Practice makes perfect?: Lessons learnt from the binding of the Winchester Bible

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My paper concerns a long conservation project of a very large manuscript, begun by Dr Christopher Clarkson and now being completed at the Bodleian Library in Oxford.[1] (Fig. 1) The Winchester Bible was made at and for Winchester Cathedral, Hampshire, in southern England, in the later twelfth-century and has remained at the Cathedral for over 900 years.[2] It is the largest of the surviving giant English twelfth-century lectern bibles, with 468 leaves each 59 x 40 cm. Planned on a lavish scale, it has the text copied by a single scribe in two columns and with large historiated initials for each of the books of the Bible. The manuscript is rightly famous and Christopher de Hamel has claimed that "the Winchester Bible is a candidate for the greatest work of art produced in England".[3] Although the text is complete, and it has been inter-corrected with another large twelfth-century Bible from Winchester, the illumination was never completed.[4] Six artists have been identified as having worked on the Bible, in some cases one artist completing an initial that had been drawn by another. Initials survive in all states, from blank areas with the lightest underdrawing in metalpoint, presumably the scribe planning the page layout, to underdrawing in metalpoint and ink after the scribe has finished copying the text, then ink-drawn and gilded initials, to finally many finished gilded and painted initials.[5] This allows us to study the methods and materials used for its illumination, these details are outside the scope of this paper.

There are two separate sets of quire signatures indicating that the Bible was originally bound as two volumes, and minor damage from wood-boring insects to the final leaves of the original second volume shows that the first bindings had wooden boards. The final leaves of the Bible have evidence of moisture damage and some mould stains which prompted repair in 1820, with the London binder Charles Lewis repairing and then rebinding the Bible as three volumes.[6] The Bible was repaired and rebound again in 1948 by Beatrice Forder in Winchester. Her repair seems to have concentrated on repairing damage to the outer spinefolds of quires throughout the manuscript, and most quires were repaired with full-length parchment guards with additional patch or strip repairs to other spinefolds where necessary. The damage had presumably been caused by Lewis's use of hot glue while rebinding an already damaged spine. The Bible was rebound by Forder as four volumes with oak boards quarter-bound with goatskin leather, with each of the original two volumes divided into

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[1] All images are reproduced by permission of The Chapter, Winchester Cathedral. The Photographer of figures 2, 3 and 5a is Jane Eagan, Oxford Conservation Consortium. I am grateful to Jane Eagan and the anonymous peer-reviewer for their comments on this paper.

[2] Winchester, Winchester Cathedral, MS. 17, known as the Winchester Bible. For details of the manuscript with a bibliography of the earlier literature see Claire Donovan, *The Winchester Bible* (Winchester, 2008).

[3] Winchester Cathedral, 'The Winchester Bible', http://www.winchester-cathedral.org.uk/conservation-action/the-winchester-bible/ [accessed 10 October 2018].

[4] For inter-correction with the Auct. Bible (Oxford, Bodleian Library, MSS. Auct. E. inf. 1-2) see N. R. Ker, *English manuscripts in the century after the Norman Conquest* (Oxford, 1960), pp. 50-52.

[5] Walter Oakeshott, *The Artists of the Winchester Bible* (London, 1945) and Walter Oakeshott, *The Two Winchester Bibles* (Oxford, 1981).

[6] For Charles Lewis (1786–1836), see Foot, Mirjam M., 'Lewis, Charles (1786–1836), bookbinder', *Oxford Dictionary of National Biography*, September 23, 2004, Oxford University Press. https://www.oxforddnb.com/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-16574 [accessed 15 July 2019].

