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Care and Handling of Coverboard in Book Binding

reprint courtesy of LBS and Rock-Tenn

Dave Bird, Technical Services Manager at Rock-Tenn, shares tips on storage and handling of binders board for consistently flat book covers.

Traditionally, bookbinding has been a relatively simple operation. Regardless of whether a book is being bound for the first time, or otherwise rebound, the process consists basically of sewing or gluing pages together to maintain an order, preparing a cover and gluing it over cover boards and stamping, or otherwise, decorating the completed cover, then attaching the cover to the text.

In recent years, competition in the book industry has become fiercer than ever. One inevitable outcome of such competition has been the race by many manufacturers to apply quality manufacturing methods such as Lean or Six Sigma to the bookbinding operation in order to reduce working capital, increase inventory turns, or improve productivity. Ironically, while great progress has been made in decreasing turnaround time from publishing to book delivery, several of these same companies report increasing numbers of rejections due to poor quality, despite the adoption of these advanced manufacturing techniques. And as every book manufacturer knows, a "good" book is one that doesn't come back!

One aspect that many quality gurus miss is a proper understanding of what happens to cover board during a bookbinding operation. Coverboard, after all, is a natural fiber and as such, responds to natural elements - particularly moisture – in different ways. Further, cover curl - an occurrence in which the covered panel of a case-bound book does not remain flat – is one of the leading factors in "cover board quality" as experienced by book manufacturers, publishers and component vendors.

Understanding the time required for moisture to diffuse and equilibrate with the environment is essential to minimizing cover curl. Cover curl typically increases during the dry, winter months and modifying your standard approaches to manufacturing may help you control cover curl and increase overall throughput. Here are some things to keep in mind to keep your bookbinding operations running as smoothly as possible.

Maintaining a Consistent Environment

During dry winter months, manufacturers often do not compensate for the lower humidity. As the air becomes drier, cover board will typically lose some of its internal moisture as it equilibrates with a dry environment. This can sometimes be seen as the top board units of an opened pallet start to curl upwards in the cross-grain direction. This movement is natural with cellulose fiber but can sometimes lead to feed-

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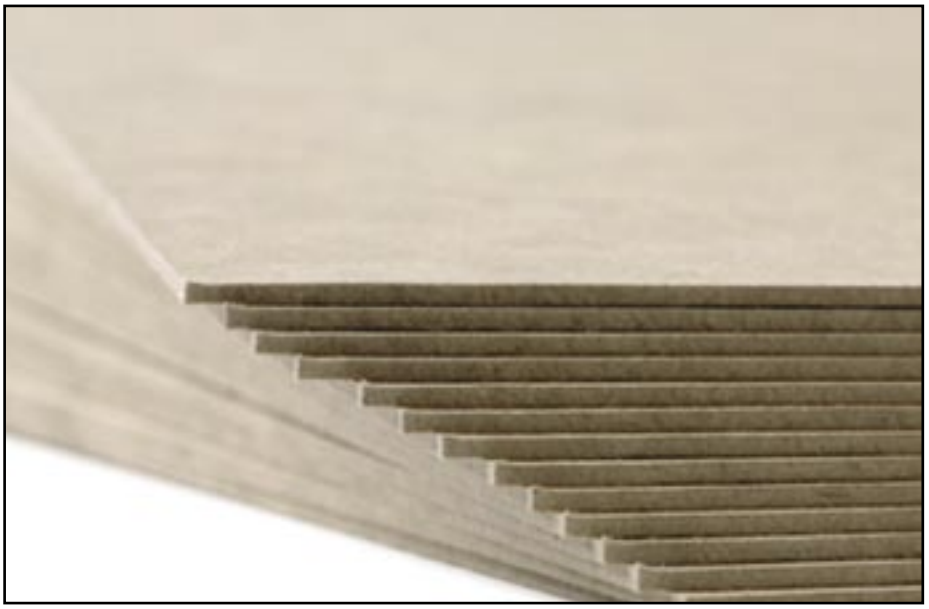
ing difficulties on the case-maker. When board is delivered from a cold warehouse or off the back of the shipping truck, it needs to acclimate with the manufacturing environment.



