

Comparing T_EX and Traditional Typesetting for the Composition of a Textbook

Laurie J. Petrycki

Addison-Wesley Publishing Company, 1 Jacob Way, Reading, MA 01867

617-944-3700

crw@wjh12.harvard.edu

Abstract

Producing a textbook with T_EX, as opposed to a traditional typesetting system, requires different procedures to achieve a similar final result. The publisher's production staff takes on a much different role and enters the publishing process at an earlier stage when a book is produced with T_EX. The most significant issue Addison-Wesley faces when a book is typeset with T_EX is the availability of typesetting houses who can produce the book at the level of typographic and page make-up quality we require. When we use a traditional typesetter we may pay a higher price, but we can count on meeting our publishing standards. The most significant advantage in producing a book with T_EX is the accuracy of mathematical material, which then does not have to be rekeyboarded, and with which we can easily produce a subsequent edition or spinoffs.

Background

Addison-Wesley Publishing Company is primarily an educational and technical publisher. The Higher Education Division publishes approximately 100 titles per year in the following disciplines: computer science, engineering, business, economics, physics, and mathematics. The complexity of these 100 titles varies greatly — from one-color, sparsely illustrated books to four-color, heavily illustrated, and designed books. Approximately twenty percent of these books are produced with T_EX or L^AT_EX.

The publishing process begins when an acquisitions editor signs a contract with an author. After the manuscript is written and reviewed by the author's peers, the project is officially turned over to the production department. A production supervisor is assigned to shepherd the manuscript through the production process, with the end result being final film that can be sent to a printer for printing and binding. The production process consists of designing, copyediting, preparing the manuscript for typesetting, rendering the art, typesetting, proof-reading, checking galleys and page proofs, and final film.

Like most other production departments within large publishing houses, much of the hands-on portion of the production process — the copyediting, design, art rendering, and typesetting — is done by outside vendors. The in-house staff consists of generalists (production supervisors) who coordinate the project from start to finish, and specialists who arrange for purchasing technical art, typesetting, and cover designs. Addison-Wesley has added a special group to its in-house staff called electronic production. This group (of which I am a member) is responsible for all projects that are produced in a nontraditional manner, which includes T_EX. Addison-Wesley is committed to staying on the cutting edge of production technology and recognizes the necessity of such a group to consult with authors and the rest of the division.

To understand how T_EX typesetting affects the traditional publishing process I want to first describe traditional procedures and then compare it with the T_EX publishing process.

The Traditional Production Cycle

The author's role. The author creates the manuscript, generally using a word processor, and is

responsible for providing a doubled-spaced manuscript to facilitate copyediting. The author is given guidelines for preparing the manuscript — this includes preparing art sketches; following Addison-Wesley editorial styles; placing of figure captions, footnotes, and references; numbering of heads, equations, figures, and tables; and, later in the process, creating an index.

If the manuscript includes mathematical expressions, the author must either leave space on the hard copy and insert the expressions by hand, or use a technical word processing package that can represent the expressions. Technical word processing packages, however, are usually limited in their choice of special characters and their ability to represent complex built-up equations. Thus, an author frequently has to insert some material by hand each time the manuscript is printed out.

If the manuscript has been created with a word processor, we make every effort to use the word processed file rather than rekeyboard the entire manuscript. Traditional typesetting systems can interface with a variety of word processing packages, and some of them can preserve formatting, such as boldface, italics, and tabs. Mathematical expressions in a word processing file, however, cannot be converted to a traditional typesetting system. Math in a word processing program or in $\text{T}_{\text{E}}\text{X}$ is coded differently from math in a traditional typesetting system. Invariably, the math expressions, as well as any computer program listings and tabular material, must be rekeyboarded.

After the author has submitted the manuscript to the publisher, his or her role consists of verifying and checking proofs throughout the production process. The author sees: the manuscript after it has been copyedited; the art after it has been rendered; and the galleys and/or page proofs after the manuscript has been typeset. If the book has mathematical expressions or computer program listings, the author must pay particular attention to proofreading this material since it is rekeyboarded by the typesetter.

The publisher's role. When a book is produced traditionally, the production department is minimally involved until the manuscript is nearly written. At that point, the acquisitions editor holds a meeting with the production supervisor, conveying the market needs for the book, the desired budget and schedule, and any special quality considerations. The production supervisor commissions a design and lines up outside vendors such as a copyeditor and a proofreader.

