Attending EuroTeX'95 in Papendal

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I arrived with the night train from Basel at 8:29 precisely in Arnhem Railway station on Monday morning September 4th. I decided to take a cab to Papendal, the Sports Center a few km outside of the town, where I arrived just before nine. In no time I was registered and given two keys to my room, where, as expected, I would spend only a minimal amount of time during the four next nights. . .

Indeed, while walking the fifty meters or so to the breakfast area, I met many known faces, and I had to promise each one of them that we would have a chat later during the conference.

A Truly International Gathering

EuroTeX conferences are quite different from the TUG conferences, in that many more participants from Russia and Central Europe participate, and this year was no exception. In all 103 TeX users from 18 different countries (4 from Belgium, 1 from Canada, 7 from the Czech Republic, 2 from France, 17 from Germany, 1 from Hungary, 2 from Lithuania, 18 from the Netherlands, 1 from Norway, 20 from Poland, 15 from Russia, 1 from South Africa, 2 from Spain, 1 from Sweden, 3 from Switzerland, 1 from Turkey, 6 from the United Kingdom, and 1 from the United States of America) came to EuroTeX'95, where our hosts, the Dutch-speaking TeX Users Group NTG, had prepared a nice, interesting, and extremely dense program of TeX and text-processing related presentations given by contributors who are active in the various areas mentioned.

After breakfast the members of the Program Committee, Johannes Braams, Chris Rowley and myself, met to make final adjustments to the schedule of the various talks and tutorials, taking into account the availability of the speakers, so that the program could be communicated to the participants of the conference, who now started to arrive.

The EuroTeX Bus

But before going any further let me explain how such a large group from Russia and Central Europe was able to come to Papendal. It was mainly thanks to the generous contributions of the NTG, who donated a sizable sum of money they had collected by selling the 4AllTeX CD-ROM(s), plus over $1800 from the book auction that took place at TUG'95 in St. Petersburg Beach (Florida, USA) that a Polish bus was hired. In Warsaw the Russian, Lithuanian and part of the Polish group boarded, while other (Polish

and Czech) participants were picked up later on the way to Papendal. In this way the travel expenses of about forty people were kept to a minimum. This great initiative, which, I hope, will be repeated in the future, shows the enormous solidarity in the TeX community. It can serve as a proof that TeX is not only a (or "the") utility to compose beautiful documents in most of the languages written by mankind, but it also brings people of various nations, cultures, and backgrounds together, and thus fosters communication, which is the basis of all human success.

The Conference Starts

A few minutes before 2 p.m., the conference was formally opened by Erik Frambach, the President of NTG. He welcomed all participants, and then passed things over to me. In my role as President of TUG, I congratulated NTG for the magnificent work they had done for allowing so many participants from different parts of Europe to take part in the EuroTeX meeting, and I underlined that TUG fully supports all such initiatives and is doing its best to help all TeX users in the world. I therefore invited everybody who wanted to express constructive ideas about how to develop or improve the actions of TUG in the area of supporting the international community better, to find me during the week for a discussion. Finally Johannes Braams, on behalf of the Program Committee, explained the few changes that had to be introduced in the program in order to accommodate a maximum of the wishes of speakers and participants, and he gave a few details on logistics for the rest of the week.

Monday p.m. — Font Developments

Thus, well informed, the conference could start with the talk on VFComb, a program for designing virtual fonts by Alexander Berdnikov and Sergey Tirtia from St. Peterburg (Russia). The main aim of their MS-DOS program is to facilitate setting up virtual fonts for use with CM and the Cyrillic LL-fonts. This program is especially interesting in that it constructs font and user-defined ligature tables extracted from various fonts and combines it with metric information from various `tfm`-files. The VFComp program not only supports the full syntax of `.pl` and `.vpl` files, but also adds some symbolic variables and conditional operators to ease the production and debugging of virtual fonts.

