

# Goossens at EuroTeX '94 in Gdańsk\*

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## 1 Sunday September 25th

After a Fokker 50 took me in about one hour from Copenhagen to Gdańsk, it was about midday on Sunday September 25th, when I stepped out of the plane and was greeted by a beautiful blue sky and summer-like temperatures. A trip by taxi of 41 km around the southern part of Gdańsk brought me in about 30 minutes to the Orle holiday center in Sobieszewo, a resort on the Baltic some 20 km east of the city. The hotel was located 100 meters from the beach, and already straight after lunch I had the pleasure of walking along the wide sandy beach in search of amber and shells, while discussing TeX and other text processing related problems with several colleagues and friends of the TeX world, who had already arrived the day before. The hotel had nice rooms, comfortable lecture theaters; and the organizing Committee of the Polish user group GUST made available two PC's, a printer and a photo-copying machine, so that those who wanted to exchange software had the necessary infrastructure, while many of the participants came with their own notebooks (PC's, Mac's, a Sparcbook). The drop in price of these machines (I now have one myself!) allows users to readily take their development or production systems with them and demonstrate their work. They allow one to test new ideas immediately, and that is very important in developers' environments, like the ones that most of those attending TeX conferences are dealing with. It also makes it possible to make notes, without the need to retype them afterwards, and to distribute documentation in a flexible way. In fact the hard disk of my Notebook PC contained a lot more Mbytes of data and source files when I left Sobieszewo than when I arrived, and it will take some time before I can put to good use all the goodies I got from various friends at the conference.

## 2 Monday September 26th

The next day, the Monday, was kept free to allow people to register and to meet one other. On arrival everybody was given a copy of the Proceedings, and extremely useful typographic ruler, and the traditional mug, with the specially designed EuroTeX94 logo, showing a paper origami boat in the foreground, symbol of Gdańsk and its famous shipyard, on a dark background (the Baltic sea), and the words EuroTeX '94 in a light sky at the top. Very nice stylistic work, indeed!

I also be glad if you mention that mug and rules were given to the all participants. My friends put a lot of work preparing these. What about the EuroTeX '94 logo. That also cost a lot of voluntarily work? Could you mention that too?

The conference had a total of 57 participants coming from 15 different countries, with the Polish (19) and German (13) representations being the largest, while there were also TeX users from Belgium, Canada, the Czech Republic, France, Hungary, Lithuania, the Netherlands, Norway, Russia, Slovenia, Switzerland, the United Kingdom, and the United States. All those who had arrived by 1 o'clock in the afternoon were taken by bus on a guided tour of the most interesting parts of Gdańsk, a northern Polish city of 400000 inhabitants with a proud cultural history and a promising future. Thanks to the extremely competent guide who showed us the various places where events had become history, we got an extremely good idea of the life and death, the joys and tragedies, the wars and peace in this famous city on the Baltic during the last millenium.

## 3 Tuesday September 27th

The formal opening of the conference was on Tuesday morning, and after the usual opening speeches by the organisers, it was Petr Sojka who walked us through the various aspects of hyphenation with TeX and described the significant success that has been obtained recently, especially in the case of multi-lingual documents. Bernd Raichle demonstrated how useful it is to use TeX's mouth to process data and showed how he had applied these ideas to implement a quicksort algorithm. Klaus Lagally, the author of the multi-lingual ArabTeX system, explained in his talk how he solved, staying within standard TeX, the problem of line-breaking inside paragraphs with text that runs both from right to left (like English) and from left to right (like Arabic or Hebrew), thus providing a really portable solution. The techniques described were successfully used to process a forty-page paper containing mixed English and Hebrew with some Arabic and even Latin or other short language fragments, and it showed how flexible and powerful the basic TeX typesetter really is. Just before lunch Marion Neubauer told us about her experiences with converting Word and WordPerfect documents from