two.[7] The 1948 repair and rebinding campaign was paid for from the royalties received by the Dean and Chapter of Winchester Cathedral from Walter Oakeshott's *The Artists of the Winchester Bible,* which had been published in 1945 and became a surprise best seller. Beatrice Forder appears to have been suggested for the work by Oakeshott who was then Headmaster of Winchester College and honorary Cathedral Librarian from 1947.[8] In 1973 he noted, in a piece that he wrote when Forder retired from being "largely responsible for the day to day running of the [Cathedral] Library", that he had chosen her as "she had already done some fine work for me, privately, in a like style with oak boards, and I had no doubt that she would produce a noteworthy binding".[9] Her 1948 work concentrated on parchment repair and rebinding with less attention being given to treatment of the illumination.[10] Forder is little known in the conservation world today but her binding work was exemplary and ahead of its time.[11] She used loose parchment guards around each quire when the Bible was sewn, thereby keeping adhesive away from the spine, and her bindings function well. However, the heavy guards, spine linings and endleaf structure do restrict the opening of the bindings, placing some stress on the leaves and illumination.

In 2012 Winchester Cathedral started a major building conservation project which is now nearing completion and a new area for the display of the Bible, one of their major treasures, was planned as part of the project.[12] Concern was raised about the condition of the Bible and although the manuscript is in generally good condition, small areas of loss as well as loose and vulnerable gilding and paint were visible to the naked eye in some of the initials. Treatment in 1948 had concentrated on creating new bindings, though some leaves appear also to have been treated probably with damp blotters leaving some white paper fibres stuck to a number of the initials and display lettering. The restricted opening of the bindings and the full-length guards also obscured many of the annotations and corrections hidden in the spine margins. These risks prompted the Cathedral to commission a conservation project for the Bible alongside the building work in 2014. This project would see each of the four volumes of the Bible disbound, conserved, digitized and then rebound, and they asked Christopher Clarkson the pre-eminent book conservator and father of modern book conservation to undertake this work.[13]

A treatment proposal to treat the Bible volume by volume was agreed by an expert committee advising the Cathedral and Chris Clarkson began work in 2014 on the first volume (I.i) in the studio of

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[7] A detailed description of her bindings is outside the scope of this paper and I plan to discuss them further in a future article.

[8] John Dancy, *Walter Oakeshott a diversity of gifts* (Norwich, 1995), pp. 151 and 191.

[9] Walter Oakeshott, 'Beatrice Forder', *Winchester Cathedral Record* 42 (1973), p. 5.

[10] There were white paper fibres stuck to some of the initials and it appears that Beatrice Forder may have pressed leaves with initials between damp blotters, but there is no evidence that she consolidated any of the already damaged initials.

[11] Beatrice Forder (1901-1976) can be seen working in the Cathedral's Morley Library in three photographs published in 'The Winchester Bible is Rebound', *Picture Post* 38:10 (6 March 1948), p.15. In 1948 Roger Powell (1896-1990), who would in 1953 famously rebind the *Book of Kells* for Trinity College Dublin, was commissioned by Winchester College to rebind eighteen of their manuscripts (Dancy, *Walter Oakeshott*, p. 309). It is tempting to speculate that Forder and Powell may have met to discuss their respective projects and to swap notes.

[12] Winchester Cathedral, 'Kings and Scribes – the Birth of a Nation', http://www.winchester-cathedral.org.uk/conservation-action/kings-and-scribes-the-birth-of-a-nation/ [accessed 12 October 2018].

[13] For Dr Christopher Clarkson (1938-2017) and his career see Nancy Bell and Christopher Clarkson, 'Personal and professional reflections: A conversation with Christopher Clarkson', *The Paper Conservator* 25:1 (2001), pp. 71-84, and the obituary written by Nicholas Pickwoad (*The Guardian*, 10 June 2017, p. 43) available at https://www.theguardian.com/books/2017/apr/19/christopher-clarkson-obituary [accessed 9 October 2018].

