

Bound and Determined

With today's PostScript printers, it is a trivial matter to churn out zillions of sheets of high quality paper on your kitchen table. The real problems lie in converting all of these individual paper stacks into your final salable Book-on-demand products. Somehow your printing has to get bound into attractive and properly trimmed books with durable covers. And that's where the fun begins...

Binding options

After years of searching, I have yet to find *any* product whose main purpose is to let end users attractively hold pages together. Either their primary goal is to have some distributor make a huge commission on an outrageously expensive one-time sale; or else guarantee a future market of highly overpriced, very overspecialized, often stale, and impossible-to-find custom materials.

Your simplest bookbinding procedure is to use staples for *saddle stitching*. Your pages are printed double-wide in the proper order and then folded down the middle. They are then inserted in a cover and locked in place using two or three ordinary staples. Saddle stitching is fast and cheap, and allows flat pages. You are limited to thinner volumes. There's no spine lettering, since there's no spine.

Regular staplers will not work. Instead, you need a *long throw* stapler. Although the long throw stapler prices have dropped a lot at discount office product warehouses, they still cost too much. The obvious ploy is to take a plain old stapler, a hinge from your hardware store, and \$5. Then visit your local "can do" welder or blacksmith. Better yet, use a "trough" or a "vee" so your folded pages don't have to be opened up very far.

I did see one remarkable alternate solution once in a notions catalog. This was a shabby \$2 Hong Kong stapler whose staple feed channel could be *twisted* by 90 degrees from the throat. You thus staple your documents from the *top* or the *bottom*, rather than from the sides. While a great idea, they quickly self destruct, usually taking half of your finger with them.

To me, a plastic comb binding is not even funny. It is a gross and demeaning insult to your customers. But there's a useful variation on comb binding known as *wire binding*. Wire binding is a lay-flat process that seems ideal for reference manuals, cookbooks, calendars, and programming guides. Small quantity costs are in the twenty cent range. The sheets do need custom punching. Again, there is no spine and no spine lettering. Some wire systems need special punches, while others are compatible with the plastic comb punches.

Any cover stock of your choice can be used.

One good wire binding supply source is *Wire-O*, while the *Specialties Bindery* offers custom work.

While all their larger products are excessively gruesome, I've found the *Personal Velobinder* to be an attractive and lower cost option for less-than-professional bindings. The system uses snap-in plastic strips to clamp 25 or fewer pages together. It is fine for such things as proposals and fire department annual reports. The punch costs as little as \$29, and the strips are around a quarter each. You can add or remove pages later. While special covers are available, you can easily punch your own. Limitations include being labor intensive, a non-perfect binding, no spine lettering, and thin documents only.

One warning: The punched holes are tiny and very near the edges of your document. Punch with care!

Xerox has newly introduced their *ChannelBind* system. Which to me is an outright joke. This eliminates the need for punching and substitutes "C" shaped channels which "bite" into the pages. If one page loosens, all fall out. And I feel that \$1100 is way too much to pay for nothing but a cleverly disguised pair of *Vise-Grip* pliers.

There are dozens of firms who offer *thermal* binders. These are usually full covers which have a hot glue strip down their spine. You jog your pages and place them inside the cover. You then drop everything into a special toaster for half a minute. The hot glue melts, grabbing the pages. You get a very durable perfect binding. But you still cannot label the spine, and your cover material choices are limited. About a dollar per bind. Getting an exact fit is tricky. And stale stock can crack when trimmed. Of the many systems available, I've found that *Unibind* is the best deal. Their toaster is \$200, or free if you buy enough covers.

Pages *must* get jogged before you put them into the cover. Jogging shakes up the pages so they have a uniform glue edge. I use a costly jogger I got from *Martin-Yale* by way of the *Printer's Shopper*. Your best bet here is to modify

a \$25 *Black and Decker* jitter sander from *Wal-Mart*.

