

A Noddy's Guide to using T_EX for Text Production: From Manuscript to Bromide

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Abstract

The purpose of this paper is to give a practical example of a PC system setup for obtaining high quality typeset output. A brief discussion of the Wellcome Institute's publication requirements will be followed by detailed explanations of the hardware and software configurations, how to output to PostScript and the utilisation of electronic communications for sending laser printer proofed text to a Linotronic 300 phototypesetter. The value of employing WordPerfect macros, alternative keyboard layouts and style files as an interface for secretarial inputting is also demonstrated.

Introduction

Many non-UK residents may wonder who or what is Noddy. He is a children's storybook character, a doll, created by children's author Enid Blyton. Basically he's young and cute, but pretty naïve. He gets himself into all sorts of sticky situations from which he is invariably extricated by his older, wiser companion, Big Ears. In England the term "a Noddy's guide" is synonymous with "basic", thus this paper is aimed at people who are new to electronic publishing and T_EX. We are all Noddys at some stage. Some of us get to be Big Ears.

In this paper I use T_EX as a generic term, taking L^AT_EX under its umbrella.

Background Information

The Wellcome Institute for the History of Medicine exists to provide library resources and research and teaching facilities for all persons with serious interests in the history of medicine and the allied sciences. It collects, maintains and makes available materials in the history of medicine from all cultures and from all periods ranging from primitive man to the present day. Its collections of books, manuscripts, periodicals, paintings, prints and photographs total upwards of 850,000 items. Its teaching and academic staff, its librarians and associated Research Fellows explore and disseminate the wealth of its collections to the world-wide academic community through lectures, seminars,

symposia and *publications*. It is because of this requirement to communicate through publications that T_EX has become a useful tool to the Institute.

T_EX Arrives

It was almost by accident that T_EX found its way into the Institute through the auspices of Dr Dominik Wujastyk, the Associate Curator for the Oriental collection. In this tale he is Big Ears to my Noddy. In February 1986, attracted by an article on processing strings in SNOBOL4, he bought an issue of *BYTE* magazine. His attention was soon grabbed, however, by an article from the pen of Pierre MacKay of the University of Washington entitled *Typesetting Problem Scripts*. Dominik's interest in string processing in SNOBOL4 was not prompted by idle curiosity, but stemmed from the fact that he definitely has *problem* scripts to typeset in providing a descriptive catalogue of the South Asian collections of the Wellcome Institute. In 1985 he had published the first volume of a Handlist of Sanskrit and Prakrit Manuscripts, of which there are over 6000. The text included many Latin transliterations of the original Devanāgarī script used in Hindi and Sanskrit which includes numerous diacritical marks (Figure 1, Appendix).

Having despaired of the nightmare task of proofing externally typeset galleys, Dominik was attempting to manipulate the IBM DisplayWriter and daisywheel printer technology available at the

Institute at that time. In his efforts to overcome the compromises imposed on non-Latin letters by the limitations of the IBM extended character set, he had obtained a customised daisywheel. As the amount of inputting was far too great to tackle without secretarial help, he devised a system for the secretary to type, for example, $d\$$ which would then be mapped to the d position on the daisywheel. As you have seen, the results were not ideal, but they were published.

Pierre MacKay's paper promoted \TeX as the solution to the typesetting of problem text. Not only were the facilities for dealing with diacriticals available, but Pierre also held out the promise of being able to typeset Devanāgarī script. This was like manna from heaven to Dominik, who subsequently lobbied for the purchase of a couple of IBM PCs, a Toshiba P1340 dot matrix printer, for which there was a \TeX driver, and a copy of PC \TeX . I'm not sure that there can be many examples of \TeX being the cause of an Institute becoming computerised, but this could be cited as one of them.

The PCs, however, could not be solely dedicated \TeX . They were there for Institute work in general. Their arrival coincided with the commencement of two major projects which it was proposed to *computerise*. Senior staff at the Institute were also realising the benefits of their work being word-processed as opposed to typewritten. It was decided to expand the computing provision in the Institute, and at the same time it was recognised that a *professional* computing person was required to oversee those changes. This is where I came on the scene in September 1986, fresh from the business information systems world of DBASE, LOTUS and, thankfully, DISPLAYWRITE3 (DW3). So, you could say in some roundabout way, that I have \TeX to thank(!) for my present job.

