Formerly *The New Library Scene*

SHELFLIFE

VOLUME 3• ISSUE 3

A NEWSLETTER FROM HBI AND THE LIBRARY BINDING INSTITUTE

The Printed Book – The "Live Forest Version"

by Bill Upton, Malloy Incorporated

Imagine standing in front of a group of people and showing them two pictures, one being of a fuel drum labeled "Diesel" and the other being of a fuel drum labeled "Bio-diesel". If you asked the group which of those products is more environmentally friendly, probably 100% of them would say bio-diesel. If you asked the group why they answered that way you would hear a variety of reasons, but the most common reason is likely to be that bio-diesel is made from a renewable resource.

Now imagine showing the same group another pair of pictures, one being of a printed book and the other being of a Kindle e-book reader, and asking them the same question. This time there might not be 100% agreement, but a significant portion of the group, perhaps a majority, would say the Kindle is more environmentally friendly. If you asked those that favored the Kindle why they felt that way, again you would probably hear a variety of reasons, but one of the more common reasons is likely to be that you don't have to cut down trees to make a Kindle.

This is an interesting paradox. Many people who are proponents of bio-fuels, because they're made from renewable resources, also like Kindles because they aren't made from trees. As renewable resources, we view trees in an entirely different light from the crops grown to make bio-fuels. This perception exposes an even deeper paradox. In most areas of the world, particularly in the eastern half of the United States, crops like corn and soybeans that are used to make bio-fuels are grown on land that was cleared of forests – land that would naturally revert to forest if we left it alone. Why is it a good thing to clear trees off land and keep that land in a perpetually deforested state so that we can grow soybeans to make bio-diesel, but it's a bad thing to harvest trees and re-grow more trees to make a product like a book?

Now, this article is not intended to be an attack on the agriculture industry. With the world's population approaching the 7 billion level, we are totally dependent on an increasingly efficient agriculture industry, and the feeding of the world's people is an entirely honorable pursuit. What this article is intended to do is cover three issues regarding our own industry: 1) to explain why, for environmental reasons, we should think of trees as a renewable resource, 2) to look at how we're managing the forests from which the U.S. book industry gets its wood fiber, and 3) to list some actions we in the industry can take to help ensure that our forest resources are managed sustainably.

Sustainability

There is virtually universal agreement that a major challenge we face today is to find ways that provide for the needs of Earth's current inhabitants, without diminishing the ability of future generations to provide for their own needs and enjoy the beauties of our planet. Meeting this challenge will require employing a number of methods. One method will be to shift to using benign and limitless energy sources, such as wind and sunlight. Another method will be

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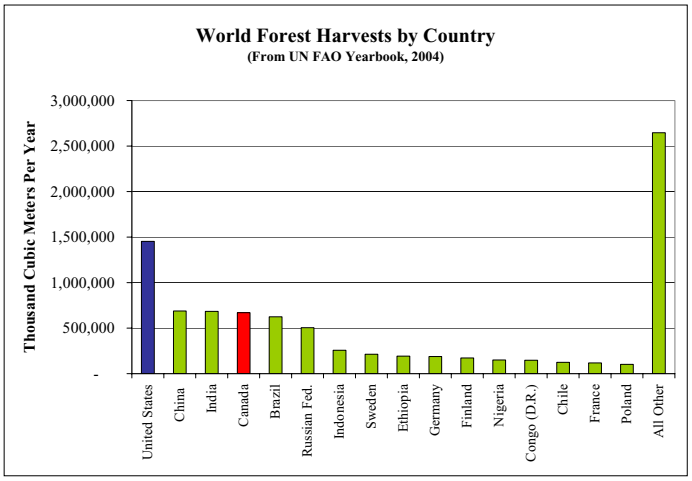
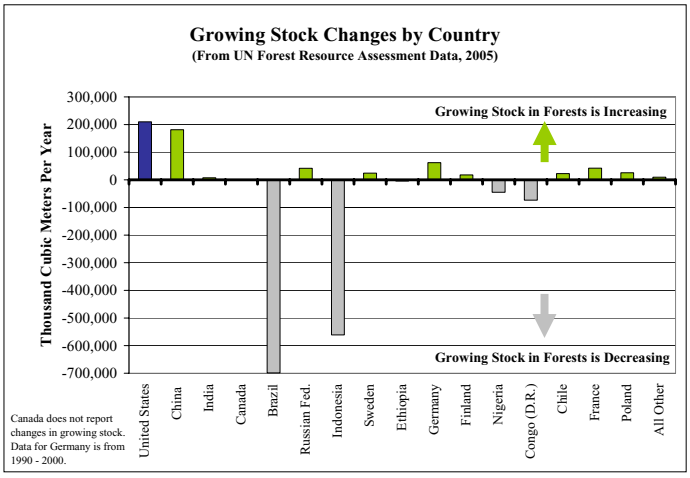
to, wherever possible, make the products we use out of renewable materials. Where it isn't practical to make products from renewable materials, we need to develop increasingly efficient ways of recycling our non-renewable materials.

