

# The `tugboat` package\*

The *TUGboat* team  
(Distributed by Robin Fairbairns)

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## 1 Document preambles

```

1 <tugboatcls | ltugproccls | ltugcomm>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile                {tugboat.dtx}
4 </dtx>
5 <tugboatcls>\ProvidesClass  {ltugboat}
6 <tugproccls>\ProvidesClass  {ltugproc}
7 <tugboatsty>\ProvidesPackage{ltugboat}
8 <tugprocsty>\ProvidesPackage{ltugproc}
9 <tugcomm>   \ProvidesPackage{ltugcomm}
10           [2010/11/15 v2.8
11 <tugboatcls>                TUGboat journal class%
12 <tugproccls>                TUG conference proceedings class%
13 <tugboatsty | ltugprocsty>  TUG compatibility package%
14 <tugcomm>                   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 T<sub>E</sub>X and L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>.

### 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).

<code>\AllTeX</code>	( $\mathbb{A}$ ) $\TeX$
<code>\AMS</code>	American Mathematical Society
<code>\AmSTeX</code>	
<code>\aw</code>	A-W (abbreviation for Addison-Wesley)
<code>\API</code>	
<code>\AW</code>	Addison-Wesley
<code>\BibTeX</code>	
<code>\CandT</code>	Computers & Typesetting
<code>\ConTeXt</code>	Con $\TeX$ t
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVD</code>	
<code>\DVI</code>	
<code>\DVIPDFMx</code>	DVIPDFM $x$
<code>\DVItoVDU</code>	DVItoVDU
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	$\varepsilon$ - $\TeX$
<code>\ExTeX</code>	$\varepsilon_X$ - $\TeX$
<code>\Ghostscript</code>	
<code>\Hawaii</code>	Hawai'i
<code>\HTML</code>	
<code>\ISBN</code>	ISBN
<code>\ISO</code>	
<code>\ISSN</code>	ISSN
<code>\JTeX</code>	
<code>\JoT</code>	The Joy of $\TeX$
<code>\LaTeX</code>	
<code>\LyX</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>\OOXML</code>	
<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>\SVG</code>	
<code>\TANGLE</code>	
<code>\TB</code>	The $\TeX$ book
<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>\TFM</code>	TFM
<code>\TUB</code>	<i>TUGboat</i>
<code>\TUG</code>	$\TeX$ Users Group
<code>\UNIX</code>	
<code>\UTF</code>	
<code>\VAX</code>	
<code>\VnTeX</code>	
<code>\VorTeX</code>	
<code>\XeT</code>	
<code>\XeTeX</code>	reflected and lowered first ‘E’
<code>\XeLaTeX</code>	with extra space before ‘L’
<code>\XML</code>	
<code>\WEB</code>	
<code>\WEAVE</code>	
<code>\WYSIWYG</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 <code>\TUB</code> 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 <code>\TBremarks</code> (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}{ltugboat}
    Warnings/error messages/information messages — if we're using LATEX 2ε we
    can use the \Class* commands:
26 \def\TBInfo{\ClassInfo{\@tugclass}}
27 \def\TBError{\ClassError{\@tugclass}}
28 \def\TBWarning{\ClassWarning{\@tugclass}}
29 \def\TBWarningNL{\ClassWarningNoLine{\@tugclass}}
```

Some trivial options, just flicking switches, etc.

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

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

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

Similarly, ignore one/two-side/column

```
55 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
56 \DeclareOption{twoside}{\ds@oneside}
57 \DeclareOption{onecolumn}{\ds@oneside}
58 \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`.)

```

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

```

Option `rawcite` (the default) specifies the default citation mechanism (as built-in to  $\LaTeX$ ); option `harvardcite` specifies the author-date citation mechanism defined in section 3.23 below.

```

63 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
64 \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...

```

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

```

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

```

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

```

Minimal running headers/footers contain just the TUGboat volume/issue identification and page numbers. ‘runningfull’ is the default, and includes title and author. ‘runningoff’ makes both headers and footers empty.

```

69 \DeclareOption{runningoff}{\AtEndOfClass{\@tubrunningoff}}
70 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
71 \DeclareOption{runningfull}{\AtEndOfClass{\@tubrunningfull}}

```

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

```

72 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{article}}

```

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

```

73 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
74 \ProcessOptions
75 \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.

```

76 \def\sectitlefont{\fontfamily\sfddefault\fontseries{bx}\fontshape{n}%
77   \fontsize\@xvipt\stbaselineskip\selectfont}
78 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
79   \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...

```
80 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
81     \selectfont}
82 \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>).

```
83 \*common)
84 \IfFileExists{mflogo.sty}%
85   {\RequirePackage{mflogo}}%
86 \ltugcomn) {\TBWarning
87 \tugcomn) {\PackageWarning{ltugcomn}
88   {Package mflogo.sty not available --\MessageBreak
89   Proceeding to emulate mflogo.sty}
90 \DeclareRobustCommand\logofamily{%
91   \not@math@alphabet\logofamily\relax
92   \fontencoding{U}\fontfamily{logo}\selectfont}
93 \DeclareTextFontCommand{\textlogo}{\logofamily}
94 \def\MF{\textlogo{META}}-\textlogo{FONT}\@}
95 \def\MP{\textlogo{META}}-\textlogo{POST}\@}
96 \DeclareFontFamily{U}{logo}{}
97 \DeclareFontShape{U}{logo}{m}{n}{%
98   <8><9>gen*logo%
99   <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
100  }{}
101 \DeclareFontShape{U}{logo}{m}{sl}{%
102   <8><9>gen*logos1%
103   <10><10.95><12><14.4><17.28><20.74><24.88>logos110%
104  }{}
105 \DeclareFontShape{U}{logo}{m}{it}{%
106   <->ssub*logo/m/sl%
107  }{}%
108 }
```

### 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

```
109 \newtoks\ResetCommands
```

```

110 \ResetCommands{%
111   \setcounter{part}{0}%
112   \setcounter{section}{0}%
113   \setcounter{footnote}{0}%
114   \authornumber\z@
115 }
116 \newcommand{\AddToResetCommands}[1]{%
117   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
118 }

```

### 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.

```

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

```

`\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.

```

143 \def\savecat#1{%
144   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}
145 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
146 <!!latex> \savecat\@
147 <!!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.

```
148 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
149   \csname#1\endcsname}
150 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
151   \csname saved@@#1\endcsname}
```

To distinguish between macro files loaded

```
152 \def\plaintubstyle{plain}
153 \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:

```
154 \providecommand\hb@xt@{\hbox to}
155 \providecommand\textsuperscript[1]{\ensuremath{\m@th
156   ^{\mbox{\fontsize\sf@size\z@
157     \selectfont #1}}}}
```

(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.

```
158 \def\AllTeX{(\La\kern-.075em)\kern-.075em\TeX}
159 \def\AMS{American Mathematical Society}
160 \def\AmS{\mathcal{A}\kern-.1667em\lower.5ex\hbox
161   {\mathcal{M}}\kern-.125em\mathcal{S}}
162 \def\AmSLaTeX{\AmS-\LaTeX}
163 \def\AmSTeX{\AmS-\TeX}
164 \def\ANSI{\acro{ANSI}}
165 \def\API{\acro{API}}
166 \def\ASCII{\acro{ASCII}}
167 \def\aw{A\kern.1em-W}
168 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
169 %
170 % make \BibTeX work in slanted contexts too; it’s common in titles, and
171 % especially burdensome to hack in .bib files.
172 \def\Bib{%
173   \ifdim \fontdimen1\font>0pt
174     B{\SMC\SMC IB}%
175   \else
176     \textsc{Bib}%
177   \fi
178 }
179 \def\BibTeX{\Bib\kern-.08em \TeX}
```

```

180 %
181 \def\BSD{\acro{BSD}}
182 \def\CandT{\textsl{Computers \& Typesetting}}
183 \def\CJK{\acro{CJK}}