After the manuscript has been copyedited and typemarked, it is sent to a professional typesetting house for keyboarding and formatting. The typesetter has already received the design specifications and has written a program to interpret the designer's specifications into their coding system. If the book is relatively simple, the typesetter may output the text directly to a final paged format. If the book is complex (for example, if it has a high frequency of illustrations or special design elements), the typesetter will output galleys first.

Galleys are lengths of unpagged, but formatted type. The galleys are proofread and then dummied into pages. By this point the art has been rendered, so the dummier can lay out the galleys on a page grid and indicate where the illustrations should fall. Dummyming is an exacting and critical skill that cannot be replicated by automatic pagination programs. In determining where the illustrations fall, the dummier evaluates each double-page spread of the book, looking forward or backward through as much as an entire chapter, to ensure that the illustrations flow evenly and do not fall more than one page past their reference.

The dummier must adhere to certain paging standards. The most important of these standards is that each double-page spread must align across the bottom of the pages. To do this, the dummier has the flexibility of manipulating the space above or below design elements, such as heads, boxed material, illustrations, and equations. However, the dummier must ensure that the space around these elements is consistent across the double-page spread. The dummier must also make sure that there are no widows, orphans, or pages ending with hyphenated words, and that figures and tables are not stacked.

Pages are made up from the dummy, either by hand from corrected galleys or on the typesetter's paging system. The typesetter outputs page proofs which are checked again by the publisher and author. Once the pages are corrected, final film is made, with the art film stripped into place.

The $\text{T}_{\text{E}}\text{X}$ Production Cycle

When $\text{T}_{\text{E}}\text{X}$ or $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ is used, most of the above steps of the traditional publishing process are altered. (The issues discussed below refer to manuscripts prepared with both $\text{T}_{\text{E}}\text{X}$ and $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ unless $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ is mentioned specifically.) $\text{T}_{\text{E}}\text{X}$ disturbs the linearity of the traditional publishing process by forcing the author and publisher to change their roles and by changing the sequence of key events. These changes

are not necessarily detrimental; rather, they make it all the more important for the publisher to define the author's responsibilities and to determine a production plan for each project early on.

The author's role. The first change for the author is being put in contact with the production department *during* the contract signing process instead of *after* the manuscript is written. The choice of T_EX as the typesetting system for a project is usually driven by the author's desire to use T_EX and his or her expertise. As consultants to authors and acquisitions editors, the electronic production group helps determine the level of involvement the author will have in the production of his or her book. An author is rarely encouraged to use T_EX unless the author has used T_EX previously and is comfortable with the coding process.

Secondly, an author plays a more significant role in ensuring the accuracy of the material and in controlling the schedule. Since the manuscript is not going to be rekeyboarded by a traditional typesetter, it is even more important that the author's initial keyboarding be free of errors. Once the file has been paged, the cost of correcting errors is greater.

Finally, the author gets involved in the type formatting process, which used to be the responsibility solely of the traditional typesetter. This involvement varies according to the production plan. In some cases, the author may be responsible for providing final camera-ready copy to the publisher. More often the author does the initial formatting using T_EX macros, then turns the files over to the publisher for final formatting and paging.

The publisher's role. With the author taking over more responsibility for the publishing process, it becomes even more critical that the author's and publisher's roles be defined during the contract stage. In general, the publisher retains control over the interior and cover design, the copyediting, the quality of the page makeup, the artwork, and the final filming. However, this is not always the case, as an author may have been given the responsibility for turning over completely camera-ready copy. Assuming these responsibilities are still within the control of the publisher, the T_EX production process departs from the traditional process in the following ways.

First, the roles of the publisher's production staff are changed. To produce a T_EX typeset book the publisher needs typesetting specialists who are familiar with both T_EX and the book publishing process. The traditional production

route is well established and straightforward for the typical production coordinator. However, the influx of word processing files, from a variety of programs, has led to a need for specialists within the publishing house to help with the conversion and smooth translation from electronic file to the compositor or freelancer.

Secondly, T_EX reverses the traditional order of the publishing process. Most notably, the production department must start working on the book design before the manuscript has been written, whereas in the traditional model a design is usually not done until a manuscript is nearly final. When the design is done after some of the manuscript is written, the designer has the advantage of looking at the manuscript's elements, making sure that the design is appropriate for all situations. For example, the designer will look at the shortest and longest instances of a chapter title and design the title accordingly.

When T_EX is used, the designer does not have this advantage and instead must approximate the final manuscript. Invariably this means that some follow-up design must be done, as new elements are added to the manuscript or if the manuscript structure does not fit the design.

