

Production tasks

Production tasks begin where the editorial and design tasks end, but production functions are supported directly by decisions that were made during the editorial and design process. As before, you will make the job of production significantly easier if you have followed the advice contained in earlier chapters (particularly related to style, fonts, and graphics).

The cover and the binding method

The design of the cover and the choice of the binding method are linked together. You cannot design the cover until a decision is made about the book's binding.

Although you may already have some idea of what you want the cover to look like, for most practical purposes, the artwork on the cover is one of the last things you will need to consider. In addition, unless you are a graphic designer or unless your cover needs are extremely simple, it is also likely to be one of the parts of this process that you will have to pay for someone else's help. Many things need to be decided before you should even start thinking about the cover.

Binding methods

How will the book be bound? There are three typical bookbinding methods that can be handled by most print shops: tape, mechanical, and perfect.

- Tape binding – Tape binding adheres the pages with a strip of tape that extends from the front to back covers. It is a very utilitarian and inexpensive method of binding, but it is not particularly attractive. Recently, some companies have begun selling matching colored tapes and covers that improve the look of a tape bind immensely. Some methods are also available that allow you to print the title and author on the tape, but in most cases there is no text on the spine of a tape-bound book.
- Mechanical binding – Mechanical binding is another cost-effective binding method that takes advantage of either a wire coil or plastic comb to hold the pages together. Mechanical binds allow a book to lay flat. (This may be a useful feature for a cookbook or a construction manual.) Generally, there is no text on the spine of a mechanically bound book, however, it is possible to imprint spine text on a plastic coil.
- Perfect binding – Perfect binding is the type of binding used for paperback books. An adhesive holds the pages together and also links the cover to the pages.

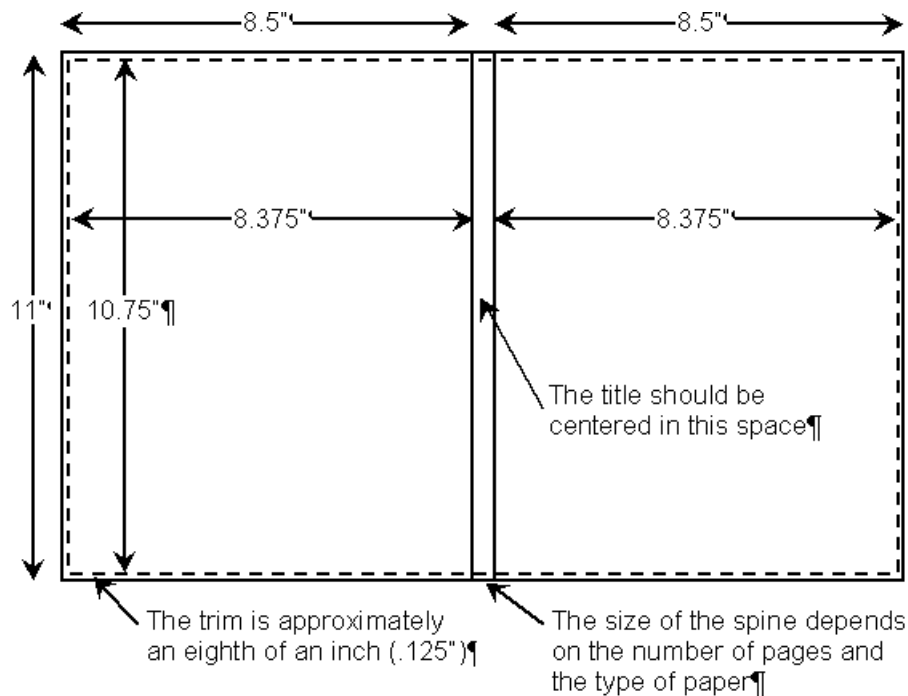
Hard cover (also called case binding) is generally not done by small print shops. If you want a hard cover binding, you will either need to find a specialty binder, or have your print shop find one for you. In either case, the expense of the hard cover binding is likely to constitute a significant portion (perhaps 25% or more) of the overall cost of each book. Hard cover books frequently also have a printed dust jacket.

