Travels in TeX Land: Final Layout of a Book

David Walden

Abstract   In this column in each issue I muse on my wanderings around the TeX world. In my last column (www.tug.org/pracjourn/2006-2/walden) I described some methods I use to make it easier to draft large documentation projects (i.e., books). In this column I describe my experience of taking the final steps of turning a book manuscript into a published book.

1   Caveat

I worry slightly about the suitability of my following descriptions: maybe people more expert with LaTeX than I would recommend better approaches and "deprecate" the approaches I have figured out. My concern is reduced, however, by the thought that there is a lot to be said for doing whatever is expedient to get the job done — in this case getting a book to the printer — and being motivated by the experience to seek better approaches next time. Whatever the quality of my practices, it may be useful for other non-expert LaTeX users and first book publishers to see the long list of issues that came up for me.

These experiences also will make me consider seriously using something other than LaTeX's book class for my next book. Perhaps I'll try the Memoir class or ConTeXt.

2   Waiting for copy editing

My manuscript was more or less finished, and I sent it to the copy editor for her review. While she edited the manuscript, I began to tune up the manuscript in anticipation of final layout.

2.1   Fonts

I had drafted the manuscript using Palatino for my roman font, Helvetica for sans serif, and Courier for the typewriter font. Steve Peter suggested that I might switch to Minion as the roman font, and helped me do so. (I had asked Steve, a professional book designer and

publisher, to be my consultant in the use of LATEX in the design of my book as this is the first time I have taken a book length document all the way to publication in LATEX. I have "gone all the way" with LATEX for journal publications, and I have developed book length manuscripts in LATEX. But with my previous LATEX-developed books, the publisher in both cases retypeset the book using QuarkXpress based on my conversions of my LATEX files to plain text via HTML — see, for instance, section 4 of www.tug.org/TUGboat/Articles/tb24-2/tb77walden.pdf.)

I tried downloading and installing a set of files that claimed to be Minion Pro for TEX, but I couldn't get it to work. Eventually, Steve provided me with a set of Minion files he had created for TEX, and he talked me through installing them. I already had Minion Pro on my computer as part of Photoshop CS2 and Illustrator CS2, so I felt comfortable that I was licensed to have and use Minion. I continued to use Helvetica for sans serif because I only used it in a few TEX-based tables and I had many tables drawn with Illustrator that used Helvetica and wanted the lettering in all tables to be in the same font. I switched to using what came with Minion for roman fonts. Thus, my personal class file was changed from

```
\RequirePackage{mathpazo}
\RequirePackage[scaled=.95]{helvet}
\RequirePackage{courier}
```

to

```
\RequirePackage{minion}
\RequirePackage[scaled=.95]{helvet}
\RequirePackage{courier}
```

This column uses Minion.

However, I didn't like the way Courier (only used for URLs) looked with Minion, so I dropped the Courier line above

```
\RequirePackage{minion}
\RequirePackage[scaled=.95]{helvet}
```

and fell back on the TEX default Computer Modern typewriter font, which I think looks OK with Minion (and which I also use in this column).

Having changed to Minion, I had to make some adjustments. The first adjustment was to change the Roman numerals of my part numbers to small caps; in the table of contents and running head, full caps Roman numerals looked too big compared with old style

numerals. Next, I had to change all instances of \$ ($) to \textdollaroldstyle{} ($) which was defined in one of the Minion files from Steve Peter. (My book is about business management, so quite a few dollar signs were present.)

