

## Small but Bulky: Rebinding a Portable 15th-Century Book of Hours

### INTRODUCTION

Book conservation treatment rarely calls for the full rebinding of a book. Where possible, conservators preserve the material nature of a book by keeping its original components and performing minimal repairs. At times, more interventive treatments are necessary to prepare the book for safe handling. A 15th-century Flemish book of hours (HRC 10) from the Harry Ransom Center's Medieval and Early Modern Manuscripts Collection presents a case study where rebinding became essential, allowing an in-depth examination into how modifying traditional resewing and rebinding techniques can improve the opening of small, bulky text blocks.

### TREATMENT DECISIONS AT THE HARRY RANSOM CENTER

The Harry Ransom Center at the University of Texas at Austin functions as both a museum and a research library, with an active exhibits program as well as a commitment to making its collections accessible to the public. As a public institution, the Harry Ransom Center's collection belongs to the residents of Texas and, while researchers are carefully supervised, access to collection materials is seldom restricted. Bound collections at the Harry Ransom Center are thus simultaneously historic artifacts as well as working objects that need to remain functional.

The primary goal of conservation is to stabilize the object in its current condition rather than returning it to a previous state. Where treatment is necessary, conservators often like to focus on preventive over interventive and, where it's necessary to keep treatment to a minimum, to preserve as much of the original object as possible. Occasionally, however, treatments for bound materials can become quite interventive for the object to remain safe during handling and access—if inadequate repairs are made for the sake of minimal intervention, more problems can arise in the future. As collection materials at the Harry Ransom Center are actively used in the Reading

and Viewing Room and called for frequently in classroom settings (for instance, there were 414 class sessions encompassing over 8,000 students in 2017), interventive treatments are sometimes necessary for the continued access to collection materials.

### HRC 10: A LEGACY TREATMENT

Multiple conservators have worked on the treatment of HRC 10 (ca. 1425-1475), a Flemish book of hours that originally belonged to the Miriam Lutcher Stark Library (fig. 1). The Stark collection was donated to the University of Texas beginning in 1925, and HRC 10 eventually made its way to the Harry Ransom Center, where it is now part of the Medieval and Early Modern Manuscript collection. The parchment text block consists of 237 leaves and measures approximately 9.5 cm (h) × 7 cm (w) × 4 cm (d)—it is small, fitting in the hand of a user, but rather bulky. Decoration includes 10 small miniatures and 12 full-page miniatures, with borders and initials throughout the manuscript painted and illuminated with gold.

When HRC 10 arrived at the Harry Ransom Center, the manuscript was in a 19th-century binding of full vegetable-tanned goatskin over paperboards with a hollow back. The text block had been sewn on recessed cords with the endpapers whip-stitched on, with a heavy amount of animal glue applied on the spine. The animal glue, which would have been applied hot, had gelatinized the parchment spine folds, further reducing the opening of a text block already restricted by its awkward dimensions and unaccommodating binding structure. A condition report of HRC 10 dating back to the 1990s describes the text block as very compressed, where “pressure must be used to open the book, during which the leaves flex a great deal from the gutter to the center of the leaf, causing stress to the media” (Primanis 1993, 2).

To view the manuscript, users had to grip the leaves tightly to force them open, which was especially damaging as there are no margins to the full-page illustrations (figs. 2 and 3). As a result, while the binding was in relatively good condition, the manuscript was disbound by conservators at the Harry Ransom Center sometime during this period.

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Fig. 1. HRC 10. Catholic Church. Book of Hours. Flanders: between 1425 and 1475. Courtesy of Olivia Primanis.

At a later point, residual animal glue on the text block spine folds was removed with water using cotton swabs, and Japanese paper mends were made where necessary. The text block was then re sewn on double raised cords with an alum-tawed lining tacketed onto the spine, over which primary endbands were sewn (fig. 4). The sewing and endband supports were laced into wooden boards, with the intention of covering the manuscript in an alum-tawed skin with



Fig. 2. Worn-away areas of the miniature from the lack of margins and handling with a strong grip.

