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General Delivery

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MESSAGE FROM THE PRESIDENT

Pierre MacKay

Late in the afternoon of Bastille day, after an hour or so of lively debate on structure and amendments, the \TeX Users Group adopted its first formal constitution. We have tried to take all reasonable contingencies into account, but still keep the articles short, clear and not too numerous. It should serve us satisfactorily for a while, at least, and we do not expect that we will have to ask for the creation of a `\documentstyle{constitution}` in \LaTeX in the near future.

As you will discover elsewhere in this issue, a new executive committee came into being together with the constitution, and I am addressing you for the first time as president of TUG. I begin in this office with feelings of profound gratitude to the officers of the pre-constitutional period. The new Executive Committee inherits a lively, active and financially solvent organization. It will be our job to live up to their example. Much of our past success as an organization has depended on the services of Ray Goucher, and on the generous assistance given us by the American Mathematical Society in a variety of ways. We are fortunate in being able to continue this relationship, and we have decided that one of our first actions should be to give formal recognition to Ray by asking him to accept the position of Business Manager to TUG.

Our financial position is just about right. We are neither too lean nor too fat. We carry forward a sufficient balance to cover normal annual expenses, and our revenues have so far kept pace very nicely with our outlays. We do, however, recognize that Don Knuth's generosity in offering the \TeX short courses in association with the meetings of TUG is the real reason for our solvency.

In this general connection, we have given some thought to streamlining the necessary collection of TUG dues. Mailing out reminders is costly both in time and in postage, and you will notice that our new dues structure gives a substantial discount to those members who respond quickly. The discount comes quite close to representing the savings made by the avoidance of a second and third mailing of reminders.

That gets the principal organizational details out of the way, and now for the good news. By the

time you read this, version 0.999 of \TeX will be up and running on a variety of systems. Perhaps the version number will be 0.9999, or perhaps the final rounding operation will have brought us up to Version 1.0. It has been a great education to watch the development of a new software system through all the stages from 0.0 to 0.999. On three occasions, major changes have been made which required a certain amount of effort to bring old macro files into conformity with the new syntax. In some cases the adoption of a major change was so obviously beneficial (e.g., the new syntax for font declarations) that it simply appeared in the newest version. In other cases, (e.g., the change in `{if...fi}` syntax) there was a general polling of those already using \TeX 82. In every case except the one brief episode of the non-standard printer's point the change so obviously justified itself that the argument for it was overwhelming. Those of you who make the acquaintance of \TeX 82 for the first time with version 1.0 will find that it takes some care to make the transition from \TeX 80 to \TeX 82, but you will be glad of the increased power and flexibility of the new system. It does all sorts of things that you simply couldn't do in the old version, and it does even the old things better.

Concurrently with the development of \TeX 82, there are the several systems for smoothing the path between the end user and the more arcane details of \TeX . $\text{\Facute}il\ \TeX$ and $\text{\A}MS\text{-}\TeX$ are familiar to many users already. Max Diaz has continued work on the one, and Michael Spivak and Ron Whitney on the other, so that they will be available for use with \TeX 82 at more or less the same time as Version 1.0. Leslie Lamport's $\text{\L}^{\text{\A}}\TeX$, which he himself pronounces in almost all the possible ways, is a new approach to \TeX , inspired by Brian Reid's Scribe. Like Scribe, it allows the user to work with the logical structure of a document, and in most instances to avoid tinkering with the precise details of \TeX formatting. (In a very specialized way, the $\text{\W}EB$ system of structured documentation does much the same thing.) Systems such as $\text{\L}^{\text{\A}}\TeX$ and $\text{\W}EB$ will go a long way towards answering the most common criticism of \TeX , that it drew the user too deeply and inexorably into the details of formatting at the primitive level. (The great secret, of course, is that many of us find these details almost irresistible.) There are rumors of a combination of the $\text{\A}MS\text{-}\TeX$ macros with $\text{\L}^{\text{\A}}\TeX$, which lead one to wonder just how the name will be formatted.