Tips to manufacturing success

- Store received board in an environment similar to the manufacturing area.
- Before running board on the case-maker, allow time so that the board's stabilized temperature is within 15 deg. F of the case-making area.
- Open board loads, removing stretch film but allowing the board to be top-weighted during acclimation to minimize moisture dissipation. If some of the top boards start to curl in the cross-grain direction, just set them aside in a stack with the curl facing down and they will shortly flatten out.
- Eliminate any fans or blowing air onto the board load during case making. In many situations, an overhead blower or fan is creating excessive air movement and accelerating moisture migration.

Maximizing Moisture Acceptance

The case-making process consists of two primary steps. First, adhesives are applied to the cover material and depending upon the absorption ability of the cover material and the amount of any filler or coating, the adhesive may sit on the surface for a period of time before starting to penetrate the cover material surface. The second step involves the placement of cover board onto the cover material where, upon contact, the adhesive will start to penetrate the board surface.

This interaction of bonding between the two substrates, using a water-based adhesive is referred to as a moisture event. Minimizing the effects of a moisture event lead to the best results for flatness and occur when there are strong similarities of moisture acceptance and moisture dissipation between the two bonding substrates.

Moisture acceptance can vary greatly with the wide variety of cover materials being used today. Production managers should make sure they are familiar with the dissipation characteristics of each cover material type used. Film coated and liquid laminated covers will not have the same absorption rate or dissipation rate as natural cloth or uncoated paper-base covers because the outer side of the material has been sealed. Synthetic cover material will have a limited amount of moisture acceptance and rely on a suction bond.

In each event, the additional moisture from the adhesive must go somewhere. That somewhere is into the board, resulting in additional fiber swell and longer time required for moisture dissipation. Depending upon the cover material, its level of moisture compatibility, and the characteristics of the board, the time to reach equilibrium with the environment may be anywhere from 12 to 24 hours. During this time, the made-cover is open to manipulation.

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(continued from page 2)

Tips to delivering a flat cover

- Maintain an adhesive solids content above 50%.
- Use a minimal amount of adhesive to create the bonding of substrates. If 1 mil (.001) thickness is adequate to create the bond and 2 mil (.002) is applied, the moisture addition to substrates has doubled.
- Whenever possible, adjust the adhesive viscosity by adjusting the temperature rather than adding additional water. There is a fairly wide range in temperature application and flow characteristics can be improved without inducing add'l moisture. Your adhesive supplier can assist in creating a temperature/viscosity range chart.
- Learn which substrate combinations generate problems. Pull 2 made covers off the case maker while running. Lay one cover face-up and the other facedown without weighting them. Watch for curl reaction within a few minutes. If curl is excessive, the made covers should be brick-stacked and top-weighted to maintain flatness during curing.

Stacking and Storing Finished Books

Proper stacking to maintain flatness requires positioning stacks of proportional size (of made covers) onto a supported flat surface and the addition of weight upon the stack to insure flatness as moisture dissipates. There are a variety of methods used to stabilize made covers during equilibration but the most common method is brick stacking onto a pallet.

Brick stacking uses an overlap of each cover layer to maintain flatness and weight. A wooden top can be used to weight the top stack layer. The key elements to success in brick-stacking are: a) maintaining a consistent stack height that provides minimal weight build on the cover turn-in area, b) placing cover stacks so that their weight is distributed to the outer edges of the stack below and, c) overlapping layers to stabilize the pallet for movement to the next operation.

If made covers are not controlled during equilibration and there are dissimilarities between the bonded substrates, cover curl can result. As mentioned previously, the rate of moisture intake and the rate of moisture dissipation between cover material and cover board represent two factors of consideration. Another factor is the adhesive. If excessive adhesive is applied, the excessive moisture can affect substrate interaction. If the adhesive solids content is low, additional moisture is added and that moisture must eventually dissipate. With proper and timely stabilization of the made covers, the interaction of these variables can be reduced.

