triangular holes for the inner binding. He feels this shape causes the pages to lock into each other better than a round awl. He also uses a “beating stick” to knock in his awl rather than a mallet or hammer. The placement of the holes along the spine varies according to the size of the book. The holes should not be too near the head and tail, or the center. Kiyoshi normally places the holes at $\frac{2}{7}$ of the height of the book.

To secure the inner binding, Kiyoshi uses the *Bozu* or “Bold” method, where a paper twist is threaded through each hole and untwisted above and below. The excess is trimmed and beaten flat so it does not leave bumps. Alternative methods of inner binding are the *Musubi* (“Knot”) method, where each twist is threaded down and up through a pair of holes and the ends knotted together, and the *Kagi* (“Lock”) method, where the ends of the twist are folded down in opposite directions against the text block.

2. Kiyoshi commented that Japanese-style papers are made in Korea, but Korean papers often have narrower chain lines, i.e., less than 2 cm. Japanese books tend to be smaller than Korean books, but his is a general observation which may not be true in every instance.

When the inner binding is completed, trim the text block. Kiyoshi uses a board template lined up to the fore edge and squared to pencil marks on the top page. He places an oak block (cut smooth and square) on the penciled line, and uses a trimming knife made from an English paring knife rounded down. A round edge is preferable to a straight edge because the blade can be rotated, and Kiyoshi further prefers his shaped English knife to commercially made pre-shaped trimming knives, though he does note that a French knife will also serve the purpose. A traditional Japanese knife is 12 cm long and 14 cm wide, and has a rounded edge, but is quite expensive.

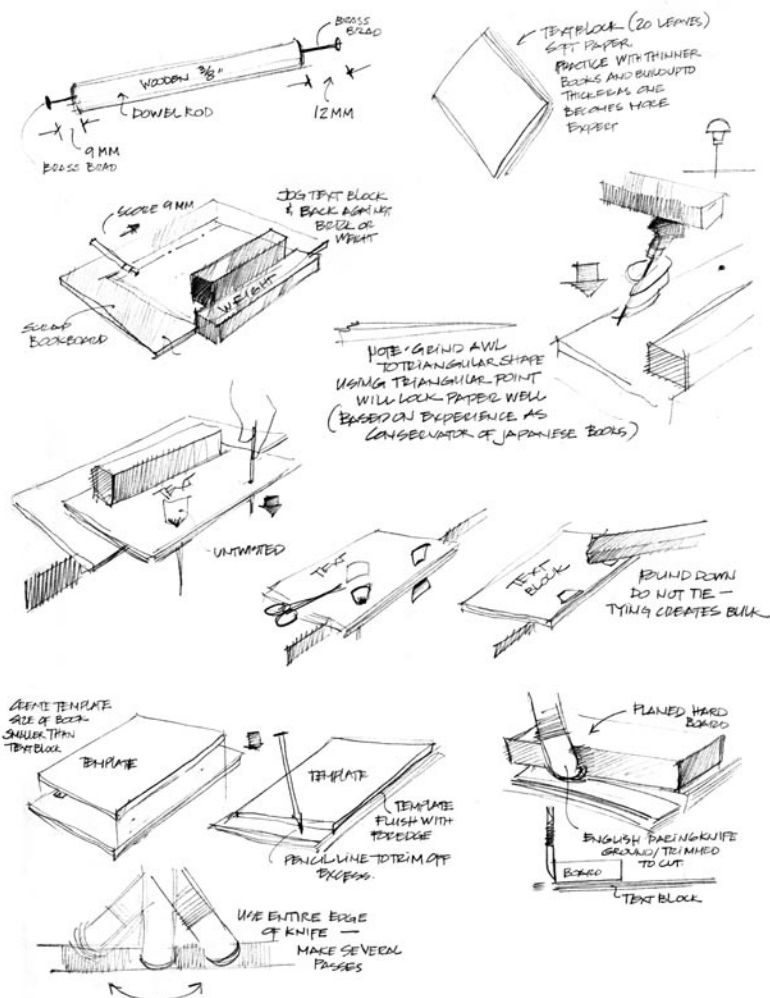


Illustration G: Text Block

The trimming is done by supporting the knife at 90° to the paper text block against the oak block. The pressure should be on holding the block down, not the knife; cuts should only go through one or two sheets at a time (see Illustration G). This is a task requiring patience, and frequent knife-sharpening. (Kiyoshi uses an oilstone but no oil; he also likes Japanese water stones, and uses medium grit for everything. He points out that in his experience, carbon steel sharpens better than stainless steel.) He also notes that he finds it easier to trim by drawing the blade parallel (i.e. right or left) across the paper rather than toward himself.

When the text block is secure, the next step is to wrap the spine corners with the lined cloth. (Silk is traditional for corners, though paper can also be used.) Using the nail head gauge, mark 9 mm from the spine on the head and tail of the text block. Since the cloth will fold the long way around the corner, the length of cloth needed is 9 + 15 mm. The width needed is 9 mm + the width of the text block, so that the cloth will wrap 4.5 mm onto the front of the book and 4.5 mm onto the back.

Affix the corner cloth by applying thick paste to the head, tail, and spine, and to the cloth. (Be aware that the paper lining almost always separates from the cloth when any moisture touches it—a perpetual frustration!) Line the corner cloth up with the marks at head and tail. Snip the cloth at the corners and fold it down first at the head and tail, then at the spine (see Illustration H).

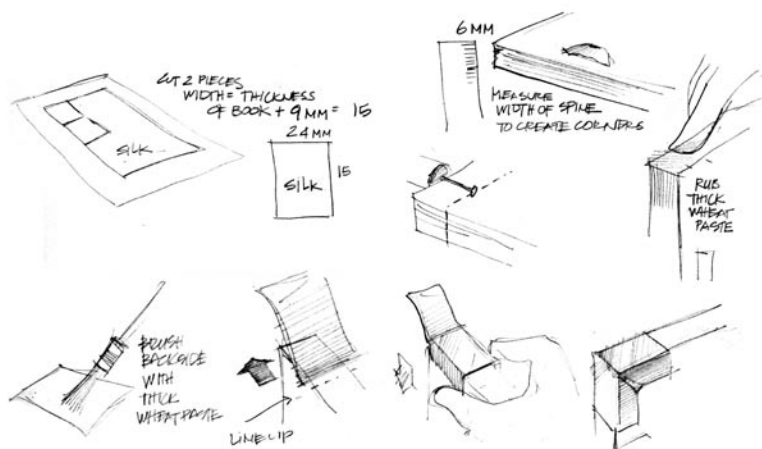


Illustration H: Spine Corners

Covering the book

The cover is constructed of two components: core paper, a piece of which is attached to the text block at the front and the back, and the laminate prepared earlier, which covers the core pieces and is sewn on at the spine. Use thick *koso* for the core, aligning it to the spine or fore edge, and then adhere the core piece to the front of the text block with two dots of paste. The cover will wrap around the core paper, so the paste dots won't show. Do the same at the back, let it dry under light weight, and then trim the core pieces to the text block.

Next, rough-cut the cover laminate and place the book on it so that the laminate protrudes no more than 9 mm. This extra will become the spine turn-in, and will be hidden below the stitch work. With a ruler placed between the text block and the cover sheet, aligned to the spine, score the cover and turn in the excess. This measurement is important—the sewing will align to the edge of the corner cloth, 9 mm from the spine, so the turn-in must be small enough that it doesn't interrupt the sewing but large enough to work with so it folds cleanly. A small wedge should then be trimmed off the head and tail corners of the spine edge, cutting from the spine edge to the top of the turn-in, about 1 mm in depth, for easier head and tail turn-ins. Now measure and score the head and tail turn-ins (Kiyoshi measures his head and tail turn-ins to the width of his ruler, because bigger turn-ins are easier to work with), and fold them over the core. The fore-edge corners should be mitered to 45°, trimmed to the width of the ruler, and turned in over the core (see Illustration I).