It may appear ungrateful but I have to admit that my priorities were not centred on \TeX . I was evaluating the overall PC requirements of the Institute as far as text and data processing were concerned, and dealing with the anxieties of secretaries who viewed the new technology with the suspicion and fear of the over-worked.

Initially, DW3 was chosen as the PC word processing package primarily because of its relationship to the DisplayWriters, which we expected would facilitate the translation of existing documents and ease the learning curve. The arrival of the PCs and faster printers speeded up the word processing output and consequently created a greater demand. The DisplayWriters and associated

daisywheel printers were deemed obsolete and were replaced. The Toshiba's print quality was inadequate for the Institute's requirements, therefore IBM Quietwriters were chosen. The secretaries, to their relief, were able to dispense with their ear-plugs. So far nothing but improvements in conditions.

Top priority was to take the load off the two secretaries who were carrying the bulk of the word processing load by persuading the primary producers of text, the academics, that it would be a good thing for them to have one of these dreaded things on their desks. Document production would be more direct and editing less onerous. Secretaries of long standing had to be weaned off their typewriters. Not only that, but we were introducing databases as well. You can imagine the learning curves and conceptual mysteries we were struggling with. And then, to top it all, there was \TeX .

In the midst of all the hardware and software changes, Dominik was enthusiastically pursuing \TeX with some splendid results. Fellow academics saw, admired and desired the same effects, but were unwilling or unable to invest the corresponding time and effort in their achievement. The burden then fell on the secretaries. You could say that we could have ignored the demand, but if a system is there to allow an academic to publish a work which would be prohibitively expensive by any other means, then it should be made available. With hind-sight though, in our enthusiasm, we did jump in at the deep end. However, we learnt many lessons which I hope this account may help you to avoid.

Our first \TeX task outside of Dominik's domain was a *book* for our Arabist, Dr Lawrence Conrad, to commemorate the work of a recently deceased colleague. There was a tight dead-line for its publication, and \TeX 's ability to deal with diacritical markings promised Dr Conrad release from the typesetter/proofing ordeal.

Lesson number one—the obvious—do not start with anything longer than a couple of pages. Having said that though, Donald Knuth does describe \TeX as “a new typesetting system intended for the creation of beautiful books” [*The \TeX book*, Preface].

Lesson number two—a must—get your authors to proof and edit the content of their text *before* \TeX ing. Unfortunately, because of the nature of the book's content and a need to prove that \TeX could do the job, this was a lesson we learnt the hard way. There is nothing more guaranteed to drive a secretary to the brink of insanity than having to alter her slaved over text and re-sit through

all that interminable T_EX processing and printing procedure, which is not even in background mode! Our secretaries did a valiant job, with the end result being a superb 599 page book *The Formation and Perception of the Modern Arab World: Studies by Marwan R. Buheiry*, complete with 49 plates. This book sells for \$24. Dr Conrad informs me that if the book had been produced in the conventional manner it could not have sold for less than \$90. I mention this to encourage perseverance. It does pay off.

Lesson number three—if you are an applications developer, get your act together and provide an efficient system in order to prevent your secretaries deserting in droves. This is not a trivial point. In a city such as London, secretarial jobs are plentiful and well-paid.

To introduce T_EX effectively into your organisation, it has to be accepted that it is not for the masses to learn. Conceptually, it is likely to be different from any other text processing package a secretary has come across. I think of T_EX as a programming language embedded in the text, commanding the layout and design of the whole document. Often, complex nested macros are required to create the ultimate design. The first processing run is synonymous with de-bugging. This task is easier for a highly motivated person, with programming skills. Ideally, there should be someone employed with specific responsibility for T_EX development. In a circumstance where we were required to respond to an urgent demand I was fortunate in that Dominik was there to design the macros and style files. This is where the hard work lies.