Cover requirements

A book bound with a tape or mechanical binding has a separate front and back cover. Preparing these covers is a relatively simple process. The cover size is the same as the page size. In your cover design, be sure to leave space (around three eighths of an inch) for the tape overlap of a tape bind or the punched holes of a mechanical bind. This falls on the left edge of the front cover and

the right edge of the back cover. Some tape or mechanical binding processes allow the name and author to be printed on the spine. If this is the case, you will need to supply the text and choose a font and size.

Figure 28 – Diagram of perfect-bound cover



A perfect-bound book requires a wrap-around cover that includes the front and back covers plus the spine. The width of the spine depends on the number of sheets of paper in your book as well as the thickness of those sheets of paper. If your book is to be perfect-bound, your cover design will need to reflect the width of the spine as well as the final trim size of the book. The completed book including text and cover is trimmed along three edges (i.e., every side but the bound side). This trim makes the cover the right size and assures that the edges of the book are smooth. Therefore, a perfect-bound book that is based on an 8½” x 11” page will ultimately be trimmed down to about 8.375” x 10.75” (approximately 1/8” will be trimmed from the top, bottom and

right sides). The full wrap-around cover will include the front and back covers plus the spine.

It is important that you adjust appropriately for the spine width and trim, otherwise it will be impossible to center the design on your cover!

The width of the spine

How many pages will the book have? Will it be printed single sided (simplex) or double sided (duplex)? This determines the width of the spine of the book, and needs to be considered in the cover design for a perfect-bound book. The figure on the following page shows the estimated spine width for a book printed on 24 lb. paper. You should confirm the spine width with your print shop before proceeding with your cover design.

Table 3 – Estimated spine width for a book printed on 24 lb. paper

Numbered pages	Sheets of paper ⁵⁶	Resulting spine width
100	50	0.2”
200	100	0.4”
300	150	0.6”

Color covers

Your decision about what to do with the cover has both financial and aesthetic components. From a financial perspective, the more complex the cover design, the more each cover will cost. For example, each four-color cover will cost you anywhere from \$1 to \$5 or more just to print (not including the services of a designer). A simple one-color cover printed on a white or colored stock is a less expensive alternative. In either case, be sure to enlist the help of a professional graphic designer, because designing an eye-catching cover is not a simple task. Many print shops have in-

⁵⁶ Assuming that the book is printed duplex.

house design facilities to help you with the cover design. If not, they should be able to recommend suitable freelance graphic designers. You will need to provide the designer with any text that you want printed on the cover.

Do you want the artwork to extend all the way to the edge of the page?⁵⁷ If so, the cover must be printed on oversized paper and trimmed to the finished size later in the process. For a tape or mechanical bind, the covers are trimmed to size prior to binding. For a perfect bind, the covers are attached to the book block and then the entire book is trimmed to size. This assures that the edge of the book is smooth and the cover size matches the book size exactly.

Paper grain

Paper grain refers to the direction of the fibers in a sheet of paper. You can determine the grain of a sheet of paper by tearing it parallel to its edge. If you are tearing parallel to the grain, the tear will be relatively smooth and straight. If you are tearing against the grain, the tear will be more jagged and is likely to run at an angle to the edge. Paper is called “long” if the paper grain runs parallel to the long edge of the paper. Conversely, paper is called “short” if the grain runs parallel to the short edge.

Paper grain is important when you fold or bind paper. Paper folds well if the fold runs parallel to the grain of the paper. However, a fold that runs across the grain of the paper will appear rough. For a book’s cover, the paper grain should run parallel to any folds along the spine. For binding a book, particularly tape or perfect binding, it is important that the grain run parallel to the bind. If it runs perpendicular, the paper may buckle over time if the book is

⁵⁷ Designers call this a “bleed” because the ink “bleeds” off the edge of the page. A page may “bleed” on one or more sides. A page that “bleeds” on all four sides is called a “full bleed.”

exposed to varying levels of humidity.⁵⁸ Luckily, long grain 8½” x 11” paper is commonly used for copying and digital printing. This means that you should not have problems with tape or perfect binding with such paper. However, if you choose another size besides 8½” x 11”, then you must be sure that your print shop pays close attention to the orientation of the paper grain in relation to the binding.