Kiyoshi interjected a note about the knife he uses to do his trimming at this stage—it is an NT knife, model F650.³ He likes it because one side of the knife is flat, almost flush with the blade. It's a Japanese knife with a proprietary blade.

Sewing

The traditional measurement in from the spine for sewing is 9 mm, but for the sake of visual alignment, the line for piercing should be marked from corner cloth to corner cloth rather than measured with a ruler. Score with a bone folder against a ruler to mark the sewing line. When marking for placement of sewing holes along the scored line, first measure equal distances down from the head and up from the tail, then divide the space between those two corner holes into three equidistant areas. This way, if the center is a little off, it will be less apparent.

3. Notetaker's comment: The NT F650 is very similar to the Olfa silver knives with snap-off blades. Olfa is also a Japanese company, but its knives are available internationally.

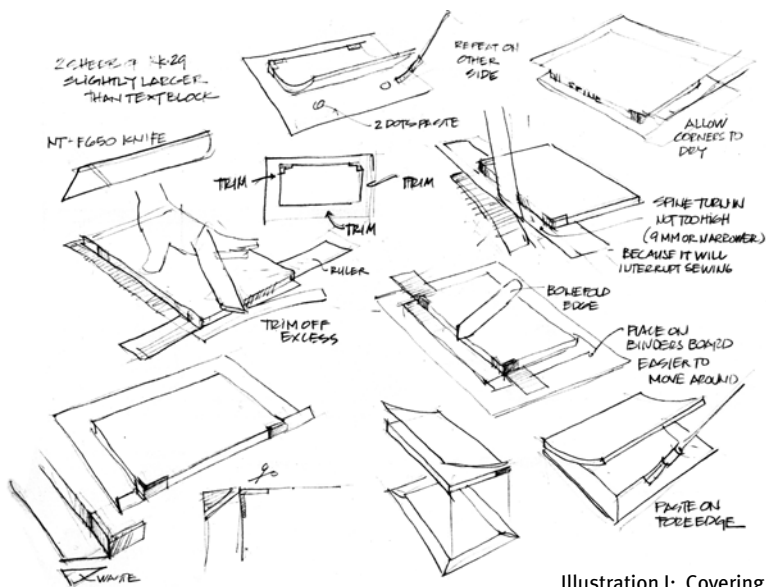


Illustration I: Covering

The holes should be punched this time with a round awl. First hold the awl lightly to find straight alignment, then grip it and hammer. Punch first from the front of the book so the measurements on the front cover are clean, then punch again from the back to open the holes all the way (see Illustration J).

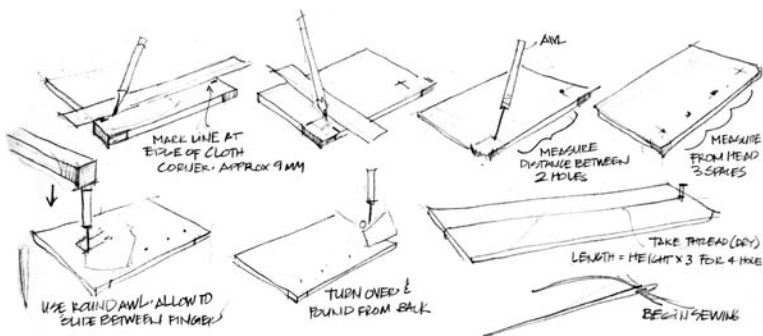


Illustration J: Prepare for Sewing

For his demonstration, Kiyoshi showed the steps of a simple pattern where straight threads wrap around the spine at each piercing, but he also passed around samples showing a number of more complex sewing patterns. (If you design your own sewing pattern, two elements are essential: make sure the back and front match, and make sure you end where you begin.)

Sewing on the demonstrated pattern begins on the back of the book at the third hole from the head. By way of comparison, Kiyoshi noted that Koreans begin the sewing at the top, and Chinese sewing begins, he believes, from the second hole.

1. Holding the book with the back cover face up and the spine toward you, so the head points to the left, draw the thread all the way down through the book at the third hole.
2. Using your needle, pull the loose end of the thread out from the middle of the book, so it now protrudes from the text block rather than the back cover.
3. Tie a knot in the end of the thread and apply paste to it, then tuck the knot back into the text block by pulling on the needle to bury the knot inside the text block.
4. Wrap around the spine and back in the third hole.
5. Pull the thread through to the front and sew up through the second hole to the back cover.
6. Wrap around the spine and back up through the second hole to the back.
7. Now sew across to the first hole and pull the thread through to the front cover.
8. Wrap around the spine and back in through the first hole. Try to align the wraparound with the edge of the corner silk.
9. Now wrap around the head and back through the first hole a second time, once again aligning the thread with the cloth.
10. The thread is now protruding from the front cover. Sew back across to the second hole to complete the pattern in the stitch work
11. On the back, sew down to the third hole to complete the stitch work.
12. Sew down to the fourth hole, nearest the tail.
13. Wrap around the spine and back through the fourth hole to the back.
14. Now wrap around the tail and back in through the fourth hole, once again taking care to align with the cloth.
15. Sew the final stitch in the pattern, from the fourth to the third hole, and then turn the book over so the head is now at your right and the tail to the left, with the spine still facing you.
16. Knot the thread directly over the hole by tying on to the adjacent stitch.
17. Sew back through the hole.

18. Pull the thread so the knot sinks into the hole and turn the book back over.
19. Insert the needle back into the same hole again, but only push it part way through. The needle should emerge from between the pages at the spine, about midway through the text block.
20. Snip off the thread close to the spine.
21. Apply paste to the loose end and tuck it back into the book.

As the final step in this binding, paste down the fore-edge turn-ins, but not the head and tail turn-ins—to do so would constrict the book's opening. Insert a piece of scrap paper into the fold of the book's first and second pages to block the moisture. Use a narrow strip of thin paste and place under weight to dry.

