

# The `tugboat` package\*

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## 1 Document preambles

```

1 <ltugboatcls | ltugproccls | ltugcomn>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile                {tugboat.dtx}
4 </dtx>
5 <ltugboatcls>\ProvidesClass {ltugboat}
6 <ltugproccls>\ProvidesClass {ltugproc}
7 <ltugboatsty>\ProvidesPackage{ltugboat}
8 <ltugprocsty>\ProvidesPackage{ltugproc}
9 <ltugcomn>   \ProvidesPackage{ltugcomn}
10             [2004/07/06 v1.6
11 <ltugboatcls>                TUGboat journal class%
12 <ltugproccls>                TUG conference proceedings class%
13 <ltugboatsty | ltugprocsty>  TUG compatibility package%
14 <ltugcomn>                  TUGboat 'common macros' package%
15 <*dtx>
16                               TUG macros source file%
17 </dtx>
18                               ]
19 <*dtx>
20 \newif\ifoldlongtable
21 </dtx>

```

## 2 Introduction

This file contains all the macros for typesetting *TUGboat* with both plain  $\TeX$  and  $\LaTeX$  2 $\epsilon$ .

### 2.1 Summary of control sequences

Abbreviations. Just a listing with indications of expansion where that may not be obvious. For full definitions, see real code below (Section 3.4).

$\backslash$ AllTeX	( $\mathbb{A}$ ) $\TeX$
$\backslash$ AMS	American Mathematical Society
$\backslash$ AmSTeX	
$\backslash$ aw	A-W (abbreviation for Addison-Wesley)
$\backslash$ AW	Addison-Wesley
$\backslash$ BibTeX	
$\backslash$ CandT	Computers & Typesetting

<code>\ConTeXt</code>	ConTeXt
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVItOVDU</code>	DVItOVDU
<code>\eTeX</code>	$\epsilon$ -TeX
<code>\Ghostscript</code>	
<code>\Hawaii</code>	Hawai‘i
<code>\HTML</code>	
<code>\ISBN</code>	ISBN
<code>\ISSN</code>	ISSN
<code>\JTeX</code>	
<code>\JoT</code>	The Joy of TeX
<code>\LaTeX</code>	
<code>\MacOSX</code>	Mac OS X
<code>\MathML</code>	
<code>\Mc</code>	M with raised c
<code>\MF</code>	METAFONT
<code>\mf</code>	METAFONT
<code>\MFB</code>	The Metafont book
<code>\MP</code>	METAPOST
<code>\mp</code>	MetaPost (in text only: remains ‘ $\mp$ ’ in maths)
<code>\OMEGA</code>	Omega ‘logo’ ( $\Omega$ )
<code>\OCP</code>	Omega compiled process
<code>\OTP</code>	Omega translation process
<code>\mtex</code>	multilingual TeX
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pcTeX</code>	
<code>\Pas</code>	Pascal
<code>\PiCTeX</code>	
<code>\plain</code>	plain (in typewriter font)
<code>\POBox</code>	P. O. Box
<code>\PS</code>	PostScript (with hyphenation)
<code>\SC</code>	Steering Committee
<code>\SGML</code>	SGML
<code>\SliTeX</code>	
<code>\slMF</code>	Metafont (slanted) — deprecated: use <code>\textsl</code> instead
<code>\stTeX</code>	TeX for the Atari ST
<code>\TANGLE</code>	
<code>\TB</code>	The TeXbook
<code>\TeX</code>	(Although nearly every package defines this, most—including plain—are missing the space-factor adjustment)
<code>\TeXhax</code>	
<code>\TeXMaG</code>	(defunct)
<code>\TeXtures</code>	
<code>\TeXXeT</code>	
<code>\Thanh</code>	

<code>\TUB</code>	<i>TUGboat</i>
<code>\TUG</code>	TeX Users Group
<code>\UNIX</code>	
<code>\VAX</code>	
<code>\VorTeX</code>	
<code>\XeT</code>	
<code>\XML</code>	
<code>\WEB</code>	
<code>\WEAVE</code>	

Macros for things that are slightly more significant.

<code>\NoBlackBoxes</code>	turns off marginal rules marking overfull boxes
<code>\BlackBoxes</code>	turns them back on
<code>\newline</code>	horizontal glue plus a break
<code>\ifundefined#1</code>	checks argument with <code>\csname</code> against <code>\relax</code>
<code>\topsmash</code>	smashes above baseline (from AMSTeX)
<code>\botsmash</code>	smashes below baseline (from AMSTeX)
<code>\smash</code>	smashes both (from plain)
<code>\ulap</code>	lap upwards
<code>\dlap</code>	lap downwards
<code>\xlap</code>	reference point at center horizontally; 0 width
<code>\ylap</code>	reference point at center vertically; 0 height, depth
<code>\zlap</code>	combination <code>\xlap</code> and <code>\ylap</code>
<code>\basezero</code>	to avoid insertion of <code>baselineskip</code> and <code>lineskip</code> glue
<code>\nullhrule</code>	empty <code>\hrule</code>
<code>\nullvrule</code>	empty <code>\vrule</code>
<code>\makestrut[#1;#2]</code>	ad hoc struts; #1=height, #2=depth
<code>\today</code>	today's date
<code>\SetTime</code>	converts <code>\time</code> to hours, minutes
<code>\now</code>	displays time in hours and minutes
<code>\Now</code>	shows current date and time
<code>\ifPrelimDraft</code>	flag to indicate status as preliminary draft
<code>\rtitlex</code>	<i>TUGboat</i> volume and number info for running head
<code>\midrttitle</code>	information for center of running head
<code>\HorzR@gisterRule</code>	pieces of registration marks ('trimmarks')
<code>\DownShortR@gisterRule</code>	
<code>\UpShortR@gisterRule</code>	
<code>\ttopregister</code>	top registration line with 'T' in center
<code>\tbotregister</code>	bottom registration line with inverted 'T' in center
<code>\topregister</code>	register actually used
<code>\botregister</code>	
<code>\raggedskip</code>	parameters used for ragged settings
<code>\raggedstretch</code>	
<code>\raggedparfill</code>	
<code>\raggedspaces</code>	
<code>\raggedright</code>	

<code>\raggedleft</code>	
<code>\raggedcenter</code>	
<code>\normalspaces</code>	
<code>\raggedbottom</code>	
<code>\bull</code>	square bullet
<code>\cents</code>	‘cents’ sign
<code>\Dag</code>	superscripted dagger
<code>\careof</code>	c/o
<code>\sfrac</code>	slashed fraction (arguments optionally separated by a slash)
<code>\cs</code>	control sequence name <code>\cs{name}→\name</code>
<code>\env</code>	environment name <code>\env{name}→\begin{name}</code>
<code>\meta</code>	meta-argument name <code>\meta{name}→⟨name⟩</code>
<code>\dash</code>	en-dash surrounded by thinspaces; only breakable AFTER
<code>\Dash</code>	em-dash, as above
<code>\hyph</code>	permit automatic hyphenation after an actual hyphen
<code>\slash</code>	‘breakable’ slash
<code>\nth</code>	for obtaining ‘1 <sup>st</sup> ’, ‘2 <sup>nd</sup> ’, 3 <sup>rd</sup> , etc.
<code>\tubissue</code>	gets \TUB followed by volume and issue numbers
<code>\xEdNote</code>	Editor’s Note:
<code>\Review:</code>	Review: (for title of book review article)
<code>\reviewitem</code>	begin data for item being reviewed
<code>\revauth</code>	with one argument, author(s) of item being reviewed
<code>\revtitle</code>	with one argument, title of ...
<code>\revpubinfo</code>	with one argument, other info pertaining to ...
<code>\endreviewitem</code>	end data for item being reviewed
<code>\booktitle</code>	with one argument, format book title in text
<code>\Input</code>	<code>\input</code> with some other bookkeeping for case where multiple articles are put together
<code>\TBremark</code>	reminder to <i>TUGboat</i> editorial staff
<code>\TBEnableRemarks</code>	enable \TBremarks (normally suppressed)
<code>\pagexref</code>	used to write out page numbers to screen and external files
<code>\pagexrefON</code>	
<code>\pagexrefOFF</code>	
<code>\xrefto</code>	used for symbolic cross-reference to other pages
<code>\xreftoON</code>	in <i>TUGboat</i>
<code>\xreftoOFF</code>	
<code>\TBdriver</code>	marks code which only takes effect when articles are run together in a driver file
<code>\signaturemark</code>	items for signatures
<code>\signaturewidth</code>	

## 3 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> TUGboat class file

### 3.1 Setup and options

Check for reloading. Hmmm... Does this happen with L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> classes? Probably, in fact, as well that it doesn't, since the `\tugstyinit` referenced here doesn't exist; however, it's possible that we might need a similar mechanism in the future, so we retain its skeleton, without fleshing out the `\tugstyinit` bones.

```
22 \*tugboatcls
23 \csname tugstyloaded\endcsname
24 \def\tugstyloaded@{\tugstyinit\endinput}
```

Acquire a name for this class if we don't already have one (by virtue of having been loaded by `tugproc.cls`). This name will be used in error messages and the like.

```
25 \providecommand{\@tugclass}{tugboat}
```

Warnings/error messages/information messages — if we're using L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> we can use the `\Class*` commands:

```
26 \*latex2e
27 \def\TBInfo{\ClassInfo{\@tugclass}}
28 \def\TBError{\ClassError{\@tugclass}}
29 \def\TBWarning{\ClassWarning{\@tugclass}}
30 \def\TBWarningNL{\ClassWarningNoLine{\@tugclass}}
31 \*latex2e
```

Some trivial options, just flicking switches, etc.

```
32 \newif\ifpreprint
33 \def\preprint{\preprinttrue}
34 \DeclareOption{draft}{%
35   \AtEndOfClass{%
36     \setcounter{page}{1001}%
37     \BlackBoxes
38     \def\MakeRegistrationMarks{}%
39     \PrelimDrafttrue
40   }%
41 }
42 \DeclareOption{preprint}{%
43   \preprinttrue
44 }
45 \DeclareOption{final}{%
46   \AtEndOfClass{%
47     \NoBlackBoxes
48     \PrelimDraftfalse
49   }%
50 }
```

The rules dictate that the output should be set using a 10pt base font.

```
51 \DeclareOption{11pt}{%
52   \TBWarning{The \@tugclass\space class only supports 10pt fonts:
53     \MessageBreak option \CurrentOption\space ignored}%
54 }
55 \DeclareOption{12pt}{\csname ds@11pt\endcsname}
```

Similarly, ignore one/two-side/column

```
56 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
57 \DeclareOption{twoside}{\ds@oneside}
58 \DeclareOption{onecolumn}{\ds@oneside}
59 \DeclareOption{twocolumn}{\ds@oneside}
```

There are these people who seem to think `tugproc` is an option rather than a class... (Note that it's already been filtered out if we were calling from `ltugproc`.)

```
60 \DeclareOption{tugproc}{%
61   \TBWarning{Option \CurrentOption\space ignored: use class ltugproc
62     instead of \@tugclass}%
63 }
```

Option `rawcite` (the default) specifies the default citation mechanism (as built-in to  $\text{\LaTeX}$ ); option `harvardcite` specifies the author-date citation mechanism defined in section 3.22 below.

```
64 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
65 \DeclareOption{harvardcite}{\let\if@Harvardcite\iftrue}
```

Option `extralabel` (the default) specifies that the publication years of two successive references with otherwise identical labels will be tagged with distinguishing letters; option `noextralabel` causes those letters to be suppressed. Note that (a) no two references will in any case have the same labels in the default (plain) `rawcite` setup, and that (b) the distinguishing letters appear in the labels themselves — the even remotely intelligent reader should be able to work out the correspondence one with the other...

```
66 \DeclareOption{extralabel}{\let\UseExtraLabel\@firstofone}
67 \DeclareOption{noextralabel}{\let\UseExtraLabel\@gobble}
```

The section-numbering style, so that we can allow the same heading layout as in the plain macros.

```
68 \DeclareOption{numbersec}{\let\if@numbersec\iftrue}
69 \DeclareOption{nonumber}{\let\if@numbersec\iffalse}
```

Any other options, we pass on to `article.cls` before we load it:

```
70 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{article}}
```

Request default options (draft mode, standard citation, double-sided printing), process all options, and then get the base document class on top of which we reside.

```
71 \ExecuteOptions{draft,extralabel,numbersec,rawcite}
72 \ProcessOptions
73 \LoadClass[twoside]{article}
```

Various fonts used throughout. Some effort has been made to suppress these things with explicit sizes in the macro name (`\tensl` is an example below), but keeping in step with the documentation is one thing that restricts such a move.

```
74 \def\sectitlefont{\fontfamily\sfdefault\fontseries{bx}\fontshape{n}%
75   \fontsize\@xvipt\stbaselineskip\selectfont}
76 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
77   \selectfont}
```

This font selection command is used *only* for the ‘Editor’s Note’ introduction to notes; sadly it makes explicit reference to CMR, and Barbara Beeton has agreed that the reference may be constructed to use the current family such that, if no upright italic is defined, ordinary italics are used. A project for later...

```
78 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
79         \selectfont}
80 \ltugboatcls)
```

If Ulrik Vieth’s `mflogo.sty` is around, we’ll use it. Otherwise (pro tem, at least) we’ll warn the user and define the absolute minimum of machinery that *TUGboat* requires (that which was used prior to the invention of L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>).

```
81 \*common)
82 \IfFileExists{mflogo.sty}%
83   {\RequirePackage{mflogo}}%
84 \ltugcommn) {\TBWarning
85 \ltugcommn) {\PackageWarning{ltugcommn}
86   {Package mflogo.sty not available --\MessageBreak
87   Proceeding to emulate mflogo.sty}
88   \DeclareRobustCommand\logofamily{%
89     \not@math@alphabet\logofamily\relax
90     \fontencoding{U}\fontfamily{logo}\selectfont}
91   \DeclareTextFontCommand{\textlogo}{\logofamily}
92   \def\MF{\textlogo{META}\-\textlogo{FONT}\@}
93   \def\MP{\textlogo{META}\-\textlogo{POST}\@}
94   \DeclareFontFamily{U}{logo}{}
95   \DeclareFontShape{U}{logo}{m}{n}{%
96     <8><9>gen*logo%
97     <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
98   }{}
99   \DeclareFontShape{U}{logo}{m}{sl}{%
100     <8><9>gen*logosl%
101     <10><10.95><12><14.4><17.28><20.74><24.88>logosl10%
102   }{}
103   \DeclareFontShape{U}{logo}{m}{it}{%
104     <->ssub*logo/m/sl%
105   }{}%
106 }
```