We place our \kern after \- so that it disappears if the hyphenation is taken:
184 \def\ConTeXt{C\kern-.0333em\-\kern-.0667em\TeX\kern-.0333emt}
185 \def\CMkIV{\ConTeXt\ \MkIV}
186 \def\Cplusplus{C\plusplus}
187 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
188 \def\CSS{\acro{CSS}}
189 \def\CSV{\acro{CSV}}
190 \def\CTAN{\acro{CTAN}}
191 \def\DTD{\acro{DTD}}
192 \def\DTK{\acro{DTK}}
193 \def\DVD{\acro{DVD}}
194 \def\DVI{\acro{DVI}}
195 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
196 \def\DVitoVDU{DVito\kern-.12em VDU}
197 \def\ECMA{\acro{ECMA}}
198 \def\EPS{\acro{EPS}}
199 \DeclareRobustCommand\ensuremath{\varepsilon}\kern-.125em\TeX}
200 \DeclareRobustCommand\ExTeX{%
201   \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}
202 \def\FAQ{\acro{FAQ}}
203 \def\FTP{\acro{FTP}}
204 \def\Ghostscript{Ghost\script}
205 \def\GNU{\acro{GNU}}
206 \def\GUI{\acro{GUI}}
207 \def\Hawaii{Hawai'i}
208 \def\HTML{\acro{HTML}}
209 \def\HTTP{\acro{HTTP}}
210 \def\IEEE{\acro{IEEE}}
211 \def\ISBN{\acro{ISBN}}
212 \def\ISO{\acro{ISO}}
213 \def\ISSN{\acro{ISSN}}
214 \def\JPEG{\acro{JPEG}}
215 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
216 \def\JoT{\textsl{The Joy of \TeX}}
217 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
218   \mathcal{A}}\kern-.125em
219   \mathcal{M}}\kern-.125em
220   \mathcal{S}}-\TeX}
221   {\mathcal{S}}-\TeX}
222 % This code
223 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
224 % example) to propagate into the raised (small) 'A':
225 %   \begin{macrocode}
226 \newcommand{\La}%
227   {L\kern-.36em

```

```

228     {\setbox0\hbox{T}%
229       \vbox to\ht0{\hbox{\m@th$%
230                           \csname S@f@size\endcsname
231                           \fontsize\sf@size\z@
232                           \math@fontsfalse\selectfont
233                           A}%
234                           \vss}%
235     }}

```

We started with the intention that we wouldn't redefine `\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.

```

236 \!latex\def\LaTeX{\La\kern-.15em\TeX}
237 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
238 \def\MacOSX{Mac\,\acro{OS\,X}}
239 \def\MathML{Math\acro{ML}}
240 \def\Mc{\setbox\TextBox=\hbox{M}M\vbox
241   to\ht\TextBox{\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 `\MF` or `\MP`

```

242 \def\mf{\textsc{Metafont}}
243 \def\MFB{\textsl{The \MF book}}
244 \def\MkIV{Mk\acro{IV}}
245 \let\TB@mp\mp
246 \DeclareRobustCommand\mp{\ifmmode\TB@mp\else MetaPost\fi}
247 %
248 % In order that the \cs{OMEGA} command will switch to using the TS1
249 % variant of the capital Omega character if \texttt{textcomp.sty} is
250 % loaded, we define it in terms of the \cs{textohm} command. Note
251 % that this requires us to interpose a level of indirection, rather
252 % than to use \cs{let}\dots
253 %
254 % \begin{macrocode}
255 \DeclareRobustCommand{\NTG}{\acro{NTG}}
256 \DeclareRobustCommand\NTS{\ensuremath{\mathcal{N}}\mkern-4mu
257   \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
258 \DeclareTextSymbol{\textohm}{OT1}{'012}
259 \DeclareTextSymbolDefault{\textohm}{OT1}
260 \newcommand\OMEGA{\textohm}
261 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
262 \DeclareRobustCommand{\OOXML}{\acro{OOXML}}
263 \DeclareRobustCommand{\OTF}{\acro{OTF}}
264 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
265 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}

```

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

```

266 \def\Pas{Pascal}
267 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
268 \def\PCTeX{PC\thinspace\TeX}
269 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
270 \def\PDF{\acro{PDF}}
271 \def\PGF{\acro{PGF}}
272 \def\PHP{\acro{PHP}}
273 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
274 \def\PiCTeX{\PiC\kern-.11em\TeX}
275 \def\plain{\texttt{plain}}
276 \def\PNG{\acro{PNG}}
277 \def\POBox{P.\thinspace 0.\~Box }
278 \def\PS{\acro{Post}\-Script}}
279 \def\PSTricks{\acro{PST}ricks}
280 \def\RTF{\acro{RTF}}
281 \def\SC{Steering Committee}
282 \def\SGML{\acro{SGML}}
283 \def\SliTeX{\textrm{S\kern-.06em\textsc{l}\kern-.035emi}%
284             \kern-.06em\TeX}}
285 \def\s1MF{\textsl{MF}} % should never be used
286 \def\SQL{\acro{SQL}}
287 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
288 \def\STIX{\acro{STIX}}
289 \def\SVG{\acro{SVG}}
290 \def\TANGLE{\texttt{TANGLE}\@}
291 \def\TB{\textsl{The \TeX book}}
292 \def\TIFF{\acro{TIFF}}
293 \def\TP{\textsl{\TeX}: \textsl{The Program}}
294 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
295 \def\TeXhax{\TeX hax}
296 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
297             \kern-.2267emG\@}
298 \def\TeXtures{\textit{Textures}}
299 \let\Textures=\TeXtures
300 \def\TeXXeT{\TeX-{}-\XeT}
301 \def\TFM{\acro{TFM}}
302 \def\Thanh{H\`an\~Th\^e\llap{\raise.5ex\hbox{'}}}\~Th\`anh}
303 \def\TikZ{Ti{\em k}Z}
304 \def\ttn{\textsl{TTN}\@}
305 \def\TTN{\textsl{\TeX} and TUG News}}
306 \let\texttub\textsl % redefined in other situations
307 \def\TUB{\texttub{TUGboat}}
308 \def\TUG{\TeX\ \UG}
309 \def\tug{\acro{TUG}}
310 \def\UG{Users Group}
311 \def\UNIX{\acro{UNIX}}
312 \def\UTF{\acro{UTF}}
313 \def\VAX{V\kern-.12em A\kern-.1em X\@}
314 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
315 \def\VorTeX{V\kern-2.7\p@ \lower.5ex\hbox{0\kern-1.4\p@ R}\kern-2.6\p@\TeX}

```

```

316 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
317 \def\XML{\acro{XML}}
318 \def\WEB{\texttt{WEB}\@}
319 \def\WEAVE{\texttt{WEAVE}\@}
320 \def\WYSIWYG{\acro{WYSIWYG}}

XeTeX requires reflecting the first E, hence we complain if the graphics pack-
age is not present. (For plain documents, this can be loaded via Eplain.) Also,
at Barbara's suggestion, if the current font is slanted, we rotate by 180 instead of
reflecting so there is at least a chance to look ok. (The magic values here seem
more or less ok for cmsl and cmti.)

321 \def\tubreflect#1{%
322   \ifundefined{reflectbox}{%
323     \TBerror{A graphics package must be loaded for \string\XeTeX}%
324   }{%
325     \ifdim \fontdimen1\font>0pt
326       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
327     \else
328       \reflectbox{#1}%
329     \fi
330   }%
331 }
332 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
333 \DeclareRobustCommand\Xe[1]{\leavevmode
334   \tubhideheight{\hbox{X%
335     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
336     \lower\dp0\hbox{\raise\dp1\hbox{\kern-.125em\tubreflect{E}}}}%
337     \kern-.1667em #1}}
338 \def\XeTeX{\Xe\TeX}
339 \def\XeLaTeX{\Xe{\,LaTeX}}
340 %
341 \def\XHTML{\acro{XHTML}}
342 \def\XSL{\acro{XSL}}
343 \def\XSLFO{\acro{XSL}\raise.08ex\hbox{-}\acro{FO}}
344 \def\XSLT{\acro{XSLT}}

```

### 3.5 General typesetting rules

```

345 \newlinechar='^^J
346 \normallineskiplimit=\p@
347 \clubpenalty=10000
348 \widowpenalty=10000
349 \def\NoParIndent{\parindent=\z@}
350 \newdimen\normalparindent
351 \normalparindent=20\p@
352 \def\NormalParIndent{\global\parindent=\normalparindent}
353 \NormalParIndent
354 \def\BlackBoxes{\overfullrule=5\p@}
355 \def\NoBlackBoxes{\overfullrule=\z@}
356 \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.