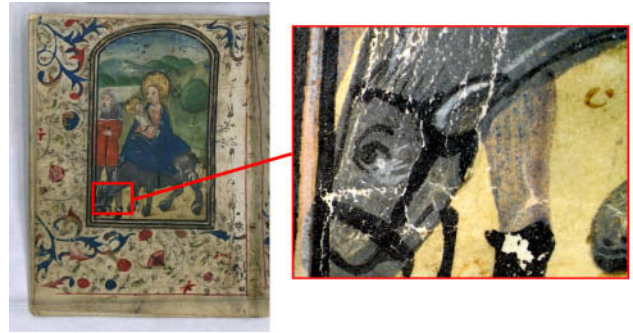


Fig. 3. Cracking media caused by flexing and handling of the leaves.

a baggy-back. When conservators rebind, some rebind in a period style or a structure that is aesthetically sympathetic because there is an idea that that is how the book was “meant to be.” The binding structure just described may sound familiar to many book conservators—it may sometimes be the structure that is used when rebinding manuscripts of this period.

Nevertheless, while a lot of care had been taken in carrying out the treatment of HRC 10 to that point, the manuscript did not open as well as hoped after resewing (fig. 5).

For books where the leaves are wide enough and not too thick to drape naturally, it is not necessary for the text block to open to the gutter. In these instances, conservators prefer a reduced throw-up of the spine: “If a book throws up high the stresses and wear of opening are localized at the gutter instead of being spread out across the page. The paper will bend too much at the gutter and will be fatigued; worse, the tension of the sewing thread and supports will change as the book opens and closes, sawing the thread against the stations” (Conroy 1987, 2). Sewing supports and spine linings are used to restrict the movement of the spine so that the stress of the opening action is distributed across the leaf. On manuscripts like HRC 10, however, the text block is small and stubby, with narrow margins and stiff leaves that have no drape; high



Fig. 4. Resewing of HRC 10 on double raised cords with an alum-tawed lining. Tacketed onto the spine, over which primary endbands were sewn. Courtesy of Erica Schoirfer.



Fig. 5. Poor openability of HRC 10 after resewing on doubled raised cords.

throw-up is necessary for the book to open well. The use of double raised supports in the resewing increased the stiffness of the spine, reducing throw-up and restricting the opening of the book, meaning that the leaves still needed to flex in order for them to open (fig. 6). Treatment was left unfinished for awhile and, when the project was resumed, there was not a clear idea on how to proceed with the current structure.

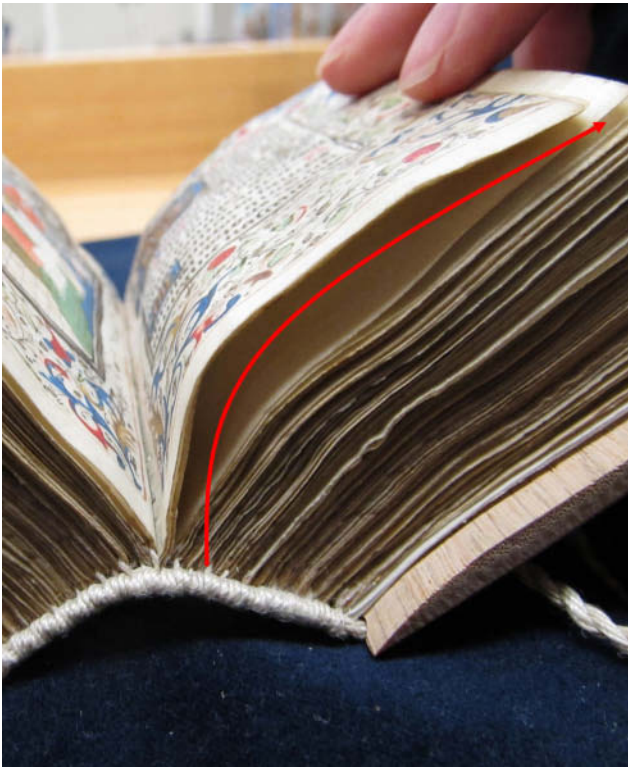


Fig. 6. Flexing of the leaf during opening, causing risk to media.