### 3.2 Resetting at start of paper

`\ResetCommands` We store a set of commands that should be executed at the start of each paper, before any paper-specific customisation. These commands (stored in the token register `\ResetCommands`) include things such as resetting section and footnote numbers, re-establishing default settings of typesetting parameters, and so on. The user (or more typically, editor) may execute the commands by using the command `\StartNewPaper`. Things I’ve not yet thought of may be added to the list of commands, by

```
107 \newtoks\ResetCommands
108 \ResetCommands{%
109   \setcounter{part}{0}%
110   \setcounter{section}{0}%
111   \setcounter{footnote}{0}%
```



```

112 \authornumber\z@
113 }
114 \newcommand{\AddToResetCommands}[1]{%
115   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
116 }

```

### 3.3 Helpful shorthand (common code with Plain styles)

`\makeescape`, ..., `\makecomment` allow users to change the category code of a single character a little more easily. These require that the character be addressed as a control sequence: e.g., `\makeescape\` will make `'/'` an escape character.

```

117 <!!latex>
118 \def\makeescape#1{\catcode'#1=0 }
119 \def\makebgroup#1{\catcode'#1=1 }
120 \def\makeegroup#1{\catcode'#1=2 }
121 \def\makemath #1{\catcode'#1=3 }
122 </!!latex>
123 <!!latex>
124 \def\makeescape#1{\catcode'#1=\z@}
125 \def\makebgroup#1{\catcode'#1=\@ne}
126 \def\makeegroup#1{\catcode'#1=\tw@}
127 \def\makemath #1{\catcode'#1=\thr@@}
128 </!!latex>
129 \def\makealign #1{\catcode'#1=4 }
130 \def\makeeol #1{\catcode'#1=5 }
131 \def\makeparm #1{\catcode'#1=6 }
132 \def\makesup #1{\catcode'#1=7 }
133 \def\makesub #1{\catcode'#1=8 }
134 \def\makeignore#1{\catcode'#1=9 }
135 \def\makespace #1{\catcode'#1=10 }
136 \def\makeletter#1{\catcode'#1=11 }
137 \chardef\other=12
138 <!!latex>
139 \def\makeother #1{\catcode'#1=\other}
140 </!!latex>
141 <!!latex>
142 \let\makeother\@makeother
143 </!!latex>
144 \def\makeactive#1{\catcode'#1=13 }
145 \def\makecomment#1{\catcode'#1=14 }
146 <!!latex>
147 \def\makeatletter{\makeletter\@}
148 \def\makeatother {\makeother\@}
149 </!!latex>

```

`\savecat#1` and `\restorecat#1` will save and restore the category of a given character. These are useful in cases where one doesn't wish to localize the settings and therefore be required to globally define or set things.

```

150 \def\savecat#1{%
151   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}
152 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
153 <!!latex>\savecat\@
154 <!!latex>\makeletter\@

```

`\SaveCS#1` and `\RestoreCS#1` save and restore ‘meanings’ of control sequences. Again this is useful in cases where one doesn’t want to localize or where global definitions clobber a control sequence which is needed later with its ‘old’ definition.

```
155 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
156   \csname#1\endcsname}
157 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
158   \csname saved@@#1\endcsname}
```

To distinguish between macro files loaded

```
159 \def\plaintubstyle{plain}
160 \def\largetubstyle{latex}
```

Control sequences that were first defined in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> of 1995/06/01 (or later), but which we merrily use. Only define if necessary:

```
161 \*latex2e
162 \providecommand\hb@xt@{\hbox to}
163 \providecommand\textsuperscript[1]{\ensuremath{\mathop{\text{\mbox{\fontsize\sf@size\z@
164   \selectfont #1}}}}}
165
166 \*latex2e
167 \!latex2e\def\hb@xt@{\hbox to}
```

(Note that that definition of `\textsuperscript` isn’t robust, but probably doesn’t need to be... What’s more, it doesn’t appear in the mythical 2.09 version of the package.)

### 3.4 Abbreviations and logos

Font used for the METAFONT logo, etc.

```
168 \!latex2e\font\manual=logo10
169 \def\AllTeX{(\La\kern-.075em)\kern-.075em\TeX}
170 \def\AMS{American Mathematical Society}
171 \!latex2e\def\AmS{\the\textfont2 A}\kern-.1667em\lower.5ex\hbox
172 \!latex2e\the\textfont2 M}\kern-.125em\the\textfont2 S}}
173 \!latex2e\def\AmS{\mathcal{A}}\kern-.1667em\lower.5ex\hbox
174 \!latex2e\mathcal{M}}\kern-.125em\mathcal{S}}
175 \def\AmSLaTeX{\AmS-\LaTeX}
176 \def\AmSTeX{\AmS-\TeX}
177 \def\aw{A\kern.1em-W}
178 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
179 \!latex2e\def\BibTeX{\rm B\kern-.05em{\smc i\kern-.025em}\kern-.08em\TeX}}
180 \!latex2e\def\BibTeX{\textsc{Bib}}\kern-.08em\TeX}
181 \!latex2e\def\CandT{\sl Computers \& Typesetting}}
182 \!latex2e\def\CandT{\textsl{Computers \& Typesetting}}
```

We place our `\kern` after `\-` so that it disappears if the hyphenation is taken:

```
183 \newcommand\ConTeXt{C\kern-.0333em\kern-.0667em\TeX\kern-.0333em}
184 \newcommand\Cplusplus{C\raisebox{.7ex}{$_{++}$}}
185 \def\CTAN{\acro{CTAN}}
186 \def\DTD{\acro{DTD}}
187 \def\DVItOVDU{DVItO\kern-.12em VDU}
188 \!latex2e\DeclareRobustCommand\epsilon{\ensuremath{\varepsilon}}\kern-.125em\TeX}
189 \!latex2e\def\epsilon{\varepsilon}\kern-.125em\TeX}
```

```

190 \def\Ghostscript{Ghost\script}
191 \def\Hawaii{Hawai'i}
192 \def\HTML{\acro{HTML}}
193 \def\ISBN{\acro{ISBN}}
194 \def\ISSN{\acro{ISSN}}
195 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
196 \!latex2e\def\JoT{\s1 The Joy of \TeX}
197 \!latex2e\def\JoT{\textsl{The Joy of \TeX}}
198 \!latex2e
199 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em\the\scriptfont2 A}%
200 \kern-.2em\lower.376ex\hbox{\the\textfont2 M}\kern-.125em
201 {\the\textfont2 S}\TeX}
202 \!latex2e
203 \!latex2e
204 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
205 \m@th\fontsize\sf@size\z@\selectfont
206 \m@th\mathcal{A}}}%
207 \kern-.2em\lower.376ex\hbox{\m@th\mathcal{M}}\kern-.125em
208 {\m@th\mathcal{S}}\TeX}
209 \!latex2e
210 \!latex2e\def\La{\TestCount=\the\fam\leavevmode L\raise.42ex
211 \!latex2e\hbox{\fam\TestCount\scriptstyle\kern-.3em A}}

```

With the facilities of  $\text{\LaTeX} 2_{\varepsilon}$ , we can do rather better. This code is hacked from its definition of  $\text{\LaTeX}$ ; it allows slants (for example) to propagate into the raised (small) ‘A’:

```

212 \!latex2e
213 \newcommand{\La}%
214 {L\kern-.36em
215 \setbox0\hbox{T}%
216 \vbox to\ht0{\hbox{\m@th%
217 \csname S@\f@size\endcsname
218 \fontsize\sf@size\z@
219 \math@fontsfalse\selectfont
220 A}%
221 \vss}%
222 }}
223 \!latex2e

```

We started with the intention that we wouldn’t redefine  $\text{\LaTeX}$  when we’re running under it, so as not to trample on an existing definition. However, this proves less than satisfactory; a single logo may be OK for the run of documents, but for *TUGboat*, we find that something noticeably better is necessary; see section 3.11.

```

224 \!latex\def\LaTeX{\La\kern-.15em\TeX}
225 \def\MathML{Math\acro{ML}}
226 \def\MacOSX{Mac\,\acro{OS\,X}}
227 \def\Mc{\setbox\TestBox=\hbox{M}\vbox
228 to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we’re running under  $\text{\LaTeX} 2_{\varepsilon}$ , we’re using (at least pro tem) Ulrik Vieth’s `mflogo.sty` if it’s present. Otherwise, we’re using a short extract of Vieth’s stuff. Either way, we don’t need to specify  $\text{\MF}$  or  $\text{\MP}$

```

229 \!latex2e\def\MF{\manual META}\-{\manual FONT}\@}

```

```

230 \!latex2e\def\mf{\smc Metafont}}
231 \!latex2e\def\mf{\textsc{Metafont}}
232 \!latex2e\def\MF{\sl The \slMF book}}
233 \!latex2e\def\MF{\textsl{The \MF book}}
234 \!latex2e\def\MP{\manual META}\-{\manual POST}\@}
235 \*latex2e
236 \let\TB@@mp\mp
237 \DeclareRobustCommand\mp{\ifmmode\TB@@mp\else MetaPost\fi}
238 \!latex2e

```

In order that the `\OMEGA` command will switch to using the TS1 variant of the capital Omega character if `textcomp.sty` is loaded, we define it in terms of the `\textohm` command. Note that this requires us to interpose a level of indirection, rather than to use `\let...`

```

239 \*latex2e
240 \DeclareTextSymbol{\textohm}{OT1}{'012}
241 \DeclareTextSymbolDefault{\textohm}{OT1}
242 \newcommand\OMEGA{\textohm}
243 \DeclareRobustCommand\OCP{\OMEGA\acro{CP}}
244 \DeclareRobustCommand\OTP{\OMEGA\acro{TP}}
245 \!latex2e
246 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}

```

Revised definition of `\NTS` based on that used by Phil Taylor.

```

247 \DeclareRobustCommand\NTS{\ensuremath{\mathcal{N}}\mkern-4mu
248   \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
249 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
250 \def\PCTeX{PC\thinspace\TeX}
251 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
252 \def\Pas{Pascal}
253 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
254 \def\PiCTeX{\PiC\kern-.11em\TeX}
255 \!latex2e\def\plain{\tt plain}
256 \!latex2e\def\plain{\texttt{plain}}
257 \def\POBox{P.\thinspace 0.\^Box }
258 \def\PS{Post-Script}
259 \def\SC{Steering Committee}
260 \def\SGML{\acro{SGML}}
261 \!latex2e\def\SLiTeX{\rm S\kern-.06em{\smc l\kern-.035emi}\kern-.06em\TeX}
262 \!latex2e\def\SLiTeX{\textrm{S\kern-.06em\textsc{l\kern-.035emi}}%
263   \kern-.06em\TeX}
264 \!latex2e\def\slMF{\MF}
265 \!latex2e \def\slMF{\textsl{\MF}} % should never be used
266 \!latex2e\def\stTeX{\smc st\rm\kern-0.13em\TeX}
267 \!latex2e \def\stTeX{\textsc{st}\kern-0.13em\TeX}
268 \!latex2e\def\TANGLE{\tt TANGLE}\@}
269 \!latex2e\def\TANGLE{\texttt{TANGLE}\@}
270 \!latex2e\def\TB{\sl The \TeX book}
271 \!latex2e\def\TB{\textsl{The \TeX book}}
272 \!latex2e\def\TP{\sl \TeX/}: {\sl The Program/}}
273 \!latex2e\def\TP{\textsl{\TeX}: \textsl{The Program}}
274 \!latex2e\def\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
275 \*latex2e
276 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}

```

```

277 </latex2e>
278 \def\TeXhax{\TeX hax}
279 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
280   \kern-.2267emG\@}
281 <!\latex2e>\def\TeXtures{\it Textures}
282 <!\latex2e>\def\TeXtures{\textit{Textures}}
283 \let\Textures=\TeXtures
284 \def\TeXXeT{\TeX-{}-\XeT}
285 \def\Thanh{H\`an\Th\`e\llap{\raise 0.5ex\hbox{\`{}}}\~Th\`anh}
286 <!\latex2e>\def\ttn{\sl TTN}\@}
287 <!\latex2e>\def\ttn{\textsl{TTN}\@}
288 <!\latex2e>\def\TTN{\sl \TeX{} and TUG News}
289 <!\latex2e>\def\TTN{\textsl{\TeX{} and TUG News}}
290 <!\latex2e>\def\tubfont{\sl} % redefined in other situations
291 <!\latex2e>\def\TUB{\tubfont TUGboat\@}
292 <!\latex2e>\let\texttub\textsl % redefined in other situations
293 <!\latex2e>\def\TUB{\texttub{TUGboat}}
294 \def\TUG{\TeX\ UG}
295 \def\tug{\acro{TUG}}
296 \def\UG{Users Group}
297 \def\UNIX{\acro{UNIX}}
298 \def\VAX{V\kern-.12em A\kern-.1em X\@}
299 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{0\kern-1.4\p@ R}\kern-2.6\p@\TeX}
300 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
301 \def\XML{\acro{XML}}
302 <!\latex2e>\def\WEB{\tt WEB}\@}
303 <!\latex2e>\def\WEB{\texttt{WEB}\@}
304 <!\latex2e>\def\WEAVE{\tt WEAVE}\@}
305 <!\latex2e>\def\WEAVE{\texttt{WEAVE}\@}

```

### 3.5 General typesetting rules

```

306 \newlinechar='^^J
307 \normallineskiplimit=\p@
308 \clubpenalty=10000
309 \widowpenalty=10000
310 \def\NoParIndent{\parindent=\z@}
311 \newdimen\normalparindent
312 \normalparindent=20\p@
313 \def\NormalParIndent{\global\parindent=\normalparindent}
314 \NormalParIndent
315 \def\BlackBoxes{\overfullrule=5\p@}
316 \def\NoBlackBoxes{\overfullrule=\z@}
317 \def\newline{\hskip\z@\@plus\pagewd\break}

```

Hyphen control: first, we save the hyphenpenalties in `\allowhyphens`. This allows us to permit hyphens temporarily in things like `\netaddresses`, which typically occur when `\raggedright` is set, but which need to be allowed to break at their artificial discretionaries.

```

318 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
319   \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
320 \def\nohyphens{\hyphenpenalty\@M\exhyphenpenalty\@M}

```

### 3.6 Utility registers and definitions

We define a few scratch registers (and the like) for transient use; they're all paired: an internal one (`\T@st*`) and an external one (`\Test*`).

*Comment:* Exercise for an idle day: find whether all these are necessary, or whether we can use the L<sup>A</sup>T<sub>E</sub>X temporaries for some (or all) of the `\T@st*` ones.

*Comment:* (bb) All these registers are used in the plain version, `tugboat.sty`.

```

321 \newbox\T@stBox           \newbox\TestBox
322 \newcount\T@stCount      \newcount\TestCount
323 \newdimen\T@stDimen      \newdimen\TestDimen
324 \newif\ifT@stIf          \newif\ifTestIf

```

Control sequence existence test, stolen from T<sub>E</sub>Xbook exercise 7.7 (note that this provides functionality that in some sense duplicates something within L<sup>A</sup>T<sub>E</sub>X).

