

Well ... the original version of \TeX was written in SAIL, so doesn't that mean the TUG Newsletter should be called TUGboat? Hmmm!

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EDITOR'S COMMENTS

Robert Welland

The \TeX Users Group (TUG) met at Stanford University in February of 1980 (see Robert Morris' minutes of this meeting, p. 12) and among other things decided that the group would publish a newsletter to assist the distribution of \TeX pertise. Sam Whidden of the AMS volunteered the services of the Providence group to help make this decision a reality.

\TeX , $\text{AMS-}\TeX$ and **METAFONT** are software tools which will make the processing of scientific documents less painful, less expensive and more rapid. Authors working at editing terminals will find correcting easier and they will be spared much of the pain of proofreading (see Richard Palais' "Message From The Chairman" on p. 3). Ellen Swanson's article "Publishing & \TeX " on p. 7 gives us a glimpse of the steps involved in getting a paper from the author's desk into print and indicates the benefits and savings the AMS expects when \TeX software tools become widely used.

TUG, the \TeX Users Group, like other software users groups, was formed so that its members could share with one another the skills they have developed using \TeX .

TUGboat, an energy-efficient conveyance powered by SAIL and a newly-found Pascal driver, is the name of the TUG newsletter and will be used to ship a cargo of information between its members. Among other things, it will provide the information necessary to support the implementation of \TeX and $\text{AMS-}\TeX$ software. This support burden has been shouldered by Don Knuth and his colleagues at the Stanford University Computing Center. To the greatest extent possible, we must now carry this load so that these very kind people can return to their principal task of developing Computer Science.

This first issue of TUGboat contains several introductory articles, which we hope will inform and inspire our non-TUG friends in the AMS to board TUGboat so that they too can begin to experience the JOY of \TeX . This issue also contains several technical articles (David Fuchs' article on DVI files, p. 17, and Terry Winograd and Bill Paxton's Index Creation Package, Appendix A) which non- \TeX pers will find difficult to understand.

This brings us to a problem which the newsletter must confront. For some time to come, the mathematics community will contain people not conversant with \TeX , whom we at TUG will want to join our ranks; it will contain \TeX pers at various levels of development and systems experts charged with the job of bringing up \TeX on a host of machines having many different operating systems and driving a large array of output devices.

This audience is too broad; so in the future we will assume that our readers have at least the acquaintance with \TeX which will come from reading this issue of TUGboat and from reading Don Knuth's excellent book \TeX and **METAFONT: New Directions in Typesetting**. With this background, a reader will be able to understand nearly everything in TUGboat with the exception of the parts directed to the systems programmers. The average \TeX user will be able to get by quite well without understanding these specialized parts.

TUG has been in existence for a short period of time and so its needs are only partially delineated and for this reason this is also the case for TUGboat.

Our ship has compartments in its hold for:

(a) *General Delivery.*

This compartment will carry expository articles, minutes of TUG meetings and other material not devoted to specific technical issues.

(b) *Interface Software.*

This compartment will carry descriptions of interface software. It will tell who is developing what, list what interface software exists, where it can be obtained and give reports from various test sites.

(c) *Warnings and Limitations.*

Barbara Beeton of the AMS suggested this compartment and makes its first entry. We were tempted to call it Murphy's room because it will carry descriptions of collections of steps which, if carried out in order, will produce undesirable results.

(d) *Macros.*

This compartment will carry descriptions of macros; it will also carry descriptions of various helpful programs related to using \TeX .

(e) *Bugs.*

The name of this compartment is short and self explanatory. We hope, unrealistically, that the contributions to it will be few and far between. There have been almost no bugs reported recently in the SAIL version of \TeX . However, we will undoubtedly experience difficulties with the new software. When bugs are found, please send the information to the newsletter so that it can be published immediately.

(f) *Questions and Answers.*

This compartment will contain questions which

are of general interest and hopefully eventually their answers.

(g) *Letters.*

The content of this compartment is obvious.

(h) *Miscellaneous.*

All odd-shaped packages which do not fit into any of the above compartments will be placed in this one.

How well TUGboat sails will depend on the support it receives from its crew. At this stage it is an experimental ship. The Steering Committee of TUG and the editor encourage you to make contributions, comments and criticisms. We believe that, with this collective hand on the TUGboat wheel, everyone will have a pleasant trouble-free trip into the friendly land of \TeX arcana.

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General Delivery

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MESSAGE FROM THE CHAIRMAN

Richard S. Palais

An Apology ...

The organizational meeting of TUG took place last February and at that time the first mailing of the newsletter was at least informally promised within a couple of months. And here it is October. Perhaps the major cause for delay was the failure of the Chairman of TUG to get his share of the writing of the newsletter done in a timely fashion. It would be easy enough to blame this on preoccupation with "other matters", but that only pushes back the question to why the newsletter was not given higher priority—and the answer quite honestly was a feeling that the initial newsletter should not predate by too long the actual release of the Pascal version of \TeX . The latter happily now really does seem imminent (for more on \TeX -in-Pascal see the report on page 18). Finally then it is perhaps as good a place here as any to say a little about why the public release of Pascal \TeX has been delayed.

The most important cause seems to have been a technical one, the lack of a complete, standardized definition of Pascal. The resultant need to take careful account of possible compiler inconsistencies showed up (and aborted) the initial attempt at Pascalization. The second version of \TeX -in-Pascal

has made a careful segregation of the universal, machine-independent features from those parts that must be implemented separately for each different machine architecture family and operating system, and this approach now seems to have been quite successful. This illustrates a point worth noting. If the same problem had arisen while \TeX was being developed under contractual time constraints by a commercial software house, in all probability a quick technical fix would have been attempted. In fact of course, \TeX was developed at one of the world's foremost centers of artificial intelligence research by an outstanding master of the art of computer programming and his students. The goal was not only the best possible typesetting system but also a design and implementation that would exemplify and indeed be a paradigm of the state of the art in the development and documentation of a complex software system meant to run in many diverse architectures and environments. The original SAIL implementation of \TeX has proved to be an unusually bug-free and stable system that has now been running very successfully for well over a year on five operating systems (TOPS-10, TOPS-20, SU-AI, ITS, Xerox PARC) driving as many different output devices (XGP, Versatec and Varian electrostatic printers, Alphatype CRS typesetter, Xerox Dover printer). The Pascal version has now passed most of its basic tests and there is every reason to expect of it the same high quality performance demonstrated by its predecessor.

... and an Appreciation

I am sure many early \TeX users have had the experience of watching with surprised delight as their first pages came off the printer and thinking, "Did I really set that myself!" And on reflecting, we knew that while we did, and while we had reason to be proud of our new skill, in a very deep sense Don Knuth had been and would continue to be there at our side through his algorithms, his carefully designed user interface, and delightfully written \TeX manual. I am sure that kind of silent, smiling appreciation is all the thanks Don is looking for, but I would be remiss in my role as TUG chairman if I did not express in a more public way the tremendous debt of gratitude we all owe to him for the tireless and selfless effort he has put into the task of making \TeX a freely available system. Despite his consummate programming skill, creating software is not what Don considers a high priority use of his time. Research and writing papers in mathematics and computer science is much more challenging for him, but he even rations the time spent on this in