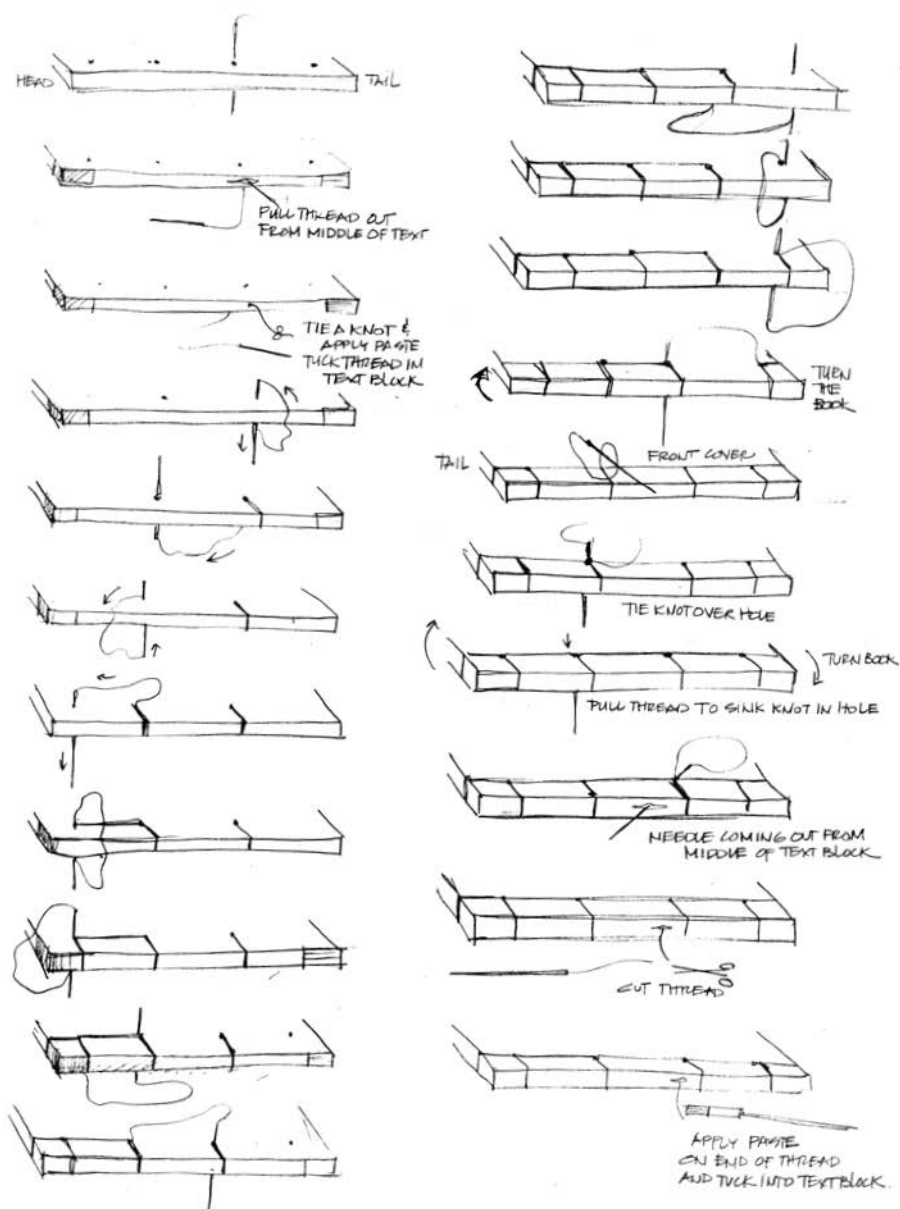
The completed book is a lovely work of art, with its many details showing the care of its design in a deceptively simple package.

Handouts

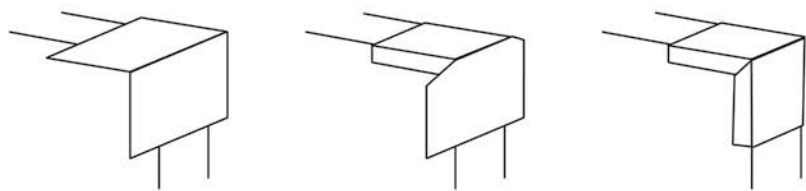
- A. Step-by-step illustration of sewing pattern showing the steps listed above.
- B. Illustrations of corner cloth construction, inner binding variations, trimming knives, and Nail Head Gauge
- C. Relationships between dimensions of book and sewing margins / dimensions of title label. This table can be found on page 115 in the book *Komonjo Shuho rokuju nen* by Endo Teinosuke (Tokyo: Kyuko Shoin) 1987. The translated table was done by Kiyoshi Imai.
- D. Materials for Pouch Binding: a table compiled by Kiyoshi Imai for the seminar.
- E. *Pouch Binding*, a diagram of the parts of a book, with names in English, Japanese, and transliteration; drawn by Kiyoshi Imai for the seminar.

Written by Cara Schlesinger

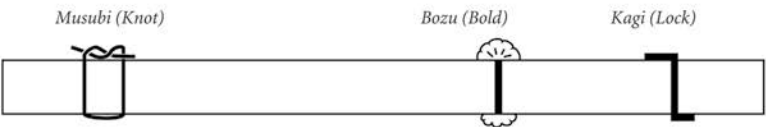
Imai Handout A



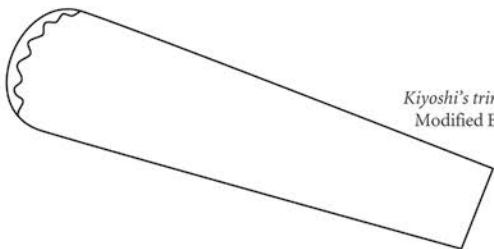
Imai Handout B



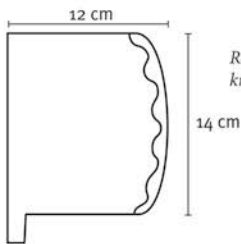
Corner cloth construction



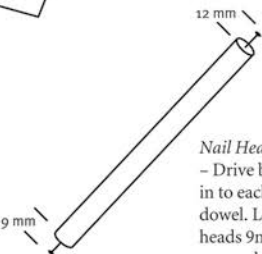
Inner binding variations



Kiyoshi's trimming knife –
Modified English paring knife



Real Japanese trimming
knife – \$\$\$\$\$\$



Nail Head Gauge
– Drive brass nail
in to each end of a
dowel. Leave nail
heads 9mm off at
one end and 12mm
at the other.

Relationships between dimensions of book and sewing margins/dimensions of title label

Millimeters (inches)

Height x Width	Sewing margin at spine	Sewing margin at head and tail	Number of sewing holes	Title Label
327 x 236 (12 ⁷ / ₈ x 9 ⁵ / ₁₆)	15 (¹⁹ / ₃₂)	24 (¹⁵ / ₁₆)	5	227 x 39.5 (8 ¹⁵ / ₁₆ x 1 ⁹ / ₁₆)
297 x 197 (11 ¹³ / ₃₂ x 7 ³ / ₄)	12 (¹⁵ / ₃₂)	21 (²⁷ / ₃₂)	5	206 x 36.5 (8 ¹ / ₈ x 1 ⁷ / ₁₆)
276 x 197 (10 ⁷ / ₈ x 7 ³ / ₄)	10.5 (¹³ / ₃₂)	16.5 (²¹ / ₃₂) 18 (²³ / ₃₂)	5 4	197 x 33 (7 ³ / ₄ x 1 ⁵ / ₁₆)
236 x 164 (9 ⁹ / ₃₂ x 6 ¹⁵ / ₃₂)	9 (¹¹ / ₃₂)	15 (¹⁹ / ₃₂)	4	167 x 30 (6 ⁹ / ₁₆ x 1 ³ / ₁₆)
194 x 137 (7 ⁵ / ₈ x 5 ³ / ₈)	9 (¹¹ / ₃₂)	15 (¹⁹ / ₃₂)	4	137 x 27 (5 ³ / ₈ x 1 ¹ / ₁₆)
164 x 118 (6 ¹⁵ / ₃₂ x 4 ⁵ / ₈)	9 (¹¹ / ₃₂)	12 (¹⁵ / ₃₂)	4	118 x 24 (4 ⁵ / ₈ x ¹⁵ / ₁₆)
137 x 194 (5 ³ / ₈ x 7 ⁵ / ₈)	10.5 (¹³ / ₃₂)	13.5 (¹⁷ / ₃₂)	4	103 x 33 (4 ¹ / ₁₆ x 1 ⁵ / ₁₆)
115 x 164 (4 ¹⁷ / ₃₂ x 6 ¹⁵ / ₃₂)	9 (¹¹ / ₃₂)	12 (¹⁵ / ₃₂)	4	88 x 30 (3 ¹⁵ / ₃₂ x 1 ³ / ₁₆)

