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## A New Chapter for Hardcover Binders International/Library Binding Institute

On December 6, 2013, the Board of Directors for both the Book Manufacturers' Institute (BMI), and Hardcover Binders International/Library Binding Institute (HBI/LBI) approved a "Memorandum of Understanding," the final agreement confirming the merger of the two associations. Effective January 1, 2014, HBI/LBI will be merged into BMI. HBI/LBI will continue to exist as the Library Binding Council within BMI.

Both associations are anticipating great value in combining resources during a time in which the book manufacturing, hardcover binding, and library binding industries are experiencing significant changes.

Jac Garner, President of BMI, comments "This merger provides the best opportunity for both associations to continue to represent the best interest of their members in this changing environment, and to continue to provide world class support and services for their members, their member's customers, and ultimately the consumer."

This edition of *ShelfLife* printed compliments of Library Binding Service.  
<http://www.lbsbind.com>

Duncan Campbell, President of HBI/LBI, notes "In a way, the merger brings both organizations full



Jac Garner, BMI President (left) and Duncan Campbell, President of HBI/LBI.

circle. In 1933, LBI emerged from BMI, because the book manufacturers not only did the binding, but also printed the entire book, and at the time, library binders just did the binding. A number of our members are now printing, not just binding, and they are printing brand new books."

Many of HBI/LBI's services will continue under the auspices of the Library Binding Council. Debra S. Nolan, CAE, HBI/LBI Executive Director, will continue with the merged organization through December 31, 2015 to support the work of the Library Binding Council. Werner Rebsamen, HBI/LBI technical consultant, will stay on as technical consultant to the Council. The publications, *Endpaper* and *ShelfLife*, will continue

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to be published and contain information relevant to all members of the merged association. The Council will be represented by Nolan at the ALA Annual Conference and the Library Binding Toolkit will be maintained.

According to HBI/LBI Executive Director, Debra S. Nolan, CAE, "HBI/LBI has had to take a hard look at how to remain relevant and viable in a rapidly changing and fast moving environment. By merging with BMI, we hope to achieve the shared goal of providing increased value while streamlining costs."

Since 1933, BMI has been providing value to both its member companies and others who are associated with the book industry. Today, BMI continues to provide a vital link between book manufac-

turers, publishers, suppliers, and governmental groups. BMI member companies represent every facet of the book manufacturing industry, and produce the great majority of books ordered by the U.S. book publishing industry.

Daniel N. Bach, BMI Executive Director, notes, "We are looking forward to welcoming Library Binding Council members into the fold and to the synergies bound to happen as a result."

The Library Binding Council will have an opportunity to hold its first official meeting during the 2014 BMI Management Conference, May 4 – 6, 2014, at the Sanibel Harbour Marriott Resort & Spa, Fort Myers, Florida. 📖

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## Forces that Make Hardcover Bindings Fail

*By Werner Rebsamen*

Librarians could write many stories of how and why some binding's structures fail, or why some books do not even last just a few circulations. Unfortunately, over the last few decades, the quality of publishers' bindings has become a very serious problem, in large part due to pressures to lower prices. Years ago, in order to bring attention to this growing problem, a group of dedicated and concerned librarians created a web site they called "**Hall of Shame.**" While searching the Internet for this, and similar sites, I came across several articles on the topic. One in particular, "Book Quality Liabilities and the Pages of Shame," caught my attention. (Here is a link to the article: <http://www.archival.com/newsletters/apnewsvol9no3.pdf>.) I found it interesting that de-



spite having no prior knowledge of the publication, my writings had been included. Nevertheless, it is my hope that writings regarding book quality will find their way to those responsible for writing binding specifications. For a teacher, it is always an honor and privilege to share knowledge.

The aim of this particular article is to make binders, suppliers and those who purchase hardcover bindings aware of some of the

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pitfalls, and, as a result, prevent what could be an outright disaster. Over the decades, I have witnessed many horrible examples of printed and bound masterpieces that ended up in binding graveyards. As a result, this article is also intended for my colleagues down in the trenches and others involved in the production and manufacturing of hardcover bound books.

*Seventy percent of all mistakes in printing are made in planning!*

best of all, offer solutions. While there is much to cover on each of these topics, this article will simply scratch the surface on some of the most important things.

### **Some Aspects of Planning**

Whenever we had to settle bookbinding failures and disputes in the courts, one factor always surfaced as the primary cause—the lack of communication. The folks who drafted ISO9000 estimated that 70 percent of all information to create a printed and bound product lacked at least some critical information. This is an unfortunate fact, and has resulted in much disappointment and many legal implications.