the Oxford Conservation Consortium.[14] (Fig. 2) Clarkson was working against a tight deadline as the conserved, digitized, and rebound first volume, as well as three bifolia from the second volume were scheduled for exhibition at the Metropolitan Museum, New York from December 2014.[15] The Bible is a complex manuscript and both the consolidation and parchment repair, as well as the new binding, are challenging. After completing the first volume, Clarkson noted in his draft conservation report that "there are sure to be new developments, thoughts, questions, & possible treatments which may necessitate changes" for the other three volumes.[16] From April to December 2015 Clarkson completed the consolidation and parchment repair of the second volume (I.ii) at the Bodleian Library before ill health forced him to stop work on the Bible. From May 2016 the work has been continued by a team of book conservators at the Bodleian Library, under my leadership, with the rebinding of the second volume and then the conservation and rebinding of the third (II.i) and fourth (II.ii) volumes. Clarkson's work on the Winchester Bible was his last major conservation project and continuing his work has been a humbling experience for me, a former student of his from his time at West Dean College.

This paper will concentrate on the rebinding of the Bible and my continuation of Clarkson's work, as well as discussing the minor changes and developments that we have introduced during the project. When thinking about new bindings for the manuscript, Clarkson looked back to the best features of Romanesque bindings from the twelfth century. In the report for the first volume he states that "structurally my aim with such a manuscript is generally to obtain a binding with good board leverage & a wide easy opening […] such handling qualities depend upon well consolidated sewing, board lacing, endleaf materials & style, also the weight & quality of covering material".[17] Clarkson specified a binding that would reuse the original sewing stations and be sewn on five double linen-cord supports. To provide the wide opening and board leverage, new oak boards were used to allow for Romanesque lacing channels through the spine edge of the board for both the sewing and endband supports. At the beginning of the project Clarkson worked closely with Tova Irving of William Cowley Parchment Makers, Newport Pagnell to select calfskin parchment for new endleaves, and alum-tawed goatskin for the covering for all four volumes. Bernard Allen, a furniture maker based in Llansantffraid, Powys, supplied and worked quarter-sawn oak boards wide and thick enough for a Romanesque structure, and the treatment proposal sought to produce four matching bindings.[18]

Taking over a partially completed conservation project is a difficult task, but to take one over on a manuscript of this importance and to try to complete one started by Chris Clarkson was especially daunting. Clarkson had consolidated the illuminations, completed the parchment repair, prepared the endleaves and partially prepared the boards for the new binding of the second volume. He had left brief instructions beginning with "study volume one carefully so they match reasonably well"

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[14] The original two volumes were bound as four in 1948, with volume numbers that identify the original divide: Volumes I.i (fols. 1-128), I.ii (fols. 129-214), II.i (fols 218-314, 316-330), II.ii (fols. 331-371, 375-468).
[15] Metropolitan Museum of Art, New York, 'The *Winchester Bible*: A Masterpiece of Medieval Art', https://www.metmuseum.org/exhibitions/listings/2014/winchester-bible [accessed 15 October 2018].
[16] Unpublished report dated March 2015, Christopher Clarkson, *Conservation & Rebinding Report, The Winchester Bible, Winchester, A four volume calfskin folio Bible. Project 179*, p. 3.
[17] Clarkson, *Conservation & Rebinding Report,* p. 49.
[18] Clarkson specified seasoned quarter-sawn oak boards with a square spine profile which are 14 mm thick at the centre of the board and 12 mm thick within the rebates for covering and endleaf hooks. They were made from two pieces joined with a biscuit mortise at the rebate, made from a particularly wide board selected from a Shropshire oak that was felled in the 1970s. (Bernard Allen, Personal communication, 23 June 2016). By comparison the quarter-sawn oak boards used by Beatrice Forder in 1948 were 10 mm thick at the centre of the board, reducing to 7 mm at the rebates.

and importantly “study volume two for opening flow & board leverage”. Replicating Clarkson’s work, both in appearance and more importantly in function, is not an easy matter though. I was fortunate to have observed and helped him during his work on the second volume, and I had my notes and had discussed various points with him during this time. The completed volume had returned to Winchester and we began by visiting and studying it closely as instructed. Most importantly Jane Eagan and the Oxford Conservation Consortium (OCC) conservators had taken approximately 700 photos and videos during his work on the first volume. These have proved to be invaluable as they caught details and methods that are hard to describe, measure or note in any other way. The photographs document Clarkson at work, rather than being static documentation photos of the Bible at particular stages of the process. Completing the binding of the second volume was a very steep learning curve, but I think we achieved the structural qualities that he had aimed for “a binding with good board leverage & a wide easy opening”.