After reviewing condition reports and reconsidering the objective of treatment, the decision was made to remove the double raised supports from the text block. The sewing on double raised supports had appeared to be the right choice initially, as that is how a 15th-century manuscript would have been sewn. Sometimes, one becomes fixated on what the structure is supposed to be and alternative solutions are not considered even when it is clear the treatment is not working. Condition reports served as a reminder that the contemporary binding of HRC 10 no longer exists and is not necessary to recreate. As the media was in fragile condition and could be further damaged with flexing of the leaves, treatment proceeded by finding a structure for HRC 10 that could improve the opening and reduce flexing of the text block leaves during its use.

#### FLEMISH MANUSCRIPTS: ILLUMINATED LEAVES

A notable structural detail of HRC 10 is that its full-page miniatures were painted on individual leaves and adhered to the rest of the gathering with a hooked stub (fig. 7). This is typical of Flemish manuscripts—L. M. J. Delaissé describes how, “toward 1420 the specifically Dutch tradition in book production was already well established; unlike French Books of Hours, in which text and miniature are on the same leaf, in Dutch Books of Hours a miniature may be painted on a separate leaf, with one side remaining blank, which is then bound in at the appropriate place in the text” (Delaissé 1968, 19). The parchment used for the illuminated leaf tends to also be thicker than that used for the rest of the text block in Flemish illuminated manuscripts. This construction method affected



Fig. 7. An illustrated leaf is attached to this gathering by a hooked stub.

the opening: because the illuminated leaves are adhered to another leaf, the area of adhesion is stiffer, less flexible, and the illuminated leaves move with the leaves they are adhered to, reducing their ability to open flat.

A decision was made to detach the hooked stubs of the illuminated leaves from the gatherings they were adhered to, after which they would be re sewn along with the rest of the text block. While this method of leaf attachment is significant in identifying the manuscript's Flemish origins, the choice to detach the stubs was made based on the treatment objective, which stresses the importance of increasing the opening characteristics of the text block to prevent the media from being flexed too much. Working under a microscope to observe any changes in the parchment, hooked stubs were gently humidified, using small pieces of damp blotter to soften the adhesive, after which leaves could be detached easily with a microspatula (fig. 8).

#### DETERMINING A SUITABLE STRUCTURE

As the sewing supports were so restrictive after HRC 10 had been re sewn, the first consideration for improving openability was to try a structure with unsupported sewing. In discussions with colleagues from peer institutions, half were doubtful about the idea of re sewing HRC 10 on an unsupported structure, preferring the control across the spine that raised supports would give during the opening. The other half suggested looking into variations of unsupported sewing structures, including sewing on a Japanese paper accordion with a link stitch or long stitch on airplane cotton. One conservator also suggested scraping or manipulating the spine fold before sewing to increase the parchment's flexibility. Through discussions with multiple conservators, it became clear that, even among experienced conservators, there is a wide range of opinions and uncertainty on what works or what might not. There is often more than one suitable solution, and it is also important to consider that what may work for one person and institution's culture may not work for another.

Models were made to test re sewing the manuscript without any supports, using a link stitch, and to see if there were noticeable improvements in openability between different

structures. The unsupported link stitch is a structure that offers a high throw-up, improving openability for stubby text blocks like HRC 10. A potential problem with unsupported sewing structures is that the stress of opening is placed entirely on the sewing thread, which can also cause knifing and chafing to sewing stations. These problems are less of a concern for HRC 10 as it is a small book, and its parchment text block would be less susceptible to stress at the sewing stations. Historic precedence for the use of unsupported sewing can also be found in Coptic and Ethiopian parchment manuscripts, as well as Western manuscripts such as the 8th-century St. Cuthbert Gospels.