The best advice ever given on this topic came from a New York City trade binder, Bernard Sendor, who told me that in teaching those responsible for ordering printed and bound products, I should instruct them “to always think backwards.” In other words, they should begin by understanding the purpose of the printed and bound book. We all agree that a music or cookbook must lay perfectly flat. After all, one needs to be able to read the notes and play a musical instrument, or cook with butter all over their

fingers while still reading and following a recipe. Once the purpose of the project is understood, other items, such as paper grain direction, the method of binding, and other elements can be considered.

I believe I have made the case about considering the finished product first, the true end use purpose of the finished item. A bookbinder is your greatest ally in this process, and I always recommend talking with a bookbinder during the planning process of printing and binding your project. Their advice is offered at no charge and will often result in great savings. Their experience and know-how can help printers and prepress people avoid costly mistakes during their part of the process. Binding is the very last task when creating a printed and bound masterpiece. In many cases, problems created in the early part of the process cannot be corrected during binding, and can doom a project to fail.

There are many stories that could be shared to illustrate this. For example, a Canadian (Quebec) publisher needed to have a rather thick cookbook printed and bound. A quantity of 40,000 made web-offset printing the most economical option. The publisher found a commercial web-offset catalog printer capable of reproducing mouth-watering images that would make anyone hungry. The books were printed on heavy, glossy paper stock and the binding requested was an adhesive bound hardcover. The trade binder, tasked with the job of adhesive binding, noticed that the paper grain was perpendicular to the binding edge and, as a result, milled deep notches into the spine. The spine was then covered with an unusually thick coat of hotmelt. Finally, the bound book blocks were sent to a hardcover binding facility. It is important to note that the publisher used three different graphic arts facilities to manufacture these cookbooks, likely to reduce costs. To make a long story short, the finished

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cookbook would not stay open, and customers began returning them to the publisher. All involved in the process began blaming one another, while the beautifully printed masterpieces ended up in the recycling graveyard. When this binding expert was asked to investigate that particular incident, the highly skilled web-offset printer told me that he did not know that printing against the grain could have such serious consequences. He just gave the publishing production managers the lowest price possible which, unfortunately, called for an appropriate signature imposition with the paper grain being perpendicular to the binding edge. *Ouch!*

### Material Handling

Whenever I was called into a plant to solve problems, the very first department I always visited was the pressroom, especially if the plant had web-offset printing. I started here because, in most cases, the quality of the printed material was a primary contributor to the problem. Distorted signatures, sometimes representing outright haystacks, can cause lots of bindery downtime, stop and go operations and, ultimately, poor quality bindings. I have published many articles on this very subject.

During a BIA workshop with trade binders, I was shocked to learn that these experienced professionals had no idea what poorly handled printed materials, furnished by printers, had actually cost them. It's the old saying, "garbage in results in garbage out!" When we conducted in-plant studies with graduate students, we always found that the majority of downtime and unwanted stops on binding machines were caused with poorly handled signatures or sections. In fact, they represented 76 percent of all stops. Distorted signatures not only cause unwanted stops, but when adhesive binding, they cause splits, allowing glue to penetrate deeper than desired. If a book block is Smyth-sewn, fluffy signatures may cause a loose sewing pattern. Among other problems,

distorted signatures may not be sewn through the fold. Again, we could write an entire article on this topic alone.

Even digital printers must review their options for successful and efficient downstream operations. In a previous *ShelfLife* issue, we introduced readers to pressed and pre-glued book blocks. Exploring less expensive solutions, digital printers should look into pressing units used at the end of folding operations. Each folded signature/section is pressed between adjustable steel rollers. Other units may press an entire book block. Well-pressed book blocks result in high quality adhesive binding, soft- and hardcovers. If a binder must process fluffy sheets, they will encounter many downstream problems, such as wrinkled spines, poor trimming, split bindings, and glue running up into the images. Decades ago, I introduced the slogan, "**Well pressed is half bound!**" This motto was adopted worldwide by bookbinding machinery suppliers and advertisers. If you follow that advice, you will have

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*Not being familiar with the consequences of the paper grain being perpendicular to the binding edge sent these Canadian cookbooks to the grave yard. The books would not open. Note the wavy paper. Photo courtesy of Werner Rebsamen.*



*Distorted, or fluffy signatures/book blocks (right), cause costly downtime and result into poor quality bindings. On the left, signatures compliments of a commercial printer. Photos courtesy of Werner Rebsamen.*

increased productivity and reduced waste, and the result will be a quality product.

