Warnings	Macros

The PLAIN Truth: \buildrel

Barbara Beeton

Changes to PLAIN.TeX, though infrequent, are usually somewhat inscrutable. This column will attempt to illustrate with (relatively) simple examples the reasons for some of the changes that have occurred since TeX was "frozen" at version 1.0.

\buildrel

All changes to \buildrel have taken place where the * appears in this "generic" definition:

```
\def\buildrel#1\over#2{\mathrel
        {\mathop{*#2}\limits^{#1}}}
```

A handy little tester for this macro is built right into PLAIN:

```
\def\doteq{\buildrel\textstyle.\over=}
```

Let's use this, plus a simple variation with x replacing =, to show the change history.

(1) The original definition contained nothing but the argument within the \mathop.

$$a \doteq b \mathop{x} c$$

This works well enough for \doteq, but it's just luck — single characters within \mathop have their baselines altered so that they align vertically with the axis (rule 13, The TeXbook Appendix G, pp. 443-444).

(2) The next iteration inserted \null.

$$a \doteq b \mathop{x} c$$

\null is type Ord, which generates space when adjacent to a symbol of type Rel.

(3) \hskip0pt eliminates this space:

$$a \doteq b \mathop{x} c$$

however, it requires 3 words of memory, to accommodate stretch and shrink, which aren't needed here.

(4) \kern0pt accomplishes the same thing, using only 2 words of memory.

$$a \doteq b \mathop{x} c$$

This is presumably the "final" word on the subject.

(To be continued)

Announcement of LaTeX Version 2.09

Leslie Lamport

The end is in sight. LaTeX Version 2.09 is now available. This is the final, last, terminal, ultimate version. No more new features. Bugs will be fixed as usual. Some time soon, after people have had a chance to find bugs, this version will be renumbered to be Version 3.0, which sounds much more final than 2.09.

The LaTeX manual is now in production, and Addison-Wesley should have it in your local bookstore around the middle of October. Meanwhile, LERRATA.TEX will tell you what has changed. There's not too much that's new in Version 2.09. However, there are a lot of changes in the procedure for obtaining and setting up new versions, so read on.

The primary source of LaTeX files is now the <TEX.LATEX> directory on SU-SCORE. My new Arpanet address is lamport@decwrl. (I assume that people will be able to figure out what to append to this address when the net is fully fragmented.)

Users who read the new manual will have some new expectations. Installers will have to see that they are met, or they'll have some unhappy customers. The file LATEX.INS describes what must be done, but here's a short description.

The primary innovation is a *Local Guide* — a document that gives the site-specific information they need for using LaTeX. The file LOCAL.TEX contains the LaTeX input to produce the document in use at DEC's System Research Center in Palo Alto. The installer must modify this document for their site and arrange for its distribution. (It would be really neat if university book stores could provide the *Local Guide* along with the LaTeX manual.) Since LOCAL.TEX is written for an Ultrix system, it will be fairly easy to modify it for an Ultrix or Unix site.

There are also two short files that provide quick introductions to LaTeX. The shorter, SMALL.TEX, covers only the most elementary things. It contains a pointer to on-line documentation of how to use LaTeX at the specific site. The installer must modify that pointer and create the pointed-at documentation. The file SAMPLE.TEX is a more complete tutorial.