TEX and TUG NEWS

for and by the TEX community

A Publication of the
TEX Users Group

Electronic version
Mission Statement

The \TeX Users Group (TUG) provides leadership:
1. to encourage and expand the use of \TeX, \METAFONT, and related systems
2. to ensure the integrity and portability of \TeX, \METAFONT, and related systems
3. to foster innovation in high-quality electronic document preparation

\TeX and TUG NEWS is a newsletter for \TeX and \LaTeX users alike: a forum for exchanging information, tips and suggestions; a regular means of communicating news items to one another; a place where information about \TeX and TUG can be quickly disseminated.

Throughout the newsletter “\TeX” is understood to mean \TeX, \LaTeX, \AMSTeX, and other related programs and macros. \TeX and TUG NEWS is produced with the standard \LaTeX distribution, and is to be as portable a document as possible.

The entire contents of this newsletter are being placed in the public domain. The source file of this issue will be placed in the \texttt{aston}, \texttt{shsu}, and \texttt{stuttgart} archives, as well as at the \texttt{heidelberg}, \texttt{labrea}, and \texttt{ymir} archives. Copying and reprinting are encouraged; however, an acknowledgement specifying \TeX and TUG NEWS as the source would be appreciated.

Submissions to \TeX and TUG NEWS should be short, the macros must work, and the files must run without special font or graphics requirements: this is to be a portable newsletter (the new font selection scheme has not yet been implemented). Correspondence may be sent via e-mail to \texttt{tug@math.ams.org} with the subject line \texttt{NEWSLETTER}. Regular mail should be addressed to the Publications Committee, c/o TUG Office at the address below.

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Editorial

This issue comes so quickly on the heels of the February one . . . now we can say we’re finally on target with our quarterly publication dates. Next issue will be out in early July. And that means I can now give you some deadlines for submission of material for future issues.

<table>
<thead>
<tr>
<th>July issue</th>
<th>June 1st</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. issue</td>
<td>Sept. 15th</td>
</tr>
<tr>
<td>Apr. issue</td>
<td>March 15th</td>
</tr>
</tbody>
</table>

A reminder: my editorship of \TeX{} and TUG NEWS will come to an end this year; potential candidates should contact me as soon as possible.

This issue we have a number of interesting items on offer, from reports on activities in Estonia and the Nordic countries, to an announcement about a contest! Yes — a contest! Something for pure fun. Go look at p. 28 for details.

And as hinted at in the previous issue, we now have two new members on the TTN team, one for an existing column, and one for a new column.

Jeremy Gibbons, a frequent contributor to several electronic lists, has agreed to take on “Hey — it works!”.

Jeremy is currently a lecturer in computer science at the University of Auckland, New Zealand. His research interests range from program specification and transformation to algorithm design. He has been an inverteate \TeX{} and METAfont hacker since 1988. Jeremy can be reached at jeremy@cs.auckland.ac.nz.

And Robert Becker, who has also started up a local user group at MIT, is going to produce a new column for TTN. “You rang . . . ?” will be aimed more at providing answers to questions, and writing about things which can make your \TeX{}-ing life easier.

Robert Becker is a secretary at the Department of Mathematics, M.I.T. where he’s been typesetting with \AMSTeX, \TeX{}, and \latex{} under DOS 5.0 and UNIX on a Sun Sparcstation or X-terminal since 1991. Along with his writing and computer consulting, he runs the local user group at M.I.T., and occasionally teaches \latex{} for TUG.

Contact them directly: submissions to Jeremy, queries to Robert. Because of an overloaded mailbox, Robert asks that correspondence be addressed to his snail address — see his column for the relevant information.
And something on the more serious side — we have board elections coming up this fall. First notice is contained in this issue (p. 23).

**Attention** all those who have plans to attend some of the TUG courses later this year. *Except for* “Book and Document Design”, all courses previously scheduled for Boston have been moved to Santa Barbara.

There have been a gratifying number of requests for my \TeX file to print up font tables (TTN 1.4), and for the two \LaTeX files supplied by Claudio Beccari (TTN 2.1). I also received some additional information from Nelson Beebe:

I enjoyed reading the issue of TTN v2n1 which arrived on Friday, but didn’t get read until last night. On p. 13, you comment on “Files to print up font tables”.

*Every* \TeX distribution should contain Don Knuth’s `testfont.tex` file that will do what this article wants to do.

Besides that handy file, there is the \LaTeX `testpage.tex` file that produces a page diagram that can be used for checking printer alignment.

And there is my `layout.tex` file that illustrates the \LaTeX style page dimension parameters; its 2-page output is shown in David Berger’s book on \LaTeX.

And Robert mentioned that he had found a file, `fontbl.tex`, in the em\TeX package, which appeared to also print up fonts in table form.

For those of you who are using the list of “Other \TeX User Groups” as a reference (pp. 27–28 of TTN 2.1), please note the following additions and corrections. The Czech user group information contained two typos: ‘Československé’ should read Československé and ‘uživalelů’ should read uživalelů. Another correction: the Dutch user group NTG has a general e-mail address: `ntg@nic.surfnet.nl`.

Christina Thiele
Editor, \TeX and TUG NEWS

**Did you know . . .?**

. . . that the Knuth Scholarships began in 1986? The first mention in *TUGboat* appeared in Vol. 7, no. 1, p. 7 (1986). The following people have won the scholarship:

1986: Jackie Damrau
1987: Marie McPartland-Conn and Doris Hsia
1988: Larry Sharlow
1989: Frank Mittelbach
1990: Linda Williams
1991: [ no winner ]
1992: Jenny Smith
Updates on the \LaTeX{}3 Project

Alan Hoenig
\LaTeX{}3 Liaison for TUG

Volunteer Work for the \LaTeX{}3 Project

The December 1992 \textit{TUGboat} (volume 13, no. 4; page 510 ff.) included a call for volunteers to work on the \LaTeX{}3 project. If you refer to that article, you will see that volunteers are needed at all levels of skill — it’s not just for \TeX{}perts!

With additional experience, it has become clear that additional tasks need to be undertaken, and we propose to publish additions to the master list here in \TeX{} and \textit{TUG NEWS}.

The procedure for volunteering is spelled out in detail in the original \textit{TUGboat} article. Basically, you need to get hold of the coordinator for the task below (or of any other task in the list). We hope to be hearing from you.