### **Well-bound Book Blocks**

When binding books, edition and POD binders have many options for leaf attachments. They may use many different ways of adhesive binding, sewing through the fold (Smyth) and side-sewing. As for hardcover bindings, we may also add mechanical bindings, although those are relatively few. Library binding is even more complex. Add to that oversewing and many different ways of sewing by hand. With so many options, much can go wrong. While we could certainly produce an entire book, this article focuses on just some of the major problems.

**Adhesive Bindings** are, by far, the most problematic. Difficult tasks, coupled with human operators who are often not fully trained or familiar with various adhesive binding techniques, only make it more challenging. In an effort to solve these problems and aid operators, machinery and adhesive suppliers have written many docu-

ments and books about it. The best book, available at Amazon, is *Bookbinding with Adhesives* by Tony Clark. The 96 pages are filled with valuable information on machinery settings, problem solving and testing adhesive bound books. Critical items include spine preparation, temperature of the adhesive, application, caliper, and cover adhesion, just to name a few.

When consulting on-site, I am often shocked at the lack of necessary tools, like a relatively inexpensive microscope to measure the amount of adhesive applied. One of the most successful items recommended and implemented is an external, independent adhesive temperature gauge connected to an alarm bell. Why? We had occasions where maybe just one heating element in the glue pot stopped working. Busy operators failed to notice the temperature going down, yet the perfect binding machine was running at 10,000 or more books per hour. The softcover bound books still looked good and were shipped. A few weeks later, as some of the covers started falling off and the bindings cracked, the customer

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filed a major complaint. In this particular case, the entire job of 10,000 books had to be reprinted and bound again, the last step with myself present as a consultant. Why did the adhesive bindings fail? The hotmelt adhesive applied was at a lower temperature than the one recommended by the adhesive supplier. The covers did adhere but the adhesive did not fully bond. Viscosity is a most important factor. Take a look at this example: Hotmelt at 350°F has a viscosity factor of 10,000 cps. At 400°F, that viscosity is only half, 5000 cps. It is important to be aware of the impact of a small difference in temperature of plus or minus 10 to 20 degrees.

Adhesive bound book blocks designated for hardcover binding require an endsheet. The most popular technique used is commonly known as a combined endsheet, where two single folded endpapers are combined with a cloth strip. The application of such an endsheet structure is very critical to operations; the book block must fit exactly between the folded endpapers. If they do not, we create serious problems with the joints of a hardcover binding. Endpapers can be applied in various ways. Their folds should be as close to the spine as possible, yet cutting them partially open during the spine preparation is an absolute no-no. If endpapers are tipped-on in-line or off-line, the adhesive applied needs to be covered with a back-lining material. Make sure that back-lining material has good internal bond characteristics. At the RIT book testing laboratory, we have seen many hardcover bindings fail because the back-lining material internally separated.

**Smyth-sewn** book block are, in this writer's opinion, still the very best and most durable. Those book blocks have a built-in shock absorber. *How can I make such a statement?* In over two decades of book testing, this type of binding always came up as the true winner. Here is an example: A publisher of church hymnals wanted to place a large order for printing and hardcover binding. Their requirement was that the books must last ten years. When they approached me regarding the best binding method for such a task, I recommended Smyth sewing, which is more expensive than adhesive binding. Ignoring my advice, they had the books adhesive bound with a hotmelt adhesive. Two years later, that same publishing production manager came back and requested UBT book testing. The adhesive bound hymnals failed in the churches and, within a short time they failed in the end-user UBT book-testing device as well.