The hardware and software chosen for our bulk text processing had to have some coherence with T_EX, or be able to be manipulated to be so, without isolating a T_EX system from the main stream of the Institute's requirements. Our word processing package had to change. DW3 was really cumbersome. Text had to be converted to ASCII format before it could be processed by T_EX. Often the conversion was problematic. EBCDIC control characters would be retained, grinding processing to a halt and taking an age to find. Fortunately, several major developments in the outside world helped to advance the integration of the T_EX cause. We were progressing into the age of the laser printer and the secretaries were keen to take advantage of this fast, quiet technology. IBM was notoriously bad at providing drivers for non-IBM printers. For a short time we used PC-WRITE to overcome these problems particularly for the book inputting, but it

did mean an added learning burden all round. The change had to be to a mainstream package which would provide the secretaries with a marketable skill and ourselves with a ready supply of able operators. The choice came down to two packages, WordPerfect and Microsoft Word, both of which were becoming industry standards. I chose the former because, as well as being a powerful package, it was much easier to learn than Microsoft Word, and WordPerfect Corporation provided excellent telephone technical support. There is an advantage in choosing industry standards in that everyone writes for them. You will never be stranded out on a limb.

The same can be said for choosing hardware. When it came to laser printers I opted to go with Hewlett-Packards. Their documentation is clear and informative on all levels and they have good customer support. As we are not an Apple site the LaserWriter was not an option. I would stress that I started buying nearly three years ago. There have been great changes since those days. Today, I would recommend that you go for a PostScript printer, because it is the advent of PostScript and T_EX's adaptation to its environment which has made really high quality output possible.

Lesson number four—you have to convince the powers that be that the upheavals involved in the implementation of T_EX are worth the effort invested. We have an Administrator whose task it is to ensure that the Institute runs efficiently and all staff are relatively satisfied with their working conditions. Rumbblings of discontent from the ranks were threatening to rock the boat and, to mix metaphors, he was in the firing line. He rightly asked why we should upset an established tradition of external typesetting which, as far as he was concerned, worked well. The Administrator had never had to bear the consequences of an individual author's frustrated typesetting resubmissions, the authors having previously suffered in silence, yet he was bearing the brunt of the secretaries' complaints. To him T_EX brought no improvements.

The argument to use is cost effectiveness. We needed to identify areas where T_EX would be of benefit to the production of main-stream Institute publications. A major vehicle in the T_EX PR battle was the publication of a comprehensive catalogue of the Wellcome Library's Tibetan collection entitled *Tibetan Manuscripts, Xylographs and Thankas in the Wellcome Institute Library*. The work had commenced in 1978 under the auspices of the collection's former curator, Miss Marianne Winder, and had been continued by her after her retirement.

The project was being funded by the Trustees of the Wellcome Institute, but there was some fear that the funding would disappear if the catalogue was not brought to publication before the end of the 1989 financial year, which fell in September.

We took this on as a T_EX project in the summer of 1988. In many ways we had to start practically from scratch. Text had started to be input on the DisplayWriter by Miss Winder herself and had subsequently been transferred into DW3. We converted all the DW3 text into WordPerfect in order to be able to use various inputting techniques I had devised to speed up the procedure. I can tell you that at this point Miss Winder was nearly having kittens: she had spent years painstakingly typing in all the entries, devising a form of codification that she hoped a typesetter would transform into Tibetan script and here we were practically stripping the whole thing bare.

The ability to sit down with the author and discuss the desired layout is an essential production process. We are fortunate to benefit from having a professional artist, Huw Geddes, on our staff as Exhibitions Designer experienced in catalogue layout, who was able to advise us in this area. The format for the manuscripts and xylographs section is more complex than that of the thankas, banners and paintings. Therefore a crucial stage in the undertaking of this project was in the creation of the different style files. This is where someone with an detailed knowledge of T_EX is essential, in this instance Dominik. Using his splendid L^AT_EX style files, the results illustrated in Figures 3 and 4 (Appendix) were produced.

Using this catalogue as an example, I shall outline to you the steps I then took to make the T_EX inputting procedure less of a burden for the secretaries.