The traditional order is also affected during the copyediting and art rendering stages. On a traditional manuscript the copyeditor not only edits but marks up the manuscript for the typesetter by indicating the various type elements. With T_EX this step of typemarking is incorporated into the initial formatting the author does. As the author chooses a particular macro for a text element, he or she is essentially doing the copyeditor's job of typemarking. However, the copyeditor must check to make sure the author has used the correct macros.

Art rendering is traditionally done while a manuscript is being copyedited and set into galleys. Since there isn't a comparable galley stage in the T_EX production process, the art rendering stage is on a tighter schedule.

Finally, T_EX introduces new types of outside resources to the publisher. After the T_EX manuscript has been copyedited, it is paged, with space allowed for the art to be added or the art merged electronically. This task is contracted out to a typesetter who specializes in T_EX or L^AT_EX composition. There are not many of these typesetters to choose from, especially ones who are experienced in our exacting textbook standards and who can manipulate T_EX. Theoretically the final product should look the same, no matter which production process

is used, so it is important that the appropriate typesetter be chosen.

Publisher-assisted formatting. To expedite the \TeX production process we find it advantageous to supply our authors with comprehensive macro packages as early in the manuscript writing stage as possible. These macros follow one of several book designs and have been thoroughly tested and documented. The author is responsible for the initial formatting of the manuscript with these macros, but at some point we take over the follow-up stages. We call this process publisher-assisted formatting, and our goal in working this way is to retain as much of the author's formatting as possible, while allowing the author to concentrate on writing the manuscript.

Many authors, especially those who are using \TeX for the first time, tend to rely on plain \TeX commands instead of macros when they set up the design parameters. For example, an author might type out the command string

```
\bf, \medskip\item\vskip2in\hskip1em
```

each time an item in a numbered list is called for, instead of incorporating the same string into a macro. Whereas plain \TeX commands get the job done, design changes are difficult to implement throughout the file. Using macros allows us to make these design changes globally and, in general, allows for smoother formatting when the files are sent to a typesetter. Therefore, we ask all authors to avoid using plain \TeX , except within mathematical expressions. Although there is always the danger that any customization of the math spacing, using plain \TeX commands, will interfere if the final book is reformatted in a different typeface or size.

When we give an author a macro package, we include a set of instructions for using the macros, as well as guidelines for paging the book. We tell the author how to set up files in order to avoid redundant effort—for example, an author should not put in manual page breaks, because the composition of the pages will change several times before the book is complete. We also show authors how to add any custom macros to the macro file, and we stress that authors code their files consistently.

Providing authors with professionally designed macro packages and then contracting with a typesetter to finish the formatting allows us to control the quality of the finished product. However, there are instances when an author has contractually agreed to provide camera-ready copy. In these cases, we provide guidelines for paging the book to

our publishing standards and we follow the process rigorously, acting as quality checks for the author along the way. Most authors who are proficient with \TeX have used it to write class notes, papers, or perhaps journal articles. They do not realize how much more difficult and time-consuming it is to make \TeX conform to textbook standards. \LaTeX is even more difficult to use because its sizing and figure placement features must be overridden.

The macro package we give an author may not necessarily reflect the final design, which can change for a number of reasons. We may have predetermined that the typeface will be changed from Computer Modern and the author may not have the new typeface available. Or the design may not be determined, but we don't want to delay the author's writing. In any event, the beauty of \TeX is that once the file is properly coded with macros, another set of macros can be substituted.

Supplying macros to authors is an ongoing and challenging task. Our authors work on a variety of computer and printer platforms and the availability of typefaces other than Computer Modern further complicates matters. Macros that work well on a test chapter may not work in an unforeseen combination of text elements that an author sets up. An author may want to add a new text element or his manuscript might not fit the design. All of these challenges mean that we must keep a library of macro packages available and must continually update and debug the packages as new fonts or platforms are introduced. In spite of these challenges, we feel that \TeX gives us certain advantages.

Advantages of Using \TeX

Technical material. \TeX is an easy and efficient tool for representing mathematical equations. The author writes and typesets concurrently, as opposed to having to handwrite equations that cannot be represented in many word processing programs. Equations, computer program listings, and tabular material do not have to be rekeyboarded by the typesetter, whereas with other programs they do have to be rekeyboarded. This type of material is the most difficult to proofread, and authors want to be assured that once they have verified the accuracy of such material, it will not change. Of course, there is the proviso that any time electronic material is converted between different systems or editing changes are added to a file, there is the possibility of errors being introduced. Thus the

importance of thorough proofreading by both the author and publisher is not diminished.