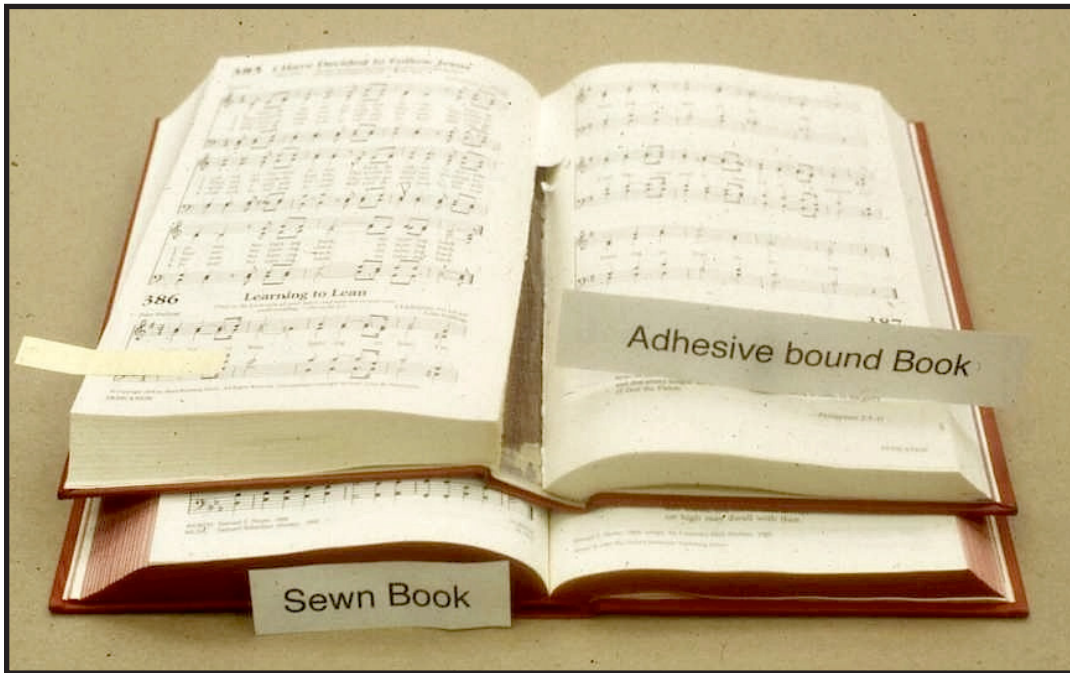
I could fill pages with items that could go wrong when sewing through the fold. One big problem is the thickness of the signatures. If they are too thin, the sewing threads will build-up and create havoc in all downstream operations. If the signatures are too thick, the sewing may become problematic. Best is to aim for signatures which are approximately 3/32 inch thick.

Smyth-sewn book blocks need to be glued-off. An adhesive is applied to the spine to seal

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*Ignoring a binder's advice often has consequences. Sewn book blocks have a "built-in shock absorber." Hotmelt bound books have a stiff spine. Photo courtesy of Werner Rebsamen.*

the threads. This is a delicate operation. We have seen in court cases, instances where the water-based adhesive penetrated deep between individual signatures—a result of poorly pressed signatures. Most Smyth-sewn books must go through a nip and smash operation to prevent glue penetration and control the swell.

**Reinforcements** on book structures play an important role. At our LBI/RIT book-testing laboratory, we have seen many unfortunate examples of hardcover bound books failures, due to the lack of appropriate reinforcements or materials that did not perform as expected. The sad, unfortunate fact is that most of our clients who purchase hardcover bindings are not familiar with binding structures. They are impressed by the lowest price. This writer's slide collection contains many such examples—hardcover bound books coming apart in no time due to the lack of appropriate reinforcements. Bear in mind, the only NISO standards for hardcover bindings we have in our industry are those for school

textbooks and library bindings. There is another one for publishers' hardcover bindings (Z39.66), written in 1992 in an effort to maintain minimum quality standards for publishers. Unfortunately, these specifications were largely ignored and have now been all but forgotten.

How can my colleagues in the trenches protect themselves from unfortunate claims made afterwards? First and foremost, put everything in writing (email is likely sufficient)—the project's technical details, your recommendations, and any other important information.

Your sample maker should bind some examples; a book with appropriate reinforcements, and another without. Then have them tested in a UBT book-testing device. If that is not available, drop each of the books a couple of times until you see the difference. Then let your client make the decision, and get that decision in writing. You may need it later if faced with a claim.

**Book Cover Boards** are critical when hardcover binding books. Paperboard manufacturers have come a long way in furnishing our trade with exceptionally high quality paperboards; however, there is no such thing as a warp-free paperboard. Next to adhesive binding, board-warping is the second most "popular" problem I am called in to comment on or solve. Interestingly, in all of the many incidents investigated, we have never found fault with the paperboard manufacturers. It was always the binder, who failed to equalize the forces on each side of boards. While it is a difficult task, it can easily be addressed by de-warping the covers before