This was my first experience with a font that used old style figures. (Old style figures are number characters where 1, 2, and 0 are the size of letters such as a, m, and x; the numbers 3, 4, 5, 7, and 9 hang down like g, p and y; and 6 and 8 stick up like b, h, and t. Old style figures are also known as text figures, hanging figures, and lower case figures; the other kind of figures where the number characters are all the size of capital letters are known as titling, ranging, and lining figures. For a discussion of the two types of figures, see page 46 of the 2005 paperback edition of Robert Bringhurst's *The Elements of Typographic Style*, Hartley and Marks, Point Roberts, WA.) I quickly became used to seeing old style figures; however, I had the characters "10×" several places in one of my book chapters, as in "a 10×change in the market" which Andrew Grove talks about in his book *Only the Paranoid Survive* (paperback edition, New York: Currency, 1999). This looked OK with lining (capital letter size) numbers and a capital letter X in Palatino or plain text ("10X change"), but with the conversion to Minion, I had to define

```
\newcommand{\TenX}{{10\kern -.01in$\times$}}
```

to find something that I thought looked good, as in the quote above from Grove.

With the switch to Minion, I also switched to 12pt for my main text:

```
\documentclass[12pt]{btbook}
```

The style specified in the above command is my own style for this book as described in my previous column. I chose 12 point primarily because my co-author's and my eyes are not getting any younger, and 12 point with its default leading (interline spacing) looks nice and airy to my not-too-discerning eye. (I am also using 12 point for this column.) However, using normalsize text, the LaTeX default, for block quotes doesn't make them distinctive enough to my eye, despite the greater indentation on the left and right. Using \small for block quotes with its default sizing looked too small to me. Thus, I redefined \small in my class file using a pattern that Steve Peter showed me:

```
\renewcommand\small{%
  \@setfontsize\small{10.7pt}{13.05pt}
  \abovedisplayskip 9.5\p@ \@plus2.5\p@ \@minus5\p@
  \abovedisplayshortskip \z@ \@plus\p@
  \belowdisplayshortskip 5.25\p@ \@plus2.75\p@ \@minus2.5\p@
  \belowdisplayskip \abovedisplayskip}
```

Initially I didn't know what much of the above means (although, Peter Flynn's presentation at the PracTeX06 conference, which presumably will be published in an upcoming issue of this journal and/or *TUGboat*, explained what it means), but it produced a pleasing result for block quotes and the few other places where I used small text — in the bibliography, end notes, and so forth. I redefined LaTeX's block quote macros to use my version of \small:

```
\renewenvironment{quote}
   {\list{}{\rightmargin\leftmargin}%
   \small%added by me
   \item\relax}
   {\endlist}

\renewenvironment{quotation}
   {\list{}{\listparindent 1.5em%
     \small%added by me
     \itemindent     \listparindent
     \rightmargin    \leftmargin
     \parsep         \z@ \@plus\p@}%
   \item\relax}
   {\endlist}
```

2.2   Right justification

The justification of the right margins of my draft manuscript didn't look as straight as they are with another book I recently had published that the publisher typeset with Quark-Express. A few months before (while interviewing Frank Mittelbach for TUG — see www.tug.org/interviews), I learned that so-called microtype capabilities exist with pdfTeX. Consequently, I decided to try

```
\RequirePackage{microtype}
```

I printed out the documentation for the microtype package, but I didn't read it as microtype just worked without any additional commands (luckily, Minion was one of the five or six fonts for which configuration files came with the microtype package). The right margins immediately looked straighter, there were less line overflows, and fewer lines were hyphenated.

Microtyping apparently involves two primary capabilities. First, hyphens, periods, etc., are allow to extend *slightly* past what should be the right margin, and this makes the right

margin *look* more straight. Second, justifying lines using the inter-word spacing, the actual characters in a line (and inter-letter spacing?) are allowed to shrink or expand *slightly* to better fit the line, in addition to the normal expansion and shrinkage of interword spaces. Microtyping is turned on for this column.

2.3   Figure placement

The macros for figure and table formatting that I defined in my column in the previous issue (www.tug.org/pracjourn/2006-2/walden) did not include a parameter for specifying page position. I could see that I was going to want to be able to better force figures to the top or bottom of pages, or sometimes to the middle of a page with text above and below. I immediately converted the table macro and all calls of it to have an additional argument (there were only a few LaTeX-produced tables in the whole book). I had *many* figures, however, so for them I defined a new macro that included the additional positioning argument and began to switch to its use a figure at a time, as I came across combinations of text and a figure where LaTeX's default figure placement was not adequate. (Will Robertson's paper in this issue deprecates the use of figure macros such as I discussed in my last column and mention again here. My justification for using them is that they help *me* handle my *large* number of figures.)

