

Book reviews¹

Nico Poppelier, Amy Hendrickson

March 1992

L^AT_EX for Everyone,
Jane Hahn,
1st edition, Personal T_EX Inc. 1991,
softbound, 346 pages

Writing a book is hard work. It can also be rewarding work – if the readers are satisfied with the book. In comparison, writing a review about a book is easy: in a few paragraphs you criticize what it took years to write. Nevertheless, the readers deserve an honest review, so I won't hide the fact that in my opinion the first book reviewed here is less than what it could have been. This book, *L^AT_EX for Everyone* by Jane Hahn, is published by Personal T_EX, Inc. (PTI), and which will replace *L^AT_EX, a Document Preparation System* by Leslie Lamport in the PC-T_EX packages that PTI sells.

Surely, Lamport's book leaves a lot to be desired as an introductory book. For this purpose, you need a book with a clear expository style, a sufficient number of examples and well designed exercises. On the surface, it looks as if *L^AT_EX for Everyone* could have been such a book, since it has a clear 'if you want this, do that' way of explaining, it has summaries at the end of all sectional units, and lots of exercises.² Unfortunately it falls short of being a good introduction: it shows structural flaws, it contains a substantial number of mistakes, and it explains several parts of L^AT_EX confusingly or not at all.

Structure

Chapter 2 introduces the basic commands of L^AT_EX, and it also tells you how to adjust line spacing, margins, paragraph indentation, and footnote spacing – I will come back to this in a minute.

Chapter 3 is an odd mixture of things: it explains about document styles, typefaces and typeface sizes, sectioning commands, symbolic references, hyphenation, lists, formulas, accents, and headers and footers.

Chapter 4 deals with mathematics, but the environ-

ments for displayed equations were treated in chapter 3. Chapter 5, *Rows and Columns*, discusses `tabbing`, `tabular`, `array` and `eqnarray`. There are two problems with this arrangement of material.

1. The information on mathematical formulas is spread over three chapters.
2. `array` is used in chapter 4 on pages 93 and 99, but is not explained until later on, on page 128.

Chapter 6, *Customization*, treats page and line breaks, centering, vertical and horizontal space, lengths and boxes. This is followed by a chapter on floating objects and one on preparing large documents. In my view, chapter 6 should have been put after chapters 7 and 8, and combined with parts from chapter 3 in a chapter on influencing the layout.

Chapter 7 contains a lot of useful information about floating tables and figures, but it could have been written more concisely I think. And, like other authors of books on L^AT_EX – see some of my earlier reviews – Ms. Hahn does not clarify what `table` and `figure` are, namely 'envelopes' for floating figures and tables.

Furthermore, the book contains seven appendices. Appendices A and B, on user-defined commands and counters respectively, contain lots of useful information with instructive examples. Appendix C, on style parameters, is also a nice appendix, but it lacks the page-layout and list-layout diagrams, which are by now familiar to most L^AT_EX users.

Appendix D treats the `picture` environment. Appendix E, *Errors*, is a particularly good appendix, with lots of examples. I missed one thing in this appendix: what happens when you forget the required argument of `\begin{thebibliography}`?

Appendix F gives examples in the form of question and answer, and is one of the best parts of the book!

Appendix G 'discusses' S^LT_EX in twelve (sic!) lines. The page on which it is printed can just as easily be torn out of the book, since all it tells the reader is that S^LT_EX is a program similar to L^AT_EX, designed for creating slides, and with commands different from those of L^AT_EX. If the reader wants to know more, he

¹To be published in TUGboat 13.1, 57–59 (1992).

²I should add that the answers to the exercises are given in small print below the questions.

or she is advised to print and read `slides.tex` and `local.tex`.

Finally, the index is awkward to work with: all environments must be looked up under the main entry ‘environment’, and all commands under the main entry ‘commands’. Strangely, the entry ‘commands’ is followed by ‘captions’, ‘center’, ‘comment’, . . .³ My preference would be to list, e.g., ‘picture’ environment between ‘picture’ and ‘placement’, as in the *L^AT_EX User’s Guide*, or to have a separate command index.

