

General Delivery

From the President

Bart Childs

I started my last column with:

The last issue of TUGboat (Vol. 8, No. 1) represents a measure of success in my mind. The number of contributions, their content, and all other measures of quality made it interesting and useful. I hesitate to mention any one paper, but a number of people have commented about their high interest on several of the papers. Let's keep up the good work.

I am sure that my words were not the reason that TUGboat Vol. 8, No. 2 was the best yet. It was a dramatic improvement again in the most important area, your contributions. In those two issues we are already ahead of our total number of pages from any previous year. It really gave me a high to go to meetings and be able to show it.

Now, the same is true about the annual meeting which was held at the University of Washington. Dean Guenther did an outstanding job of pulling the program together, with assistance from Pierre MacKay. The University of Washington and particularly Donna Gardner were outstanding hosts. The meeting had record attendance, the courses were large, the weather was wonderful, and it was an all-around good event.

For good news and bad news, Donald Knuth did not attend (that is bad news) but it was a successful meeting anyway. Maybe we can help realize Don's goal of T_EX's being viable without his involvement. He will always be the Grand Wizard.

Thanks to Patrick Ion, Mike Ferguson, and Cal Jackson for being the nominating committee. Patrick prefaced his introduction of nominees for President and Treasurer with the comment that they "expected to find that TUG members are very busy people." I was re-elected President, which is rewarding. That is taken as a compliment, but the long range quality of our organization is dependent on having a large and representative number of us participating as authors, contributors, volunteers, and officers. I can't imagine conditions being such that I would accept again in two years.

David Ness has been elected Treasurer. We welcome him to the Steering and Finance Committees. Since TUG is now a much bigger business, his

willingness to work and proximity to Rhode Island mean that we will have a good replacement for Sam Whidden's yeoman service.

The Vice President has been assigned a new duty: coordination of volunteers. The list of potential volunteers compiled from the questionnaires of two years ago is now in Rilla Thedford's hands; if you showed interest then in becoming a volunteer, Rilla will be getting in touch with you. If you have an idea for something you can do that will benefit other TUG members, get in touch with Rilla.

Several items were discussed that we need to move forward with, as a society. The most pressing three are:

1. distribution standards for T_EX systems,
2. printer (driver) standards, and
3. expanded member services, particularly communications and local user groups.

I have furnished a short article on the first item (page 263), Robert McGaffey's article in the last issue (page 161) and his committee trying for a written standard addresses the second, and we are working on the third. Ray Goucher is collecting samples of organizational criteria to be distributed to the Steering Committee for action.

I just received the following from Hope Hamilton of NCAR. It appeared in the *Staff Notes* for NCAR, Vol. 22, No. 39.

T_EX Users' Group Meeting

The first Boulder-area T_EX Users' Group meeting was held in the Fleishmann Building on 15 September. About 30 users attended from the University of Colorado, the National Oceanic and Atmospheric Administration, Ball Aerospace, and NCAR. Sheridan Garcia (Climate and Global Dynamics Division), who organized the meeting and served as moderator, provided T_EX software handouts and cautioned the participants on several dangerous turns along the way to perfect electronic typesetting. Participants agreed that at the October meeting, a comparison between T_EX and its macro-packaged spinoff, L^AT_EX, should be featured. Meetings will be held monthly; for more information, call Sheridan on ext. 1358.

Should we have a section of TUGboat dedicated to such reports? We would appreciate receiving such information and any by-laws that local organizations of this type have established.

Happy T_EXing.

The Volunteer Tree

Rilla Thedford

Congratulations to all who attended the Seattle Users Group meeting. It was great to see so many new faces and lots of the veteran faces as well. (We sure missed you, Don.)

As y'all could tell there is an ever growing amount of activity in the T_EX community. In order to channel this activity and enthusiasm, it has been suggested that various committees or special interest groups be created. It has also been suggested that the Vice President of TUG take on that responsibility. Well, here I am, but where are you!!! We need your help!