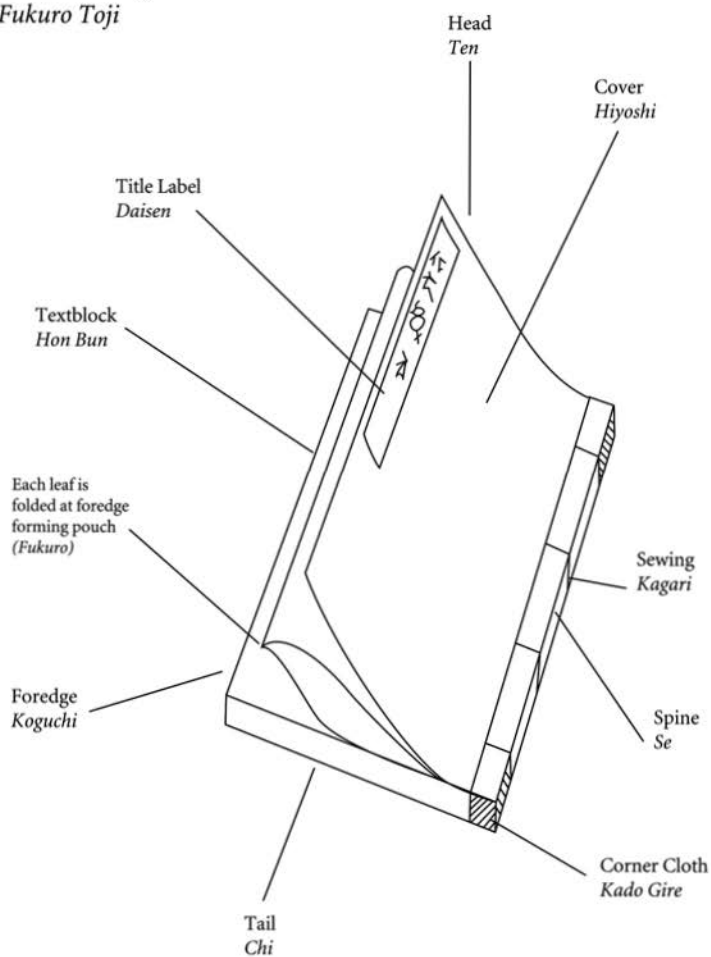
Teinosuke, Endo – *Komonjo Shuho rokuju nen* – Kyuko Shoin, Tokyo 1988

Materials for Pouch Binding

	What to look for	Kiyoshi's recommendation	Kyoshi used for the demo
Text block	Depends on purpose of the book. Talk to supplier.	--	<i>Warahanshi</i> (Hiromi Paper)
Inner binding	Strong long fiber <i>Kozo</i> (Paper mulberry) paper.	<i>Okawara, Sekishu, Hosokawa, etc.</i>	RK-29 (Paper NAO)
Core (board)	Thick and flexible paper	<i>Okawara, Hosho, Senka shi, etc.</i>	RK-29 (Paper NAO)
Corner cloth	Traditionally silk was used. Don't use polyester or nylon.	Visit Hong Kong or Hanoi. Silk is cheap.	Silk found at flea markets in Osaka and Kyoto.
Cover (paper)	Patterned/decorated paper makes sewing invisible.	--	Colored <i>Echizen Kozo</i> (Hiromi Paper)
Cover (Cloth)	I don't like cloth cover for this type of book. I can't make it right.	Use an available book cloth rather than try to make your own.	Sorry, I won't do a demo on this one.
Lining paper for corner cloth	Thin <i>Kozo</i> paper.	<i>Usumino, Misu, etc.</i>	Usumino (Hiromi Paper)
Lining paper for paper cover	Thick, long fiber, strong <i>Kozo</i> paper	<i>Okawara, Hosokawa, etc.</i>	RK-29 (Paper NAO)
Sewing thread	Traditionally silk was used. Stay away from polyester or nylon.	Cotton embroidery thread works very well.	6 ply cotton embroidery thread.
Title label	Good writing or printing paper. Talk to the supplier.	--	--
Paste	Wheat starch paste, not rice starch.	--	--

Imai Handout E

Pouch Binding *Fukuro Toji*



EDGE GILDING AND EDGE COLORING OF BOOKS

Peter Geraty

Peter Geraty has been a bookbinder since 1975 and has been independently employed since 1984. His shop, Praxis Bindery, produces editions, boxes and fine bindings, and also does conservation work for libraries, private collectors and academic institutions. Praxis is located in a large complex in Easthampton, MA that also houses a number of other artist studios.

Recognizing and acknowledging the apprehension of all novice, and many experienced, binders to the challenge of gilding an edge, Peter Geraty began the handout distributed at his sessions with an anonymous 17th century poet's lament on the failure of his best efforts: "Where has the gold gone, /I look all around. /As the leaf flakes onto my feet." Peter admitted similar fears in his own past, but assured his audiences that, as in many other processes, it is repetition and experience that bring mastery. In his presentation, as well as working through the procedure, Peter paid attention to the reasons for each step, what it seeks to do, and what must be done right to prevent going wrong.

There are several kinds of edge gilding, but Peter demonstrated the best known and most common, a solid gilt edge at the head. This is best done when the text block has been rounded and backed, but the boards can be laced on or simply laid in place to protect the shoulders. If the book is gilded in boards, the boards are laced on and the supports pasted down on the inside of the boards but not in the grooves, so the boards can still be moved up and down parallel to the shoulders. If the text block is only rounded before the edge is gilded, care must be taken in the backing process to protect the gilt edges, which mar easily from backing incorrectly.

The first step, after trimming the book, is to dust the edge with French chalk, or talc (magnesium silicate hydroxide) to keep the pages from sticking together. The book is set on its tail, and the text block is flexed to the right, dusted with talc using a fine brush or fingers, and then flexed to the left for another application. Care should be taken not to inhale the talc, and not to disturb the text block afterward to prevent the talc from sifting out. The edge is now ready to scrape flat, which is essential for a smooth, solid edge (see Illustration A).

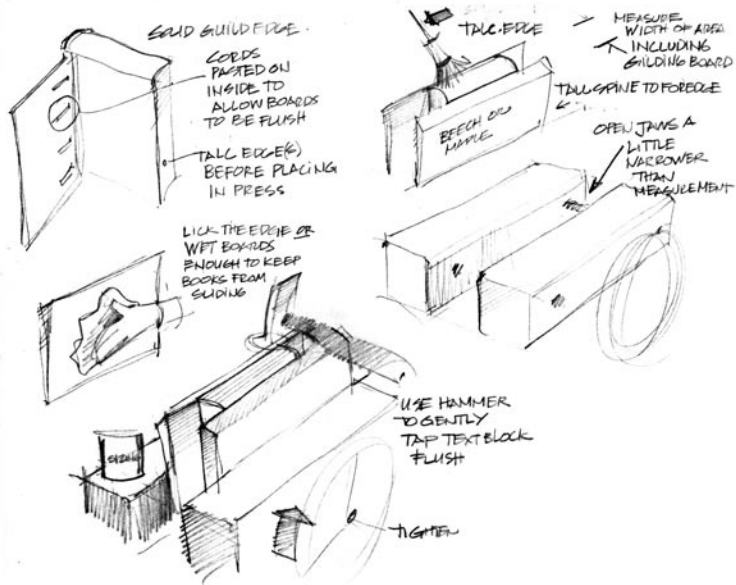


Illustration A: Placement

Gilding boards are used to hold the book during the gilding process, and it helps them to “grip” the book boards if they are moistened slightly. This is easily done by licking the top inside edges of the gilding boards before putting them around the book. The book edge, covering boards (if already on the book), and gilding boards are put into a press so that they are in absolute alignment and projecting about a centimeter or less above the cheeks of the press. Tighten the press to hold the text securely so the pages cannot flex during gilding. [See note 1, Gilding Boards.]