My main criticism is that the structure of *L^AT_EX for Everyone* does not reflect the philosophy behind *L^AT_EX* – like most other books on *L^AT_EX* unfortunately. Chapters 2–4 of *L^AT_EX, a Document Preparation System* by *L^AT_EX*’s creator Leslie Lamport mostly explain about those features of *L^AT_EX* that are related to logical structure of a document. Only in chapter 5 does he discuss those features that are more related to the visual structure of a document.

By contrast, Ms. Hahn continually mixes structure commands with layout commands.

An example: in almost every chapter Ms. Hahn introduces a command that accepts the `\\` command, and every time she explains what `\\[. . .]` does. If she had moved this to a separate appendix on layout changes, this would reflect the philosophy of *L^AT_EX*, and it would make the exposition much clearer.

Another one: in section 3.10.1 she gives this example

```
\begin{itemize}
\item [{$\heartsuit$}] potatoes
\item [{$\heartsuit$}] celery
\item [{$\heartsuit$}] frying chicken
\item [{$\heartsuit$}] milk
\end{itemize}
```

immediately after she has introduced the `itemize` environment. First of all, this can be done much simpler with a `\renewcommand` of `\labelitemi`. Secondly, this sort of example really belongs in a separate chapter on layout changes.

Errors

This review column does not provide the space required for an extensive summary of all errors in *L^AT_EX for Everyone*. Instead, I will mention a few interesting ones.

1. The author confuses the document style `book` with the abstract class of documents that can be called ‘book’. Furthermore, to confuse the reader she introduces a new term, ‘style guide’, as a synonym for ‘document style’. She also confuses *L^AT_EX* with its standard document styles (p. 69–70)
2. On page 42 she calls *T_EX*’s ‘usual’ typeface, Computer Modern, Times Roman.
3. On page 88: ‘A super- or subscript that is an English word should be set in roman type’. Is this not the

case for mathematical texts in French or Dutch?

4. An explanation of `*{n}{cols}` is missing in all places where `tabular` is treated (pages 127 and 288).
5. ‘You should get into the habit of typing names as follows: . . . J.~S.~Bach’ (page 142). Not true, since it depends on the particular typographical convention one uses: in common usage the space between ‘J.’ and ‘S.’ is omitted.
6. A table in section 6.6 suggests that *L^AT_EX* does not understand the following units of length: `dd`, `cc`, `bp` and `sp`, which the basic *T_EX* program, and therefore *L^AT_EX*, an extension, understands.
7. In section 6.7, the author uses `\makebox` to get an alignment!
8. On page 164, Ms. Hahn writes that

```
\oddsidemargin=0in
\textwidth=6.5in
```

 results in a right margin of 1 inch. This happens sometimes, but only if you use American letter size paper!
9. The ‘default order of preference’ for figure placement is `[bthp]`, according to the author, which is wrong, since this default is given by the document style, for example `[tbp]` in `article`.
10. On pages 194–197 Ms. Hahn suggests producing an index by sorting the entries in the `.idx` file in your editor, manually changing the `\indexentry` commands into `\item` and so forth, and then combining multiple entries into one. I find this appalling advice, with index programs such as `MakeIndex` available.
11. Similarly, in section 8.5 there is no mention of *BIB_{T_EX}*.
12. The command `\setlength` is discussed in the main text, whereas `\newcommand`, `\renewcommand` and `\newenvironment` are treated in the appendices. In my view, the latter are more important, because they make typing easier or can clarify the structure of a document. A separate appendix on layout changes would be an appropriate place to discuss `\setlength`.
13. A discussion of `\newtheorem` is completely missing.

Besides this, Ms. Hahn sometimes suggests bad typography. For example a tall formula, an integral in display style, in text. Shouldn’t authors of books on *T_EX* keep traditional typographical rules of thumb in mind?

Conclusion

On the whole, *L^AT_EX for Everyone* is an unsatisfactory book. It has the potential of becoming a good book, in a revised edition, if the structural flaws are solved and all the errors are removed.