Products made out of wood fit squarely into the category of renewable materials. In fact, unlike a field of corn or soybeans, forests can regenerate without any human intervention. Forests can grow without the use of insecticides, herbicides, fertilizer, irrigation or tilling. In fact, natural regeneration is the most common method used in this country to grow the hardwood trees that constitute two thirds of the fiber in uncoated free-sheet book papers. Nevertheless, just because a material is renewable doesn't mean humans aren't capable of exploiting it at a rate faster than it can regenerate. In other words, it is possible to use a renewable resource in an unsustainable manner. There are many examples of species that humans have hunted to extinction. There are also examples of civilizations in numerous parts of the world that have wiped out their forest resources. Some of these, cited by the author Jared Diamond, include civilizations in the Middle East, the pre-Columbian American Southwest, and Easter Island. Therefore, an important question for us is whether the paper going into books produced in this country is being made from forests that are being managed sustainably.



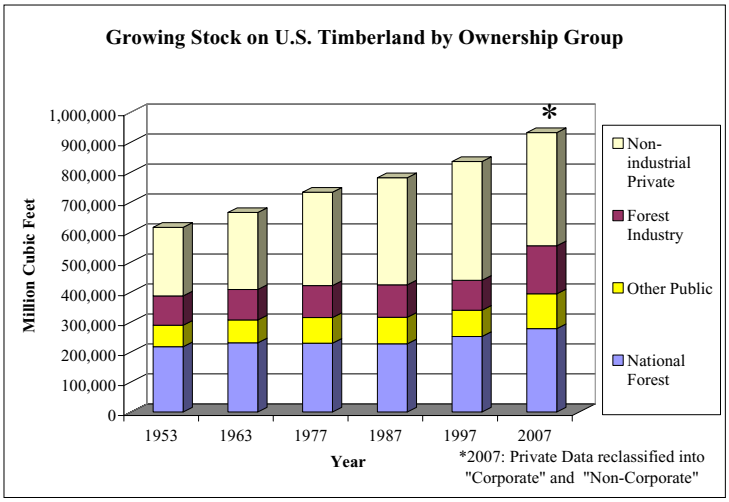


Where Our Paper Comes From

About a year ago, when I was a member of the steering committee that was preparing the report for the *Book Industry Study Group* and the *Green Press Initiative* titled "Environmental Trends and Climate Impacts, Findings from the U.S. Book Industry", I asked John Maine of RISI if he could estimate the main countries of origin for papers going into books *published* in the United States. He told me that, as best he could determine, about 60% of the paper was made in the U.S., 23% was made in Canada, 6% was made in China, and 11% came from other countries. Had I asked him a slightly different question – what were the main countries of origin for papers going into books *printed* in the U.S. – the proportion coming from the U.S. and Canada would have been much closer to 100%.

According to the United Nations Food and Agriculture Organization (FAO), more wood is harvested in the United States than in any other country in the world, while Canada vies for second place, along with China and India, at a volume of wood harvest that is about half the size of the annual U.S. harvest. Contrary to what you might assume, while the U.S. harvests more than twice as much wood as any other country, the volume of live wood contained in U. S. forests is *increasing* more than any other country. This is due to the fact that much U.S. forest land, particularly in the eastern

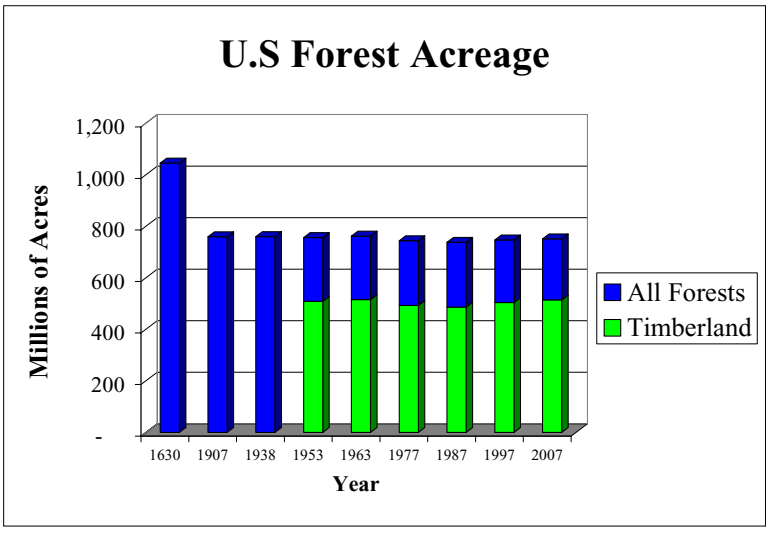
half of the country, is experiencing re-growth after having been cleared or thinned in the 1800's and early 1900's. Some other major wood producing countries, like Brazil and Indonesia, are now in the process of rapidly depleting their wood supplies, because they are converting their forests to grazing lands and land used for growing annual crops. (See the charts on the previous page.)