The next speaker, Jörg Knappen of Mainz (Germany), described his work on version 1.2 of the DC fonts and the text companion symbol fonts. He first gave an overview of the improvements introduced into version 1.2 with respect to the previous release

in order to cope with criticism in the areas of the placement of accents, the design of the quotation marks, plus the outlines for various Polish, Czech, Slovak diacritics, and the height of the umlauts. The *text companion* TC fonts try to address the problem of more clearly separating the symbols present in the CM math fonts from the really mathematical characters, and to make uniformly available to TEX users several custom signs (currencies, trademarks, some arrows, a musical note, etc.) that are present in the ISO standards 8859-1, 8859-2 and 6937. For practical reasons Jörg proposes to put all those characters into two different fonts, TS1 and TSA. Last but not least, the speaker underlined the importance of design size in fonts, since the linear scaling of a font over a large range gives the wrong results. He therefore proposed encoding the design size of the font in the font name in each case by using the trailing four digits of the name to represent the design in points (multiplied by a factor of 100). He therefore has to rename a few of the present DC font names, since one has only two characters left for weight and shape. For instance the present `dcssi10` would become `dcsi1000`, and `dcbxti10` is `dcbi1000` in the new scheme. Thanks to Jörg's work, and the work done earlier by the LATEX3 team on math font encodings, it is now hoped that a proposal for the two math fonts will be reached soon, so that by next summer the DC fonts will be promoted to the EC fonts, and be accompanied by a useful and standardized set of 256-character math fonts.

Just before the tea break, Jiří Zlatuška from Brno (Czech Republic) gave a talk on how to use METAFONT and TEX together for typesetting text and graphics.[1] By using TEX's extended ligature mechanism, label placement on diagrams generated by METAFONT, as well as the generation of curvilinear texts, can be accomplished in one METAFONT pass and only requires a simple TEX interface. Institutional seals and other logos can thus be conveniently generated.

Multiple Languages

After the break Andrey Slepukhin (Sergiev Posad, Russia) introduced the audience to the magnificent world of old Church Slavonic typesetting.[2] Andrey works for the Holy Trinity St. Sergius Lavra publishing house, printers of Bibles and other texts in Church Slavonic. For his project of printing such texts he has to develop high quality fonts, tools for

simplifying text input, and put together hyphenation tables. Church Slavonic has a lot of characters and they have very few common parts, so that designing them takes a lot of time. The main problem, however, is that almost every word in Church Slavonic texts has a diacritical mark. Since the placement of the diacritical mark is not fixed, and the use of the `\accent` primitive has a lot of unwanted side-effects, Andrey developed the various letter-accent combinations as separate glyphs. By carefully studying Church Slavonic texts it was found that some letter-accent combination could only occur in certain locations in a word. In this way, with the help of a set of special macros and using active characters, the number of needed symbols could be kept below 256, the limit of symbols in a single font. Other problems he had to solve were coloring symbols (a practice occurring extremely frequently in such texts), numbering (numbers are represented by letter combinations), and encoding (several different encodings are actively used in the Cyrillic world). To help solve the last problem he proposes using symbolic names to map to character codes and has implemented these ideas in the latest version of his package. He is also working on Type1 variants of his fonts, and on extending his character set to include older Slavonic letters, initial caps, and a special font for headings. Finally, he has expressed a wish that at some time in the not too distant future it might be possible to typeset a multilingual Bible with parallel texts in Church Slavonic, Greek, Latin, Hebrew, and any other language.

Olga Lapko of Mir Publishers (Moscow, Russia) then presented work she has been doing together with Irina Makhovaya and other collaborators of CyrTUG, on developing a Russian style for the `babel` system that implements in a user-friendly way the typographics and national peculiarities of the Russian language, such as correct names for some math operators, repeating signs in broken math formulae, and Russian-character enumeration lists. Several font encodings are supported and are interfaced to 256-glyph Russian fonts.[3]

In the next talk Johannes Braams reviewed his work on the `babel` system. The present release 3.5 has a completely rewritten interface to deal with shortcuts, introduces new ways to switch languages, has been made compatible with LATEX 2_ε's input and font encoding packages, has added support for a configuration file and many more different languages,

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[1] He presented this talk also at TUG'95, see *TUGboat* **16** (3), p. 223–228, 1995.
[2] His article is published in both Russian and English in this issue of *TUGboat*, p. 373.