In-line case-making and case-in operations present a slightly different set of equilibration issues. As long as there is minimal time between case making and case-in, the made cover will not have time to react to the moisture intake. This reduces the possibility of cover curl happening before the made cover reaches the case-in cover hopper. Problems generate when the case-in portion of the in-line operation is down and case making continues to run product. Made covers should be brick-stacked and stabilized so that they can be fed back in-line without presenting problems to the case-in cover hopper.

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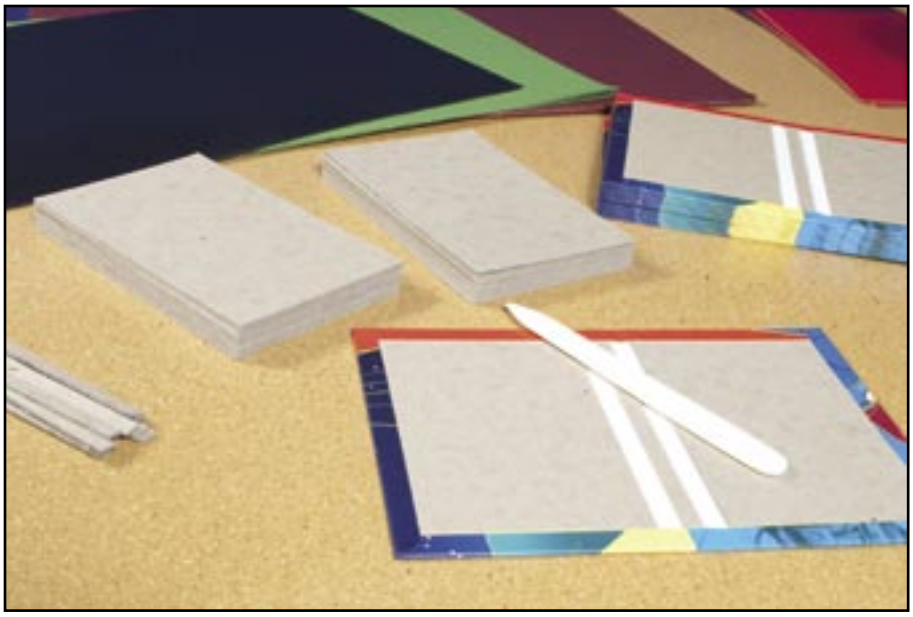
Tip 3: Flat covers for the case-in operation

- Brick stacking off the case-maker should always result in the cover turn-in area being supported by the cover turn-in area of the stack below it.
- Cover stacks should be made with a consistent amount of covers in every stack.
- Stack height of covers should allow for no more than 3/8" differential between the measurement at the turned-edge and measurement at the board joint area.
- Pallets of made covers remain flat when a weighted top is placed upon the load during curing.



Improving the Case-in Operation: Another Moisture Event

During case-in, application rollers meter adhesive onto the outer end leaf. As the end leaf adhesive makes contact with the exposed surface of the cover board, there exists another opportunity for a moisture event.

In this case, the moisture from the water-based adhesive will begin penetrating the end leaf fibers and the board fibers. A time period ranging from 12 to 24 hours is necessary for the moisture to dissipate and the substrates to reach equilibrium with the environment. During this time, the bound book and the made cover can be manipulated or allowed to find equilibrium by stabilizing the bound book. This is frequently done by stacking the books onto pallets and weighting them with a pallet top or light banding. If books are packed directly after case-in, a properly fitted bulk carton will stabilize the bound books.

Tip 4: Flat books out the door

- Case-in adhesive should have a high solids ratio.….60 to 65% and the application rate should be minimal to make the bond.
- If curl reactivity was found to be an issue in case making, monitor the results during case-in by placing a bound book on a table and watching it's reaction over a 3-5 minute timeframe. If there is an exaggerated tendency for cover uplift, be sure that palletized book stacks are weighted during curing. If books are going directly into cartons, be sure that the carton is a good fit and doesn't contain excess "head" space.
- Track flatness issues and the type of end leaf used to see if there is correlation over time.