```

325 \def\ifundefined#1{\expandafter\ifx\csname#1\endcsname\relax }

```

L<sup>A</sup>T<sub>E</sub>X conventions which are also useful here.

```

326 <*\latex>
327 \let\@@input\input
328 \def\iinput#1{\@@input#1 }
329 \def\@inputcheck{\if\@nextchar\bgroup
330 \expandafter\iinput\else\expandafter\@@input\fi}
331 \def\input{\futurelet\@nextchar\@inputcheck}
332 <\/!\latex>

```

Smashes repeated from AMS-T<sub>E</sub>X; plain T<sub>E</sub>X implements only full `\smash`.

```

333 \newif\iftop@             \newif\ifbot@
334 \def\topsmash{\top@true\bot@false\smash@}
335 \def\botsmash{\top@false\bot@true\smash@}
336 \def\smash{\top@true\bot@true\smash@}
337 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
338 \else\let\next\makesm@sh\fi \next }
339 \def\finism@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}

```

Vertical ‘laps’; cf. `\llap` and `\rlap`

```

340 \long\def\ulap#1{\vbox to \z@{\vss#1}}
341 \long\def\dlap#1{\vbox to \z@{\#1\vss}}

```

And centered horizontal and vertical ‘laps’

```

342 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
343 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
344 \long\def\zlap#1{\ylap{\xlap{\#1}}}

```

Avoid unwanted vertical glue when making up pages.

```

345 \def\basezero{\baselineskip\z@skip \lineskip\z@skip}

```

Empty rules for special occasions

```

346 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
347 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }

```

Support ad-hoc strut construction.

```

348 \def\makestrut[#1;#2]{\vrule \@height#1 \@depth#2 \@width\z@ }

```

Construct box for figure pasteup, etc.; height = #1, width = #2, rule thickness = #3

```

349 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
350     \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
351         \vss\hb@xt@#2{\vrule \@width\T@stDimen
352             \hfil\makestrut[#1;\z@]%
353             \vrule \@width\T@stDimen}\vss
354         \hrule \@height\T@stDimen \@depth\z@}}
```

Today's date, to be printed on drafts. Based on T<sub>E</sub>Xbook, p.406.

```

355 <*\latex>
356 \def\today{\number\day\space \ifcase\month\or
357     Jan \or Feb \or Mar \or Apr \or May \or Jun \or
358     Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
359     \number\year}
360 </!\latex>
```

Current time; this may be system dependent!

```

361 \newcount\hours
362 \newcount\minutes
363 \def\SetTime{\hours=\time
364     \global\divide\hours by 60
365     \minutes=\hours
366     \multiply\minutes by 60
367     \advance\minutes by-\time
368     \global\multiply\minutes by-1 }
369 \SetTime
370 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
371 \def\Now{\today\ \now}
372 \newif\ifPrelimDraft
373 \ifx\@latex2e\@def\midrttitle{\ifPrelimDraft {\tensl preliminary draft, \Now}}\fi}
374 \ifx\@latex2e\@def\midrttitle{\ifPrelimDraft {\textsl preliminary draft, \Now}}\fi}
```

### 3.7 Ragged right and friends

`\raggedskip` Plain T<sub>E</sub>X's definition of `\raggedright` doesn't permit any stretch, and results in too many overfull boxes. We also turn off hyphenation. This code lies somewhere between that of Plain T<sub>E</sub>X and of L<sup>A</sup>T<sub>E</sub>X.

```

\raggedspaces 375 \newdimen\raggedskip \raggedskip=\z@
376 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
377 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil
378 \def\raggedspaces{\spaceskip=.3333em \relax \xspaceskip=.5em \relax }
```

`\raggedright` Some applications may have to add stretch, in order to avoid all overfull boxes.

`\raggedleft` We define the following uses of the above skips, etc.

```

\raggedcenter 379 \def\raggedright{%
\normalspaces 380 \nohyphens
381 \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
382 \parfillskip=\raggedparfill
383 }
384 \def\raggedleft{%
385 \nohyphens
386 \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
387 \parfillskip=\z@skip
```

```

388 }
389 \def\raggedcenter{%
390   \nohyphens
391   \leftskip=\raggedskip\@plus\raggedstretch
392   \rightskip=\leftskip \raggedspaces
393   \parindent=\z@ \parfillskip=\z@skip
394 }
395 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}

```

Miscellaneous useful stuff. Note that L<sup>A</sup>T<sub>ε</sub>X 2<sub>ε</sub> defines a robust `\,`, but that we provide a new definition of `\~` by redefining its robust underpinnings<sup>1</sup> (based on the version in AMS-`TεX` — the L<sup>A</sup>T<sub>ε</sub>X 2<sub>ε</sub> version has `\leavevmode` and doesn't care about surrounding space).

```

396 \<!*latex2e>
397 \def\,{\relax\ifmmode\mskip\thinmuskip\else\thinspace\fi}
398 \def~{\unskip\nobreak\ \ignorespaces}
399 \</!*latex2e>
400 \<!*latex2e>
401 \DeclareRobustCommand{\nobreakspace}{%
402   \unskip\nobreak\ \ignorespaces}
403 \</!*latex2e>

```

Plain `TεX` defines `\newbox` as `\outer`. We solemnly preserve the following, which removes the `\outerness`; of course, we carefully exclude it from what we generate... (`\outerness` is a spawn of the devil, is it not? Barbara Beeton responded to the previous sentence “`\outerness` has its place: it avoids register buildup, hence running out of memory”. In another context, David Carlisle remarked that an error control mechanism that causes more confusing errors than it prevents is rather a poor one. This is perhaps not the place to conduct a serious debate...)

```

404 \<!*latex>\def\newbox{\alloc@4\box\chardef\insec@unt}
405 \def\boxcs#1{\box\csname#1\endcsname}
406 \def\setboxcs#1{\setbox\csname#1\endcsname}
407 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
408 \<!*latex>\def\gobble#1{}
409 \<!latex>\let\gobble\@gobble
410 \def\vellipsis{%
411   \leavevmode\kern0.5em
412   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
413 }
414 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
415 \def\cents{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}
416 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
417 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
418   /\kern-.125em\smash{\lower.3ex\hbox{o}}}\ignorespaces}
419 \<!*latex2e>
420 \def\sfrac#1/#2{\leavevmode\kern.1em
421   \raise.5ex\hbox{\the\scriptfont\z@ #1}\kern-.1em
422   /\kern-.15em\lower.25ex\hbox{\the\scriptfont\z@ #2}}
423 \</!*latex2e>
424 \<!*latex2e>
425 \DeclareRobustCommand\sfrac[1]{\@ifnextchar{\@sfrac{#1}}}%

```

<sup>1</sup>`\DeclareRobustCommand` doesn't mind redefinition, fortunately



```

426                                     {\@sfrac{#1}/}}
427 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
428       \hbox{$\m@th\mbox{\fontsize\sf@size\z@
429               \selectfont#1}$}\kern-.1em
430       /\kern-.15em\lower.25ex
431       \hbox{$\m@th\mbox{\fontsize\sf@size\z@
432               \selectfont#2}$}}
433 \DeclareRobustCommand\cs[1]{\texttt{\char'\#1}}
434 \DeclareRobustCommand\meta[1]{%
435   \ensuremath{\langle}\emph{#1}\ensuremath{\rangle}}
436 \DeclareRobustCommand\env[1]{%
437   \cs{begin}\texttt{\char'\#1\char'\}}
438 \</latex2e>
439 \def\thinspace{\hskip 0.16667em\relax}

```

We play a merry game with dashes, providing all conceivable options of breakability before and after.

```

440 \def\endash{--}
441 \def\emdash{\endash-}
442 \def\d@sh#1#2{\unskip#1\thinspace#2\thinspace\ignorespaces}
443 \def\dash{\d@sh\nobreak\endash}
444 \def\Dash{\d@sh\nobreak\emdash}
445 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
446 \def\rdash{\d@sh\nobreak\endash}
447 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
448 \def\Rdash{\d@sh\nobreak\emdash}

```

Hacks to permit automatic hyphenation after an actual hyphen, or after a slash.

```

449 \def\hyph{-\penalty\z@\hskip\z@skip }
450 \def\slash{/\penalty\z@\hskip\z@skip }

```

Adapted from comp.text.tex posting by Donald Arseneau, 26 May 93.  
 $\text{\LaTeX 2}_{\epsilon}$ -isation added by Robin Fairbairns. Destroys both the TestCounts.

```

451 \def\nth#1{%
452   \def\reserved@a##1##2\@nil{\ifcat##1n%
453     0%
454 \<latex2e> \let\reserved@b\ensuremath
455   \else##1##2%
456 \<latex2e> \let\reserved@b\relax
457   \fi}%
458   \TestCount=\reserved@a#1\@nil\relax
459   \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
460   \T@stCount=\TestCount
461   \divide\T@stCount by 100 \multiply\T@stCount by 100
462   \advance\TestCount by-\T@stCount % n mod 100
463   \ifnum\TestCount >20 \T@stCount=\TestCount
464   \divide\T@stCount by 10 \multiply\T@stCount by 10
465   \advance\TestCount by-\T@stCount % n mod 10
466   \fi
467 \<!*latex2e>
468   \T@stCount=\the\fam\relax
469   $\fam\T@stCount#1\^{\fam\T@stCount
470   \ifcase\TestCount th% 0th

```

```

471      \or   st%           1st
472      \or   nd%           2nd
473      \or   rd%           3rd
474      \else th%          nth
475      \fi
476    }$%
477 \<!!latex2e>
478 \<*latex2e>
479     \reserved@b{#1}%
480     \textsuperscript{\ifcase\TestCount th%   0th
481                     \or   st%           1st
482                     \or   nd%           2nd
483                     \or   rd%           3rd
484                     \else th%          nth
485                     \fi}%
486 \</latex2e>
487 }

```

### 3.8 Reviews

Format information on reviewed items for book review articles.

```

488 \<!!latex2e>
489 \def\Review:#1{\ifx[#1\@Rev[%
490   \else Book review:\enspace\sl #1%
491   \fi
492 }
493 \def\@Rev[#1]{\ignorespaces#1\unskip:\enspace\ignorespaces\sl}
494 \</!!latex2e>

```

For the L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> version, we follow Fairbairns' maxim, and define something that can even look like a L<sup>A</sup>T<sub>E</sub>X macro...

```

495 \<*latex2e>
496 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
497 \def\@Review:{\@ifnextchar[%
498   {\@Rev}%
499   {\@Rev[Book review]}}
500 \def\@Rev[#1]#2{\ignorespaces#1\unskip:\enspace\ignorespaces
501               \slshape\mdseries#2}}
502 \</latex2e>
503 \<!!latex2e>\def\reviewitem{%
504 \<latex2e>\def\reviewitem{\advspace{\BelowTitleSkip}%
505   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
506 \<!!latex2e> \def\revtitle##1{\def\therevtitle{{\sl##1}. }\ignorespaces}%
507 \<latex2e> \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
508   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
509 }
510 \def\endreviewitem{{\noindent\interlinepenalty=10000
511   \therevauth\therevtitle\therevpubinfo\endgraf}%
512   \vskip\medskipamount
513 \<!!latex>\DeleteOptionalSpacesandPars{\noindent\ignorespaces}%
514 }
515 \<!!latex2e>\def\booktitle#1{{\sl #1}/}}
516 \<latex2e>\def\booktitle#1{{\slshape#1}/}}

```

### 3.9 Dates, volume and issue numbers, etc.

Dates and other items which identify the volume and issue. `\issueseqno` is a sequential issue number starting from the first issue published; volume 15,4 has `\issueseqno=45`.

`\vol 19, 1.`

To use: `\issdate March 1998.`

`\issueseqno=58`

Starting with volume 23 (nominal 2002), we have `\issyear` instead of `\issdate`, because issues don't have months any more.

For production, these are set in a separate file, `tugboat.dates`, which is issue-specific.

**Comment:** I would like to make the code read a file `tugboat.dates` in the current directory or its parent. This is easy except under 'odd' operating systems (VMS is an example that springs to mind, RISCos may be even worse) whose syntax is out of the ordinary.

```

517 \newcount\issueseqno          \issueseqno=-1
518 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
519 \def\volyr{}
520 \def\volno{}
521 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
522     \gdef\issno{\ignorespaces#2\unskip}%
523     \setbox\TestBox=\hbox{\volyr}%
524     \ifdim \wd\TestBox > .2em \v@lx \fi }
525 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
526     \gdef\bigissdt{#1}%
527     \setbox\TestBox=\hbox{\volno}%
528     \ifdim \wd\TestBox > .2em \v@lx \fi }
529 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
530     \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
531     \setbox\TestBox=\hbox{\volno}%
532     \ifdim \wd\TestBox > .2em \v@lx \fi }
533 \vol 0, 0.
534 \issdate Thermidor, 2060.

```

(The curious should know that *Thermidor* was one of the French revolutionary month names...)

For L<sup>A</sup>T<sub>E</sub>X use, define a version of the issue declaration that can take or leave the old plain syntax

```

535 \!latex\def\tubissue#1(#2)%
536 \*latex
537 \def\tubissue#1{\@ifnextchar(%)
538     {\@tubissue@b{#1}}
539     {\@tubissue@a{#1}}}%
540 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
541 \def\@tubissue@a#1#2%
542 \!latex
543     {\TUB~#1, no.~#2}

```

*TUGboat* conventions include the sequential issue number in the file name. Permit this to be incorporated into file names automatically. If issue number = 11, `\Input filnam` will read `tb11filnam.tex`

```

544 \def\infil@{\jobname}
545 \def\Input #1 {\ifnum\issueseqno<0
546   \def\infil@{#1}%
547   \else
548   \def\infil@{tb\number\issueseqno#1}
549   \fi
550 \edef\jobname{\infil@}\@readFLN
551 \@@input \infil@relax
552 \if@RMKopen
553   \immediate\closeout\@TBremarkfile\@RMKopenfalse
554 \fi
555 }

```

\TBremarks are things that need to be drawn to the attention of the editors; the conscientious author will include such things in the article file. By default, remarks are suppressed, but their appearance may be enabled by the \TBenableRemarks command, which can be included in the configuration file ltugboat.cfg (or ltugproc.cfg, if that's what we're at).

```

556 \newif\if@RMKopen \@RMKopenfalse
557 \newwrite\@TBremarkfile
558 \def\@TBremark#1{%
559   \if@RMKopen
560   \else
561     \@RMKopentrue\immediate\openout\@TBremarkfile=\infil@.rmk
562   \fi
563   \toks@={#1}%
564   \immediate\write\@TBremarkfile{^^J\the\toks@}%
565   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
566 }

```

We initialise \TBremark to ignore its argument (this used to involve a \TBremarkOFF which was cunningly defined exactly the same as \gobble)

```

567 \let\TBremark=\gobble

```

\TBenableRemarks simply involves setting \TBremark to use the functional \@TBremark defined above.