[3] Their article is published in both Russian and English in this issue of *TUGboat*, p. 364.

and offers an extended syntax for specifying hyphenation patterns.

The final talk of the afternoon was by Petr Sojka from Brno (Czech Republic), who presented his work on hyphenation for compound words. His paper was chosen at TUG'95[4] as the best technical paper by Knuth for pointing out problems with hyphenation that he himself had not considered. The problem is with long compound words that occur frequently in German, Dutch and Slavic languages. In these languages constituent word parts are not signaled by a hyphen or other fill character, thus making it difficult to find the correct hyphenation in some cases. Petr proposed extensions to the hyphenation algorithm and primitives which would make it possible to deal with these cases. Perhaps an interesting suggestion to be implemented in e-TeX or Ω?

After dinner Sebastian Rahtz headed a workshop on Acrobat and electronic publishing. He presented tools that take advantage of LaTeX to generate hypertext views of a document. In his presentation he made it clear that LaTeX, HTML, and PDF should be viewed as complementary representations, that each has its advantages and is suited for addressing the specific needs of some applications.

Tuesday a.m. — Graphics and Packages

The Tuesday morning started with a presentation by Andrey Astrelin of Moscow (Russia), who talked about a new implementation of graphics in TeX. Of the three basic ways of introducing graphics inside TeX (special fonts, using rules, or exploiting the `\special` command) his implementation uses the approach of extending TeX's graphics capabilities by writing graphics commands via `\special` commands into the `.dvi` file, which is then postprocessed to realize the required functionality. Each command is represented by a character and zero or more numeric arguments. There are general graphics commands, complemented by path and area commands. The `.dvi` file is processed by a special MS-DOS program, where the graphics `\special` commands are replaced by emTeX `\specials` pointing to `.pcx` pictures. These facilities are complemented by macros to place text and graphics on the page and a library of graphics macros that is still under development. It is planned that future releases will offer support for generating `.pk` fonts and PostScript output.

TeX Plotter, a program to create two- and three-dimensional pictures developed by Alexander Berdnikov and Sergey Turtia of St. Petersburg (Russia), was presented next. The program is written in Pascal for MS-DOS, and plots functions depending on two variables. It allows one to obtain equiline and surface representations of complex functions without running into overflow problems with TeX's memory. The program has a menu-driven user interface which allows the creation and viewing of pictures in a variety of forms, including LaTeX's `picture` environment, the `epic`/`eepic` package commands or emTeX `\specials`. Future releases will also support `mfpic`, PiCTeX and EPS files.

Gabriel Valiente Feruglio of Palma de Mallorca (Spain) then gave a detailed overview of the various commutative diagram packages that are available. He compared eleven of them in terms of their ability to generate complex diagrams, quality of documentation and generated output, ease of installation, user interface, resource requirements, and portability. The way a diagram is structured to increase readability is a somewhat subjective matter, often related to points of aesthetics, so that it is difficult to say which package is the best in applications. In his estimation, the familiarity of an author with the syntax of one package is often more important than the intrinsic power of other packages.

After coffee Hans Hagen of Pragma (Zwolle, the Netherlands) presented a paper on typesetting chemical formulae with the PPCHTeX system he wrote together with A.F. Otten.[5] The system is based on PiCTeX. Basic structures for often used chemical structure diagrams are available as macros, and can be combined and "dressed" with radicals in various way to obtain complex formulae. The syntax is straightforward and logical. It also allows typesetting reaction equations easily and provides for several special features, like fine-tuning the position of radicals, placing small formulae inside running text, and optimizing the depth of subscripts.

The last talk of the morning was by Daniel Taupin (Orsay, France) who introduced MusiXTeX, an improved version of his earlier MusicTeX system for typesetting polyphonic music with TeX. MusiXTeX was developed together with Werner Icking and Andreas Egler. It uses three passes (MusicTeX was a one-pass system), where during the second pass a program `muflex` is used to compute optimal spacing to position the notes and determine the length

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[4] His article is published in *TUGboat* **16** (3), p. 302–305, 1995.