2.4   Bibliography

I actually made the decision I am about to discuss before I sent my manuscript to the copy editor; I made it because I was using a copy editor. For my last book developed in LaTeX I used BibTeX. BibTeX was very convenient for experimenting with different formatting and citation systems for the bibliography. However, in this case of using a copy editor and with a modest-size bibliography, I decided that it would be easier to make the copy editor's edits in my computer files if I just typed the approximate format for each entry in the correct order (alphabetical by author and chronological for each author), and then edited these bibliography entries according to the copy editor's red pen marks on the hard copy of the manuscript.

Therefore, I wrote a little macro to do gross formatting of bibliography entries, which follows along with an example of its use (defining a macro named `\ref` below was a **serious mistake** — see the note at the end of section 3.3):

```
\def\ref#1#2{\vskip 4pt
    \vbox{\noindent\small
    \hangindent = 1pc \textbf{#1.}\hskip.05in#2}}
```

```
\ref{Ackoff81}{Ackoff, Russell L. \textit{Creating the Corporate
Future: Plan or Be Planned For}. New York: Wiley, 1981.}
```

```
\ref{Bower97}{Bower, Joseph L. Harvard Business School Case:
''Teradyne: The Aurora project'' (revised March 29, 1999). Boston:
Harvard Business School Press, 1997.}
```

This produces the following:

Ackoff81. Ackoff, Russell L. *Creating the Corporate Future: Plan or Be Planned For.* New York: Wiley, 1981.

Bower97. Bower, Joseph L. Harvard Business School Case: "Teradyne: The Aurora project" (revised March 29, 1999). Boston: Harvard Business School Press, 1997.

In the main text I cited such bibliography entries as follows

```
Russell Ackoff talks of type 1 system properties and
type 2 (or ''emergent'') system properties (Ackoff81).
```

Obviously, this is a somewhat nonstandard citation method, but I like it and I can use it since I am self-publishing.

I treated the bibliography as just another unnumbered backmatter chapter rather than using the typical command to insert the bibliography.

This approach to the bibliography in this case is indicative of my tendency to do a tiny bit of programming and a good bit of manual editing rather than taking time to look around for and (especially) learn to use capabilities that may already exist.

2.5   Integrating the copy editor's work

At this point groups of chapters began to come back from the copy editor, each page covered with red ink marks and writing indicating necessary or suggested changes to the manuscript and suggestions for possible improvement of the presentation. (When writing, I try to insist that editors make no changes to my files, until the final layout pass; however, some publishers these days insist that their editors edit my files, flagging the changes they have made for my review. I am not fond of this "modern" practice of editors actually changing

my files. Fortunately, the copy editor for this book was as reactionary in this matter as I am and insisted on editing a double spaced printout of the manuscript with her red pen.) I processed all of the copy editor's mandatory and suggested changes (each chapter took me a long, e.g., 10-hour, day to do — a couple of weeks altogether); next came about four solid days of proofreading and minor changes (and a couple of hard-to-think-about major changes that I had procrastinated about making from before the manuscript went to the copy editor).

3 Waiting for co-author's review

I sent the much improved manuscript to my co-author to review (he is a non-native English speaker — we collaborate on the content but I do all the writing in English). While waiting for his review, I made some more changes on my way to a final layout.

3.1 Log file

I searched the PDF output once again for instances of a double question mark indicating places where LaTeX could not resolve cross-references, and I took a look at the log file for the first time (until now I saw little point in plowing through vast numbers of log-file comments about line overflows, and I normally run pdfTeX from WinEdt where the LaTeX window closes after a successful compilation without leaving me anything to scroll through on the screen). I immediately noticed that the were lots of "label multiply defined" messages involving tables, which resulted from my table macro in fact having a redundant \label command, and which was trivially fixed. But there was so much other stuff still in the log file that I set it aside and vowed to look again later (I never did).