The Current State of U.S. Forests

Since the early 1900's, the U.S. Forest Service has been collecting data on the health of U.S. forests. These data are presented in periodic Forest Inventory and Analysis (FIA) reports. Following an act of Congress in the 1970's, the Forest Service began publishing FIA reports for the full country on a regular 10 year cycle. The most recent of these was published for 2007. (These reports and the Forest Service database can be accessed on the website of the U.S. Forest Service in the "Research and Development" section of the site. Tables containing the data are also referred to as RPA Tables, for the Rangeland Renewable Resources Planning Act, the act passed by Congress in 1974.)

The Forest Service separates forests into two broad categories: timberlands and non-timberlands. It defines timberlands as, "Forest land that is producing or is capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation." Excluded from timberlands are protected forests, such as many of our National Forests, and forests which can't generate enough trees of sufficient size to justify harvesting activity.



"Growing Stock" is a term the Forest Service uses to describe the amount of live wood, of sufficient size to harvest, contained in our forests. According to Forest Service data, the volume of growing stock in U.S. forests has been increasing since at least the 1950's. As the graphs on this page show, U.S. forest acreage has been stable for the past 100 years. The two thirds of our forests which are considered timberlands, while remaining stable from an acreage standpoint, have seen a steady increase in growing stock for the past 50 years. Between 1953 and 2007, the Forest Service estimates that the volume of growing stock on U.S. timberlands increased by 51%. (1953 is the earliest year for which the Forest Service shows data for growing stock.) While this picture varies somewhat from one region of the country to another, in 47 of the 50 states there is more growing stock per acre of timberland today than there was in 1953. The exceptions are Oregon, which is virtually unchanged over that period; California, where growing stock per acre declined by 1% over the period; and Nevada,

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where the value decreased by 13%. (Not surprisingly, Nevada is a state with negligible wood resources, ranking ahead of only Rhode Island and Delaware in the size of its timberlands.)

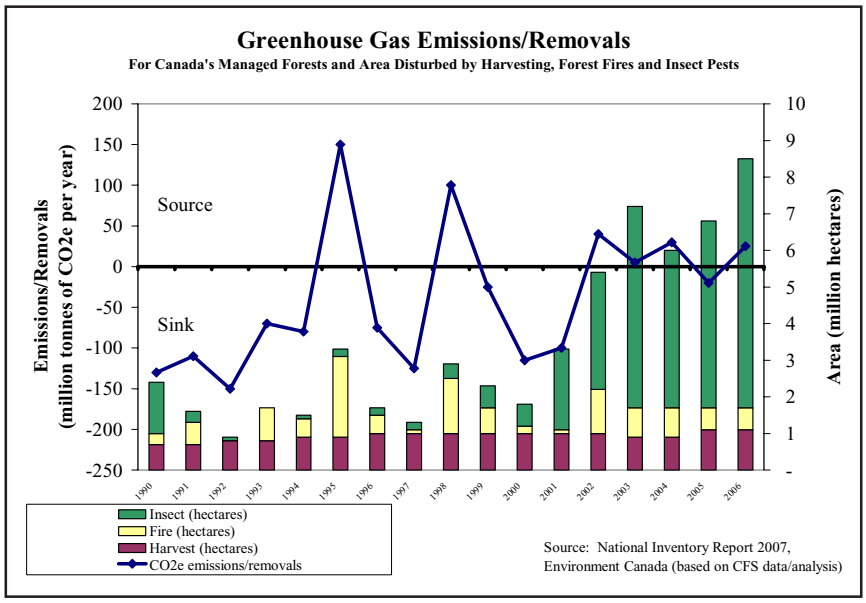
Therefore, it is safe to conclude that paper made from wood harvested in the United States is coming from a renewable resource that is being consumed in a sustainable manner. (For more information on the state of U.S. forests, go to the *National Report on Sustainable Forests, 2003,* published by the U.S. Forest Service, at: http://www.fs.fed.us/research/sustain/2003SustainabilityReport/documents/SustainableForests.pdf)

The Current State of Canadian Forests

Shifting the focus to Canada, it's worthwhile to note that Canadian forests differ from U.S. forests in a couple of important ways:

- While 92% of the wood harvested in the U.S. comes from privately owned land, most of the wood harvested in Canada comes from publicly owned land. 77% of Canadian forest land is owned by the provinces, while 16% is owned by the federal government, and only 7% is privately owned. Since First Nations people inhabit publicly owned lands, it is important that harvesting practices in Canada take into account the needs and rights of those First Nations peoples.
- Canadian forests are much more mature than U.S. forests. It is estimated that Canada still retains 91% of its original forest land; whereas, the U.S. retains between 60% and 70% of its original forest area. In addition, while only a small portion of the current forest land in the U.S. has never been tapped for its wood resources, it's estimated that 70% of Canadian forests are untouched. Therefore, while U.S. forests are relatively young and growing, a large portion of Canadian forest land has reached a state of equilibrium as far as growth is concerned.