Understanding the substrates, the interactions and the process

Proper handling within the process and understanding of the interactions of the components is vital to manufacturing high quality books. As noted above, when

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(continued from page 4)

changes to the environment, the types of cover board or cover material, glue, or method of stacking occur, it is best to consider how this will effect the moisture dissipation. In this way, returns and allowances can be kept to a minimum and overall book manufacturing productivity improved.

Definitions of terms referenced in article

Cover material
A variety of different materials are available for the outer covering of the book cover including paper-based printing stock, natural cloth, and synthetic woven & non-woven materials. These may be used in their natural state or coated with a variety of fillers to enhance performance characteristics, such as latex saturated, acrylic filled or paper-backed.

Cover board
Refers to recycled cellulose fiber as the dominant base substrate used to support the cover material. Cellulose fiber provides an inexpensive "body" to the case-bound cover and allows water-based adhesives to be used in the bonding process.

Adhesive
Water-based adhesives are the most functional, allowing considerable "open-time" to position the cover board onto the cover material and create the turned-in edges. Dextrin and polyvinyl-acetate adhesives are used but protein-based heated glue (normally referred to as "animal glue") is the dominant adhesive used to bond cover materials to cover board.

Moisture Event
The joining of substrates with a water-base adhesive and the corresponding interaction between the substrates as they absorb and dissipate moisture.

Hardcover Book Cases – Are You Sure They Fit?

By Werner Rebsamen

The traditional way of constructing a hardcover binding used to be as follows: First you had to bind the book block and then take the measurements – these are the width, height and bulk (thickness). Then the binders cut the boards, the inlay or spine-strip, and the covering materials. A library binder, binding or rebinding one book at a time, usually had no other choice but to follow this rule. There are just too many variables for each book to be bound. They have to take much into consideration—trim or no trim; grinding or not grinding-off the spine; thickness of the book-block; and type of the hardcover binding (rounded and backed, flat-back, endpaper structure). They all influence the critical measurements required for making a beautifully fitting hardcover case.

Book Measuring Devices for Library Binding

The slow, labor intensive process of measuring book blocks was recognized by the pioneer of Library Binding automation. Jack Bendror, an innovative mechanical engineer and president of Mekatronics, introduced in 1969 a very advanced, high-speed optical book-measuring unit. In these earlier times, and long before micro-processors and computers, Jack was one of the first to utilize printed circuit boards, which used clever gadgets and fiber optic probes to record the measurement. The operator had to set the measuring device to the kind of binding—e.g. rounded and backed, square back—and the program would change to accommodate the binding style.

When micro-processors became available, both Mekatronics and the Flesher Corp. introduced more sophisticated book measuring devices. The electronics of these machines would automatically translate the sensor information into the three dimensions—width, height and bulk—and transmit these to the computer for processing.

These book-measuring devices display and do filing and/or printing of all critical case-making and stamping data. Options in the machine control software which allow for trim/no trim and rounded/flat compensated computations of the books dimension.

Why are these book measuring devices so important for an enhanced production flow? Well, the information provided not only furnishes the trim size; it aids in the selection of the binding material—a board, spine inlay, flannel—and also checks the available width for stamping a title. If the title does not fit, the computer will alert the operator, who will most likely need to communicate options to the client. In short, a book-measuring machine automatically calculates, and within seconds, prints out all required and critical dimensions which include those for case-making. Best of all, over time, a bindery will get consistent data of dimensions which help to streamline or automate other areas within the bindery. Book measuring assures computer-accurate dimensions and with it aids a binder to produce excellent quality work.

Much later, edition binders discovered the value of such book measuring devices for hardcover and soft-cover perfect binding. These measuring devices allow an operator to set up their machinery via a computer. With the aid of built-in servo-motors, all critical components of a sophisticated binding line then can be set-up and adjusted with remote control change-over capabilities. What used to take hours is now accomplished in minutes. Library Binders can

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(continued from page 6)

Incoming works to be library bound are first measured in a book size computer. At this station, all data recorded is checked over and against a clients instructions.. It is one of the most important steps taken in an all computer controlled bindery environment. Shown here at a book size computer is Linda Meier at the modern Utah Bookbinding Company.

take pride to have been the very first in our industry to utilize such advanced technology.