Suggested book sizes

The table on the following page shows two possible book sizes based on a standard 8½” x 11” page using one of two classes of binding, either tape/mechanical or perfect.

I recommend an 8½” x 11” sheet size over other possible sizes because it is the simplest. It uses the most common paper size and it does not require any special imposition (i.e., printing two copies per side, and then folding or trimming the result). I also believe that perfect binding is a good choice. It is true that the cover design is a little more complex with a perfect bind, but the resulting book will have a more professional look than a book with a tape or mechanical binding.

Any print shop that you consider should be able to show you examples of the different types of bindings that they offer. A word of caution about perfect binding: it is easy to screw up a perfect bind by using the wrong paper for the cover or the text. Be sure that the print shop you choose has adequate experience with perfect binding. You should ask to see a sample of their work. Check the sample for paper buckling or cracked folds on the cover (which would indicate problems with paper grain). Check that the pages are securely attached. Be sure that the cover lays flat.

⁵⁸ The paper grain does not matter for books that are mechanically bound with a wire coil or plastic comb because the paper is not held as tightly as in a perfect binding. Therefore it can move slightly to adjust to any changes in humidity.

(Frequently the cover curls away from the inside of the book. This is unacceptable.)

Table 4 – Suggested book sizes

	Method 1	Method 2
Binding type	Tape or mechanical	Perfect
Finished size	11" (tall) x 8½" (wide)	10.75" (tall) x 8.375" (wide) (estimated, confirm the amount of trim with your print shop)
Sheet size	8½" x 11"	8½" x 11"
Trim	No trim	Trim on three sides
Paper grain for interior	Long (for tape bind), not an issue for mechanical bind	Long
Cover	Separate front and back covers	Wrap-around, one-piece cover (should be grain short)
Cover dimensions	11" (tall) x 8½" (wide)	Depends on spine width, the height will be 10.75", and the width will be 16.75" plus the width of the spine
Other factors	The largest spine width of a tape or mechanical bound book is dependent on the width of the tape or the size of the plastic comb or metal coil (confirm the details with your print shop)	It is difficult to perfect bind very short books (confirm the details with your print shop)

The advantages of a standard size

There are two reasons to base your book on an 8½" x 11" sheet:

1. It's a standard U.S. paper size and every print shop with a digital printer or copy machine can handle it. As a result, virtually any print shop will be able to print your job. This will increase the likelihood that you will get a competitive bid.
2. It gives you plenty of room to add illustrations and/or to make the type large. (This may make it more appealing to different audiences, including older people who may have trouble reading smaller type.)

The only drawback is that 8½” x 11” is larger than most other typical paperback books.

Preparing a print-ready file

You can take your finished Word file to a print shop, but there is no guarantee that it will print the same as it does using your home computer and printer. There are two key reasons for this:

- Fonts
- Print drivers⁵⁹

The design of your book is dependent on the fonts that you have installed on your computer. If your print shop does not have these fonts, it will be unable to reproduce your design. Most print shops have vast libraries of fonts, so if you select commonly available fonts, there should be no problem. However, if you purchase some obscure font to use in your book, keep in mind that you cannot give it to the print shop (that would be a violation of the software license for the font). The print shop must purchase its own copy.

Sometimes, having the right fonts isn't enough. I once created a Word file on my home computer using standard Windows TrueType fonts (Times and Arial), to assure that the job would print out easily on my computer at work. Unfortunately, when I opened the job on my work computer I found that a number of the page breaks had changed. This was the result of some very slight changes in either the font spacing or the page layout. As a result, a sentence that previously fit on one line, now extended to a second line. This pushed other lines to the next page. If I had put in a manual line or page break, this caused gaps in the document. Where had I gone wrong? The culprit was the print driver. I had created the document using the print driver for my home printer.

⁵⁹ A print driver is a computer program that allows a software program like Microsoft Word to print a file on a printer. You need to install the appropriate print driver on your computer if you want to be able to print a file to that printer.

Microsoft Word uses the print driver settings to lay out the document. When I opened the job on my work computer, it applied the print driver settings for my work printer. These were different enough to cause the disruptions described above. This type of scenario could easily happen when you take a file to your print shop.