One of the most important activities for our organization in the next few years will be to educate the unconverted masses. Many of those who, un-

til now, have resisted the seductions of typesetting are ready to take a second look. It would help a great deal if we could easily lay our hands on convincing examples of the benefits of using T_EX. It was proposed at this year's meeting that we provide for this information in two ways.

1. We should maintain a bibliography of articles about experiences with T_EX and METAFONT. This will be particularly helpful for those articles which have appeared in unexpected journals. If you know of any, please send the reference to Barbara Beeton at the American Mathematical Society.
2. We should also keep a list of books published using T_EX, and for this we need a really full description. Which T_EX was used, and in which flavor? Which macro packages and fonts, on which CPU? What consultation, if any, on layout and design? What output device or devices? What printing system and what paper stock? Supplying this information should not discourage anyone from a more extensive description of the problems and triumphs of book-production, but let's start with the information.

As these lists grow, we will be able to answer questions about T_EX in the most effective way of all, by pulling a book off the shelf and saying, "That is T_EX."

The urge to predict is an occupational hazard of this sort of office, so I will venture a single guess that some time in the near future the T_EX community and the T_EX Users Group are going to grow very suddenly indeed. I would not be at all surprised to see them double in a single year, though I will not go so far as to guess which year. The future looks very interesting indeed.

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MINUTES OF THE T_EX USERS GROUP STEERING COMMITTEE MEETING

July 13-14, 1983
Palo Alto, California

The Steering Committee of the T_EX Users Group met on July 13 and 14 to conduct business. An ad hoc version of the Finance Committee met on July 12 and drafted recommendations for action by the Steering Committee. Those recommendations and the Steering Committee actions taken were:

- (1) In order to reduce clerical resources required by late membership renewals, two rates for dues should be established for 1984: a normal rate of

\$28, with a discount for renewal by January 31 of \$3 for an early renewal rate of \$25.

The Steering Committee agreed that an early renewal discount to help reduce clerical costs was needed and established a basic membership rate of \$30, with a \$10 dollar discount for renewals paid prior to January 31; that is, memberships paid prior to January 31 will cost \$20.

- (2) Institutional memberships for 1984 should be priced as follows:

educational	\$200	with \$25 discount
		per course or meeting
non-educational	\$300	with \$35 discount
		per course or meeting

The Steering Committee approved this recommendation.

- (3) The majority of our foreign memberships include postage for air mail delivery. In order to reduce administrative costs, all non-North American memberships should be priced to include air mail.

With the information from Ray Goucher that air mail would cost about \$5 per year, the Steering Committee decided to price non-North American memberships at \$35 per year, subject to the above \$10 early renewal discount.

- (4) Back issues should be priced consistently at \$15 per issue. The current scheme which sets the price for each back issue of TUGboat at the cost of membership for that year is confusing to administrate and even more confusing to explain to new members.

The Steering Committee agreed that back issue prices be consistently priced at \$15/issue.

- (5) The Finance Committee felt there was a potential for the abuse of institutional memberships by large organizations with multiple sites. They recommended that individual memberships which resulted from a single institutional membership be restricted to a single address or location.

The Steering Committee felt that this would prevent several of our current institutional members from being able to justify subsequent institutional memberships. Frequently a large firm may have only one TUG member in each of several sites and would not be willing to pay an institutional membership for each. The Steering Committee therefore decided that all of the individual memberships associated with a single institutional membership need not be at the same address.

- (6) Some members expecting to attend only one day of the meeting have inquired about a rate

for partial attendance at the meeting. The Finance Committee recommended that registration is already complicated to administer and that there should not be a partial meeting rate.

The Steering Committee approved this recommendation.

- (7) Questions about potential TUG-sponsored courses were raised without recommendations: Should TUG sponsor future T_EX-related courses? Should these courses be always connected with the annual meeting? Should they be scheduled at other times and places?