[5] Their article will be published in an upcoming issue of *TUGboat*. Their approach can be compared to the one of XyMTeX described in *TUGboat* **16** (1), p. 81–88.

for slurs and ties. This makes for more aesthetically pleasing scores. A planned future improvement is cleaner lyrics insertions. Some issues remain between Andreas Egler and the other two developers about future developments and the compatibility between MusicTEX and MusiXTEX.

Tuesday p.m. — Electronic Documents

The theme of the Tuesday afternoon was electronic documents, and Wiegert Tierie of Adobe Systems Benelux (Amsterdam, the Netherlands) started off with a detailed overview of Abode's Acrobat series of utilities to create, use, store, annotate, send, view and print electronic documents. To do this Adobe developed the "Portable Document Format" (PDF), a language that is based on PostScript and includes commands to implement a hypertext functionality. He introduced the (freely available) Reader — for reading PDF documents — , Exchange — for introducing annotations — , Writer — for directly creating PDF files from applications — , Distiller — for translating PostScript documents into PDF — , Catalog — for creating full-text indexes — , and finally Search — for full-text searches. Via Application Programming Interfaces (API's) developers can easily plug in their own extensions to take full advantage of the capabilities of the Acrobat system, thus allowing an optimal integration of Acrobat into custom products.

Hans Hagen of Pragma (Zwolle, the Netherlands) then told us about his experience using TEX to generate hypertext documents in PDF. Hans expects that in a few years PDF will be as stable and standard as TEX is today, so that at that time PDF might well become an important format for distribution of documents. Because PDF is based on PostScript it can combine high typographic quality with hypertext capabilities offered via PDF's `pdfmark` operator. Building a utility able to exploit both TEX's and PDF's strong points relies on communicating information from TEX to PDF via `\special` commands that will contain `pdfmark` instructions. Hans emphasized, however, that writing hypertext documents for viewing on a screen requires a somewhat different approach from optimizing them for paper. He presented a set of points that have to be dealt with, in particular different aspect ratios, a more complex pagebody to optimally place navigation aids, synchronization of screen and printed versions of documents, the design of the typographic interface, the generation of tables of contents, multiple indexes, cross-references. Other points to be considered are how to handle multiple documents, shared data, status bars, active figures, color, and

version control. The speaker thought that TEX was an ideal tool to explore the advantages and limits of electronic documents and that TEX and Acrobat thus formed a nearly perfect match, combining the advantages of both a flexible programming language and a powerful document delivery system.

After the tea break Sebastian Rahtz (Elsevier Science, Oxford, United Kingdom) talked about the experience he had gained working on the `hyperref` package, developed together with Yannis Haralambous of Lille (France). This LATEX package uses LATEX's cross-reference commands to transmit the necessary information to PDF and thus provides a rather straightforward and effortless way for LATEX users to transform their documents into hypertext. Sebastian pointed out some difficulties of this approach, namely the successful handling of fonts, and the generation of back-references from the bibliography and index. Although it thus is easy to generate PDF from LATEX documents in a way that they are faithful representations of each other, all problems of optimizing the presentation for screen viewing, as explained by Hagen in the previous talk, still remain to be addressed.

During the next half hour or so I gave an introduction to SGML, using HTML as an example of a DTD. I emphasized that using and understanding SGML is straightforward by using examples drawn from HTML. I outlined the structure of a DTD and how it describes a document, its elements, their attributes and the entities that are available. The mathematics and table extensions of HTML3 were presented briefly, but it was emphasized that HTML's main aim is describing the document's structure, not its perfect typesetting, where it is better to consider the PDF solution, so that HTML and PDF are complementary rather than competing technologies.

My second talk presented the LATEX2HTML tool of Nikos Drakos, which translates LATEX documents into HTML using a perl program. All standard LATEX commands are dealt with. Tabular and mathematics constructs are turned into images since they cannot yet be treated by HTML, and the same strategy is applied to user-defined commands or environments. I emphasized that with a little work by the user such user-defined extensions can be dealt with by providing a perl routine for the extension in question, thus increasing substantially the usability of the generated HTML document, decreasing at the same time its size and fragmentation. The hypertext extension package `html` was described and it was shown how it allows the introduction of hypertext elements into a LATEX document, so that it can

be optimized both for printing and hypertext viewing on screen. Finally, work on providing support for the automatic generation of HTML3 and the implementation of HTML3 capabilities in the experimental `arena` browser were briefly mentioned.

