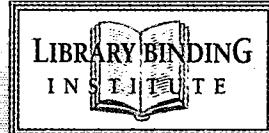


# The New Library Scene



## WHY BOOKS FALL APART

by Werner Rebsamen

Technical Consultant, Library Binding Institute

Professor Emeritus, Rochester Institute of Technology

Every librarian working down in the trenches most likely has experienced new books coming apart. This may be the case even before they are circulated. On some books, the sheets are coming out or covers on soft cover bound and hard cover bound bindings separate from the book blocks. Worse, some of the most expensive sewn "coffee table books" may split apart between signatures. Sewing through the fold is considered the very best method for an edition bound books. Why then do they come apart? You may wonder why such "things" happen in an industrial age where everything in a manufacturing environment should be under control. True, almost everything is under control, but as an active consultant to the book manufacturing industry, this writer knows better.

As I write this article, I analyze four different problems: split bindings, adhesion problems on textbooks, soft cover bound books cracking apart and warped book covers. When these "things" happen, everyone blames someone else. That is where we come in to act as a "referee." Our task is to pin-point the reasons why there is a problem. It is a difficult job as one cannot satisfy all of the parties involved.

### PASS-ON THE BLAME

Let me share with you some actual experiences. In one major incident, a publisher found that the covers of their paperback bindings were delaminating, while being left untouched and stored in the warehouse. Hundred of thousands of soft cover books were at stake. Interestingly, the same books stored elsewhere did not delaminate. Who is to blame for such a disaster? The book manufacturer blamed the storage conditions - the warehouse had no windows and no ventilation. Summers do get hot in Pennsylvania. The publisher claimed that something must be wrong, all the other books stored and supplied from various vendors are o.k. Every party involved in manufacturing these books blamed someone else. They had arguments, defended their own interests and pointed the blame on specific items like the UV coated covers, the cover material used, ink-solvent migration, the adhesive used etc.

This writer was hired by a cover stock supplier; one of the largest paper companies in the world. After many tests and reviewing all aspects and documents, I concluded that there must be something wrong with the adhesive. It was just a gut feeling. The paper company then

conducted extensive tests at specialized laboratories and concluded that the adhesive formula used did indeed deviate from earlier shipments. The reason the adhesive supplier changed the formula for the hotmelt adhesive was most likely a matter of price. If a company binds several hundred millions of paperback books, these are large orders and such jobs use adhesives by the trailer loads.

Price is an important topic. Book manufacturers are pressured by the publishers to deliver at the lowest possible cost. Competition among the adhesive suppliers is fierce. The new formula, using most likely less expensive ingredients, performed well in all the tests made at the suppliers laboratory. The problem then was, that the heat in that particular warehouse, not being ventilated, exceeded the performance criteria of this particular hotmelt adhesive. The warehouse now has windows and a ventilation system. Luckily, the parties involved settled that dispute without going to court.

### FAULTS IN THE DESIGN

A book designer must choose not only the format of a particular book, but also select the paper, the method of printing and how the book is to be printed and bound. Price is an important item. A

## WHY BOOKS FALL APART

designer would love to create the very best book, sewn and bound in cloth. Unfortunately that is no longer possible most of the time. Designers and those responsible for book production at a publisher's office have tight budgets which limits their choices. Instead of sewing, they must select adhesive binding. Cloth, being a relatively expensive cover material, is unfortunately most often out of question. These days, the majority of hardcover bound books are now covered with colored kraft papers. After a book is designed and all the specifications are written, a book manufacturer is contacted. A skilled account representative may immediately recognize a potential problem.

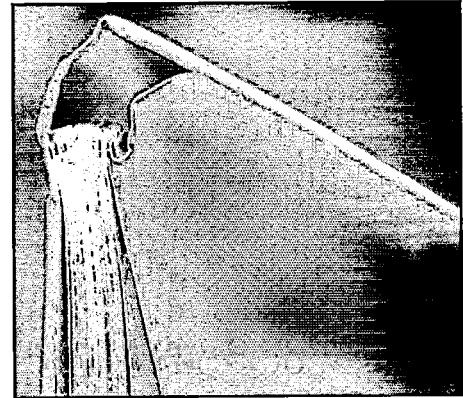
For example, and this did actually happen, the book is heavy, the trim size is oblong, the content is coated paper stock with bleeding ink into the gutter. Worse, the grain direction of the paper was perpendicular to the bind fold. Such books should be sewn through the fold. A book manufacturer provides a service to the publishers. One can only say so much to a potential client, and that is where the problem starts. The first book manufacturer told the publishing production manager that this particular book should be sewn. The publisher was offended, thought he is taken for a ride. He went to another, less expensive book manufacturer who did, without objections, what the publisher wanted, that is to adhesive bind these heavy, oblong books. Needless to say, the final product was a disaster. The forces exerted onto the binding edge when opening it was too much for the adhesive. After little use, the sheets start-

ed to come out of the binding. Advance tests could have prevented such a problem. But who has time these days to conduct such tests. It's time consuming to make sample books by hand and test them. Turn around time and low prices are the rules.