The Steering Committee was in favor of the concept of offering TUG-sponsored courses on topics related to T_EX and typesetting at various times and places in addition to the traditional course with the annual meeting. Topics suggested for such courses included L^AT_EX, output devices, book design, output routines, and AMS-T_EX internals. A motion to authorize courses in TUG's name and to hire professionals to teach as appropriate was tabled until after the General Meeting.

- (8) There should be geographic area coordinators in addition to the current Site Coordinators.

The new title Area Coordinator was created. A request for volunteers and/or areas which feel the need for an Area Coordinator will be published in the next TUGboat. If appropriate, we will consider proposing a bylaw change next year.

- (9) Provision should be made for annotating the membership lists to indicate members who do T_EX consulting.

Ray Goucher was authorized to determine an appropriate fee for such annotation and make provision for these notes in the membership lists.

Arthur Keller has offered to teach a T_EX for Beginners class at Stanford during quarter break next June or August. The class would last one week and consist of morning lectures followed by afternoons of lab time using LOTS. The course would be aimed at technical people who already understand at least one editor to minimize the amount of time spent teaching how to use the computer and to maximize the time spent learning T_EX.

We need to provide in the budget for Ray's time; the AMS will no longer subsidize his considerable services to TUG. The Steering Committee recommended the following addition to the proposed TUG bylaws to provide explicitly for his services:

The Finance Committee has the power to secure the services of a Business Manager who will report to the Finance Committee.

It was resolved that the costs of travel to the TUG meeting of the Executive Committee be covered if necessary to enable them to attend and to empower the Finance Committee to waive the conference fee when appropriate.

As its final item of business, the outgoing Steering Committee passed a resolution thanking Ray Goucher for the fine job he did in setting up this conference and for all of his service on behalf of the T_EX Users Group.

At a brief meeting on July 15 the outgoing Steering Committee met to select members of the new Steering Committee as provided in the newly adopted Operating Procedures. This being accomplished, the outgoing Steering Committee adjourned.

Respectfully submitted,
Susan Plass

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July 15, 1983

The following persons were present at the meeting:

Barbara Beeton	Don Knuth
Lance Carnes	Pierre MacKay
Barry Doherty	Monte Nichols
Chuck Dupree	Susan Plass
Richard Furuta	Lynne Price
Raymond Goucher	Joey Tuttle
Arthur Keller	Sam Whidden

On Friday, July 15, 1983, the Steering Committee of the T_EX Users Group met at Stanford University. The Business Meeting of TUG took place the previous afternoon, and new officers were elected: Pierre MacKay, president; Joey Tuttle, vice president; Chuck Dupree, secretary; and Sam Whidden, treasurer. The new officers attended the Steering Committee meeting.

At this meeting the first order of business was to reconstitute the Steering Committee. The following issues were discussed:

- It was decided to send letters to the Steering Committee members (whose names appear on the top half of the inside front cover of TUGboat). The letters are to request information about future plans for participation in TUG and the Steering Committee. Thus the Committee plans to determine which members will continue to be active in committee work.
- There was general sentiment that Robert Welland should receive a letter of thanks for his

work as Editor-in-Chief of TUGboat. Barbara Beeton, who has been the Managing Editor, was appointed to replace him.

- The new members were present, and previous members will be contacted; thus, the Steering Committee has been reconstituted.
- There was a good deal of discussion of next year's TUG meeting, centering around the possible dates. Tentative dates were set, and Arthur Keller is attempting to determine that the dates are as convenient as possible, given the constraints discussed. Final decision on dates was delegated to the Finance Committee. The tentative dates are:

August 13-17 Arthur Keller's T_EX users course
 August 20-22 TUG meeting
 August 23-24 short course

Arthur has suggested that the short course concern either the writing of complex macros or the design of typeset formats.

Joey Tuttle has graciously agreed to make arrangements for next year's meeting, as he did for this.