The Canadian Forest Service doesn't provide information as extensive as that published by the U.S. Forest Service. For instance, it doesn't report changes in growing stock. However, the Canadian Forest Service has recently begun publishing data pertaining to carbon stocks in Canadian forests. Measuring carbon stocks is another way of measuring the sustainability of forest resources. The graph on this page is taken from the Canadian Forest Service website, and it shows a history of net carbon emissions and removals for the forest areas from which trees are harvested in Canada for the period from 1990 to 2006. The heading in the chart indicates that this is for "Canada's managed forests and area disturbed by harvesting, forest fires and insect pests." Years in which Canadian forests were a "sink" for carbon are years in which new growth drew in more carbon from the atmosphere (in the form of CO_2) than the amount of carbon lost due to harvest, fire, and decay. In years where Canadian forests were a "source" of carbon to the atmosphere, the opposite was true – they lost more carbon than they gained through new growth. Though Canadian forests experienced a loss of carbon in six of the years shown, the overall average for the 17 year period was an annual absorption (removal) of 38



million metric tonnes of CO_2. It's important to note that harvest levels throughout the above period were consistent, at roughly 1 million hectares (2.5 million acres) per year. This is out of a total forest area in Canada of 310 million hectares. The years in which Canadian forests lost carbon (were a "source") are those in which they experienced high levels of fire or insect damage. (Fire damage causes a more immediate and complete reduction of carbon stocks than insect damage. Fire immediately turns live wood into carbon emissions; whereas, insects cause trees to die and decay over time. In the graph on page 4, this can be seen by comparing the years 1995 and 2006. The blue line for carbon emissions rises to a higher level in 1995, when there was a large amount of fire damage, than it did in 2006, when there was a large amount of insect damage. This is true despite the fact that the size of the area damaged by fire in 1995 was considerably smaller than the area damaged by insects in 2006.)

Given that Canadian forests are quite mature, that growth has exceeded losses in most recent years, and that they are being harvested at a rate of 1 hectare per 310 hectares of total forest per year, it is safe to conclude that paper made from wood harvested in Canada is coming from a renewable resource that is tapped in a sustainable manner.

Past Performance is No Guarantee of Future Results

The fact that we have been sustainably managing the forests supplying raw material to the North American book industry in recent years doesn't mean that it always was and will be that way. In fact, Hemingway described my state, Michigan, as having been "lumbered out" a century ago. Without proper care that could happen again.

In addition to being concerned about lumber supplies, we also need to manage our forests in ways that protect other vital resources, such as waterways, endangered species, and high conservation value forests. Fortunately, we in the book industry have ways of helping to ensure that the papers we use come from sources that guarantee sustainability and protect vital resources. Here are three important things we can do:

- First, we can use recycled paper products whenever possible. For most of the paper-based materials we use, cost-competitive recycled products are available. Binders board, for instance, is routinely made from recycled material.
- Second, for the materials we buy that are made from virgin fibers, we can choose materials that are certified by one of the three main forestry certification organizations in North America: the Canadian Standards Association (CSA), the Forest Stewardship Council (FSC), or the Sustainable Forestry Initiative (SFI). All of these organizations apply standards to forestry practices that ensure both sustainable harvests and protection of vital forest resources. In Canada, both CSA and FSC also incorporate standards development processes that protect the rights of First Nations peoples. FSC and SFI also have Chain of Custody processes, enabling book producers to assure consumers that the material they use is, indeed, made from sustainably managed forests. Depending on the amount of material an organization buys, it may or may not be economically feasible for the organization to obtain Chain of Custody (CoC) certification qualifying them to apply certification labels to the products they produce. However, even in instances where CoC certification is not feasible for an organization, it is still possible for the organization to stipulate that the virgin material it buys comes from certified sources.
- Finally, we can recycle as much of our own waste paper as is absolutely possible. A major environmental benefit from doing this is to reduce greenhouse gas emissions. A portion of the carbon atoms contained in paper discarded in a modern landfill will combine with hydrogen to form methane when the paper decays, and methane is estimated to be 23 times more

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powerful as a greenhouse gas than carbon dioxide. However, we also have two selfish incentives for recycling our paper waste. The more obvious of these is that recycling enables us to get paid for our waste rather than paying to have it taken away. The less obvious reason is that our own recycling efforts can help increase the amount of recycled fiber available, thereby enlisting the law of supply and demand to assist us in reducing the price of the recycled paper we buy.

Conclusion

We should appreciate the fact that books are made from trees, rather than cringe about it. There is no more environmentally friendly material on the planet than wood, provided we manage our resources in a responsible and sustainable manner. Most of us feel good when we see the label "100% Cotton". If you compare the processes for growing and cultivating cotton vs. trees, and if you consider the fact that much land used for growing cotton had to be cleared of trees, you should feel even more positive about the label "100% Wood". The key for us is to manage our resources in a responsible and sustainable manner – we need to replace what we take and protect vital forest resources. While forest resources in the U.S. and Canada have been managed in an increasingly sustainable manner for the past half century, all of us in the book industry have the opportunity to see that this continues by recycling our own paper waste and purchasing recycled papers and papers certified by one of the forestry certification organizations. In that way we can ensure that the "dead tree version" is really the "live forest version".