By far my favorite binding system for Book-on-demand publishing is Unibind's stupendously great *Pelsaer* system. This is simply a "U" shaped hot glue channel attached to two flysheets. Cost is thirty cents. You make up *any* cover done *any* way you like, including spine lettering. You drop your pages in and toast it. You then keep or remove the flysheets as you wish. Presto. Book-on-demand products

I've yet to find any product whose main purpose is to let end users attractively hold papers together.

that you cannot tell from a "real" book.

While the Pelsaer glue channels are only available in increments, they easily adjust to *any* thickness. So long as your cover scoring is carefully set.

You can also get just the self-stick hot glue strips from *Planax* as part of their *Optitherm* system. But they cost far too much. A *Midnight Engineering* opportunity: Sanely priced peel-and-stick hot glue strips on a carrier.

There are bunches of bookbinding and padding machines intended for jiffy print shops. They are priced in the \$2000 to \$6000 range. These basically jog and roughen the backs, apply hot glue, score and apply a cover. The main brands include *Brackett*, *Bourg*, *Horizon*, *Planax*, *Rosback*, and *Standard Bind-Fast*.

Or, for high volume machines at insanely higher prices, you can try *Kolbus* or *Wohlenberg*.

Planax also has a new cold binding system that is *very* intriguing. Cold glues are much better for bookbinding, but nobody ever liked them because of their long cycle times. They have a new cold glue that starts hardening the instant any de-watering pressure is applied. Cycle time is under a minute. The pricing is too high.

I personally use four binding systems today: *Velobind* for local community stuff, *Unibind* for our older volumes, and *Pelsaer* for most of our future pilot work. Finally, I'm rapidly switching most of our better selling titles over to David Seid of *Access LaserPress*, where fast PostScript and medium resolution Xerox Docutech get combined with standard printshop bindery techniques. This new system is nearly optimum for several hundred volumes at once. At unbelievably low prices. And a fast turnaround.

Improving cover durability

Book covers tend to scuff. Especially raw toner ones. And a shopworn book won't sell. What can you do here?

First, you might consider using real ink instead. By jiffy printing your covers. Real ink is usually far tougher than toner. Besides offering more exciting colors. And real ink is easily protected further by a clear varnish, a uv overcoat, or plastic lamination. All of these are standard processes offered by most printers. Some new *aqueous film overcoats* have been announced. *Van Son* is a varnish source.

The overcoats are press printed just like real ink. Except that they are clear and fully cover the page.

Your simplest and cheapest way to improve cover toner durability is by minimizing your toner coverage, avoiding any large dense areas or bleeds.

The next step up in durability is known as *Bakerizing*. Bakerizing is a near zero cost process that converts toner into a tough and jet black medium gloss. To Bakerize, you place a sheet of smooth and slip-coated mylar in contact with your laser printed output. You then run it back through your laser printer or go through a *Kroy Color* or similar machine. The toner remelts and *calenders* in contact with the smooth mylar. Just the same way that chrome ferrotype drums got used for high gloss photo finishing before they invented resin coated paper. With care, the mylar sheets can be reused many times.

The results of properly done Bakerizing are absolutely stunning. You won't believe the improvement the first time you see it. Empty *Kroy* carriers also can be used.

You can also overlay your toner with a hot stamp foil,

changing the color and improving the ruggedness at the same time. Your laser printed output is placed in contact with a hot stamp carrier sheet and sent through a machine that is a second cousin to the laser's own fusion assembly. The toner melts, acting as a foil-grabbing adhesive.

Kroy Color is one example of this process. The bright metallic foils often work the best, the solid matte colors the poorest. This can be fairly neat stuff.

To date, *Kroy Color* and its competitive offerings have been overpriced and mismarketed. But you can get the uncut raw hot stamp material by yourself in humongous quantities for under a nickel a sheet. From such places as *Transfer Print*, *Hoechst*, *Lamart*, or *Maple Roll Leaf*.

On most of our earlier Book-on-demand publications, I used some transparent *Unibind* vinyl covers. A heavier parchment cover stock was selected in an appropriate shade and then laser printed. The printing was Bakerized, and placed *inside* the clear protective vinyl cover. Which was durable, attractive, and fairly cheap. But also is somewhat unusual and not quite fully professional.