For the second volume I aimed to replicate Clarkson’s work on the first. The foundation of a new binding is its sewing structure and the Bible has been sewn all-along with a heavy linen thread to double linen cords.[19] The size of the manuscript meant that sewing the Bible was a two-person job, and the size and weight of the volume has meant that two, three, or more conservators have been needed for various processes. Fully understanding the interrelated mechanical qualities of Romanesque bindings has been challenging. Clarkson had already partially prepared the boards and their lacing channels for the second volume and we relied on our notes of the completed first volume, as well as the OCC photographs to match and complete the board shaping. (Fig. 3) Pack sewing to support the spine shape was carried out after the boards were laced on and the structural primary endbands were worked after this, to help to control the opening and support the text-block.[20] (Fig. 4) This meant that the board channels for the endband lacing needed to be positioned and carefully drilled *in-situ*, and I used an idea for a drilling jig suggested by Bernard Allen to ensure an accurate and standard angle.[21] (Fig. 5) For covering I called on the help of Jane Eagan to replicate the method that Clarkson had used for the first volume, which was covered as a tight-back using foam pads bandaged to the spine to mould the covering skin around the supports without too much

[19] Each of the large text-blocks were sewn on five double-supports of linen 27 cord with linen 8/5 seaming cord thread. The sewing was all-along, a non-linked supported sewing described by Szirmai as ‘straight-sewing’, and the thickness of the sewing thread meant that supported kettle-stitches which incorporate a braid were not necessary (J. A. Szirmai, *The Archaeology of medieval bookbinding* (Aldershot, 1999), p. 148 and fig. 85b).

[20] Clarkson had a long interest in pack sewing and the way that this modified the opening characteristics of a binding, and he referred to it in several publications (Christopher Clarkson*, Limp Vellum Binding*, (Oxford, 2005), pp. 6 & 14-15, and ‘The personal development of three binding techniques’, in Shulla Jacques (ed.), *Edinburgh Conference papers 2006*, (London, 2007), pp. 87-96, at p. 94). However, ‘Pack sewing off the frame’ - a technique that he both practised and taught - was one that I don’t think he ever described in print. In his own rebinding work of repaired text-blocks he would pack after sewing and after the boards had been laced on, by whipping a thread of the same weight as that used for the sewing around the double sewing supports using a shaped, blunted and polished needle. This has the advantage of helping to set and support the spine shape once the boards have been laced on. The number of winds of packing can be varied quire-by-quire allowing for different thicknesses, and responding to the spine in ways that would not be possible if the packing was carried out during the sewing.

[21] Clarkson specified boards of a uniform height for all volumes, with a larger square at the tail edge than the head, to allow for slight differences of height between the four text-blocks. At head and tail structural primary endbands were worked with linen thread over linen cord cores, tied down at the centre of each quire and worked with a reversing stitch. At the head, secondary endbands were worked with indigo-dyed and natural linen threads with a front crossover bead, and at the tail, where the square was larger, an additional linen cord core was incorporated in the secondary sewing. All endband cores were laced into the boards. For the primary endband see Szirmai*, Archaeology*, p. 207 fig. 9.22b-c

definition. We were relieved to finish the binding that matched the first volume, but realised that we had two further volumes to complete.

