drums by the US Department of Defense and the CALS initiative, is hailed as a great leap forward. A markup *meta*-language, it can describe the structure of a document, but requires some friendly help to let that structure be realised on a sheet of paper (or a screen). And where does that friendly help often come from? — TeX or LaTeX. But those who embrace SGML shy away from LaTeX. What is the difference? — simple: standards. The way of the future is through the standards world ([3, 5]). We join in or become a backwater. C'mon in, the water's lovely!

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Site Reports

MVS Site Report

Craig Platt

I am happy to report that MVS TeX 3.0 and META-FONT 2.0 have passed the trip/trap tests. Further testing remains, but I hope they will soon be ready for distribution. The current distribution, available from Maria Code, remains at TeX 2.9 and META-FONT 1.3, so if you want to order the new version, be sure to specify "TeX 3.0" on your order.

In addition to final testing of TeX and META-FONT, some of the auxiliary sources, particularly METAFONTware, need to be brought up to date. In the past, I have had difficulties getting the latest versions of some software, being at a site without FTP access. Dean Guenther has kindly sent me updates by mail from time to time, and Barbara Beeton has been mailing all the site coordinators *diff* files for updates to the main programs, which I've used to piece together the current test versions. Nevertheless, I've always felt hampered by the lack of direct access to the Stanford sources. Fortunately, this situation should improve soon, as I am assured that the University of Manitoba will in the next month or so be connected to Internet with FTP access. Then it should be much easier to keep all the sources up-to-date.

I have also experimented briefly with a large-memory version of TeX, based on values in the UNIX distribution (mem_max = 262140). There appears to be a slight tradeoff in speed (about 9% slower), but the "big" TeX seems to run with no problems (it passes the trip test).

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VMS Site Report

David Kellerman

First, let me mention some news from the TUG90 conference. A quick informal survey during the site coordinators' reports showed that about two-thirds of those present used TeX on a VMS system. A large majority were LaTeX users. Most were not sure where they got TeX. Maria Code, DECUS, Internet FTP, and commercial distributions each got only a few responses. TeX travels in mysterious ways! PostScript printers are by now the most common output device, with LN03s sliding into a distant second place. A handful of users have VAXstations.

The software developments are too numerous to mention in detail, but let me hit some of the high points. The DECUS distribution, assembled by Ted Nieland, remains the most accessible and broad-

ranging source of public-domain VMS TEXware in the United States — it's available on a variety of media from the DECUS library (219 Boston Post Road, BP02; Marlboro, MA 01752-4605; 508-480-3635), and from your local librarian, if there is a DECUS Local User Group in your area. In Europe, the archive at Aston University, Birmingham, provides the largest and best-organized collection of VMS TEXware, and they are currently testing an encoding scheme that should improve their ability to distribute files across gateways without corruption (Peter Abbott; Computing Service; Aston University; Aston Triangle; Birmingham B4 7ET). For those with Internet access, Don Hosek has been collecting and organizing a large VMS archive on the YMIR node at Harvey Mudd College, Claremont, that includes his latest VMS adaptations of TEXware and LATEXware (dhosek@ymir.claremont.edu).

All the sources listed above should include versions of TEX 3.0 by the time you read this, from work done by Brian Hamilton Kelly and Don Hosek. Also of note, good DECwindows previewers are starting to appear. XDVI appears to currently be the best public-domain implementation (DECUS distribution, YMIR archive), and both ArborText and Northlake Software now offer commercial products.

Finally, I want to discuss a more general issue: with TEX development work now literally spread around the world, most information related to TEX is exchanged electronically across computer networks via mail, newsgroups, and file transfers. If, like many VMS sites, you have no decent network connections, your sources of information are limited, and often out of date.