Research on the most commonly used \LaTeX{} styles

Even though \LaTeX{}3 will internally not be fully code-compatible with \LaTeX{} 2.09, it is highly desirable that a well-written \LaTeX{} 2.09-compatible document should be formatted with \LaTeX{}3 with little or no rewriting. To achieve this, the currently most popular \LaTeX{} macros will be rewritten for \LaTeX{}3. But which are the most popular \LaTeX{} macros?

A questionnaire has been pre-tested and completed. Plans are to distribute this to some 10 sites throughout the world, a fair number to each. This will, hopefully, come close to a real stratified sample survey.

Volunteers are needed to hand out the form to an unsuspecting group of \LaTeX{} users, punch the data (fairly easy — we only keep a frequency count), and mail the frequencies to Rolf Lindgren. He wants the filled-in forms as well, to be available to others who might want to do research on \LaTeX{} use.

\textbf{Time Estimate}: 1 hour to administer the form, 2–3 hours to process the completed forms, 1 hour to translate the form if necessary.

\textbf{Coordinator}: Rolf Lindgren (28 January 1993).
E-mail: rolf.lindgren@usit.uio.no.
DTP ‘Chamber of Horrors’

Thank you to all those who have sent me contributions: the collection has started but more are welcome. Arthur Reed of Silver Spring, Maryland, points out that in the summer of 1992, William Safire’s ‘On Language’ column in the New York Times Magazine had a piece on this very question. He also sent a reference to a book printed using \TeX{} which ‘contains many underfull vboxes, and the vertical glue between paragraphs, section headings and figures varies significantly’, producing what he thinks is a very unappealing book. I won’t cite chapter and verse until I’ve checked it out, but clearly we are not immune!

What has been very interesting has been seeing the things people trip up on most often, and one of the more obvious ones has been hyphenation. \TeX{} hyphenates pretty well if you are using common continuous English prose, and there are hyphenation patterns available for many languages now. Other DTP systems are not so well-provided, but the most obvious pitfall in non-\TeX{} systems seems to be not turning hyphenation on at all, even in ragged-right or ragged-centered setting.

The ‘solution’ offered by most systems to lines which do not justify happily without hyphenation is to expand the inter-letter spacing. This appalling contrivance is acceptable only in newspaper columns, which are narrow and set against the clock, and even there, they were only a result of the way that Linotype and Intertype machines did their justification. Nowadays there is no excuse whatsoever for this rubbish, but examples abound, and some users are even proud of their clever systems which add space between letters in this way.

An example I found the other week shows the opposite effect, of allowing the system to hyphenate in ragged-centered setting where it is not normally sensible:

```
Advance ticket purchase recommended as audience will be limited to 100 persons
```

Breaking the line after the word ‘recommended’ would have been the ideal, but my guess is that having told the system ‘centre-align this paragraph’, automated hyphenation was the default. The full file, for those who wish to inflict it on themselves, can be picked up as garden.tex from curia.ucc.ie in pub/typography.

The document was originally set in Gill Sans, but this version uses Computer Modern Sans in the interests of portability. Keep ’em rollin’.
Titles
Amongst some further suggestions for dropped initial caps (or raised ones, as well), Christina asked me what are the rules for breaking titles? This arises when a title (often done in bold or a larger face) runs over one line and has to be broken at a sensible place. Her example is a good one: ‘Does one do it right after a noun phrase, or between “little words”: eg in “Upper Canada and the War of 1812” is it after “Upper Canada” or between “and” and “the”? ’

My own preference is for the first approach, so that ‘little words’ go on at the start of the following line, but I don’t think there can easily be a hard and fast rule for something which is going to be a largely aesthetic judgment. In very large type, you might also have to take account of where the ascenders and descenders fall, as you might need to close the linespacing a little without them knocking into each other.

She also mentions flush-left (and I guess flush-right) titles and a rule about only having title lines run about $\frac{2}{3}$ of the way across a line before they’re broken. I’d be interested in the source for this, as it sounds like a useful rule of thumb and I’ve been unable to track it down.

Punctuation and Quotes
I wasn’t going to pursue this one, but Dale Gaumer (from netxk.UUCP [?]) wrote that he puts the period after the closing quotes when the whole sentence is in quotes, but to avoid criticism, has resorted to a subterfuge of sorts: using \texttt{vrlap"}. so that the two marks are one over the other. This surely needs some sort of prize for ingenuity! He adds, ‘some of my critics don’t even notice this. But it is a bother, and \TeX doesn’t follow with the proper end-of-sentence horizontal space’.

Long-s ligatures
Andrea de Leeuw van Weenen wrote from Leiden to say that using some specially made characters including these ligatures caused problems when the publisher wanted abbreviations expanded in italics for an Old Icelandic document (c. 1200) as this meant shifts from roman to italic up to eight times in a word!

One problem with ligatures for non-English work is the need to retain the effect of ligaturing when, for example, the following vowel requires an accent, as in fi. A pragmatic solution I came up with (but haven’t tried yet) is to doctor a .pk file with \texttt{pkedit}, make the f-ligatures into s-ligatures and then incorporate the glyphs into a virtual font.
New Publications

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Malcolm Clark. *A plain *\TeX* Primer.*
- “This primer introduces plain *\TeX*, and aims to help the reader get started. It explains why *\TeX* approaches its subject in the way it does, and provides the context into which it fits. Another thread is the emphasis placed on document structure. Stress is also laid on practical work. The book is aimed at scientists and researchers preparing their own books and papers, or technical typists used to the conventions and jargon of their field.” [adapted from the publisher’s description]

Stanley A. Sawyer and Steven Krantz. *A *\TeX* Primer for Scientists.*
- “This concise, straightforward text covers all basic topics of equation typesetting, and some advanced topics: how to automatically generate a table of contents, and indices; how to make text flow around a graphic; how to add more fonts; how to change fonts in math mode (for titles, etc.). In an appendix differences between *\TeX*, *\LaTeX* and *AMS*-*\TeX* are discussed.” [adapted from promotional material]

Hans Ibrus. *Väike Eesti *\TeX*iraamat. [The Small Estonia *\TeX*book].*
- Preface by Enn Saar. [Further description on p. 18.] Appendix A is a translation into Estonian of *First Grade *\TeX*, by Arthur Samuel.

- This is neither a tutorial nor a textbook on *METAFONT*. It is a reference tool, and consists mainly of listings with short descriptions, in particular of the basic *METAFONT* commands, the macros of cmbase, and the parameters used to define the CM fonts.

