

AN OUTLINE OF BOARD REATTACHMENT

Jeff Peachey, Guild of Book Workers Standards of Excellence Seminar

San Francisco, CA, September 28 - 30, 2023

This outline – generally – begins with less invasive techniques, then ends with more invasive ones. The techniques are largely for leather covered tight joint bound books. Often they are used together; a sewing extension and tissue hinge repair. CAUTION: some techniques are included for historic completeness and are rarely used today.

1. SEWING EXTENSIONS¹

1.1 Sewing support extensions²

- 1.1.1 Thread sewn through the center of sections and around the support³
- 1.1.2 Thread sewn through the center of sections and under supports
- 1.1.3 Thread sewn through the center of sections and through the supports⁴
- 1.1.4 Supports extended with added material⁵
- 1.1.5 Thread laced through entire support⁶
- 1.1.6 Thread or fibers adhered into support⁷

¹ Most treatments in sections 1 and 2 can be done with the spine attached. There are four common variations for then attaching the boards to the spine: lacing-in with new holes, lacing-in using existing holes, de-ply or fray then adhere to the board, or insert into an (often partially) split or lifted area.

² Bernard C Middleton. *The Restoration of Leather Bindings. Revised Edition* (Chicago: American Library Association, 1984): 87-99. Middleton has clear illustrations of variations 1.1.1 and 1.1.4. Alessandro Scola describes adapting the technique for an extremely large antiphonal, and includes an intriguing mechanical analysis of tension and compression forces. "Conserving and Preserving a 15th-century Italian Antiphony", Youtube accessed 25 June 2023. https://www.youtube.com/watch?v=3_geozLDF0

³ Sydney Cockerell. *The Repairing of Books* (London: Sheppard Press, 1958): 47- 49.

⁴ Emma Fraser, "An Elegant Method of Board Reattachment" *Journal of the Institute of Conservation* 41, no. 1, 2023: <https://doi.org/10.1080/19455224.2023.2202412> Fraser either goes through the support or along side it depending on condition, and also generally laces the thread through the board similar to Cain's method.

⁵ For example, looping deployed cord around a support 4 sections into the bookblock, then sewing it through the first 3 or so signatures.

⁶ Alessandro Scola performed a treatment where he threaded new supports through the entire spine, reattaching both boards. This was done in two stages, with a hole near the middle. Email 25 July 2023.

⁷ Peter Goddijn. *Het Restaureren van Boeken; Een Handleiding Voor de Restauratie van Boeken uit de Periode van 1600 tot 1850* (Den Haag: Koninklijke Bibliotheek, 1994): 43. Goddijn uses linen fibers, but deployed cord or soft thread are alternatives.

1.2 Endband sewing extensions⁸

- 1.2.1 Lacing or adhering cores of a new endband to the board⁹
- 1.2.2 Adhering flanges of a stuck-on, or sewn stuck-on, endband
- 1.2.3 End-of-spine band¹⁰

2. JOINT TACKETING¹¹

- 2.1 Not at a support¹²
- 2.2 At a support, thread through original lacing pattern on board¹³
- 2.3 Two holes, parallel tackets on sides of support
- 2.4 V-shaped, one hole on the shoulder, two on the spine¹⁴
- 2.5 X-shaped, two holes on the shoulder, four on the spine¹⁵

⁸ This is an overlapping category. These are generally used with larger, earlier book structures where new endbands need to be sewn. Often endbands can be sewn without lifting if the headcaps or spine panels are lifting or missing.

⁹ Assuming the bookblock is strong, this is an unobtrusive method that adds critical support near the head and tail of the binding.

¹⁰ Christopher Clarkson. "Minimal Intervention in the Treatment of Books" *Preprint from the 9th International Congress of IADA, Copenhagen* (August 15 - 21, 1999): 94. These are often used when reinforcing earlier books with exposed areas of the spine. Clarkson fills the area from the kettle stitch to the endband in order to strengthen the sewing and to have an additional material to adhere to the boards. This could be considered a new sewing support.

¹¹ Robert Espinosa and Pam Barrios, "Joint Tacketing: A Method of Board Reattachment" *Book and Paper Group Annual* 10 (1991): 78-83. The technique and name of joint tacketing is attributed to Tony Cains. See Cains, Anthony. 1994. "In Situ Treatment of Manuscripts and Printed Books in Trinity College, Dublin." *Conservation and Preservation in Small Libraries* (Cambridge: Parker Library Publications, 1994): 127-131. Cains's original tacket description is similar to 2.1, but making a knot on the shoulder peak, and lacing on boards.

