Site Reports

UKTEX and the Aston Archive

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Towards the end of 1988 it became obvious that the demands on UKTEX and the Aston archive were still increasing, threatening a major flood. As a result of interest from several parties at Nottingham (the first UKTUG meeting), the idea of a group effort to maintain the archive germinated.

The number of contributions continues to grow and unfortunately there is an element of duplication and 'duff' material in the archive. Some contributions have passed through many gateways and gateway table translations, or even encoding and unencoding routines. As yet there is no consistent format, and items are stored in a variety of forms including SHAR, ARC etc.

Magnetic tapes arrive regularly at Aston, and numerous requests have been received for material on floppy discs. Currently I support three major tape distributions:

- a copy of the Washington tape,
- a VMS backup of the archive at 6250bpi (2 reels),
- a VMS backup of our working set of TEX/LATEX with PSPRINT at 3.0 (either 1600bpi or 6250bpi).

I have also recently been asked if I can supply material on cartridge tapes (for SUNs). In addition, Adrian Clark of the University of Essex has for some time been supplying magnetic tapes for VMS sites.

At the Nottingham meeting we identified one major 'hole' in these facilities. Commercial users (in the main) are unable to take UKTEX or access the archive unless a local JANET site is willing to host them. I am currently looking at ways to provide a Bulletin Board Service which will list (amongst other information) details of providers and 'wants'. At the same time, mailboxes will probably be made available.

The idea of group maintenance of the archive resulted in a meeting being held in London in December 1988 at which the following — agreed — were persuaded — succumbed:

Adrian Clark	University of Essex
Malcolm Clark	Imperial College
Charles Curran	Oxford University
David Osborne	University of Nottingham
Sebastian Rahtz	Southampton University
Philip Taylor	Royal Holloway and Bedford New College (RHBNC)

plus myself. Each brings different talents to the group, and it is hoped that the first phase will have been completed as you are reading this *(it is impossible writing on 4th January 1989 to assume that no changes will have taken place in our plans).*

Each member of the group has been allocated one or more of the subdirectories of **PUBLIC**. A tree structure will be created using pointers so that there is only one 'real' copy of a file (for example `latex.tex`) but when looking for the files required for any particular implementation then all files needed will be included.

Directory and filenames will all be standardised on 8 characters (max) with 3 suffix characters. This will satisfy most systems including MS DOS. There will be a standard file in each directory called `00readme.txt` which explains the purpose and contents of that directory, and, where appropriate, `00files.txt` and/or `00map.txt` files will also be provided. The `00files.txt` file provides details on each individual file, while `00map.txt` can be used to generate a filename mapping 'script' on systems which do not enforce VMS's file-naming rules (e.g., mixed case filenames under UNIX).

We shall provide 'kit' files which detail all files needed for a particular installation e.g. `vms.kit` or `cms.kit` or `msdos.kit`. It may be necessary to provide subkits especially for `unix.kit`. These kits will also be used to create the magnetic media distributed from Aston on demand.

We agreed at the meeting (please note, however, that it is still subject to change) to start with the following top-level structure for the archive:

```
tex, metafont, latex (subdir for slitex),
amstex, digests (texhax uktex texmag),
bibtex, utils, fonts etc, drivers, docs,
langs, tools (for use by the 'group' not
the general public)
```

We shall announce these revised arrangements in UKTEX, but will ensure that mail and NIFTP access to the present structure is unaffected whilst work progresses, and we may even provide a short overlap period.

Longer term plans include the distribution of kits on relevant media and the BBS described above.

Aston University has a policy of 'customer care' and I am working on providing the help file for the mail server in as many languages as necessary. Most Europeans speak excellent English, but I consider a user-friendly interface as a major asset. I

already have translators for Danish, Italian, Spanish, Swedish and other languages.

My thanks are due to the many providers of material, in particular Michael DeCorte from Clarkson, Jon Radel (DECUS tapes) and many others too numerous to name. I must however mention the other members of the group who give so freely of their time and expertise. Without them the archive could fossilise and maybe even die.

Data General site report

Bart Childs

The distribution continues to be stable. We have improved the robustness of the previewer for alphanumeric terminals and are in the process of adding Stephan von Bechtolsheim's PostScript driver.

I hope the note on "Portable Graphics Inclusion" that appears elsewhere is seriously considered by all. I feel that it does offer a reasonable plan for portable inclusion of graphics and merging of `dvi` files.

