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Binding Structures Featuring Removable Pages

Prepared for the Guild of Book Workers 2012 Standards of Excellence Seminar, Salt Lake City

The title of this presentation promises a discussion of those binding structures that have removable pages, but can't all bindings literally be taken apart and the pages removed? Book conservators direct much of their professional energy toward figuring out how to take apart binding structures in order to repair them. If the sewing is damaged they might even take the book down completely and remove the pages to clean and repair them before rebuilding the book. I consider this conservation process one that demonstrates the reversibility of a binding but not one that offers a strategy for simple page removal. The deconstruction of some bindings is very labor intensive, requiring extreme manipulation of the structure—even destructive manipulation. So, perhaps our quest for bindings with removable pages should concentrate on structures that are *easily reversible*.

Given this last point, easy reversibility, the question becomes: how do we characterize bindings with this feature? Let's approach this from a very practical perspective, and ask a few more questions. What constitutes the *removable unit*? Is it indeed a page, a leaf, a folio (a.k.a. a bifolio), a section, or something else? And, what's binding that unit to other units or to the covers? Also, is the structure exposed or hidden—in other words, what level of accessibility to its parts does the structure offer? I think this point, *accessibility of parts*, deserves to be considered a second factor necessary for easy removability of pages.

Before getting into the technical issues of this exploration we might ask ourselves why we even want removable pages—in what situations do we fine them desirable? What immediately pops into my mind is a dilemma that has troubled me for years. The history of fine press books reveals



Leda, Cheloniidae Press. Book, box, and suite of prints. Box and binding by Kelm.

an unfortunate tendency for the value of individual prints or original art to diminish when bound into a book. Many fine press books were accompanied by an extra suite of prints that could be framed and exhibited (though I would bet that most of them remained with the books). In a case like this, removable pages allow one set of original art to do two tasks: illustrate the book as a bound entity AND hang on the wall for more public exhibition. Possibly this will help to contradict and counteract that unfortunate tendency for bound art to lose value.

Presentation portfolios occupy an important area of book work where a structure with removable pages is desirable. In lieu of a binding, the portfolio is often a folder or box that simply contains a stack of loose pages or images. This direction can function well, but falls short if the presentation demands the unifying organization of a bound book. In either case the motivation is the desire to customize the presentation for a specific purpose, a purpose that may change from presentation to presentation.



Portfolio for Jim Coon. Drop-wall box by Kelm.

A third reason arises out of the participatory nature of some artist's books. There are occasions when I want to give the reader of my book the opportunity to modify the narrative by changing the order and content of the book. I have made two accordion books (in collaboration with Timothy C. Ely) in which the pages intentionally have no permanent binding though in both cases there is a suggested layout for achieving a specific geometric form. In these books the reader is free to determine the order of the pages and to change them at will. Encouraging this modus operandi creates an environment that promotes an intimate engagement between book and reader one that may even inspire the reader to create their own story.

Now to the technical issues. Let's start with the question about what material is actually binding one removable unit to another removable unit or to the covers. In most of the traditional book structures the answer is "thread". There is a long history of using thread to bind stacks of single leaves or folded sheets of paper and animal skin. If the thread passes through the side of the leaves we call it "oversewing" or "side sewing"; if through the center folds of gathered sections we call it "sewing through". Many book artists continue to employ thread as their core binding material, but often adapt it for use in new hybrid structures, for example, *wire edge binding*.



Investigations: The Four Elements: Earth. Artist book by Kelm and Timothy C. Ely.

Thread is used extensively and universally, but is it a good material for bindings with removable pages? Thread is an example of what I'd call a continuous material. If we think of its three dimensions, two are very small (the cross section or thickness of the thread) and one is very, very long (the length of the thread). The way that we normally use thread is to secure it at the beginning,

sew continuously in some fashion incorporating all of the paper that we wish to include in the binding, then secure it at the trailing end. Given that securing the thread at beginning and end rarely utilizes a knot that can be untied, taking the book apart necessitates cutting the thread. And once you cut the thread, you can't simply retie it to put it back together. New thread will have to be added. The sewing is also often buried under layers of spine linings that need to be removed in order to resew the book. The presence of glued linings lowers accessibility to the internal parts. Accessibility, and therefore, reversibility, is increased by utilizing sewn structures that leave the thread exposed on the spine. And if the goal is removal of individual sections from a multiple section binding, sewing each section independently will also increase the ease of reversibility.