Paper Caliper – PPI

Making cases in advance has its advantages. A book cover case takes up very little room. We can pile thousands of them onto a single pallet. Best of all, if book cover cases are made in advance, they have a chance to "cure." Using water based adhesives and paper- boards, and the book-cases being lined with a material only on one side, they often intend to warp slightly. A built-in de-warping device in the casing-in machine will correct that problem and will ensure that the book cover will lay flat.

Book-blocks in production take away lots of space, especially if they are bulky. In my professional career as an edition bookbinder, I was responsible for furnishing all book cover dimensions for daily runs of 100,000 plus books. This included a complex variety - not only hardcover bindings, but children's books, four inches thick unabridged dictionaries, all kinds of Bible bindings and more. For that knowledge and responsibility, I was the highest paid bookbinder at that large book manufacturing facility. You might wonder how I could ever furnish all the dimensions for several dozen jobs daily. With some exceptions, making sample books to take the measurements was out of the question—there was simply no time for it. Worse, I had to furnish those dimensions for some large runs long before the paper was even made. Is your curiosity piqued wondering how in the world can one figure out a well-fitting book-cover when the paper is not even available? Well, let me explain:

Manufactured papers have a caliper. The caliper of the paper is the measured thickness of a single sheet by the use of a micrometer when a specified static load is applied for a minimum specified time. Since papers vary in their thickness and are compressible, the caliper of four sheets of paper is sometimes measured for greater accuracy and especially for a more representative reading of their thickness. The thickness of paper and that of paper-boards are often designated in points. A point of thickness denotes one-thousandth of an inch. Thus a 10-point Bristol would have a caliper or thickness of .010 inches. Thinner papers are measured differently. The bulking number is measured in a manner that predicts the bulk of a book under the conditions of production. To simulate the conditions of compression in book manufacture, a pressure bulk method is used. This establishes the number of sheets required to bulk exactly 1" after being placed under a platen

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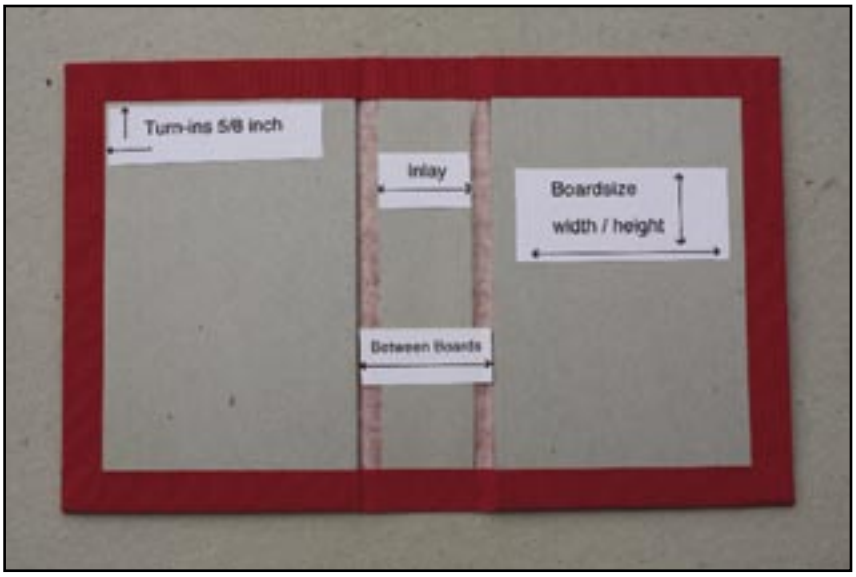
(continued from page 7)