Latest issues of other *\TeX* newsletters


Greetings. I have just taken over the column “Hey — it works!” from Christina Thiele. This column is designed for little tricks — even ones that seem trivial or inelegant — that others may find useful. If you have any such items, send them in to me at the address above.

The first piece in this issue, from Navindra Gambhir, continues from Claudio Beccari’s note in the previous issue on aligning decimal points; it is an improvement in that you don’t need to manually add padding after the decimal place, nor (as with decalign.sty) do you need to specify the number of decimal places used.

My colleague Hans Guesgen’s piece shows how to insert \LaTeX\ material into a bibliography in a disciplined way.

The third piece highlights the fact that the column title could be taken in two ways. The intended meaning is one of practicality (“Hey, don’t knock it — it works!”), but it could also be taken as one of surprise (“Well, bless my cotton socks, it \textit{works}!”). Alan Jeffrey’s note on pattern matching falls squarely into the latter category.

But enough talk — on with the show!

Lining up decimal points

A method to line up the decimal points in a column of a numeric table that uses active \char`\?'s to produce blank spaces is explained on p. 241 of \textit{The \TeX\book}. The question whether there is a “nicer” way to do this was recently raised on \textit{Info-\TeX}. Hence, for example, one would like to be able to typeset the table

<table>
<thead>
<tr>
<th>Jan. 8</th>
<th>0.125</th>
<th>2.25</th>
<th>.0625</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb. 13</td>
<td>128.5 ± .1</td>
<td>&lt;.01</td>
<td></td>
</tr>
<tr>
<td>Mar. 23</td>
<td>16</td>
<td>256</td>
<td>.5</td>
</tr>
<tr>
<td>Apr. 29</td>
<td>.25</td>
<td>.0</td>
<td>32</td>
</tr>
</tbody>
</table>

by simply typing
$$\dpalign{\indent\hfil&\quad\span\dpaligntemplate\cr Jan.~8& 0.125& 2.25& .0625\cr Feb.~13& 128.5\pm.1& & <.01\cr Mar.~23& 16& 256& .5\cr Apr.~29& .25& .0& 32\cr}$$

The trick, which is based on an idea also suggested on p. 241 of *The TeXbook*, is to make the “.” behave locally like an alignment tab within \dpaligntemplate. To handle numbers that do not have a decimal point, & is also made to behave locally like two alignment tabs with an empty column in between. Some care is needed to get the timing right when changing the category codes.

\begin{verbatim}
\def\dpalign#1#2{% #1 is <box specification> #2 is <alignment material>
\halign#1{#2\crcr}}
\def\dpaligntemplate{\dpaligndefs
\hfil$##$\tabskip=0pt&$.##$\hfil}
{\catcode'.=\active \catcode'&=\active \catcode'|=4
 % | is temporary alignment tab
 \gdef\dpaligndefs\catcode'.=\active \chardef.'=\catcode'|=4
 % and & act normally
 \gdef\dpaligndefs\def\{\def\{\omit\hfil})
\end{verbatim}

The macro \dpalign should be used within a group, e.g., inside a \vbox, or within $$’s, as in the above example. Such grouping can also be made a part of the macro by adding it to the definitions of \dpalign and \dodpalign in the obvious places. Also note that \dpaligntemplate sets \tabskip to 0pt, so it has to be reset explicitly, if necessary, after \dpaligntemplate in the preamble.

### Headings in reference lists

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Since I want to use my BibTeX bibliographies also for reference lists in non-scientific papers like annual reports, resumes, etc., I am interested in incorporating headings and commenting text into a reference list. Of course, it is always possible to edit the resulting .bbl file to get the job done, but this is annoying if you want to produce such papers on a regular basis. So I looked for another way of adding interspersed headings to the reference list.

The trick I came up with might look awful, but it certainly works. I created an additional .bib file that contains all the headings I want to use in the reference.
list. The headings are defined as usual \LaTeX\ commands within \texttt{@misc} \TeX\ entries:

\begin{verbatim}
% file headings.bib
@misc{books, note = "\bibheading{Monographs}%"}
@misc{inbooks, note = "\bibheading{Papers in Books}%"}
@misc{injournals, note = "\bibheading{Journal Articles}%"}
\end{verbatim}

It is essential to have a \% as the last character in the \texttt{note} field to comment out the punctuation character produced by \TeX.\bibex\TEX.

After defining the set of potential headings, I wrote a \LaTeX\ style file that specifies what to do with them. Typesetting the reference list with labels wasn’t appropriate any more, since I didn’t want the headings ending up with labels. Thus, I redefined the \texttt{\thebibliography} command, replacing the enumerating list environment with a simple one, and I defined how the headings are to be typeset in the new environment:

\begin{verbatim}
\def\thebibliography#1{%
  \list{}{\leftmargin0em \itemsep0.5\baselineskip}\
  \def\newblock{\hskip .11em plus .33em minus .07em}%
  \clubpenalty4000\widowpenalty4000 \sfcode`\=1000\sloppy}
\def\bibheading#1{\subsection*{#1}}
\end{verbatim}

Now I can cite (via \texttt{\nocite}) the entries of my actual bibliography and the pseudo-bibliography containing the headings in the order they are supposed to appear in the bibliography. Whenever a pseudo-entry is cited, for example, by \texttt{\nocite{books}}, the contents of its \texttt{note} field are included in the \texttt{.bbl} file:

\begin{verbatim}
\begin{thebibliography}{1}
.. 
\bibitem{books}
\bibheading{Monographs}%.
.. 
\end{thebibliography}
\end{verbatim}

The following is an example of \LaTeX source for producing a reference list with headings.

\begin{verbatim}
\documentstyle[bibheadings]{article}
\begin{document}
\section*{Relevant Publications}
\end{document}
\end{verbatim}
Relevant Publications

Monographs


Journal Articles


howto pattern match in \TeX

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\TeX’s pattern matching ability is quite powerful, but is also quite infuriating. It allows you to pattern-match against an arbitrary string, but when it fails, it can do nothing but produce an error message. For example, if you say:

\begin{verbatim}
def\foo(#1,#2){\message{(#1 and #2)}}
\end{verbatim}
\foo(a,b) \foo(c) \par

Then you will get a message (a and b) but you will then get an error message telling you about a \texttt{Runaway argument}. It would be nice if you could use \TeX’s pattern-matching ability, but provide more than one pattern, and have \TeX use the latest definition that matches. This note describes such a command, so you can say:
\begin{verbatim}
\howto{oneof(#2)}{#2}
\howto{oneof()}{()}
\howto{oneof(#2,#3)}{#2 \lor \oneof(#3)}

$\oneof(a,b,c,d)$
\end{verbatim}

and get the result:

\[a \lor b \lor c \lor d\]

This definition says that any argument matching the pattern \((x, y)\) should produce \(x \lor \oneof(y)\), any argument matching the pattern \(()\) should produce nothing, and any argument matching the pattern \((x)\) should produce \(x\).