¹² There are pros and cons of tacketing at sewing stations or avoiding them. When not at a support, the original sewing is not interfered with. When at a support, the tacket blends in better with the existing cords and slips.

¹³ Donia Conn, who interned with Tony Cains, used this on a treatment around 2004. It works best with wooden boards or in instances where there is very little adhesive on the slips of paper boards. Treatment: <https://digitalcollections.syr.edu/Documents/Detail/book-of-hours/24808?item=26227> Email 24 April 2023.

¹⁴ Alessandro Scola brilliantly devised this style tacket. Email 25 July 2023.

¹⁵ Ibid.

3. OTHER SEWING TECHNIQUES

- 3.1 Sewing boards to the spine (NC)¹⁶
- 3.2 Replacing a deteriorated cord or tape without resewing¹⁷
- 3.3 Replacing or adding material under or into an existing one¹⁸
- 3.4 Adhering or sewing new material on top of a support¹⁹
- 3.5 Adding new sawn-in stations with glued supports (NC)²⁰

4. INNER HINGE REPAIR²¹

- 4.1 New endsheets²²
- 4.2 Glue board into shoulder (NC)²³
- 4.3 Paper, fabric, or laminate hinges²⁴
- 4.4 Pleated paper hinge²⁵

¹⁶ NC = Not Common in book conservation. Usually this a non-bookbinder (aka amateur, folk, home, owner) repair. But like all the earlier repairs, if possible, it is best to preserve them.

¹⁷ Deborah Evetts used this technique for cords, and used a floss threader. Conversation 1990s. Robin Tait uses a hose clamp to thread a new tape without resewing. Email 2016.

¹⁸ These can be deployed thread, frayed thread, yarn, linen tape, etc....

¹⁹ Rachael Day, Board Reattachment: Cord Extensions, 4 November 2013. Accessed April 4, 2023. <https://www.westdean.org.uk/study/school-of-conservation/blog/books-and-library-materials/board-reattachment-cord-extensions>

²⁰ This was a common method of binding single sheets and reinforcing library bindings in the 19th and 20th c.

²¹ The idea of grouping into outer / interior/ inner attachment came from Alexis Hagadorn. Alexis Hagadorn and Jeffrey S. Peachey, "The use of parchment to reinforce split wooden bookboards, with preliminary observations into the effects of RH cycling on these repairs", *Journal of the Institute of Conservation* 33, no.1 (2010): 41 – 63.

²² This is a treatment once common, that now seems to be on the wane, primarily due to the extreme invasiveness, often for primarily aesthetic reasons. It is still used for more functional type repairs, rather than conservation work.

²³ Often a non-bookbinder repair method. Inevitably, the leaf it is glued to fails, and once I saw three consecutive leaves glued to the board.

²⁴ These are sometimes adhered to the shoulder and board edge, or extend onto the inner face of the board and under the lifted flyleaf.

²⁵ This was in common use at Carolyn Horton's NYC studio in the mid-20th century. https://www.conservation-wiki.com/wiki/BPG_Board_Reattachment#Pleated_Paper_Hinge

5. INTERIOR BOARD REPAIR²⁶

5.1 Splitting

- 5.1.1 Fully split including turn-ins
- 5.1.2 Split only under the pastedown
- 5.1.3 Locally split²⁷
- 5.1.4 Inserted into already delaminating boards

5.2 Slotting²⁸

- 5.2.1 Basic slotting
- 5.2.2 Lifted pastedown on the board edge
- 5.2.3 Molded spine, two layers of fabric
- 5.2.4 Biscuit slotting
- 5.2.5 Combination slot/ reback²⁹

²⁶ Most of these involve flanges of fabric or tissue, adhered and sometimes sewn to the spine. For larger books the flange can be sewn. Flanges can have slots cut out to fit over raised supports, or comb style. Splitting separates the board into layers, slotting removes material equivalent to the thickness of the blade.

²⁷ Useful when inserting sewing extension or tacket slips. Sometimes called biscuit or patch lifting.