When providing T_EX files, however, it is even more critical that the author be accurate in the first place. Correcting mistakes that the author made in the initial keyboarding may be charged to the author or publisher if they were not the final typesetter's responsibility.

Split and revised editions. When we decide to produce a book using T_EX, we're also looking down the road at future editions, spinoffs, or splits (certain chapters of the book rearranged and/or removed for different versions of the book). Using T_EX gives us a strategic advantage for this kind of expanded publishing platform.

Producing split editions from a traditionally typeset book often involves a painstaking update of the references, the table of contents and the index. There is a certain amount of page make-up that has to be redone. With T_EX, however, counters and macros can be used to automate these changes. T_EX macros can regenerate the table of contents and index files, and update the cross-referencing of figures, equations, and tables. The file is just reprocessed, then output again. No additional page makeup is required.

Producing future editions from a traditionally typeset book is often problematic. In general, a traditional typesetter can download files from their system back to an author's word processing system. However, if there is any math or tabular material, this process will not work. The typesetter's coding structure around this material cannot usually be converted to the author's system. Also, the traditional typesetter must ensure that the final version of the files have been updated, including last minute or reprint corrections. Often this does not happen—a traditional typesetter will set these corrections as one-line patches, rather than update and run out the entire chapter file.

This is where T_EX shines. For future editions, it is easy and economical to return T_EX files to an author, with the codes intact. The files are accessible to the author for the revision and can be uploaded back to the T_EX typesetter. Even if we do not know the final design of the book, we can provide an author with a generic macro package to produce a coded file. Later the design can be completely modified, and the T_EX typesetter merely rewrites the definitions of the macros. If the original macros were planned and used well, the final design can be implemented with a minimum of additional coding.

Cost and schedule advantages. In general, the composition portion of books produced with T_EX are less expensive and take less time to produce than traditionally typeset ones, but there are several caveats here. If a T_EX file is inconsistently coded to begin with, it can cost us more to clean it up than if the book were traditionally typeset. Also, the author's initial writing time may increase substantially, even adding a year or more to the schedule, if the author gets bogged down in the formatting. These factors have to be weighed in the initial evaluation of each project.

Even so, when T_EX works out, it allows us to publish in limited markets we normally would not be able to publish in. These markets, such as graduate level courses, can only support small print runs of a book, thereby decreasing the book's profitability. Using T_EX, we can keep our production costs down.

Satisfied authors. An author who uses T_EX feels more assured knowing his or her keystrokes will be used in typesetting the final book. T_EX is almost necessary when the author needs to represent complex and frequent mathematical expressions. Authors who want a lot of control over the layout of the pages want to work with T_EX to provide final dvi files or camera-ready copy. The author must trade off that satisfaction by spending a considerable amount of time formatting his or her manuscript.

Disadvantages of Using T_EX

Steep learning curve. T_EX is not easy to learn, especially if an author has not had previous experience with the program or is not familiar with a code-intensive computer language. Most authors who have not used T_EX before are familiar with WYSIWIG (What You See Is What You Get) types of word processing programs, which are generally easier to use. Thus, trying to learn T_EX while on a fixed schedule to produce a manuscript can be overwhelming. In general, L^AT_EX is easier to learn for the new user.

In spite of this challenge, some authors will learn T_EX for the first time because they want to retain more control over their technical material or because an acquisitions editor may require a camera-ready manuscript. The danger here is that the author can easily spend more time learning how to format with T_EX than actually writing the manuscript.

TEX paging problems. There are a number of instances where TEX's automatic paging can present more difficulties than it solves.

1. When TEX pages, it does not recognize double-page spreads — instead it processes one page at a time. Aligning the bottoms of pages across spreads is critical to textbook design. In traditional typesetting the operator or dummer can review several pages at a time, going backwards and forwards through a group of pages to allow for the best possible layout of each page. TEX only considers the current page, so we must manipulate TEX to give us the required results.
2. TEX does not always pull out the most current first-level head as the running head. The number one head is usually pulled out by the second occurrence.
3. Figures can occasionally appear out of order, especially if the file has a lot of figures. LATEX has a tendency to lump several of the figures at the end of a chapter file or place them too far away from their page reference. LATEX also tends to add a lot of additional space below figures, although this is adjustable manually.
4. Minor edits or revisions which should be confined to the current page or paragraph sometimes affect subsequent pages or the spacing around elements. Not only does the typesetter have to reprocess the entire chapter, but the production supervisor must thoroughly recheck subsequent pages, rather than just the one line where the change occurred. This creates a great deal of additional and unnecessary work for each proof stage of a book. Often we will have to manipulate the TEX coding so that the pages match the previous output. In a traditionally typeset book, such changes are always limited to the page on which the change occurs.