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Michel Goossens was recently in attendance at the 1994 EuroTeX Conference in Gdańsk. He has kindly provided an overview report of the activities at that meeting (similar to his earlier report about TUG'94 in Santa Barbara) and asked that they be passed along for everyone's reference. The ASCII text file of this report has been placed in the newly-created `usergrps/info/` directory on the CTAN as `eurotex94.txt`; the  $\text{\LaTeX}2_{\epsilon}$  source file is present there as `eurotex94.tex`. If you missed it, the report for TUG'94 is in `tug94.*` in the `usergrps/info/` directory. Other reports for other meetings of users groups will also appear in this new directory. Also already present is Michel's report from the 1994 CyrTUG meeting in Dubna.

and to T<sub>E</sub>X and L<sup>A</sup>T<sub>E</sub>X and I am sure many of those present would agree with her finding that unless the elements of the document are already clearly marked up in the source, the L<sup>A</sup>T<sub>E</sub>X document obtained was hardly usable, and that converting rather complex documents is in any case a time-consuming process. The answer might be using an editor in conjunction with an internal conversion program.

The afternoon session started with a description by Olga Lapko of the METAFONT package developed at Mir Publishers in Moscow and distributed as part of the *CyrTUG-emtex* package. It contains the METAFONT sources of a completely redesigned Russian Computer Modern-like font family, which is more adapted to Russian typographic tradition than previous Computer Modern Cyrillic fonts. Yannis Haralambous then gave a detailed overview of the Ω system, a 16-bit extension to T<sub>E</sub>X that uses the Unicode standard as internal encoding and allows multiple input and output character encodings. He described various applications, including calligraphic poetry, mixtures of languages with many special characters, vowelized Arabic, fully diacriticized Greek, and correctly kerned Khmer. Finally, Kees van der Laan gave us an overview of his BLUE's (Ben Lee User) Format. At the user level this new format is supposed to facilitate the creation, formatting, exchange and maintenance of compuscripts during the complete lifetime of a publication. The format is easily customizable and provides for the possibility of having cross-references using a one-pass process. I found it an interesting approach since Kees introduced many ideas from modern software engineering practice.

That evening, we had the traditional EuroT<sub>E</sub>X banquet, with a lot of atmosphere, champagne, wine, plenty of beer, good food, guitar playing and singing by several of the participants — in a word (or two) — a hell of an evening, with T<sub>E</sub>X and L<sup>A</sup>T<sub>E</sub>X (almost) forgotten and other themes such as family, children, politics, philosophy, 'real life', in short, becoming the main subjects of the evening, and it was not before we were all convinced that we had solved all of the world's problems that we went to bed in the early morning hours.

#### 4 Wednesday September 28th

So, the next morning at breakfast, it came as a shock to many of us that there were still a few unsolved problems left (mainly in the area of T<sub>E</sub>X, of course) and so we decided to continue the conference and turn our attention to the niceties of colour techniques and their realization in L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub> . I emphasized in my part of the first talk of the day that colour is rarely needed in normal text, and that when it is used, the function of each colour should be unambiguously clear. There exist many (empirical) rules about colour harmonies and only a lot of experience and practice allows one to become an expert in this field and apply colours efficiently. Sebastian then showed how L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub>  implements a few simple tools for obtaining colour and he presented some nice examples. Janusz Bień gave an overview of different standards connected with the Polish language (keyboards, character encodings, localisa-

tion, fonts layout) and put them into perspective relative to developments of the international standards bodies. Yannis Haralambous described his *Tiqwah* ('Hope' in Hebrew) system for typesetting Biblical Hebrew, going into some detail on issues of font design, classical Hebrew typography and the user interface. He hoped that his system would help to revive the interest in Biblical Hebrew typography. Vladimir Batagelj gave an introduction to the PostScript language, and presented some of his experience in combining T<sub>E</sub>X and PostScript. Karel Horák gave an overview on how one can decompose large METAFONT pictures into smaller fragments and described techniques to place them on a page in a seamless way. He stressed the importance of resolution dependence and hoped that the new versions of some of the drivers would eliminate most of the constraints of this powerful approach where one only uses T<sub>E</sub>X and METAFONT to generate pictures, thus making the whole document fully portable.