One way to avoid this problem is to change a little known setting in the Word file. Go to the “Options” selection under “Tools”, then choose the “Compatibility” tab. Deselect the “Use printer metrics to lay out document” selection (i.e., make sure this box is not checked).

If you want to take a Word file to your print shop, you should do the following:

- Limit your use of fonts and be sure that the print shop has access to those same fonts.
- Take the file to a print shop that is very experienced with accepting Word files from Windows computers.
- Make sure the “Use printer metrics to lay out document” is not checked (see description above).
- Request a proof and check it very closely.

A more reliable way to get a printable file to the print shop is to convert your Word file to a print-ready file format like Adobe Acrobat portable document format (PDF). Software capable of converting a Microsoft Word file to PDF ranges in price from about \$100 to \$200. (These methods are described in greater detail below.)

Whether you choose to take a Word file or a PDF to your print shop, you will still need to see a printed proof. No method is foolproof. As a result you will always need to see a printed proof of your book before you authorize the full printing. The “Creating a dummy” section later in this chapter gives tips on what to look for.

Adobe Acrobat Portable Document Format (PDF)

Adobe Systems (<http://www.adobe.com>) sells a product called Acrobat that, among many other features, allows users to create a print-ready file format called PDF. Users who create PDF files have a much greater assurance that the files will print as expected. And while it's true that there are no guarantees in life, PDF can make it much easier for you to get your book to the printer in a reliable format. If you are taking your book seriously, I would highly recommend that you purchase Adobe Acrobat. (The 4.0 version of this product lists for around \$200.) It will not only help you in the process of creating a print-ready file, but it will also allow you to create a more effective electronic version of your file should you intend to publish it as an electronic book.

Acrobat works very nicely in conjunction with Word. As an example, the table of contents and index references can be turned into active links that bring you to the appropriate page automatically when you click on the page number. There are also extensive annotation and security tools that may help you in the writing process if you need to pass a file around for comment among a group of previewers.

In the past, Adobe Systems has offered another PDF creation tool called PDF Writer. This should not be confused with Adobe Acrobat. PDF Writer is only appropriate if you are creating a text-only document. It is not robust enough to handle documents with photographs or illustrations.

Adobe Systems offers free “reader” software that allows anyone to read a PDF file. You can download Acrobat Reader from the Adobe web site for free and use it to read any PDF file. However, you will have to buy software if you want to be able to create PDF files. If you're not sure that you need the full capabilities of Acrobat, then you should consider a product from 5D called “PDF Creator”. PDF Creator does not have the full feature set of

Acrobat, but it does allow you to create PDFs and it is available for about \$100. You can find information at <http://www.five-d.com>.

Font issues

Alas, even with Adobe Acrobat you have to be careful about the fonts you use to create your document. There is a lengthy history behind this, so let me digress for a moment. Adobe Systems is the inventor of the PostScript page description language. PostScript was developed in the 1980s and was a key part of the desktop publishing revolution. PostScript allows users to design graphically rich documents using off-the-shelf software running on personal computers. These documents can then be printed on desktop laser printers. PostScript was one of the key factors in the early success of Apple Computer, and it is also why so many graphic artists and printers still prefer Apple Macintosh computers. Many of them moved to the Macintosh in the 1980s and stayed there despite the overwhelming popularity of Windows-based personal computers. However, PostScript is available on all the major computer platforms and its success in the graphic arts marketplace is complete. Today, PostScript is the standard for professionally published documents.

Unfortunately, Windows computers don't come with the fonts preferred by PostScript users. Windows computers use "TrueType" fonts, which can be identified by the TT logo in the font selection window of Word. PostScript fonts, on the other hand, are identified by a small logo that looks like a printer. It is possible to use TrueType fonts when creating a PDF, but I wouldn't recommend it. Print shops, with their preference toward PostScript, do not usually like to print jobs with TrueType fonts. Although TrueType fonts work great on home printers, things just tend to go wrong on the higher resolution output devices typically used by print shops. Luckily, there are PostScript fonts that work on Windows computers and it is possible to get a nice selection of PostScript fonts for free. If you choose to purchase Adobe

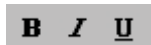
Acrobat, I recommend that you also acquire some PostScript fonts to load on your computer. Then set the styles in your document to use PostScript fonts exclusively.