We should start with the major areas of concern and "branch" out from there, with several interest areas under each major area. The major areas are:

Program coordination

Standards

TUG representative to X3VI standards committee

Printer standards - hardware/software

Distribution tapes - (already lots of discussion in this area)

New versions of T_EX and METAFONT

Manuals of documentation standards

Macro writing and documentation

Fonts

Font catalog

Font exchange

Naming conventions

Publications

TUGboat

T_EXniques - new manuscripts

Software catalog

Index of TUGboat articles

T_EXhax monitor

Macros and Packages library

"Masters" Coordinator

Aid in production of TUGboat

Compile list of members willing to take technical calls

Employment bulletin board

Classified ads in TUGboat

Job openings/jobs wanted

Several people have already volunteered and many more have suggested special interest areas. Below is the current list of interests, and the name(s) of volunteers, if known. If you have any interest in participating, *please please* contact me or a volunteer already listed.

Group: Beginning Users

Name(s): Open

Group: METAFONT

Name(s): Doug Henderson (UC-Berkeley)

Group: Implementors (as opposed to users)

Name(s): Open

Group: Macros (standards, collecting/collating packages)

Name(s): Bill Kaster (Personal T_EX)

Group: Commercial applications

Name(s): Elizabeth Barnhart (TVGuide)

Group: Law applications

Name(s): Allen Dyer

Group: L^AT_EX

Name(s): Jackie Damrau (Univ. of New Mexico)

Group: Speakers forum

Name(s): Gary Benson (Los Alamos)

Group: Regional/State Chapters

Name(s): Robert Messer

Group: Primers

Name(s): Michael Doob (Univ. of Manitoba, Winnipeg)

Group: Printer standards, QA files

Name(s): Robert MCGaffey (Martin Marietta, Oak Ridge, Tenn.)

Group: Index of old TUGboats

Name(s): James Slagle (TVGuide)

(There is another person who expressed an interest; I apologize for misplacing your name.)

Group: Do's & Dont's

Name(s): Open

Group: Linguistics and the Humanities

Name(s): Christina Thiele (Carleton Univ., Ottawa)

Group: Basic T_EX questions

Name(s): Doris Hsia (Stanford)

The above people have already expressed an interest in special areas. Let's take these and group them under the major areas. This is just the "tip of the tree" and a great start.

If I have forgotten your name, please forgive and drop me a line reminding me of your special interest. If you want to become involved in the "Volunteer Tree" please contact me.

Intergraph

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Book Publishing using \TeX

Charles-Michel Marle
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I was very interested by the paper by Tony Siegman, "Book publishing using \TeX ", in the April 1987 issue of TUGboat. I think that my experience on this subject, more limited, but somewhat different, may be of interest for some readers of TUGboat.

A few years ago I wrote, with a coauthor, Paulette Libermann, a book in French, on symplectic geometry. A Dutch publisher, D. Reidel Publishing Company, offered to us to pay a translator and to publish the book in English. But he asked us to provide a "camera ready" text. At that time, I knew that an implementation of \TeX existed in France at the University of Strasbourg, but I had no knowledge at all about its use. However, I thought that it would be much more interesting for me to use \TeX than to type the translation of my book on an ordinary typewriter for producing the camera ready sheets. The translator, Bertram Schwarzbach, was willing to use a microcomputer for typing the translation. So I thought that once the translation was made, I would have only to introduce the mathematical formulas and the formatting \TeX commands.

I obtained from Dominique Foata a preprocessor, developed at the University of Strasbourg and called STRATEC, made for Victor Sirius microcomputers, which makes much easier the typing of mathematics, and also of French texts. The keyboard, which is specially redefined, allows the typing of all the Greek letters and of the most usual mathematics symbols (such as \in , \sum , \mapsto , \int , \cap , ...), with a single keystroke, or maybe with the ALT key or the SHIFT key and a single keystroke. It allows also the typing of all the French accented letters \acute{e} , \grave{e} , $\grave{\text{e}}$, $\grave{\text{a}}$, $\grave{\text{u}}$, ...) in exactly the same way as with a French typewriter. Moreover, all these special symbols, when typed, appear on the screen with their usual shape, not as \TeX control sequences. Once the text is registered in a file, the preprocessor STRATEC produces a standard \TeX file by mapping all the special symbols onto the corresponding \TeX control sequences. Moreover it checks a few points of \TeX syntax, such as the balance between the number of opening and closing braces, the consistency of the mode changes (between ordinary text and mathematics) and of the font changes (for the most usual fonts, roman, italics and boldface). This preprocessor, which was used to produce the book, was certainly a great help (for typing the mathematics, not for the French

accented letters, since the book is in English). It is a pity that, to my knowledge, there is no equivalent product at a reasonable price for microcomputers more common than the Victor Sirius, which is no longer manufactured.

