BIJLAGE BB

New Books on TeX

Victor Eijkhout

University of Illinois at Urbana-Champaign

305 Talbot Lab

104 S. Wright Street

Urbana, Illinois 61801, USA

u641001@HNYKUN11

There is a piece of good news to be reported: two new books on TeX have appeared recently, one for beginning to intermediate users, and one for intermediate to advanced users. And there's more good news: TeX is so widely spread that both books originated in Germany, and are written in German. Of the introductory book translations into English and Dutch exist, but the advanced book, in more than one respect the more interesting of the two, has not been translated yet.

TeX books in other languages than English are a good thing for two reasons. One is that they give an indication of the widespread use of TeX. The other is that, quote Norbert Schwartz, author of 'Einführung in TeX' [1], such books are 'a bit more internationally oriented than a book of English or American origin would probably be'. This is especially apparent in 'TeXfür Fortgeschrittene' [2] by Wolgang Appelt, which has a whole chapter on 'Deutschsprachige Text', containing sensible remarks that are relevant to more languages than just German – although they are not particularly relevant to the somewhat plebeian English language.

Introduction to TeX

'Introduction to TeX' by Norbert Schwartz assumes no knowledge of TeX whatsoever, indeed the first chapter 'General information' gives a short list of the merits of TeX. This makes for a nice and motivating introduction for the complete novice.

The same holds for chapter 2, 'Operation', that contains, after a few pages of braces, backslashes, and punctuation, a first example of the use of TeX. Some thirty commands are used here. Obviously the author wants to get the reader going: the details will come later.

Chapter 3 was written in the same vein. In 30 pages a large amount of information about 'Setting text' is given to the reader, with lots of examples. However, this chapter had me frowning a number of times. It is the author's style of writing to use bursts of creativity like

```
\obeylines\everypar{\hfil}
```

to introduce the concepts of `\everypar` and

`\parfillskip`, but it wouldn't be mine. And I object to

```
\centerline{\it The current page has
    the number \folio}
```

Fortunately, some important concepts are explained more fully in chapters on macros and 'How TeX works' – although I feel that the section on modes is a bit skimpy. There are two nice chapters on mathematical typesetting, there is a short chapter on output routines, and I was particularly pleased with the chapter on 'Tables and alignment'.

Main part of the appendix to this book is an 80 page (!) list of all TeX and plain TeX commands. The explanations are short, but certainly not cryptic, and often an illuminating example is given. Definitely a good idea of the author.

TeX for the advanced

'TeX for the advanced' by Wolfgang Appelt is a very different book. The subtitle, 'Programming techniques and macro packages' is probably the best indication to its contents. Wolfgang Appelt argues in the preface the need for high level macro packages, and then sets out to assist the reader in constructing such packages. He does this in three ways.

The preface, the introductory chapter, and a chapter 'Macro packages' give general thoughts on how macro packages should be structured, and what their nature should be. He distinguishes between the logical structure and the layout structure, and for both of these the generic and the specific structure. It is useful to have such concepts explained in some detail, and the reader won't hear me arguing the author's point of view.

Pure TeX theory is treated on chapters on 'Spaces' – such a chapter must be answering many prayers of desperate TeXers – and 'Macros and parameters'. The author has a very clear style of explaining, but his explanation of conditionals, sufficient for most cases, distorts the truth a bit.

Lastly, four chapters can be classified as 'case studies in macro package design'. They treat the subjects of a font selection scheme, text structures (lists and sectioning), referencing (including table of contents), and adaptations necessary for the German language. These chapters give complete sets of macros, and they are well explained.

Appelt makes no attempt at being complete. Mathematical typesetting and alignments are not treated in this book, and output routines are hardly touched upon. Given the size of the book this would not have been possible, and concentrating on a few selected topics is probably a good idea.

In all, this book is maybe not sufficient reason to start learning German – which means you'll never make such delightful discoveries as that 'ragged right' is 'Flattersatz', 'flutter setting' in German – but if you know a smattering of the language it certainly won't harm you to pick up this book.

How does it look?

When a book about T_EX appears, there is an obvious question: 'has it been done in T_EX?' For both books reviewed here the answer is yes, but the results are widely different. The Appelt book is set in 12 point Computer Modern with non-obtrusive headings, which gives a surprisingly open and readable page. Of the Schwartz book I have only seen the Dutch and English translations, which are totally unlike each other. The English translation is set in Computer Modern, photographically reduced to 10 point. Unfortunately, the book was printed rather lightly, which makes the page appear somewhat vague.

The Dutch branch of Addison-Wesley must have been in an adventurous mood, combining New Century Schoolbook as a text face with Avant Garde headings. Choosing Courier as the type writer font was not the optimal choice, but the overall result is rather pleasant – even though there have been a few accidents in typesetting the examples.

As a conclusion I would state that both books are an asset to the T_EX community. Neither book is a definite T_EX bible, but for both there is certainly a niche to fill.