Firstly, PC T_EX provides a simple menu facility which allows you to switch easily between your editor, the T_EX program itself, the printing program and the screen previewer. I strongly recommend installing a screen previewer as it is useful for checking page-breaks and formatting integrity. We use MaxView. This is not a particular recommendation for or against this previewer as I have not undertaken a detailed evaluation of previewers; suffice it to say that it serves our requirements.

The PCTEX.CFG file, which sets up the menu, can be customised to use a particular editor or word processor, along with certain options. I configured the file to run WordPerfect with the /m- macro command line option. When you use this option as you start WordPerfect, the program immediately

executes a macro name, which you specify after the /m-. The main T_EX text file for the manuscripts section of the catalogue was called TIB.TEX. I created a WordPerfect macro, TIB.WPM similar to the file name, consisting of the following key strokes:

```
{DISPLAY OFF} {Text In/Out}12
d:\winder\mscript\tib.tex
{Enter} {Setup}6s{Enter}
```

As one wishes to work with ASCII files for T_EX this macro retrieves the file called TIB.TEX in DOS text mode. The macro then goes on to change to an alternative keyboard layout called SANSKRIT. Here the Sanskrit and Tibetan diacritically marked characters as well as various frequently used words such as

```
{\it}={A}rya\~vakra\~cchedik\={a}%
praj\~{n}\={a}\~p\={a}ramit\={a}}
```

for *Āryavajracchedikāprajñāpāramitā*, were mapped onto CTRL-key combinations. The ALT-key combinations had WordPerfect macros relating to the T_EX formatting macros, e.g., `\begin{physical}` `\end{physical}`, assigned to them, thereby retaining a conceptual consistency in macro calling for the secretary. I should just like to bring to your attention the usefulness of using the pause feature within the macro for paired commands or commands requiring more than one argument. The WordPerfect Save key F7 had another macro called DOS.WPM assigned to it. When the secretary came to save the document the macro changed the keyboard layout back to the original, used the CTRL-F5 DOS Text save with a pause to confirm the document name including a .TEX extension, retained the prompt to confirm overwriting, then used F7 to exit the document without saving it as a WordPerfect file.

Within the PCTEX.CFG file:

```
%E=wp /m-%s
%C=tex &lplain %s
%V=view %s
%P=makeps %s
%T:Print:
%T=makeps %s
%C:LaTeX:
%T:Print:
/PT=d:\pctex\textfms
/PF=d:\pctex\textfms
/PI=d:\pctex\texinput;d:\pctex\latex
/K
```

the %s stands for the "string" file name that you would normally type after wp. To run the PC T_EX menu the user types `pctex` and the file name at the DOS prompt. Therefore, in this case, the command `pctex tib` ran WordPerfect with the TIB.WPM macro with the results described above. By utilising these features the secretary remains

within a familiar WordPerfect environment and has far fewer keystrokes to input. Alternatively, if you do not wish to install PC T_EX on the secretarial PCs then invoke the macro with `wp tib`.

The onerous burden, as she saw it, of T_EXing and printing the text is removed from the secretary and centralised — with me. This does seem to make the procedure of going through the PC T_EX menu redundant. The important concept to remember is that if the secretary wishes to become more involved, e.g., by using the previewer, then she has that choice. The more people on site with T_EX competence gained through motivation, the better. Any reasonably sized document should be split into logically manageable chunks, usually by chapter, for inputting. The whole, or its parts, can then be processed and printed by using a main text file (Figure 2, Appendix), which initiates the document style and uses the `\input` command for the relevant chapter. By centralising the processing and printing one can justify the expense of investing in a very fast machine with lots of memory, thereby saving valuable time and freeing secretarial PCs for inputting. For instance, I have a DELL 386 with a 90MB drive and 2MB RAM at the moment. It also means that there is a focal point for all queries and developments, of which there are many. The developer of the application should be aware of the output. Centralisation also encourages standardisation in error correction procedures. If the macros are well designed, there should not be many problems arising from the inputting, particularly with that old chestnut — the missing command parameter.