This problem was compounded on a recently reprinted two-color book. Many of the reprint changes were simple typographical errors that should have affected only one line in a paragraph. In fact, the page breaks did not change on those pages and the black text pages looked fine. However, the spacing between all elements on the page changed a small amount, which was not noticeable until the film for the black text was no longer in register with the film for the second color. We had to reshoot and restrip all the second color film to make it align with the revised black text page.

TEX math spacing. For the most part, the internal spacing around math characters in TEX poses no problems. We have, however, uncovered two instances where we feel the spacing is unacceptable. These are: the spacing around extensible parentheses and the lack of kerning in sub- and superscripts. Examples of these instances follow.

Notice in the following first equation where the proper size parentheses are used, the space after the open parenthesis is too large. In the second equation where the normal size parentheses are used, although incorrectly sized for the equation, the spacing is correct.

$$\text{\texttt{\$}u=\left(1-\frac{u^2}{u+2}\right)\text{\texttt{\$}}}$$

$$u = \left(1 - \frac{u^2}{u+2}\right)$$

$$\text{\texttt{\$}u=(1-\frac{u^2}{u+2})\text{\texttt{\$}}}$$

$$u = \left(1 - \frac{u^2}{u+2}\right)$$

Letter pairs are not automatically kerned when used for sub- and superscripts. Notice the spaces between the letters in the examples below.

$$\text{\texttt{\$}v^{CE}\text{\texttt{\$}}}$$

v^{CE}

$$\text{\texttt{\$}v^{VJ}\text{\texttt{\$}}}$$

v^{VJ}

$$\text{\texttt{\$}v^{To}\text{\texttt{\$}}}$$

v^{To}

As mentioned earlier, any spacing adjustments to equations must be done in the correct type and point sizes. Translation problems have occurred when special math coding is done by an author and then the macros are converted to a different typesize and style.

TEX is not always device-independent. When using fonts other than Computer Modern, TEX is not strictly device independent. Typefaces are designed by different companies to run on different output devices. The character widths in Compugraphic's version of Times Roman differ from each of Autologic's and PostScript's versions. Therefore, a source file processed through one output device will have different line breaks when run through another output device.

This makes it difficult when authors format files using their own computer system and laser printer,

then give us the files to output through a high-resolution typesetter. One solution is to provide authors with `tfm` files that match the character widths on the final output device. The author can still use Computer Modern on his/her laser printer, but each character will be the width of the corresponding font on the high-resolution output device. The disadvantage here is that proofreading can be a challenge. The space between letters on the laser proof will not be accurate—some characters will appear kerned too tightly and others too loosely, when they may in fact be correct—so the proofreader must bear this in mind.

The implementation of PostScript on different devices affects how T_EX's `\special` commands are interpreted. Special PostScript effects, such as rotated type, rules, and shadings, can change position depending on the T_EX printer driver implementation. Other problems can occur because T_EX and PostScript use a different measurement for points to the inch. PostScript rounds to 72 points to the inch, while T_EX correctly uses 72.27 points to the inch.

We were most disappointed when we ran out an author's `dvi` files, which were entirely in Computer Modern, and found differences between his laser proofs and the high-resolution output. The more recent PostScript Computer Modern fonts have been being calculated differently. We were told that the Computer Modern font itself is not static but is being revised constantly. This can create major problems for publishers supporting authors on different systems.

Issues to Consider When Choosing T_EX

In spite of the disadvantages just listed, more often than not we choose to use T_EX because the pros still outweigh the cons. When we determine the production plan for each T_EX project, however, there are certain issues we need to determine.

What is the author's level of production involvement? We must first define the author's role in the production process, because from that definition comes clarification of the publisher's and typesetter's responsibilities. Some authors will contract to provide camera-ready copy, including rendering the art, while others will do the initial formatting only. No matter which route the author takes, the publisher is ultimately responsible for the overall quality of the book, so it is up to

the publisher to ensure that the production plan includes the necessary checks and balances.

Defining roles is also important when it comes to the cost of making the book. For example, if the author is responsible for inserting the copyedits into the source files, then there are repercussions later on when changes are made during the page formatting stage. Who is responsible for the changes and, more importantly, who pays the typesetter to make the changes?