3.2 Ellipses

My copy editor was never happy with the spacing of ellipses that were done with TeX's \dots command. I only used ellipses a few times in my whole manuscript, mostly in block quotes. Therefore, I created much less general versions of . . . where I could explicitly control the spacing:

```
 %dots for main text
\def\BDS{3pt}
  %three dots
```

```
\def\MYdots{\hbox{\hspace{\BDS}.\hspace{\BDS}.\hspace{\BDS}.\hspace{\BDS}}}
  %period and three dots = four altogether
\def\fMYdots{\hbox{.\hspace{\BDS}.\hspace{\BDS}.\hspace{\BDS}.\hspace{\BDS}}}


  %dots for block quote text
\def\SDS{2pt}
  %three dots without end spaces
\def\MINsmalldots{\hbox{.\hspace{\SDS}.\hspace{\SDS}.}}
  %three dots
\def\sMYdots{\hbox{\hspace{\SDS}\MINsmalldots\hspace{\SDS}}}
  %period and three dots = four altogether
\def\fsMYdots{\hbox{\hspace{.3pt}.\hspace{\SDS}\MINsmalldots\hspace{\SDS}}}
```

The above macros are intended to be used directly . . . as here . . . abutting text on both
sides, thus inhibiting line breaking at either side of an ellipsis. With so few ellipses in my
entire manuscript, my plan was to manually note instances where there should be a line
break before or after an ellipsis and manually allow the correct thing to happen. Such
manual intervention (rather than trying to develop a redefinition of \dots that better suits
my needs) has the disadvantage that if I later change the text (for example, in a reuse of
the text in another document), the manual fix might no longer be the correct thing. My
thought is that I could deal with this eventuality by then redefining all of my special "dots"
macros to be equivalent to \dots or by simply doing a Replace-All of each instance of one
of my dots commands by \dots.

3.3   End notes

When I was originally drafting my book, I used footnotes because it is convenient to have
them on the same page as the text they refer to. However, everyone I run into in profes-
sional publishing seems to disapprove of footnotes because they make the book look too
scholarly. Before I sent the manuscript to the copy editor, I converted all the footnotes to
end-of-chapter notes with the following definitions:

```
\renewcommand{\footnote}{\endnote} %comment out to not have end notes

\newcommand{\dumpendnotes}
{
\medskip
\begingroup
```

```
\setlength{\parindent}{0pt}\setlength{\parskip}{1ex}
\theendnotes\endgroup \setcounter{endnote}{0} }
```

I added a `\dumpendnotes` command at the end of each chapter. In this way, my copy editor was able to also edit my notes in a realistic format along with each chapter.

However, publishing professionals also seem not to like end-of-chapter notes — I guess it is considered rude to force readers to look in different places in the book for notes for different chapters. Therefore, I decided to move all the end notes to a single "chapter" near the end of the book. In particular, I happened to be skimming through a copy of *Misquoting Jesus* (Bart D. Ehrman, Harper, 2005) at the same time, and tried to mimic this book's style for end-of-book chapter notes.

I looked in *The LaTeX Companion* (second edition) and on comp.text.tex for how to combine all chapter end notes in one place, but neither of these was much help to me (perhaps because I was not smart enough to understand what I was reading). Therefore, I modified the endnotes.sty file some more (in my last column I mention how I had already modified it, and renamed it dw-endnotes.sty to slightly change the format of end notes). Now, I changed the end of each chapter to only reset the end note counter, i.e.,

```
 \setcounter{endnote}{0}
```

and I put a single `\theendnotes` command in a new Notes "chapter" near the end of the book (beginning with `\chapter{Notes}` and appropriate redefinition of the running heads). The result of having only one `\theendnotes` command is that all the endnotes for all chapters go in succession in one .ent file with no distinctions among notes from different chapters, although the note numbers restart at 1 at the beginning of the notes from each chapter. My changes to the portion endnotes.sty which it typesets the end notes included:

- commented out where it typesets the heading for a Notes section, since we only needed this once — and not with the notes for each chapter
- included a test for whether a note number was equal to 1
- defined a new counter with which to keep track of chapter numbers
- inserted a test for whether a note number being read from the .ent file is equal to 1 (i.e., is the first note of a chapter); if it is, the chapter number counter is incremented by one and the word "Chapter" and the chapter number are typeset with appropriate vertical spacing

(If someone wants my actual code for the above, please ask.)

Unfortunately, for some reason my end note processing changes put an erroneous space in instances of inter-end-note cross references, e.g., instances where one end note said, `See note~\ref{fn:whatever on page~\pageref{fn:whatever}`, and the label `fn:whatever` was defined in the referenced end note; this printed as

5. See note   8 on page 243.

All non-inter-end-note cross references worked fine; thus, rather than trying to figure out what was going on, I replaced `note~\ref{fn:whatever}` with an absolute note number, e.g., `note~8`, in the two instances where I had of such cross references, and I put a comment in the source file to remind me to remove the absolute references if I later reuse this text in another document.

(When this paper was being edited for publication, Barbara Beeton pointed out the I should not have redefined `\ref` (which LaTeX already uses for cross-references. Rather, I should have called my macro something else, such as `\Ref`. This also indicates the value of using `\newcommand` for defining macros which would have told me I was redefining an existing macro. Some lessons I seem to have to learn over and over again.)

3.4   Table of contents

Using the LaTeX defaults and the size font I had specified, the table of contents spilled slightly onto a third page. I wanted the table of contents to fit on two pages, and I wanted the page boundary to be between parts of the book. Again, I looked in the documentation and at the comp.text.tex discussion group but didn't find what I needed. So I hunted around in the files latex.ltx and book.cls (and a few other files) until I found the `\@starttoc` command and the `\l@chapter` command.

I first looked at the `.toc` file resulting from the compilation of my book. That was full of lines of the form

```
\contentsline {chapter}{\numberline {3}Identify Need}{45}
\contentsline {section}{\numberline {3.1}Humanitas and principle 1}{45}
```

I found `\contentsline` defined in latex.ltx:

```
\def\contentsline#1{\csname l@#1\endcsname}
```

Although I don't completely understand this definition, it seemed like it was defining a command that had as its name the first argument of the `\contentsline` command. I

hunted around for `l@chapter` and found in `book.cls` the definition which controlled the spacing before chapter lines in the table of contents. Then I looked for where the table of contents is typeset and found the `\@starttoc` command in `latex.ltx`.

I redefined both `\@starttoc` and `\l@chapter` in my class file so there was less vertical space before chapter lines and `\baselineskip` was a little smaller throughout the table of contents. By trial and error with the amounts of vertical space, I was able to get the page break to be where I wanted it to be without the table of contents flowing onto a third page.

Altogether I spend several hours until I had the page breaks of the table of contents where I wanted them.

Then, after talking with the printing company, I changed the text block size of the whole book which put the table of contents page break in the middle of the subsections of a chapter. Remembering a tip from Walter Cazzola in response to a question of mine on `comp.text.tex` six years ago, I inserted

```
\addtocontents{toc}{\raggedbottom\protect\vspace{.5in}}
\chapter{Build New Business} \flushbottom
```

at the beginning of the chapter in question which forced the chapter and chapter subsections lines onto the next page without putting extra vertical space in either page of the table of contents. (Barbara Beeton has told me `\flushbottom` has no effect in the above.)

3.5   Part and chapter headings

Later I decided that LaTeX's default chapter heading format was a little oversized compared with my text. I experimented a little bit with `\usepackage{fncychap}` but the package's built-in styles seemed more different than I wanted.