Having arrived at the realization that in every case where thread is used cutting the thread is necessary for removal of pages, I broadened my search to binding materials other than thread. But where to look? Earlier I characterized thread as a continuous material, so I'd automatically look to its opposite—a discontinuous material. Small parts such as nuts and bolts fall into this category. The broader term used in the hardware world is "fastener".

One such fastener that has made it into the vernacular of modern bookbinding is the Chicago screw post—a 3/16 inch diameter metal post with 3/8 inch diameter heads on both ends. The two sections of the post are threaded together which allows them to be separated very simply with the use of a screw driver. The function of the screw post is analogous to that of the thread in the side sewn or side stabbed binding. The advantage of the screw post over thread is ease of reversibility.

There are, of course, limitations inherent to the screw post. Some are easily accommodated, such as the finite range of available lengths. A screw post is most secure when the two halves are screwed together tightly. Consequently, it's ill advised to adjust the binding length of a screw post by leaving the two halves loose to each other. Instead, the thickness of the text block and covers is adjusted to match the length of an available screw post.

A more complex question concerning the screw post involves its use in heavy or large books, and involves a look at the dynamics of movement in the spine during use of these bindings. As is the case with all codex-configured books, the spine and fore edge of a screw post binding normally face opposite directions. This certainly holds true when the book is closed, and usually holds true as the book is progressively opened from front to back. Imagine a closed book in front of you,



Fine Wallpaper. Artist book by TRIIIBE. Binding by Kelm. Head and spine detail.





with the spine to the left and the fore edge to the right. This orientation will have switched as you finish going through the book and close the back cover. The spine of a book with sections sewn through will make this transition fairly smoothly. In books that are side sewn, side stabbed, or screw post bound, the spine can't open up so it has to make the rotation as a solid unit, lifting upright and over as it changes direction. This big rotation of the spine is fine for lightweight and small screw post bindings but it becomes problematic as the weight and size of the book increases. The reason is that the weight of the cover and pages piling up on the spine section can trap it flat against the table and not allow it to rotate freely, thus severly limiting the opening of the book. My solution to this is a double-hinging system that allows the full mass of the text block to passively stack over previously opened pages. Thus, it opens smoothly and completely without requiring the spine to move all. It accomplishes this by progressively increasing the distance between the two lines of hinging on each removable unit, or page.



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Trees, Kurt Markus. Simple wire edge binding by Kelm.

Another style of binding that provides many options for removable pages is my own invention, wire edge binding. The simple wire edge structures utilize a binding thread knotted to anchorwires associated with each removable unit, and the thread is exposed and not trapped in any way. While these are easily reversed and reknotted, they still suffer from the same drawbacks discussed earlier, that is, drawbacks ascribed to binding with thread.



Spine and head detail of a wire edge model by Kelm.

The structures that are more versatile are those that combine small metal hinges with tubing and wire rod. Lengths of tubing are fixed to the spine edge of each removable unit, with openings large enough for two hinges spaced evenly along the edge. To bind the units together hinges are held in place in each opening and a wire rod is run into the tubing to trap the hinges. To take the binding apart the wires are simply pulled out, which releases the hinges.

The scope of wire edge binding is quite broad and utilizes some non-traditional materials and construction techniques, such as thermoplastic film adhesive to build laminated structures combining paper with metal tubing, wire rod, and sheet. Rather than reiterating all of this information here, I'll direct you to another essay, titled "Artists' Books as Articulated Sculpture: Daniel Kelm's Wire Edge Binding Structures". This article was originally compiled after my 1999 presentation for the Guild of Book Workers Standards of Excellence Seminar in Chicago, and was subsequently updated and illustrated for the 2011 Society of Bookbinders Conference in Warwick, England. It does not focus specifically on how to configure wire edge bindings with removable pages but gives a general discussion of the structure. Because of wire edge's modular construction it generally tends to be highly reversible, so lends itself successfully to structures with removable pages.

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Moth and Bonelight, Jerry Uelsmann and 21st Editions. The metal binding is an inventive solution to the age-old dilemma of art-in-a-book versus art-on-the-wall. Kelm created a volume that can be dismantled and reassembled by the owner—one or more prints removed without destroying the integrity of the binding.