- The Finance Committee was also reconstituted. The four new officers became members of the Finance Committee, and nominations of Arthur Keller and Rilla Thedford were approved by the Committee. Fortunately, both have accepted.
- The Committee wholeheartedly agreed to reappoint Ray Goucher as Business Manager, reporting to the Finance Committee. He was also made an ex officio member of the Steering Committee.
- There was some discussion of the possibility of holding a meeting of TUG members on the East Coast. Such a meeting would not be a formal business function, but would consist of short courses, seminars, birds-of-a-feather sessions, and the like. A TUG meeting on the East Coast might draw a number of new faces, who would buy memberships and contribute their knowledge to the group. It was agreed that we request opinions from the general membership on whether and where a meeting would be held.
- Finally, there was a short discussion of the state of T_EX in Europe. Ignacio Zabala has volunteered to serve as coordinator of European and United States TUG activity, and the Committee was happy to accept.

Submitted by Chuck Dupree,
 Secretary,
 August 18, 1983.

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Summary of the Technical Program T_EX Users Group Meeting Stanford University, July 11-15, 1983

AMS-T_EX82 Beginning Users Course

Monday and Tuesday, July 11-12, were devoted to a short course for beginning users of AMS-T_EX82, presented by Mike Spivak. All sessions of the course were videotaped, and will be available for purchase or lease (see cover 3 for details). A summary of AMS-T_EX82 commands begins on page 103; arrangements are being made to include the macro package and documentation files on the T_EX82 standard distribution tape. Mike will begin in November to rewrite the manual, *The Joy of T_EX*.

TUG Meeting

Wednesday morning, July 13, began with an introduction to T_EX and TUG for new users, presented by Ron Whitney. This covered essentially the same ground as his presentation at the 1982 TUG Summer meeting; that session was written up in TUGboat Vol. 3, No. 2, pages 9-12.

STATUS OF T_EX82

Don Knuth gave an update on the current condition of T_EX82 and answered questions from the audience. The most recent status information appears in the article by David Fuchs beginning on page 72.

The Site Coordinators reported the current status of T_EX82 on their architecture groups' equipment. Birds-of-a-Feather sessions were held by many of the groups. The high points are reported in Site Reports elsewhere in this issue.

USING T_EX82

Two practical sessions were held for users with different levels of T_EX experience. Arthur Keller chaired a tutorial for beginners, and Don Knuth presented some new tricks for macro wizards. Don's first session was a guided tour through TRIP.TEX; some problems from his second session appear in the Macro Column.

Leslie Lamport described his document formatting package, L^AT_EX. The impetus for L^AT_EX was Leslie's desire for a tool as well-organized and easy to use as Scribe, but with the full power of T_EX underneath. Several common document types are described, and the user is given the ability to choose different styles of titles, running heads, page arrangement, and the like from a diverse predefined set, enabling the user to concentrate on the content of his document. Bibliographic references are maintained as a separate database, and compiled

for each document as needed. \LaTeX is current to \TeX version .97, and will be upgraded later in the year to version 1. \AMS-TeX has adopted a number of \LaTeX syntax conventions, and a future possibility is the mutual adaptation of these two packages to permit access to the mathematical capabilities of \AMS-TeX within the document structuring framework of \LaTeX .

Roger Woodsmall of Intergraph Corporation gave a presentation on the way his organization has implemented \TeX in conjunction with graphic work stations used for a CAD/CAM system and linked to a VAX/VMS. One of their goals is to integrate line art with the text of manuals and other technical publications. Fonts are stored in vector rather than raster format, to avoid rotational problems. Third-party word-processing software manages the input, which is later translated to \TeX control sequences. A proprietary program, Interpage, merges text and graphics, and has the ability to scale fonts. Output is to an Autologic typesetter; graphics are built up using graphics "fonts", comprising various line segments of suitable weights, dimensions and orientation.