## LACK OF REINFORCEMENTS

Most of the textbooks designated for schools are bound in accordance to the NASTA Standard. These are strict manufacturing standards established by the National Association of State Textbook Administrators. They must be appropriately reinforced and best of all they will last. North American school textbooks are superior regarding end use performances. Despite such a flattering statement, library binders still rebinding textbooks in large quantities. College textbooks do not have to follow such specifications. As a matter of fact, I believe that some college textbooks are bound in such a way that they will last no longer than one semester. This will prevent resales, which are not in the publishers' best interests.

Students have always complained to me about high prices and poor quality of their required textbooks. Our book testing laboratory received many books, some printed and bound abroad. The publisher "thought" that these books met the NASTA requirements. As problems with the performance of these bindings surfaced, they could not understand why school book buyers complained. When we analyzed such bindings, we made them aware of all the shortcomings. Reference books and all others which are



A new book and it already starts to detach from the cover due to lack of joint adhesion.

heavy and designated for excessive end use should be appropriately reinforced. Unfortunately, this is an area where publishing production managers always seem to find a way to save a few cents. Suppliers to the trade offer book manufacturers an excellent variety of reinforcing material options. Problem is better materials cost more. This is why the majority of book manufacturers resort to less expensive materials, that is, if they reinforce their bindings at all! If books come apart, this is most often not the publisher's problem. The book manufacturer will try the best, but their services in regard to quality are restricted by the price the publisher is willing to pay for a particular product.

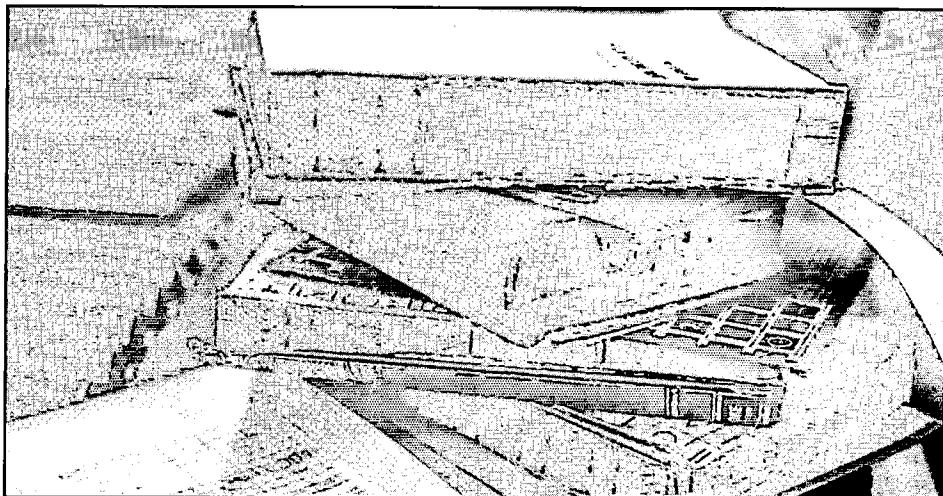
## INSIDIOUS SOLVENTS

Now you just received those beautiful, expensive hardcover bound art books, most of them imported from Asia or Europe. These large "coffee table" books will be some of the exceptional treasures in your library. The beautiful reproductions are printed on coated paper stock. You may even be able to smell the heavy ink used and that is already a sign that there could be a potential problem. As you open the book and leaf through it, the sheets start to detach from the binding edge. There is no cracking noise, they simply come loose. If the book is sewn through the fold, there are splits between folded signatures, most often after every 16 pages. This is especially annoying if the images printed are going across the bind fold. There were incidents where the hard cover boards acted only as protective packaging material for loose

The Library Binding Institute (LBI), publisher of *The Library Scene* and *The New Library Scene*, reserves the right to refuse copy which is not in accordance with LBI's established policies. Specifically, LBI endorses no machinery, equipment, material or supply or supplier thereof; other than the American National Standard Z39.78-2000 *Library Binding*, LBI endorses no method of binding.

Copyright © 2002 by the Library Binding Institute. Subscriptions to *The New Library Scene* (formerly *The Library Scene*) are available through most subscription agencies or you may write directly to 70 E. Lake St., #300, Chicago, IL 60601. *The New Library Scene* is published quarterly in March, June, September, and December. Subscription rates are \$24.00 annually. Canadian subscriptions, add \$2.00 per year for postage; for foreign subscriptions, \$3.00 per year. Subscribers must submit a missing issue claim within 90 days from each specific issue's date of publication. If these terms are not adhered to, the publisher will be unable to fill the request. All manuscripts are welcomed for publication review. *The New Library Scene* is indexed in "Library Literature and Information Science Abstracts." ISSN 0735-8571.