The afternoon was concluded by a panel discussion on electronic documents, chaired by Joachim Schrod of Darmstadt (Germany), with all speakers of the afternoon as panel members. Each of the speakers again emphasized the complementarity of the various approaches to enrich the LaTeX source code with markup that can be used to exploit the hypertext capabilities of the various output media targeted. However, hypertext viewing on a computer screen is quite different from writing books, and therefore care must be taken to design and mark up documents with enough generality to optimize their re-use in the various circumstances. Another interesting question which was raised was the level of control that should be given to the viewer to customize the appearance of the viewed document. Should one allow complete freedom to the receiver to represent the document (font type and size, setting of colors, preferences for lists, page size, etc.) or should the author be able to freeze some or all of the document's appearance (for instance for legal documents). It became soon evident that a general answer to this question was impossible, and that as much flexibility as needed should be given to the receiver. As the hypertext medium, and the freedom to "view as one likes" are still quite new, the plethora of browsers, and possibilities to (over)dress one's documents will soon die out as the technology matures, and some studies in readability and efficiency in communication information via the screen on the Internet come up with some guidelines that will eliminate the more extreme excesses in the area, just as fontitis, or the disease to use as many fonts a possible in one's documents, died out after a few years after people realized that the documents became unreadable.

After dinner a long presentation/discussion session on the achievements of the e-TeX project was organized by the e-TeX team, with Phil Taylor, Jiří Zlatuška, Bernd Raichle, and Friedholm Sowa, who came specially for that day, present. It was an extremely useful discussion, that lasted until midnight, and I am sure that both the members of the e-TeX team and the participants benefited greatly from the exchange of ideas.

Wednesday a.m. — Tools I

The tools section started on Wednesday morning with the presentation by Andries Lenstra (Uitgeest,

the Netherlands) of the $\delta\alpha$TeX package that he developed with his colleagues Seven Kliffen and Ruud Koning. The $\delta\alpha$TeX system is a series of TeX macros for storing and retrieving data that work both with LaTeX and plain TeX. The system makes it possible to keep source texts short and guarantees data integrity and uniformity in typesetting. Data are stored in $\delta\alpha$TeX format in a $\delta\alpha$T file. The format is simple, versatile, easy to learn, and as portable as a TeX document. Conversion utilities to generate $\delta\alpha$ from ASCII files are available. $\delta\alpha$TeX has sorting-out facilities, supports default fields, conditionals, and wrapping.

Kees van der Laan (Garnwerd, the Netherlands) explained how to use his BLUe's format to manage a database. In particular, TeXnical details concerning storage and access of the material are hidden from the user, and since the database code is written in plain TeX, it can in fact be used with any TeX format. High-level user commands allows non-TeXnical users to take full advantage of this tool, which moreover allows one to include pictures and cross-references. Facilities for preparing letters to be sent to multiple addressees are also included.

Philip Taylor (London, United Kingdom) then gave one of his famous pedagogical presentations, explaining how one can use `\csname...\endcsname` constructs advantageously in various often-occurring programming paradigms in TeX. He showed how this construct helps to clarify the programming logic in many TeX macros, and thus makes documenting and maintaining such macros more straightforward and more robust. As an interesting side-remark he mentioned the fact that an undefined `\csname`-construct has the value `\relax` can be a disadvantage in some cases. All in all a well-prepared, stimulating, and thought-out talk, for which Phil rightly got the prize for the most pedagogical presentation of the conference. Congratulations Phil!

Just after the coffee break Laurent Siebenmann (Paris, France) introduced his TeX utility *Occam* that is useful for managing macros. The *Occam* utility eliminates from a set of TeX macros all those that are not referenced (and thus not necessary), thereby reducing (sometimes significantly) the size of a TeX source document, at the same time making the maintenance and comprehension of the supporting macro collection easier.