[1] **Einführung in T_EX**, Norbert Schwartz, Addison-Wesley Verlag, Bonn 1988(?) ISBN 3-925118-97-7
Inleiding T_EX, Norbert Schwartz, Addison-Wesley Europe, Amsterdam 1990, ISBN 90-6789-151-7
Introduction to T_EX, Jost Krieger and Norbert Schwartz, Addison-Wesley Europe, Amsterdam 1989, ISBN 0-201-51141-X
[2] **T_EX für Fortgeschrittene**, Wolfgang Appelt, Addison-Wesley Verlag, Bonn, 1988, ISBN 3-89319-115-1

T_EX for the impatient

One of the aspects of T_EX that set it apart from other text processors is the fact that there exists an ultimate reference: the T_EX book. Like its introduction states, this book is for people who have never used it before and the experienced hackers alike. 'T_EX for the impatient' makes a similar claim: Paul Abrahams, the senior author, asked himself 'What kind of book would have made it easier for me to learn T_EX? What kind of book would I need now, as a more experienced user, to locate commands or functions that I never learned or only half remember?'. In my opinion he, and co-authors Karl Berry and Kathryn Hargreaves, have given an succesful answer to the first question. My thoughts on the second question follow below.

'T_EX for the impatient' has a very appealing front cover: the white rabbit from 'Alice in Wonderland' (the one that exclaims 'Oh dear, I shall be too late!') is sitting, looking at his watch, very impatiently. The inside of the book looks good. Computer Modern is used for the text, with a surprising but very satisfactory choice of Optima bold for headings and command names when these are used as headings. Thirteen chapters and an index make up the approximately 360 pages of the book.

After two inevitable chapters 'Using this book' and 'Using T_EX', follows an interesting third chapter: 'Examples'. Ten page-long examples with the input on the facing page give a good impression of T_EX's capabilities, and give the novice a source of commands and constructs to study (and copy).

Chapter four 'Concepts' starts the reference part of the book. Instead of merging the list of concepts treated here into the table of contents, the authors decided to print it separately on the inside of the back cover. An unusual idea, but I like it. The list is some 90 terms long, and the chapter spans 55 pages. Individual concepts are therefore treated briefly but the explanations are clear and well-written, and there are many references to the subsequent chapters which treat individual commands. In this chapter I appreciated especially the fact that the authors use the anatomical analogy for T_EX's workings, and refer to it repeatedly.

Although the authors suggest that novices, after having read chapters 1–3, start working from the summary of commands (chapter 13), looking up commands and concepts, I feel that chapter 4 is really also part of the introduction to T_EX. Call it a higher introduction.

The following chapters 5–9 treat T_EX commands, grouped by subject. Here too the explanations are clear, but they are less complete than I would like them. It has been a wise decision not to treat each command separately, but to tackle a few commands at a time, for instance `\hss` and `\vss`, or `\unskip`, `\unkern`, and `\unpenalty`.

Chapters 10–12 are probably a good selling point for this book: let it suffice that the titles are 'Tips and tech-

niques', 'Making sense of error messages', and 'A compendium of useful macros'. This last chapter contains an 'extended plain format', containing such much wanted macros as for cross references and left aligned display equations. Explanations of these macros limit themselves to explanations of the way to use them. A 'Capsule summary of commands' and an index complete the book.

On the whole, I find this book very clearly written, and all its information is readily accessible. However, I was a bit annoyed by the small errors that I found. For instance, the delimiters around \..withdelims commands don't grow as the authors claim; they are determined by font parameters 20 and 21 of the symbol font. Also, the remarks about the depth (height) of a \vbox (\vtop) on pages 52 and 161/2 are at odds; in principle this dimensions is the depth (height) of the last (first) box or rule. On page 52 it is stated that theses dimensions are zero if the last (first) item is kern or glue – which is wrong for the \vtop; on page 161/2 it is stated that it is zero if the last (first) item is not a box or rule – which is wrong for the \vbox. For the exceptions to these statements consider whatsits.

As I mentioned above, the question underlying this second part of the book started 'What kind of book would I need now, as a more experienced user'. By 'experienced user' the authors apparently do not mean an aspiring TeX hacker, since this book explains commands as such, but much less the large scale mechanisms connecting them.

For instance, one technique in chapter 10, 'Leaving space at the top of page', is treated in a mere five lines: the reader is told that \vskip does not work, but

that \topglue does. I was particularly struck by this, since I didn't know the latter command, which is a late addition to TeX version 3. Neither here, nor in the systematic reference chapters is it mentioned whether this is a macro or a primitive. That information can only be found in the command summary; it is not even in the index, like it is in the TeX book.

Another example: page 86 states that 'When TeX breaks a page, it discards any sequence of glue, kerns, and penalty items that follows the break'. This is rather a simplification of what really happens; one might even say that this is simply not true. However, it is a convenient way of looking at things, and as long as you stick to the plain TeX output routine you never notice the difference.

The most obvious sign that the authors do not aim at TeX hackers is of course the fact that they repeatedly refer to the TeX book for the details. On page 167 it even says 'if you want to get adventurous you can learn all about it from pages [. . .] of the TeX book'.

In general, this book gives good factual information, and the information is very easy to find. What it lacks are the explanations, not of commands but of mechanisms. For instance, expansion is never treated as such. Also the problems of expansion and timing in macros for cross references and table of contents are not discussed.

But most people will not write such macros, and since some very handy macros are given in chapter 12, this book can be useful for people wanting to understand and modify or extend existing macros. And as an introduction, it is simply a good book.