Figure 29 – TrueType (T) and printer (P) font logos from the Microsoft Word font menu (PostScript fonts appear as printer fonts)

Figure 30 – TrueType (T) and PostScript (A) font logos from the font folder in Windows operating system

While we're talking about fonts, let's spend a moment to clarify an important point. The toolbar in Microsoft Word has three buttons that allow you to vary the look of a typeface. A large bold "B" changes the typeface to bold. A slanted "I" changes the typeface to italic. An underlined "U" underlines the font.

Figure 31 – Bold , italic, and underline buttons from the Microsoft Word tool bar



In the olden days, there used to be people called typesetters, whose profession it was to make printed text look good. Today, computers have automated the process so dramatically that anyone with a computer can set type. Typesetters are virtually extinct. All of the things that typesetters cared about (including letter spacing and word spacing) are handled in automated fashion by a computer. In addition, authors using software like Word have access to additional tools that allow them to mess around with the text on the page. The Bold, Italic, and Underline tools are prime examples. These tools would have made old-style typographers physically ill. Why? These adjustments are computer adaptations that make the font look bold or italic or, God forbid, underlined.⁶⁰ In most cases, when you select the "Bold" or "Italic" button, the

⁶⁰ Underlining is not even worth discussing from a typesetter's point of view, since the added emphasis of the underline could be more attractively made through a change in size or weight. Underlining is a carry-over from typewriter days when the typist had very limited tools to provide emphasis, such as underlining or capitalizing a word.

fonts are artificially darkened or tilted based on some generic computer algorithm.⁶¹ A true bold or italic rendition of a font is a separate design. For example, Adobe's Garamond is available in a roman version, simply called AGaramond, and bold version called AGaramond Bold.

You might think that this is a fine point that is only of concern to aging typographers, but the fact is that a computer-generated bold font is a feeble imitation of a true bold font. Your documents will have a much more professional look if you avoid those three heretical buttons (i.e., bold, italic, and underline) and choose instead to assign actual fonts.

There are two books that I highly recommend for additional information on fonts and design. Both are by Robin Williams and both are published by Peachpit Press:

- The Macintosh is not a Typewriter (also available in an edition called "The PC is not a Typewriter")
- The Non-Designers Design Book

For the purpose of the ensuing discussion, I'll assume that you have purchased Adobe Acrobat and want to make a PDF from a Word file created using PostScript fonts. Once you have installed Acrobat, you can create PDF from within Word by pressing the Acrobat icon. (It's a white page with the Acrobat logo and a red bar in the upper left hand corner.) You will also find a "Create Adobe PDF..." option under the "File" Menu. This will bring up Acrobat PDFMaker for Microsoft Word. (This is not to be confused with PDF Writer.) The first menu you see will have four tabs: General, Output, Bookmarks, and Display options. Under "General", you should see "Creation options" and "Use Acrobat Distiller" should be selected. You will then have the ability to

⁶¹ In some cases, the roman, bold, and italic versions of the font appear under the same name, and when you select the bold button, Word will apply the actual bold font rather than the computer generated version.

choose the “Distiller settings”. Acrobat Distiller is the component of Acrobat software that creates the PDF based on settings you have chosen. The “PrintOptimized” Distiller setting is the one you should choose.⁶²

Figure 32 – The Adobe Acrobat icon () as it appears in Microsoft Word

Creating a dummy

As you go through the process of writing and formatting a book, there will be many chances for you to catch typos, wordos, and formatting errors. One of the most effective ways of proofing for formatting errors is to create a “dummy”. A dummy is an accurate representation of the final printed book. You can create a dummy by printing out a double-sided copy of your book on your home printer using paper that matches the paper that your print shop will use. Since your printer probably isn’t capable of automatically printing a double-sided copy, you will need some careful planning to do this. When you select “Print”, most printers give you the option of printing just the odd or just the even pages. Do this experiment first:

- Print just the first page
- Pay careful attention to how the page came into your printer tray. Did it come out face up? Did the top of the page emerge first from the printer? With a little effort on your part, you should be able to figure out how to place the printed pages back into the paper tray so that the pages are printed correctly front to back.
- Print the second page on the back of the first page.