```
357 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
358 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
359 \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`.

```
360 \newbox\T@stBox           \newbox\TestBox
361 \newcount\T@stCount      \newcount\TestCount
362 \newdimen\T@stDimen     \newdimen\TestDimen
363 \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).

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

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

```
365 <!*latex>
366 \let\@@input\input
367 \def\iinput#1{\@@input#1 }
368 \def\@inputcheck{\if@nextchar\bgroup
369 \expandafter\iinput\else\expandafter\@@input\fi}
370 \def\input{\futurelet\@nextchar\@inputcheck}
371 </!latex>
```

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

```
372 \newif\iftop@           \newif\ifbot@
373 \def\topsmash{\top@true\bot@false\smash@}
374 \def\botsmash{\top@false\bot@true\smash@}
375 \def\smash{\top@true\bot@true\smash@}
376 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
377 \else\let\next\makesm@sh\fi \next }
378 \def\finism@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}
```

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

```
379 \long\def\ulap#1{\vbox to \z@\{ \vss#1}}
380 \long\def\dlap#1{\vbox to \z@\{#1\vss}}
```

And centered horizontal and vertical ‘laps’

```

381 \def\xlap#1{\hb@xt@\z@\hss#1\hss}
382 \long\def\ylap#1{\vbox to \z@\vss#1\vss}
383 \long\def\zlap#1{\ylap{\xlap{#1}}}

Avoid unwanted vertical glue when making up pages.
384 \def\basezero{\baselineskip\z@skip \lineskip\z@skip}

Empty rules for special occasions
385 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
386 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }

Support ad-hoc strut construction.
387 \def\makestrut[#1;#2]{\vrule \@height#1 \@depth#2 \@width\z@ }

Construct box for figure pasteup, etc.; height = #1, width = #2, rule thickness
= #3
388 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
389     \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
390         \vss\hb@xt@#2{\vrule \@width\T@stDimen
391             \hfil\makestrut[#1;\z@]%
392             \vrule \@width\T@stDimen}\vss
393         \hrule \@height\T@stDimen \@depth\z@}}

Today’s date, to be printed on drafts. Based on TEXbook, p.406.
394 !latex
395 \def\today{\number\day\space \ifcase\month\or
396     Jan \or Feb \or Mar \or Apr \or May \or Jun \or
397     Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
398     \number\year}
399 /!latex

Current time; this may be system dependent!
400 \newcount\hours
401 \newcount\minutes
402 \def\SetTime{\hours=\time
403     \global\divide\hours by 60
404     \minutes=\hours
405     \multiply\minutes by 60
406     \advance\minutes by-\time
407     \global\multiply\minutes by-1 }
408 \SetTime
409 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
410 \def\Now{\today\ \now}
411 \newif\ifPrelimDraft
412 \def\midrttitle{\ifPrelimDraft {\textsl{preliminary draft, \Now}}\fi}

```

### 3.7 Ragged right and friends

<pre> \raggedskip \raggedstretch \raggedparfill \raggedspaces </pre>	<p>Plain T<sub>E</sub>X’s definition of <code>\raggedright</code> 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.</p>
----------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

```

413 \newdimen\raggedskip \raggedskip=\z@
414 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
415 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil
416 \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 417 \def\raggedright{%
\normalspaces 418 \nohyphens
419 \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
420 \parfillskip=\raggedparfill
421 }
422 \def\raggedleft{%
423 \nohyphens
424 \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
425 \parfillskip=\z@skip
426 }
427 \def\raggedcenter{%
428 \nohyphens
429 \leftskip=\raggedskip\@plus\raggedstretch
430 \rightskip=\leftskip \raggedspaces
431 \parindent=\z@ \parfillskip=\z@skip
432 }
433 \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-`TEX` — the L<sup>A</sup>T<sub>Ε</sub>X 2<sub>ε</sub> version has `\leavevmode` and doesn't care about surrounding space).

```

434 \DeclareRobustCommand{\nobreakspace}{%
435 \unskip\nobreak\ \ignorespaces}

```

Plain `TEX` 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...)

```

436 \def\boxcs#1{\box\csname#1\endcsname}
437 \def\setboxcs#1{\setbox\csname#1\endcsname}
438 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
439 \let\gobble@\gobble
440 \def\vellipsis{%
441 \leavevmode\kern0.5em
442 \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}

```

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

```

443 }
444 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
445 \def\cents{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}
446 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
447         /\kern-.125em\smash{\lower.3ex\hbox{o}}}\ignorespaces}
448 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
449 %
450 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}%
451         {\@sfrac{#1}/}}
452 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
453         \hbox{$\m@th\mbox{\fontsize\sf@size\z@
454                 \selectfont#1}$}\kern-.1em
455         /\kern-.15em\lower.25ex
456         \hbox{$\m@th\mbox{\fontsize\sf@size\z@
457                 \selectfont#2}$}}
458 %
459 % don't stay bold in description items, bold italic is too weird.
460 \DeclareRobustCommand\meta[1]{%
461     \ensuremath{\langle} %
462     \ifmmode \mbox\bgroup \fi % if in math
463     {\it #1\}/} % no typewriter italics, please
464     \ifmmode \egroup \fi
465     \ensuremath{\rangle} %
466 }
467 %
468 \DeclareRobustCommand\cs[1]{\texttt{\char'\#1}}
469 %
470 \DeclareRobustCommand\env[1]{%
471     \cs{begin}\texttt{\char'\#1\char'\}}
472 %
473 \def\thinskip{\hskip 0.16667em\relax}

```

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

```

474 \def\endash{--}
475 \def\emdash{\emdash-}
476 \def\dsh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
477 \def\dash{\dsh\nobreak\endash}
478 \def\Dash{\dsh\nobreak\emdash}
479 \def\ldash{\dsh\empty{\hbox{\endash}\nobreak}}
480 \def\rdash{\dsh\nobreak\endash}
481 \def\Ldash{\dsh\empty{\hbox{\emdash}\nobreak}}
482 \def\Rdash{\dsh\nobreak\emdash}

```

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

```

483 \def\hyph{-\penalty\z@\hskip\z@skip }
484 \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`.

```

485 \def\nth#1{%
486   \def\reserved@a##1##2\@nil{\ifcat##1n%
487     0%
488     \let\reserved@b\ensuremath
489     \else##1##2%
490     \let\reserved@b\relax
491     \fi}%
492   \TestCount=\reserved@a#1\@nil\relax
493   \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
494   \T@stCount=\TestCount
495   \divide\T@stCount by 100 \multiply\T@stCount by 100
496   \advance\TestCount by-\T@stCount % n mod 100
497   \ifnum\TestCount >20 \T@stCount=\TestCount
498     \divide\T@stCount by 10 \multiply\T@stCount by 10
499     \advance\TestCount by-\T@stCount % n mod 10
500   \fi
501   \reserved@b{#1}%
502   \textsuperscript{\ifcase\TestCount th%      0th
503                     \or st%                  1st
504                     \or nd%                  2nd
505                     \or rd%                  3rd
506                     \else th%                nth
507                     \fi}%
508 }

```

### 3.8 Reviews

Format information on reviewed items for book review articles. For the  $\text{\LaTeX} 2_{\epsilon}$  version, we follow Fairbairns' maxim, and define something that can even look like a  $\text{\LaTeX}$  macro...