²⁸ Slotting requires a machine to cut the slot, but these structures would be applicable for slitting too. Diagrams for all of these 6.2 structures are at: <https://jeffpeachey.com/board-slotting-machine-2/structures-for-board-slotting/>

²⁹ Angela Andres, "Variation on Board Slotting: Case binding meets in-boards binding..." *The Bonefolder*, Vol. 4, No. 2 (2008): 24-26. <https://www.philobiblon.com/bonefolder/vol4no2contents.htm>

6. OUTER JOINT REPAIR

- 6.1 Tissue, pre-colored, or colored with acrylics³⁰
- 6.2 Inserted into cuts in the leather, or lifting leather³¹
- 6.3 Infilled losses covered with tissue³²
- 6.4 Leather onlay³³
- 6.6 Heat or solvent-set tissue³⁴
- 6.7 Cast acrylic onlay³⁵
- 6.8 Pressure-sensitive tape (NC)
- 6.9 Glue (NC)³⁶

³⁰ Don Etherington, "Japanese Paper Hinge Repair For Loose Boards on Leather Books", *The Abby Newsletter* Volume 19, Number 3, Aug., (1995)
<https://cool.culturalheritage.org/byorg/abbey/an/an19/an19-3/an19-305.html>

³¹ Ursula Mitra, in the 2010s, offhandedly mentioned to me a technique of cutting into the leather to bury the edges of the tissue, since the edges of the tissue often (always?) lift. Lifting the leather also solves this common problem.

³² Losses on the board can be brought level with the existing leather using paper, leather, blotter, etc....

³³ I've seen this done on a number of 20th c. repairs, and the previously mentioned Brockman Reback article also uses this as a cosmetic onlay.

³⁴ Priscilla Anderson and Alan Puglia, "Solvent-Set Book Repair Tissue", *The Book and Paper Group Annual* 22 (2003): 3-8. A more recent reevaluation see Katherine S. Kelly et al., "Heat- and Solvent-Set Repair Tissues" *Journal of the American Institute for Conservation*, 61:1, (2022): 24-54, <https://www.tandfonline.com/doi/full/10.1080/01971360.2020.1795982>

³⁵ Sarah Reidell, "Textured Fills: Replicating Leather Surfaces with Acrylic Media and Reusable Silicone Rubber Molds", *ICOM-CC* (2019): 1-7. Reidell has published extensively on this topic.

³⁶ Liquick Leather was a common glue for this unfortunate treatment. It was a Poly Vinyl Acetate (PVA) based miracle cure for book repair used in the 1950s-70s. It was painted onto books, and in one collection the books were not even removed from the shelves, they were stuck to the shelves in some cases.

7. REBACKING³⁷

- 7.1 Brockman³⁸
- 7.2 Cockerell³⁹
- 7.3 Middleton⁴⁰
- 7.4 Reid-Cunningham⁴¹
- 7.5 Paper, fabric, or laminates
- 7.6 Overbacking (NC)⁴²

An excellent overview and step-by-step tips for many of these techniques is on the AIC BPG Wiki: https://www.conservation-wiki.com/wiki/BPG_Board_Reattachment.

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³⁷ Likely everyone has their own variation of this treatment, I've listed a few common published ones. Because of its invasiveness and the skill necessary to perform one, rebacks are much less common than a few decades ago. When done properly, a reback lets the book feel and function like it was new. My hunch – based on zero material evidence, but extrapolating craft thinking – is that this is one of the earliest types of book repair, after rebinding.

³⁸ James Brockman, "Rebacking—An Alternative Approach" *The New Bookbinder* 11 (1991): 36–46. A super strong attachment method, and can be sewn or rely on adhesives. Brockman also mentions using a thinly pared strip of leather as a cosmetic covering on the outer joints. It is much easier to insert each hinge separately, like he recommends. I have used this extensively since 1991.

³⁹ Douglas Cockerell, *Bookbinding and the Care of Books* (New York: D. Appleton & Sons 1901): 305-306. Although these two pages don't have a lot of information, they do contain a salient summary of his treatment philosophy, "... it is desirable that the characteristics of an old book should be preserved ... it is far more pleasant to see an old book in a patched contemporary binding, than smug and tidy in the most immaculate modern cover."

⁴⁰ Middleton, *Restoration*, 135 - 149. The oversewn cloth joint is damaging and is rarely used today.

⁴¹ James Reid-Cunningham, "Leather Rebacking, Updated GBW Standards Presentation Handouts", https://www.conservation-wiki.com/wiki/File:Leather_rebacking_article_feb_2020.pdf

⁴² Often a non-bookbinder repair, where an unpared piece of leather is adhered on top of the existing spine and onto the boards; like a quarter binding on top of a full leather binding. Again, often worthy of preservation as an owner intervention.