Northlake Software was faced with this problem about a year ago. Briefly, we solved it by getting a copy of the DECUS UUCP software (another public-domain DECUS library offering), and setting up a telephone connection to the UUCP network. The DECUS UUCP documentation is exceptional for public-domain software; installation and net management require care, but not deep sophistication. We use the UUNET node for our access point. UUNET Communication Services is a non-profit corporation that provides mail transfer and an Internet gateway (3110 Fairview Park Drive, Suite 570; Falls Church, VA 22042-4239; 703-876-5050). For simple mail and newsgroup access, you can expect to pay about $50–60 per month for their services and telephone charges. The lack of FTP file transfers is the one real limitation to this solution, but the price and level of complexity are about right for us.

There are variations to this approach you might want to consider. We chose UUNET for its reliability and good Internet connections; if you have a friend at a local university with a UNIX system, you may be able to wrangle a connection for free. Low-speed modems are adequate for light use; we added a Telebit T2500 when our traffic started increasing. If you get started, yours probably will, too — welcome to the net.

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Data General Site Report

Bart Childs

TEX 3.0 and METAFONT 2.0 have been installed without problem. The wisdom of Don's design is shown by the ease of installation. Few modules required change. Most of them were due to the strictness with which VS/Pascal interpreted Pascal's rules. The file type **text** must be used with *readln* and *writeln*. It does not allow the use of **eight-bit** **ASCII** with **text** files.

The current version includes drivers for PostScript, LaserJet, QMS, Imagen, and Date General printers. We are working on installing Tom Rokicki's PostScript driver.

We have created a new driver for the vanilla Canon engine. It is written in C-WEB and is currently being tested. It seems to be quite good. As soon as we make a change file for the HP-LaserJet, we intend to distribute it too.

The European distribution of our software is being assisted by Dr. Wolfgang Slaby at Eichstätt. This help is greatly appreciated.

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Prime 50 Series Site Report

John M. Crawford

Prime sites running the PRIMOS operating system can contact my office to obtain a TeX tape. The TeX tape we send out generally reflects the latest software revisions available from Stanford and contributing users. It's a changing beast! Currently we have available TeX version 3.0 and METAFONT version 2.0. With this new version of TeX we've also added some new system features such as support for input file search lists. The TeX program comes in two sizes, one of which has greatly expanded storage capabilities.

The TeX tape, as it currently ships, contains a substantial collection of work. All the standard TeX-related software, as available from Stanford University, can be referenced in source form. LaTeX and AMS-TeX are easy to install. The programs in support of WEB, TeX and METAFONT (commonly called TeXware and METAFONTware) are available to execute. We ship the standard fonts (in tfm and pk form) of the Computer Modern family, and include, naturally, those fonts that support LaTeX and AMS-TeX.

Several device drivers are running under PRIMOS, and many friendly Prime sites (primarily academic institutions) have returned their work to us for inclusion on the distribution tape. A BibTeX port to PRIMOS and several site documents have also been added to the tape by contributing users. We've tossed in some other goodies and have ended up with a TeX distribution tape for PRIMOS that requires "extra length" tape media. Many sites have reported the installation goes well. It's always nice to know we have happy TeX users in the world of PRIMOS.

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UNIXTeX Site Report

Pierre A. Mackay

The full suite of TeX and METAFONT programs has been updated to match the most recent sources on labrea.stanford.edu. We are now delivering TeX version 3.0, METAFONT version 2.0 and the versions of all the support software have been changed to match. The choice of a proper official version of LaTeX is a bit problematic, but we have chosen to adopt Dominik Wujastyk's upgrade of lplain.tex in order to get the full advantage of TeX 3.0. In addition, splain.tex has been brought into conformity with lplain.tex. It had drifted pretty badly over the past three or four years. I am deeply intrigued by the notion of multilingual slides all set in magnifications of cmssq8, with perfect hyphenation.