This is all done using \TeX{}'s pattern-matching ability (which explains the rather odd fact that the parameters have to be numbered starting at \#2, since a pattern may fail by having something before parameter \#2, which has to be matched by parameter \#1). If you say:

\begin{verbatim}
\howto{foo(pattern)}{expansion}
\end{verbatim}

then we look to see if \texttt{\textbackslash foo} is already defined, and if it is not, we define it to produce an error message. Then we increment the counter \texttt{\actioncount} to get \(n\) and define the command \texttt{\textbackslash \textbackslash action\textbackslash \#n} so that \texttt{\doaction\textbackslash \textbackslash action\textbackslash \#n(x)} expands out to \texttt{\textquote{expansion}} if \(x\) matches \texttt{pat}, and to the previous definition of \texttt{\textbackslash foo(x)} otherwise.

A wonderfully incomprehensible piece of programming, but hey — it works!

\begin{verbatim}
\def\xcs#1#2\{\expandafter#1\csname#2\endcsname\}
\newcount\actioncount
\def\howto#1(#2)#3{\%\n \xcs{\ifx{\expandafter\gobble\string#1}\relax \def#1{\erroraction#1}\fi}
 \advance\actioncount by 1\relax
 \expandafter\def\expandafter\action\expandafter{#1}{#3}{#2}\%
 \def\temp##1##2##3##4##5##6##7##8##9{\def\temp{(#2)}}%
 \edef\temp{\empty\empty\empty\empty\empty\empty\empty\empty\empty\empty}
 \edef#1{\noexpand\doaction\xcs\noexpand\{\action\the\actioncount\}\temp}}\%
\def\doaction#1\{\%
 \xcs{\def\action\the\actioncount\#1(#3)}{\applyto\{#1\}{#2}}\%
 \gobble\%
 \def\applyto#1#2#3\{\#3[#1]{\#2}\%
 \gobble\%
 \def\doaction\{\%
 \success\%
 \failure\%
 \erroraction\%
 \errmessage{I don't know how to \string\{#2\}}}\%
\end{verbatim}
Jones Index of \TeX\ Macros

The Index of \TeX\ Macros, compiled by David Jones, was first mentioned in TTN 1,2:16; a more detailed description has also appeared in TUGboat 13, no. 2, pp. 188–189. In mid-March, M.A.Carriba@sheffield.ac.uk posted a very nice summary of archive locations for this index to comp.text.tex, and it might be useful to reproduce that information here. One thing to note: not all archives have the latest version, dated 12 December 1992 (v. 1.06). Check that you are getting the revised one. The canonical version is always available from the theory site.

The originating site is:

\begin{verbatim}
theory.lcs.mit.edu pub/tex/TeX-index.zip
theory.lcs.mit.edu pub/tex/TeX-index
[18.52.0.92]
\end{verbatim}

Some other US sites are:

\begin{verbatim}
Niord.SHSU.edu [fileserv.tex-index]tex.index
Niord.SHSU.edu [listserv.tex-index]tex.index
ftp.math.utah.edu pub/tex/tex-index
ymir.claremont.edu [anonymous.tex.documentation]tex-index.txt
\end{verbatim}

European sites include:

\begin{verbatim}
archive.cs.ruu.nl TEX/DOC/TeX-index.Z
ftp.diku.dk pub/TeX/misc/TeX-Index.Z
ftp.uni-stuttgart.de /soft/tex/documentation/TeX-index
TeX.ac.uk [tex-archive.doc]tex-index.txt
TeX.ac.uk [tex-archive.doc]TeX-index.txt
\end{verbatim}

To retrieve it by mail, send a message containing only the line

\begin{verbatim}
send tex TeX-index
\end{verbatim}
to

archive-server@theory.lcs.mit.edu

Or
SENDME TEX-INDEX

to
FILESERV@SHSU.BITNET
or
FILESERV@SHSU.edu

SHSU will deliver this file in 8 parts.

TTN Index

Jackie Damrau
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It is time once again to begin working on the annual TTN index of this past year’s issues. The last index covered the past two years; however, we have heard no suggestions, complaints, or ailments from the TTN community on how successful this index has been.

I would like to solicit your response on improvements or additional topics that you would like to see in this index. The TTN editorial staff are planning at this time to leave the index cumulative, showing all issues; however, let us know if you think a yearly index would be more beneficial for your use.

Send your suggestions to me at the above address; use the subject line TTN Index Suggestions to make it easier for me to sort the messages.
You Rang . . . ?

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This being the first column, the Q&A section will be a little short. Future columns will be virtually all question-and-answer.

What is this column?
This column will attempt to satisfy two major needs. First, a hardware/software tips and tricks column for the general user, general being those who are trying to get their flavor of \TeX to do what they want and perhaps to ease their job. Second, it will give tips on how to install various versions of \TeX and their support packages (DVIPS under DOS, for example).

How will it do this?
Write to me at the above address via letter, postcard, special delivery, what-have-you (but not C.O.D.!). Complain, voice opinions, ask questions. I definitely want to hear from you. Tell me what you’re trying to do, and, space and interest providing, a solution will be published.

It cannot be emphasized enough how important your input is to TUG. I’m looking forward to seeing your questions/comments!

Q & A: How do I print envelopes?
Laser printers can print envelopes. For those doing mass mailings that need to look really good (no labels on the envelopes!) here are a {\LaTeX} \TeX and \TeX solutions. Feel free to improve on them.

The problem is that, if you own a laser printer, envelopes can’t fit through like regular paper. Instead, you have to turn the envelope sideways, in what’s called “landscape” orientation (versus “portrait”). We can set up a page of the appropriate size in {\LaTeX}, but how to print that image? If we do a normal print, it will come out “portrait”. The solution is to turn the .\dvifile sideways as well!
1. Set up the page. Use the code below as a template.