Having gone through this procedure, we sent off the 300 dpi laser printer camera ready copy to our printer, the result being a hardback catalogue which sells for £10 (approximately \$16) per copy. Because of the complexity of the typesetting, it is unlikely that the catalogue would have sold for less than £50 using conventional methods. I think the powers that be were suitably impressed, and Marianne Winder was ecstatic that she was able to hold in her hand the culmination of a lifetime's work. I would challenge any other 'DTP' package to turn out work of this calibre.

By now we had proven cost effectiveness and had convinced some of our authors that T_EX was a good thing, with the immediacy of correction and production virtually under their noses saving them time and anxiety. We had even produced catalogues for the various exhibitions held within the Institute, but The Powers That Be were still not convinced that T_EX could be a viable alternative

to external typesetting. The problem lay in the quality of the output. We were dependent on laser printed camera-ready copy which, to be honest, at a resolution of 300 dots per inch looked distinctly splodgy to the eyes of those more accustomed to commissioning *professional* publications. And then there was the Computer Modern Roman font. To our academics, librarians and curators steeped in tradition it was not universally popular. They wanted Times Roman at the very least.

Fortunately, along came PostScript which, with its ever extending font families, became another de facto standard and opened up new horizons for in-house electronic publishing. Linotron then put PostScript fonts onto their phototypesetters. This means that if you have a PostScript laser printer you can design and proof your document at 300dpi, then send the file to the phototypesetter confident in the knowledge that you will receive a bromide at 1270dpi with the exact same line and page breaks. The fact that we had Hewlett-Packard printers which are not PostScript was not too great a setback as we were able to purchase JetScript which is a PostScript enhancer for the HP Series II. However, I believe that the HP Series III will soon be provided with a PostScript cartridge.

We were keen to take advantage of this new potential, particularly as the University of London Computer Centre had set up a phototypesetter service using a Linotronic 300. The T_EX world did not ignore these developments either. Several DVI to PostScript drivers began to appear. We use one, DVItO_{PS}, designed by James Clarke which we obtained via the Aston Archives (detailed below). There are also commercially available drivers. The two I know of are from PC T_EX and ArborText.¹

DVItO_{PS} has a file `dvitops.fnt` in which you substitute the name of the font as it is known to T_EX (with the extension `.tfm` removed) with the name of the font as it is known to PostScript, for example Times-Roman. DVItO_{PS} also permits the inclusion of PostScript graphics in the document.

Because of the Institute's links with University College London we have access to their EUCLID system. Through the simple expediency of purchasing a modem (a Hayes Smartmodem 2400) and a good communications package (PROCOMM), I am, from my PC, able to link into JANET (the Joint Academic NETwork) and thus the whole world. More specifically I am able to link to the ULCC Phototypesetter

¹ Philip Taylor in *ImageSetting*, the Phototypesetter User Group magazine of the ULCC, lists several drivers.

service. As KERMIT is bundled with PROCOMM I am able to log into EUCLID, activate KERMIT on my PC, call up the ULCC Typesetter service via one of EUCLID's PADS, activate KERMIT at that end and have it transfer my laser printer proofed PostScript files to the ULCC VAX. The DVItO PS program has already enabled me to specify the required 1270dpi resolution for the typesetter output as opposed to 300dpi for the laser printer. ULCC then run my file through the Linotronic 300 and within two days I receive the bromides by post at a cost of approximately £1 per page. In Figure 4 (Appendix), you will see reproductions of identical catalogues we produced for two exhibitions at the Institute. The 1987 version used laserprinter camera ready copy with Computer Modern Roman fonts, the 1989 version used 1270dpi bromide camera ready copy with a Times Roman font. We were able to use the same input file with minor modifications. The beauty of T_EX is that you struggle once, then use the fruits of your labour over and over again.

WordPerfect Specifics

I have not gone into great detail describing how to create keyboard layouts and macros, but refer you to Anita Hoover's excellent paper on this subject in last year's proceedings. I have given an example of the use of an alternate keyboard layout above. There are, however, a few procedures which I feel can be usefully elaborated.