Unusually for book conservation, the four-volume Bible means that a very similar treatment and then binding needs to be repeated volume by volume. I looked critically at the completed second volume and used the insights to suggest improvements. During the binding of the second volume it become painfully clear that subtleties, for example board shaping and the tension required when lacing on the boards, cannot be written down and our efforts to master these have been a joint endeavour. However, the wealth of photos provided by OCC of Clarkson working on the first volume made the continuation of the project possible as it had allowed us in small part to look over his shoulder as he worked. To maintain consistency over the long project, I have generated growing piles of notes, drawings, templates, jigs, photographs and films. All members of the Book Conservation team at the Bodleian have either taken part in the treatment or observed critical parts, and we have worked very closely with our colleagues from the OCC. This is much more comprehensive than our normal documentation but the learning opportunities from this project have been immense and we want to ensure that we benefit to the utmost. Working after Clarkson has brought a realisation that our documentation needs to record the 'why' and 'how' just as much as 'what' we have done. This project has also ensured that a pool of book conservators from two studios in Oxford have benefitted, sharing their expertise and creating a resource for future work.

To conclude, I would like to look at one element of my approach to the binding that has developed during the project. For the first volume Clarkson stuck alum-tawed panel spine linings to the spine over the paper concertina guard incorporated during sewing.[22] This was to help support the large manuscript and to control its opening and the volume which was then covered as a tight-back, albeit carefully covered so that it has the appearance of a Romanesque binding. This has worked well, but Clarkson had some reservations about the opening characteristics, particularly the flow between the endleaves and the text-block. For the second volume, where I was aiming to replicate Clarkson's work, I had limited options for change. However, I used transverse spine linings of washed aerolinen rather than the alum-tawed panel spine linings to better integrate the endleaves. (Fig. 6) The primary sewing of the endbands was sewn through the lining at the kettle stitch and the lining extensions were pasted to the inner face of the board. This provided a mechanical anchorage, and the spine lining and a hooked aerolinen joint from the endleaves worked together to enhance the board leverage.[23] Following the model of the first volume this was also covered as a tight-back using foam pads to mould the covering skin over the spine and around the supports without too much definition. The resulting binding functions well and has improved handling qualities with better integrated endleaves. Covering as a tight-back over the linen spine lining was aesthetically less pleasing that Clarkson's covering over alum-tawed spine linings and I was unhappy to produce a binding based on the best Romanesque qualities that was atypically covered as a tight-back.

For the third volume I was able to refine and improve the board shaping, particularly on the inner face at the spine, and we kept the transverse linen spine linings which had successfully improved the

[22] The following spine lining terms, defined by *The Language of Bindings Thesaurus*, have been used in this paper: panel spine lining, transverse spine lining, continuous spine lining. (Ligatus Research Centre, University of the Arts London, 'The Language of Bindings Thesaurus', http://www.ligatus.org.uk/lob/ [accessed 15 October 2018]).

[23] Clarkson has explained the operation of board leverage as "the handling & opening characteristics of an English Romanesque binding, if in reasonable order, work so that as one opens the upper board the spine starts to readjust & the leaves are supported throughout the movement" (Clarkson, *Conservation & Rebinding Report*, p. 49).

board leverage. However, I wanted to avoid covering as a tight-back if possible, while still supporting the spine and wide opening and to also recreate the appearance of the spine that Clarkson had achieved for the first volume. Two articles by Clarkson mention the use of alum-tawed panel spine linings mechanically anchored to the spine-edge of boards with trenails, and I experimented with these as a possibility.[24] From the brief descriptions with two photographs in Clarkson's articles, they appeared to be panel spine linings stuck and mechanically fixed to the board edges with trenails, the tawed leather being hair- or grain-side out. For the large Bible I experimented with a continuous spine lining of tawed leather with the flesh side out, the same thickness as the covering skin, which was extended on either side to cover the spine edge of the board. The lining was slotted at each support and was not adhered to the spine, though the hair side of the lining was roughened with sandpaper where it would be pasted to the board edges. The lining was anchored with trenails into predrilled holes through the lining and into the spine-edge of the board, with four equally spaced trenails per panel.[25] I used the mechanical properties of the tawed lining and covering skin to both support the wide opening and to form a friction bond that meant the volume did not need to be covered as a tight-back. The lining was placed flesh-side out, and its suede-like surface grabs the flesh-side of the covering skin forming a mechanical bond without adhesive, a phenomenon first noticed by Nicholas Hadgraft while studying chemise bindings.[26] Hadgraft noticed that the primary covering was often flesh-side out and that the flesh-side of the chemise grabbed it without any adhesive. For this volume the covering was only pasted to the outer face of the boards, board edges and lightly over the supports, it was not stuck to the spine. The flesh-side of the covering leather grabs the flesh-side of the spine lining so that the two materials work in tandem when the book is opened and closed. (Figs. 7 & 8)