pressure of 35 pounds per square inch (psi) for 30 seconds. Now if that sounds complex, I never had to conduct such measures. Paper companies and suppliers will furnish that data. For example if they list a certain paper to have 500 PPI (pages per inch) it means 500 pages will make a book-block that is exactly one inch thick. Now watch out and be aware that a sheet has two pages! In other words, 250 sheets of a 500 PPI paper will equal one inch. I could list many failures where, due to the lack of communication, the book-covers were twice the size they should have been. After just one such incident, I made it a rule, never to accept or furnish verbal information; everything had to be in writing. In all of the unfortunate incidents, this method then always saved my skin! In conclusion, do not assume that a specific weight of a paper will always result in the same PPI. I have a PPI chart which lists various paper companies. Let's take a 60# papers. A No. 66 Antique 60# lists a PPI of 320. Yet a Camelia Matte 60# lists a PPI of 550! The paper industry allows a tolerance of 5 percent. This was no problem for us when books were printed one signature at a time, which means various different kinds of paper(s) were used. Statistically, that evened out the bulk variations. But in 1973, when I was in charge of the world's first in-line book-manufacturing system—a plant, which featured a Cameron press—those tolerances played havoc with my carefully calculated book-covers. Printing an entire book from a single roll of paper incorporated all variables into a book-block. These days we have digital printing where we print an entire book at once. It is all déjà vu. Minor bulk variations are acceptable to a certain degree; a carefully calculated book cover will be able to absorb those deviations. Before we calculate a well-fitting book-cover, we need to know the trim-size, paper used, the PPI, the amount of pages and of course, the style of binding.



To achieve a good fitting, quality hardcover, all measurements are critical.

How to Calculate the Dimensions of a Book-Cover

Our book testing/evaluation laboratory receives many hardcover bindings, especially photo book structures, which are, with regard to the cover structures presented and quality presented, very questionable. Some of those folks may never have had a chance to mingle with genuine bookbinders and learn more about this exciting trade. But that is what this trade association and its workshops are all about. No matter how much experience we have in the bookbinding trade, we never have a chance to know it all. Our complex trade has just too many variables. Even after being active in the bookbinding trade for over 50 years, I still keep learning. Most of us binders love to share our knowledge and trade "secrets" with newcomers to the trade. Let's take a few examples and discuss the dimensions needed for hardcover cases.

Flat or square hardcover cases are much different from rounded and backed ones. First you must be familiar with endpaper structures. If the book block is adhesive bound and the endpaper flexes at the binding edge, such a

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(continued from page 8)

cover structure is different from a binding that is side-sewn. If oversew endsheets are used, treat it like one that flexes at the very binding edge. For an example, let us assume that our book-blocks have a trim size of 6 x 9 and a bulk of approx. 3/8 inch. An average, median board is used (.080)

A square back hardcover flexing at the binding edge is calculated as follows:

Trimsize	6	X 9 inches
less	1/8	plus 1/4
Boardsize	5 7/8	X 9 1/4 inches

Let us assume the bulk of the book block and two board thicknesses equal ½ inch. That is the width of the spine strip. Therefore, cut the spine strips ½ x 9 ¼ inches. This should be done on a board shear. If the strips are cut on a guillotine cutter, one of the edges of the strip is slanted, often resulting in a poor quality, distorted spine.

Now we are ready to calculate the dimensions of the cover and covering material.

If the spine strip has a width of ½ inch, add 3/8 inches on each side. The 3/8 inch gaps represent the joint areas. Bear in mind when using thicker boards, you must add a little more to this area, as the covering material has to go over the spine strip. An insufficient joint area may results into unusual stress exerted onto the first and last pages of a binding.

Distance between the boards calculate as follows: 3/8 + ½ + 3/8 = 1 ¼ inches

The finished cover dimension is now as follows:

Board size	5 7/8
+ Between Boards	1 1/4
+ Board size	5 7/8
= Cover size	13 x 9 1/4

To figure the coverstock dimension, add 5/8 inch turn-ins on all four sides. Coverstock or cut covering material then has a dimension of 14 ¼ x 10 ½ inches.