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Book vs. Kindle
by Bill Upton

If you're curious about how a printed book compares to a Kindle, I can't provide you with definitive information. I can only give you my own thoughts. Today, the most common way to do an environmental comparison of two things is to compare their footprints for greenhouse gas emissions, in terms of carbon dioxide (CO_2) equivalents. As yet, I'm not aware of any rigorous study that has been done to compare a printed book and an e-book reader in terms of carbon emissions. But, let's examine some of the plusses and minuses of the two that should be considered in such a study:

- *An e-book reader replaces many books:* This is an obvious plus for the Kindle and is a fact that needs to be taken into consideration when looking at all of the issues below. However, a key question is how many books would a Kindle replace? The number of titles the device is capable of storing is irrelevant. An e-book reader replaces however many books (and other documents) its owner would have obtained in printed form during the device's useful life. The Kindle is advertised as being capable of storing 200 titles, and an avid reader may in fact use a single Kindle to read more titles than that. However, other devices have been advertised as capable of holding up to 10,000 titles, and I haven't met anyone who would be capable of reading that many titles over the projected useful life of an e-book reader. The length of a reader's useful life will be determined by when it becomes obsolete, breaks or otherwise stops functioning. This is typically just a few years for most pieces of electronic equipment.
- *Transportation emissions:* e-book content is transmitted electronically, at a trivial fraction of the emissions caused by

transporting printed books. On the other hand, the Kindle e-book reader is manufactured in China; thereby, leading to greater transportation emissions of the physical product than a book made in the U.S. Given that a Kindle replaces multiple books, the edge here would go to the Kindle.

- *Manufacturing emissions:* the processes for fabricating and assembling the parts of the two products are quite different, though with some analysis it would be possible to measure the magnitude of the emissions of each process. Given that the Kindle replaces multiple books, the edge here probably goes to the Kindle, but that isn't certain.
- *Material:* In this regard, the edge would certainly go to the printed book. As discussed in the adjacent article, the principle material contained in a book (paper) is made from a renewable resource, and that resource grows by drawing carbon dioxide out of the atmosphere. During the lifetime of every person reading this comparison, every atom of carbon taken from U.S. and Canadian forests to make paper has been replaced by new carbon taken in by new growth. And, every book on our bookshelves represents stored carbon that has recently been removed from the atmosphere. The same can't be said of a Kindle, made of various metals and petroleum-based plastics.
- *Power consumed in use:* Here again, the advantage would go to the printed book. A book requires no power source; it can be operated in whatever light we use for conducting our normal lives. Whereas, a Kindle needs to be recharged periodically.
- *End-of-life emissions:* In this area, the book offers numerous advantages. Printed books can be reused and transferred to new owners more readily than Kindles or their content. In fact, libraries serve as the preeminent example of a highly developed infrastructure for re-using a product. And, while used bookstores abound, disposing of consumer electronic items can be challenging. If, rather than reusing a printed book, a person decides to discard it, there is an efficient infrastructure in place to have it recycled. Though it is also possible to have electronic products recycled, the process of doing so is not nearly as efficient and automated. (I've wondered if recycling of electronic products is done with a melting pot and centrifuge or with tweezers.) A book can also be incinerated and used as a carbon-neutral replacement for fossil fuels. Finally, if a book is discarded in a landfill, it is biodegradable, and while some of its carbon atoms will be emitted as methane, a Kindle's heavy metals will classify it as hazardous waste.

The authors of the BISG/GPI Environmental Report have cautioned that until a rigorous study is done, it is not safe to assume that either a book or a Kindle is environmentally superior to the other. On the day the BISG/GPI Report was released, a session was held at the Book Publishing Conference and Expo in New York announcing the study's key findings. One of the presenters was Andrew Van Der Laan of Random House. He compared the carbon footprints of a number of products to that of a single book – 8.8 pounds of CO_2 equivalents, as claimed by the report.* One of those products was a MacBook, which was purported to have a carbon footprint of 1,200 pounds. Andrew was careful to point out that it's probably not appropriate to make a direct comparison between the two numbers, because it's likely that different sets of assumptions were made in arriving at them. Nevertheless, the disparity serves to underscore the advice that it isn't safe to assume an electronic e-book reader is more environmentally friendly than a printed book.