```

509 \def\Review{\@ifnextchar{\@Review}{\@Review:}}
510 \def\@Review:{\@ifnextchar[%]
511   {\@Rev}%
512   {\@Rev[Book review]}}
513 \def\@Rev[#1]#2{\@ignorespaces#1\unskip:\enspace\ignorespaces
514               \slshape\mdseries#2}}
515 \def\reviewitem{\advspace{\BelowTitleSkip}}%
516 \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
517 \def\revtitle##1{\def\therevtitle{\slshape##1. }\ignorespaces}%
518 \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
519 }
520 \def\endreviewitem{\noindent\interlinepenalty=10000
521 \therevauth\therevtitle\therevpubinfo\endgraf}%
522 \vskip\medskipamount
523 }
524 \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.

```
525 \newcount\issueseqno          \issueseqno=-1
526 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
527 \def\volyr{}
528 \def\volno{}
529 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
530         \gdef\issno{\ignorespaces#2\unskip}%
531         \setbox\TestBox=\hbox{\volyr}%
532         \ifdim \wd\TestBox > .2em \v@lx \fi }
533 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
534         \gdef\bigissdt{#1}%
535         \setbox\TestBox=\hbox{\volno}%
536         \ifdim \wd\TestBox > .2em \v@lx \fi }
537 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
538         \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
539         \setbox\TestBox=\hbox{\volno}%
540         \ifdim \wd\TestBox > .2em \v@lx \fi }
541 \vol 0, 0.
542 \issdate Thermidor, 9999.
```

(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

```
543 <!latex> \def\tubissue#1(#2)%
544 <*latex>
545 \def\tubissue#1{\@ifnextchar(%)
546   {\@tubissue@b{#1}}
547   {\@tubissue@a{#1}}}}
548 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
549 \def\@tubissue@a#1#2%
550 </latex>
551 {\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`

```

552 \def\infil@{\jobname}
553 \def\Input #1 {\ifnum\issueseqno<0
554   \def\infil@{#1}%
555   \else
556     \def\infil@{tb\number\issueseqno#1}
557   \fi
558   \edef\jobname{\infil@}\@readFLN
559   @@input \infil@\relax
560   \if@RMKopen
561     \immediate\closeout\@TBremarkfile\@RMKopenfalse
562   \fi
563 }

```

`\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).

```

564 \newif\if@RMKopen      \@RMKopenfalse
565 \newwrite\@TBremarkfile
566 \def\@TBremark#1{%
567   \if@RMKopen
568   \else
569     \@RMKopentruer\immediate\openout\@TBremarkfile=\infil@.rmk
570   \fi
571   \toks@={#1}%
572   \immediate\write\@TBremarkfile{^^J\the\toks@}%
573   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
574 }

```

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

```
575 \let\TBremark=\gobble
```

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

```
576 \def\TBEnableRemarks{\let\TBremark\@TBremark}
```

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

```
577 \def\TUBedit#1{}
```

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

```

578 \def\TUBfilename#1#2{\expandafter\def\csname file@#1\endcsname{#2}}
579 \newread\@altfilenames

```

```

580 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
581 \ifeof\@altfilenames\let\@result\relax\else
582 \def\@result{\@input\jobname.fln }\fi
583 \immediate\closein\@altfilenames
584 \@result}
585 \@readFLN
586 \everyjob=\expandafter{\the\everyjob\@readFLN}
587 \InputIfFileExists{\jobname.fln}%
588 {\TBInfo{Reading alternative file file \jobname.fln}}{}

```

The following needs to work entirely in T<sub>E</sub>X's mouth

```

589 \def\tubfilename#1{\expandafter\ifx\csname file@#1\endcsname\relax
590 #1\else\csname file@#1\endcsname\fi}
591 \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.

```

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

```

```

623 \else\csname#1\endcsname\fi}
624 \def\xrefstoOFF#1{???}
625 \let\xrefsto=\xrefstoOFF

\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.

626 \let\TBdriver\gobble

Some hyphenation exceptions:

627 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
628 Flor-i-da Free-BSD Ghost-script Ghost-view
629 Hara-lam-bous Hoek-water Jac-kow-ski Karls-ruhe
630 Mac-OS Ma-la-ya-lam Math-Sci-Net
631 Net-BSD Open-BSD Open-Office
632 Pfa-Edit Post-Script Rich-ard Skoup South-all
633 Vieth VM-ware Win-Edt
634 acro-nym ap-pen-dix asyn-chro-nous
635 bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
636 col-umns com-put-able com-put-abil-ity cus-tom-iz-able
637 data-base data-bases
638 de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
639 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion
640 dis-trib-ut-able
641 es-sence
642 fall-ing
643 half-way
644 in-fra-struc-ture input-enc
645 key-note
646 long-est
647 ma-gyar man-u-script man-u-scripts mne-mon-ic mne-mon-ics
648 mono-space mono-spaced
649 name-space name-spaces
650 off-line over-view
651 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
652 pipe-line pipe-lines
653 plug-in plug-ins pres-ent-ly pro-gram-mable
654 re-allo-cate re-allo-cates re-allo-cated
655 set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
656 sub-ex-pres-sion syn-chro-ni-city syn-chro-nous
657 text-height text-length text-width
658 time-stamp time-stamped
659 vis-ual vis-ual-ly
660 which-ever white-space white-spaces wide-spread widget wrap-around
661 }
662 <!latex>\restorecat\@
663 </common>
664 <*classtail>
665 \PrelimDrafttrue

```

### 3.10 Page dimensions, glue, penalties etc

```
666 \textheight 54pc
667 \textwidth 39pc
668 \columnsep 1.5pc
669 \columnwidth 18.75pc
670 \parindent \normalparindent
671 \parskip \z@ % \@plus\p@
672 \leftmargini 2em
673 \leftmarginv .5em
674 \leftmarginvi .5em
675 \oddsidemargin \z@
676 \evensidemargin \z@
677 \topmargin -2.5pc
678 \headheight 12\p@
679 \headsep 20\p@
680 \marginparwidth 48\p@
681 \marginparsep 10\p@
682 \partopsep=\z@
683 \topsep=3\p@\@plus\p@\@minus\p@
684 \parsep=3\p@\@plus\p@\@minus\p@
685 \itemsep=\parsep
686 \twocolumn
687 \newdimen\pagewd \pagewd=39pc
688 \newdimen\trimwd \trimwd=\pagewd
689 \newdimen\trimlgt \trimlgt=11in
690 \newdimen\headmargin \headmargin=3.5pc
```

In L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, twoside option is forced on when `article.cls` is loaded.

### 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 hir 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.

```
691 \newcommand\DeclareLaTeXLogo[5]{\expandafter\def
692 \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:

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

More are defined in the initial version, for bold CM sans (which is used as `\SecTitleFont`), and CM italic medium and bold, and Bitstream Charter (which Nelson Beebe likes to use):

```
694 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
695 \DeclareLaTeXLogo{cmr}{m}{it}{.3}{.27}
696 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
697 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
698 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
699 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a
700 \csname @LaTeX@f@family/f@series/f@shape\endcsname
701 \ifx\reserved@a\relax\let\reserved@a@LaTeX@default\fi
702 \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 `LATEX`, and then bits stuck in on the side.

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

```
703 \newcommand\@LaTeX[2]{L\kern-#1em
704     {\sbox\z@ T%
705     \vbox to\ht0{\hbox{\$m@th$%
706     \csname S@f@size\endcsname
707     \fontsize\sf@size\z@
708     \math@fontsfalse\selectfont
709     A}%
710     \vss}%
711     }%
712     \kern-#2em%
713     \TeX}
```

### 3.12 Authors, contributors, addresses, signatures

An 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.

```
714 \def\theauthor#1{\csname theauthor#1\endcsname}
715 \def\theaddress#1{\csname theaddress#1\endcsname}
716 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
717 \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.