The final talk of the morning was a presentation of *pascal*, a TeX macro package for typesetting Pascal programs, based on work by Pedro Palao Gostanza and Manual Núñez García (Madrid, Spain), and presented by the former. This utility allows the user to clearly indicate the structure of a

program by using special typesetting conventions. Technically speaking, all reserved words and identifiers become TeX control sequences, so that no external parser is necessary and layout conventions can be easily enforced. Extensions of these ideas to other structural programming languages such as Modula-2, Ada, or ML should be straightforward.

Wednesday p.m. — General Developments in TeX and LaTeX

The afternoon was reserved for presentations related to recent general developments in TeX and LaTeX. Chris Rowley (Open University, United Kingdom), as a representative of the LaTeX3 Team, gave an overview of the activities of the team. Having devoted the Group's resources over the past two years on the development and consolidation of LaTeX 2_ε, the Group will now concentrate on further studies on the way to LaTeX3. During his talk Chris also explained the Group's policy on modifying files in the LaTeX 2_ε distribution.

Next Philip Taylor, speaking for the NTS and ε-TeX teams, announced that version 1 of ε-TeX was now available, and gave a list of the extensions which have been introduced. He emphasized that ε-TeX can be used in a 100% compatibility mode with TeX and he expressed the hope that with time and after a lot of tests, most TeX users will have enough confidence to use ε-TeX as a valid replacement for TeX. In fact, when generating the format file with `initex`, one can configure ε-TeX so that it is completely compatible with TeX, and the extensions and enhancements are disallowed. The new features implemented in this first version are in the areas of additional control over expansions, re-scanning tokens, environmental enquiries, additional marks and debugging facilities, bi-directional typesetting, and a few supplementary primitives.

John Plaice (Laval University, Ste-Foy, Québec, Canada) of the Ω team then gave an update of work done since the summer of 1994 on this 16-bit extension to TeX. In particular, he described the additional collaboration with a graduate student in Estonia in the area of generalized multi-dimensional typesetting, and recent progress in the area of Arabic. A beta-version now runs on a PC. Dynamic memory allocation is next on the list of features to be implemented in order to reduce the memory requirements of the system when static arrays are used.

It was then Joachim Schrod's turn to introduce the audience to the proposals of the "tds" (TeX Directory Structure) team, whose members have been working for many months on the definition of an ISO

9660-compliant directory structure that can be used as a plug-and-play run-time system by all operating systems.[6]

A panel discussion on the theme *TeX quo vadis?* concluded the afternoon. Several members in audience thanked the various teams who are working so hard to improve the functionality of TeX, LaTeX, and their user production environments and gave valuable input to the respective development teams, who promised to look at ways of implementing the suggestions put forward.

Wednesday Evening — The Social Event

At 16:30 two buses took all participants to the center of Arnhem, where we had two hours for a walk through the streets of this historic town, perhaps best known from the film "A bridge too far", which described the battle for the bridges over the Rhine in the vicinity of Arnhem. The inner city, which was almost completely devastated in 1944, has since been rebuilt, and has become a modern local center where the importance of the river Rhine is omnipresent. It was thus also appropriate that our whole company boarded the ship "MPS Graaf van Bylant", named after a wealthy count who in the 18th century owned large parts in the neighbourhood of Arnhem. It was already getting dark when we left the embankment, and set off for a three-hour tour of the Rhine and the IJssel, taking us along the quays with its wharfs, warehouses, and the apartment building in the background, with their thousands of little lighted windows, each corresponding to a little cell of present-day society, people eating, drinking, talking, watching television or just enjoying each other's company: yellow-orange rectangular reflections of human joy and grief, micro-windows on the life of a modern city. But I am sure that these metaphysical considerations were absent from the heads of most EuroTeXers that evening, since our NTG hosts did their utmost best to make the outing as enjoyable as possible. Apart from the excellent food and drinks (including quite a few bottles of Polish and Russian Vodka, contributed by GUST and CyrTUG), there were also the MAPS awards for the best papers in the proceedings. They went to Gabriel Feruglio for his overview article of commutative diagrams and Bogusław Jackowski for his beautiful article on the use of EPS and METAFONT (this was, in fact, already his second MAPS award!). On top of that the MAPS editing team decided to award two "special" prizes and it was quite a nice surprise that MAPS chose to