Chuck Dupree described the document production system now being used by the DEC VAX Software Documentation Group. This group produces 15,000 pages of technical documentation per year. They wanted a system which would support multifunction text processing, to include: draft documents, typeset documents, slides, help files, glossaries, etc. Document storage and retrieval and high-quality, direct VAX-to-typesetter output were also important considerations. The system actually developed is based on generic coding of data, and includes automatic page makeup and the direct typesetter link. Generic coding requires that data be separated from applications. Elements are identified by their structural content rather than by their appearance on a printed page (thus **keyword** or *newterm* would be identified, rather than font specification). \TeX is neither the input language nor, as of the time of the meeting, the typesetting language used. But \TeX 's principles conform to the generic coding concept, and translation of a generically-coded document to \TeX is straightforward. Conversion of the typesetting function to \TeX is a very attractive option.

OUTPUT DEVICES

David Fuchs gave a summary of the status of output devices and drivers. Details appear in his article on page 72, also on the output device chart on page 71.

Representatives of several output device manufacturers gave presentations, held open houses, or were available for discussion. The following (in alphabetical order) were represented.

Autologic now manufactures three typesetters suitable for interface to \TeX output:

APS-5	Micro-5	Nano-5
4000 lpm	1000 lpm	300 lpm
57, 70, 100, 108pc	57, 70pc	70pc
~\$130,000	~\$72,000	\$29,000 base
		~\$35-41,000 for \TeX

The APS and Micro are suitable for high-resolution CAD/CAM work. Basic resolution is 723 dots/inch. Speed is in terms of newspaper lines per minute. A high-speed interface, 19.2KB, is available for the APS and Micro. Rotation is available on, and unique to, the Micro. Two auxiliary devices were discussed, the APS-44 (a font/logo digitizer) and the BitBlaster (a plain-paper output device with 300 dot/inch resolution). Autologic will make available Computer Modern fonts as supplied by Stanford, and will update them, for \$2,500, supported.

Hewlett-Packard has installed \TeX on a work station, the 68000-based series 200. The output device is a desk-top laser printer, with 300 dot/inch resolution and output speed of 12 pages/minute; this should be available about the end of the year. A hard disk is needed for font storage; font compression is an option. Supported fonts are designed for the printer, not METAFONT fonts, although METAFONT fonts will also be available. A maximum of 32 fonts may be used on one page. This is a shared-resource system, with a maximum of 4 work stations per group, and up to 4 groups, or 16 work stations, per printer resource. Cost of a single station is about \$50,000, including printer and a 10 megabyte Winchester disk; for a 16-station setup, per-station cost is about \$15-17,000, plus about \$30,000 for the printer. 1.5 megabytes of memory are required on a station to support \TeX .

Imagen held an open house, at which was introduced their new 480 dot-resolution printing engine, which is manufactured by Canon as is the printing engine of the Imprint-10. See their ad on page 128.

A representative of Quality Micro Systems described the Lasergrafix 1200, a printing system based on a Xerox 2700 engine, with 300 dot resolution and a speed of 24 pages per minute. The machine is cassette loaded, with two cassettes which can change automatically, or be loaded with two different paper sizes; cassette capacity is 250 sheets. The system is 68000-based. Interfaces are available to a wide variety of computer equipment. 1.4 megabytes of memory are required for an 8.5x14

inch page; the full raster is generated to permit intermixing of text and graphics. About 30 fonts can be active at once. The hardware cost is \$25,000 with the simplest interface; some interfaces add up to \$1,250. QMS handles a Talaris "software support kit" for the Lasergrafix, which includes a .DVI translator and graphics support, and runs on VAX, DEC 10s and 20s; the Talaris software is fully supported, and is priced at \$3,500.

FONTS

Chuck Bigelow announced the ATypI (Association Typographique Internationale) seminar on electronic and traditional methods of letter design, to be held the first week of August at Stanford (the program appeared in TUGboat Vol. 4, No. 1, page 33). He also showed off an advance copy of the August 1983 issue of *Scientific American*, which contains an article on digital typography by him and Donald Day. Presentations by three of his students followed, on current work in electronic type design, with emphasis on METAFONT.