**Author's note: I dispute the value of 8.8 pounds of CO_2 per book, because nearly two thirds of that amount is claimed to be "Forest Carbon Loss", a figure which doesn't take into account the fact that trees harvested for U.S. book papers are replaced by new growth.*

Casemaking

By Werner Rebsamen

One must be curious and ask why we bother to "dress-up" a book with a rigid hardcover? After all, in order to read a book, a soft-cover binding should serve the purpose. Why carry around all the extra weight of a hardcover bound book? Those are good, justified questions. In 1978, a Vice President of a well-known graphic arts machinery company told our students at RIT in a major Print-Finishing lecture, "Ten years from now, there will be virtually no more hardcover bound books!" It should be noted that this manufacturer marketed perfect binding equipment only and had no interests in hardcover binding. Looks like their market research was wrong!

A well-known graphic arts marketing expert who recently paid me a visit made a similar statement 30 years later. I asked him why the two major suppliers of hardcover binding machinery recently had to expand their manufacturing facilities to take care of the increased demand? The statistics on the number of hardcover bindings produced worldwide are hard to come by and vary from one book manufacturing plant to another. While working in the industry, a good indicator for us was 60 percent soft-cover and 40 percent hardcover bindings.

There are various reasons why we furnish books with a hardcover binding. For publishers, it is a chance to make a little more money. You may be aware that many popular book titles and best sellers are always initially published with hardcover bindings. Soft-cover editions are sold much later-on. For those of us who love books, a hardcover binding is like an upgrade to business class. We enjoy the better paper the text is printed on, the increased margins in the gutter which make reading a joy, and best of all, the satisfaction of a quality binding. Further upgrades to first class are available—consider books bound in full leather with gilded edges. But those bindings are for the true lovers of books who appreciate the soft touch of leather and to those who know how to appreciate superior bookbinding craftsmanship. It is simply amazing how many such beautiful bindings are still being produced and marketed. Just look for example at Franklin Mint, Easton Press, the luxury editions of National Geographic and especially all the religious publications bound in luxurious leathers.

Casemaking 101 – How to Make a Case Yourself

With digital book printing very much in demand, and continuing to increase, there are many newcomers who would like to know how they can get started with hardcover bindings. These may include publications produced at home, printed and soft-cover bound on the local Espresso book machine, texts coming off your DocuTech and other toner or ink-jet printing units. Some may just want to convert an existing soft-cover binding into a hardcover. (As I write this article, we, that is the HBI/LBI office, received a request to do this in relative large quantities.) This article will not cover how to bind book blocks,

Making a case by hand is relatively easy, just follow the instructions.

but will focus on options for making cases for books, including those that need to cover book blocks which contain photos, texts or other contents.

If you search the Internet under hardcover, you will find many offers for making covers with pressure sensitive materials. That is okay for a single or a few hardcover bindings, but be prepared to pay a steep price for these components. Making a hardcover case is actually a simple procedure. First, shop for supplies. Visit the Vendors/ Suppliers page at www.hardcoverbinders.org for a list of many suppliers. For an extremely small number of supplies, start with the Gane Brothers website; move to the others who may require minimum quantities. There are many other suppliers for hobby bookbinders—it is often best to connect with a local binder. To make a case, you will need cover boards, covering materials and PVA adhesive. One of my favorite tasks for making a book cover is using textiles. If you find an attractive fabric, keep in mind that the glue applied to make a cover will penetrate through it. If you do select a beautiful hand-printed or batik fabric, for example, you will need to line the back side with a thin paper. Cut everything oversize; apply a thin coat of PVA adhesive onto the lining paper; and mount the fabric onto it. Rub-out all air-bubbles and let it dry between boards overnight.

Cover Dimensions

The very first items you need to calculate are the dimensions of the cover boards, the spine strip, the spacing and the covering material. This is relative easily to figure for a flat-back hardcover binding. Here is an example:

Let's assume the book block measures 6 x 9 inches.

- Board size - 5 7/8 x 9 1/4 (Deduct 1/8 in the width, add 1/4 in the height)
- Spine strip - Width - thickness (bulk) of book block plus the thickness of the two boards. The height is the same as the cover boards, 9 1/4 inches
- Joints - 3/8 inches on each side of the strip

Now you need to figure out the final dimensions of the cover. Let us assume that the board-strip is 1/2 inch wide. Then figure as follows: 5 7/8 + 3/8 + 1/2 + 3/8+ 5 7/8 This establishes the cover size, which is 13 x 9 1/4 inches. The cover-material must be cut larger so it can be turned in over the boards. The average turn-in dimension is 5/8 inch, more with heavy or thick materials. Therefore if the coversize is 13 x 9 1/4 inches, the covering material must be cut to 14 1/4 x 10 1/2 inches. Be sure all grain-directions are parallel to the binding edge. If not, your final covers may be more likely to warp. Rounded and backed books are of course a different item and require more advanced experience. Please contact this writer if you need more information on that particular item.

