LaTeX and BibTeX for ASAE Papers*

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Abstract

A LaTeX style for the American Society for Agricultural Engineers (ASAE) is discussed. This is not official and not (yet) an accepted way to submit articles to ASAE. *This is NOT an ASAE Transcations article.*

Keywords. LaTeX, BibTeX, typesetting, ASAE Transactions.

Introduction

This document, when compared to source code, instructs someone on the use of `asaetr.sty`, a LaTeX style file for writing documents that look like *ASAE Transactions* articles. Examples of section headers, itemized lists, tables, and figures are given. Hopefully, a document written using the default `article` style in LaTeX could be transformed to look like a *Transactions* article by only a few changes.

The American Society of Agricultural Engineers editorial staff encourages authors to submit electronic manuscripts in the following formats: MacWrite, MS–Word, MS–Works (preferably Version 2.0), WordPerfect (Version 5.0 or later), and WriteNow (ASAE, 1991). Though LaTeX is not an accepted format to submit articles to ASAE, it does have utility when predicting page length and appearance of an article that you submit. Predicting page length is especially important when submitting "Technical Notes" (which cannot exceed two pages) and when trying to avoid unnecessary page charges.

It should be emphasized that this document was written as an example of use of the style files; it's value is greatly enhanced if you compare it with source code (see a later section for instructions) and a copy of *ASAE Transactions*.

*Written for presentation as the 1992 International Winter-Meeting of ASAE.

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Objective

The objective of this work was to develop LaTeX and BibTeX style files for ASAE members.

Finer Objectives

Well, that sounds pretty noble, but I also wanted to

1. Make it easier on myself (because I'm a programmer, and programmers are lazy),
2. Encourage a friend to switch to TeX and
3. Show you the use of a `\subsubsection` heading and the `enumerate` environment.

Test Heading. This is a test of level four headings.

Getting Started

If you're unfamilar with LaTeX, I would suggest picking up a copy of the manual (Lamport, 1986) and putting this paper aside for a while. If you're already familiar, read on.

The Preamble

The preamble is where tell LaTeX that you are going to use `asaetr.sty`. It's also where you list the authors and ASAE membership grades. Here's an example:

```
\documentstyle{asaetr}
\title{Boring Title}
\author{U.\ B.\ Boring \fellow \and
       I.\ M.\ Young \student \and
       R.\ U.\ Happy \nonmember   }
\begin{document}
\maketitle
```

I have used up to four authors and still got it fit on one line. Five authors may fit, depending on the lengths of the names. If they don't all fit, two rows of authors will be formed. Membership grades can be any of

`\member`, `\associate`, `\student`, `\affiliate`, or `\fellow`.

You can also use `\nonmember`, but it has the same effect as leaving the membership grade off. The `\maketitle` command simply tells LaTeX to use this author and title information to compose the title of the paper.

The Abstract

After the preamble comes the abstract. Here's an example:

```
\begin{abstract}
This is going to be short. See, I told you.
\keywords{brevity, terseness, words.}
\end{abstract}
```

This should be straightforward enough.

The Body

The commands that you should be most familiar with to typeset the body of your paper are the sectioning commands. They are

section: Same level as the Introduction.

subsection: Secondary headings, such as "Objectives."

subsubsection: Third level headings.

paragraph: Avoid fourth level headings.

The usage of these commands can be best described by an example:

```
\subsection{The Body}
```

This is the sectioning command for the section you are now reading.

You may want to avoid fourth level headings because it requires an additional font for your TeX installation: `cmcscsl10`. This is a slanted, small caps font. If you have METAFONT working on your system, this is not a problem. Source code for this font is available with the style files. Ask you local TeX guru for help, should you need it.

Figures and Tables

If you have a POSTSCRIPT printer available, it's highly recommended that you use the `\psfig` macros written by Trevor Darrell to include high quality figures. Another useful utility for including figures is `fig` (or `xfig` if you use X Windows). Figure 1 was created in about 30 seconds using `xfig`. You can get `fig` from `cayuga.cs.rochester.edu` by anonymous ftp. Remember that in *Transactions of the ASAE*, captions for figures go *below* the figures.