John Hobby described his work METAFONTING Chinese characters. Each character is composed of one or more distinct segments, or radicals. The radicals, in turn, are composed of strokes. John's approach, which is truly "meta" in nature, defines the strokes in such a way that their shape within a character adjusts automatically to the shape of the space occupied. New spline routines were created to yield smoother curves, and "no surprises". These fonts have been constructed in three weights: a "normal" weight, as would be used in books or journals; a bold version, similar to that used for newspaper headlines or posters; and an extra-light version. The style of the stroke terminators varies with the weight: small flourishes accompany the normal weight; the bold strokes have squared-off, blunt ends; the flourishes on the extra-light strokes are quite prominent compared to total stroke length. John's work has been published as a Stanford Computer Science Department Report.

Lynne Ruggles described software for converting meta-fonts back and forth between property-list and .TFM form (PLtoTF, TFtoPL) and between character and .PXL form (PXtoCH, CHtoPX). Property-list (for font metrics) and character (for character shapes) files are readable by human beings on a terminal screen, and may be edited to make ad-hoc adjustments for testing, or to "clean up" the images especially of small-size fonts for low-resolution output devices. This font-manipulation software is written in WEB.

Dave Siegel described the construction of METAFONT descriptions for several alphabets drawn

by Hermann Zapf for use in mathematical composition, and known collectively as "Euler". The final implementation is not truly "meta"—outlines and the "double draw" technique have been used extensively. The results are very good at 10-point, but they can be scaled only linearly, and their acceptability decreases sharply with increase or decrease in point size. (A lower-case Fraktur alphabet developed by Scott Kim using more nearly meta-descriptions may scale.) A bit-pad interface was developed to input point coordinates for the METAFONT descriptions; use of this tool has cut initial entry time to about a half hour per character. The means by which Euler fonts may be made generally available has not yet been determined.

HOW TO OBTAIN T_EX82

The generic WEB source for T_EX82 and associated software is available on tape from Maria Code; an order form is included in this issue on page 129. The generic tape will include change files for several computer types, but some architecture-specific tapes have now been made available, and users of those types of hardware are advised to obtain the specific distribution tape. Details are on the order form. Please note that Maria Code is only the tape distributor. While she can tell you what version of T_EX82 is on the current tape, she cannot answer technical questions. Questions regarding particular implementations, availability of output drivers, etc., should be directed to the Site Coordinators.

PLANNING AHEAD

The technical program was arranged by Joey Tuttle. He has agreed to perform the same function for next summer's meeting, and would welcome any suggestions or volunteers; he can be reached at I. P. Sharp Associates, Palo Alto, (415) 327-1700.

Barbara Beeton

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List of Participants, TUG Summer Meeting and Introductory A_MS-T_EX82 Short Course Stanford University, July 11-15, 1983

In the following list, names of persons attending only the meeting are not specially marked; attendees at only the Short Course are starred; attendees at both the Meeting and the Short Course are flagged by a †.

- * Anderson, Keith - Automatic Data Processing
- † Armetta, Lois - Lawrence Berkeley Laboratory
- Ballance, Bob - Hewlett-Packard Research Labs.
- * Barrera, Josephine - U.C./Lawrence Berkeley Laboratory
- Beatty, Stuart - Hewlett-Packard
- Beebe, Nelson - University of Utah
- † Beeton, Barbara - American Mathematical Society