Paper of similar thickness to the parchment in HRC 10 was selected for the models, with gatherings folded following the collation of HRC 10. Since paper is more flexible and accommodating than parchment, any openability issues seen with these models were expected to increase in a parchment version. The first model made was sewn all-along on raised double cords, so that a comparison could be made between it and the unsupported sewing structures. The leaves in this model did not open flat and, over time, the spine became very concave—possibly due to the tension of the sewing in combination with the size and thickness of the text block (fig. 9). In contrast, a model with unsupported link sewing opened flat (fig. 10). While this was the goal, the structure turned out to be too flexible. The gatherings could move up and down, and the spine could be easily twisted in one's hands and, with this movement, cause the leaves to rub against each other and abrade the media (fig. 11).

To reduce the flexibility of the spine, endbands with a back-bead were sewn over cords at the head and tail, with tie-downs at every gathering to reduce any vertical shifting. Having reduced that vertical movement, the next challenge was to reduce the horizontal shifting of the spine. In a conventional spine lining, bookbinders usually apply an adhesive to the spine and then apply a lining on top. A pounding brush is then used to ensure the lining has complete contact with the spine, molding to any slight undulations on the spine. This method of applying the spine lining is a typical procedure that does not tend to interfere with how the book opens. In this instance,



Fig. 8. Before treatment, after separation of hooked stubs from attached leaves, and bifolio under hooked stub after treatment.



Fig. 9. Opening characteristics of a model sewn on raised double cords.

where the text block has no drape and the margins are narrow, the lining restricted the opening. By adhering the first and last leaves of a gathering, these leaves did not open flat and the gatherings could not move independently of one another.

To avoid this effect in HRC 10, the adhesive was applied to a Japanese lining paper. The flat side of a Teflon folder was used to apply pressure on the lining over the spine, so that only the tops of the gathering folds are adhered to the lining (fig. 12). This method of lining attachment creates a gap in between sections, allowing the gatherings to pivot independently as the leaves are turned and for the leaves to lie flatter (fig. 13). The flexibility of the spine was also suitably reduced. There may be some concerns over how well the lining is adhered to the text block with this method—over the last year, the opening characteristics of this model were demonstrated almost on a biweekly basis during tours and classes,

with deliberate attempts at twisting the text block in multiple directions to show the reduced flexibility after spine-lining, and the lining has remained firmly attached to the model text block. This is encouraging for the actual text block of HRC 10, where the text block will (hopefully) be handled less frequently and vigorously. As this model had suitable opening characteristics, HRC 10 was resewn following the model on an unsupported link stitch. It was then lined as described above using a heavyweight Japanese paper, over which primary end-bands with a back bead were sewn. Single-bifolio parchment endpapers with an airplane cotton hinge were added at the front and back of the text block.

Wooden boards were made for the covers, with the edges bevelled so that they would be aesthetically reminiscent of 15th-century bindings. Holes were drilled into the boards corresponding with the location of the sewing stations, and



Fig. 10. Opening characteristics of a model sewn with unsupported link stitch.



Fig. 11. The easily contorted spine of an unlined link stitch structure.

on the inside of the board, zigzag channels were drilled to accommodate the sewing thread, which had been left long at the beginning and end to be laced into the boards (fig. 14). The airplane cotton hinge was adhered to the inside of the board. The book was covered in an alum-tawed skin, leaving the spine unadhered for a natural hollow (fig. 15).

AFTER REBINDING: OBSERVATIONS AND CONCLUSIONS

After rebinding, there is a noticeable improvement in openability between the current structure of HRC 10 and when it was sewn on raised double supports. Due to the size of the manuscript, a collapsible custom cradle was made for HRC 10. Snake weights will still be needed to keep the pages down as the manuscript is being used, which can be tricky as there is no blank area of the text block to place the weights. The opening is still not ideal, and it must be accepted that for such problematic manuscripts where the text block is too small and thick, an ideal opening may not exist. Nevertheless, the aim of the treatment to increase openability has been achieved.

