Editorial Comments

Barbara Beeton

First, I would like to apologize for the many errors that crept into the last issue. Some new production procedures were being instituted, and some of the final checks that should have been made just didn't get done. Through the end of volume 8, production of TUGboat was essentially a one-person job — mine. The TUG office now has a staff TEXnician, Alan Wittbecker, as announced in the last issue, and he will be the TUGboat Production Editor. This means that he will acknowledge incoming items, maintain the administrative records, assist in the TEXing and makeup, and make sure that everything gets to the printer on time. The EDITOR will still be responsible for what does or doesn't get accepted for publication, and will still nag contributors about accuracy, grammar, and other sundry details of that sort.

Some of last issue's errors are amended by errata or addenda in this issue. One omission, TUG's new telephone number, was beyond our control — the phone hadn't been installed until after the copy was delivered to the printer. Though it's listed elsewhere in this issue, here it is again: 401-751-7760. However, we should have gotten the ZIP code for the new address right; it's 02904. Please change it on the last line of page 5.

Several names and addresses of authors were omitted from the last issue. All have been included in this issue's address list.

The most egregious omission was that of Barry Smith's Macintosh site report. It contained two major announcements. The first was Addison-Wesley's withdrawal from the TEX software business, and Kellerman & Smith's assumption of the distribution of *Textures* (as the implementor of *Textures*, Barry was already handling maintenance). The second announcement was that a new version, 1.01, had been released, and that K&S were trying to let all registered users know it was available. Kellerman & Smith have now gone their separate ways. Dave will continue to handle the VAX/VMS work from his new company, Northlake Software, and will be the new VAX/VMS site coordinator; Barry, at Blue Sky Research, will deal with the Macintosh world and *Textures*. Our best wishes to them both.

In order to help keep future submissions to TUGboat from getting lost, a new mail drop has been set up on the Math Society's computer: TUGboat@Math.AMS.com on the Internet. Send your articles and your questions there, instead of directly to me. I'll be checking it regularly, and so will Alan,

but if either of us is out of town, someone else will be assigned to check it, acknowledge the receipt of messages and inform the senders how long it will be until someone is actually there to read them.

We keep hearing requests that items from TUGboat be made available on-line. A subdirectory <TeX.TUGboat> has been created at Score, where it will become part of the standard the TEX distribution, and it will gradually be populated with macros that have been the basis for articles in the Macros and LATEX columns, and with other selected items. As a start, the macros used to produce TUGboat are already there, along with a couple of sample articles. Our current plan is to start with the latest issue, and work backwards. But if you have a favorite macro from an earlier issue that you'd like to see moved higher on the list, please let us know. (You can use the new mailing address ...) The macro for trees, by David Eppstein (6#1, pp. 31 ff.) has already been requested. I will be getting in touch with the keepers of additional repositories on Bitnet (TEX-L, etc.) and elsewhere, to arrange for inclusion of these files in their collections.

Finally, I'd like to thank all the readers who have had kind words for TUGboat — that's what makes all of this worthwhile.

Software

New Version(s) of TEX and METAFONT

Barbara Beeton

Not long before the printer's deadline, I received a message from Don Knuth — yet another bug, one that affected both TEX and METAFONT. It's been fixed. We're now up to TEX 2.93 and METAFONT 1.5.

During 1987, twelve bugs were found in TEX and two in METAFONT; so far in 1988 the count is six bugs in TEX and two in METAFONT. Some of them have been pretty obscure (the finders constructed samples akin to the TRIP test to do their worst), but some of the bug fixes will solve problems that have been bothering users for a long time without their knowing quite what was wrong.

Changes since the end of last year appear as extracts from the files `TeX82.BUG` and `MF84.BUG`, in the supplement at the end of this issue.

Changes to TeX

These are the changes that precipitated each new version of TeX beginning with changes made in November 1987. The reward for being the first to find a new bug in TeX now stands at $81.92.

2.6 (November 1987) Added 10sp to width when shipping leaders, to improve the handling of rounding in device drivers.

2.7 (November 1987) Improved the rounding of negative-width characters.

2.8 (December 1987) Removed a loop that occurred when no hyphenation patterns have been loaded and hyphenation is attempted when a `\lccode` is 1.

2.9 (December 1987) Made the assignment of `\csnames` global, so that they don't disappear when the first definition occurs inside a group.

2.91 (April 1988) Fixed a bug that showed up when trying to process `\outer\def\a0{}\a\a`.

2.92 (May 1988) Fixed a problem with `\patterns`. Also fixed bad handling of file names generated with complex macros; in 2.91, typing `\input\romannumeral6` in response to the `**` prompt, and `\end` on the next line, would result in TeX reporting that it has written a transcript file called "viTEXPUT".

2.93 (June 1988) Fixed negative halving in memory allocation, which caused a problem just before running out of memory when *mem_min* is negative.

Changes to METAFONT

Here are the changes to METAFONT. The reward for being the first to find a new METAFONT bug is now $20.48.

1.4 (May 1988) A typo which suppressed detection of an error was fixed. The timing of *scan_declared_variable* was also fixed.

1.5 (June 1988) Comparable to the change for TeX 2.93.

Changes to PLAIN.TeX

The following definitions should be corrected in PLAIN.

```
\def\arrowvert{\delimiter"33C000 }
\def\Arrowvert{\delimiter"33D000 }
\def\bracevert{\delimiter"33E000 }
```

TeX implementors' early warning system

Since Knuth has included me in the list of people he informs whenever he makes any changes to TeX, METAFONT, *C&T* or the CM fonts, I have set up a mailing list of all the implementors and distributors I know about, so that changes can be communicated to them as quickly as possible. The details of all the changes mentioned above have been sent out to the list, and acknowledgements were received from most of the addressees, so TeX 2.93 should be generally available soon.

If you are an implementor or distributor of TeX software and believe you should be included on the list, send me your name and address (preferably a valid Internet address) and a short description of what you're doing that makes you eligible.

64-bit TeX

Bart Childs

Most of us have seen one of the little warnings, "`TeX capacity exceeded ...`" at one time or another. When it is memory that has been exceeded, it is probably most often due to a missing brace or similar error. But some macro packages, like Michael Wichura's P$_I$CTeX, Michael Spivak's *Tables to Die For*, and even LATeX, can encourage this error in legal uses.

While I was working on the port of Cray TeX and reviewing Don Knuth's tapes on *TeX: the Program*, it dawned on me that we can change TeX to use 64-bit words rather than 32-bit words on most systems. We generally use 128k memory as opposed to the former limit of 64k. When we do this, we have noticed an increase in speed of about 7% under AOS/VS.

Lily Barkovic-Mummert has installed these changes on several Mach systems at CMU, IBM PC-RT, SUN 3, and μVAX. These too are probably faster. We will be publishing the details later. If you are interested in obtaining these change files, please contact us.