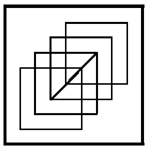

Figure 1 – Primitive figure.

If you plan to include tables, and if you want to have footnotes within these tables, use the `minipage` environment. Contact your local LaTeX guru or see your *local guide* for more information about how to code tables. The source code for this paper also provides good information. You'll notice in *Transactions of the ASAE* or in *Applied Engineering in Agriculture* they use thicker lines for the top and bottom rules in tables. Instead of having to change line thickness yourself (as you do in using document style "article" and others), you can use two macros that come with this style: `\thickhline` and `\thinhline`. See the example table in this document (Table 1). Don't forget to put the caption *above* the table instead of below it.

The References

BibTeX automatically generates the "References" section of your paper from an external database. Style files govern to appearance of your "References" section. In principle, you could change a paper, which met the requirements of one professional society, to that of another by simply changing the style file that you use. The style file `asaetr.bst` (for ASAE) is currently being developed. Other style files exist for IEEE, ACM, APA, etc.

To use BibTeX, you normally process your file with LaTeX, then with BibTeX, then twice more with LaTeX. The BibTeX style file, which is unfinished, comes close to the citation style used by ASAE. You may have to edit some entries by hand. To do this, edit the `*.bbl` file after you have processed the file with BibTeX. See Appendix B in (Lamport, 1986) for more information about BibTeX.

Table 1: Comparison of Publishing Tools

Tool	Learning Curve[a] (*units*)	Support[b] (*units*)
FrameMaker	5.0	6.0
Troff	10.0	1.0
TeX[c]	7.0	10.0

[a] 1.0 being easiest.
[b] 10.0 being the best.
[c] TeX is the winner!

Submission

When you submit to ASAE, they want a double–spaced, single–column document with figures and tables on separate pages. If you've written you document using
`\documentstyle{asaetr}`,
simply change that first line to read
`\documentstyle[asaesubmit]{asaetr}`.
This makes all the changes necessary.

Where to Find

This collection of files discussed in this paper include:

asaetr.sty: LaTeX style

asaesubmit.sty: for paper submissions to ASAE

asaetr.bst: BibTeX style

asaetr.tex: example usage of and documentation for above (source for this document)

asaetr.bib: part of the above example

cmcscsl10.mf: METAFONT source for level four heading font

A copy of this collection of style files can be obtained via anonymous ftp:

```
% ftp sun.soe.clarkson.edu
Connected to sun.soe.clarkson.edu.
Name (sun.soe.clarkson.edu:jdm5548): anonymous
331 Guest login ok, send ident as password.
Password: jdm5548@diamond.tamu.edu
230 Guest login ok, access restrictions apply.
ftp> cd pub/tex/latex-style
250 CWD command successful.
ftp> mget asae*
...
ftp> quit
```

To retrieve this collection via electronic mail, send a MAIL message to

`FILESERV@SHSU.BITNET`

with the command:

`SENDME ASAETR`

Conclusion

This file should serve as an excellent example of the use of the style files. If you still can't figure things out, hunt up your local guru and ask him/her to explain LaTeX and BibTeX style files.

References

ASAE. 1990. Instructions to authors of ASAE technical publications. *Transactions of the ASAE* 33(4).

Lamport, L. 1986. *LaTeX: A Document Preparation System.* Reading, MA: Addison–Wesley Pub. Co.