⁶² If you wish to adjust any of the Distiller settings, you can do so by opening Distiller and selecting one of the Distiller settings under Job Options. I created a PrintOptimized setting for digital print by lowering the standard PrintOptimized Distiller setting from 1,200 to 600 dots per inch. I did this because 600 dpi is the most common resolution for the type of black & white digital print devices used in print shops.

- Check the result to be sure that the pages printed correctly and in the right orientation. If page one overprinted page two, or if page two is upside down in relation to page one, then repeat the experiment until you have it right.

Once you have figured out the proper placement, print all of the odd pages. Then, place the printed pages back into the paper tray so that the blank side is properly positioned for the next page. Be sure that page one will be the first to be taken by the printer.

Then print the even pages.

If your printer is slow and your book is long, you might prefer to ask your print shop to print a single copy for you. This will be a significant expense. However, it will be a marvelous opportunity to catch and prevent errors. A dummy can show you errors that you might never have otherwise anticipated. It will give you a totally new perspective on your book.

Whether you print it yourself or have your print shop print it, you definitely need to see a dummy or “proof” copy. If you skip this step, I guarantee that you will find several unpleasant surprises when you see the final printed copies of your book.

Examining the dummy

Once you have the dummy, here are some things to look for:

- Showthrough – Can you see through the page to the text or images on the opposite side? If you are using a 20 lb. bond paper, chances are that you will be able to see through to some of the darker images or heavy type. If this constitutes a significant problem, then you should consider a more opaque paper. However, the best test for showthrough should be done on the print shop’s printer rather than your home printer.
- Left- and right-hand pages – When viewing a book on a computer screen, it is very easy to forget which pages would fall on the left- or right-hand side of an open book. Do you want all

chapters to start on a right-hand page? If so, make sure that your chapters start on odd-numbered pages. Does your table of contents start on a right-hand page? If not, you may need to add a blank page in front of it.

- Binding and trim issues – You need to know if your margins are adequate, and the way you do this will depend on the binding type. For a perfect-bound book, draw a line where the book will be trimmed. Ignore the edge of the paper and make sure that the margins you have made will be sufficient once the job is trimmed. For a mechanically bound book, mark where the holes will be punched for the metal coil or plastic comb. For a tape-bound book, mark where the tape will overlap the cover. Have you left enough room for all of the elements on your pages? Are the margins wide enough for the trim or any punched holes? For tape and perfect binds, is the central gutter (i.e., the margin closest to the bind) wide enough so that the words can be read when the book is opened?
- Page numbers – Do the page numbers fall where intended? For a simplex page this is generally on the lower right, away from the bind. For duplex pages this is generally on the lower corner furthest from the bind (i.e., on the right for an odd-numbered page and on the left for an even-numbered page). For duplex pages, do the odd numbers appear on right-hand pages? Do the even numbers appear on left-hand pages?
- Evaluating a spread – A “spread” refers to a left- and a right-hand page side by side. Does the spread look okay? Are the margins symmetrical? Do the headers and footers align? Does the text of the headers and footers appear as you wanted?
- Other issues – You should also look for incorrectly formatted heads and misplaced line or page breaks. Double check to be sure that the page references are correct for the table of contents and the index.

You are likely to find it much easier to catch errors in a printed dummy than on a computer screen, so repeat this exercise as frequently as possible. You should also use this same technique for the cover, particularly to confirm the trimmed book size in the case of a perfect-bound book.

Getting the print-ready file to the printer

Getting the job to the printer may seem like the easiest task of all, but depending on how complex your book is, it can be very tricky. The easiest way to get the job to the printer is to print out a copy on your home printer and then hand carry it to the print shop. They will then photocopy it. And while this is a convenient way to supply the job to the print shop, it's not suitable for books with illustrations or scanned photographs. The photocopy that you get at the print shop won't look as good as what you printed on your home printer. If you have ever used a copy machine to copy a photograph, you know what I mean. Copies of photographs never look as good as the original.