2. Typeset it.

3. Rotate the .dvi file sideways. However it is you print, look in the documentation for an option that rotates your .dvi file to “landscape” orientation or 90°. Examples:

   (a) emTeX: the printing program has an option /tr1 (for transformation). For HP LaserJets, use prthplj /tr1 filename.

   (b) For PostScript printers: DVIPS has an option -t landscape. In this case, use dvips -t landscape filename. Your .dvi to PostScript program may be different.

4. Print the file!

   \documentstyle[11pt]{article}
\pagestyle{empty}
\setlength{\textwidth}{8.8215in} % Horizontal envelope printing area
\setlength{\textheight}{8.5in} % This sets up a landscape envelope
\setlength{\topmargin}{1.5in} % This leaves a 2.5" margin
\setlength{\headheight}{0in} % No header
\setlength{\headsep}{0in} % No separation since no header
\setlength{\oddsidemargin}{-0.625in} % Leave .375" left margin
\setlength{\parindent}{0in} % Ditto
\begin{document}
Robert N. Becker\ % Return address area
Department of Mathematics, 2--332\ % No box needed because it’s
For \TeX\ Users

\nopagenumbers % Envelopes don't have numbers
\voffset=-1in % This leaves a 0" top margin
\hoffset=-0.625in % This leaves a 0.375" left margin
\vsize=6.5in % This sets up a landscape envelope
\hsize=8.8215in % Horizontal envelope printing area
\topskip=0in % This leaves a 1" margin
\parindent=0in % No paragraph indent for better control
\parskip=0in % No paragraph skip for better control
\topinsert % Skip 2.6875 inches at
  \vskip2.6875in % the top of the document
\endinsert
Robert N. Becker\par % Return address
Department of Mathematics, 2--332\par
M.I.T.\par
77 Massachusetts Avenue\par
Cambridge, MA--02139--4307
\vskip1.25in % Vertical distance to addressee box
\strut\hskip4in % Horizontal distance to addressee box
% from the left margin
\vbox{
  \hsize=4in
    Robert N. Becker\par
    Department of Mathematics, 2--332\par
    M.I.T.\par
    77 Massachusetts Avenue\par
    Cambridge, MA--02139--4307}
\bye
News from Around . . .

\TeX\ waves from Estonia

Kauko Saarinen  
University of Jyväskylä, Finland  
saarinen@jyu.fi

At the beginning of 1992 I had the great fortune of staying at the University of Tartu, in Estonia, for four weeks. The main purpose of my visit was to spread \TeX-related information. I gave two lectures on \TeX, and installed the em\TeX package on a couple of PCs, as a pilot project.

Before my trip to Estonia I was not clearly aware of the current state of affairs with \TeX there. At the University of Tartu \TeX didn’t seem to be so popular. However, I heard that someone in Tõravere has been working with \TeX. Tõravere is located some 20 km from Tartu and I was helped in finding my way there, where I had a meeting with Enn Saar, who is working at the Astronomical Observatory of Tõravere. I met Enn and he told me about his \TeX affairs; I quickly noticed that he is a professional user of \TeX.

Enn seemed to be a real gentleman and we had a vivid discussion on \TeX and many other topics. During a walk around the large observatory, he showed me the huge mirror telescope that is one of the biggest in Eastern Europe.

The Estonian diacritic characters

Like most European languages, the Estonian alphabet contains a few letters with diacritics. The extra letters are lower- and uppercase ā, ő, ŏ, ü, š, ž. The last two of these are used only with words borrowed from other languages. The first step to “estonianize” \TeX is to make it easy to input these local Estonian characters.

Language-specific hyphenation problems

Enn has created Estonian hyphenation patterns based on a large dictionary of 125 000 words. According to him, these patterns work well for Estonian. He has also created virtual fonts in order to output the Estonian characters correctly and to make Estonian hyphenation easy.

Estonian hyphenation is simple in principle if we look at single words. However, this is not the whole truth. In Estonian, compound words are frequently used. In these cases the general hyphenation rules may sometimes fail. The same is true in many other languages as well; for example, in Finnish, my mother tongue.

The \TeX hyphenation command is not so useful here because in Estonian, suffix cases are frequently used, and there are 15 different cases corresponding to prepositions of English. Furthermore, you have singular and plural cases,
too. In Estonian, and especially in Finnish, the \TeX{} hyphenation command would be much more useful if you had the possibility of using wild characters. For example, \texttt{\hyphenation{ulos-ajo*}} could accept all possible suffix cases replacing ‘*’. I know that \TeX{} is frozen but nothing prevents me from dreaming of better hyphenation control! I believe that there are many \TeX{} users who would be satisfied with this feature. In some languages there may be prefixes that would be easier to handle in the same way, I think.

In Finnish we have the same kind of suffix cases as in Estonian, but we also have additional possessive suffix cases. All the general suffix cases are easily handled using the pattern command of \TeX{}, but there often exist problems with compound words. The real problem is that there is an unpredictable number of compound words in practise. Finally, a very awkward method is needed if you wish to have a good automatic hyphenation of Finnish. You must have a system that recognizes sub-word parts in compound words.

\TeX{} installations in Estonia

The freely available em\TeX{} package by Eberhard Mattes is an invaluable tool for \TeX{} users in Estonia. The em\TeX{} package runs practically on any PC with a hard disk. The package also contains drivers for many dot matrix printers; these are economically priced printers and common in Estonia, but you seldom see laser printers yet. Eberhard Mattes has also given permission to distribute a subset of em\TeX{} in Estonia. Many thanks go to him.

According to Enn, many other packages have been tried as well, such as PCTeX, MLTeX and SB\TeX{}. \TeX{} runs on some UNIX machines too, and on a number of Amigas.

\TeX{} publications and other activity

\TeX{} activity in Estonia has greatly increased during the past year (1992). A book, \textit{Väike Eesti \TeX{}iraamat} or \textit{The Small Estonian \TeX{}book}, written by Hans Ibrus was published by Komput.

The preface of the book, written by Enn Saar, contains eight pages of useful information. A key note in the Preface struck my mind. Enn says that some of the best programs are free and \TeX{} is a good example of them. The same is true in human life. The best things in life can’t be bought by money.

The book contains 144 pages, including appendices. The first appendix is a translation of Arthur L. Samuel’s \textit{First Grade \TeX{}: A Beginner’s \TeX{} Manual}, by permission of TUG.