Source Code of This Paper

```
% asaetr.tex v1.0 01 Jan 92
\documentstyle{asaetr}
\title{\LaTeX\ and B\kern-.05em{\large I}\kern-.025em{\large B}\kern-.08em\TeX\
       for ASAE Papers\thanks{Written for presentation as the 1992 International WinterMeeting of ASAE.}
      }
\author{J.~D.~McCauley\thanks{USDA Fellow, Department of Agricultural Engineering, Purdue University. Formerly,
       Graduate Assistant--Research, Department of Agricultural Engineering, Texas A\&M University.
       ({\tt jdm5548@diamond.tamu.edu}).} \student
       %\and
       %A.~D.~Whittaker \member
       }
       % the format is: name \membership_grade, where membership_grade
       % is one of ( \member, \associate, \student, \affiliate, \fellow)
\begin{document}
\bibliographystyle{asaetr}
\maketitle

\begin{abstract}
A \LaTeX\ style for the American Society for Agricultural Engineers (ASAE) is discussed. This is not official
and not (yet) an accepted way to submit articles to ASAE.  {\em This is NOT an ASAE Transcations article.}
\keywords{\LaTeX,\ \BibTeX,\ typesetting, ASAE Transactions.}
\end{abstract}

\section{Introduction}
\drop{T}his document, when compared to source code, instructs someone on the use of {\tt asaetr.sty},
a \LaTeX\ style file for writing documents that look like {\it ASAE Transactions} articles.  Examples
of section headers, itemized lists, tables, and figures are given. Hopefully, a document written using
the default {\tt article} style in \LaTeX\ could be transformed to look like a {\em Transactions} article
by only a few changes.

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manuscripts in the following formats: MacWrite, MS--Word, MS--Works (preferably Version 2.0), WordPerfect
(Version 5.0 or later), and WriteNow \cite{asaeins} (ASAE, 1991).  Though \LaTeX\ is not an accepted
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of an article that you submit. Predicting page length is especially important when submitting
``Technical Notes'' (which cannot exceed two pages) and when trying to avoid unnecessary page charges.

It should be emphasized that this document was written as an example of use of the style files;
it's value is greatly enhanced if you compare it with source code (see a later section for instructions)
and a copy of {\em ASAE Transactions}.

\subsection{Objective}

The objective of this work was to develop \LaTeX\ and \BibTeX\ style files for ASAE members.

\subsubsection{Finer Objectives}
Well, that sounds pretty noble, but I also wanted to
\begin{enumerate}
\item Make it easier on myself (because I'm a programmer, and programmers are lazy),
\item Encourage a friend to switch to \TeX\, and
\item Show you the use of a  \verb#\subsubsection# heading and the
{\tt enumerate} environment.
\end{enumerate}

\paragraph{Test Heading}
This is a test of level four headings.

\section{Getting Started}

If you're unfamilar with \LaTeX, I would suggest picking up a copy of the manual (Lamport, 1986)
\cite[note]{ll:86} and putting this paper aside for a while. If you're already familiar, read on.

\subsection{The Preamble}
The preamble is where tell \LaTeX\ that you are going to use {\tt asaetr.sty}.  It's also where you
list the authors and ASAE membership grades. Here's an example:
\small\begin{verbatim}
```

```
 \documentstyle{asaetr}
 \title{Boring Title}
 \author{U.\ B.\ Boring \fellow \and
       I.\ M.\ Young \student \and
       R.\ U.\ Happy \nonmember   }
 \begin{document}
 \maketitle
end{verbatim} \normalsize
I have used up to four authors and still got it fit on one line.  Five authors may fit, depending
on the lengths of the names. If they don't all fit, two rows of authors will be formed. Membership grades can be
any of
\small \begin{verbatim}
 \member, \associate, \student,
 \affiliate, or \fellow.
end{verbatim} \normalsize
\noindent
You can also use \verb#\nonmember#, but it has the same effect as leaving the membership grade off.
The \verb#\maketitle# command simply tells \LaTeX\ to use this author and title information to
compose the title of the paper.

\subsection{The Abstract}

After the preamble comes the abstract. Here's an example:
\small\begin{verbatim}
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This is going to be short. See, I told you.
\keywords{brevity, terseness, words.}
\end{abstract}
end{verbatim}\normalsize
This should be straightforward enough.

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The commands that you should be most familiar with to typeset the body of your paper are the sectioning
commands. They are
\begin{description}