Ideally, the book edge has been carefully trimmed flat prior to gilding so only some smoothing and finishing is required. This is best done with a cabinet scraper with an elliptical edge. [See note 2, Cabinet Scraper.] This will allow you to work only on areas needing some additional smoothing and irregularities. When scraping work from spine towards the fore edge, hold the scraper in both hands tilted away from you at an angle between 45° and 70°. Avoid digging into the surface with the scraper at the spine and fore edge areas. An application of bole and sizing prior to scraping will dampen the surface slightly, which will make scraping easier and provide a visual indication of the scraped areas. If the surface gets too damp, wait for it to dry slightly before proceeding.

After scraping, sand lightly with fine grit aluminum oxide sandpaper.

Begin with 220 grit moving parallel to the edge in a straight line holding the sandpaper between thumb and forefinger. Do not allow excessive heat, from the friction, since this can fuse the sizing on some papers. When the edge is evenly sanded repeat with a 320 grit. Dust the edge with soft bristle brush (Peter uses a shoe brush) between grits and from time to time during sanding. Do not touch the edge with your hands since this may adversely affect the gilding size.

Many different kinds of size are used in gilding. Some binders prefer a particular kind, and some types of paper work better with a particular kind of size. Peter employs a PVA sizing agent which he has used successfully for several years. [See note 3, Size.] Size, with a filler mixed in, is brushed onto the edge. The filler fills the pores in the paper surface and provides a background color to the gold. Several kinds of fillers can be used depending on the desired effect, but two commonly used fillers are Armenian bole (a reddish clay), and graphite (a.k.a. plumbago or black lead). Gouache is another commonly used coloring filler. The filler is mixed with the gilding size using a flat, soft-bristled brush until it is the consistency of milk and applied in an even coat. While it is still damp, use a wad of Japanese paper and work the filler into the edge using a circular motion. When the edge is dry and slightly polished by the Japanese paper, brush it vigorously with a soft brush from end to end. On softer papers this may need to be repeated. A final thin, even coat of filler is applied to the surface and allowed to dry without being worked. When dry, the edge should be burnished first with a brush, and then with an agate burnisher. Peter prefers to use a slightly convex burnisher. It is important that the burnisher used is clean, since any dirt or grease will keep the gold from adhering to the edge. Approach the book from the side of the press and move the burnisher across the edge working from the spine toward the fore edge. Moving lengthwise with the burnisher could scratch the edge. Peter recommends doing this three to five times before applying size.

Several coats of size will be necessary, and, since each one activates the previous layers, new coats should be applied rapidly and exactly in a thin coat so as not to lift a previous layer. It is best to use a brush that will cover the entire width of the edge when depressed. Apply the size from spine to fore edge in a continuous stroke, but a small amount of back and forth may be necessary. Start in the center and work outward if the brush won't cover entirely. Two or three coats of size will be needed; two for harder papers and three for softer ones. Wait for the size to turn dull

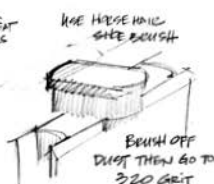
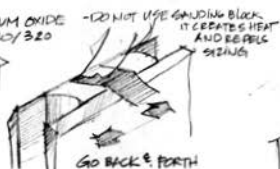
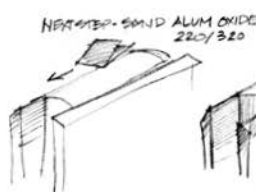
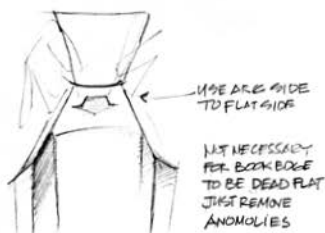
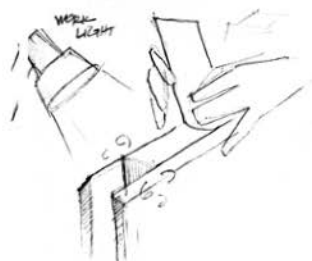
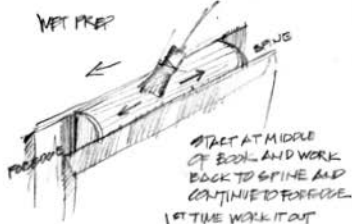
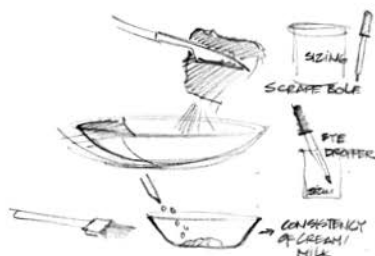
before applying the next coat. However, the edge should not dry out completely between the first coat and the application of gold or it may not adhere. Time will vary according to temperature and humidity levels (see Illustration B).

While the size dries, the binder can use the time to prepare the gold. Since dirt and oils from your hands will prevent gold from adhering, never touch the gilding cushion, knife or gold leaf when preparing gold. Use the knife to manipulate the gold leaf and extricate it from the paper of the gold book. Do not take out more gold than necessary. Maneuver the gold out of its paper book by placing the book on the gold cushion [see note 4, Gold cushion]. Slide the gold knife under a paper leaf and lift it to expose a sheet of gold. Pat the cushion in front of the gold with the flat of the knife until the puffs of air cause the gold leaf to fold. Slide the knife up to the folded edge and blow gently until the gold unfolds at its center over the knife blade. Twist the knife a quarter turn and carry the gold leaf, draped over the knife, to the other end of the cushion. Lower the leaf while simultaneously dragging the leaf and rotating the knife underneath it away from the leaf. This will leave a flat but slightly rumpled sheet of gold lying on the cushion. Shape your lips as to pronounce the letter 'P', and blow gently into the center of the leaf to smooth and flatten it. Use the full stroke of the knife to cut gold leaf into strips, and cover, to prevent them from being disturbed until needed. A variety of tools are available for applying the gold strips to the edge. The simplest to obtain and use is scrap handmade paper, and the gilding frame is the best tool for applying full sheets of gold.

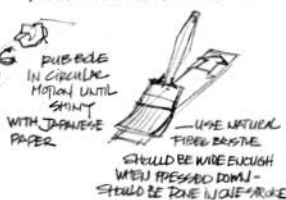
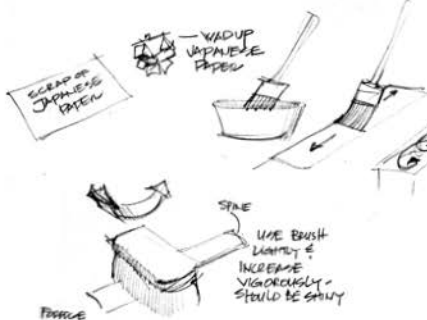
Whatever method is used, the binder should have enough gold laid out for the entire edge. If paper is being used, it should be cut slightly wider than the leaf. Peter gave a general estimate of 12 cm wide and 7–8 cm deep for the average book. Lightly rub the tool across your face or hair to apply some grease, to pick up the gold, then breathe lightly on it to discharge any static electrical charge, and lay it over the gold so that about 3 mm of leaf projects beyond the tool. If using paper, it may be necessary to rub the paper lightly for the gold beneath to adhere. Line up the tools loaded with the gold strips.