```

568 \def\TBenableRemarks{\let\TBremark\@TBremark}

```

For marking locations in articles that pertain to remarks in another file of editorial comments

```

569 \def\TUBedit#1{}

```

For using different filenames in the production process than those supplied by authors

```

570 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
571 (*!latex2e)
572 \newread\@altfilenames
573 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
574   \ifeof\@altfilenames\let\@result\relax\else
575   \def\@result{\@@input\jobname.fln }\fi
576   \immediate\closein\@altfilenames
577   \@result}
578 \@readFLN
579 \everyjob=\expandafter\the\everyjob\@readFLN}

```

```

580 </!latex2e>
581 <latex2e>\InputIfFileExists{\jobname.fln}%
582 <latex2e>    {\TBInfo{Reading alternative file file \jobname.fln}}{}

    The following needs to work entirely in TEX's mouth
583 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
584   #1\else\csname file@@#1\endcsname\fi}
585 \def\fileinput#1{\@@input\@tubfilename{#1} }

    Write out (both to a file and to the log) the starting page number of an article,
    to be used for cross references and in contents. \pagexref is used for articles fully
    processed in the TUGboat run. \PageXref is used for 'extra' pages, where an
    item is submitted as camera copy, and only running heads (at most) are run.

586 <!*latex>
587 \def\pagexrefON#1{%
588     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
589     \write\ppoutfile{%
590         \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
591     }
592 \def\PageXrefON#1{%
593     \immediate\write-1{\def\expandafter
594         \noexpand\csname#1\endcsname{\number\pageno}}}%
595     \immediate\write\ppoutfile{\def\expandafter
596         \noexpand\csname#1\endcsname{\number\pageno}}}%
597 </!latex>
598 <!*latex>
599 \def\pagexrefON#1{%
600     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
601     \write\ppoutfile{%
602         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
603     }
604 \def\PageXrefON#1{%
605     \immediate\write-1{\def\expandafter
606         \noexpand\csname#1\endcsname{\number\c@page}}}%
607     \immediate\write\ppoutfile{\def\expandafter
608         \noexpand\csname#1\endcsname{\number\c@page}}}%
609 </latex>
610 \def\pagexrefOFF#1{}
611 \let\pagexref=\pagexrefOFF
612 \def\PageXrefOFF#1{}
613 \let\PageXref=\PageXrefOFF
614 \def\xrefTOON#1{%
615     \ifundefined{#1}%
616         ???\TBremark{Need cross reference for #1.}%
617     \else\csname#1\endcsname\fi}
618 \def\xrefTOFF#1{???}
619 \let\xrefTO=\xrefTOFF

    \TBdriver 'marks code for use when articles are run together in a driver
    file'. Since we don't yet have a definition of that arrangement, we don't have a
    definition of \TBdriver. Its argument (which one presumes was intended as the
    code for this unusual state) is just gobbled.

620 \let\TBdriver\gobble

```

Some hyphenation exceptions:

```
621 \hyphenation{Dijk-stra Eijk-hout Hara-lam-bous
622 Doc-Book Flor-i-da Ghost-script Ghost-view Open-Type Pfa-Edit
623 Post-Script True-Type
624 ap-pen-dix
625 bit-map bit-mapped bit-maps bool-ean
626 col-umns
627 data-base data-bases
628 fall-ing
629 half-way
630 long-est
631 ma-gyar man-u-script man-u-scripts
632 over-view
633 par-a-digm par-a-digm-atic par-a-digms
634 se-vere-ly spell-ing spell-ings stand-alone strong-est
635 time-stamp time-stamped
636 which-ever white-space white-spaces wide-spread wrap-around
637 }
638 <!\latex>\restorecat\@
639 </common>
640 <*\classtail>
641 \PrelimDrafttrue
```

### 3.10 Page dimensions, glue, penalties etc

```
642 \textheight 54pc
643 \textwidth 39pc
644 \columnsep 1.5pc
645 \columnwidth 18.75pc
646 \parindent \normalparindent
647 \parskip \z@ % \@plus\p@
648 \leftmargini 2em
649 \leftmarginiv .5em
650 \leftmarginvi .5em
651 \oddsidemargin \z@
652 \evensidemargin \z@
653 \topmargin -2.5pc
654 \headheight 12\p@
655 \headsep 20\p@
656 \marginparwidth 48\p@
657 \marginparsep 10\p@
658 \partopsep=\z@
659 \topsep=3\p@\@plus\p@\@minus\p@
660 \parsep=3\p@\@plus\p@\@minus\p@
661 \itemsep=\parsep
662 \twocolumn
663 \newdimen\pagewd \pagewd=39pc
664 \newdimen\trimwd \trimwd=\pagewd
665 \newdimen\trimlgt \trimlgt=11in
666 \newdimen\headmargin \headmargin=3.5pc
```

If we're in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, twoside option is forced on when article.cls is loaded.

```
667 <!\latex2e>\@twosidetrue
```

### 3.11 Messing about with the L<sup>A</sup>T<sub>E</sub>X logo

Barbara Beeton's pleas for L<sup>A</sup>T<sub>E</sub>X logos that look right in any font shape provoked me to generate the following stuff that is configurable.

Here's the command for the user to define his own new version. The arguments are font family, series and shape, and then the two kern values used in placing the raised 'A' of L<sup>A</sup>T<sub>E</sub>X.

```
668 \newcommand\DeclareLaTeXLogo[5]{\expandafter\def
669   \csname @LaTeX@#1/#2/#3\endcsname{#{4}{#5}}}
```

The default values are as used in the source of L<sup>A</sup>T<sub>E</sub>X itself:

```
670 \def\@LaTeX@default{.36}{.15}
```

Three more defined in the initial version, for bold CM sans (which is used as \SecTitleFont), and CM italic medium and bold:

```
671 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
672 \DeclareLaTeXLogo{cmr}{m}{it}{.3}{.27}
673 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
```

Redefine \LaTeX to choose the parameters for the current font, or to use the default value otherwise:

```
674 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a
675   \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
676   \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
677   \expandafter\@LaTeX\reserved@a}
```

Here's the body of what was originally \LaTeX, pulled out with its roots dripping onto the smoking ruin of original L<sup>A</sup>T<sub>E</sub>X, and then bits stuck in on the side.

\@LaTeX@default provides parameters as one finds in the original; other versions are added as needed.

```
678 \newcommand\@LaTeX[2]{L\kern-#1em
679   {\sbox\z@ T%
680     \vbox to\ht0{\hbox{${m@th$}%
681       \csname S@f@size\endcsname
682       \fontsize\sf@size\z@
683       \math@fontsfalse\selectfont
684       A}%
685     \vss}%
686   }%
687   \kern-#2em%
688   \TeX}
```

### 3.12 Authors, contributors, addresses, signatures

Each article may have several authors (of course), so we permit an \author command for each of them. The names are then stored in a set of \csnames called \author1, \author2, ... Similarly, there are several \address<n> and \netaddress<n> and \PersonalURL<n> commands set up for each article.

*Comment:* I would like to make provision for several authors at the same address, but (short of preempting the \* marker, which it would be nice to retain so as to preserve compatibility with the plain style) I'm not sure how one would signal it.

```

689 \def\theauthor#1{\csname theauthor#1\endcsname}
690 \def\theaddress#1{\csname theaddress#1\endcsname}
691 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
692 \def\thePersonalURL#1{\csname thePersonalURL#1\endcsname}

```

The standard way of listing authors is to iterate from 1 to \count@ and to pick the author names as we go.

```

693 {\latex}\newcount\@tempcnta
694 \def\@defaultauthorlist{%
695   \@getauthorlist\@firstofone
696 }

```

\@getauthorlist processes the author list, passing every bit of stuff that needs to be typeset to its argument.

```

697 \def\@getauthorlist#1{%
698   \count@\authornumber
699   \advance\count@ by -2
700   \@tempcnta0

```

Loop to output the first  $n - 2$  of the  $n$  authors (the loop does nothing if there are two or fewer authors)

```

701   \loop
702     \ifnum\count@>0
703       \advance\@tempcnta by \@ne
704       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
705       \advance\count@ by \m@ne
706   \repeat
707   \count@\authornumber
708   \advance\count@ by -\@tempcnta
709   \ifnum\authornumber>0

```

If there are two or more authors, we output the penultimate author's name here, followed by 'and'

```

710     \ifnum\count@>1
711       \count@\authornumber
712       \advance\count@ by \m@ne
713       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
714     \fi

```

Finally (if there were any authors at all) output the last author's name:

```

715     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
716   \fi
717 }

```

Signature blocks. The author can (in principle) define a different sort of signature block using \signature, though this could well cause the editorial group to have collective kittens (unless it had been discussed in advance...)

```

718 \def\signature#1{\def\@signature{#1}}
719 \def\@signature{\@defaultsignature}

```

\@defaultsignature loops through all the authors, outputting the details we have about that author, or (if we're in a sub-article) outputs the contributor's name and closes the group opened by \contributor. It is (as its name implies) the default body for \makesignature



```

720 \def\@defaultsignature{%
721     \let\thanks@gobble
722     \ifnum\authornumber<0
        if \authornumber< 0, we are in a contributor's section
723         \medskip
724         \signaturemark
725         \theauthor{\number\authornumber}\\
726         \theaddress{\number\authornumber}\\
727         \allowhyphens
728         \thenetaddress{\number\authornumber}\\
729         \thePersonalURL{\number\authornumber}\\
730     \else
        \authornumber ≥ 0, so we are in the body of an ordinary article
731         \count@=0
732         \loop
733             \ifnum\count@<\authornumber
734                 \medskip
735                 \advance\count@ by \@ne
736                 \signaturemark
737                 \theauthor{\number\count@}\\
738                 \theaddress{\number\count@}\\
739                 {%
740                     \allowhyphens
741                     \thenetaddress{\number\count@}\\
742                     \thePersonalURL{\number\count@}\\
743                 }%
744             \repeat
745         \fi
746     }%
747 }
748 \newdimen\signaturewidth \signaturewidth=12pc
    The optional argument to \makesignature is useful in some circumstances (e.g.,
    multi-contributor articles)
749 \newcommand\makesignature[1][\medskipamount]{%
        check the value the user has put in \signaturewidth: it may be at most
        1.5pc short of \columnwidth
750     \@tempdima\signaturewidth
751     \advance\@tempdima 1.5pc
752     \ifdim \@tempdima>\columnwidth
753         \signaturewidth \columnwidth
754         \advance\signaturewidth -1.5pc
755     \fi
756     \par
757     \penalty9000
758     \vspace{#1}%
759     \rightline{%
760         \vbox{\hsize\signaturewidth \ninepoint \raggedright
761             \parindent \z@ \everypar={\hangindent 1pc }
762             \parskip \z@skip
763             \def\|{\unskip\hfil\break}%
764             \def\\{\endgraf}%

```

```

765     \def\phone{\rm Phone: }
766     \rm\@signature}%
767 }%
768 \ifnum\authornumber<0 \endgroup\fi
769 }
770 \def\signaturemark{\leavevmode\llap{$\diamond$\enspace}}

```

The code used to define the following:

```

{\makeactive\@
 \gdef\signatureat{\makeactive\@\def@{\char"40\discretionary{}{}{}}
 \makeactive\%
 \gdef\signaturepercent{\makeactive%\def%{\char"25\discretionary{}{}{}}
 }

```

However, they were never used within the class (or within `ltugproc.cls`). They have therefore been deleted; the identically defined `\netaddrat` and `\netaddrpercent` may be used in the unlikely event that they're needed elsewhere.

Now all the awful machinery of author definitions. `\authornumber` records the number of authors we have recorded to date.

```

771 \newcount\authornumber
772 \authornumber=0

```

`\author` 'allocates' another author name (by bumping `\authornumber`) and also sets up the address and netaddress for this author to produce a warning and to prevent oddities if they're invoked. This last assumes that invocation will be in the context of `\signature` (`ltugboat.cls`) or `\maketitle` (`ltugproc.cls`); in both cases, invocation is followed by a line break (tabular line break `\\` in `ltugproc`, `\endgraf` in `\makesignature` in `ltugboat`).

```

773 \def\author{%
774   \global\advance\authornumber\@ne
775   \TB@author
776 }

```

`\contributor` is for a small part of a multiple-part article; it begins a group that will be ended in `\makesignature`

```

777 \def\contributor{%
778   \begingroup
779   \authornumber\m@ne
780   \TB@author
781 }

```

Both 'types' of author fall through here to set up the author name and to initialise author-related things. `\EDITORno*` commands allow the editor to record that there's good reason for an *address* or *netaddress* not to be there (the *personalURL* is optional anyway).

```

782 \def\TB@author#1{%
783   \expandafter\def\csname theauthor\number\authornumber\endcsname
784     {\ignorespaces#1\unskip}%
785   \expandafter\def\csname theaddress\number\authornumber\endcsname
786     {\TBWarningNL{Address for #1\space missing}\@gobble}%
787   \expandafter\def\csname thenetaddress\number\authornumber\endcsname

```

```

788     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
789     \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
790         \@gobble
791     }
792 \def\EDITORnoaddress{%
793     \expandafter\let\csname theaddress\number\authornumber\endcsname
794         \@gobble
795 }
796 \def\EDITORnonetaddress{%
797     \expandafter\let\csname thenetaddress\number\authornumber\endcsname
798         \@gobble
799 }

```

`\address` simply copies its argument into the `\theaddress<n>` for this author.

```

800 \def\address#1{%
801     \expandafter\def\csname theaddress\number\authornumber\endcsname
802         {\leavevmode\ignorespaces#1\unskip}}

```

`\network` is for use within the optional argument of `\netaddress`; it defines the *name* of the network the user is on.

**Comment:** I think this is a fantasy, since everyone (in practice, nowadays) quotes an internet address. In principle, there are people who will quote X.400 addresses (but they're few and far between) and I have (during 1995!) seen an address with an UUCP bang-path component on `comp.text.tex`, but *really*!

```

803 \def\network#1{\def\@network{#1: }}

```

`\netaddress` begins a group, executes an optional argument (which should not, presumably, contain global commands) and then relays to `\@relay@netaddress` with both `@` and `%` made active (so that they can be discretionary points in the address). If we're using L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, we use the default-argument form of `\newcommand`; otherwise we write it out in all its horribleness.