³Probably because the index was generated as explained on pages 194–197 of the book – see further on.

The author considers math \LaTeX 's strongest feature, a position I disagree with strongly: its main merit is document structuring. Math is a \TeX feature, and \LaTeX does not *add* new math capabilities: it presents them in a structured and sometimes more user-friendly way. If Ms. Hahn had recognized the key role of document structuring in \LaTeX , she would probably have written a different book.

A final remark: the publisher chose to have the book produced from 2000 dpi camera-ready copy, which is the high quality output a book on \TeX , made by \TeX deserves. Unfortunately, the typeface Computer Modern was used, and the layout is the standard book style. That \TeX can produce 'masterpieces of the publishing art',⁴ using other fine typefaces and a layout created by a professional designer, is shown too rarely – an exception is Victor Eijkhout's recent book *TeX by Topic*.

Nico Poppelier
n.poppelier@elsevier.nl

Practical SGML,
Eric van Herwijnen,
1st edition, Kluwer Academic Publishers 1990,
softbound, 307 pages

'A review of a book on SGML in the columns of *TUGboat*?' some of you may wonder. What does SGML have to do with \TeX ? Well, nothing, but since the term SGML has surfaced often in *TUGboat* and on the TUG conferences the past years⁵, I thought a review of an SGML book could be worthwhile.

Practical SGML is one of the best books on SGML currently available. To be absolutely honest, there are not many books on SGML – yet – but this book is the only one so far with 'many helpful hints and ideas on developing SGML, applications and discussions of the current software written to be conforming to the ISO standard', as is written in the foreword of the book. This is indeed a book about practical SGML!

The book is divided into three parts. Part I, *Getting started with SGML*, is an introduction to SGML. It explains what a document type definition or 'dtd' is, what the role of the dtd in the processing of the document is, and what steps are necessary to create and process an SGML document.

Part II is intended for document managers or programmers, and explains SGML in more depth. Some of the topics discussed in this part are: formal aspects of the

⁴The last line of the last chapter of *The TeXbook*.

⁵See for example the proceedings of the 1991 TUG conference.

language SGML, distinguishing data characters from markup, and the reference concrete syntax.

Part III is about SGML implementations and should be read by everyone who has to install and maintain an SGML software system. Mr. Van Herwijnen discusses what components are usually found in such a system, how to create SGML documents, how to convert SGML documents into documents that can be processed, for instance to get output on paper, or in order to store information in a database. He also gives some examples of SGML parsers.

The book also contains five appendices. Appendix A contains the answers to the exercises in the book. In appendix B Mr. Van Herwijnen tells how he wrote *Practical SGML* using SGML, and in appendix C he even gives the complete document type definition for his book.

Appendix D is a short appendix, in which the author gives common SGML definitions for use with \TeX . Finally, appendix E contains useful advice on how to read the ISO standard (8879) in which SGML is defined.

At the end of the book we find a glossary and an index, and throughout the book the author gives lots of valuable references to existing literature on SGML and related topics.

Mr. Van Herwijnen, is leader of the text processing section at CERN, the European Laboratory for Particle Physics in Geneva, Switzerland. SGML is one of the important tools in the text processing section at CERN, which probably explains the high quality of *Practical SGML*: it was written by someone who has extensively used SGML in practice. Since no prior knowledge of text processing or publishing is required to understand what is written in *Practical SGML*, I can highly recommend it to anyone who is interested in this subject.

Nico Poppelier
n.poppelier@elsevier.nl

TeX by Topic, A TeXnician's Reference,
Victor Eijkhout,
1st edition, Addison-Wesley Publishing Company, 1992
softbound, 307 pages

Victor Eijkhout has definitely done the \TeX community a service by presenting us with his book, '*TeX by Topic*', published by Addison-Wesley. I recommend it highly to everyone who has had some acquaintance

with \TeX and who would like to 1) understand the basic mechanisms underlying \TeX processing and 2) wants a concise \TeX reference source.