POSTMASTER: Send address change to *The New Library Scene*, 70 E. Lake St., #300, Chicago, IL 60601.



*Adhesive failures, the lack of it, or ink solvent migration may make bindings fail.*

sheets. The bindings failed already in the publisher's warehouse! Imagine. You just paid a hundred or more dollars for such a keepsake only to find loose sheets inside!

One of my colleagues, Peter Stadler, a researcher at FOGRA, a German testing facility for paper, printing and binding, told me that they investigate over 400 adhesive binding failures annually! What is going on? Modern sheetfed presses have become faster and faster. Conventional inks can no longer be used. With wet inks, the sheets printed simply would stick together. Chemists then introduced quick-setting ink formulas. They quickly dry on the surface, but the solvents underneath remain in a fluid stage. In analyses, FOGRA found that over half of the solvents were still present three months after the sheets were printed. The problem is, these solvents react in a strange way to most of the adhesives used in binding books. Ink-solvent migration is a serious problem. It contaminates the adhesive, which in turn weakens its performance. If covers come loose on perfect bound books, we may notice a slightly brown stain. The adhesive used to secure the threads from sewing may have the same fate. The book block will hold together by the threads, but the individual signatures may tangle loose within the hardcover binding. The good news is industry's adhesive suppliers have come up with new PUR (Poly Urethane) adhesives which

are non-migratory. However, these application systems are expensive and so is the PUR adhesive. For these reasons, do not expect these problems to go away. The good news is, certified library binders must use "internally plasticized polyvinyl acetate adhesives" (PVA) which are non-migratory. If you are interested to learn more about such ill-fated problems, obtain a copy of my article "Insidious Solvents" as published in *American Printer*. Copies are available from the LBI office.

#### **THE BEST OPTION TO CURE THESE PROBLEMS? LIBRARY BINDING**

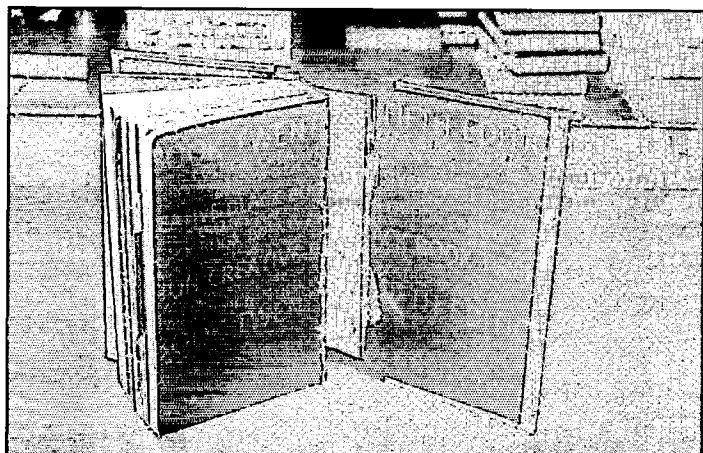
Some of these problems discussed are nothing new. Back in the 1920's, school book administrators and librarians complained about poor quality bindings. They put so much pressure onto the industry, book manufacturers and library binders got together with librarians, schoolbook administrators and others and in 1923 established the first standards and specifications for binding. In 1935, the library binders decided that they needed to separate themselves from the book manufacturers. After all, producing books

by the thousands and binding individual printed pieces are two different worlds.

This action, initiated by the library binders, soon established cooperative arrangements and best of all, allowed them to work closer with ALA and its dedicated librarians. This is how, over the decades, they were able to establish improved specifications for library binding. Those voluntary activities have been going on ever since. In the year 2000, a most cooperative spirit between librarians and library binders resulted in the American National Standard. The specifications outlined in this new, comprehensive ANSI/NISO/LBI Standard are all an individual responsible for the maintenance of a collection of books needs. If one follows this standard, and of course if everything is done in accordance to these specifications, there is absolutely no reason to have books coming apart. Library binders must use only approved materials and methods of binding. Reinforcements are specified, there are simply no short cuts in library binding.

All methods and binding options have been tested by independent laboratories giving the best assurances for quality bindings for any library. Simply one of the most cost-effective endeavors ever invented for any collection of books.

**Questions or comments about what you've read here?** Contact the Library Binding Institute at [info@lbinders.org](mailto:info@lbinders.org) or call our office at (312) 372-5020. We'd love to hear from you.



*This book, made in Japan, cost \$150 and weighed over nine pounds. It had no reinforcements. It was bound to fail instead of bound to please.*



COPYRIGHT INFORMATION

TITLE: Why Books Fall Apart  
SOURCE: New Libr Scene 21 no4 D 2002  
WN: 0233501493001

The magazine publisher is the copyright holder of this article and it is reproduced with permission. Further reproduction of this article in violation of the copyright is prohibited.

Copyright 1982-2003 The H.W. Wilson Company. All rights reserved.