```

804 \ifx\@latex2e
805 \newcommand\netaddress[1][\relax]{%
806     \begingroup
807     \def\@network{}%
808 }/\ifx\@latex2e
809 \ifx\@latex2e
810 \def\netaddress{%
811     \begingroup
812     \def\@network{}%
813     \ifnextchar[{\@netaddress}{\@netaddress[]}%
814 }
815 \def\@netaddress[#1]{%
816 }/\ifx\@latex2e

```

Unfortunately, because of the catcode hackery, we have still to do one stage of relaying within our own code, even if we're using L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>.

```

817 #1\@sanitize\makespace\ \makeactive\@
818 \makeactive\.\makeactive%\@relay@netaddress}%

```

`\@relay@netaddress` finishes the job. It sets `\thenetaddress` for this author to contain the network name followed by the address. As a result of our kerfuffle

above, @ and % are active at the point we're entered. We ensure they're active when \thenetaddress gets expanded, too. (*WOT?!*)

```

819 \def\@relay@netaddress#1{%
820   \ProtectNetChars
821 (*!latex2e)
822   \expandafter\xdef\csname thenetaddress\number\authornumber\endcsname
823     {\leavevmode{\noexpand\rm\@network}}%
824     {\noexpand\NetAddrChars\noexpand\net
825       \ignorespaces#1\unskip}}%
826 </!latex2e>
827 (*!latex2e)
828   \expandafter\protected@xdef
829     \csname thenetaddress\number\authornumber\endcsname
830     {\protect\leavevmode\textrm{\@network}}%
831     {\protect\NetAddrChars\net
832       \ignorespaces#1\unskip}}%
833 </!latex2e>
834   \endgroup
835 }
```

\personalURL is in essence the same as \netaddress, apart from (1) the lack of the eccentric optional argument, and (2) the activation of ‘/’.

We could imagine needing an \URL command in general. If so, we must remember that the code here would naturally permit a break between the last two characters of http://, and some sort of special action must be taken to ensure that it doesn't happen.

```

836 \def\personalURL{\begingroup
837   \@sanitize\makespace\ \makeactive\@
838   \makeactive\.\makeactive%\makeactive\/\@personalURL}%
839 \def\@personalURL#1{%
840   \ProtectNetChars
841 (*!latex2e)
842   \expandafter\xdef\csname thePersonalURL\number\authornumber\endcsname
843     {\noexpand\URLchars\noexpand\net
844       \ignorespaces#1\unskip}}%
845 </!latex2e>
846 (*!latex2e)
847   \expandafter\protected@xdef
848     \csname thePersonalURL\number\authornumber\endcsname{%
849     \protect\leavevmode
850     {%
851       \protect\URLchars\net
852       \ignorespaces#1\unskip
853     }}%
854   }%
855 </!latex2e>
856   \endgroup
857 }
```

Define the activation mechanism for ‘@’, ‘%’, ‘.’ and ‘/’, for use in the above. Note that, since the code has ‘%’ active, we have ‘\*’ as a comment character, which has a tendency to make things look peculiar...

```

858 {%
```

```

859 \makecomment\*
860 \makeactive\@
861 \gdef\netaddrat{\makeactive\@*
862   \def@{\discretionary{\char"40}{\char"40}}
863   \makeactive\%
864   \gdef\netaddrpercent{\makeactive\%*
865     \def%\{\discretionary{\char"25}{\char"25}}
866   \makeactive\.
867   \gdef\netaddrdot{\makeactive\.*
868     \def.\{\discretionary{\char"2E}{\char"2E}}

```

`\NetAddrChars` is what *we* use (we're constrained to retain the old interface to this stuff, but it *is* clunky...). Since URLs are a new idea, we are at liberty not to define a separate `\netaddrslash` command, and we only have `\URLchars`.

```

869 \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
870 \makeactive\/
871 \gdef\URLchars{*
872   \NetAddrChars
873   \makeactive\/*
874   \def/{\discretionary{\char"2F}{\char"2F}}

```

`\ProtectNetChars` includes protecting `'/'`, since this does no harm in the case of net addresses (where it's not going to be active) and we thereby gain by not having yet another csname.

```

875 \gdef\ProtectNetChars{*
876 \!latex2e)
877   \def@{\noexpand@}*
878   \def%\{\noexpand%}*
879   \def.\{\noexpand.}*
880   \def/{\noexpand/*}
881 \!latex2e)
882 \!latex2e)
883   \def@{\protect@}*
884   \def%\{\protect%}*
885   \def.\{\protect.}*
886   \def/{\protect/*}
887 \!latex2e)
888   }
889 }

```

In L<sup>A</sup>T<sub>E</sub>X 2.09, there's no inhibition against simply saying the following:

```

890 \!latex2e)\def\net{\tt}

```

L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, on the other hand (in its wisdom), suppresses `\DeclareOldFontCommand` when in compatibility mode, so that in that circumstance we need to use a declaration copied from `latex209.def` rather than the way we would normally do the thing (using the command L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> defines for the job).

```

891 \!latex2e)
892 \if@compatibility
893   \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\syntypewriter}
894 \else
895   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
896 \fi
897 \!latex2e)

```

```

898 \def\authorlist#1{\def\@author{#1}}
899 \def\@author{\@defaultauthorlist}

\if@articletitle \maketitle takes an optional “*”; if present, the operation is not defining the
\maketitle title of a paper, merely that of a “business” section (such as the participants at
\@r@maketitle a meeting) that has no credited author or other title. In this case, the command
flushes out the latest \sectitle (or whatever) but does nothing else.

Provide machinery to skip extra space, even one or more full columns, above
the top of an article to leave space to paste up a previous article that has finished
on the same page. This is a fall back to accommodate the fact that multiple
articles cannot yet be run together easily with LATEX 2ε.

900 \newif\if@articletitle
901 \def\maketitle{\@ifstar
902   {\@articletitlefalse\@r@maketitle}%
903   {\@articletitletrue\@r@maketitle}%
904 }
905 \def\@r@maketitle{\par
906   \ifdim\PreTitleDrop > \z@
907     \loop
908       \ifdim \PreTitleDrop > \textheight
909         \vbox{}\vfil\eject
910         \advance\PreTitleDrop by -\textheight
911       \repeat
912       \vbox to \PreTitleDrop{}
913       \global\PreTitleDrop=\z@
914   \fi
915   \begingroup
916   \setcounter{footnote}{0}
917   \def\thefootnote{\fnsymbol{footnote}}
918   \@maketitle
919   \@thanks
920   \endgroup
921   \setcounter{footnote}{0}
922   \gdef\@thanks{}
923 }

```

### 3.13 Section titles

The following macros are used to set the large *TUGboat* section heads (e.g. “General Delivery”, “Fonts”, etc.)

Define the distance between articles which are run together:

```
924 \def\secsep{\vskip 5\baselineskip}
```

Note that `\stbaselineskip` is used in the definition of `\sectitlefont`, in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, so that it has (at least) to be defined before `\sectitlefont` is used (we do the whole job).

```

925 \newdimen\stbaselineskip      \stbaselineskip=18\p@
926 \newdimen\stfontheight
927 \<!!latex2e>
928 \setbox\T@stBox=\hbox{\sectitlefont 0}
929 \stfontheight=\ht\T@stBox
930 \<!!latex2e>
931 \<latex2e> \settoheight{\stfontheight}{\sectitlefont 0}

```

Declaring section titles; the conditional `\ifSecTitle` records the occurrence of a `\sectitle` command. If (when) a subsequent `\maketitle` occurs, the section title box will get flushed out; as a result of this, one could in principle have a set of `\sectitle` commands in a semi-fixed steering file, and inclusions of files inserted only as and when papers have appeared. Only the last `\sectitle` will actually be executed.

```

932 \newif\ifSecTitle
933 \SecTitlefalse
934 \newif\ifWideSecTitle
935 \newcommand\sectitle{%
936   \SecTitletrue
937   \@ifstar
938     {\WideSecTitletrue\def\s@ctitle}%
939     {\WideSecTitlefalse\def\s@ctitle}%
940 }
```

`\PreTitleDrop` records the amount of column-space we need to eject before we start any given paper. It gets zeroed after that ejection has happened.

```

941 \newdimen\PreTitleDrop   \PreTitleDrop=\z@
```

The other parameters used in `\@sectitle`; I don't think there's the slightest requirement for them to be registers (since they're constant values, AFAIK), but converting them to macros would remove the essentially useless functionality of being able to change them using assignment, which I'm not about to struggle with just now...

`\AboveTitleSkip` and `\BelowTitleSkip` are what you'd expect; `\strulethickness` is the value to use for `\fboxrule` when setting the title.

```

942 \newskip\AboveTitleSkip   \AboveTitleSkip=12\p@
943 \newskip\BelowTitleSkip   \BelowTitleSkip=8\p@
944 \newdimen\strulethickness  \strulethickness=.6\p@
```

`\@sectitle` actually generates the section title (in a rather generous box). It gets called from `\maketitle` under conditional `\ifSecTitle`; by the time `\@sectitle` takes control, we already have `\SecTitlefalse`. This implementation uses L<sup>A</sup>T<sub>E</sub>X's `\framebox` command, on the grounds that one doesn't keep a dog and bark for oneself...

```

945 \def\@sectitle #1{%
946   \par
947   \penalty-1000
```

If we're setting a wide title, the stuff will be at the top of a page (let alone a column) but inside a box, so that the separator won't be discardable: so don't create the separator in this case.

```

948   \ifWideSecTitle\else\secsep\fi
949   {%
950     \fboxrule\strulethickness
951     \fboxsep\z@
952     \noindent\framebox[\hsize]{%
953       \vbox{%
954         \raggedcenter
955         \let\\\@sectitle@newline
956         \sectitlefont
```

```

957     \makestrut[2\stfontheight;\z@]%
958     #1%
959     \makestrut[\z@;\stfontheight]\endgraf
960   }%
961 }%
962 }%
963 \nobreak
964 \vskip\baselineskip
965 }

```

`\@sectitle@newline` For use inside `\sectitle` as `\@`. Works similarly to `\@` in the “real world” — uses an optional argument

```

966 \newcommand{\@sectitle@newline}[1][\z@]{%
967   \ifdim#1>\z@
968     \makestrut[\z@;#1]%
969   \fi
970   \unskip\break
971 }

```

We need to trigger the making of a section title in some cases where we don’t have a section title proper (for example, in material taken over from TTN).

```

972 \def\@makesectitle{\ifSecTitle
973   \global\SecTitlefalse
974   \ifWideSecTitle
975     \twocolumn[\@sectitle{\s@ctitle}]%
976     \global\WideSecTitlefalse
977   \else
978     \@sectitle{\s@ctitle}%
979   \fi
980 \else
981   \vskip\AboveTitleSkip
982   \kern\topskip
983   \hrule \@height\z@ \@depth\z@ \@width 10\p@
984   \kern-\topskip
985   \kern-\strulethickness
986   \hrule \@height\strulethickness \@depth\z@
987   \kern\medskipamount
988   \nobreak
989 \fi
990 }

```

`\@maketitle` Finally, the body of `\maketitle` itself.

```

991 \def\@maketitle{%
992   \@makesectitle
993   \if@articletitle{%
994     \nohyphens \interlinepenalty\@M
995     \setbox0=\hbox{%
996       \let\thanks\@gobble
997       \let\=\quad
998       \let\and=\quad
999       \ignorespaces\@author}%
1000   }%
1001   \noindent\bf\raggedright\ignorespaces\@title\endgraf
1002 }%

```



```

1003 \ifdim \wd0 < 5\p@ % omit if author is null
1004 \else
    Since we have  $\text{\BelowTitleSkip} + 4\text{pt} = \text{\baselineskip}$ , we say:
1005 \nobreak \vskip 4\p@
1006 {%
1007 \leftskip=\normalparindent
1008 \raggedright
1009 \def\and{\unskip\}%
1010 \noindent\@author\endgraf
1011 }%
1012 \fi
1013 \nobreak
1014 \vskip\BelowTitleSkip
1015 }\fi%
1016 \global\@afterindentfalse
1017 \aftergroup\@afterheading
1018 }

```

Dedications are ragged right, in italics.

```

1019 <*\latex2e>
1020 \def\dedication{\bgroup\raggedright\let\MF=\slMF
1021 \noindent\it\ignorespaces}
1022 \def\enddedication{\endgraf\egroup\medskip}
1023 </!\latex2e>
1024 <*\latex2e>
1025 \newenvironment{dedication}%
1026 {\raggedright\noindent\itshape\ignorespaces}%
1027 {\endgraf\medskip}
1028 </!\latex2e>

```

The `abstract` and `longabstract` environments both use `\section*`.

```

1029 <*\latex2e>
1030 \def\abstract{
1031 \section*{Abstract}
1032 }
1033 \def\endabstract{}
1034 </!\latex2e>
1035 <*\latex2e>
1036 \renewenvironment{abstract}%
1037 {%
1038 \begin{SafeSection}%
1039 \section*{Abstract}%
1040 }%
1041 {\end{SafeSection}}
1042 </!\latex2e>
1043 <*\latex2e>
1044 \def\longabstract{
1045 \section*{Abstract}
1046 \bgroup\small}
1047 \def\endlongabstract{\endgraf\egroup
1048 </!\latex2e>
1049 <*\latex2e>
1050 \newenvironment{longabstract}%

```

```

1051 {%
1052   \begin{SafeSection}%
1053   \section*{Abstract}%
1054   \bgroup\small
1055 }%
1056 {%
1057   \endgraf\egroup
1058   \end{SafeSection}%
1059 \end{latex2e}
1060 \vspace{.25\baselineskip}
1061 \begin{center}
1062   {$--*--$}
1063 \end{center}
1064 \vspace{.5\baselineskip}}

```

### 3.14 Headings

Redefine style of section headings to match *TUGboat*'s defined styles. `\vskip 8pt` `\vskip\parskip` before; `\vskip 4pt` after. Negative beforeskip suppresses following parindent.

These macros are called `\*head` in the plain styles.

Relaying via `\TB@startsection` detects inappropriate use of `\section*`. Of course, if (when) *we* use it, we need to avoid that relaying; this can be done by `\letting \TB@startsection` to `\TB@safe@startsection`, within a group.

First the version for use in the default case, when class option `NUMBERSEC` is in effect.

```

1065 \if@numbersec
1066   \def\section{\TB@startsection{\section}%
1067                                   1%
1068                                   \z@
1069                                   {-8\p@}%
1070                                   {4\p@}%
1071                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1072   \def\subsection{\TB@startsection{\subsection}%
1073                                   2%
1074                                   \z@
1075                                   {-8\p@}%
1076                                   {4\p@}%
1077                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1078   \def\subsubsection{\TB@startsection{\subsubsection}%
1079                                   3%
1080                                   \z@
1081                                   {-8\p@}%
1082                                   {4\p@}%
1083                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1084   \def\paragraph{\TB@startsection{\paragraph}%
1085                                   4%
1086                                   \z@
1087                                   {2.5ex\@plus 1ex}%
1088                                   {-1em}%
1089                                   {\normalsize\bf}}

```

Now the version if class option NONUMBER is in effect, i.e., if `\if@numbersec` is false.