Another publication is a brochure written by Professor Ülo Kaasik at the University of Tartu. In the autumn of 1992, he also gave a course on \TeX{}.

The Estonian \TeX{} User Group was founded in 1992 as well.

I feel that these two publications and the establishment of the Estonian \TeX{} Users Group form a good basis for further progress of \TeX{} in Estonia.
Personal experiences

During the happy four weeks in Tartu I had a chance to study more closely the Estonian style of living and make friends with new people. I have a principle to try to speak at least some words of the local language in any foreign country, whenever possible. In Estonia this is easier than in many other countries: the Estonian and Finnish languages are close relatives of one other. They have a common origin and the grammar is much the same. There are also plenty of common words, although many of them have different meanings. This makes studying Estonian very interesting for a Finn. The evaluation here is only mine and a professional linguistic might disagree but it does not bother me at all.

The Estonian people were very kind to me everywhere. Thanks to all of them and special thanks to Jüri Tapfer, manager of the Computing Centre at the University of Tartu, who invited me and helped me in all possible ways.

I later wrote an article about these experiences of my TEX mission to Estonia in our local newsletter. However, that article would be too long to be included here; furthermore, it was written — in Finnish.

References


NTG happenings  

Kees van der Laan  
President, NTG

We have several publications underway this spring. One is David Salomon’s courseware, which has grown into a book of some 500 pages. It will be redistributed as a MAPS special (second printing). Apart from that we’ll bring out a second booklet — another MAPS special — which will contain our promotional material, to demonstrate with some examples what can be done with TEX and METAFONT, next to what TEX (and METAFONT) is all about, and the ‘off-the-shelf’ public domain set (small version and complete version). Both will be out in May, in addition to our well-filled regular issue, again 150 pages or so.

The NTG’s 5th anniversary, its “Lustrum”, will be held on June 10th of this year. It is actually the 11th NTG meeting; there are usually two per year. The theme will be “From Font to Book”, and it will be held at the Royal Dutch Meteorological Institute, in De Bilt.

In Memoriam: Huub Mulders

Recently, one of the founding members of the NTG passed away. Huub Mulders was a quiet and knowledgeable person, active in the TEX community, in addition to his other work at the Computing Centre of the University of Tilburg. We will
remember him as a silent force, always there when needed. Huub Mulders was a
kind person. We hope his family will find a way to get over this sorrow.

La Lettre GUTenberg

Christina Thiele
Editor, TTN

As announced in the last issue of TTN, the new GUTenberg newsletter has now
arrived on the scene; it is expected that the issues will appear every two months.
The first issue, no. 0, is a handsome 16-page A4 publication, produced with
\LaTeX\, using a font called Rotis (courtesy of Yannis Haralambous), and de-
gined by Éric Picheral and Philippe Louarn. The editors hope that each issue
will in fact be produced in a different font. Included in its various sections are an
outline history of GUTenberg, the main changes in the new \texttt{french.sty} v3.10,
and a column ingeniously called “Niouniouses”, which phonetically comes out
as “Newnews” — selected items of interest culled from various electronic news-
groups. There are also 3.5 pages devoted to publications about \TeX\ and/or
produced with \TeX. An interesting addition here is a list of bookstores known
to stock publications on \TeX, typesetting, and typography.

There is also kind mention of some TUG issues: the latest \texttt{TUGboat} is de-
scribed, as is TTN, and my own new post as president. We wish the editorial
team well with the new \textit{Lettre}.

Also to note — there is a new address for GUTenberg: (the place you send
your subscription/membership queries to):

\begin{verbatim}
Association GUTenberg
P.B. 10
F-93220 GAGNY cedex
gut@irisa.fr
Tél: (+33 1) 44 27 71 25
\end{verbatim}
Reports on Meetings

6th Annual Nordic \TeX Users Group Meeting
23 November 1992

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The 6th Annual Nordic \TeX Users Group Meeting was held on 23 November, 1992, in Copenhagen, Denmark and hosted by Peter Busk Laursen, UNI-C. Elections were held and the 91/92 Nordic committee and chair were voted in for another year; an additional member from Denmark, Frank Jensen, Aalborg University, was also welcomed to the board. The 1993 annual meeting is scheduled for November and will be hosted by Martti Nikunen, Department of Mathematics, Helsinki University, Finland.

From activities during 1992 it was reported that Kauko Saarinen, Finland, successfully had been able to support the start of an Estonian user group and will keep in touch with Enn Saar, the chair of the group. Furthermore, KTH, Stockholm, could sponsor Yannis Haralambous who was invited by the University of Vilnius, Lithuania, to help to install a version of \TeX, adapted to the local language.

Meeting programme

The programme for the 1992 meeting was organized under six major headings: Installations, \LaTeX extensions, Applications, Future, Macros, and Organization.

Installations

The Installations session featured three talks. Kresten Krabb Thorup, Aalborg University Centre, introduced an Emacs-based integrated environment for writing \LaTeX documents in “AUCT\TeX — A front end for \LaTeX” (published as “GNU Emacs as a Front End to \LaTeX,” in TUGboat 13, no. 3, pp. 304–307).

Next, Ole Carsten Pedersen, UNI-C Copenhagen, presented the concept and design objectives of “A distributed UNIX-based \TeX installation” — an online distribution of ready-to-run public domain UNIX software. This service for workstations was introduced by UNI-C in the autumn of 1992.

Finally, Sven Spanne, Lund University, gave an overview of the use of em\TeX and auxiliary programs at the Departments of Mathematics and Mathematical...
Statistics at Lund University and the Lund Institute of Technology: “emTEX — a public domain \TeX{} implementation for IBM-compatibles”. The modifications necessary in order to use it for writing Swedish, especially regarding input of the national characters and hyphenation, was also mentioned.

\section*{\LaTeX{} extensions}

Frank Jensen, Aalborg University Centre, provided an introduction to “The New Font Selection Scheme (NFSS)” and discussed the \LaTeX{} interface to NFSS for both text and math fonts. He also presented some styles based on NFSS and outlined some of the limitations of NFSS and some ways of overcoming them.