A Library corner

Making the Case by Hand

Now you are ready to make an actual cover. For an adhesive application, I always use a small painter's tray and a 4" foam roller applicator available from virtually every hardware store. Pour a small amount of PVA adhesive into the tray. Try your skills first on a piece of newspaper until you achieve a thin, uniform application. To space the boards, you will need a strip of board 1 1/4 inch wide. (3/8 + 1/2 + 3/8). If you intend to fabricate cases often, a cover gauge (available from Gane and perhaps other suppliers) may be a good investment. Apply a thin coating of PVA adhesive onto the covering material. Lay down

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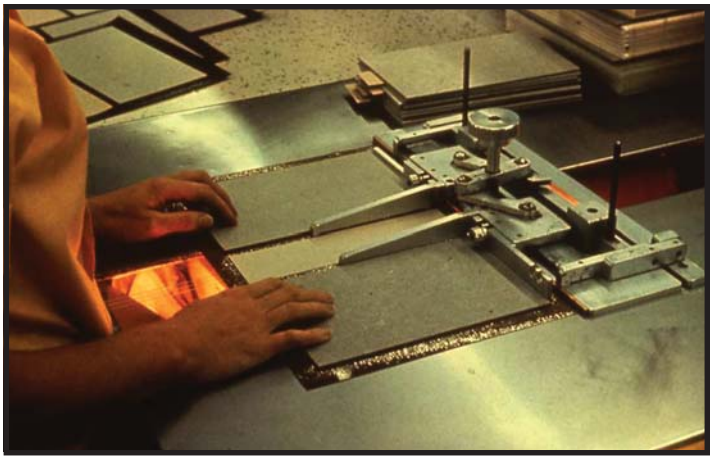

Casemaking in a Library Bindery. Note cover-gauge, lighted glass and mirror to center titles or images.

the first piece of board. Allow 5/8 inch of the covering material to overlap on three sides.

Next, take the board strip or cover gauge; align it with the first board and lay down the second. Remove the board strip or cover gauge. Now place the back strip exactly into the center. The critical part is to cut the corners. With scissors, cut an angle at each corner approximately 1/8 to 3/16 inch from the corners of the boards. Now take a piece of paper and turn-in the top and bottom edges and then tuck in the corners and turn in the two remaining edges. Be sure to rub out all air bubbles and let the cover dry between boards. There is another corner version available which is called the "Library corner." Do not cut the corners. Instead, fold-in the corners first. On the board, concentrate on an even square. Then turn-in all four sides. Now admire the fit of the cover made. You should have 1/8 inch of an edge protruding on all three sides of the trimmed book block you intend to cover.

Basic, Mechanical Casemaking Tables

Suppliers offer a variety of tools and gadgets to produce book cases by the hundreds. The first item you will need is an adhesive applicator; these come in various widths with the larger ones being more expensive. Purchase one that is able to handle a larger piece of covering material, a width of 18" being an absolute minimum. The suppliers' experts will advise you on brass or stainless steel rollers, PVA or protein glue versions. Shop around for cover gauges—the best are those which have either a light or mirror underneath. You may ask *"Why?"* These days, printed and laminated covering materials must be processed. Some cloth may be stamped before the cases are made. The most critical step in casemaking is to center the spine's images. Without a light table or a mirror, that task will be difficult and may require extra steps like marking the center.

After placing the boards and the spine strip, the corners are cut. On larger quantities, this task is done before glue application. Turning-in the edges follows, and suppliers have developed clever turning-in devices. This task is very important, as the covering materials must be turned-in tightly over the edges. If you use square corners, be sure to tuck them in by hand before you proceed with the two remaining edges. After all edges are turned-in, pressing follows. This task is done between two rubber rollers. Be careful to avoid bubbles or any loose areas in the cover structure. Perhaps the most sold casemaking table that includes all the features described is the one built by ODM (www.ODMachinery.com). ODM's casemaking table includes an adhesive applicator, a casemaking gauge with a light underneath, a tuning-in device and rub-down rollers. This and several other, similar casemaking gadgets, are ideal to get into the business of casemaking and limited

ODM's turning-in device is just one part of their casemaking.

During the Fall 2008 HBI/LBI Seminar in Los Angeles, participants touring the Kater-Crafts Bindery saw a GP2 AUTOCASE in action.

hardcover binding. For many, such basic equipment has been the start of a successful hardcover binding endeavor. At the HBI/LBI September 2008 seminar on Digital Print/Binding Opportunities, a successful photo book printer stated that due to increased business, they are now ready for further investments as described in the following section.

Semi and Automatic On-Demand Casemaking Machines

The next step up in casemaking is a variety of newly developed casemaking machines especially designed for the ultra-short, photo-book, library and on-demand hardcover binding facilities. Gone are the days where engineers designed ever faster casemaking machines, one even capable of producing 120 cases a minute. Yes, 120 a minute, I have seen it with my own eyes! The same engineers who created such an amazing mechanical breakthrough are now the owners of a most successful company called GP2 Technologies (www.gp2tech.com). Their casemaking machines are designed and built in New Hampshire, marketed and used in over 50 countries around the world. Yet they just started out just a few years ago. Their basic, simple to operate casemaking machine is the AUTOCASE SC-2. A single operator is capable of producing several cases each minute—the cycle speed is 300/hour. Everything is fully automated, zero-make-ready using touch screen technology. Even corner trimming is done automatically. Library corners are no problem. It is simply a great machine for all kinds of case-made or turned-edge products. Their larger casemaking machine is the AC-20, a fully automated casemaking machine where the covering machine is fed automatically through a gluing device. The engineering breakthrough is a near zero make ready time, 90 seconds maximum for a major change-over. Such achievements are unheard of in our industry. The AC-20 is capable of producing 1200 each hour and is the ideal machine for smaller edition bindings, several hundreds of the same size.