I was pleased with the final results, achieving the structural qualities of "a binding with good board leverage & a wide easy opening" without it being covered as a tight-back. (Fig. 9) So, after three volumes, has 'Practice made Perfect?' - I'm afraid not. Learning from and observing Chris Clarkson over many years I realise that he was always striving for unattainable perfection while enjoying the process of learning and adapting as he went. I believe that Clarkson would have continued to modify and adapt his bindings for the Winchester Bible if he had been able to continue, and I hope that we are continuing his tradition of inquiry and adaptation. During this project I have been able to study three twelfth-century Winchester manuscripts with contemporary bindings and have been struck by the important and continuing role played by the thick tawed-leather panel spine linings, through which the endbands were sewn, to control the opening even after the primary coverings have

[24] For trenails used to secure a spine liner during the rebinding of Oxford, Corpus Christ College, MS. 157 in 1993, see Bell and Clarkson, 'Personal and professional reflections', pp. 71-84, at p. 82 and fig. 12, and Clarkson, 'Three binding techniques', pp. 88-90 and fig. 2.

[25] The trenails were turned from quarter sawn oak offcuts held in a pillar drill using a pencil sharpener with a modified blade. This produced a shank of approximately 2.3 mm diameter and a flared head. The turned blanks were then cut to approximately 13-14 mm length with a woodcarver's knife and a point was cut and the head refined. 2.2 mm diameter holes were drilled to a depth of 15 mm in the spine edge of the boards after the lining was stuck to the board edge, and the trenails were knocked in with a wooden block giving a friction fit.

[26] "In many examples observed the primary covering had the suede side outermost with the hair-side to the board. The secondary covering or chemise had the suede side innermost and the hair-side outermost. It seems that this arrangement of suede to suede may have had something to do with the handling characteristics of skin, by helping the chemise to cling to and support the thin primary covering, it also helped to improve the opening characteristics. It is noteworthy that many books of the period which have lost their chemise often have a primary cover in a reverse skin, and this possibly explains the preference." (Nicholas Hadgraft, *English Fifteenth Century Book Structures*, PhD dissertation, University College London, 1997, p. 252).

partially broken down.[27] For the final volume I hope to experiment with a slotted continuous spine lining that is mechanically attached to the text-block by the endband tiedowns as well as being mechanically attached to the boards with trenails.[28]

The death of Chris Clarkson continues to be a huge loss to book conservation, to the Bodleian Library, and to me personally. However, I am now realising that the opportunity to continue his work on this exceptional manuscript is proving to be a kind of posthumous masterclass. It has brought together a pool of conservators in Oxford and made us work as a team towards a greater understanding of Chris' work, both its execution and aim. It is also making us formulate our own approach to the complex conservation needs of these wonderful Romanesque manuscripts, building on the experience and example of our predecessors.

[27] Winchester, Winchester Cathedral, MSS. 4, 5 & 20, for details see N. R. Ker, *Medieval libraries of Great Britain* (London, 1964), p. 201. For these panel linings which project beyond the endbands to form a tab, previously described as 'endband stiffeners' or 'tab-linings', see Szirmai, *Archaeology,* pp. 157-8 and fig. 8.14.
[28] Similar to the twelfth-century continuous spine lining illustrated by Szirmai, *Archaeology,* p. 170 fig. 8.24. Clarkson may have been thinking along similar lines and his draft conservation report notes that "various English Romanesque entwining stitchery created good support and controlled spine and leaf movement without reliance on pasted spine liners" (Clarkson, *Conservation & Rebinding Report*, p. 53).