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[6] More about tds can be found in this issue of *TUGboat*, p. 401.

honor the "*TUGboat* Production Team", for their efforts to publish *TUGboat* on time again. With great pleasure Barbara Beeton, Sebastian Rahtz and I myself received the now-traditional MAPS-sweets-cone (a collections of 256 sweets of many different colors, with the necessary "glue" and all other necessary attributes...). And I found it very appropriate that MAPS gave also a special prize to Erik Frambach, who had been doing an enormous amount of visible (and even more invisible) work to make the conference the success it has become. Apart from these formal parts of the evening, there was of course ample occasion for direct person-to-person discussions and other forms of socializing, making contacts, making new acquaintances and friends, and around midnight, when we arrived back at the Papendal Sport Center, we could all go to bed trying to assimilate all those new and enriching impressions and contacts of this memorable Wednesday Evening EuroTEX'95 cruise.

Thursday a.m. — Tools II

The last formal session of the conference on the Thursday morning started with a talk by Philip Taylor who tried to convince the audience that TEX is quite an unsuitable language for marking up documents. He came to this conclusion after he had to deal with the production of a book in the field of linguistics, and had to communicate with an author who did not know TEX. Phil therefore developed a syntax, <ATML>, for "A TEX Markup Language", where all markup is enclosed between the triangular brackets < and >, thus disallowing all direct TEX markup. Phil explained the precautions that he had to take to implement this scheme, and discussed the advantages and drawbacks. It seemed clear that for non-TEX-aware authors this approach can certainly maximize the efficiency for preparing documents where TEX should be used as the typesetting engine, but where otherwise consistency and structural markup can be checked at a level of <ATML>.

Similar ideas were supported by Antonin Strejc (Prague, Czech Republic) who described the W95 environment, where contributors to a conference can use an MS-DOS based authoring system, which is a menu-driven interface to LATEX. The authors can specify the information needed for preparing their article (title, author, affiliation, abstract, etc.) via these menus, and also have the possibility of entering other text elements, like lists, equations, tables, and figures. Thanks to this approach, which guarantees consistent and correct markup, the editors of the proceedings were able to typeset almost 1000 pages by over 430 contributors in about two

weeks. The speaker emphasized that such a system needs close cooperation between the organizing committee and the typesetter, and it presupposes that the instructions have been announced to the contributors about six month before the conference. To minimize the need for direct hotline-type support (it was found that with the W95 system only 1–2% of the authors needed personal help) a sufficiently self-documenting help facility should be provided.

Various ways of improving the archiving of scientific documents by optimizing the ways external material can be included by standardized keywords for TEX's \special commands were discussed by Laurent Siebenmann, the next speaker. Although his ideas were quite interesting, it was not completely evident that his demands were not already dealt with by the work of the dvi-standard committee, that had a few meetings at TUG'95 in St. Petersburg, and Laurent was invited to contact the members of that working group. The speaker also said a few words about the effort concerning atomic fonts...

After the coffee break Kees van der Laan showed how one can implement indexing in a one-pass TEX run. Although only moderate indexes can be dealt with in this way, the approach is nevertheless quite useful for smaller documents, or for proofing indexes on a chapter-by-chapter basis. For the markup Kees followed closely the circumflex (^) notation proposed by Knuth in the TEXbook. Sorting is possible and several methods of ordering (lowercase/uppercase, accented/non-accented/word ordering) are available. This indexing system is part of the BLUeTEX system.

Stanislav Brabec (Prague, Czech Republic) discussed his typesetting system, based on plain TEX. He uses TEX's powerful programming facilities to generate macros for managing references, contents tables, defining page layout, with a flexible facility for adding cropmarks, specifying margins, preparation of booklets, and typesetting in landscape mode. His systems upages.tex allows one to interpret the input stream on a token-by-token basis, is able to prepare output for PostScript devices, with support for rotation and scaling; it generates device-independent color, with provision for color signatures and separations, and has primitives for line-drawings.