UnixTEX Site Report

Pierre A. MacKay

TEX and METAFONT came into the New Year in updated versions. TEX is now supplied as version 2.95 and METAFONT as version 1.7. There is also a new version (2.9) of `tangle`. None of these changes need worry you very much, since the basic functionality of the programs is more or less unaltered. The change to `tangle` allows a reference to numeric macros before they are defined, which is a bit more permissive than the old version, and the other changes have to do with the behavior of the programs when they terminate abnormally. The changes to TEX and METAFONT had already been made in versions 2.94 and 1.6 respectively, but certain features of those versions interacted badly with some operating systems. One useful Unix feature is gone from the new version (unless we sneak it back in through a change file); you can no longer exit with a `^D` key-in.

Chris Torek looked over my version of a Bourne shell script for running TEX, LATEX, and SliTEX, and sent a vastly improved version which runs as follows:

```
case "$0" in
 */tex|tex) me=tex; fmt=plain;;
 */latex|latex) me=latex; fmt=lplain;;
 */slitex|slitex) me=slitex; fmt=splain;;
 *) echo "don't know how to be $0" \
    1>&2; exit 1;;
esac
# verify 1 or 2 arguments
case $# in
 1|2) ;;
 *) echo "usage: $me foo[.tex [my[.fmt]]" \
    1>&2; exit 1;;
esac
virtex "&"${2-$fmt} ${1+"$1"}
```

There are no major changes in `web2c` which will probably be at about version 2.26 by the time this report is printed. As each new variety of Unix operating system works up to a successful compilation, small improvements emerge which make the system yet more general. The list of successful machines is by now too large to maintain accurately. In December, I had the opportunity of trying out a compilation on a NeXT system. As might be expected from what is essentially a BSD4.3 kernel, compilation was a complete success, using a recent version of the GNU gcc compiler. The loader had trouble with the `-s` option but that is a known bug and will soon be fixed. We intend to provide copies of the distribution on 256Kbyte laser disks in the very near future. Any help with previewers and METAFONT display routines will be very much appreciated.

There is even more interesting news about fonts. Several years ago, through the courtesy of the American Mathematical Society, it became possible to offer compiled versions of the Euler fonts (fraktur, script, etc.) which were developed by Hermann Zapf, with the support of the AMS. These compilations were of mixed quality, because some defects still remained in the METAFONT programs, and some styles would not compile at all in the smaller design-sizes. Donald Knuth has reviewed the entire set, and remapped them into a slightly

different arrangement. There is now a full range in 10pt, 7pt, and 5pt sizes available as a regular part of the distribution, made up at true size, and magsteps 0, 0.5, and 1. These compiled fonts are made available by the AMS for non-profit scholarly use. A site which wishes to use them in other ways, or which needs, for some reason, to produce different compilations, should get in touch with the AMS and arrange to acquire the `eu*.mf` files under license.

A completely new font family is the "concrete fonts" which are discussed elsewhere in this issue. The `cc*.mf` files for these are part of the distribution, but are not intended to serve merely as another canonical font family. They are offered as a lesson in how to use METAFONT to its full effectiveness, by creating one-off fonts that may be especially appropriate only for a specific publication. It is this capacity that distinguishes a font-design tool such as METAFONT from a system for font expression, such as PostScript. We welcome other similar experiments, which we will make part of a special directory known simply as `metafonts`.

In addition to the "concrete" fonts, the `metafonts` directory will include the *Pandora* family, designed by Neenie Billawalla. We have eagerly awaited the release of this new set of fonts, which was developed independently from, and on somewhat different principles from Computer Modern. This is an original creation, and shows what a professional designer can do with METAFONT. As with any genuinely new font design it has taken several years of work to bring it to its present shape. I would urge those who make use of this font to include in their publications some acknowledgement of Neenie Billawalla's generosity in making it available for free non-profit and educational use.

An anomaly in the `chardx` values of some characters in Computer Modern was discovered during 1988, and the relevant Computer Modern METAFONT files have been corrected. A complete recompilation of all the `plain.tex`, `lfonts.tex`, `sfonts.tex`, and some others was done in December, 1988, and reflects all the improvements described in `cm85.bug`. These fonts are still offered in 118dpi, 200–240dpi, and two 300dpi resolutions. I should like to hear from readers whether the 200–240dpi versions are still really useful. I have not seen an advertisement for a 240dpi laser printer in some time, and I do not have any sense of how many sites still use the 200dpi Versatec for output. The 300dpi fonts come in `CanonCX` mode for generic write-black print engines, and in `RicohFourZeroEightZero` mode for generic write-black print-engines. Notice the change in the naming convention for the Ricoh engine. We are going to need quite a few new `mode_defs` as new varieties of print-engine become available, and the suggestion that was made a while back (I forget where) that the names be reasonably consistent, with all numeric digits spelled out, seems a very good one. `LN03` fonts, for example (if that really is a print-engine), might be addressed with a `mode_def` named `LNZeroThree`.