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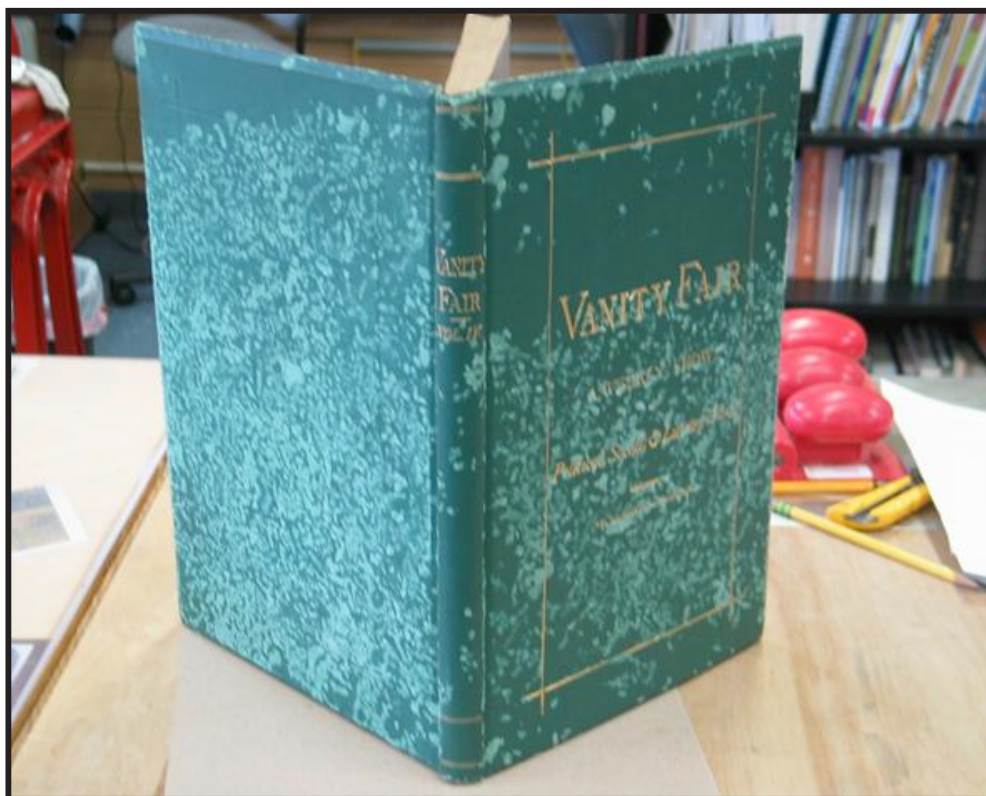
casings-in. This writer has published several articles on that particular topic, the very latest one in the December 2013 issue of the *Endpaper*.

**End-use Factors**, which may destroy your hardcover bindings, are many. Librarians are most familiar with book returns and subsequent damages, which occur when hardcover bound books are bouncing down a slide to the basement. Those factors and this realization actually started an entire industry, that of Library- and Pre-binding. Over the decades, library binders developed strict binding and material specifications and a formal ANSI/NISO/LBI Standard. Library books bound in accordance with these specifications may be able to circulate up to 100 times. Compare that to publishers' edition bindings, some which fall apart after just one reading – a factor that initiated the aforementioned librarians "Hall of Shame" efforts. While we binders and book manufacturers can furnish any quality bookbinding specified, we cannot determine when it will be necessary for a book to be bound in such a way that it will last 100 circulations. This reinforces the importance of those using our services to familiarize themselves with all critical tasks of bookbinding and the materials being used for quality bindings. As stated earlier, we must always use the binding process as the conversation starter. Don't wait, because when a project reaches the bindery, it is often too late to fix any mistakes resulting from poor planning.

There are items which are often out of our control. Decades ago, a well-known book manufacturer printed and bound some hardcover books for a religious publisher. For the hardcover, they selected a beautiful, starch-filled cloth. The books

were then sent to many tropical missionary stations around the world.

Later, that religious publisher lodged a major complaint with the book manufacturer. Bugs were eating the covers off the book blocks, sometimes even before they got them to the schools. To these bugs, the flexible animal (protein) glue and the flour paste in the starch-filled cloth to construct the book cases for these hardcover bindings were a delicious treat. In looking for a solution, the book manufacturer learned that the bugs did not like pepper. In all future hardcover bindings covered with starch-filled cloth, and destined for tropical destinations, the casemaking glue was laced with a small amount of cayenne pepper. That did the trick—at least to stop the bugs from shortening the life of the books. *The kids?* Well, they still manage to do that. 📖



*Insects love starch-filled cloth and protein glue. For them it's a delicious treat. Photo courtesy of Werner Rebsamen.*