```
718 \!latex\newcount\@tempcnta
719 \def\@defaultauthorlist{%
720 \@getauthorlist\@firstofone
721 }
```

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

```
722 \def\@getauthorlist#1{%
723   \count@\authornumber
724   \advance\count@ by -2
725   \@tempcnta0
```

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

```
726   \loop
727     \ifnum\count@>0
728       \advance\@tempcnta by \@ne
729       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
730       \advance\count@ by \m@ne
731   \repeat
732   \count@\authornumber
733   \advance\count@ by -\@tempcnta
734   \ifnum\authornumber>0
```

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

```
735     \ifnum\count@>1
736       \count@\authornumber
737       \advance\count@ by \m@ne
738       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
739     \fi
```

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

```
740     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
741   \fi
742 }
```

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...)

```
743 \def\signature#1{\def\@signature{#1}}
744 \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`

```
745 \def\@defaultsignature{%
746   \let\thanks@gobble
747   \frenchspacing
748   %
749   \ifnum\authornumber<0
```

```

if \authornumber < 0, we are in a contributor's section
750     \medskip
751     \signaturemark
752     \theauthor{\number\authornumber}\\
753     \theaddress{\number\authornumber}\\
754     \allowhyphens
755     \thenetaddress{\number\authornumber}\\
756     \thePersonalURL{\number\authornumber}\\
757     \else
\authornumber ≥ 0, so we are in the body of an ordinary article
758     \count@=0
759     \loop
760         \ifnum\count@<\authornumber
761             \medskip
762             \advance\count@ by \@ne
763             \signaturemark
764             \theauthor{\number\count@}\\
765             \theaddress{\number\count@}\\
766             {%
767                 \allowhyphens
768                 \thenetaddress{\number\count@}\\
769                 \thePersonalURL{\number\count@}\\
770             }%
771     \repeat
772     \fi
773 }%
774 }
775 \newdimen\signaturewidth \signaturewidth=12pc
The optional argument to \makesignature is useful in some circumstances (e.g.,
multi-contributor articles)
776 \newcommand\makesignature[1][\medskipamount]{%
check the value the user has put in \signaturewidth: it may be at most
1.5pc short of \columnwidth
777 \@tempdima\signaturewidth
778 \advance\@tempdima 1.5pc
779 \ifdim \@tempdima>\columnwidth
780     \signaturewidth \columnwidth
781     \advance\signaturewidth -1.5pc
782 \fi
783 \par
784 \penalty9000
785 \vspace{#1}%
786 \rightline{%
787     \vbox{\hsize\signaturewidth \ninepoint \raggedright
788         \parindent \z@ \everypar={\hangindent 1pc }
789         \parskip \z@skip
790         \def\|{\unskip\hfil\break}%
791         \def\\{\endgraf}%

```

```

792     \def\phone{\rm Phone: }
793     \rm\@signature}%
794 }%
795 \ifnum\authornumber<0 \endgroup\fi
796 }
797 \def\signaturemark{\leavevmode\llap{\$\diamond$\enspace}}
    The code previously defined 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.

```

798 \newcount\authornumber
799 \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`).

```

800 \def\author{%
801   \global\advance\authornumber\@ne
802   \TB@author
803 }

```

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

```

804 \def\contributor{%
805   \begingroup
806   \authornumber\m@ne
807   \TB@author
808 }

```

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).

```

809 \def\TB@author#1{%
810   \expandafter\def\csname theauthor\number\authornumber\endcsname

```

```

811     {\ignorespaces#1\unskip}%
812 \expandafter\def\csname theaddress\number\authornumber\endcsname
813   {\TBWarningNL{Address for #1\space missing}\@gobble}%
814 \expandafter\def\csname thenetaddress\number\authornumber\endcsname
815   {\TBWarningNL{Net address for #1\space missing}\@gobble}%
816 \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
817   \@gobble
818 }
819 \def\EDITORnoaddress{%
820 \expandafter\let\csname theaddress\number\authornumber\endcsname
821   \@gobble
822 }
823 \def\EDITORnonetaddress{%
824 \expandafter\let\csname thenetaddress\number\authornumber\endcsname
825   \@gobble
826 }

```

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

```

827 \def\address#1{%
828 \expandafter\def\csname theaddress\number\authornumber\endcsname
829   {\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!*

```

830 \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  $\text{\LaTeX 2}_\epsilon$ , we use the default-argument form of `\newcommand`; otherwise we write it out in all its horribleness.

```

831 \newcommand\netaddress[1][\relax]{%
832 \begingroup
833 \def\@network{}%

```

Unfortunately, because of the catcode hackery, we have still to do one stage of relaying within our own code, even if we're using  $\text{\LaTeX 2}_\epsilon$ .

```

834 #1\@sanitize\makespace\ \makeactive\@
835 \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?!*)

```

836 \def\@relay@netaddress#1{%
837   \ProtectNetChars
838   \expandafter\protected@xdef
839     \csname thenetaddress\number\authornumber\endcsname
840     {\protect\leavevmode\textrm{\@network}%
841      {\protect\NetAddrChars\net
842       \ignorespaces#1\unskip}}%
843   \endgroup
844 }

```

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

For general URLs, url.sty (with or without hyperref) suffices and is recommended.

```

845 \def\personalURL{\begingroup
846   \@sanitize\makespace\ \makeactive\@
847   \makeactive\.\makeactive%\makeactive\/\@personalURL}%
848 \def\@personalURL#1{%
849   \ProtectNetChars
850   \expandafter\protected@xdef
851     \csname thePersonalURL\number\authornumber\endcsname{%
852     \protect\leavevmode
853     {%
854       \protect\URLchars\net
855       \ignorespaces#1\unskip
856     }%
857   }%
858 \endgroup
859 }

```

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...

```

860 {%
861   \makecomment\*
862   \makeactive\@
863   \gdef\netaddrat{\makeactive\@*
864     \def@{\discretionary{\char"40}{\char"40}}
865   \makeactive\%
866   \gdef\netaddrpercent{\makeactive\%*
867     \def%{\discretionary{\char"25}{\char"25}}
868   \makeactive\
869   \gdef\netaddrdot{\makeactive\.*
870     \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.

```

871 \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
872 \makeactive\
873 \gdef\URLchars{*
874   \NetAddrChars
875   \makeactive\/*
876   \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.

```

877 \gdef\ProtectNetChars{*
878   \def@{\protect@}*
879   \def%{\protect%}*
880   \def.{\protect.}*
881   \def/{\protect/}*
882   }
883 }

```

$\LaTeX 2_{\epsilon}$  (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  $\LaTeX 2_{\epsilon}$  defines for the job).

```

884 \if@compatibility
885   \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\syntypewriter}
886 \else
887   \DeclareOldFontCommand\net{\ttfamily\upshape\mdseries}{\mathtt}
888 \fi
889 \def\authorlist#1{\def\@author{#1}}
890 \def\@author{\@defaultauthorlist}

```

For the online re-publication (as of 2009) by Mathematical Sciences Publishers (<http://mathscipub.org>), lots and lots of metadata is needed, much of it redundant with things we already do. They are flexible enough to allow us to specify it in any reasonable way, so let’s make one command `\mspmetavar` which takes two arguments. Example: `\mspmetavar{volumenumber}{30}`. For our purposes, it is just a no-op.