The key to this book's success is the considerable effort and thought that went into the overall conception and in the care taken in transforming that concept into a systematic and thorough development of each topic presented.

It is a daunting task to write about \TeX , since to describe any topic thoroughly inevitably includes defining its component parts, which can launch the author into another topic to the confusion of the readers. It is a task that must be approached with care.

This organizational problem can be seen even in the \TeX book, though one hesitates to complain. We \TeX ies have all spent hours poring over the \TeX book, enjoying its lovely writing, its complex concepts, and its illuminating examples. One cannot help admiring it and its author, of course. Still, it must be admitted, when a macro writer is struggling to find some particular bit of information, a quick definition, a nudge in the right direction, he or she can find the \TeX book index thoroughly unhelpful and the bit of information wanted scattered over many different pages in many different chapters.

' \TeX by Topic,' on the other hand, excels in organization, making it a most helpful adjunct to the \TeX book. The basic plan is to break the whole subject of \TeX commands and processing into about 40 topics, each discussed in its own chapter. Each chapter begins with a list of control sequences relevant to that chapter, followed by a brief explanation of the theory behind that topic, then brief remarks and examples. The chapters in the book are organized into three parts: chapters on basic mechanism; text treatment and math; and finally, output and aspects of \TeX 's connection to the outside world.

The book is meant as a reference source, not a tutorial. It assumes that the reader has a general grasp of \TeX vocabulary and syntax. It is brief and concise and information dense.

It includes detailed explanations of the mechanisms underlying \TeX 's workings and \TeX programming techniques. In the last part of the book is found a description of the differences between \TeX Version 2 and Version 3, a 13 page glossary of \TeX primitives, a bibliographical list of references, character tables, math symbols, a list of examples. The book ends with a 3 page Index by command and a 2 page Index by topic, each with sending readers to *one* particular page for information on each entry.

Evaluation:

I have found the book useful several time already, and I have been using \TeX for the last nine years. Even if you

have been using \TeX for a number of years you may not have had occasion to use a particular command and using ' \TeX by Topic' may save you valuable hours by quickly defining or demonstrating the bit of information you need. In the event that you must also consult the \TeX book, having two explanations rather than one for a given topic can be helpful.

I think my complaints about the book relate to its brevity which is also one of its virtues. 'T. by T.' tends to be more theoretical than practical, and it is somewhat sparse with examples. There are many times when it might well be helpful to readers to explain 'why' a particular construct should be used, as well as mentioning that it exists.

For instance, the strut is mentioned on p. 213. First, it is explained somewhat inaccurately by saying it is defined statically in Plain \TeX as a `\vruleheight 8.5pt depth3.5pt width 0pt`.

Actually the definition of the `\strut` command only asks to copy the strut box. The strut box has been separately set to include a rule of those dimensions. When making up font families one need not change the definition of `\strut` but only the contents of the `\strutbox`. The `\strut` command itself is not static. The quick explanation given ' \TeX by Topic' is understandable as an effort in extreme brevity but could be slightly misleading if taken literally. Secondly, the strut is mentioned only as being used in tables. How else can or is it used? Perhaps this question is considered to be too basic, but the strut is found in many other macros and its use could be explained further.

A similar example is found in the brief mention of `\everycr`. 'T. by T.' mentions that it is included after every nonredundant `\cr`, and defines it in the list of primitives. But how might the \TeX nician make use of it?

Or, in the explanation of '`\let`' and '`\futurelet`' which are at least as clear as those found in the \TeX book, perhaps it would be helpful to let users know why it is advantageous to use those constructions instead of the roughly analogous '`\def`' and '`\expandafter`.' But perhaps that is a different book, a book on macro writing.

In the end, all this is mere quibbling. There is a wealth of well organized material included in this books' 300 pages. I am delighted to have ' \TeX by Topic' at my elbow as I work, and if you are a serious \TeX user, you will be too.

Amy Hendrickson,
TeX nology Inc.
amyh@ai.mit.edu