```

1090 \else
1091   \setcounter{secnumdepth}{0}
1092   \def\section{\TB@nolimlabel
1093             \TB@startsection{section}%
1094                             1%
1095                             \z@
1096                             {-8\p@}%
1097                             {4\p@}%
1098                             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1099   \def\subsection{\TB@nolimlabel
1100                 \TB@startsection{subsection}%
1101                                 2%
1102                                 \z@
1103                                 {-8\p@}%
1104                                 {-0.5em\@plus-\fontdimen3\font}%
1105                                 {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1106   \def\subsubsection{\TB@nolimlabel
1107                     \TB@startsection{subsubsection}%
1108                                     3%
1109                                     \parindent
1110                                     {-8\p@}%
1111                                     {-0.5em\@plus-\fontdimen3\font}%
1112                                     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1113 \fi

```

`\TB@startsection` traps \* versions of sectioning commands. Its argument is the complete set of `\@startsection` arguments.

```

1114 \def\TB@startsection#1{\@ifstar
1115   {\TBWarning{* - form of \expandafter\string\csname\@firstofsix#1%
1116             \endcsname\space inappropriate}%
1117   \@startsection#1}%
1118   {\@startsection#1}}
1119 \def\@firstofsix#1#2#3#4#5#6{#1}

```

`\TB@safe@startsection` is to be used where `\section*` (etc.) appear in places where the request is OK (because it's built in to some macro we don't fiddle with).

```

1120 \def\TB@safe@startsection#1{\@startsection#1}

```

The `SafeSection` environment allows use of \*-forms of sectioning environments. It's not documented for the general public: it's intended as an editor's facility.

```

1121 \newenvironment{SafeSection}%
1122   {\let\TB@startsection\TB@safe@startsection}%
1123   {}

```

And now for the exciting sectioning commands that L<sup>A</sup>T<sub>E</sub>X defines but we don't have a definition for (whatever else, we don't want Lamport's originals, which come out 'like the blare of a bugle in a lullaby'<sup>2</sup>).

---

<sup>2</sup>Thurber, *The Wonderful O*

The three inappropriate ones are subparagraph (indistinguishable from paragraph), and chapter and part. The last seemed almost to be defined in an early version of these macros, since there was a definition of `\l@part`. I've not got down to where that came from (or why). If class option NONUMBER is in effect, we also suppress `\paragraph`, since it has no parallel in the plain style.

```

1124 \if@numbersec
1125   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1126 \else
1127   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1128   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1129 \fi
1130 \def\chapter{\TB@nosection\chapter\section}
1131 \def\part{\TB@nosection\part\section}
1132 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1133   \string#2\space used instead}\#2}

```

`\l@<sectioning-name>` is for table of contents (of an article). Don't ask me (RF) why `\l@part` is there; I commented it out because I couldn't understand why it had been left there for me. To be finally deleted in a future release of these macros...

```

1134 %\def\l@part#1#2{\addpenalty{\@secpenalty}}%
1135 % \addvspace{2.25em\@plus\p@}%
1136 % \begingroup
1137 %   \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
1138 %   {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1139 %   \nobreak
1140 % \endgroup}
1141 \def\l@section#1#2{\addpenalty{\@secpenalty}}%
1142 \addvspace{1.0em\@plus\p@}%
1143 \@tempdima 1.5em
1144 \begingroup
1145   \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1146   \parfillskip\z@
1147   \bf\leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1148   \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1149 \endgroup}

```

### 3.15 Appendices

Appendices (which are really just another sort of section heading) raise a problem: if the sections are unnumbered, we plainly need to restore the section numbering, which in turn allows labelling of section numbers again (`\TBnolimelabel` happens before the `\refstepcounter`, so its effects get lost ... what a clever piece of design that was). So here we go:

```

1150 \renewcommand\appendix{\par
1151   \renewcommand\thesection{\@Alph\c@section}%
1152   \setcounter{section}{0}%
1153   \if@numbersec
1154   \else
1155     \setcounter{secnumdepth}{1}%
1156   \fi

```

Now: is this the start of an appendix environment? This can be detected by looking at `\@currenvir`; if we are, we need to relay to `\@appendix@env` to pick up the optional argument.

```

1157 \def\@tempa{appendix}
1158 \ifx\@tempa\@currenvir
1159   \expandafter\@appendix@env
1160 \fi
1161 }

      Here we deal with \begin{appendix}[\langle app-name \rangle]

1162 \newcommand\app@prefix@section{}
1163 \newcommand\@appendix@env[1][Appendix]{%
1164   \renewcommand\@secntformat[1]{\csname app@prefix@##1\endcsname
1165     \csname the##1\endcsname\quad}%
1166   \renewcommand\app@prefix@section{#1 }%
1167 }
```

Ending an appendix environment is pretty trivial...

```

1168 \let\endappendix\relax
```

### 3.16 References

If the sections aren't numbered, the natural tendency of the author to cross-reference (which, after all, is one of the things  $\text{\LaTeX}$  is for ever being advertised as being good at) can cause headaches for the editor. (Yes it can; believe me ... there's always one.)

The following command is used by each of the sectioning commands to make a following `\ref` command bloop at the author. Even if the author then ignores the complaint, the poor old editor may find the offending `\label` rather more easily.

(Note that macro name is to be read as “*noli me label*” (I don't know the mediæval Latin for ‘label’).

**Comment** To come (perhaps): detection of the act of labelling, and an analogue of `\ifG@refundefined` for this sort of label

```

1169 \def\TB@nolimelabel{%
1170   \def\@currentlabel{%
1171     \protect\TBWarning{%
1172       Invalid reference to numbered label on page \thepage
1173       \MessageBreak made%
1174     }%
1175     \textbf{?!?}%
1176   }%
1177 }
```

### 3.17 Title references

This is a first cut at a mechanism for referencing by the title of a section; it employs the delightfully simple idea Sebastian Rahtz has in the `nameref` package (which is part of `hyperref`). As it stands, it lacks some of the bells and whistles of the original, but they could be added; this is merely proof-of-concept.

The name label comes from the moveable bit of the section argument; we subvert the `\@sect` and `\@ssect` commands (the latter deals with starred section commands) to grab the relevant argument.

```

1178 \let\TB@@sect\@sect
1179 \let\TB@@ssect\@ssect
1180 \def\@sect#1#2#3#4#5#6[#7]#8{%
1181   \def\@currentlabelname{#7}%
1182   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1183 }
1184 \def\@ssect#1#2#3#4#5{%
1185   \def\@currentlabelname{#5}%
1186   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1187 }

```

The `\newlabel` command that gets written to the `.aux` file needs to be redefined to have three components to its argument:

```

1188 \def\label#1{%
1189   \@bsphack
1190   \let\label\@gobble
1191   \let\index\@gobble
1192   \if@filesw
1193     \protected@write\@auxout{%
1194       {\string\newlabel{#1}{%
1195         \@currentlabel}{\thepage}{\@currentlabelname}}%
1196       }%
1197   \fi
1198   \@esphack
1199 }%
1200 }

```

Of course, in the case of a sufficiently mad author, there will be no sectioning commands, so we need to

```

1201 \let\@currentlabelname\@empty

```

References are pretty straightforward, but need three extra utility commands (analogous to the `\@firstof...`, etc., defined in the kernel).

```

1202 \DeclareRobustCommand\ref[1]{\expandafter\@setref
1203   \csname r@#1\endcsname\@firstofthree{#1}}
1204 \DeclareRobustCommand\pageref[1]{\expandafter\@setref
1205   \csname r@#1\endcsname\@secondofthree{#1}}
1206 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1207   \csname r@#1\endcsname\@thirdofthree{#1}}
1208 \long\def\@firstofthree#1#2#3{#1}
1209 \long\def\@secondofthree#1#2#3{#2}
1210 \long\def\@thirdofthree#1#2#3{#3}

```

### 3.18 Float captions

By analogy with what we've just done to section titles and the like, we now do our best to discourage hyphenation within captions.

```

1211 \long\def\@makecaption#1#2{%
1212   \vskip\abovecaptionskip
1213   \sbox\@tempboxa{#1: #2}%
1214   \ifdim \wd\@tempboxa >\hspace

```

```

1215 \raggedright\hyphenpenalty=\@M
1216 #1: #2\par
1217 \else
1218 \global \@minipagefalse
1219 \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1220 \fi
1221 \vskip\belowcaptionskip}

```

### 3.19 Size changing commands

Apart from their ‘normal’ effects, these commands are

```

1222 \renewcommand\normalsize{%
1223 \setfontsize\normalsize\@xpt\@xipt
1224 \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1225 \belowdisplayskip=\abovedisplayskip
1226 \abovedisplayshortskip=\z@\@plus 3\p@
1227 \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1228 }
1229
1230 \renewcommand\small{%
1231 \setfontsize\small\@ixpt{11}%
1232 \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1233 \belowdisplayskip=\abovedisplayskip
1234 \abovedisplayshortskip=\z@\@plus 2\p@
1235 \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1236 }
1237 \renewcommand\footnotesize{%
1238 \setfontsize\footnotesize\@viiipt{9.5}%
1239 \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1240 \belowdisplayskip=\abovedisplayskip
1241 \abovedisplayshortskip=\z@\@plus 3\p@
1242 \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1243 }

```

### 3.20 Lists and other text inclusions

```

1244 \def\@listi{%
1245 \leftmargin\leftmarginiparsep=\p@\@plus\p@\@minus\p@
1246 \itemsep=\parsep
1247 \listparindent=1em
1248 }
1249
1250 \def\@listii{%
1251 \leftmargin\leftmarginii
1252 \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1253 \topsep=2\p@\@plus\p@\@minus\p@
1254 \parsep=\p@\@plus\p@\@minus\p@
1255 \itemsep=\parsep
1256 \listparindent=1em
1257 }
1258
1259 \def\@listiii{%
1260 \leftmargin=\leftmarginiii

```

```

1261 \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1262 \topsep=\p@\@plus\p@\@minus\p@
1263 \parsep=\z@
1264 \itemsep=\topsep
1265 \listparindent=1em
1266 }
1267 \def\quote{\list{}{\rightmargin.5\leftmargin}\item[]}

```

From Dominik Wujastyk's font article. First paragraph of a quotation will not be indented, and right margin is decreased for narrow columns.

```

1268 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1269 \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}

```

### 3.21 Some fun with verbatim

The plain *TUGboat* style allows [optional] arguments to its `\verbatim` command. This will allow the author (or editor) to specify a range of exciting features; we would definitely like the numbered verbatim style for code (that facility is reserved for a future version of this package), and the present little bit of code imposes the `\ruled` option on the built-in `verbatim` environment. (Note that we don't yet deal with `verbatim*`, which is in itself an option to the plain original.)

We start by saving various bits and bobs whose operation we're going to subvert.

```

1270 %\let\@TB@verbatim\@verbatim
1271 \let\@TBverbatim\verbatim
1272 \let\@TBendverbatim\endverbatim

    Impose an optional argument on the environment.
    (\obeylines added to prevent the \futurelet from propagating into the
    body of the verbatim, thus causing lines that start with odd characters (like # or
    even \) to behave peculiarly.)
1273 \def\verbatim{\obeylines
1274 \futurelet\reserved@a\@switch@sqbverbatim}
1275 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1276 \expandafter\@sqbverbatim\else
1277 \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1278 \def\@sqbverbatim[#1]{%

```

The optional argument consists entirely of functions that modify the appearance of the environment. Following the plain style, we define the functions we can execute in the optional argument here.

The command `\ruled` tells us that there should be rules above and below the verbatim block.

```

1279 \def\ruled{\let\if@ruled\iftrue}%

```

Then we just execute the ones we've got, and relay to a (hacked) copy of the built-in environment.

```

1280 #1\@TBverbatim}

```

The built-in environment itself relays to `\@verbatim`, which we've subverted to impose our views on appearance.

```

1281 \def\@verbatim{%
    First, we deal with \ruled:
1282 \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi

```



Now, the code out of the original verbatim environment:

```

1283 \trivlist \item\relax
1284 \if@minipage\else\vskip\parskip\fi
1285 \leftskip\@totalleftmargin\rightskip\z@skip
1286 \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1287 \@@par
1288 \@tempswafalse
1289 \def\par{%
1290   \if@tempswa
1291     \leavevmode \null \@@par\penalty\interlinepenalty
1292   \else
1293     \@tempswatrue
1294     \ifhmode\@@par\penalty\interlinepenalty\fi
1295   \fi}%
1296 \obeylines \verbatim@font \@noligs
1297 \let\do\@makeother \dospecials
1298 \everypar \expandafter{\the\everypar \unpenalty}%
1299 }%

```

To end the environment, we do everything in reverse order: relay via the copy we made of `\endverbatim`, and then finish off the option changes (again `\ruled` only, so far).

```

1300 \def\endverbatim{\@TBendverbatim
1301   \if@ruled\kern5\p@\hrule\endtrivlist\fi}

```

`\enablemetacode` simply typesets<sup>3</sup> something that looks (verbatim) like:

as:

```

\meta-text

```

```

1302 {\makeactive<
1303   \gdef<#1>{{\reset@font\ensuremath{\langle}}%
1304     \textit{#1}}%
1305   \ensuremath{\rangle}}}
1306 }

```

Finally, we define the `\if` used by the `\ruled` option

```

1307 \let\if@ruled\iffalse

```

## 3.22 Bibliography

This is more or less copied verbatim from Glenn Paulley's *chicago.sty* ([gnpaulle@bluebox.uwaterloo.ca](mailto:gnpaulle@bluebox.uwaterloo.ca)). It produces an author-year citation style bibliography, using output from the BIBTEX style file based on that by Patrick Daly. It needs extra macros beyond those in standard L<sup>A</sup>T<sub>E</sub>X to function properly. The form of the bibitem entries is:

```

\bibitem[\protect\citeauthoryear{Jones, Baker, and Smith}
{Jones et al.}{1990}{key}]...

```

---

<sup>3</sup>Or will simply typeset, when we get around to implementation proper

The available citation commands are:

<code>\cite{key}</code>	→ (Jones, Baker, and Smith 1990)
<code>\citeA{key}</code>	→ (Jones, Baker, and Smith)
<code>\citeNP{key}</code>	→ Jones, Baker, and Smith 1990
<code>\citeANP{key}</code>	→ Jones, Baker, and Smith
<code>\citeN{key}</code>	→ Jones, Baker, and Smith (1990)
<code>\shortcite</code>	→ (Jones et al. 1990)
<code>\citeyear</code>	→ (1990)
<code>\citeyearNP</code>	→ 1990

First of all (after checking that we're to use Harvard citation at all), make a copy of L<sup>A</sup>T<sub>E</sub>X's default citation mechanism.