```

\mspmetavar
891 \def\mspmetavar#1#2{}

```

### 3.13 Article title

```

\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 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>.

```

892 \newif\if@articletitle
893 \def\maketitle{\@ifstar
894   {\@articletitlefalse\@r@maketitle}%
895   {\@articletitletrue\@r@maketitle}%
896 }
897 \def\@r@maketitle{\par
898   \ifdim\PreTitleDrop > \z@
899     \loop
900     \ifdim \PreTitleDrop > \textheight
901       \vbox{}\vfil\ejct
902       \advance\PreTitleDrop by -\textheight
903     \repeat
904     \vbox to \PreTitleDrop{}
905     \global\PreTitleDrop=\z@
906   \fi
907   \begingroup
908   \setcounter{footnote}{0}
909   \def\thefootnote{\fnsymbol{footnote}}
910   \@maketitle
911   \@thanks
912   \endgroup
913   \setcounter{footnote}{0}
914   \gdef\@thanks{}
915 }

```

`\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.

```

916 \def\rhTitle{}% avoid error if no author or title
917 \renewcommand\title{\@dblarg\TB@title}
918 \def\TB@title[#1]#2{\gdef\@title{#2}%
919   \bgroup
920     \let\thanks\@gobble
921     \def\{\unskip\space\ignorespaces}%
922     \protected@xdef\rhTitle{#1}%
923   \egroup
924 }

```

`\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.

```

925 \def\shortTitle #1{\def\rhTitle{#1}}
926 \newif\ifshortAuthor
927 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}

```

### 3.14 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:

```
928 \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).

```
929 \newdimen\stbaselineskip      \stbaselineskip=18\p@
930 \newdimen\stfontheight
931 \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   \SecTiteltrue
937   \@ifstar
938     {\WideSecTiteltrue\def\s@ctitle}%
939     {\WideSecTitelfalse\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 \newenvironment{dedication}%
1020 {\raggedright\noindent\itshape\ignorespaces}%
1021 {\endgraf\medskip}

```

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

```

1022 \renewenvironment{abstract}%

```

```

1023  {%
1024    \begin{SafeSection}%
1025    \section*{Abstract}%
1026  }%
1027  {\end{SafeSection}}
1028  \newenvironment{longabstract}%
1029  {%
1030    \begin{SafeSection}%
1031    \section*{Abstract}%
1032    \bgroup\small
1033  }%
1034  {%
1035    \endgraf\egroup
1036    \end{SafeSection}%
1037  \vspace{.25\baselineskip}
1038  \begin{center}
1039    {$---$}
1040  \end{center}
1041  \vspace{.5\baselineskip}}

```

### 3.15 Section headings

Redefine style of section headings to match plain *TUGboat*. Negative beforeskip suppresses following parindent. (So negate the stretch and shrink too).

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.

```

1042 \if@numbersec
1043   \def\section{\TB@startsection{{section}}%
1044     1%
1045     \z@
1046     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1047     {4\p@}%
1048     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1049   \def\subsection{\TB@startsection{{subsection}}%
1050     2%
1051     \z@
1052     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1053     {4\p@}%
1054     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1055   \def\subsubsection{\TB@startsection{{subsubsection}}%
1056     3%
1057     \z@
1058     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1059     {4\p@}%

```

```

1060         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1061 \def\paragraph{\TB@startsection{paragraph}%
1062         4%
1063         \z@
1064         {4\p@ \@plus1\p@ \@minus1\p@}%
1065         {-1em}%
1066         {\normalsize\bf}}

```

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

```

1067 \else
1068   \setcounter{secnumdepth}{0}
1069   \def\section{\TB@nolimelabel
1070     \TB@startsection{section}%
1071     1%
1072     \z@
1073     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1074     {4\p@}%
1075     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1076   \def\subsection{\TB@nolimelabel
1077     \TB@startsection{subsection}%
1078     2%
1079     \z@
1080     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1081     {-0.5em\@plus-\fontdimen3\font}%
1082     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1083   \def\subsubsection{\TB@nolimelabel
1084     \TB@startsection{subsubsection}%
1085     3%
1086     \parindent
1087     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1088     {-0.5em\@plus-\fontdimen3\font}%
1089     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1090 \fi

```

`\TB@startsection` traps \* versions of sectioning commands, if numbering isn't in effect. Its argument is the complete set of `\@startsection` arguments.

```

1091 \if@numbersec
1092   \def\TB@startsection#1{\@startsection#1}%
1093 \else
1094   \def\TB@startsection#1{%
1095     \ifstar
1096     {\TBWarning{* - form of \expandafter\string\csname\@firstofsix#1%
1097       \endcsname\space
1098       \MessageBreak
1099       conflicts with nonumber class option}%
1100     \@startsection#1}%
1101     {\@startsection#1}%
1102   }
1103 \fi

```

```
1104 \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).

```
1105 \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.

```
1106 \newenvironment{SafeSection}%
```

```
1107 {\let\TB@startsection\TB@safe@startsection}%
```

```
1108 {}
```

And now for the exciting sectioning commands that  $\LaTeX$  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>).

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.

```
1109 \if@numbersec
```

```
1110 \def\subparagraph{\TB@nosection\subparagraph\paragraph}
```

```
1111 \else
```

```
1112 \def\paragraph{\TB@nosection\paragraph\subsubsection}
```

```
1113 \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
```

```
1114 \fi
```

```
1115 \def\chapter{\TB@nosection\chapter\section}
```

```
1116 \def\part{\TB@nosection\part\section}
```

```
1117 \def\TB@nosection#1#2{\TBwarning{class does not support \string#1,
```

```
1118 \string#2\space used instead}#2}
```

`\l@<sectioning-name>` is for table of contents (of an article).

We define new macros to allow easily changing the font used for toc entries (for *TUGboat*, we usually want roman, not bold), and the space between entries. Nelson Beebe's articles are almost the only ones that ever have toc's.

```
1119 \def\TBtocsectionfont{\normalfont}
```

```
1120 \newskip\TBtocsectionspace \TBtocsectionspace=1.0em\@plus\p@
```

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...

```
1121 %\def\l@part#1#2{\addpenalty{\@secpenalty}}%
```

```
1122 % \addvspace{2.25em\@plus\p@}%
```

```
1123 % \begingroup
```

```
1124 % \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
```

---

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

```

1125 %   {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1126 %   \nobreak
1127 %   \endgroup}
1128 %
1129 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1130   \addvspace{\TBtocsectionspace}%
1131   \@tempdima 1.5em
1132   \begingroup
1133     \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1134     \parfillskip\z@
1135     \TBtocsectionfont
1136     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1137     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1138   \endgroup}

```

### 3.16 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 (`\TBnolime-label` happens before the `\refstepcounter`, so its effects get lost ... what a clever piece of design that was). So here we go:

```

1139 \renewcommand\appendix{\par
1140   \renewcommand\thesection{\@Alph\c@section}%
1141   \setcounter{section}{0}%
1142   \if@numbersec
1143   \else
1144     \setcounter{secnumdepth}{1}%
1145   \fi

```

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

```

1146   \def\@tempa{appendix}
1147   \ifx\@tempa\@currentenv
1148     \expandafter\@appendix@env
1149   \fi
1150 }

```

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

```

1151 \newcommand\app@prefix@section{}
1152 \newcommand\@appendix@env[1][Appendix]{%
1153   \renewcommand\@secntformat[1]{\csname app@prefix@##1\endcsname
1154     \csname the##1\endcsname\quad}%
1155   \renewcommand\app@prefix@section{#1 }}%
1156 }

```

Ending an appendix environment is pretty trivial...

```

1157 \let\endappendix\relax

```

### 3.17 References

If the sections aren't numbered, the natural tendency of the author to cross-reference (which, after all, is one of the things L<sup>A</sup>T<sub>E</sub>X 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

```
1158 \def\TB@nolimelabel{%
1159   \def\@currentlabel{%
1160     \protect\TBWarning{%
1161       Invalid reference to numbered label on page \thepage
1162       \MessageBreak made%
1163     }%
1164     \textbf{?!?}%
1165   }%
1166 }
```

### 3.18 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.

```
1167 \let\TB@@sect\@sect
1168 \let\TB@@ssect\@ssect
1169 \def\@sect#1#2#3#4#5#6[#7]#8{%
1170   \def\@currentlabelname{#7}%
1171   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[-#7]-#8}%
1172 }
1173 \def\@ssect#1#2#3#4#5{%
1174   \def\@currentlabelname{#5}%
1175   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1176 }
```

We output the name label as a second `\newlabel` command in the `.aux` file. That way, packages such as `varioref` which also read the `.aux` information can

still work. So we redefine `\label` to first call the standard L<sup>A</sup>T<sub>E</sub>X `\label` and then write our named label as `nr<label>`.