Dominique Foata gave me also a small macro package which was developed at the University of Strasbourg for producing a special issue of the French mathematics journal *Astérisque* devoted to "Élie Cartan et les mathématiques d'aujourd'hui". With his help, and the help of Jacques Désarménien, I made a few changes and additions to adjust this macro package to my needs.

When the work began, I had no implementation of \TeX in my university. Therefore, during more than one year, most of the text was typed without any control, except an output of a few pages from the first chapter, made by Dominique Foata at the University of Strasbourg, from a diskette sent by mail. Then my university bought a P \TeX implementation of \TeX , and I was able to check my typing. An output of the whole book, except the index, the list of references and the table of contents, was produced on a dot matrix printer at the beginning of July 1986. At that time, there was no laser printer available at my university. I spent two months correcting my text, making the index, the list of references and the table of contents, checking and inserting in the text the numbers corresponding to the papers in the list of references. Then I made another output on a dot matrix printer for checking the final line breaks and page breaks, and for determining the final page numbers to be introduced in the table of contents and the index.

The final output was made on a laser printer at the computer center of the CNRS in Strasbourg, with the help of Georges Weil. A curious thing happened there, which seems to me worth reporting here. I took to Strasbourg, on IBM PC diskettes, the source files ($\ast.\text{\TeX}$ files) and the $\ast.\text{DVI}$ files (one $\ast.\text{DVI}$ file for each chapter) produced by P \TeX . We transferred these files to the mainframe computer on which \TeX and the printer driver were installed. For most of the chapters, we made the printing directly from the $\ast.\text{DVI}$ files, without running \TeX again. But for some unknown reason, the transfer of the $\ast.\text{DVI}$ file of chapters 2 and 3 failed. So we ran \TeX on the corresponding $\ast.\text{\TeX}$ files to produce locally the $\ast.\text{DVI}$ files for these two chapters. The output of chapter 2 was what I expected. But that of chapter 3 was not: a page break occurred a little earlier than in the output made previously in Paris on a dot matrix printer, the following page breaks were slightly shifted a few

lines up, and finally, the output of chapter 3 had one page more than what I expected. This was very annoying, since the page number of the last page of chapter 3 was then the same as that of the first page of chapter 4, and some of the page numbers listed in the index were now wrong. I do not know why two different \TeX implementations, one on a microcomputer, and another on a mainframe computer, applied to the same *.TEX source files, can give page breaks at different places. Maybe it is due to differences in the accuracy of the arithmetic in the two computers. Finally, the problem was solved by trying again and again to transfer the *.DVI files obtained with the IBM PC, until we succeeded.

In conclusion, I may say that I am very happy to have learnt the use of \TeX while writing a book, and that I have the deepest respect for Donald Knuth, the author of this very remarkable mathematical typesetting system. Now I use it also for my mail, my research papers and the papers I give to my students. If I ever write another book, I will certainly use it again, but I will try to use more of its advanced features (for automatically making the index, checking cross references, and so on). I will try also to obtain from the publisher an output on a phototypesetter, since my book, produced from camera ready sheets made with a laser printer, although better than most books produced from typewritten camera ready sheets, is not quite as beautiful as true typeset books.

\TeX Training, etc. — A TUG Meeting Trip Report

Laurie Mann
Stratus Computer

The \TeX Users Group Meeting was very informative. It was held at the University of Washington in Seattle this year. There were about 160 attendees from all over North America, Europe, and Japan. There was one track of programming, with some discussion groups on Wednesday. I attended the conference with my manager (Carol Klos) and stayed on campus. The view of the Cascade Mountains and Lake Washington from the odd-numbered rooms of McMahan Hall was spectacular.

The conference opened unofficially on Sunday night, with a "get-acquainted" cruise on Lake Wash-

ington. The weather was wonderful and we all got a good look at the "Lake Houses of the Washington Rich and Famous". Carol and I spent most of the evening with Jackie Damrau (last year's Knuth Scholarship winner) and Marie McPartland-Conn (one of this year's Knuth Scholarship winners).

The official opening was Monday morning, with a talk from Bart Childs on where TUG is and where it's going. The group now has 2,500 individual members, and about 140 institutional members. The user base of \TeX has expanded dramatically over the last few years, with the introduction of some \TeX -based software packages. \TeX is shifting from being almost exclusively a university-based tool to being used in many corporations for publications. A newspaper in Kansas is being produced with \TeX . **TV GUIDE** is experimenting to see if \TeX can produce 190 different editions of the magazine each week.