Side-sewn book blocks with Singer-style endsheets require different calculations because the cover board must flex further inward. Side-sewing takes place 1/8 to 1/4 inch away from the binding edge. Now take the caliper of the boards, endpapers, reinforcing and the covering material. It must have a chance to flex freely without putting strain onto the binding. The board must be cut somewhat shorter in their width. Here is an example for a 6 x 9 inch flat- or square-back book with a ½ spine strip: Board size 5 ¾ x 9 ¼ inch. Joint area width, ½ inch on each side. (More if the side-sewing is further inward or thick covering materials are used.) Cover dimensions then are calculated as follows: 5 3/4 + 1 ½ + 5 3/4 = 13 x 9 ¼ . Cover material dimensions remains the same 14 ¼ x 10 ½ inches. Make sure that all grain directions are parallel with the bindfold!

Rounded and Backed book-blocks are more difficult to calculate. The bindings always required making sample books—a labor intensive and expensive task. There is a mathematical solution to figure out the exact cover dimensions, even if the paper is not yet available. All we need from the publisher's production managers are the trim-size, the type of paper used, the number of pages (and the PPI), and the style of hardcover binding. We are almost ready to calculate. But now you ask, how in the world can you determine the distance over the rounded and backed spine? After all, the width of the flexible inlay is a most important item to achieve a quality hardcover binding. Well, there is a trick to it. You must establish a chart. In my case, during a slow period, I bound 20+ Smyth-sewn bookblocks. They all had the same trim size. The only variations were the bulk. I started with a ¼ inch thick book, the

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(continued from page 9)

next having a 3/8 inch bulk – all the way up to 3 inches. Then I rounded and backed the bookblocks the way they should look like in production. That required some craftsmanship. When I had all bookblocks ready, with a paper strip over the spine, I took careful measurements. That established the exact distance from the heights of the backed ridges on each side and the rounded spine. That data was translated into increments of one thousandths of an inch. For example, a bookblock with a bulk of 13/16 inch measured when rounded only .95 inches, after rounding and backing it showed 1.18.

That 1.18 equals roughly 1 3/16 inches for the width of the inlay. With this chart, it was possible to establish any cover dimension in a minute or two. Bear in mind, this was all done long before we had computers available. These days, once programmed, a cover size function is a matter of seconds. Best of all, if a Q.C. manager evaluates the finished bindings, some minor adjustments can always easily be made.

Now let us go back to our examples and calculate the requirement for a hardcover binding with a trim size of 6 x 9 and a bulk of 13/16 inch.

Board size	5 7/8
Joint	1/4
Inlay	1 3/16
Joint	1/4
Board size	5 7/8
= Cover size	13 7/16 x 9 ¼ inches

Cover material with 5/8 inch turn-ins
14 11/16 x 10 ½ inches
For heavy covering materials, allow a little more for the turn-ins.

The measurements used above are for Smyth-sewn book blocks. Adhesive bound books do not and should not be backed as much. Therefore deduct 1/16 inch of the width of the inlay,

When side-sewing, more space must be available for the joints.

shorten the boards and increase the joints to 5/16. Again, all such data is most valuable to get a useful cover size program started. With minor adjustments made in time, it is perhaps one of a most useful tool for anyone who must produce quality hardcover bindings.

No matter what binding style you may produce, such a program is now even more important than ever. These days, most of the covering materials used are printed. The placements of the images are most often very critical. That is just one more reason why book covers must be calculated with an utmost precision, no matter if you are an edition, on-demand or photo book binding facility.

My complete chart to calculate rounded and backed covers for hardcover bindings is available to our members on the HBI/LBI web site.

Werner Rebsamen is Professor Emeritus at the Rochester Institute of Technology and the technical consultant to HBI and the Library Binding Institute. He can be reached at wtrebs@metrocast.net.

This is the best time in decades to grow without big investment

By Wes Ball
Author of The Alpha Factor

This is the best time in years to create dramatic, sustainable growth without having to invest in technology or product innovation. In fact, we may see the most dramatic changes in decades in who the leading companies are.

I have had several conversations with business CEOs recently, and, not surprisingly, there is a common theme: Fear. There's also a lot of wondering what the answer to creating growth is going to be. But the secret to growth is both easier and harder than you may have thought. It's easier, because the answer is so simple and attainable by almost anyone. It's harder, because few business managers will believe that it can be that simple and easy.