- Bentley, Nancy – Unidot, Inc.
† Berry, Paul – I. P. Sharp Associates
Bertelsen, Erik – University of Aarhus
* Boozer, Shirley – Stanford Linear Acceleration Lab
† Bringmann, Michael – Quality Micro Systems, Inc.
* Brock, Rosemary – Computer Systems Laboratory, Stanford University
Bronson, Mark – Lawrence Berkeley Laboratory
Brotsky, Dan – Massachusetts Institute of Technology
† Brower, Virginia – Stanford Linear Acceleration Laboratory
Brown, Fon – Hewlett-Packard
† Brown, Malcolm – Center for Information Technology, Stanford University
† Bryant, Sara – McGraw-Hill, Inc.
* Buckle, Monique – Université du Québec à Hull
† Buckle, Normand – Université du Québec à Hull
Burr, Norman – Lawrence Livermore Laboratory
Burton, Mark – Scan Laser Limited
Campanaro, Frank – Autologic, Inc.
Carnes, Lance – TeXeT
Carter, Belinda – SAS Institute
Cerofolini, Luigi – University of Bologna
* Chappell, Elsie – SRI International
Chessman, Samuel – TYX Corp.
† Cheung, Lucy – Stanford Linear Acceleration Lab
† Christopher, Lydia – Center for Reliable Computing, Stanford University
Clement, Colin – Hewlett-Packard
Crumly, Jim – Hewlett-Packard
Curtis, Dan – Imagen Corp.
Cuzzo, Clint – Hewlett-Packard
Day, Chris – Lawrence Berkeley Laboratory
* Deus, Patty – American Mathematical Society
Diffie, Whitfield – Bell-Northern Research
† Doherty, Barry – American Mathematical Society
† Dupree, Chuck – Digital Equipment Corp.
Durland, Tom – Information Handling Services
Eastman, Pat – CADTEC Corp.
* Eldridge-Diaz, Evelyn – Artificial Intelligence Lab, Stanford University
* Ferandin, Bette – Stanford Linear Acceleration Lab
Ferguson, Michael – INRS - Telecommunications
Fidelman, Susan – University of California
† Fina, Pat – Massachusetts Institute of Technology
* Flynn, Kathleen – Stanford University
† Fossati, Elaine
* Frary, Nancy – Lawrence Livermore Laboratory
† Fuchs, David – Computer Science Department, Stanford University
Furuta, Richard – University of Washington
† Gaffney, Charles – Pascal News
* Garrett, Liz – Lawrence Livermore Laboratory
* Gaskins, Robert – Bell-Northern Research
* Gessner, Barbara – U. S. Geological Survey
Gold, Lynn – Kestrel Institute
Goldberg, Donna – Center for Information Technology, Stanford University
Goucher, Raymond E. – American Mathematical Society
Grosso, Paul – University of Michigan
Guenther, Dean – Washington State University
† Gurel, O. – IBM Scientific Center
Haley, Larry – Hewlett-Packard
* Hall, Diana – Computer Science Department, Stanford University
Hansen, Linda – Lawrence Livermore Laboratory
* Harrison, Michael – University of California
Heatlie, Valerie – Lawrence Berkeley Laboratory
† Hsu, Agnes – Computation Center, National Research Council of Canada
† Ion, Patrick – Mathematical Reviews, American Mathematical Society
† Isensee, Philip – Iowa State University
Jackson, Calvin – California Institute of Technology
Jacobson, Van – Lawrence Berkeley Laboratory
† Jaeger, Dennis – Automatic Data Processing
Janko, Wolfgang – Karlsruhe University and University of California, Los Angeles
Janson, Barbara – American Mathematical Society
* Jensen, Sharon – Stanford Linear Acceleration Lab
† Kaylor, Richard – Hewlett-Packard
Keller, Arthur – Computer Science Department, Stanford University
Kellerman, David – Oregon Software
† Kim, Julius – Grumman Data Systems
† Kitajima, Yasuko – Hugh Graham Secretarial Service
Knuth, Donald – Computer Science Department, Stanford University
Krapp, David – CALMA
† Lamport, Leslie – SRI International
Langley, Jim – Hewlett-Packard
† Laurent, Kevin – U. S. Geological Survey
Leary, Pat – Sandia National Laboratories
Leung, Sheon – Signetics, Inc.
MacKay, Pierre – University of Washington
Mallett, Rick – Carleton University
* McCluskey, Joseph – Center for Reliable Computing, Stanford University
* McCormick, Jutta – Computer Science Department, Stanford University
* McGilton, Henry – Sun Microsystems
† Melen, Shirley – Center for Information Technology, Stanford University
Merrell, Greg – MSM Company
† Mesirov, Jill – American Mathematical Society
* Milenkicz, Joan – University of California
† Moffat, Shannon – Center for Information Technology, Stanford University
Mohr, August S. – Editor, UniForum
* Monroe, Beverly – U. S. Geological Survey
Moortgat, Hugo – University of Santa Clara
* Moran, Rita – Computer Systems Laboratory, Stanford University
Morris, Tom – University of North Carolina
* Naugle, Mary – Texas A&M University
Naugle, Norman – Texas A&M University
Nichols, Monte – Sandia National Laboratories
Olum, Ken – Fairchild
Osmond, Carolyn O. – Information Handling Services
† Pagan, Carol – U. S. Geological Survey
Palais, Richard – Brandeis University
† Parker, Don – Quality Micro Systems, Inc.
† Penny, S. Keith – Union Carbide Corp.
† Pesch, Roland – I. P. Sharp Associates
* Pickering, Jane – Computer Science Department, Stanford University
† Plass, Susan – Center for Information Technology, Stanford University