Bogusław Jackowski and Marek Ryćko showed some extremely nice and pleasing pictures made with METAFONT (and their paper was rightly given the prize of *Best Paper* in a ballot amongst all conference participants at the end of the conference). They demonstrated some examples of non-standard METAFONT programming and advocated the creation of libraries of METAFONT routines, that would make the use of METAFONT as a universal drawing tool much more appealing. Éric Picheral, who looks after the Unix part of the GUTenberg T<sub>E</sub>X archive, gave an overview of the history of that archive, the various steps required to adapt T<sub>E</sub>X and its companion programs to the needs of the French-speaking T<sub>E</sub>X user community, and the way the various versions (Unix, PC, Mac) are made available to users worldwide via the Internet (ftp, http/www, gopher). Lutz Birkhahn discussed his work on developing debugging tools for T<sub>E</sub>X and presented Tdb, an extension to T<sub>E</sub>X that provides an interface to the Tk/Tcl X11 toolkit. This allowed him to set up a graphical user interface to allow one to set breakpoints, have stepwise execution, and to look at macro definitions and the value of variables. The last talk of the day was by Philip Taylor, who advocated the virtues of defensive programming for T<sub>E</sub>X since in the real world one cannot assume that user code or input is correct. Hence it is the task of the programmer to make sure that the results of developed macros are as close as possible to those the users expect. Defensive programming techniques let the programmer anticipate both errors in data and flaws in algorithm design.

#### 5 Thursday September 29th

During the first talk on the last day of the Conference I had the pleasure of giving a 20-minute talk about the lessons learned when writing *The L<sup>A</sup>T<sub>E</sub>X Companion*. I once more tried to emphasize the importance of generic markup for all logical elements of the document. Also, the global design of the book should be discussed at an early stage, while formatting decisions should be left to the final stage of running the chapters into pages. Wietse Dol and Erik Frambach then gave a very impressive talk-demonstration

of their 4T<sub>E</sub>X workbench, that also forms the basis of the extremely successful NTG CD-ROM. It is without doubt the best integrated T<sub>E</sub>X system for the MS-DOS world, and many participants who wanted to know more about the system also took part in the full day tutorial that they ran on the Friday. Jörg Knappen discussed work going on to standardize the IPA characters, and advocated the creation of a 256-character IPA font for use with T<sub>E</sub>X. Jiří Zlatuška talked about work he was doing within the framework of L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub>  to allow different languages and encoding schemes to be used together in a same format, at the same time providing mechanisms to switch freely between languages and encodings. Friedhelm Sowa showed his approach to generate colour pictures, especially on cheap printers. He discussed how the dvi driver must be colour conscious and gave as an example the `dvidjc` drivers and the latest version of his BM2FONT program, that provides the four primary colours of the pictures by generating four different bitmap images. He showed some quite impressive pictures as examples of his approach but he pointed out that colour is not simple to realize and great care must be taken to obtain the effects one really intends.

The afternoon session began with two presentations about L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub> , the first by Johannes Braams, who gave a clear introduction to the principles of class files and packages, as he showed using simple examples how it is possible to transform L<sup>A</sup>T<sub>E</sub>X 2.09 styles into L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub>  classes and packages. Dag Langmyhr, in the second talk, gave an explicit example of how to roll one's own complete L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub>  document class, and detailed the various stages of building up the necessary ingredients by borrowing from existing examples, introducing (small) changes into existing constructs, and incorporating the functionality of supplementary packages. He showed convincingly that customizing L<sup>A</sup>T<sub>E</sub>X classes to obtain a certain house style or specific look and feel is not very difficult and he hoped that his listeners would now be able to create their own document classes.