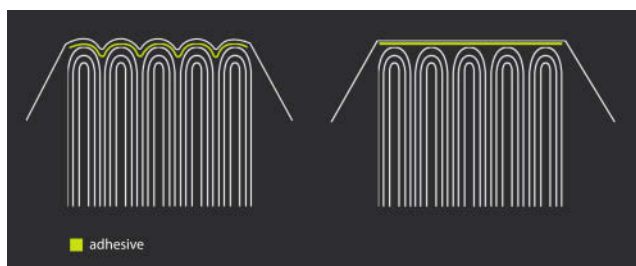


Fig. 12. Comparison of a conventional spine lining attachment (left) and a spine lining adhered only to the top of the spine folds (right).

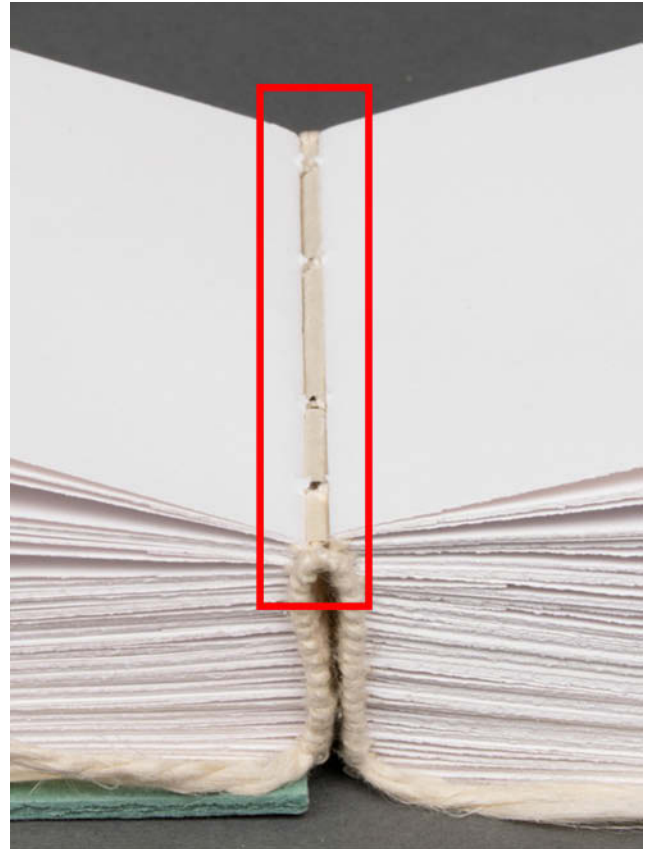


Fig. 13. Gap created by only adhering the spine lining to the spine-fold tips.

The high throw-up of the spine allows for a wider angle of opening and reduces the flexing across the leaves and, most importantly, the media (fig. 16). As interventive as the treatment was, it is satisfying to see how much HRC 10 is being used—the manuscript has been requested multiple times

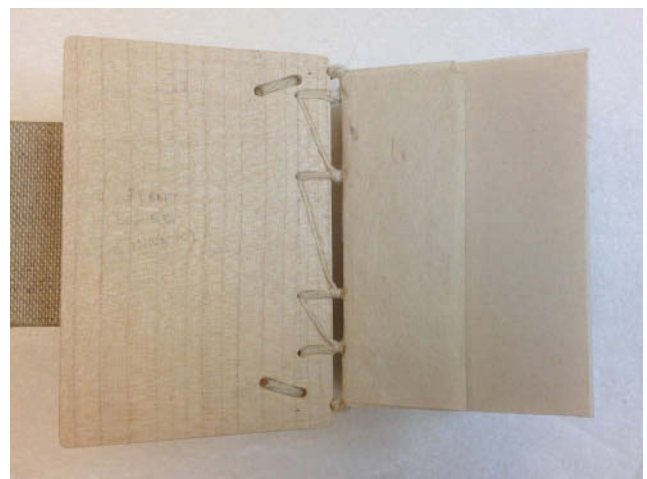


Fig. 14. The zigzag lacing-in pattern prevents the channels from creating a weak point in the board.