```
1308 \if@Harvardcite
1309 \let\@internalcite\cite
```

Normal forms.

```
1310 \def\cite{\def\@citesep{-1000}%
1311   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1312   \def\citeauthoryear##1##2##3{##1, ##3\@internalcite}
1313 \def\citeNP{\def\@citesep{-1000}%
1314   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1315   \def\citeauthoryear##1##2##3{##1, ##3\@internalcite}
1316 \def\citeN{\def\@citesep{-1000}%
1317   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1318   \def\citeauthoryear##1##2##3{##1 (##3\@citedata}
1319 \def\citeA{\def\@citesep{-1000}%
1320   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1321   \def\citeauthoryear##1##2##3{##1\@internalcite}
1322 \def\citeANP{\def\@citesep{-1000}%
1323   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1324   \def\citeauthoryear##1##2##3{##1\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1325 \def\shortcite{\def\@citesep{-1000}%
1326   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1327   \def\citeauthoryear##1##2##3{##2, ##3\@internalcite}
1328 \def\shortciteNP{\def\@citesep{-1000}%
1329   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1330   \def\citeauthoryear##1##2##3{##2, ##3\@internalcite}
1331 \def\shortciteN{\def\@citesep{-1000}%
1332   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1333   \def\citeauthoryear##1##2##3{##2 (##3\@citedata}
1334 \def\shortciteA{\def\@citesep{-1000}%
1335   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1336   \def\citeauthoryear##1##2##3{##2\@internalcite}
1337 \def\shortciteANP{\def\@citesep{-1000}%
1338   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1339   \def\citeauthoryear##1##2##3{##2\@internalcite}
```

When just the year is needed:

```
1340 \def\citeyear{\def\@citesep{-1000}%
1341   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1342   \def\citeauthoryear##1##2##3{##3\@citedata}
1343 \def\citeyearNP{\def\@citesep{-1000}%
1344   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
```

```

1345 \def\citeauthoryear##1##2##3{##3}\@citedata}
Place commas in-between citations in the same \citeyear, \citeyearNP, \citeN,
or \shortciteN command. Use something like \citeN{ref1,ref2,ref3} and
\citeN{ref4} for a list.
1346 \def\@citedata{%
1347     \ifnextchar [{\@tempswatrue\@citedatax}%
1348                 {\@tempswafalse\@citedatax[]}%
1349 }
1350
1351 \def\@citedatax[#1]#2{%
1352 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1353 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1354     {\@citea\def\@citea{, }\@ifundefined% by Young
1355         {b@\@citeb}{\bf ?}%
1356         \@warning{Citation '\@citeb' on page \thepage \space undefined}}%
1357 {\csname b@\@citeb\endcsname}}{#1}}%
Don't box citations, separate with ; and a space; Make the penalty between cita-
tions negative: a good place to break.
1358 \def\@citex[#1]#2{%
1359 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1360 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1361     {\@citea\def\@citea{; }\@ifundefined% by Young
1362         {b@\@citeb}{\bf ?}%
1363         \@warning{Citation '\@citeb' on page \thepage \space undefined}}%
1364 {\csname b@\@citeb\endcsname}}{#1}}%
No labels in the bibliography.
1365 \def\@biblabel#1{}
Set length of hanging indentation for bibliography entries.
1366 \newlength{\bibhang}
1367 \setlength{\bibhang}{2em}
Indent second and subsequent lines of bibliographic entries. Stolen from open-
bib.sty: \newblock is set to {}.
1368 \newdimen\bibindent
1369 \bibindent=1.5em
1370 \@ifundefined{refname}%
1371     {\newcommand{\refname}{References}}%
1372     {}%
For safety's sake, suppress the \TB@startsection warnings here...
1373 \def\thebibliography#1{%
1374     \let\TB@startsection\TB@safe@startsection
1375     \section*{\refname
1376         \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1377     \list{[\arabic{enumi}]}{%
1378         \labelwidth\z@ \labelsep\z@
1379         \leftmargin\bibindent
1380         \itemindent -\bibindent
1381         \listparindent \itemindent
1382         \parsep \z@
1383         \usecounter{enumi}}
1384     \def\newblock{}

```

```

1385 \BibJustification
1386 \sfcode'\.=1000\relax
1387 }

etal Other bibliography odds and ends.
\bibentry 1388 \def\etal{et\,al.\@}
1389 \def\bibentry{%
1390 \smallskip
1391 \hangindent=\parindent
1392 \hangafter=1
1393 \noindent
1394 \sloppy
1395 \clubpenalty500 \widowpenalty500
1396 \frenchspacing
1397 }

\bibliography Changes made to accommodate TUB file naming conventions
\bibliographystyle 1398 \def\bibliographystyle#1{%
1399 \if@filesw
1400 \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1401 \fi
1402 \@input{\jobname.bbl}%
1403 }
1404 \def\bibliographystyle#1{%
1405 \if@filesw
1406 \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1407 \fi
1408 }

\thebibliography If the user's asked to use LATEX's default citation mechanism (using the rawcite
\TB@@thebibliography option), we still need to play with \TB@startsection: this is a boring fact of
life...
We also patch \sloppy in case there's a need for alternative justification of
the body of the bibliography.
1409 \else
1410 \let\TB@@thebibliography\thebibliography
1411 \def\thebibliography{%
1412 \let\TB@startsection\TB@safe@startsection
1413 \let\sloppy\BibJustification
1414 \TB@@thebibliography}
1415 \fi

\BibJustification \BibJustification defines how the bibliography is to be justified. The Lamport
\SetBibJustification default is simply "\sloppy", but we regularly find some sort of ragged right setting
\TB@@sloppy is appropriate. (\BibJustification is nevertheless reset to its default value at
the start of a paper.)
1416 \let\TB@@sloppy\sloppy
1417 \let\BibJustification\TB@@sloppy
1418 \newcommand{\SetBibJustification}[1]{%
1419 \renewcommand{\BibJustification}{#1}%
1420 }
1421 \ResetCommands\expandafter{\the\ResetCommands
1422 \let\BibJustification\TB@@sloppy
1423 }

```

### 3.23 Registration marks

```

1424 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1425 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1426 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }

      “T” marks centered on top and bottom edges of paper
1427 \def\ttopregister{\dlap{%
1428     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1429         \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1430     \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}%
1431 \def\tbotregister{\ulap{%
1432     \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1433     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1434         \HorzR@gisterRule \hfil \HorzR@gisterRule}}}%
1435 \def\topregister{\ttopregister}
1436 \def\botregister{\tbotregister}

```

### 3.24 Running heads

```

1437 (!\latex2e)\def \rtitlex{\def\tubfont{\normalsize\rm}\TUB, \volx }
1438 \latex2e\def \rtitlex{\def\texttub##1{\normalsize\textrm{##1}}}\TUB, \volx }
1439
1440 \def\PrelimDraftfooter{%
1441     \dlap{\kern\textheight\kern3pc
1442         \rlap{\hb@xt@\pagewd{\midrttitle\hfil\midrttitle}}}
1443 }%
1444

```

registration marks; these are temporarily inserted in the running head

```

1445 \def\MakeRegistrationMarks{}
1446 \def\UseTrimMarks{%
1447     \def\MakeRegistrationMarks{%
1448         \ulap{\rlap{%
1449             \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1450             \topregister\vskip \headmargin \vskip 10\p@}}}%
1451     }%
1452
1453 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1454     \normalsize\cename normalshape\endcename\rm
1455     \rtitlex\qqquad\midrttitle \hfil \thepage}
1456 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1457     \normalsize\cename normalshape\endcename\rm
1458     \thepage\hfil\midrttitle\qqquad\rtitlex}
1459 \def\@oddfoot{}
1460 \def\@evenfoot{}
1461 \def\ps@headings{}
1462 \pagestyle{headings}

```

### 3.25 Output routine

Modified to alter \brokenpenalty across columns

*Comment* We’re playing with fire here: for example, \outputdblcol has changed in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> for 1995/06/01 (with the use of \hb@xt@). *This* time there’s no semantic change, but...

```

1463 \def\outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1464   \global\setbox\@leftcolumn\box\@outputbox
1465   \global\brokenpenalty10000
1466   \else \global\@firstcolumntrue
1467   \global\brokenpenalty100
1468   \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1469     {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1470     \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1471   \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1472   \@whiles\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1473   \fi}

```

### 3.26 Font-related definitions and machinery

These are mostly for compatibility with plain `tugboat.sty`

```

1474 \newif\ifFirstPar      \FirstParfalse
1475 \def\smc{\sc}
1476 \def\ninepoint{\small}

```

`\SMC` *isn't* small caps — Barbara Beeton says she thinks of it as “big small caps”. She says (modulo capitalisation of things...):

For the things it's used for, regular small caps are not appropriate — they're too small. Real small caps are appropriate for author names (and are so used in continental bibliographies), section headings, running heads, and, on occasion, words to which some emphasis is to be given. `\SMC` was designed to be used for acronyms and all-caps abbreviations, which look terrible in small caps, but nearly as bad in all caps in the regular text size. The principle of using “one size smaller” than the text size is similar to the design of caps in German — where they are smaller relative to lowercase than are caps in fonts intended for English, to improve the appearance of regular text in which caps are used at the heads of all nouns, not just at the beginnings of sentences.

We define this in terms of the memory of the size currently selected that's maintained in `\@currsiz`: if the user does something silly re. selecting fonts, we'll get the wrong results. The following code is adapted from `relsize.sty` by Donald Arseneau and Matt Swift, from a 2.09 original by Bernie Cosell. (Note that the order of examination of `\@currsiz` is to get the commonest cases out of the way first.)

```

1477 \!latex2e\def\SMC{\small}
1478 \!latex
1479 \!latex2e
1480 \DeclareRobustCommand\SMC{%
1481   \ifx\@currsiz\normalsize\small\else
1482   \ifx\@currsiz\small\footnotesize\else
1483   \ifx\@currsiz\footnotesize\scriptsize\else
1484   \ifx\@currsiz\large\normalsize\else
1485   \ifx\@currsiz\Large\large\else
1486   \ifx\@currsiz\LARGE\Large\else
1487   \ifx\@currsiz\scriptsize\tiny\else
1488   \ifx\@currsiz\tiny\tiny\else
1489   \ifx\@currsiz\huge\LARGE\else

```

```

1490         \ifx\@currsize\Huge\huge\else
1491             \small\SMC@unknown@warning
1492 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1493 }
1494 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: unrecognised
1495     text font size command -- using \string\small}}
1496 \newcommand\textSMC[1]{\{ \SMC #1\}}

```

The `\acro` command uses `\SMC` as it was originally intended. Note that, since most of these things are uppercase-only names, it fiddles with the spacefactor after inserting its text.

```

1497 \newcommand\acro[1]{\textSMC{#1}\@}
1498 \</latex2e>
1499 \<!\latex2e>\def\acro#1{\{ \SMC #1\}\@}
1500 \</latex>
1501 \<!\latex>\def\acro#1{\{ \SMC #1\}\spacefactor\@m}

```

### 3.27 Miscellaneous definitions

`\EdNote` allows the editor to enter notes in the text of a paper. If the command is given something that appears like an optional argument, the entire text of the note is placed in square brackets. (Yes, it really is!)

```

1502 \def\xEdNote{\@EdNoteFont Editor's note:\enspace }
1503 \def \EdNote{\@ifnextchar[%]
1504   {%
1505     \ifvmode
1506       \smallskip\noindent\let\@EdNote@\@EdNote@v
1507     \else
1508       \unskip\quad\def\@EdNote{\unskip\quad}%
1509     \fi
1510     \@EdNote
1511   }%
1512   \xEdNote
1513 }
1514 \long\def\@EdNote[#1]{%
1515   [\thinspace\xEdNote\ignorespaces
1516   #1%
1517   \unskip\thinspace]%
1518   \@EdNote@
1519 }
1520 \def\@EdNote@v{\par\smallskip}

```

Macros for Mittelbach's self-documenting style

```

1521 \def\SelfDocumenting{%
1522   \setlength\textwidth{31pc}
1523   \onecolumn
1524   \parindent \z@
1525   \parskip 2\p@\@plus\p@\@minus\p@
1526   \oddsidemargin 8pc
1527   \evensidemargin 8pc
1528   \marginparwidth 8pc
1529   \toks@\expandafter{\@oddhead}%
1530   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1531   \toks@\expandafter{\@evenhead}%

```

```

1532 \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1533 \def\ps@titlepage{}%
1534 }
1535 \def\ps@titlepage{}
1536
1537 \long\def\@makefnmark#1{\parindent 1em\noindent\hb@xt@2em{}%
1538 \llap{\@makefnmark}\null$\mskip5mu$#1}
1539
1540 %% \long\def\@makefnmark#1{\parindent 1em
1541 %% \noindent
1542 %% \hb@xt@2em{\hss\@makefnmark}%
1543 %% \hskip0.27778\fontdimen6\textfont\z@\relax
1544 %% #1%
1545 %% }
1546
1547
1548 \def\fnnum@figure{{\bf Figure \thefigure}}

```

### 3.28 Initialization

If we're going to use Harvard-style bibliographies, we set up the bibliography style: the user doesn't get any choice.

```

1549 \if@Harvardcite
1550 \AtBeginDocument{%
1551 \bibliographystyle{ltugbib}%
1552 }
1553 \fi
1554 \authornumber\z@
1555 \let\@signature\@defaultsignature
1556 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1557 configuration information}}{}
1558 \</classtail>

```

## 4 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> Proceedings class

`\@tugclass` Make the code of `ltugboat.cls` (when we load it) say it's really us:

```

1559 \<ltugproccls>
1560 \def\@tugclass{ltugproc}

```

`\if@proctw@column` For the case where we're preparing the preprints, we may not have been able to prepare submissions for typesetting in two columns. In this case, therefore, we may need the option `onecolumn`, that will suppress the use of `twocolumn` setting within the article.

```

1561 \newif\if@proctw@column \@proctw@columntrue
1562 \DeclareOption{onecolumn}{\@proctw@columnfalse}

```

`\if@proc@sober` TUG'96 proceedings switched to more sober headings still; so the `tug95` option establishes the original state. In the absence of any other guidance, we use the '96 for TUG'97 proceedings, but also allow numbering of sections.