Another obvious ploy is to use a spray-on fixative or an acrylic protective spray from your nearby art store. Also obvious are the fumes, dustless drying times, the labor, and the possible nonuniform coverage.

The stock printer's varnish, uv, and aqueous overcoats could certainly be used on toner covers. The trouble is that nobody yet has a cheap coating machine. A crying need for these exists. And yet another great *Midnight Engineering* opportunity waits for you.

Real plastic laminating is an effective method that we are now trying out on the *Pelsaer* covers. The results are very durable since the toner is locked inside a block of plastic. Reasonably priced (\$140) laminating machines along with very low cost matte or clear laminating films are readily available from *USI*. And they work exceptionally well. But become labor intensive in large production runs.

A pricier source is *GBC* who have newly introduced a line of curl-resistant cover lamination films.

Kroy clear laminates are also available. While identical to the above materials, these cost far more. You can fake professional lamination by using any of the stick-on sheets available at any office supply. But these can end up looking like something an eighth grader would hand in as a school science fair project report.

Interesting non-traditional sources for laminating films, hot stamp materials, and rugged overcoatings do advertise regularly in the *Paper*, *Film*, and *Foil* and *Converting* trade journals. Among several others.

Shear nonsense

Once your books or whatever are bound, you may also want to *trim* them. There are a number of good reasons to cut the edges off your bound products. First, the edges end up smoother and more professional looking. Second, most real books are narrower than 8-1/2 inches. Narrower books will look less like they fell off the quick copy machine at a jiffy printer. Third, the smaller books can be laser printed two-up, either on regular or legal paper.

Finally, any wraparound book cover can get to be a big hassle if it starts out longer than 17 inches. Your cover paper selections and printing options get real ugly real fast should you exceed this seventeen inch limit. So, take your

seventeen inches and knock off a quarter inch for rear trim and quarter inch for front trim. Save an inch for the spine thickness. This leaves you with 15.5 inches to be shared by the front and the back, or a final maximum book width of 7.75 inches. Thus, your optimum *maximum* width of any Book-on-demand product is a tad under eight inches. Since you are trimming anyway, you'll also want to reduce the height of your book to something reasonable.

If you are laser printing your own book covers, 14 inch legal cover stock is your usual low end maximum. In this case, you'll get a maximum width of around 6-1/2 inches tops. Which is wider than popular paperbacks.

Note that pages in a less-than-full-width book must have their front and back images suitably *offset* so they'll align *after* trimming. This is a trivial PostScript task, but a real nasty surprise if you overlook it.

Trimming books shouldn't be expensive or impossibly difficult. But the prices of conventional cutters are totally outrageous. Some cutter sales people are unbelievably arrogant. And the odds of getting burned on a used cutter scam approach a certainty.

Your first ploy should be to use someone else's cutter. Jiffy printers will often offer single cuts at fifty cents or so each. Or maybe you could swap your personal PostScript layout and typography for cutter access.

Several years back, I worked out a deal with the art department of a nearby college. I would fix up their ancient and non-working cutter. And keep it sharp. In exchange for my personal use. This worked until our Book-on-demand volume got so high that running across town several times a day got to be a royal pain.

The big boys use a *Kolbus* model HD three knife trimmer here. But there's no point in even *wondering* how much these princely beasts cost.

The usual print shop shear is called a *guillotine cutter*. These are obtainable in manual, electric, and hydraulic models. Mostly on their own floor stands. In a guillotine cutter, a straight blade is forced downward at a slight angle against a tightly clamped paper stack. Which creates a shearing action. Thick books or a full ream of paper can usually get accurately cut in a single pass. Beneath your book is a consumable piece of plastic known as a *cutting stick*. The blade enters the cut-resistant plastic.

The cheapest "thick stack" paper cutter is apparently the *Martin-Yale 7000E 0-12* portable cutter. It is sometimes offered at a discount by *Printer's Shopper* for around \$560. But I don't trust this flimsy machine, and I've yet to see any printer say anything nice about this one. Even their data sheet has a "No way, Jose" look about it.