The theme of this year's conference was " \TeX and the Humanities". The first speaker, Christina Thiele, discussed how she uses \TeX to produce a scholarly linguistics journal (*Canadian Journal of Linguistics*) several times a year, as well as an annual conference proceedings. She described some of the difficulties in typesetting for linguistics publications. She also stressed the importance of keeping the editing and production cycles separate. One interesting trend Christina mentioned is the proliferation of PC use by writers for the journal. In 1984, only 11% of the writers used PCs. By 1986, this had risen to 68%.

A number of speakers described the challenges behind developing fonts and \TeX for non-Roman alphabets. Silvio Levy talked about how he developed a more readable modern Greek font. He also traced the history of Greek typography. Walter Andrews and Pierre MacKay presented a talk on publishing in Turkish. Nobuo Saito and Yasuki Saito spoke on how $\text{j}\text{\TeX}$ has gotten started in Japan. Since Japanese is an ideographic rather than an alphabetic language, and uses thousands of ideographs rather than a handful of letters, implementing a set of Japanese characters in \TeX has been difficult. While sites using alphabetic languages can load information for many different fonts, only 10 fonts can be loaded for Japanese. $\text{j}\text{\TeX}$ now has 50 users and is considered stable.

A big issue raised during the week was that of device drivers. In the last *TUGboat*, Robert McGaffey called for standardization of device drivers. Standardization is important for two reasons:

1. The more output devices you have, the harder it is to maintain the driver software.
2. People are selling drivers. Since drivers are being sold, standardization protects the consumer.

The standardization issue is very complicated, due to the wide variety of output devices and their assorted capabilities. Several program items dealt with drivers in different ways. Robert led a panel discussion on the value of driver standardization, and whether or not it could even be done. The next day, Nelson Beebe presented information on how he develops drivers and what he thought constituted a good driver. He believed drivers should incorporate the following features:

1. Uniform UNIX-like command line interface on all machines for all output devices.
2. Control of page selection and order from the command line.
3. Default and user-specified font substitutions.
4. Default directory paths overridden by environment variables and command line options.
5. User control of magnification.
6. Virtual font caching.
7. Multiple output copies.
8. Multiple input files.
9. Debugging output, including open file tracing.
10. Page origin positioning.
11. Autospool (TOPS-20 only).
12. Supporting any combination and order of font formats.

There seemed to be more vendors this year. Personal T_EX, ArborText, FTL systems, Kellerman & Smith, and Addison-Wesley were among those attending. There are now several variants of T_EX for the Mac and the IBM PC. Some software houses are taking a different approach to T_EX, by implementing a system of menus to supply the end-user interface to T_EX. K-Talk Communications is testing a product that would take a file formatted with WordPerfect and generate a T_EX source file. T_EXnology, Inc. presented a macro package called MacroT_EX which features a number of interesting table-building macros.

TUG made a PC available for software swapping; this was a very helpful innovation. Karen and Bill Butler spent a good part of Tuesday and Wednesday copying software from disk to disk. This was an excellent vehicle for sharing macros, style files, documentation, drivers, font files, etc., and I hope more people use it next year.

One very interesting talk about T_EX was given by David Ness of TV GUIDE. For the last three

years, TV GUIDE has been experimenting with T_EX, to see if it can be used to produce the weekly magazine. One major reason TV GUIDE is experimenting with T_EX is because they believe T_EX will weather foreseeable changes in typesetting technology. Currently, TV GUIDE is using a "home grown" database and typesetting system for production. Now, the staff uses T_EX for most internal documentation, and continues to test it for magazine production.

Part of Tuesday afternoon was spent in "Birds-of-a-Feather" sessions—small discussion groups where people can discuss T_EX-related issues. The groups this year discussed driver standardization, T_EX and graphics files, T_EX training, editing and production cycles, and non-English T_EX. I was interested in three of the topics, and chose the training group. Stephan v. Bechtolsheim led about thirty of us in a discussion on how to make T_EX training more manageable. The problems in developing T_EX training programs and aids include the following:

1. Insufficient support from university or corporate management for T_EX training.
2. New T_EX users must learn some programming.
3. Distinctions between non-technical and technical T_EX users need to be drawn.