The problems specific to using (\LaTeX{}) with the Nordic languages — national letters, hyphenation, diacritical marks, national paper formats and the hard-wired texts in \LaTeX{} — were dealt with by Peter Busk Laursen, UNI-C Copenhagen, in “Towards a Nordic \TeX{}”. He proposed a solution to these problems based on standards: a European \TeX{} font (Cork encoding), NFSS for the font selection, and Babel style files for hyphenation, paper formats and hard-wired texts. The contents of a standard ‘Nordic\TeX{}’ distribution on one or more Nordic servers were also outlined.

\section*{Applications}

The only talk in the Applications session was “A document archive controller for Sun Sparc/X11 and Windows 3.X — based on database management, hypertext, \LaTeX{} and SGML”, given by Hasse Haitto, NADA, Stockholm. The Document Archive Controller (Darc) system supports the creation, re-use, and dissemination of documents through document bases. The multi-user system combines approaches from database management and hypertext systems in a cooperative, network-based, working environment. Darc is implemented in an object-oriented language (C++) for two platforms: Sun Sparc/X11 and PC/MS Windows 3.X. The main components of the system are: a database manager, a translator interface, a hypertext-capable presentation tool, and a virtual filing mechanism.

\section*{Future}

This year’s invited talk was by Chris Rowley, Open University, Milton Keynes, on “The \LaTeX{} 3 Project”.

\section*{Macros}

The Nordic \TeX{} Users Group — Denmark, Finland, Iceland, Norway, and Sweden — covers a huge geographical area. Much of the information exchange therefore takes place over computer networks. Jan Michael Rynning, KTH, Stockholm,
gave an overview of the possibilities in “Finding macros on the networks and getting help using them”.

One such generally available macro package was presented by Kristoffer Høgsbro Rose, DIKU, Copenhagen, in “XY-pic — typesetting graphs and diagrams with TeX”. This macro package was developed to provide an environment in TeX for typesetting a wide range of graphs and diagrams. Examples of simple and complex diagrams were presented and explained, as well as how XY-pic is installed.

The e-mail address of the Nordic TeX Users Group is nordictex@kth.se.

**TUG ’93 News Update**

Sebastian Rahtz
TUG ’93 Committee

The committee of the TUG ’93 conference would like to bring you up to date with plans for this summer’s big TeX jamboree at Aston. Booking forms were mailed to all TUG members in mid-March, and are now being sent to members of all other user groups. Readers with Internet access who have not received a form can fetch it using ftp from directory pub/tug93 on ftp.tex.ac.uk.

The five magnificent days of the TeX conference will include:

- A first day introducing TeX to newcomers; bring your partner and get them to learn your obsession!
- A day on typography and design, in conjunction with the DIDOT project.
- A detailed workshop on \LaTeX3.
- A session on language and font issues.
- A session on TeX standards and the future developments of TeX and related software.
- Discussions of TeX archives.
- A ‘problem-solving’ panel.
- Birds-of-a-feather groups.

Invited speakers include Christina Thiele, president of TUG, and Joachim Lammarsch, president of DANTE; and Boguslav Jackowski, winner of the ‘best paper’ award at the recent conference in Prague.

Some highlights from the accepted papers by speakers from around the world are:

- The Khmer Script tamed by the Lion (of TeX): Yannis Haralambous
- Virtual Fonts in a Production Environment: Michael Doob & Craig Platt
• Readability of Math Typesetting: David Murphy
• Russian \TeX\ Issues; Looking About and Outlook: Irina A Makhovaya
• Beginner’s Guide to DSSSL: Martin Bryan
• A PostScript Font Installer Written in \TeX\: Alan Jeffrey
• A versatile \TeX\ Device Driver: Minato Kawaguti
• Typesetting Catalan Texts with \TeX\: Gabriel Valiente Feruglio
• Bibliography Prettyprinting and Syntax Checking: Nelson Beebe
• Syntactic Sugar: Kees van der Laan

And we remind you that there is a full week of varied \TeX\ courses both before and after the conference proper, of which full details can be found on the booking form.

Socially, we can promise delegates that there will be no dull moments at TUG’93, with

• A half-day trip to Shakespeare country, ending with a performance of *King Lear* by the Royal Shakespeare Company
• Evening trips to visit a Chocolate Experience or take part in a bowling tournament
• A \TeX\-related competition with prizes
• Receptions and banquets
• The \TeX\ Users Group business meeting

Do not forget, booking forms returned by **May 15th** can save £15 ($22.00), as well as guaranteeing a place on the trip to Stratford-upon-Avon.

The first draft programme, with names and and titles of all speakers, will be issued by the end of April, and will be circulated widely on networks and by electronic mail.

**Courses at TUG’93**

Courses will include (15)\TeX\ for PC and Mac users; macros, and output routines; style files; \METAFONT logos, and fonts; book design; using non-CM fonts; and \TeX\ and PostScript. Details on pp. 6–7 of the booking form.
1993 TUG Board Election — First Announcement

The terms of office of the TUG Directors elected in 1991 will come to an end on December 31 of this year. All 15 Board positions will be open for election.

The election schedule has yet to be approved. However, experience gained from the 1991 election — the first in which the entire Board was elected through a mail ballot by the full membership — is being applied to ensure that avoidable problems will not recur.

Nomination will once again be by petition. Candidates and others signing petitions in their behalf must be 1993 members of TUG. Petition forms and the schedule will be published in the next issue of TTN; they will also be available at the annual meeting at Aston, or can be obtained from the TUG office after June 1.

Along with a petition form, each candidate will be asked to supply a passport-size photograph, a short biography, and a statement of intent to be included with the ballot; the biography and statement of intent together may not exceed 400 words.

It is not too early to ask yourself what contribution you could make to TUG as a member of the Board, or if you know other TUG members who would be good representatives of the \TeX{} community. TUG has undergone a number of changes in the past few years, and continues to evolve. The continued support of active members plays an important role in guiding this evolution.

Barbara Beeton
for the Elections Committee

Next Board Meeting

24–25 July, at TUG ‘93
Aston University, Birmingham, England
| Course                                | Location 1          | Date 1          | Location 2          | Date 2          |
|--------------------------------------|---------------------|----------------|---------------------|----------------|----------------|
| **Beginning/Intermediate TeX**        | San Diego           | June 14–18     | Ottawa              | August 23–27    |
|                                      | Santa Barbara**     | Oct. 18–22     | Santa Barbara**     | Oct. 25–29     |
| **Modifying LATEX Style Files**      | San Diego           | June 7–11      | San Diego           | June 21–25     |
|                                      | Santa Barbara**     |                |                     | Nov. 1–5       |
| **TeX for Publishers**               | New York City       | June 9         | Santa Barbara**     | Nov. 8–9       |
|                                      | Washington, DC      |                |                     | Nov. 12        |
| **Book and Document Design with TeX**| Boston              | Sept. 23–24    | New York            | Nov. 10        |

*Lab classes — computers will be provided for all students.