Firstly, a brief definition of the terms alternate keyboard layout, macro and style. With an alternate keyboard layout it is possible to change action performed by keys or combinations of keys. Moreover, you can create several keyboard definitions for different purposes. A macro is a file you create to represent a whole series of keystrokes. You can create a macro to perform nearly any task that you could accomplish with a series of keystrokes. This series can then be assigned to one key only in an alternate keyboard definition. The activation of the alternate keyboard definition can also be assigned to a macro. Style is a powerful tool for controlling the format of an individual document or a group of documents. You define and name a style, and then when you want to use that style, you select it from a list. Again, macros can be used to search for and replace a particular style with another. The combination of these three features allows an incredible amount of flexibility for T_EX conversion. One example is to create a macro in which you create a paired style for the `{\bf` and `}` formatting codes. This

macro can then be assigned to the standard WordPerfect function key for activating bold, F6, under an alternate keyboard layout designed for T_EX inputting. A macro can be designed to activate that keyboard whenever a document is to be in T_EX. In this way any secretary will be using familiar keys to activate a bold command, but the output will be a T_EX command.

The complex nature of the documents I have used in my examples so far has required the necessary T_EX command sequences to be input with the text. For straightforward content it is possible to allow the secretary to input using WordPerfect's formatting codes but involving the use of WordPerfect's style and macro features. As I have mentioned, a feature of style is the ability to change the formatting codes within a document. Again using the bold example, the beginning BOLD command is replaced with `{\bf` and the end bold with `}`. To create a paired style like this you go into a Paired Codes screen where your cursor is placed before a comment box. This box represents the text that is surrounded by the on and off conditions for the style. You enter the control sequences for the beginning of the style before the comment box, `{\bf` in this example, then move the cursor down to below the box and type in the sequences for ending the style `}`. An Alt macro can also be created to activate this style.

By using Block you can then replace existing codes in your document with this new style. To do this you complete the following steps:

1. Place the cursor at one end of the block you want to define.
2. Press Block (Alt-F4, or F12).
3. Highlight the block.
4. Press Style (Alt-F8).
5. Use the cursor keys to highlight the style you want.
6. Select On (1).

All of these steps can, of course, be stored in a single key macro.

In the academic world many documents contain footnotes. With T_EX the footnote text is included in the main body of the text, which can often cause problems with the authors when they are proofing and editing. Footnotes change their reference points or are taken out altogether, thus altering the relative numbering. WordPerfect's footnoting feature offers the secretary a relatively painless means of accomplishing this task. This is how to replace a WordPerfect footnote with a L^AT_EX footnote. Go to the top of the document as WordPerfect macros are

created by example. Use `Ctrl-F10` to create the macro. It can be called `Alt-F`. Use `F2` to search forward for the footnote option code `Ctrl-7`. Enter 1 for Footnote and 1 again for Note. At this point the prompt indicates `Search~[Footnote]`. Press `F2` to activate the search. The cursor will be placed to the right of the footnote number, therefore move it one space to the left over the number. Type in `\footnote{` which will go to the left of the number. Then press `Ctrl-F7`, 1 for the footnote option and 2 and `Enter`. This takes you into the text of the footnote number on which the cursor is currently placed. Use WordPerfect's `Home Home \downarrow` combination to take you to the end of the text no matter how long it is. Type in the `}`. Use `Home Home \uparrow` to go to the beginning of the text, just to the left of the number. `Alt-F4` to start blocking the footnote text, `Home Home \downarrow` to highlight the blocked text, then `Ctrl-F4`, 1, 1 to move the block. At this point press `F7` to exit the footnote text back to the main body. Press `Enter` to retrieve the text, which will be inserted just after the `{` of `\footnote{`. Move the cursor one space to the left and press `Delete`, `Y` in order to delete the WordPerfect footnote number. To cause the macro to repeat itself until no further footnotes are found press `Alt-F` again. Ignore the `ERROR message: ALTF.WPM not found`. Press `Ctrl-F10` to exit the macro definition. To run the macro press `Alt-F`, and away it goes. Note that in the \LaTeX environment there is no need to insert footnote numbers. These are incremented automatically.