Before the official part of the 1994 EuroT<sub>E</sub>X Conference came to a close, Philip Taylor and the  $\epsilon$ T<sub>E</sub>X and NTS team presented an overview of the present status of these two projects. The first one is based on the existing T<sub>E</sub>X code, and plans to extend it in various areas, while keeping 100% backward compatibility with T<sub>E</sub>X for those who want it. The NTS project, on the other hand, seeks to first reimplement T<sub>E</sub>X in a list language, so that several alternative approaches to the various components that build the system can be more easily tested. In the longer run it might thus be possible to develop a New Typesetting System (hence the name) that will be at least as good as T<sub>E</sub>X, but that extends or improves T<sub>E</sub>X in areas where the latter is considered too limited.

These last eighty minutes or so about futures were followed by closing remarks from Włodek Bzyl and Philip Taylor of the Organizing Committee, who announced the winners of the *Best Paper* contest (see above), who were given a bottle of vodka with tiny pieces of gold floating inside (a local specialty), and the venue of the next Conference, that is to take place next year somewhere in the Netherlands (possibly in the (now) famous town of Maastricht).

## 6 Friday September 30th

On Friday, most participants stayed on to attend one or more of four tutorials, namely on 4T<sub>E</sub>X (Wietse Dol and Erik Frambach), Manmac BLUe's (Kees van der Laan), Book design and Typography (Marek Ryčko and Philip Taylor), and L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub>  (with Johannes Braams and myself). In the afternoon, a 20-hour course by Marek and Phil on advanced T<sub>E</sub>X macro writing started.

The L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub>  tutorial and advanced T<sub>E</sub>X course went on the Saturday, while on the Sunday only Marek and Phil had enough energy to go on spreading the T<sub>E</sub>X word, this time no longer at the Sobieszewo Center, but on the computers in Gdańsk University. Thus, when I left around 11 o'clock on Sunday October 2nd, I left behind me three floors of (almost) empty rooms. Also a Babel-like mixture of East and Western-European languages no longer floated through the corridors. Yes, it had been a good conference, and quite different from the 1994 TUG Annual meeting, whose theme was 'innovation', so that many papers described more or less exotic, front-line developments (colour, sophisticated page layout, object-oriented techniques<sup>1</sup>), while in Gdańsk more attention was given to practical issues of typesetting in multiple languages and working with cheap printers and machines (hyphenation, the use of METAFONT, MS-DOS related developments). I can only congratulate the local organizers, especially Włodek Bzyl and Tomek Przechlewski, for their nice work, and I hope that this conference has contributed to making T<sub>E</sub>X better known in Poland, and that those present will take with them the 'spirit' of Sobieszewo, where it was shown how to put principles into practice to make progress in the field of applying T<sub>E</sub>X in real-world applications<sup>2</sup>.

When I stepped into the Fokker 50 to fly back to Copenhagen (and from there on to Geneva), I realized that I had witnessed how Summer had become Autumn. The trees were putting on their nice yellow-brown dresses, and were waving their heads in the breeze, that had become definitely cooler in only a week's time. They were preparing for their last party, before going into a long winter sleep.

See you next year, some time, somewhere, they were saying. And indeed they will.

<sup>1</sup> See my report on the Santa Barbara TUG Annual Meeting where a similar talk was given by this team, or the Proceedings of that Conference that will be available in November from the TUG Office, Balboa Building, Room 307, 735 State Street, Santa Barbara, CA 93101, USA, for a price of 30 USD.

<sup>2</sup> A copy of the 200-page Proceedings of the EuroT<sub>E</sub>X94 Conference, which, as mentioned above, were available on the Monday thanks to the hard work of Tomek and Włodek, can be obtained by sending 15 DEM (postage included) to Włodek Bzyl, Instytut Matematyki, Uniwersytet Gdański, Wita Stwosza 57, PL 80-952, Poland.