**NOTE:** These classes, previously scheduled for Boston, have been moved to Santa Barbara.

- TUG courses are small, with 8–15 students in most classes.
- Dates and locations subject to change — contact the TeX Users Group at 805-963-1338 or send a fax to 805-963-8358.

**On-Site Courses in TeX and LATEX from TeX Users Group**

- Courses in TeX, LATEX, SGML and TeX, PostScript, or TeX for Publishers tailored to the needs of your group.
- Courses at every level from beginning to advanced.
- Five full days of instruction at your site.
- One-week course fee includes all instructor fees and expenses plus textbooks and other materials for up to 15 students.
## Upcoming Events

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<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
<th>Location</th>
<th>Contact Person</th>
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<tbody>
<tr>
<td>11 May</td>
<td><strong>GUTenberg and INALCO</strong> (Institut National des Langues et Civilisations Orientales): “TEX and Arabic script”. 2 rue de Lille, Paris 7e.</td>
<td>Yannis Haralambous <a href="mailto:yannis@gat.citilille.fr">yannis@gat.citilille.fr</a></td>
<td></td>
</tr>
<tr>
<td>25 May</td>
<td><strong>UKTUG</strong>: Visit to John Wiley and Sons Ltd., Chichester, England</td>
<td>David Murphy <a href="mailto:d.v.murphy@computer-science.birmingham.ac.uk">d.v.murphy@computer-science.birmingham.ac.uk</a></td>
<td></td>
</tr>
<tr>
<td>10 June</td>
<td><strong>NTG</strong>: 11th Annual Meeting: “From Font to Book”. Royal Dutch Meteorological Inst., De Bilt.</td>
<td>Theo Jurriens <a href="mailto:taj@astro.rug.nl">taj@astro.rug.nl</a></td>
<td></td>
</tr>
<tr>
<td>26–30 July</td>
<td><strong>TUG’93</strong>: “World Wide Window on TeX” 14th Annual Meeting, Aston University, Birmingham, UK.</td>
<td>Chris Rowley, <a href="mailto:ca_rowley@vax.acs.open.ac.uk">ca_rowley@vax.acs.open.ac.uk</a> Malcolm Clark <a href="mailto:malcolm@wmin.ac.uk">malcolm@wmin.ac.uk</a></td>
<td></td>
</tr>
</tbody>
</table>

**Note**: Also consult the “Calendar” in the previous issue of TUGboat for more dates and details.
The A-in-L\TeX Contest

Most L\TeX users have experienced some disappointment when trying to get the L\TeX logo into their documents at smaller-than-normal sizes, or with a font face different from roman.

Currently there are several macros that let you set the L\TeX logo. Some print the ‘A’ as a small-cap ‘a’ from a caps-and-small-caps font, while others use the \texttt{\scriptsize} capital ‘A’ of the current math family. Some work fine only with 10pt roman and larger; some work fine with several font faces; and some are robust, while others are fragile.

All current TUG members are invited to participate in “The A-in-L\TeX Contest”. Participants may enter any of the following contest categories:

- **Basic Solution**: The macro(s) should be simple, easy-to-understand, not necessarily robust, although robustness is a favorable feature.

- **Elegant and Sophisticated Solution**: The macro(s) should exhibit good coding manners, and guarantee complete robustness and reliability.

- **Guru Solution**: The macro(s) can resort to the weirdest and most arcane internal \TeX commands and need not be understandable except by real gurus.

All solutions should be plain-\TeX compatible; it must be specified if the New Font Selection Scheme is required. Additional requirements are that the solution should also work with any other form of (L)\TeX that makes use of the extended 256-glyph fonts.

The contest entries must be submitted electronically with the subject line \texttt{LaTeXcontest} to the contest judges shown below:

**North America**: Jackie Damrau \texttt{damrau@sscvx1.ssc.gov}

**Elsewhere**: Claudio Beccari \texttt{beccari@polito.it}

Submissions should be in the form of a complete L\TeX source file with the definition for the new logo located in the preamble and accompanied by detailed comments.

**Submission deadline: June 15, 1993**

The contest winners will be announced and prizes awarded during the \TeX Users Group Annual Meeting, to be held in July at Aston University, Birmingham, UK.

Judges for the contest are: Claudio Beccari, Jackie Damrau, Michael Downes, and Peter Flynn.
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*Volume 2, No. 2, 1993*
Aston University in Birmingham (United Kingdom) will be the venue for the 1993 TUG conference. The world-wide aspects of \TeX, \LaTeX{} and METAFONT are underlined by holding the conference at one of the main centres of the electronic web outside of North America, whilst windowing systems in various forms allow us to exploit more visually oriented methods of employing the \TeX{} tools.

The Aston University campus is in central Birmingham, which has excellent travel connections. Birmingham is situated very conveniently for access to all parts of England, especially the Midlands areas including Stratford and Oxford, as well as much of Wales. Social events will include dinners, receptions, and a mystery trip to an unexpected face of Birmingham. Participants will be given details of local events and sightseeing suggestions, including a guide to the culinary treats offered by Birmingham’s multi-ethnic society.

The conference will feature the normal paper presentations, whilst workshops, poster displays, courses, panels and ‘birds of a feather’ sessions will also form integral components. There will be a selection of \TeX{} Users Group courses organised in conjunction with the meeting, which will take place during the week preceding and the week following the conference proper.

Requests for further information (full details of costs, accommodation options, conference registration forms, etc.), as well as requests for space for demonstrations and displays, should all be sent to the following address, as should completed forms and any other written correspondence:

Peter Abbott  
Information Services  
Aston University  
Aston Triangle  
Birmingham B4 7ET  
United Kingdom  

phone: +44 21 359 5492  
fax: +44 21 359 6158

TUG93-Enquiries@Vax.Rhbnc.Ac.Uk

Full computer facilities, including electronic mail and network connections, will be available to participants. The rich holdings of the UK \TeX{} Archive will, of course, be easily accessible.

**Important details inside:** Read more about TUG ’93 in this issue (p. 23–24).