The new WEB2C owes a great deal to Karl Berry, who not only did the major part of the work for the upgrade to version 3.0, but also provided the much needed change files for gftodvi and mft. At the time of writing [1 July 1990], the current version of WEB2C is 5.0d, and it has achieved a very satisfactory success rate on the ever widening range of UNIX systems available. Tor Lillqvist (tml@tik.vtt.fi) has offered an alternative translation system based on PtC, which is more absolutely tied to POSIX (good) and ANSI C (not nearly so good) standards. We have not had the time to evaluate it properly yet, but we are very interested in moving towards POSIX-conformance throughout the distribution, and we shall be giving this our close attention.

For his own Pascal-based change files, Don Knuth introduced "omphaloscopy" into TeX, a process by which any instance of initex or virtex looks at its own navel ($0) to find out what name it has been called by, and to select an appropriate format file for that name if one exists. This practice has been imported into the WEB2C change files for both TeX and METAFONT, and effectively supercedes the use of undump, which is no longer supported. There are too many versions of undump needed across the broad spectrum of UNIX systems, undumped versions of BIG TeX take too much room both in disk storage and in RAM and swap partitions, and "omphaloscopy" makes private formats for specific projects much easier.

We have yielded to many requests and consolidated all standard tfm files into a single directory called ./TeX3.0/TeXfonts. Font raster files are still distributed by "families" for what seem to us to be fairly compelling reasons. Some minor alterations were noticed in the cm*.mf sources at Stanford, so

all the fonts have been recompiled for 300, 300w, 240 and 120 dpi devices. Note that the peculiar and regrettable 118 dpi resolution is no more. Even on the old BitGraph, for which 118 dpi was originally adopted, it would be possible to adjust the software to use 120 dpi fonts. As usual, only the fonts essential for testing your basic compilation are supplied. I have worked out a very thorough UNIX manual page (in troff source) which seems to reduce the irrational fear of METAFONT which we have all too often encountered. The potential font library is far too large to form part of a distribution, and users of TEX owe it to themselves to discover the possibilities of METAFONT. The Makefiles associated with each family of fonts have been redesigned to allow the use of the simple command

> make magsteps DPI=*nnn* MAGFACTOR=*N*

so that you don't have to go through the tedium of calculating DPI-related suffixes for a full set of fonts at a magstep magnification such as might be needed for LATEX 11pt style.

The collection of old METAFONT79 fonts in ./amsfonts is about to vanish from the distribution. In its place will be the METAFONT sources officially released by the American Mathematical Society. Sites which may wish to recreate the exact appearance of documents which used the M-series fonts (msxm, msym, mcyr, mcyb), should archive these fonts, together with the tfm files and the amstex.tex input files associated with them.

Proper response to the flood of interesting contributions to UNIXTEX is way behind schedule, owing in part to the fact that the passage to TEX 3.0 had to take priority. We apologize to all who have been so generous with their offerings, and can promise that we have not forgotten you.

This year even more than last, I have depended on the initiative and imagination of Elizabeth Tachikawa, who now does a great deal of the technical organization of the distribution as well as all the administration. During my year's virtual absence from the university, she has taken on an ever larger part of the responsibility for the entire operation, and whatever improvements there may have been in the general organization and documentation of UNIXTEX are almost entirely hers.

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VM/CMS Site Report

Joachim Lammarsch

After I got the baton from Dean Guenther (thanks very much, Dean, for work in the last years), I have had to learn the job of a site-coordinator. Five things are very important:

1. Answering questions via e-mail. That is not very difficult. In most cases the answer may be:
   The VM/CMS distribution tape is available from:

   > Maria Code
   > Data Processing Services
   > 1371 Sydney Drive
   > Sunnyvale
   > CA 94087

2. The preparation of the new VM/CMS distribution tape. Peter Breitenlohner/München has done a lot of work on this. He has written the new change files for TEX 3.0 and one for TEX 3.0 with 128K memory words.

   He has also made the change files for META-FONT 2.0, VFTOVP, VPTOVF, the new TANGLE, WEAVE and the rest of TEXware and METAFONTware.