For books with illustrations or scanned photographs, you should supply the book to the print shop in digital form. When the print shop prints from a digital file instead of copying from a paper original, every print will look as good as the first. There is no degradation of the image in the process of copying. Therefore I highly recommend supplying your printer with a digital file.

The importance of file size

Once you have decided to use a digital file, the issue of file size becomes very important. A typical Microsoft Word file is under 100 kilobytes (KB) in size. This is a small file that fits easily on a computer diskette. In fact, one of those hard-plastic, 3½" square diskettes can hold more than a megabyte (MB) of data, 1.4 megabytes to be exact. This is enough to hold fourteen 100-kilobyte files. If you are writing a book with no text or

illustrations, chances are it will easily fit on a diskette, even if it is hundreds of pages long.

Diskettes are a great way of moving files because they don't cost much and virtually every computer today has the ability to read and write them. But what do you do if your file is larger than 1.4 megabytes? If it's close, you may be able to use compression software like WinZip to reduce the file size to fit on a diskette. There are also software programs that allow you to copy a single large file across multiple diskettes. But what if your file is a lot larger? The final Word file for "The Writing 69th" was more than seven megabytes and the print-ready Adobe Acrobat PDF was even larger. I didn't want to walk into a print shop with five or six diskettes in hand.

Some service providers will allow you to e-mail them files, but the large size of my files ruled that out. I have a regular modem connection and it would have taken me well over an hour to e-mail such a large file. (If I had cable modem access in my community, I might have used that.) I was left with the choice of buying (a) an external hard drive, (b) a drive supporting removable media (like a SyQuest or ZIP drive), or (c) a CD writer. Any of these devices would have allowed me to carry the file to the print shop.

I chose a CD writer for a couple of reasons. First, I liked the idea that just about any computer could read CDs. In addition, recordable and re-writable CDs are easily available and not too expensive. And then by chance I found a used CD writer cheap. New CD writers are sold for a couple hundred dollars. I got mine used for \$25. It works now, but setting it up was a nightmare.

Here are some pointers that may help you if you buy a used CD writer. First of all, my computer wouldn't recognize the device until I got the right driver software. Once I had the right driver software, I made a re-writable CD. However when I took the CD to another computer, it couldn't read it. This astounded me. It

appeared that my device was designed to create CDs that could only be read on my own CD writer! This might have had some marginal use for backing up files, but what's the point of writing a CD if nobody else can read it? I found out later that I could create a recordable CD that could be read on other CDs. (However by this point I had bought twenty re-writable CDs.)

So here's an important difference to understand: CD-R stands for CD Recordable and CD-RW stands for CD Rewritable. On my CD writer it takes about an hour to format a CD-RW, and then you can save data and write over it as many times as you want. (Unfortunately, nobody with a regular CD drive can read a CD-RW off my CD writer.) A CD-R takes almost no time to format, and only a couple of minutes to make it so it is readable on typical CD drives. However, you can only write data to a CD-R once.

Once I learned what needed to be done, I found the CD writer well suited to my needs and pretty economical. (The price of a CD-R is about \$2, or less if you buy them in quantity.) I use it to write CDs for backup and I also made a CD of the print-ready PDF to deliver to my printer.

Here's one last thing about CD writers. Today the most basic external CD writer has a list price of about \$250, so it's a little pricey if you only want to make a couple of CDs to deliver to your printer. However, I believe that you may be able to find used CD writers at significantly lower prices. First of all, many people who bought the early CD writers were disappointed with their speed. If they wanted to create a lot of CDs, they found that they spent too much time waiting. As an author, you won't be creating tons of CDs, so speed is not such a big issue. In addition to providing a good means of getting your file to the printer, they also provide a backup method that can hold hundreds of megabytes of data.

Removable media like SyQuest and ZIP drives can be bought new for less than \$200. A ZIP disk capable of holding 250 megabytes of

data sells for between \$15 and \$20. Most print shops can read a SyQuest or ZIP disk.

If you are working on a portable computer you can even bring the computer to the print shop. With the right cable, the print shop should be able to connect your portable to their network and copy the file.