There are no major additions to the `babel` foreign language directory, but some important new sets of hyphenation patterns are in the works for Dutch and Russian. Work is also well advanced on the creation of a Cyrillic font in new METAFONT coding, which will be made available both in the old AMS mapping, and in a new mapping more compatible with the Russian hyphenation system.

The various systems of support software collected under `TeXcontrib` continue to grow. There is a new version of `TiB`, a bibliographic preprocessor which is ultimately based on the Unix `refer` bibliographic system. Wolfgang Appelt's `knit` and `twist` (see *TUGboat* 7:1, pp 20–21) is included, under his collective name for it, "`patchwork`". Joachim Schrod's wide-ranging adaptation of `WEB` appears as `literate_macros`. There is always room for more.

All the `DVI` interpreter software has now been moved to a directory named `DVIware`. The old, familiar `ctex` (Chris Torek's collection of `DVI` interpreter programs), is now to be found as `umd-dvi`. This renaming was undertaken to avoid confusion with the `ctex` directory used by `web2c`. Several interpreters besides the ones under `umd-dvi` now use the system of distributed directories for font access that first appeared with those programs. The file `SUBDIRmakefile` will copy all the fonts supplied with the distribution into such an arrangement.

Recent correspondence with R. M. Damerell leads me to hope also that by the time this report is printed there will be a working version of `crudetype` which will be particularly useful as a previewer for proof correction on old-fashioned alphanumeric terminals.

VAX/VMS Site Report

David Kellerman
Northlake Software

We have been shipping a new distribution of TEX for VAX/VMS since September. It contains all the changes and bug fixes that had accumulated in the Stanford distribution at that time, and corrections and improvements to our VAX/VMS-specific modifications. The LATEX macros gained many bug fixes since our previous release, and we cleaned up loose ends in the arrangement of SLITEX. The font sets are considerably enlarged, and there is also a new conversion program called XXtoXX. It converts between any combination of GF, PK, and PXL formats, can process all RMS record formats as input or output, and makes quick work of converting large numbers of font files.

Much work went into making the new distribution easier to install and use. Martin Havlicek did most of the work of dividing it into pieces, then organizing each as a VMSINSTAL kit. Beginning users can install two or three kits for a basic system, and reliably end up with working software; later, if need arises, they can install additional kits. We organized and rewrote the VMS-specific documentation, too, and the result is both an improvement for the naive user and a source of more useful reference material (it looks better, too).

Of course we ran out of space on the tape again. And it is probably just as well, because the space limitation keeps us focused on providing a reliable core TEX system. For the broad range of publicly available TEX-related packages, we still find it better to forward inquiries to their actual developers. They are better at providing up-to-date versions, and they do a better job of answering questions about their own software.

Which leaves me to look forward to updating to TEX 2.96, and wondering what version comes after 2.99.

Typesetting on Personal Computers

The Land of the Free and the Near Free

Alan Hoenig

I've received a surprising number of requests — from as far away as Cameroon — for information about low cost implementations of TEX. It's now possible to put together several such systems. For this article, a "TEX system" includes in addition to TEX, a text editor (to create the input into TEX), a previewer (to preview on the screen the output of TEX before you send it to your printer), and a driver (the program which you need to translate from the language TEX uses to the language your printer understands), and (for the first time!) METAFONT. Because this column has talked too much about the IBM-compatible family of computers, we will begin with a *non*-IBM system. But IBMers should read on — among other things, we describe below an impressive integrated TEX environment for PCompatibles at a bargain price.

Before we begin, please note that you cannot make indiscriminate copies of the software *unless it is very clearly marked as being in the public domain.* Low cost is not synonymous with public domain! What follows is a summary of low-cost software components; please assume they are *not* public domain unless specifically so noted.

TEX on the Amiga

The Amiga microcomputers, models 500 and 2000, are powerful home computers, with built-in high-resolution graphics, a large memory capacity, and the ability to multitask. If all things were equal, it would probably be the computer of choice for most microcomputer users. Unfortunately, things are not at all equal — vastly more software is available for IBM and compatibles and for Macintoshes.

Nevertheless, a fine implementation of TEX for the Amiga is available from Radical Eye Software (Box 2081, Stanford, CA 94309; (415) 32–AMIGA). The TEX part of this system consists of TEX and a previewer and costs $200. If you provide a blank Amiga floppy and a SASE, you can get the mg editor free, which is their local version of a micrognuemacs-type editor. Printer drivers are $100 apiece, and support the HP LaserJet series, PostScript, QMS KISS and SmartWriter, HP DeskJet, Epson LQ series, NEC Pinwriter series, Epson MX and FX