Footnotes in a multi-column layout*

Frank Mittelbach
Electronic Data Systems (Deutschland) GmbH
Eisenstraße 56 N15
D-6090 Rüsselsheim

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1 Preface to version 1.1

The new release is a basically unchanged version of the original. I upgraded the macros so that they work with LaTeX 2ε and used some of the additional flexibility introduced therein. For example, the command `\preparefootins` is now automatically called at `\begin{document}`, thus allowing the user to adjust the `\textheight` in the preamble.

It is not surprisingly that I was forced to change some of the macros because they dig deep into LaTeX's output routines. Fortunately this is something normally not necessary when upgrading other LaTeX 2.09 styles to LaTeX 2ε packages.

I also upgraded the documentation to conform to the LaTeX 2ε terminology, e.g., this is a package since document classes will not know about it. However it is very likely that i have missed some necessary corrections.

2 Introduction

The placement of footnotes in a multi-column layout always bothered me. The approach taken by LaTeX (i.e., placing the footnotes separately under each column) might be all right if nearly no footnotes are present. But it looks clumsy when both columns contain footnotes, especially when they occupy different amounts of space.

In the multi-column package [5], I used page-wide footnotes at the bottom of the page, but again the result doesn't look very pleasant since short footnotes produce undesired gaps of white space. Of course, the main goal of this package was a balancing algorithm for columns which would allow switching between different numbers of columns on the same page. With this feature, the natural place for footnotes seems to be the bottom of the page[1] but looking at some of the results it seems best to avoid footnotes in such a layout entirely.

Another possibility is to turn footnotes into endnotes, i.e., printing them at the end of every chapter or the end of the entire document. But I assume everyone who has ever read a book using such a layout will agree with me, that it is a pain to search back and forth, so that the reader is tempted to ignore the endnotes entirely.

When I wrote the article about

*The LaTeX package `ftnright` which is described in this article has the version number v1.1b dated 1994/02/28. The documentation was last revised on 1994/02/28.

1. You can not use column footnotes at the bottom, since the number of columns can differ on one page.

"Future extensions of TEX" [6] I was again dissatisfied with the outcome of the footnotes, and since this article should show certain aspects of high quality typesetting, I decided to give the footnote problem a try and modified the LATEX output routine for this purpose. The layout I used was inspired by the yearbook of the Gutenberg Gesellschaft Mainz [2]. Later on, I found that it is also recommended by Jan White [9]. On the layout of footnotes I also consulted books by Jan Tschichold [8] and Manfred Simoneit [7], books, I would recommend to everyone being able to read German texts.

2.1 Description of the new layout

The result of this effort is presented in this paper and the reader can judge for himself whether it was successful or not.[2] The main idea for this layout is to assemble the footnotes of all columns on a page and place them all together at the bottom of the right column. Allowing for enough space between footnotes and text, and in addition, setting the footnotes in smaller type[3] I decided that one could omit the footnote separator rule which is used in most publications prepared with TEX.[4] Furthermore, I decided to place the footnote markers[5] at the baseline instead of raising them as superscripts.[6]

All in all, I think this generates a neat layout, and surprisingly enough, the necessary changes to the LATEX output routine are nevertheless astonishingly simple.

2.2 The use of the package

This package might be used together with any other package for LATEX which does not change the three internals changed by `ftnright.sty`.[7] In most cases, it is best to use this package as the very last package in the preamble to make sure that its settings are not overwritten by other packages.

It is unfortunate that the current LATEX has nearly no provisions to make such changes without overwriting the internal routines. In the LATEX3 implementation, we will certainly add some hooks that will make such changes more easy.

References

[1] M. Goossens, F. Mittelbach and A. Samarin. The LATEX Companion. Addison-Wesley, Reading, Massachusetts, 1994.

[2] Hans-Joachim Koppitz, editor. *Gutenberg Jahrbuch*. Gutenberg-Gesellschaft, Mainz.

2. Please note, that this option only changed the placement of footnotes. Since this article also makes use of the `doc` package [1], that assigns tiny numbers to code lines sprincled throughout the text, the resulting design is not perfect. This package is now a standard part of LATEX 2_ε.

3. The standard layout in *TUGboat* uses the same size for footnotes and text, giving the footnotes, in my opinion, much too much prominence.

4. People who prefer the rule can add it by redefining the command `\footnoterule` [3, p. 156]. Please, note, that this command should occupy no space, so that a negative space should be used to compensate for the width of the rule used.

5. The tiny numbers or symbols, e.g., the '5' in front of this footnote.

6. Of course, this is only done for the mark preceeding the footnote text and not the one used within the main text where a raised number or symbol set in smaller type will help to keep the flow of thoughts, uninterrupted.

7. These are the macros `\@startcolumn`, `\@makecol` and `\@outputdblcol` as we will see below. Of course, the package will take only effect with a document class using a twocolumn layout (like `ltugboat`) or when the user additionally specifies `twocolumn` as a document class option in the `\documentclass` command.

[3] Leslie Lamport. *LaTeX: A Document Preparation System.* Addison-Wesley, Reading, Massachusetts, 1986.

[4] LaTeX3 project. LaTeX 2_ε distribution, 1994. Souces for LaTeX 2_ε the successor to LaTeX 2.09.

[5] Frank Mittelbach An environment for multi-column output. *TUGboat*, 10(3):407–415, November 1989.

[6] Frank Mittelbach E-TeX: Guidelines to future TeX extensions. In Lincoln K. Durst, editor, *TUGboat*, 11(3): *1990 TUG Annual Meeting Proceedings*, pages 337–345, September 1990.

[7] Manfred Siemoneit. *Typographisches Gestalten.* Polygraph Verlag, Frankfurt am Main, second edition, 1989.

[8] Jan Tschichold. *Ausgewählte Aufsätze über Fragen der Gestalt des Buches.* Birkhäuser Verlag, Basel, 1987. Second printing.

[9] Jan White. *Graphic Design for the Electronic Age.* Watson Guptill, Xerox Press, New York, 1988.