Who controls the schedule. Ensuring a book's schedule is one of our major responsibilities as publishers and when T_EX is involved there is a great danger of schedule slippage. When the author takes a more active role in the production process, the publisher loses control over that part of the schedule. This is particularly detrimental when authors become overwhelmed by the extent of their responsibilities. Many of our authors have full-time teaching positions and do not initially realize how time-consuming book production is, whereas publishers are used to working with book production professionals who can commit to a 40+ hour week.

For this reason, we have occasionally found it necessary to change the production plan midstream. We have either taken over some of the tasks the author was initially responsible for or have added additional proofreading or checking stages. Our biggest concern here is that an author will become so involved in T_EX formatting that he or she slows down the writing of the manuscript.

Quality considerations. We must determine if T_EX can give us the quality level we need to publish into a particular marketplace. We have exacting quality standards for books that are produced traditionally and, as stated earlier, when left on its own, T_EX's formatting does not always meet those standards.

For example, we usually require an equal amount of space above and below displayed equations across a double-page spread. When building a page, T_EX does not automatically do this. It takes either a considerable amount of manual manipulation or a complex rewrite of T_EX's macros to achieve the proper spacing.

Another concern is that T_EX's glue often stretches or shrinks erratically unless the macro package is expertly written to account for this variability. To balance a double-page spread when a book is typeset traditionally, we can specify exactly how much extra space to add at particular points and the typesetting program will follow our specifications. This is also possible with T_EX, but it is

an added challenge that only the most experienced \TeX typesetters can handle.

Beyond Computer Modern. For most textbook publishers, Computer Modern Roman is not an aesthetically pleasing basal (main text) typeface. We feel that the x-height of the letters is too small and the typeface looks old-fashioned. Because we publish into a variety of college markets, we need to have the option of different typefaces. For lower-level textbooks, we use more open, friendly typefaces like Century Schoolbook; for upper-level textbooks we use more sophisticated, professional typefaces such as Times Roman. Some \TeX compositors can offer us Times Roman and other standard typefaces as replacements for Computer Modern in the basal text. However, only a select few compositors can also typeset math equations in Times Roman or other typefaces. Converting the \TeX math character set takes a lot of programming time and expertise—and few compositors are willing to make this investment.

Some \TeX sources will offer the compromise solution of mixing Times Roman or another standard face for the basal text and displayed material, such as heads, with Computer Modern math. This solution is not perfect, however. The weight of Computer Modern and Times Roman characters is different—Computer Modern is smaller and lighter than Times Roman—so the resulting mix looks odd. To make the two typefaces appear uniform, Computer Modern must be increased by one half point.

One last note on typeface substitution— \TeX kerning and ligatures do not always work on typefaces other than Computer Modern unless the programmers who have written the output drivers have done the extra work to provide the conversion. On some implementations of PostScript fonts in \TeX --- will give you three dashes instead of the correct emdash.

Working with specialized \TeX typesetters.

Finding the appropriate \TeX typesetter is one of our major challenges. We need sources skilled not only in programming \TeX , but also in typesetting textbooks rather than journals or papers. The quality level of paging is more exacting for technical textbooks and traditional typesetters have a solid typographical and book-making background. These typesetters are used to dealing with publishers' demanding schedules, and usually have larger staffs to call on.

We know what kind of service we will get when we work with traditional typesetters. Unfortunately,

with some \TeX typesetters this is not always the case. When we receive galley or page proofs from a traditional typesetter, we can safely assume that they have been proofread, whereas we often have to request this service from a \TeX typesetter. The output from traditional typesetting systems is almost always typographically correct. With \TeX typesetters, we sometimes have to specify correct alignment and kerning. Finally, we can rely on the typesetter for meeting our agreed-upon schedule and can even request overtime to meet a tight schedule. Since some \TeX typesetters have small staffs, we have often run into schedule overloads at their end.

Conclusion

In my experience, traditionally produced books are more predictable and easier to work on than those produced with \TeX . However, \TeX does have its place in the technical publishing house. For some authors, using \TeX is the most viable option when they want to preserve the accuracy of their mathematic equations. We will continue to support these authors by providing macro packages and working with \TeX typesetters to provide the same kind of services we expect from more experienced traditional typesetters. Producing a book with \TeX is a process that can proceed as smoothly as traditional typesetting as long as we have done the proper upfront planning and have evaluated the tradeoffs.