Why is there such a great opportunity for growth right now? One reason is that most of your competitors are pulling back in fear. It's easier than ever to steal share from your competitors when they are hiding out. And, as long as you don't fall into price competition as your primary tool to create growth, you can see great gains in market share and profitability, no matter what the economy is doing.

Cahners Publishing has done decades worth of research to prove that recessions are the best time to jump past competitors. They have continually found that those companies who use the resources to create more non-discounted demand, while everyone else is holding back, grow much greater than their competitors during and after the downturn.

My own research and testing over more than 25 years has proven conclusively that you can dramatically grow market dominance and customer loyalty without discounting even more easily during a downturn than when things are good.

The real choice will be, "Do you want to be the one left behind to follow someone else's lead, or do you want to emerge 6, 12, or 18 months from now as a dominant leader?" Act wisely now, and you can leapfrog past competitors.

Another reason is that there also is no lack of customer need. Despite the typical perception that "customer satisfaction" surveys measure how satisfied customers are, reality is that most customers are not at all satisfied. They just won't tell you that. Most of what is measured by customer satisfaction surveys is what the marketer thinks is important, not what the customer really values. In fact, most customers won't even reveal what is most important to them in a customer satisfaction survey.

I do a lot of innovation research, and invariably I uncover entire areas of deep need (functional and emotional) that customers have never revealed to anyone, because they never believed that they could fulfill those needs through a product in that category. And the marketers in that category are completely blind to it. It would be like never recognizing the opportunity for a Victoria's Secret, because there are already so many other retailers that sell lingerie and pajamas. But such are the opportunities that dominate categories in a short time, no matter what the economy is doing.

The best part is that emotional, ego-satisfaction needs are the ones that create the greatest growth in a downturn, and they

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(continued from page 11)

company has grown dramatically without discounting… no matter what the economy is doing.

The real barriers to growth now:
The economy is not the real barrier to growth right now. Yes, people and businesses may slow their spending for the next several months, but they will not stop spending. And what they spend their money on will be defined by how they feel about themselves and what they think the product will do to change that self-perception.

The real barriers to growth are…

1. Believing that low price is critical – it's actually the last criteria, not the first. It only comes into play when the customer realizes that there is no meaningful difference between products. Our research showed that approximately 90% of consumers will spend more for something they want, even though they may tell researchers that they won't.

2. Believing that function is most important – improving quality or performance works best when it supports ego-satisfaction. In really tough economies, ego-satisfaction beats functional performance or quality. Almost every Alpha company we studied (companies who dominate their category and have greater price leverage) had lower quality or product performance than many of its competitors. Functional performance is only a rationale for justifying the emotional, ego-satisfaction basis for the buying decision.

3. Believing that customer expectations get lower in a downturn – they actually go higher. Customers actually demand much more, especially in ego-satisfaction, during a downturn. To really win, you must satisfy those emotional needs and then drive expectations even higher. The company that successfully accomplishes that will become the new leader.

4. Believing that measuring outcomes is how to manage success – "causes" are more important than final outcomes, because they let you modify and improve your process as you go BEFORE final outcomes. Measuring sales and profit is backward-looking. It's like driving a car by looking out the back window. Look ahead at the emotional elements of the buying decision process, and you can manage improvement far more easily and cost-effectively.

5. Believing that when competitors follow your lead, you need to stop them – followers are your best marketing support. Our research into what creates sustainable success proved this. Every competitor who follows your lead or competes against you is proving your value, not theirs. Just don't let them pass you in driving customer expectations. Incorporate the best things they are doing and overcome the weak things they do.

You can do better than just survive in an economic downturn. Be smart about shifting current resources into ego-satisfaction fulfillment, and you will grow, while everyone else wonders what happened to them. Recognize that this may be the best opportunity your company has ever had to grow dramatically and sustainably, and a year from now you could be the dominant success in your category.

Wes Ball is the author of The Alpha Factor: The Secret to Dominating Competitors and Creating Self-Sustaining Success.