Vigorously shine the edge with the soft brush and apply a final coat of sizing, a bit thicker than the earlier coats, but should not pool too deeply. It should not be absorbed into the paper, but rest on its surface. After applying the size, pick up the first gilding tool and hold it over the edge as flat as possible and very close to the edge so that the 3 mm of leaf is over

USE BOLE (FINE CLAY)
KREMER PIGMENTS
LIQUIDITY W/ SIZING
PVA TO 100ML WATER
SIZING IS GOOD FOR 6 MOS



ONCE SANDING W/ 320 - APPLY BOLE
① TO ADD COLOR
② FILL EDGE OF BOOK
REACTIVATE BOLE IF DRY WITH SIZING



2 DIFFERENT TYPES OF AGES



USE WHEN BURNING FINGER NEVER TOUCH BOOKS IT WILL REPEL



Illustration B: Preparing the Edge

the edge of the book and onto the supporting surface. This ensures that the whole edge is completely covered by the gold. Slowly lower the tool, keeping it parallel to the edge, until the free edge of the leaf comes in contact with the edge and the leaf releases from the tool. Sometimes the release, the “kiss,” is audible in a quiet room. Proceed with the application of the gold strips, overlapping them by about 2 mm until the whole edge is covered. If the sizing dries before the edge is covered, apply more size to the edge but not to the edge of the applied leaf. If any breaks are visible, small pieces of gold can be applied to them. Breathe on the area with an open mouth to activate the size and lay on the repair.

The gold will appear shiny in areas where there is excess moisture. Allow the edge to dry until no shiny spots remain, and then set the edge. This is done with a small piece of cotton, flannel or batting, pressed lightly down on the edge. Lift the cotton straight up after each press, and work along the edge from spine to fore edge. Draw the cotton across the palm of your hand between strokes to remove any excess moisture. Repeat the process three or four times, increasing the pressure with each successive pass. Do not use cotton balls for this, since the loose cotton fibers can catch on the edges of the gilding boards or book boards and mar the edge when burnishing (see Illustration C).

Burnishing should be done while there is still some residual moisture in the edge. To test the edge, breathe on it with your mouth open. This creates a fog on the edge, which will dry within 3–5 seconds if the edge is ready. Peter advised using dry mount release paper for burnishing, or baker’s paper or a piece of ordinary paper, waxed on one side with beeswax. The paper must be hard and smooth to allow the burnisher to move smoothly. Overlay the entire edge with a piece of the paper cut larger in width and length than the edge. (If you are using a waxed paper, put the wax side up on the edge.) Starting at one end, move the burnisher back and forth across the edge, lightly and smoothly. Repeat this process four or five times. To insure good adhesion, you can also move the burnisher lengthwise to the edge two or three times. Without the paper, lengthwise movement could scrape the edge, or remove some gold, so all future burnishing will be done across the edge.

Allow the edge to dry further, about 30 minutes, and breathe on the edge again. The fog should disappear in about a second. Another test is to tap the edge with the burnisher. If the edge is dry enough there will be faint “ping,” but the edge can be damaged by this method. If the edge is sufficiently dry, lightly burnish the bare edge 2–3 times more with the agate burnisher. Before the final burnishing, the edge is slightly waxed to help the burnisher

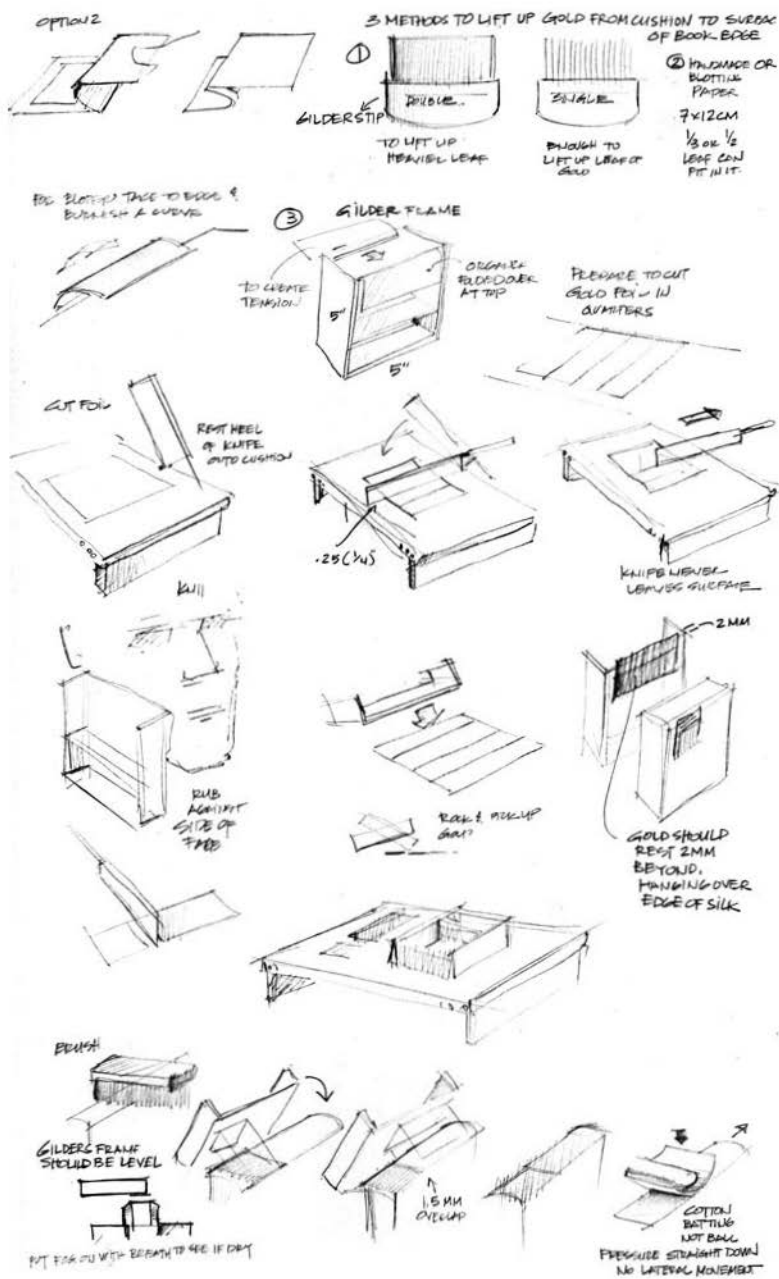


Illustration C: Cutting And Applying Gold

glide easier and with more force. The wax can be applied with a cloth, but the cloth should be discarded after use since hardened wax can damage the edge if the cloth is reused. The safest application is done by stroking a cake of beeswax with thumb or fingers and transferring the wax to the edge by lightly rubbing it. The wax should be applied in very thin coats. Burnish the edge between applications of wax, applying more pressure than used previously. The burnisher should be held nearly perpendicular to the edge to push down on the gold. If the burnisher is held at an angle, the burnisher will push the gold ahead of it. Generally, the edge is burnished 2–3 times, and wax is applied between each. If the text paper is soft, too much burnishing can cause the gold to flake off the edge. For a softer, dull sheen, you should do the final burnishing through paper without applying wax.

When the edge is done, remove the book from the press with its supporting boards and lay them flat on one side. Hinge the top board away from the book rather than lifting it straight off to avoid damaging the edge. Turn the book over, and remove the other board in the same fashion.