\item[section:] Same  level as the Introduction.
\item[subsection:] Secondary headings, such as ``Objectives.''
\item[subsubsection:] Third level headings.
\item[paragraph:] Avoid fourth level headings.
\end{description}
The usage of these commands can be best described by an example:
\begin{verbatim}
\subsection{The Body}
end{verbatim}
This is the sectioning command for the section you are now reading.

You may want to avoid fourth level headings because it requires an additional font for your \TeX\
installation: {\tt cmcscsl10}.  This is a slanted, small caps font. If you have \MF\ working on your
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the style files. Ask you local \TeX\ guru for help, should you need it.

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that in {\em Transactions of the ASAE}, captions for figures go {\em below} the figures.

\renewcommand{\footnoterule}{} % no line
\begin{table}[hbp]
\footnotesize
\caption{Comparison of Publishing Tools}
\begin{center}
\begin{minipage}{\columnwidth}
\renewcommand{\footnoterule}{} % no line
\begin{center}
```

```
\renewcommand{\thefootnote}{\fnsym{footnote}}
\begin{tabular}{lrrrrr}  \thickhline
Tool & \multicolumn{3}{c}{Learning Curve\footnote{1.0 being easiest.}
  }& \multicolumn{3}{c}{Support\footnote{10.0 being the best.}}\\
& \multicolumn{3}{c}{($units$)} & \multicolumn{3}{c}{($units$)}\\ \thinhline
FrameMaker && 5.0 && 6.0 \\
Troff && 10.0 && 1.0 \\
\TeX \footnote{\TeX\ is the winner!} && 7.0 && 10.0  \\ \thickhline
\end{tabular}
\linethickness{0pt}
\end{center}
\end{minipage}
\end{center}
\end{table}

\begin{figure}[htb]
  \setlength{\unitlength}{0.1mm} %{0.00625in}%{0.0125in}%
  \begin{center}
    \begin{picture}(181,181)(0,0)
      \thinlines \multiput(80,80)(-20,-20){4}{\framebox(80,80){}}
      \thicklines \put(0,0){\framebox(180,180){}}
      \put(60,60){\line( 1, 1){ 60}}
    \end{picture}
  \end{center}
  \caption{Primitive figure.}
\end{figure}

If you plan to include tables, and if you want to have footnotes within these tables, use the
{\tt minipage} environment.  Contact your local \LaTeX\ guru or see your {\em local guide} for more
information about how to code tables. The source code for this paper also provides good information.
You'll notice in {\em Transactions of the ASAE} or in {\em Applied Engineering in Agriculture} they use
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yourself (as you do in using document style ``article'' and others), you can use two macros that come with
this style: \verb#\thickhline# and \verb#\thinhline#.  See the example table in this document
(Table 1).  Don't forget to put the caption {\em above} the table instead of below it.

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(Lamport, 1986) for more information about \BibTeX.

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When you submit to ASAE, they want a double--spaced, single--column document with figures and
tables on separate pages.  If you've written you document using

\noindent{\verb#\documentstyle{asaetr}#,}\par
\noindent simply change that first line to read\par
\noindent{\verb#\documentstyle[asaesubmit]{asaetr}#.}\par
\noindent This makes all the changes necessary.

\section{Where to Find}
This collection of files discussed in this paper include:
\begin{description}
\item[asaetr.sty:] \LaTeX\ style
\item[asaesubmit.sty:] for paper submissions to ASAE
\item[asaetr.bst:] \BibTeX\ style
\item[asaetr.tex:] example usage of and documentation for above (source for this document)
\item[asaetr.bib:] part of the above example
```

```
\item[cmcscsl10.mf:] \MF\ source for level four heading font
\end{description}

A copy of this collection of style files can be obtained via anonymous ftp:
\small \begin{verbatim}
% ftp sun.soe.clarkson.edu
Connected to sun.soe.clarkson.edu.
Name (sun.soe.clarkson.edu:jdm5548): anonymous
331 Guest login ok, send ident as password.
Password: jdm5548@diamond.tamu.edu
230 Guest login ok, access restrictions apply.
ftp> cd pub/tex/latex-style
250 CWD command successful.
ftp> mget asae*
...
ftp> quit
end{verbatim}\normalsize
\noindent
To retrieve this collection via electronic mail, send a MAIL message to

\centerline{\tt FILESERV@SHSU.BITNET}
\noindent with the command:

\centerline{\tt SENDME ASAETR}

\section{Conclusion}

This file should serve as an excellent example of the use of the style files.  If you still can't
figure things out, hunt up your local guru and ask him/her to explain \LaTeX\ and \BibTeX\ style files.

\bibliography{asaetr}
\end{document}
```