So I found the following definitions in `book.cls` and modified the vertical spacing and the font sizes, as follows:

```
\def\@makechapterhead#1{%
  \vspace*{30\p@}%
  {\parindent \z@ \raggedright \normalfont
    \ifnum \c@secnumdepth >\m@ne
      \if@mainmatter
        \LARGE\bfseries \@chapapp\space \thechapter
        \par\nobreak
        \vskip 15\p@
      \fi
```

```
    \fi
    \interlinepenalty\@M
    \LARGE \bfseries #1\par\nobreak
    \vskip 30\p@
  }}

\def\@makeschapterhead#1{%
  \vspace*{30\p@}%
  {\parindent \z@ \raggedright
    \normalfont
    \interlinepenalty\@M
    \LARGE \bfseries  #1\par\nobreak
    \vskip 30\p@
  }}
```

This caused some interaction with the table of contents, and I had to undo the last change I described in the previous section.

3.6   Kerning

I noticed that there was too much space between the *W* and the *a* in my last name (Walden) in \Large size on the title page and in italics at the end of the preface. As a result, I took a many-hour look at how kerning tables are specified in TEX's font files; but ultimately I gave up trying to modify and recompile these tables and fonts. As an interim measure, I just inserted a kerning command at the few places that were particularly obvious to me, for example:

```
\Large{\scshape David W\kern-2pt{}alden}
```

4   Preparing a ready-to-print file

While I was doing the work described in the last section, my co-author finished his review and suggested a number of changes to the manuscript. We debated some of his proposals, and I made the changes we agreed upon in my LATEX and .eps image files. We also began to discuss the cover design (which I did as an Illustrator file — see the following page).

Breakthrough Management

Shoji Shiba and **David Walden**

司馬正次

Confederation of Indian Industry

Breakthrough Management
Shiba and Walden

CII

Prof. Shiba is my Guru. His teachings that are a part of this book have helped me to transform Sona Koyo into an ambidextrous organization which is necessary to support breakthrough practices. His lessons on leadership have helped me personally. This book is a must for all students of management and young managers who desire to be the leaders of tomorrow.
- Dr. Surinder Kapur, Chairman and Managing Director of Sona Koyo Steering Systems Ltd. and founder of Prof. Shiba's Learning Community in India.

UCAL has been associated with Prof. Shoji Shiba in learning the process of breakthrough management. It has been an exhilarating experience for the young managers of our company. Our organisation has greatly benefitted by practicing various concepts and methods taught by Prof. Shiba, and we have become more able to face the uncertainties of the future.
- Mr. K. Jaykar, Managing Director, UCAL Fuel Systems Ltd.

Prof. Shiba's breakthrough management principles, concepts and tools are deceptively simple and yet incredibly powerful. His workshops have transformed TechNova's culture beyond recognition. Personally, I have gained incredible insights into my own leadership style. With his extraordinary teaching style, we rapidly learned to unlearn, look through the invisible and the unknown, and sense the future.
- Mr. Pranav Parikh

Also by Prof. Shoji Shiba and available from CII

The
Five Step
Discovery
Process Manual
with Examples
Second Edition

CII

Prof. Shoji Shiba
with Sona Koyo Steering Systems Ltd. Gurgaon

4.1 Our first publisher and printer

Our intention had been to publish the book ourselves in the United States (before publishing it anywhere else in the world) using print-on-demand (e.g., Lightning Source). To this end, I had always planned to prepare a ready-to-print PDF file of the manuscript.