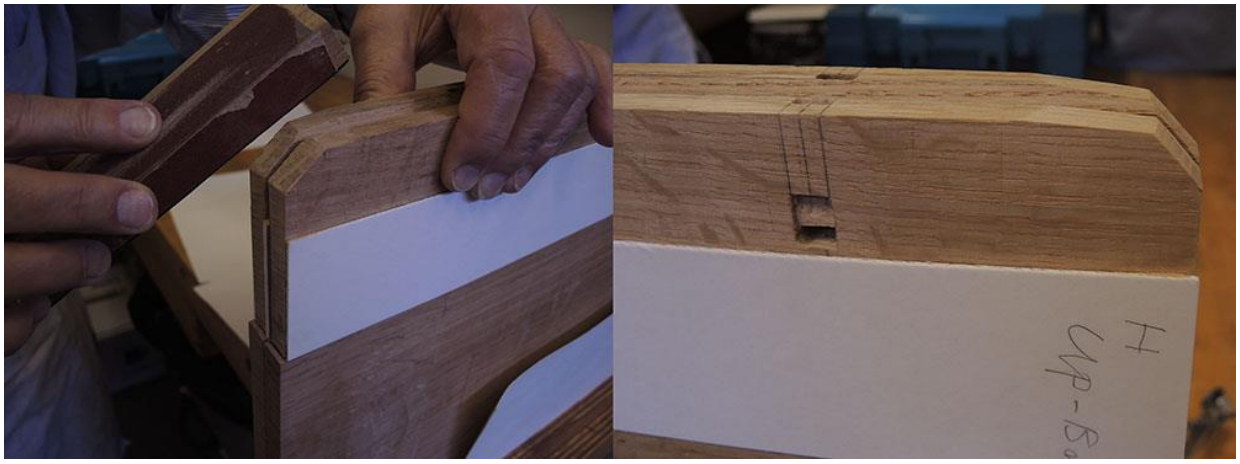
Figure 1

Winchester, Winchester Cathedral MS. 17, Volume I.ii, during rebinding.

Figure 2

Winchester, Winchester Cathedral MS. 17, Volume I.i, fol. 69r, Chris Clarkson assessing the condition of an illumination.

Figure 3



Photographs documenting the shaping of the oak boards.

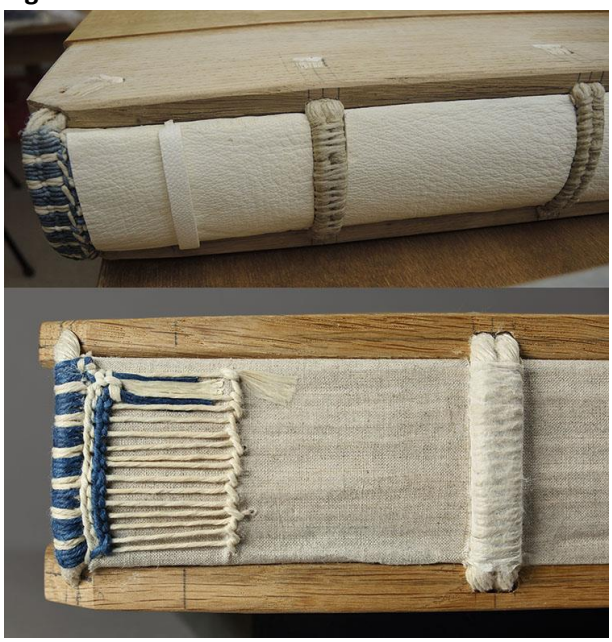
Figure 4

Winchester, Winchester Cathedral MS. 17, Volume II.ii, pack sewing after the boards have been laced on.