The last formal presentation of the conference was by Bogusław Jackowski (BOP, Gdańsk, Poland), who presented his METAFONT-EPS interface.[7] The heart of this interface is the MFTOEPS METAFONT package which provides the necessary definitions for

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[7] His article is published in this issue of *TUGboat*, p. 388.

translating the descriptions of graphics objects from METAFONT to PostScript. The PostScript code is written to a log file, that can be post-processed to generate EPS files that can be read by popular PostScript drawing tools like Adobe Illustrator, CoralDraw, or Fontographer. The package comes with two such utilities, one written in awk, the other, more general, but slower, in TEX. This system is thus merely useful for generating PostScript code that should be edited further by the tools mentioned above. For generating end-user PostScript, John Hobby's METAPOST program is probably more suited. The author is also working on a program PSTOMF, that would translate EPS files (via the ghostview program) into METAFONT, thus completing the link between METAFONT and PostScript and allowing everybody to make use of the advantages of both languages.

It was at about half past twelve when Johannes Braams, in the name of the EuroTEX'95 Program Committee, thanked all speakers for their contributions, and Wietse Dol for his work on preparing the Proceedings.[8] He then invited Andrey Slepukhin to step forward to receive the prize for "Best Presentation of EuroTEX'95", not only for his seminal work in the area of font creation of beautiful Church Slavonic letters, but also for developing solutions for the many technical problems relating to typesetting complex documents. A prize for the most pedagogical presentations (not only at this conference, but also on other occasions) was given to Philip Taylor. Sincere congratulations to both recipients of these prizes.

I then, in the name of the international TEX Organization, TUG, thanked the NTG organizers for their dedication and hard work in making EuroTEX'95 possible. I also thanked the many contributors, and last but not least the participants to the conference, and I invited everybody to the joint TUG-EuroTEX meeting that will take place next year 1996 in Dubna (Russia) from Sunday July 28th to Thursday August 2nd, 1996. This will be the first time a conference will take place in a country whose major language does not use the Latin alphabet. A unique occasion to remain up-to-date on what is happening in the world of TEX and friends, and to become acquainted with the rich Russian culture thanks to direct contact with Russian people and visits to famous monuments.

It was NTG's President, Erik Frambach, who had the honor of having the last word. He gave a complete list of the people who had spent many months since the beginning of 1995 to make the conference a success: yes it takes many people to do all the little (and not-so-little) tasks to have everything ready on time. Then he announced that the first 4AllTEX prize had been awarded to Eberhard Mattes, the father of emtex, the TEX engine that lies without doubt at the heart of most TEX installations in the world. A cheque of $3,141.59$ German Marks will be sent to Eberhard, and the applause that accompanied the announcement underlined how much all TEX users worldwide, especially those using PC's, appreciate his extremely valuable and continuous contributions. With this Erik formally closed the conference in a grandiose way, and hoped to see everybody again next year on the Volga in Dubna.

Thursday p.m. and Friday a.m. — Tutorials

The Thursday afternoon two tutorials ran in parallel, namely one by Bogusław Jackowski on METAFONT and another by Piet van Oostrum on page layout with LATEX. Both teachers gracefully agreed to repeat their respective tutorials the next morning to give a maximum number of participants the chance to attend both and to give those who had to leave already the Thursday evening the chance to attend the one of their choice. As I had meetings scheduled with various people during the time of the tutorials I was unable to go to either of them, but listening to those fortunate enough to have attended I learned that they were both an enormous success. Congratulations to both Bogusław and Piet for their careful preparations and pedagogical presentations.

Finally, on the Friday afternoon, those interested were able to join our friends from Central and Eastern Europe in a visit of Amsterdam with the EuroTEX bus, a second (and especially appreciated) "social event".

The Saturday morning with the departure of the EuroTEX bus for Warsaw via Berlin, the last EuroTEXies left the Papendal Sports Center. Thus EuroTEX'95 became history and will henceforth be remembered as the latest (in fact the ninth) in the series of European TEX Conferences. Thank you NTG, thank you Erik, and Wietse, and Gerard, and all your colleagues for that week of intense TEX happiness, and see you all next July in Russia!

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[8] Copies of the EuroTEX'95 Proceedings — counting more than 440 pages — are available at the price of 50 Dutch Guilders (postage included) from NTG, P.O. Box 394, NL-1740 AJ Schagen, The Netherlands.