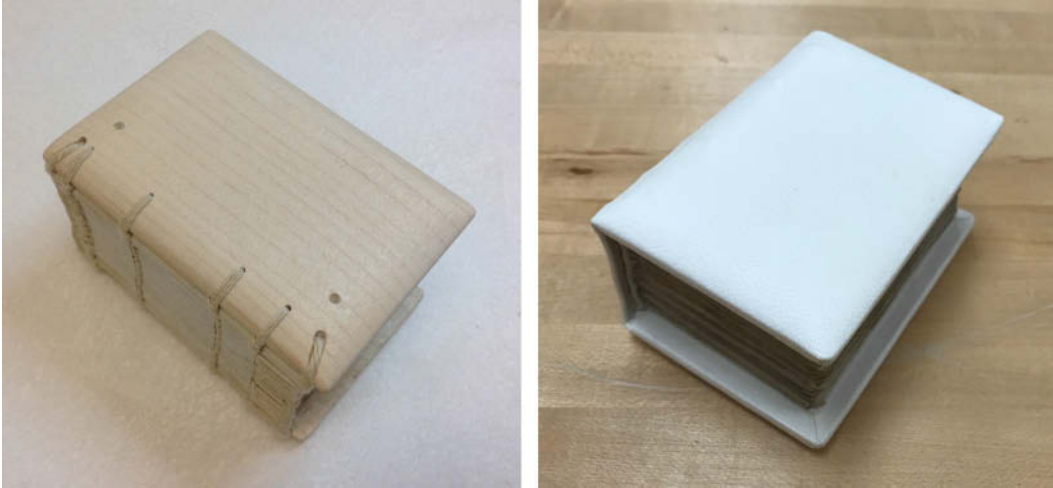


Fig. 15. HRC 10 before (left) and after (right) covering in alum-tawed skin.

since treatment was completed for classroom and research use and will be on loan to a Texas university for an exhibition (fig. 17).

A great deal of time and thought was put not only into the treatment of HRC 10, but also in how the manuscript would be stored and used. Whenever questions and considerations seem to be exhausted, however, new questions, points of views, and things to improve tend to come up through discussions with other conservators. In one instance, a question was raised regarding how the manuscript would be used—while a custom cradle had been made for HRC 10, there were questions whether books like HRC 10 were this size because they were meant to be held in the hands for an intimate experience. Conventional practice in reading rooms for special collections is that books must be opened on cradles

with proper support, but it seems safer to simply hold the book in one's hands while reading than to have to weight each leaf down, take the weights off, and reweight each time the leaves were turned.

This question was posed at the 2017 Care and Conservation of Manuscripts Conference in Copenhagen when this paper was first presented. Commenters noted that the present-day use of HRC 10 is very different from its historical use, and that a researcher is probably going to need free hands to take notes and images of the manuscript. Often, the research isn't going to simply be reading and turning the leaves like a 15th-century user and so, in this scenario, it would perhaps be more helpful to put straps on the cradle instead of changing handling rules. The important reminder from this conversation is that even though an



Fig. 16. Opening characteristics of HRC 10 after rebinding.



Fig. 17. HRC 10, selected treatment materials, and models. Courtesy of Pete Smith.

object has remained in use for the last few hundred years, subtle changes in the way it is being used do matter and need to factor into treatment decisions.

Another consideration is the issue of rebinding—there are many small, bulky manuscripts with similar openability problems to HRC 10, which makes even digitizing for access impossible. In the case of HRC 10, it was fortunate that the manuscript was in a 19th-century binding and had already been disbound in the '90s, when such a decision might have been easier to make; as such, the openability of HRC 10 could be improved upon during treatment. However, many similar manuscripts are in original or early bindings, which makes things more complicated. Problematic books like these beg the question of what to do. Taking apart an intact early binding is an uncomfortable decision but choosing to do nothing and keep a book unusable is not a satisfying solution.

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#### FURTHER READING

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