However, suddenly the opportunity arose to first publish the book in India using an industry group my co-author worked with there as the nominal publisher and distributor, and this industry group had a recommended printer in New Delhi (I had previously been unable to find the equivalent of Lightning Source for print-on-demand in India). I immediately began a major email correspondence with the publisher and printer to nail down a variety of mundane but important issues:

- the format of the publisher's name and logo on the title page and cover

- the publisher's information on the back of the title page including an ISBN number

- what promotional text and images the publisher wanted on the back cover of the book

- whether the printer could print from a PDF file of the whole manuscript doing the page imposition itself, or would I have to learn algorithms and find software tools to create big PDF pages with 4 or 8 book size pages on each big page that would later be folded and cut into book pages in the correct order: the printer would do the imposition but wanted to work from a PostScript file which I planned to obtain by saving my PDF file as a PostScript from Adobe Acrobat

- would I have to use a different page block size for India (where I thought perhaps they used different size book pages than the frequently used U.S. standard page size of 9×6 inches), or could I find a compromise text block size that worked in both the United States and India (William Adams gave me guidance on a compromise text block size): it turned out the the problem was non-existent as the printer in India is happy to print on 9×6 inch pages, and I used the `\url{geometry}` package to place text blocks of the correct size (within 7.75×5 inches) on the correct size pages.

- could I send my cover design to the printer as an Illustrator file (and for what version of Illustrator) that the printer could use to make final adjustments

- did I need to convert some of my photographic images which were in color to gray scale (there were to be no color plates in the book), or would that conversion automatically happen as part of the B&W printing process: they asked me to do the conversion

– when I sent the printer my ready-to-print PostScript file and many Illustrator files, did the printer want those on multiple CDs or one DVD: we agreed the printer would try to download the PostScript file of the book and the Illustrator file of cover art from my website, and that I would send a couple of CDs containing a gigabyte of backup files (mostly images) by air courier

In parallel with sorting out the issues with the Indian publisher and printer, my co-author and I worked on the design of the outside cover. After several iterations with Adobe Illustrator, I produced a design that satisfied us both.

4.2 Refining the line and page layout

I have always disliked how LaTeX, left to its own devices, feels free to stretch the inter-paragraph spacing. Steve Peter told me that the first step should be to give the command

```
\parskip=0pt
```

to disallow insertion of inter-paragraph vertical space. Thus, vertical space got automatically added only around floats, titles, thought breaks (www.tug.org/pracjourn/2005-4/walden/), and so forth. (At PracTeX06, TPJ editiorial board member Kaveh Bazargan gave a wonderful paper on a set of macros his company has developed for controlling vertical stretch, thus facilitating lining up the lines of text in parallel columns or on facing pages.)

I next read section 4.5 of the second edition of *The LaTeX Companion* on visual layout to avoid pages with too much vertical space, facing pages with obviously different numbers of lines, and the like. Based on the ideas presented there, I added the following commands to my class file

```
\newcommand{\Lnewpage}{\newpage}
\newcommand{\Lpushlines}[1]{\enlargethispage{-#1\baselineskip}}
\newcommand{\Lpulllines}[1]{\enlargethispage{#1\baselineskip}}
\newcommand{\Lhyphen}{\-}
\newcommand{\Lhspace}[1]{\hspace{#1}}
\newcommand{\Lvspace}[1]{\vspace{#1}}
```

The \L at the beginning of each new command (L standing for Layout) is to let me easily find all uses of these commands to remove them for a later different page layout of pages of the book.

Probably one page in six needed manual adjustment using these new commands. Viewing facing PDF pages side by side in my Acrobat Reader was key to seeing where such

adjustments were needed and trying out various possibilities for fixing things (plus lots of recompiles of each chapter). Other techniques that proved useful were *(a)* slight adjustments of figure and table sizes (an invisible tiny fraction of an inch change sometimes made things lots better), and *(b)* encouraging floats of figures and tables in some cases to be placed at the bottoms of facing pages to avoid having to balance full pages of text on facing pages.

In a dozen or so places in my 280 page book, I had to rewrite a part of a sentence to avoid problem lines. I also had to put in a few specific hyphens that TEX's automatic hyphenator couldn't find, particularly in proper names. I also spotted a few more instances where I thought kerning was required, I added explicit kerning in these instances, and (to mark the spots for later removal of the explicit kerning) I used my \L convention:

```
\newcommand{\LVught}{V\kern-1pt{}ught}
\newcommand{\LVerschuren}{V\kern-1pt{}erschuren}
```

I reproofread each chapter before I made the changes described above and checked the changes after I finished each chapter.