50 WAYS TO REATTACH BOOKBOARDS

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- 2:00** INTRO - Caveats + Goals - 5 min
- 2:05** DEMO - Scouring fabric - 5 min
- 2:10** PPT - Overview + Sewing Extensions - 15 min
- 2:25** DEMO - Making a Archimedean drill bit - 10 min
 - Filing rough shape
 - Polishing grit progression
- 2:35** DEMO - Sewing Extensions - 35 min
 - Where to start extensions
 - How to choose which type
 - When to use a blunt tip syringe, dental floss threader
 - Adhering vs. lacing new slips
- 3:10** QUESTIONS/ COMMENTS - 5 min
- 3:15** BREAK - 30 min
- 3:45** DEMO - Stropping - 10 min
 - Safety, initially loading a strop
 - Stropping techniques
 - When to clean, how to reload
- 3:55** PPT - Splitting, Lifting, and Slotting - 10 min
- 4:05** DEMO - Board Splitting - 40 min
 - Leather and book preparation
 - Splitting tools
 - Lifting pastedown on board edge
 - Splitting techniques and tools
 - Fabric beveling, scoured cloth
 - Inserting tips
 - Inner hinge and outer joint treatments
- 4:45** PPT - Cockerell treatment + A personal treatment - 10 min
- 4:55** QUESTIONS/ COMMENTS - 5 min
- 5:00** END

SEWING EXTENSIONS

Good Candidates

- Tight joint leather bound structures
- Difficult to lift tight back spines
- Relatively intact sewing and cords
- Raised cords
- Detached and partially detached boards
- 1600 - 1800 Western European structures

Poor Candidates

- Case bindings
- Books with weak paper
- Books with damaged sewing stations

SEWING EXTENSION SEQUENCE

1. Book prep: surface clean, paper repairs, locally consolidate leather if necessary.
2. Decide if it is best to sew extensions in the original style, enter spine from the outside, drill through the cord, use they syringe, etc. Find the center of two or three signatures at the beginning and end, about 1/4 inch inside the book.
3. Attach new slips to the board. Adhere to exterior, insert into pocket lifted area, or thread through original lacing holes. If desired, color the thread with acrylics, or add hinge and joint tissue repairs. Or reback.

BOARD SPLITTING

Good Candidates

- Generally 19th- 20th c. leather bound books
- Oversize books
- Thick boards
- Weak bookblock paper (adhesive structure distributes stresses better than sewing)
- Books with easily removed spines
- Books that are handled frequently and need a strong attachment
- Spine linings that have deteriorated and need to be replaced
- Books that will have hollows added
- Weak, red rotted, or easily stained leather (interior board attachment avoids contact)

Poor Candidates

- Difficult to lift tight back spines
- Small books, thin boards
- Partially detached boards (or one board detached)
- Spine features that need to remain visible

BOARD SPLITTING SEQUENCE

1. Book prep: Surface clean, paper repairs, locally consolidate leather if necessary.
2. Decide on the style of splitting: completely or just the area under pastedown. Split. Use a sharp lifting knife! A dull spatula will often push up board material, creating lumps. Split about an inch into the board.
3. Glue a hinge into each of the boards, let dry, then adhere to the edge of the board. When dry, fold at the corner of the board, not the height of the leather covering material. Space board before attaching with a bifolia of 70lb Mohawk Superfine (THIS IS KEY!). Place textblock on board to position judging from the 3 squares.
4. If appropriate, cover with inner board repair, then outer tissue repairs.

SUPPLY SOURCES

Syringes, #18 blunt (probe tip) needle (pink, OD .05").

– McMaster-Carr. <http://www.mcmaster.com>

Dental Floss Threader – Drug stores

High Molecular Weight Fish gelatin

– Henry Harvey, Ajinomoto North America, email for prices: haveyh@ajiusa.co

Japanese Tissue: Cochin, Uso Gami

– Hiromi. <https://www.hiromipaper.com/>

Lifting knives, fraying shield, bookbinder's pliers, delrin lifter, delrin hera, carbon fiber lifter, smooching stick, steel strip weight, weighty wedge, strops.

– Peachey Tools. <https://www.peacheytools.com>

Linen Cord, Londonderry Linen Lacing Thread, Size 4 (fits #18 syringe), James Needles #18

– Colophon Book Arts Supply. <https://www.colophonbookarts.com>

Muslin Springs Creative 45" Natural Southern Belle unbleached muslin, 133 x 72 tpi.

– Online fabric store. <https://www.onlinefabricstore.net>

Soda Ash – <http://www.dickblick.com>

Ball joint Leo style press – <https://www.geertvandaal.nl/>

FISH GELATIN 1:3 gelatin to clean water (a medium thick starting point)

SCOURING 2% Soda Ash per dry Weight of Fiber (WOF)

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