- † Platt, Craig – University of Manitoba
- ‡ Poggio, Margaret E. – Lawrence Livermore Laboratory
- Price, Gary – Rational Machinery
- Price, Lynne – CALMA
- ‡ Pritchard, Paul A. – Information Handling Services
- † Ragan, Donal – Arizona State University
- † Renzetti, Phyllis – U. S. Geological Survey
- ‡ Rodgers, Dave – Textset, Inc.
- † Roesser, Jim – Science Typographers, Inc.
- Saito, Nobuo – Keio University
- ‡ Samuel, Arthur – Computer Science Department, Stanford University
- Schneble, Jack – McGraw Hill, Inc.
- † Schulze, Bernd – University of Bonn
- Seeto, Anna – Xervice Center
- ‡ Selfridge, John – Mathematical Reviews, American Mathematical Society
- † Senn, Mark – Consultant
- Severance, Charles – Michigan State University
- Shanks, Alison
- ‡ Shepherd, Gary – Sandia National Laboratories
- † Sih, Peter – IBM
- † Skinner, Lydia – Kestrel Institute
- Smith, Hart – Lawrence Berkeley Laboratory
- † Spivak, Michael
- † Spragens, Alan – Stanford Linear Acceleration Lab
- Sterken, Jim – Textset, Inc.
- Sturdivant, Gary – Ascent, Inc.
- Sublett, Betty – Lawrence Berkeley Laboratory
- Sullivan, Carol – U. S. Geological Survey
- Sultan, Eric – ViewTech, Inc.
- † Sumner, Thos – University of California
- † Thedford, Rilla – Mathematical Reviews, American Mathematical Society
- † Thomas, Margaret – Science Applications, Inc.
- † Tuttle, Joey – I. P. Sharp Associates
- † Van Stone, Lisa – I. P. Sharp Associates
- Villere, Gary – Informatics General Corp.
- † Walker, Gordon L. – American Mathematical Society
- Waller, Jan – Texas A&M University
- Want, Jan – Texas A&M University
- Westmiller, Jane – ESL, Inc.
- † Whidden, Sam – American Mathematical Society
- Whipple, Edgar – Lawrence Berkeley Laboratory
- † White, Howard – Stanford Linear Acceleration Lab
- Whitney, Ron – American Mathematical Society
- Woods, Cheryl – American Mathematical Society
- † Woodsmall, Roger – Intergraph Corp.
- Young, Richard – Oracle
- † Zajkowski, Roger – McGraw Hill, Inc.
- Zamora, Tom – Washington State University

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FINAL REPORT OF THE BYLAWS COMMITTEE

Susan Plass

Operating Procedures for the TeX Users Group were drafted by a committee composed of Lance Carnes, Barbara Beeton, Ray Goucher, Sam Whidden, Lynne Price, and Susan Plass. These Procedures were revised and then adopted at the General Meeting of the TUG membership on July 14, 1983. The Operating Procedures as adopted are published on the following pages.