   From Dean Guenther I have received the TEXT1 macro package and the IPA Fonts, which were developed at Washington State University. Dean has also sent me a driver for the Apple LaserWriter which was ported from Nelson Beebe's driver family to VM/CMS by Shashi Sathaye.

   From Ferdinand Hommes I got a collection of drivers for IBM laser printers (e.g., the IBM 3820) and IBM graphic display stations (e.g., the IBM 3179, 3192, ...). These drivers are only available as text files and you need an IBM PASCAL VS compiler and GDDM to install them.

3. The next point is not very pretty: under another typesetting system, someone wrote a text file containing a virus. I ran a test to see if it works under VM/CMS with TEX 2.991 in the same way. It did! The method is to use the command \write15 to send VM/CMS commands to the operating system. To avoid this, the new TEX 3.0 is changed so that there is a new variable which controls the use of \write15. The variable has to be used to allow \write15 in the first 5 lines of an input source and before the first input statement.

4. Distribution via e-mail. I will put the VM/CMS change files at the different servers. The change files will be available using FTP from `labrea` (36.8.0.47) and from `LISTSERV@WSUVM1` (Washington State University). In Europe you can order the files from `LISTSERV@DHDURZ1` (Uni. Heidelberg). The new DANTE FTP server at the University of Stuttgart/Germany (129.69.1.12) will also contain a copy of the complete distribution tape.

5. Last but not least I will open the distribution list `TEX-IBM` hosted at `LISTSERV@DHDURZ1` for all TEX users at IBM mainframes. I hope this will help make information better and above all faster to access.

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Q & A

Report from the Question and Answer Session

Barbara Beeton

There was a new twist to the question and answer session at the TEXas A&M TUG meeting. Tom Reid, a TEXnician at A&M, set up a mail drop for advance questions, and arranged for receipts to be distributed to a small group of volunteer screeners. The address was publicized in the "usual" places— TEXhax, UKTEX, TEX-Euro, and a few others. Questions didn't exactly come streaming in, but enough arrived to give us a good start.

The questions received at the mail drop were augmented by a few more gleaned from TEXhax, UKTEX and GUT. Answers were drafted by Michael Doob (one of the volunteers), Ron Whitney, and myself, and the questions and concise versions of the answers turned into slides. This summary is an edited composite of pre-meeting answers and discussion from the session itself.

I think this format was moderately successful, and hope that a similar arrangement can be made for next year; a repeat should be even more successful, as people will be more familiar with the procedure, and will realize when seeing this summary that questions posed to that forum haven't simply dropped into a black hole.

Thanks particularly to Tom and Michael, and to the folks who sent in the questions.

Herewith the questions, their sources, and answers.

Q 1. Christina Thiele

In making up a sort of letterhead, the idea is to have some text to the left, to the right, and in the middle, all of different font styles and sizes. Here is what I tried.

```
\line{left\hfil middle\hfil right}
\line{more\hfil and more\hfil even more}
```

Even where I fudged, things don't centre properly.

| left | middle | right |
| more | and more | even more |

How can this be fixed?

Answer. You have to remember that the stuff in the middle should be centered with respect to the outside boundaries, not just given equal space on either side to separate it from whatever is on the left and right.

| left | middle | right |
| more | and more | even more |

This can't be done using just one box (`\line`), but there are two easy ways to get the effect you want with several nested boxes.

The first approach uses two full-width text boxes, superimposed on one another with an `\rlap`.

```
\line{\rlap{\line{\hfil middle\hfil}}%
  left \hfil right}
\line{\rlap{\line{\hfil and more\hfil}}%
  more \hfil even more}
```

You get the same result using one full-width box and two lapped boxes at the ends.

```
\line{\rlap{left}\hfil middle\hfil
  \llap{right}}
\line{\rlap{more}\hfil and more\hfil
  \llap{even more}}
```

Note that the "main" full-width box is always outside the others. It is possible to have the boxes side-by-side rather than nested, but to do so, one must remember that in vertical mode, an `\hbox` will not switch into horizontal mode, so adjacent `\hboxes`