```

1563 \newif\if@proc@sober
1564 \newif\if@proc@numerable

```



```

1565 \DeclareOption{tug95}{%
1566   \@proc@soberfalse
1567   \@proc@numerablefalse
1568 }
1569 \DeclareOption{tug96}{%
1570   \@proc@sobertrue
1571   \@proc@numerablefalse
1572 }
1573 \DeclareOption{tug97}{%
1574   \@proc@sobertrue
1575   \@proc@numerabletrue
1576 }
1577 \DeclareOption{tug2002}{%
1578   \@proc@sobertrue
1579   \@proc@numerabletrue
1580   \let@if@proc@numbersec@iftrue
1581   \PassOptionsToClass{numbersec}{ltugboat}%
1582 }

```

`\if@proc@numbersec` If we're in a class that allows section numbering (the actual check occurs after `\ProcessOptions`, we can have the following:

```

1583 \DeclareOption{numbersec}{\let@if@proc@numbersec@iftrue
1584   \PassOptionsToClass{numbersec}{ltugboat}%
1585 }
1586 \DeclareOption{nonumber}{\let@if@proc@numbersec\iffalse
1587   \PassOptionsToClass{nonumber}{ltugboat}%
1588 }

```

`\ifTB@title` If we have a paper for which we want to create a detached title, with an editor's note, and then set the paper separately, we use option `notitle`.

```

1589 \newif\ifTB@title
1590 \DeclareOption{title}{\TB@titletrue}
1591 \DeclareOption{notitle}{\TB@titlefalse}
1592 \AtBeginDocument{\stepcounter{page}}

```

There are these people who seem to think `tugproc` is an option as well as a class...

```

1593 \DeclareOption{tugproc}{%
1594   \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1595 }

```

All other options are simply passed to `ltugboat`...

```

1596 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{ltugboat}}

```

If there's a `tugproc` defaults file, input it now: it may tell us which year we're to perform for... (Note: this code *is* millenium-proof. It's not terribly classy for years beyond 2069, but then I'm not going to be around then—this will be an interesting task for a future `TeX`ie...)

```

1597 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1598   {Loading ltugproc configuration information}}{}
1599 \@ifundefined{TUGprocExtraOptions}%
1600   {\let\TUGprocExtraOptions\@empty}%
1601   {\edef\TUGprocExtraOptions{\,\TUGprocExtraOptions}}

```

`\tugProcYear` Now work out what year it is

```
1602 \@tempcnta\year
1603 \ifnum\@tempcnta<2000
1604   \divide\@tempcnta by100
1605   \multiply\@tempcnta by100
1606   \advance\@tempcnta-\year
1607   \@tempcnta-\@tempcnta
1608 \fi
```

And use that for calculating a year for us to use.

```
1609 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1610               {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1611 \@tempa
1612 \ClassInfo{ltugproc}{Class believes year is
1613   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1614   \@gobble}
```

Check that this is a “sensible year” (one for which we have a class option defined). If not, make it the ‘most recent year we know about’.

```
1615 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1616   \def\tugProcYear{2002}\fi
```

Now execute the default ‘year’ option, and the default `nonumber` option and get on with processing. Note that this command gets ignored if the configuration file specifies a silly year.

```
1617 \ExecuteOptions{nonumber,tug\tugProcYear,title\TUGprocExtraOptions}
1618 \ProcessOptions
1619 \if@proc@numbersec
1620   \if@proc@numerable
1621     \else
1622       \ClassWarning{\@tugclass}{This year’s proceedings may not have
1623         numbered sections}%
1624     \fi
1625 \fi
```

Call `ltugboat`, adding whichever section numbering option is appropriate

```
1626 \LoadClass[\if@proc@numbersec numbersec\else nonumber\fi]{ltugboat}
```

## 4.1 Proceedings titles

`\maketitle` There’s no provision for ‘section titles’ in proceedings issues, as there are in *TUG-*  
`\ifTB@madetitle` *boat* proper. Note the tedious L<sup>A</sup>T<sub>E</sub>X bug-avoidance in the `\@TB@test@document`  
macro

```
1627 \def\maketitle{%
1628   \begingroup
1629     \ifshortAuthor\else
1630       \global\let\rhAuthor\@empty
1631       \def\g@addto@rhAuthor##1{%
1632         \begingroup
1633         \toks@\expandafter{\rhAuthor}%
```

```

1634         \let\thanks\@gobble
1635         \protected@xdef\rhAuthor{\the\toks@##1}%
1636     \endgroup
1637 }%
1638 \@getauthorlist\g@addto@rhAuthor
1639 \fi

    now, the real business of setting the title
1640 \ifTB@title
1641     \setcounter{footnote}{0}%
1642     \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1643     \if@proctw@column
1644         \twocolumn[\@maketitle]%
1645     \else
1646         \onecolumn
1647         \global\@topnum\z@
1648         \@maketitle
1649     \fi
1650     \@thanks
1651     \thispagestyle{TBproctitle}
1652 \fi
1653 \endgroup
1654 \TB@madetitletrue
1655 }
1656 \newif\ifTB@madetitle \TB@madetitlefalse

```

`\@TB@test@document` `\@TB@test@document` checks to see, at entry to `\maketitle`, if we've had `\begin{document}`. See L<sup>A</sup>T<sub>E</sub>X bug report latex/2212, submitted by Robin Fairbairns, for details.

```

1657 \def\@TB@test@document{%
1658     \edef\@tempa{\the\everypar}
1659     \def \@tempb{\@nodocument}
1660     \ifx \@tempa\@tempb
1661         \@nodocument
1662     \fi
1663 }

```

`\AUTHORfont` Define the fonts for titles and things

```

\TITLEfont 1664 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1665 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1666 \def\addressfont{\small\rmfamily\mdseries\upshape}
1667 \def\netaddrfont{\small\ttfamily\mdseries\upshape}

```

`\@maketitle` The body of `\maketitle`

```

1668 \def\@maketitle{%
1669     {\parskip\z@
1670     \TITLEfont\raggedright\noindent\@title\par
1671     \count@=0
1672     \loop
1673     \ifnum\count@<\authornumber
1674         \vskip20\p@
1675         \advance\count@\@ne
1676     {\AUTHORfont\theauthor{\number\count@}\endgraf}}%

```

```

1677     \addressfont\theaddress{\number\count@}\endgraf
1678     {%
1679         \allowhyphens
1680         \hangindent1.5pc
1681         \netaddrfont\thenetaddress{\number\count@}\endgraf
1682         \hangindent1.5pc
1683         \thePersonalURL{\number\count@}\endgraf
1684     }%
1685     \repeat
1686     \vskip20\p@}%
1687     \if@abstract
1688         \centerline{\bfseries Abstract}%
1689         \vskip.5\baselineskip\rmfamily
1690         \list{}\listparindent20\p@
1691             \itemindent\z@ \leftmargin4.875pc
1692             \rightmargin\leftmargin \parsep \z@\item[]\ignorespaces
1693             \the\abstract@toks
1694         \endlist\global\@ignoretrue
1695     \fi
1696     \vskip1pc
1697     \global\@afterindentfalse\aftergroup\@afterheading
1698 }

```

*Comment* This is all very weird... why we (of all people) don't allow `\thanks` currently escapes me.

This restriction simply removed 1998/01/09

```

1699 %\def\thanks#1{\@bsphack\TBWarning{\string\thanks\space
1700 %                is not supported}\@esphack}

```

**abstract** Save the contents of the abstract environment in the token register `\abstract@toks`.  
**\if@abstract** We need to do this, as otherwise it may get ‘typeset’ (previously, it got put in a  
**\abstract@toks** box) before `\begin{document}`, and experiments prove that this means our shiny new `\SMC` doesn't work in this situation.

If you need to understand the ins and outs of this code, look at the place I lifted it from: `tabularx.dtx` (in the tools bundle). The whole thing pivots on having stored the name of the ‘abstract’ environment in `\@abstract@`

```

1701 \newtoks\abstract@toks \abstract@toks{}
1702 \let\if@abstract\iffalse
1703 \def\abstract{%

```

we now warn unsuspecting users who provide an `abstract` environment *after* the `\maketitle` that would typeset it...

```

1704     \ifTB@madetitle
1705         \TBWarning{abstract environment after \string\maketitle}
1706     \fi
1707     \def\@abstract@{abstract}%
1708     \ifx\@currenvir\@abstract@
1709     \else
1710         \TBError{\string\abstract\space is illegal:%
1711             \MessageBreak
1712             use \string\begin{\@abstract@} instead}%
1713         {\@abstract@\space may only be used as an environment}

```

```

1714 \fi
1715 \global\let\if@abstract\iftrue
1716 {\ifnum0='}\fi
1717 \@abstract@getbody}
1718 \let\endabstract\relax

```

\@abstract@getbody gets chunks of the body (up to the next occurrence of \end) and appends them to \abstract@toks. It then uses \@abstract@findend to detect whether this \end is followed by {abstract}

```

1719 \long\def\@abstract@getbody#1\end{%
1720 \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1721 \@abstract@findend}

```

Here we've got to \end in the body of the abstract. \@abstract@findend takes the 'argument' of the \end do its argument.

```

1722 \def\@abstract@findend#1{%
1723 \def\@tempa{#1}%

```

If we've found an 'end' to match the 'begin' that we started with, we're done with gathering the abstract up; otherwise we stuff the end itself into the token register and carry on.

```

1724 \ifx\@tempa\@abstract@
1725 \expandafter\@abstract@end
1726 \else

```

It's not \end{abstract} — check that it's not \end{document} either (which signifies that the author's forgotten about ending the abstract)

```

1727 \def\@tempb{document}%
1728 \ifx\@tempa\@tempb
1729 \TBError{\string\begin{\@abstract@
1730 ended by \string\end{\@tempb}}}%
1731 {You've forgotten \string\end{\@abstract@}}
1732 \else
1733 \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1734 \expandafter\expandafter\expandafter\@abstract@getbody
1735 \fi
1736 \fi}

```

In our case, the action at the 'proper' \end is a lot simpler than what appears in tabularx.dtx ... don't be surprised!

```

1737 \def\@abstract@end{\ifnum0='{ \fi}%
1738 \expandafter\end\expandafter{\@abstract@}}

```

\makesignature \makesignature is improper in proceedings, so we replace it with a warning (and a no-op otherwise)

```

1739 \renewcommand{\makesignature}{\TBWarning
1740 {\string\makesignature\space is invalid in proceedings issues}}

```

\title We redefine the \title command, so as to set the \rhTitle command at the same time. While we're at it, we redefine it to have optional arguments for use as 'short' versions, thus obviating the need for users to use the \shortTitle command.

```

1741 \renewcommand\title{\@dblarg\TB@title}
1742 \def\TB@title[#1]#2{\gdef\@title{#2}%
1743 \bgroup

```

```

1744 \let\thanks\@gobble
1745 \let\\\ %
1746 \protected@xdef\rhTitle{#1}%
1747 \egroup
1748 }

\shortTitle The \rh* commands are versions to be used in the running head of the article.
\ifshortAuthor Normally, they are the same things as the author and title of the article, but in the
\shortAuthor case that there are confusions therein, the text should provide substitutes, using
the \short* commands.

1749 \def\shortTitle #1{\def\rhTitle{#1}}
1750 \newif\ifshortAuthor
1751 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}

\ps@TBproctitle Now we define the running heads in terms of the \rh* commands.
\ps@TBproc 1752 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1753 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1754 \TB@definefeet
\TB@definefeet 1755 }
\pfoottext 1756 \def\ps@TBproc{%
\rfoottext 1757 \def\@oddhead{\MakeRegistrationMarks
1758 {%
1759 \hfil
1760 \def\\\{\unskip\ \ignorespaces}%
1761 \rmfamily\rhTitle
1762 }%
1763 }%
1764 \def\@evenhead{\MakeRegistrationMarks
1765 {%
1766 \def\\\{\unskip\ \ignorespaces}%
1767 \rmfamily\rhAuthor
1768 \hfil
1769 }%
1770 }%
1771 \TB@definefeet
1772 }
1773
1774 \advance\footskip8\p@ % for deeper running feet
1775
1776 \def\dopagecommands{\csmc @pagecommands\number\c@page\endcsmc}
1777 \def\setpagecommands#1#2{\expandafter\def\csmc @pagecommands#1\endcsmc
1778 {#2}}
1779 \def\TB@definefeet{%
1780 \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1781 \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1782 \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1783 \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1784 }
1785
1786 \def\pfoottext{\smc Preprint}: Proceedings of the \volyr{} Annual Meeting}
1787 \def\rfoottext{\normalfont\TUB, \volx\Dash
1788 {Proceedings of the \volyr{} Annual Meeting}}
1789
1790 \pagestyle{TBproc}

```

## 4.2 Section divisions

Neither sections nor subsections are numbered in the proceedings style: note that this puts a degree of stress on authors' natural tendency to reference sections, which is a matter that needs attention.

```
1791 \if@proc@numbersec
1792 \else
1793   \setcounter{secnumdepth}{0}
1794 \fi
```

Otherwise, the `\section` command is pretty straightforward. However, the `\subsection` and `\subsubsection` are run-in, and we have to remember to have negative stretch (and shrink if we should in future choose to have one) on the `<afterskip>` parameter of `\@startsection`, since the whole skip is going to end up getting negated. We use `\TB@startsection` to detect inappropriate forms.

```
1795 \if@proc@numbersec
1796 \else
1797   \if@proc@sober
1798     \def\section
1799       {\TB@nolimlabel
1800        \TB@startsection{{section}%
1801                          1%
1802                          \z@%
1803                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1804                          {6\p@}%
1805                          {\normalsize\bfseries\raggedright}}}
1806   \else
1807     \def\section
1808       {\TB@nolimlabel
1809        \TB@startsection{{section}%
1810                          1%
1811                          \z@%
1812                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1813                          {6\p@}%
1814                          {\large\bfseries\raggedright}}}
1815   \fi
1816   \def\subsection
1817     {\TB@nolimlabel
1818      \TB@startsection{{subsection}%
1819                        2%
1820                        \z@%
1821                        {6\p@\@plus 2\p@\@minus2\p@}%
1822                        {-5\p@\@plus -\fontdimen3\the\font}%
1823                        {\normalsize\bfseries}}}
1824   \def\subsubsection
1825     {\TB@nolimlabel
1826      \TB@startsection{{subsubsection}%
1827                        3%
1828                        \parindent%
1829                        \z@%
1830                        {-5\p@\@plus -\fontdimen3\the\font}%
1831                        {\normalsize\bfseries}}}
1832 \fi
1833 \ltugproccls
```

## 5 Plain T<sub>E</sub>X styles

```
1834 <*tugboatsty>
1835 % err...
1836 </tugboatsty>
1837 <*tugprocsty>
1838 % err...
1839 </tugprocsty>
```

## 6 The L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> compatibility-mode style files

```
1840 <*ltugboatsty>
1841 \@obsoletedefine{ltugboat.cls}{ltugboat.sty}
1842 \LoadClass{ltugboat}
1843 </ltugboatsty>
1844 <*ltugprocsty>
1845 \@obsoletedefine{ltugproc.cls}{ltugproc.sty}
1846 \LoadClass{ltugproc}
1847 </ltugprocsty>
```