```

1177 \let\@savelatexlabel=\label % so save original LaTeX command
1178 %
1179 \def\label#1{% de
1180   \@savelatexlabel{#1}%
1181   \@bsphack
1182   \if@filesw
1183     \protected@write\@auxout{%
1184       {\string\newlabel{nr@#1}{\@currentlabel}{\@currentlabelname}}}%
1185   \fi
1186   \@esphack
1187 }

```

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

```
1188 \let\@currentlabelname\@empty
```

Getting named references is then just like getting page references in the L<sup>A</sup>T<sub>E</sub>X kernel (see `ltxref.dtx`).

```

1189 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1190   \csname r@nr@#1\endcsname\@secondoftwo{#1}}

```

### 3.19 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. We also typeset them in `\small`.

First, let's define a dimension by which we will indent full-page captions. We'll also use this to indent abstracts in proceedings style.

```
\tubfullpageindent
```

```

1191 \newdimen\tubfullpageindent \tubfullpageindent=4.875pc

      Ok, here is the \@makecaption.
1192 \long\def\@makecaption#1#2{%
1193   \vskip\abovecaptionskip
1194   \sbox\@tempboxa{\small #1: #2}% try in an hbox
1195   \ifdim \wd\@tempboxa > \hsize
1196     {% caption doesn't fit on one line; set as a paragraph.
1197       \small \raggedright \hyphenpenalty=\@M \parindent=1em
1198       % indent full-width captions {figure*}, but not single-column {figure}.
1199       \ifdim\hsize = \textwidth
1200         \leftskip=\tubfullpageindent \rightskip=\leftskip
1201         \advance\rightskip by 0pt plus 2em % increase acceptable raggedness
1202       \fi
1203       \noindent #1: #2\par}%
1204   \else
1205     % fits on one line; use the hbox, centered. Do not reset its glue.
1206     \global\@minipagefalse

```

```

1207 \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1208 \fi
1209 \vskip\belowcaptionskip}

```

Also use `\small` for the caption labels, and put the label itself (e.g., “Figure 1”) in bold.

```

1210 \def\fnun@figure{{\small \bf \figurename\nobreakspace\thefigure}}
1211 \def\fnun@table{{\small \bf \tablename\nobreakspace\thetable}}

```

Let’s reduce the default space above captions a bit, and give it some flexibility. The default is 10pt, which seems too much.

```

1212 \setlength\abovcaptionskip{6pt plus1pt minus1pt}

```

### 3.20 Size changing commands

Apart from their ‘normal’ effects, these commands change the glue around displays.

```

1213 \renewcommand\normalsize{%
1214 \setfontsize\normalsize\@xpt\@xipt
1215 \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1216 \belowdisplayskip=\abovedisplayskip
1217 \abovedisplayshortskip=\z@\@plus 3\p@
1218 \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1219 }
1220
1221 \renewcommand\small{%
1222 \setfontsize\small\@ixpt{11}%
1223 \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1224 \belowdisplayskip=\abovedisplayskip
1225 \abovedisplayshortskip=\z@\@plus 2\p@
1226 \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1227 }
1228 \renewcommand\footnotesize{%
1229 \setfontsize\footnotesize\@viipt{9.5}%
1230 \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1231 \belowdisplayskip=\abovedisplayskip
1232 \abovedisplayshortskip=\z@\@plus 3\p@
1233 \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1234 }

```

### 3.21 Lists and other text inclusions

```

1235 \def\@listi{%
1236 \leftmargin\leftmargin\parsep=\p@\@plus\p@\@minus\p@
1237 \itemsep=\parsep
1238 \listparindent=1em
1239 }
1240
1241 \def\@listii{%

```

```

1242 \leftmargin\leftmarginii
1243 \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1244 \topsep=2\p@\@plus\p@\@minus\p@
1245 \parsep=\p@\@plus\p@\@minus\p@
1246 \itemsep=\parsep
1247 \listparindent=1em
1248 }
1249
1250 \def\@listiii{%
1251 \leftmargin=\leftmarginiii
1252 \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1253 \topsep=\p@\@plus\p@\@minus\p@
1254 \parsep=\z@
1255 \itemsep=\topsep
1256 \listparindent=1em
1257 }
1258 \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.
1259 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1260 \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}

The compactitemize and compactenumerate environments, without space
between the items.
1261 \newenvironment{compactitemize}%
1262 {\begin{itemize}%
1263 \setlength{\itemsep}{0pt}%
1264 \setlength{\parskip}{0pt}%
1265 \setlength{\parsep}{0pt}%
1266 }%
1267 {\end{itemize}}
1268 %
1269 \newenvironment{compactenumerate}%
1270 {\begin{enumerate}%
1271 \setlength{\itemsep}{0pt}%
1272 \setlength{\parskip}{0pt}%
1273 \setlength{\parsep}{0pt}%
1274 }%
1275 {\end{enumerate}}

```

### 3.22 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.

```

1276 %\let\@TB@verbatim\@verbatim
1277 \let\@TBverbatim\verbatim
1278 \let\@TBendverbatim\endverbatim

```

Impose an optional argument on the environment.

We start the macro with `\par` to avoid a common error: if the optional argument is `\small`, and the document has no blank line before the verbatim block, we don't want that preceding paragraph to be set with `\small`'s line spacing.

(`\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.)

```

1279 \def\verbatim{\par\obeylines
1280 \futurelet\reserved@a\@switch@sqbverbatim}
1281 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1282 \expandafter\@sqbverbatim\else
1283 \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1284 \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.

```

1285 \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.

```

1286 #1\@TBverbatim}

```

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

```

1287 \def\@verbatim{%

```

First, we deal with `\ruled`:

```

1288 \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi

```

Now, the code out of the original `verbatim` environment:

```

1289 \trivlist \item\relax
1290 \if@minipage\else\vskip\parskip\fi
1291 \leftskip\@totalleftmargin\rightskip\z@skip
1292 \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1293 \@@par
1294 \@tempwafalse
1295 \def\par{%
1296 \if@tempswa
1297 \leavevmode \null \@@par\penalty\interlinepenalty
1298 \else
1299 \@tempwatrue
1300 \ifhmode\@@par\penalty\interlinepenalty\fi

```

```

1301   \fi}%
1302   \obeylines \verbatim@font \@noligs
1303   \let\do\@makeother \dospecials
1304   \everypar \expandafter{\the\everypar \unpenalty}%
1305 }%

```

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).

```

1306 \def\endverbatim{\@TBendverbatim
1307   \if@ruled\kern5\p@\hrule\endtrivlist\fi}
      \enablemetacode simply typesets3 something that looks (verbatim) like:
      <meta-text>
as:
      <meta-text>
1308 {\makeactive<
1309   \gdef<#1>{\reset@font\ensuremath{\langle}%
1310     \textit{#1}%
1311     \ensuremath{\rangle}}}
1312 }

```

Define the `\if` used by the `\ruled` option:

```

1313 \let\if@ruled\iffalse

```

Finally, if `microtype` is loaded, we want it to be deactivated in verbatim blocks. It often manipulates a leading `\` rather too much.

```

1314 \AtBeginDocument{%
1315   \ifpackageloaded{microtype}
1316     {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{ }
1317 }

```

### 3.23 Bibliography

This is more or less copied verbatim from Glenn Pauley's *chicago.sty* (gnpaulie@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 `LATEX` to function properly. The form of the `bibitem` entries is:

```

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

```

The available citation commands are:

---

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

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

```

1318 \if@Harvardcite
1319 \let\@internalcite\cite

```

Normal forms.