Many sites have been developing in-house training and introductory T_EX manuals. There was some interest in TUG collecting introductory materials so that they could be made available to people who wanted to use them. (It isn't clear to me that TUG has the time or resources to do this, but it would be terrific if they could.)

The meeting ended with some discussion on how to train the trainer. Ways to improve this process include the publication of a "Train the Trainer" manual, and a "Train the Trainer" course.

Christina organized a Wednesday breakfast discussion group on how to document macros. About twenty of us met at 8 a.m. to discuss some strategies. We agreed that the following features should be part of a standard macro description:

1. Macro definition
2. Description of the macro parameters and the global variables
3. When the macro is used
4. How it's used
5. Typeset sample of the macro output
6. Related macros
7. How to change the macro definition
8. Some of the error messages this macro may elicit

9. Origin of the macro (particularly helpful when macros are shipped off to other T_EX sites).

The meeting wrapped up on Wednesday, with presentations made by Bart Childs to members of the T_EX community who had made special contributions. Each received an appropriately inscribed plaque, and Barbara Beeton received an original Duane Bibby illustration. Wednesday also featured a talk by Alan Dyer on how the Maryland Bar Association has made T_EX a voluntary standard for legal typesetting in Maryland. Barbara led the annual "T_EX Question and Answer" session, and that was the "official" end of the meeting. Unofficially, some people stayed on for hours.

On Thursday and Friday, I attended Stephan Bechtolsheim's output routines course with about 15 other people. This was the first formal T_EX course I'd ever taken, and I certainly hope to take another one in the future. Stephan's class notes are extremely helpful.

While most of the conference was spent attending meetings and the like, there were opportunities to meet T_EX users from all over. Addison-Wesley sponsored a barbecue on Monday, and Personal T_EX put on a wine and cheese party on Tuesday. Seattle has many ethnic restaurants, and a number of seafood restaurants on renovated piers near the downtown area.

My only regret from the week I spent in Seattle was that I was unable to take a trip to the mountains. Marie McPartland-Conn, who made the trip out to Mt. Saint Helens, described the destruction of the mountainside and the tons of dust still found in the area. She had the dirty car to prove the point!

My sight-seeing was pretty limited to watching the mountains from the back of the dorm, and a few trips to downtown Seattle. One night, I joined a group that went to Tillicum, a recreation of an Indian village on Burke Island in Seattle harbor. This spot featured an Indian-style salmon dinner, Indian dancing, and Indian crafts. Friday night, Marie, Doris Hsia (the other Knuth Scholarship winner), Michael Doob and I had one last ethnic meal and our last good look at downtown Seattle from the top of the Space Needle.

In my opinion, Dean Guenther, of Washington State University, Donna Gardner, of the University of Washington, Ray Goucher and Bart Childs all did an excellent job in pulling together the conference and the courses.

So, Ray, when do we get to go to Seattle again?????????

From the Editor

Barbara Beeton

First of all, I'd like to thank the TUG hierarchy for the most delightful token of appreciation presented to me at the Seattle meeting. Those who weren't present can see it in a different context on page 56 of *The T_EXbook*. The original drawing has been beautifully matted and framed, and was given to me accompanied by a brass plaque purporting to explain why I deserve it. I shall treasure them both.

I'd also like to report on some activity outside of TUG relating to an item that appeared in TUGboat. Chuck Bigelow's article, "Notes on typeface protection" (Vol. 7, No. 3), has now been reprinted in both English and French (translated by Jacques André, a "charter" TUG member, with the title "Du piratage de fontes" in *Technique et Science Informatiques*). I replied to a recent request to reprint this article yet again with an offer to provide the text on floppy disk. The response to my offer seems to me a backhanded comment on what I think T_EX and TUG are all about:

"I have asked our Production Department whether a copy of the article on IBM PC diskette would be useful, but they think it is preferable to go ahead with the traditional type-setting. Thank you, in any case, for the offer."

Under the circumstances, I shall let the source remain nameless.

Software

Proposed Minimum Standards for T_EX Distributions

Bart Childs

We have an activity beginning for definition of a standard for drivers. A standard for T_EX distributions will probably be harder in some sense because it has so many parts. The purpose of this is to create a start of a series of discussions that might lead to someone volunteering to lead such an effort.

I offer some thoughts here that I think are appropriate for inclusion (at least in part) for a minimum T_EX distribution standard. Many of the thoughts are not original with me because I have