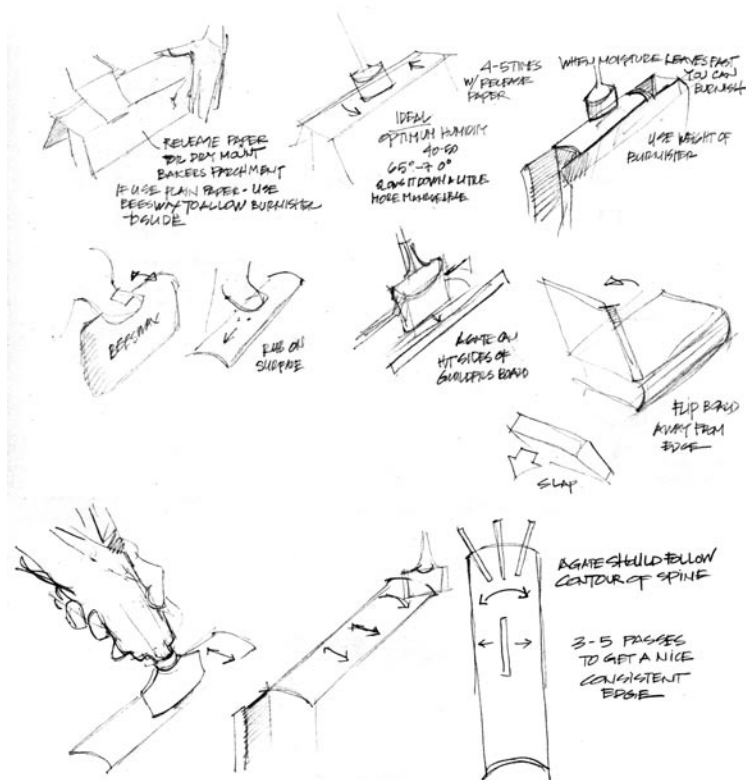


Illustration D: Burnishing

Hold the book a few inches off the bench and then slap it against the bench to loosen the pages. If some pages are still stuck, fan the book in both directions (see Illustration D).

If repairs need to be made in the process of gilding an edge, there are two optimal opportunities. The first is during the laying on of the gold. If a break appears, a small piece of flannel can be charged with grease (lightly rub it on your face) and use it to pick up a small piece of gold. Breathe on the location of the break to reactivate the size, and apply the gold. Proceed as normally, and gently brush off any excess gold with the flannel after the edge has been set and the initial burnishing through paper has been done. A second opportunity for repair is after the first direct burnishing. The procedure is the same as above.

Edge Coloring

Peter discussed several techniques used to color edges in various ways. Colors can also be used in combination with gold. For a solid color edge, the book is trimmed; talc is applied, and the book placed in the press. The edge is scraped and sanded as for gilding, using size to dampen the edge for scraping if needed. Coloring agents can be gouache, watercolor, ink or acrylic paint thinned with gilding size to the consistency of cream. Peter noted that some older books suggest adding sweet oil (such as olive) to the mixture.

The color can be applied with a sponge or a brush in a thin, consistent layer working from spine to fore edge. Let the edge dry before adding another layer of color. If the color doesn't go on smoothly, the press may need to be loosened to allow for better penetration. Use a soft brush to polish the edge as you would after applying bole for gilding. Apply beeswax and burnish with an agate burnisher.

Instead of solid application, the color may be sprinkled on the edge. The edge is scraped and sanded, and then the book is removed from the press and laid on the edge of the bench between binders' board and under weight. The color is thinned a little more than for a solid edge application. The color is applied through a screen made by stretching a piece of hardware cloth (mesh 1/4" x 1/4" inches) over a small wooden frame (about 25cm x 25cm). Dip a soft brush (like a shoe brush) into the coloring agent, holding the screen over some waste paper, flick color onto it by rubbing the brush across the screen to achieve a fine spray. The first drops will be large and varied, but the spray will become finer and more uniform. When the spray is right, the screen can be transferred from the

waste paper to the book edge. Be careful not to allow foam to build up on the screen. Bang the screen on waste paper to remove the foam. Other items which can be used to spatter an edge: a glue brush, an iron press pin or a heavy pipe. The brush is charged with color and hit upon the pin to produce a spray. Several different colors can be applied. The book can be returned to the press for the edge to be waxed and burnished.

Other variations can be produced by sprinkling rice or other small-grained items on the edge before sprinkling. This can be done on a plain or solid colored edge. Melted wax can be dripped or splashed on the edge before coloring or after a solid coloring has been applied but before sprinkling on other colors. When the application of colors is completed, the book can be knocked on the bench to remove the wax before the edge is burnished. Flakes of gold can be used in combination with coloring agents. The book is placed into the press, and the edge scraped and sanded as for gilding. The edge is colored and allowed to dry. The edge is then burnished, and a layer of plain size is applied. The gold leaf is then put into a tea strainer and brushed through the mesh to drop on the wet size. When the edge is dry, the edge is burnished first through paper, then waxed and burnished with an agate. Palladium and other kinds of leaf can be used for various effects. The smaller the screening mesh, the smaller the flakes will be on the edge.

Coloring effects or leaf flakes can also be applied on a gilded edge. Colored edges can be built up using different colors or shades of the same color. Once the basics are mastered, the binder can develop an individual vocabulary of edge decoration methods (see Illustration E).

Notes

1. Gilding boards: Gilding boards are usually made of beech, oak, maple or other straight grain wood. They are about 1 to 1.5 cm thick along one edge tapering to about .5cm thick along the other long edge. They are about 10 cm wide, and vary in length, 20 to 30 cm are useful lengths to have. The thicker edge of the boards should be planed to an angle of about 70° in relation to the inside surface. When preparing and dressing gilding boards it is important to plane them in the direction of the wood grain. The boards should be placed in a press and planed using a small block plane. If the plane is creating small voids in the wood, the plane is probably moving against the wood grain. Gilding boards will need periodic redressing to restore the angle due to wear.

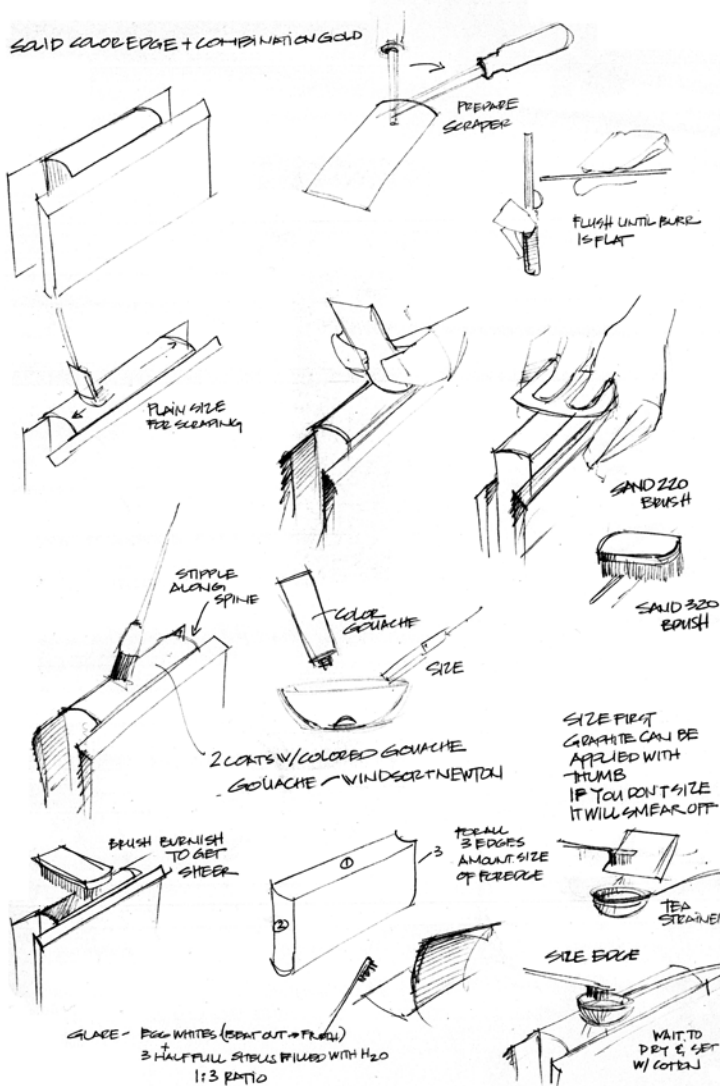


Illustration E: variations on edge treatments.