Conclusion

Before beginning to learn \TeX , I would recommend the apprentice \TeX er (or perhaps \TeX an) should use \LaTeX , a macro package developed by Leslie Lamport, as a starting point. If you are happy to stick with his design specifications, then beautifully turned out documents can be produced relatively painlessly. \LaTeX can give you the basic feel of \TeX and as you become more experienced and confident in its use you can tweak it by adding macros of your own. I should warn you to expect a few glitches at this point.

I would advocate investing in back copies of *TUGboat*. There has been a wealth of \TeX and \LaTeX experimentation, experience and developments over the past few years which have been documented in this publication. If you are able to link into an academic email network then subscribe to \TeX hax, and/or UK \TeX in the UK, where user problems and solutions are aired. These bulletin

boards are not for the real beginner as all levels of problems are intermixed, often with some prior knowledge being assumed.

I have always been concerned that nonacademic users are often cut off from developing \TeX 's potential because of the difficulty in obtaining information if one is not on the network. When we first began with \TeX we were in this situation. We were, and are, an IBM-PC compatible environment, therefore we bought PC \TeX , thus gaining a commercial company's technical support (admittedly somewhat stretched at times across the Atlantic) to help us overcome initial implementation problems. To nonacademic users I would say look at the commercial options in the PC or MAC worlds. It is not absolutely necessary to be linked to electronic mail. Peter Abbott at Aston University holds a repository of all \TeX related developments which can be obtained on disk as well as downloaded. He will also send you printed copies of UK \TeX .

I confess that I am not fully aware of all the latest developments in the \TeX world as other responsibilities unfortunately demand my attention. I am sure that more sophisticated set-ups can be achieved. In fact, I hope that people will stand up and tell us what other gems are available. My intention in this paper has been to prove by my example that any Noddy, with the help of Big Ears, can achieve quite a lot. Your Big Ears is this \TeX community, which has never hesitated in sharing its hard-earned experience. Don't be afraid to ask.

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Appendix

Works on Bhakti

Dvādaśākṣarīkośakārikā. -- AD 1839 Serial no.1
leaves 7r-8v: paper. -- In Sanskrit. -- Copied by Suphagaṇa(?).
-- Date of copying: 14 kṛṣṇapakṣa of Bhādrapada, saṃ 1896. -- Copied
in Indraprastha, Jasapatavāida(?). -- Bibliography: not in NCC; not
the same text as MS ABC 199, nos.6431-6435. -- Complete in 12
verses. Explains that the meaning of the letters
n,m,bh,g,v,t,v,s,d,v,y is namo bhagavate vāsudevāya. -- With i)
Bhūtabhaviṣyatipraśna. -- Devanāgarī script.
Shelved at α 971 (ii).

Figure 1: Excerpt from first published handlist

```
% This is TIBET.TEX, the main text file for Marianne Winder's
% catalogue of the Tibetan manuscripts in the Wellcome's Oriental
% Collections.
\documentstyle[tib]{book}
\pagestyle{myheadings}
%Working title page information
\title{A Catalogue of Tibetan manuscripts and Xylographs, \
and a Catalogue of Thankas and other Paintings and Drawings\
in the Library of\
Wellcome Institute for
the History of Medicine}
\author{by Marianne Winder}
\date{\large{\tt Draft proof of \today}}
%% The document itself
\begin{document}
\maketitle %Comment *in* for final run
\markboth{{Manuscripts and Xylographs}}{Manuscripts and Xylographs}
\input{tibtitle}
\input{copyright}
\input{forewrd}
\input{mstit2}
\input{mstoc}
\input{intro}
\input{abbrevtn}
\input{principl}
\input{tib}
\input{bib}
\input{mstitls2}
\input{shelf}
\end{document}
```

Figure 2: Main text file for T_EXprocessing

Incantations against evil and diseases

Wellcome Tibetan 11b

- 1 Manuscript; 11 × 34(7 × 29) cm.; ff. 30; 5 lines to a page; dbu can; gold and silver (i.e., yellow and white) writing on dark blue paper; painted boards 11½ × 34 cm. and leather strap.