What about casemaking in a library bindery? Each case may have a different dimension or consist of different materials. We have seen superior engineering talents at work which gave us a zero make ready casemaking machine called the MEK-A-CASE (www.mekatronicsinc.com). This is a single operator casemaking machine that requires no set ups, yet every case can be different. The only human intervention is to feed the materials into the machine; everything after that is fully automatic. Today, this unique casemaking machine is at the heart of virtually every larger library bindery and is expanding into on-demand and photo-book establishments.

Edition Casemaking

Producing the same cases by the thousands requires high-speed and sophisticated casemaking machines. We could write a lengthy article just on that topic.

In the edition binding industry, there are roll-fed and sheet-fed casemaking machines. All of these machines use protein (animal) glues. This has to do with tack. At a high speed, the turn-ins must stay down at once. Lately, there have been some casemaking experiments using hotmelt adhesives. At DRUPA, the world's largest trade show, Kolbus, one of the major machinery manufacturers for edition binding introduced a new stream-line casemaking machine that cycled at 100 cases a minute. Impressive, but as stated earlier, American engineers built faster machines 20 years ago! We must realize that these days speed is no longer king. Today's orders are much smaller and fast change-over capabilities are

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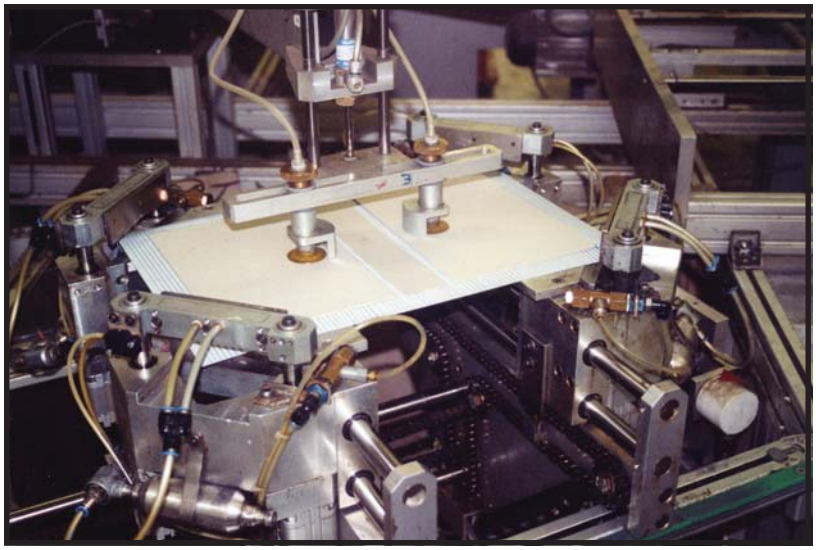
now much more important. Only computer controlled machinery equipped with servo motors can accomplish this task. For sophisticated information on such casemaking equipment, check out www.hoerauf.com or www.kolbus.de.

Should You Bother Making Your Own Cases?

This is a good question. Earlier in this article, I mentioned that as a bookbinder, I use a foam paint roller to apply a coat of PVA adhesive when making just a few cases. Call this a hobby of a retired individual. If you are a small vanity or home publishing enterprise, you may want to try your hand at binding your own. The same may be true if you are already in the business and have a small perfect binder. You might want to learn more about an all-new book-block binding method which is called "Lock-Binding." With this unique perfect binding method, you will be able to try crafting some hardcover bindings. The challenge is whether you can make money doing it. That of course depends. Every start-up enterprise is tough.

Go to the Website for a Quote

Before deciding to make your own cases, you might consider getting a price quote for a professional binder to do the job. Look at the request we just received, putting hardcovers onto soft-cover bindings. Start by visiting www.hardcoverbinders.org and asking some of the HBI/LBI members for a price quote. They have made a considerable financial investment in equipment and when they give you a price, you may lose interest in doing hardcover



The MEK-A-CASE is a fully automated case-making machine. Each case may have different dimensions, the machine is self-adjusting. In the back, a partial view of Mekatronics "EZ-CUT" cloth-cutting robot.

binding on your own. Do not get discouraged—suppliers are also here to help you with gadgets, materials and knowledge of how to get started. The main thrust of the new HBI/LBI organization is to combine all resources related to hardcover binding. Best of all, we are here to help. This is why the HBI/LBI slogan is "High Quality Books, One Book at a Time."

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