2. Cabinet scraper: Using a fine file and sharpening stones, the scraper edge should be shaped to form a 90° angle with its flat surface. A burr is formed on both sides of the edge, and then turned slightly using a steel burnisher or the shank of a screwdriver. This turned edge is used to scrape the book edge, working in the direction from the spine to-

ward the fore edge only, to avoid chipping the spine folds of the text block. The scraper should be held at an angle between 45–70° degrees (see Illustration F).

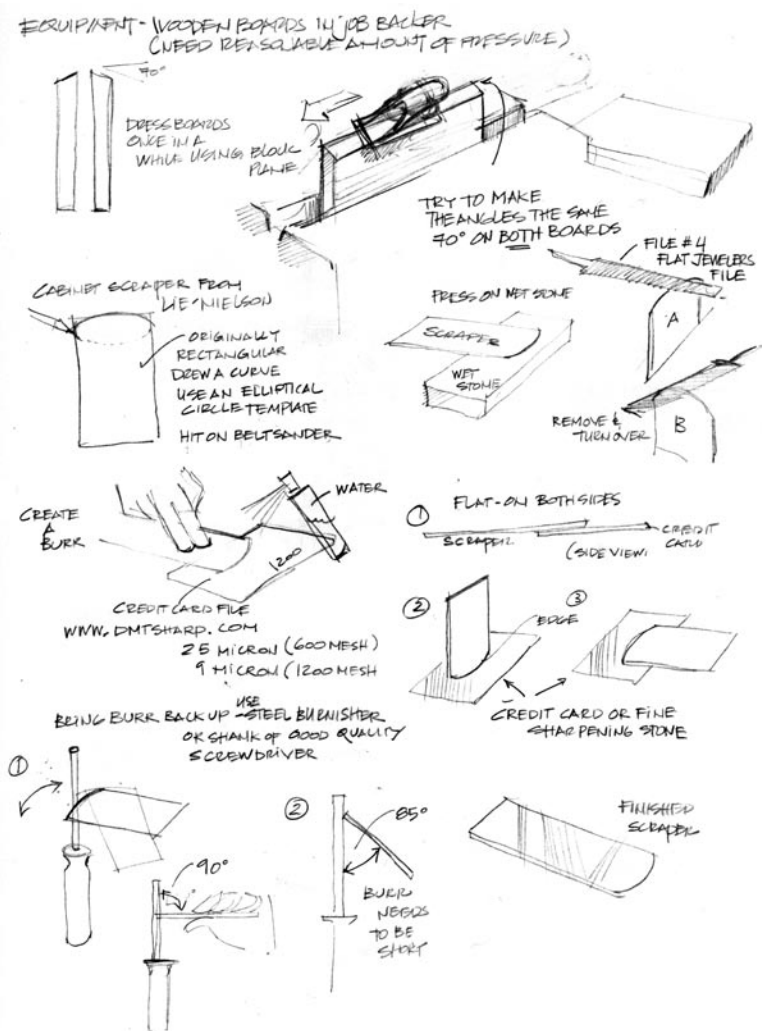


Illustration F: Tools

3. Size: Peter discussed various traditional sizing agents, egg white and starches were most common, but parchment and gelatin size are also used. Peter has found that PVA makes a quite acceptable sizing agent. He uses Jade 403, but presumes that other types of PVA would also work. He mixes about 1 teaspoon of PVA with 400 ml of distilled water

and shakes it vigorously. The size is left to stand overnight and then poured into a clean container through a coffee filter to remove any large particulate. The size can be made thicker for some difficult papers (very soft ones), but thicker size will not burnish as well as thinner size. PVA size has a much longer shelf life than egg or starch size.

4. Gold cushion: Gold cushions can be purchased, but many binders make their own by padding a wooden board and covering it with vegetable tanned leather, suede side up. Varieties of padding can be used, but the chosen material should yield a firm surface. The cushion should be about 5 mm thick. The leather is applied while damp, stretched over the padding and tacked or stapled to the board edges. When dry, dust the leather with pumice using a gold knife or similar tool. Holding the cushion vertically on an edge and away from the work area, slap it vigorously with the flat of the knife to dislodge excess pumice. As with the blade of the gold knife, avoid touching the surface of the cushion with your fingers or any greasy tool (see Illustration G).

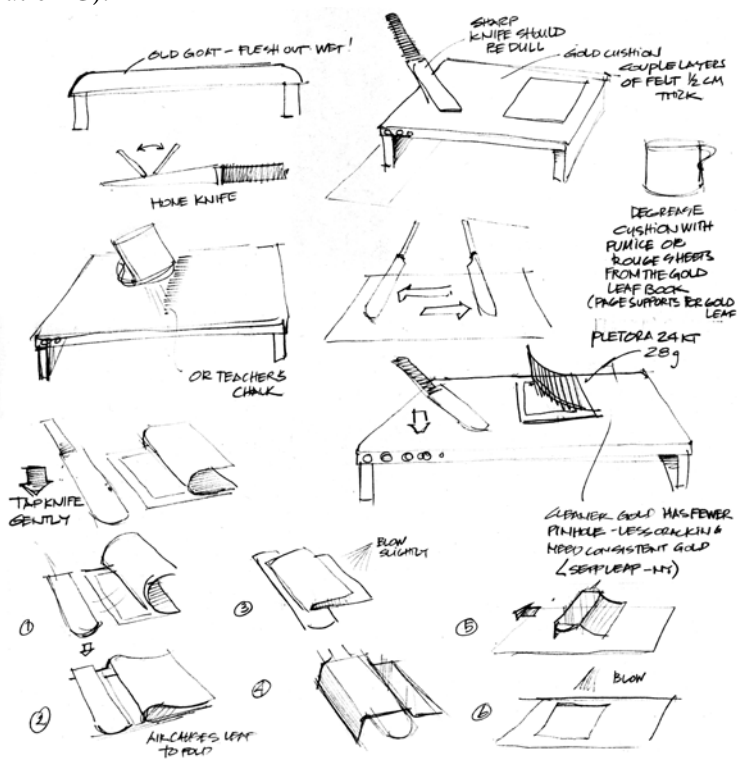


Illustration G: Gold Cushion

Peter Geraty supplied a detailed handout for his sessions, which has been abridged by Dorothy Africa for the Journal. Thanks to Peter Geraty and Eric Alstrom, the full text of the handout will be made available for downloading through a link on the Guild of Book Workers web site. An email message on the GBW mail list will be posted when the full document is available.

Colophon

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