While there are lots of makes and models of cutters, your "low end" choices rapidly narrow to the 14 inch *Triumph* electric or the 18 inch *Challenge* manual.

In theory, there should be lots of older low end machines getting traded in. Especially really archaic stuff that doesn't meet OSHA safety specs. But there's a very lively South American market for all these machines, and they literally disappear the instant they are offered.

At any rate, you can sometimes find old cutters in the regional printer insider newsletters. My favorite here is *Horsetrader*. Another is *California Printer*. There should be similar pubs in your part of the country. Please let me know about them. A free *Incredible Secret Money Machine*

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California Printers
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Kroy Color
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Scottsdale, AZ 85260
(602) 951-1593

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Specialties Bindery
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Hyattsville, MD 20781
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Andover, MA 01810
(800) 526-4774

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Transfer Print Foils
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Unibind/Pelsaer
4125 Prospect Drive
Carmichael, CA 95608
(916) 967-6401

USI
PO Box 644
Branford, CT 06405
(800) 243-4565

VanSon
Union & Liberty Streets
Mineola, NY 11501
(516) 294-8811

Velo-Bind
60 Almanor Avenue
Sunnyvale, CA 94086
(800) 538-1798

Wire-O
PO Box 430
Poughkeepsie, NY 12602
(800) 431-4610

Wohlenberg
4900 Webster Street
Dayton, OH 45414
(513) 278-2651

Martin Yale
500 N Spaulding Avenue
Chicago, IL 60624
(312) 826-4444

II for your trouble. Send samples if you can.

It's easy to get burned on an irreparable machine. I paid a knowledgeable printer to look at one for me in another state. After he reported it was heavily worn but usable, I offered \$900 for a *Triumph* 14 inch electric. A key switch got broken during delivery, and I had a local agricultural engineer ("Just pretend it's a sugar cane cutter") rebuild the machine for a bargain \$70. The kicker was that many of the parts were no longer available, and that this cutter was a bizarre mix of metric and English.

Bottom line number one: While I do have a usable cutter, the few hundred dollars I saved on this machine was not worth the time, effort, and hassle involved. Bottom line number two: Playing according to "their" rules, a real paper cutter is going to cost you \$1500.

The cutting sticks are no big deal and one of those few printer supply items that seem bargain priced at \$2 or so each. For any position of your cutter stick, you can get several hundred to several thousand cuts. The sticks can then be rotated four ways or flipped end-for-end for a total of eight fresh surfaces.

Cutting blades are easy to nick or dull. *Extreme* care is needed, and you must *never* cut anything but paper with one. Even the *Unibind* covers can eventually cause nicks. Most larger cities offer reasonably fast sharpening services for under \$25. It does pay to have a second blade that you can swap. Premium inlaid and carbide blades are available and are probably a good choice. Two sources are *Jayhawk Plastics* and *International Knife and Saw*. They both also sell the companion cutting sticks.

Note that a woodworker's jointer blade retails for \$12, while the similar paper cutter blade wholesales for \$170. There's a definite problem with decimal points here.

To me, it appears utterly unconscionable and totally inexcusable that a reliable method to trim a half inch stack of paper should cost over \$120 end user retail. The problem lies in old line machines sold through archaic channels. Not to mention the printer industry "good ole boy" network that excludes and hassles outsiders.

For more information

As usual, I've gathered most of the Names & Numbers mentioned above into a reference sidebar. I've also added some of the more popular printing trade journals.

Much more on Book-on-demand publishing appears in our *Blatant Opportunist I* reprints and also in my brand new *Book-on-Demand Resource Kit* ♦.

Microcomputer pioneer and guru Don Lancaster is the author of 33 books and countless articles. Don maintains a US technical helpline you'll find at (520) 428-4073, besides offering all his own books, reprints and various services.

Don has a free new catalog crammed full of his latest insider secrets waiting for you. Your best calling times are 8-5 weekdays, Mountain Standard Time.

*Don is also the webmaster of www.tinaja.com where a special area has been set aside for Midnight Engineering readers. You will also find selected reprints of Don's other columns, that *Synergetics Consultant's Network* plus extensive annotated web site links here.*

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