Figure 5

Winchester, Winchester Cathedral MS. 17, Volume I.ii, drilling the endband channels *in-situ* using an angled jig.

Figure 6

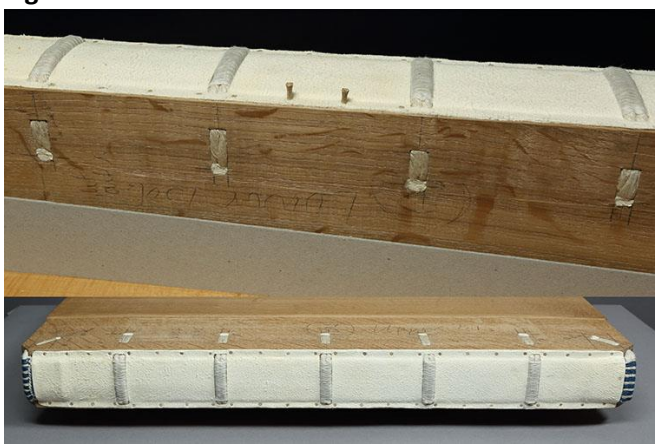


Winchester, Winchester Cathedral MS. 17, Volumes I.i (tail) and II.i (head), details of the panel and transverse spine linings and endbands.

Figure 7

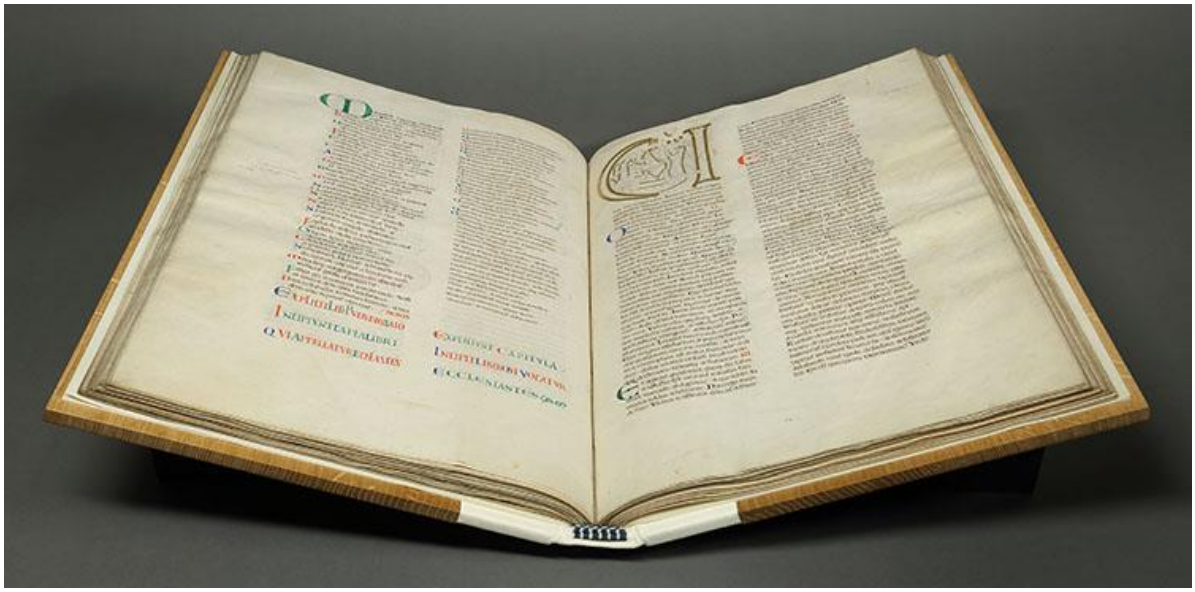
Preparation of oak trenails.

Figure 8



Winchester, Winchester Cathedral MS. 17, Volume II.i, securing the continuous spine lining with trenails.

Figure 9



Winchester, Winchester Cathedral MS. 17, Volume II.i, fols. 267v-268r, opening characteristic after binding.