Ff. 8–12: **rdo rje rnam par 'joms pa'i gzuñs**,
Vajravidāraṇānāmadhāraṇī, “Incantation of all conquering indestructible reality”, [religion, ritual, incantation]. *Tripitaka* 406,8
Tripitaka 574,11 translated by Jinamitra, Dānaśīla and Ye-śes-sde.

Purchased at Sotheby's, 31.10.1933.

Wellcome Tibetan 21

- 2 Xylograph; 78½ × 51½ cm.; broadsheet; 7 lines to a page; dbu can; three woodcuts.

stag señ om ā hūṃ ... om ma ṇi pad me hūṃ hrī khyuñ 'brug,

“Tiger, lion, om ā hūṃ, om ma ṇi pa dme hūṃ hrīḥ, ... garuḍa, dragon”, [ritual, mantras].

Print used on prayer flags. Tiger, lion, garuḍa and snake are the four conquerors of evil forces located in the four directions. — Previous owner L. A. Waddell.

— Purchased at Sotheby's, 29.11.1920.

Wellcome Tibetan 36

- 3 Manuscript; 9 × 24½(7 × 22) cm.; ff. 27; 8 or 7 lines to a page; dbu med, & can; black and red ink on white paper, diagrams; strong brown paper covers 9 × 24½ cm.

Incipit in centre of f. 1v: **sgal tshigs gser gyi**,
 “The golden spine”, [ritual text with mantras].

Folios sewn together except f. 25 which is separate. — The illegible beginning of the MS is on the brown paper cover. — Folio 24, before *dbu can* script begins, is blank. — Previous owner Kohser Temple, Lahore, 1871.

— Purchased at Stevens', 31.5.1907.

Wellcome Tibetan 37

- 4 Manuscript; 6 × 22½(4½ × 19) cm.; ff. 113; 6 lines to a page; dbu med; black and red ink on white paper; wooden, slightly carved boards 8 × 23 cm.

Figure 3: Sample page

Case 6

ORIENTAL COLLECTION

The collection of oriental manuscripts and printed books – comprising over 11,000 manuscripts and some 3,000 printed books in 43 different languages – is one of the most important in Europe. While medical history is central to the collection, many cognate topics are represented. Variety of subject matter and language is matched by diversity of medium. Besides paper and vellum, the collection includes manuscripts written on bamboo, bone, ivory, metal, tree bark and palm leaf. This small display indicates something of the diversity and variety of the collection.

1. Amulets

Amulets were employed to protect man or his possessions from evil influences, including illness. The amulet is found in the East and in the West, among both tribal and settled peoples; and it exists to the present day. Assyrians and Egyptians, Greeks and Romans, Jews and Christians, fostered this ancient tradition – which, among the Jews, has a history of some three thousand years. Three Hebrew medical amulets are displayed:

- i. **Amulet for a fruitful marriage.** c.17th century; written in Italy in iron gall ink on paper.
- ii. **Amulet for the protection of Bela daughter of Rachel from plague.** c.18th century; vellum.
- iii. **Amulet for the protection of Moses David son of Esther from plague.** c.18th century; vellum contained in parchment case.

2. Medical notebook

This beautifully copied Hebrew manuscript, probably the notebook of a physician called Elhanan (f.11v), contains marginal annotations. Patients are named, including Moses, the writer's son (f. 10r), and Dulcita his wife (ff. 15v & 16v). The opening shown includes a remedy for pain in the ilium. Copied c.17th/18th century, in a fine Italian hand.

3. **Birkot ha-milah u-minhag wa-sepher ha-milah ke-phi ha-nahug baz'ot ha-kehillah.** London.

'Blessings of circumcision and the conduct and service of circumcision as it is led in this congregation ... London'. This finely executed Hebrew manuscript was copied by Isaac Luria in London during the late 18th or early 19th centuries: it lays out the form of service for the rite of circumcision to be followed by a London congregation.

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4. **Sharḥ Qānūn al-Qānūn.**

K. Qānūnča. a. [1344]. The Arabic text of the *Qānūn* of Muhammad Tāqī al-Qānūnī, the Ottoman Sultan.