A book with all text might need fewer adjustments, but my book had perhaps 100 figures in 280 pages, lots of subtitles, many block quotes, and many lists that all had to be well placed on a page, and it seems to me that this made the layout harder most of the time. I did all the manual adjustments by hit and miss using what looked good to me as my only standard. Next time I first will read some theory about proper page layout.

5   Printing

The printer in India wanted a PostScript file of the manuscript of the book from which they could do imposition. I obtained this by opening the PDF of the manuscript in Adobe Acrobat and saving it to `.ps` format which I posted to my website for the printer to download. I also saved this on a CD and all of the source (text and image) files on a DVD and mailed them to the printer via international air courier for backup.

Sending the cover art to the printer was more difficult, however. They could not access the `.ai` file I provided out of Illustrator even though they purportedly were using the same version I was (CS2). They decided it would be best for me to send them a PostScript file. Unfortunately, as far as I know, Illustrator outputs `.eps` files and not `.ps` files. (At Prac-TeX06 Jonathan Kew and Peter Flynn told me I can convert an `.eps` file without previews to a `.ps` file by removing the `e` from the file name extension.) I tried converting a PDF

file out of Illustrator to PostScript via Acrobat, but I couldn't make this work for some reason (all the art content was lost somewhere along the conversion path, or the sizing information was confused).

Eventually, I converted the Illustrator EPS file to a PDF using epstopdf (as I did for all the rest of my illustrations), wrote a nine line LaTeX program that set up the geometry of the page size I needed for the cover (front, spine, and back as one image), and did an `\includegraphics` of the `.pdf` image. I then compiled with pdfLaTeX, opened the PDF output in Acrobat, and saved it in `.ps` format; this worked and indicated to me that the problem was in using the Illustrator produced PDF. Therefore, I ran a test of converting the EPS output of Illustrator to PDF via epstopdf, then opening the PDF in Acrobat, and then saving to `.ps`. This apparently worked.

In the end, I provided `.eps`, `.ps`, and `.pdf` files of the cover to the printer; I'm not sure which one the printer used.

6   North American and European distribution

With the book published in India, my next problem will be printing and distribution in North American and Europe. Various issues come to mind:

– Who should the publisher-in-name be (I will be the actual publisher)? Should I ask the Indian publisher to keep its name on the book for this hemisphere, should I seek another industry consortium, or should I make up my own publisher name? There are also related ISBN number issues.

– Will I have to resize the text block (and reformat the pages), or will I want to improve the overall typesetting in light of what I see in the Indian printing? In particular, will the Minion font I chose for my main text reproduce well using the printing technologies of print-on-demand printers?

– I believe that by printing via a print-on-demand company (e.g., Lightning source), I will have distribution (via Ingram) to U.S. on-line book stores (such as Amazon.com and bn.com). Will connecting to Lightning Source's UK group also provide distribution via on-line book stores in Europe?

– I have the option of selling books direct from my website (www.walden-family.com/breakthrough) in the United States. What parallel arrangement might I make for Europe?

(Elizabeth Dearborn's presentation at PracTeX06 on self-publishing a book provided inspiration that I can manage the logistics of publishing my own book.)

While these last book-publishing steps are mostly not TEX issues, I will give a brief final report on what transpired in my next column.

7   Epilog

I finished the above writing a couple of weeks ago. As this issue of *The PracTEX Journal* was about to be published, a copy of the book printed in India arrived by air courier. Although there are some things I would do differently next time (for example, slightly bigger margins), all in all I am happy with my first effort of typesetting a book using LATEX.

Acknowledgements

Biographical note

David Walden is retired after a career as an engineer, engineering manager, and general manager involved with research and development of computer and other high tech systems. More history is at www.walden-family.com/dave.