```

1320 \def\cite{\def\@citeseppen{-1000}%
1321   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1322   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1323 \def\citeNP{\def\@citeseppen{-1000}%
1324   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1325   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1326 \def\citeN{\def\@citeseppen{-1000}%
1327   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}}%
1328   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1329 \def\citeA{\def\@citeseppen{-1000}%
1330   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1331   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1332 \def\citeANP{\def\@citeseppen{-1000}%
1333   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1334   \def\citeauthoryear##1##2##3{##1}\@internalcite}

```

Abbreviated forms (using *et al.*)

```

1335 \def\shortcite{\def\@citeseppen{-1000}%
1336   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1337   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1338 \def\shortciteNP{\def\@citeseppen{-1000}%
1339   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1340   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1341 \def\shortciteN{\def\@citeseppen{-1000}%
1342   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}}%
1343   \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1344 \def\shortciteA{\def\@citeseppen{-1000}%
1345   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1346   \def\citeauthoryear##1##2##3{##2}\@internalcite}
1347 \def\shortciteANP{\def\@citeseppen{-1000}%
1348   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1349   \def\citeauthoryear##1##2##3{##2}\@internalcite}

```

When just the year is needed:

```

1350 \def\citeyear{\def\@citeseppen{-1000}%
1351   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%

```

```

1352 \def\citeauthoryear##1##2##3{##3}\@citedata}
1353 \def\citeyearNP{\def\@citesep{-1000}%
1354 \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1355 \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.

```

1356 \def\@citedata{%
1357 \ifnextchar [{\@tempswatrue\@citedatax}%
1358 \ifnextchar ]{\@tempswafalse\@citedatax[]}%
1359 }
1360
1361 \def\@citedatax[#1]#2{%
1362 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1363 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1364 {\@citea\def\@citea{, }\@ifundefined% by Young
1365 {b@\@citeb}{\bf ?}%
1366 \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1367 {\csname b@\@citeb\endcsname}}{#1}}%

```

Don't box citations, separate with ; and a space; Make the penalty between citations negative: a good place to break.

```

1368 \def\@citex[#1]#2{%
1369 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1370 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1371 {\@citea\def\@citea{; }\@ifundefined% by Young
1372 {b@\@citeb}{\bf ?}%
1373 \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1374 {\csname b@\@citeb\endcsname}}{#1}}%

```

No labels in the bibliography.

```

1375 \def\@biblabel#1{}

```

Set length of hanging indentation for bibliography entries.

```

1376 \newlength{\bibhang}
1377 \setlength{\bibhang}{2em}

```

Indent second and subsequent lines of bibliographic entries. Stolen from openbib.sty: `\newblock` is set to `{}`.

```

1378 \newdimen\bibindent
1379 \bibindent=1.5em
1380 \@ifundefined{refname}%
1381 {\newcommand{\refname}{References}}%
1382 {}%

```

For safety's sake, suppress the `\TB@startsection` warnings here...

```

1383 \def\thebibliography#1{%
1384 \let\TB@startsection\TB@safe@startsection
1385 \section*{\refname
1386 \mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%

```

```

1387 \list{[\arabic{enumi}]}{%-
1388 \labelwidth\z@ \labelsep\z@
1389 \leftmargin\bibindent
1390 \itemindent -\bibindent
1391 \listparindent \itemindent
1392 \parsep \z@
1393 \usecounter{enumi}}
1394 \def\newblock{}
1395 \BibJustification
1396 \sfcode'\.=1000\relax
1397 }

```

etal Other bibliography odds and ends.

```

\bibentry 1398 \def\etal{et\,al.\@}
1399 \def\bibentry{%
1400 \smallskip
1401 \hangindent=\parindent
1402 \hangafter=1
1403 \noindent
1404 \sloppy
1405 \clubpenalty500 \widowpenalty500
1406 \frenchspacing
1407 }

```

\bibliography Changes made to accommodate TUB file naming conventions

```

\bibliographystyle 1408 \def\bibliographystyle#1{%
1409 \if@filesw
1410 \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1411 \fi
1412 \@input{\jobname.bbl}%
1413 }
1414 \def\bibliographystyle#1{%
1415 \if@filesw
1416 \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1417 \fi
1418 }

```

\thebibliography If the user's asked to use L<sup>A</sup>T<sub>E</sub>X's default citation mechanism (using the rawcite 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.

```

1419 \else
1420 \let\TB@thebibliography\thebibliography
1421 \def\thebibliography{%
1422 \let\TB@startsection\TB@safe@startsection
1423 \let\sloppy\BibJustification
1424 \TB@thebibliography}
1425 \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.)
1426 \let\TB@sloppy\sloppy
1427 \let\BibJustification\TB@sloppy
1428 \newcommand{\SetBibJustification}[1]{%
1429 \renewcommand{\BibJustification}{#1}%
1430 }
1431 \ResetCommands\expandafter{\the\ResetCommands
1432 \let\BibJustification\TB@sloppy
1433 }

```

### 3.24 Registration marks

We no longer use these since Cadmus does not want them.

```

1434 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1435 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1436 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
“T” marks centered on top and bottom edges of paper
1437 \def\ttopregister{\dlap{%
1438 \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1439 \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1440 \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}
1441 \def\tbotregister{\ulap{%
1442 \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1443 \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1444 \HorzR@gisterRule \hfil \HorzR@gisterRule}}
1445 \def\topregister{\ttopregister}
1446 \def\botregister{\tbotregister}

```

### 3.25 Running heads

```

1447 \def \rtitlex{\def\texttub##1{\normalsize\textrm{##1}}\TUB, \volx }
1448 \def\PrelimDraftfooter{%
1449 \dlap{\kern\textheight\kern3pc
1450 \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}
1451 }}

```

registration marks; these are temporarily inserted in the running head

```

1452 \def\MakeRegistrationMarks{}
1453 \def\UseTrimMarks{%
1454 \def\MakeRegistrationMarks{%
1455 \ulap{\rlap{%
1456 \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}%
1457 \topregister\vskip \headmargin \vskip 10\p@}}}%
1458 }
1459 % put issue identification and page number in header.

```

```

1460 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1461 \normalsize\csname normalshape\endcsname\rm \tubheadhook
1462 \rtitlex\quad\midrtitlex \hfil \thepage}
1463 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1464 \normalsize\csname normalshape\endcsname\rm \tubheadhook
1465 \thepage\hfil\midrtitlex\quad\rtitlex}
1466
1467 % can be used to reset the font, e.g., tb98kuester.
1468 \def\tubheadhook{}
1469
1470 % put title and author in footer.
1471 \def\@tubrunningfull{%
1472 \def\@oddfoot{\hfil\rhTitle}
1473 \def\@evenfoot{\@author\hfil}
1474 }
1475
1476 \def\@tubrunninggetauthor#1{#1
1477 \begingroup
1478 \let\thanks\@gobble
1479 \protected@xdef\rhAuthor{\the\toks@##1}%
1480 \endgroup
1481 }%
1482
1483 % empty footer.
1484 \def\@tubrunningminimal{%
1485 \def\@oddfoot{\hfil}%
1486 \def\@evenfoot{\hfil}%
1487 }
1488
1489 % empty footer and header.
1490 \def\@tubrunningoff{%
1491 \def\@oddfoot{\hfil}%
1492 \def\@evenfoot{\hfil}%
1493 \def\@oddhead{\hfil}%
1494 \def\@evenhead{\hfil}%
1495 }
1496
1497 \def\ps@headings{}
1498 \pagestyle{headings}

```

### 3.26 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...

```

1499 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1500 \global\setbox\@leftcolumn\box\@outputbox
1501 \global\brokenpenalty10000

```

```

1502 \else \global\@firstcolumntrue
1503 \global\brokenpenalty100
1504 \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1505 {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1506 \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1507 \@outputpage \begingroup \@dblfloatplacement \startdblcolumn
1508 \@whiles\if@fcolmade \fi{\@outputpage\startdblcolumn}\endgroup
1509 \fi}

```

### 3.27 Font-related definitions and machinery

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

```

1510 \newif\ifFirstPar \FirstParfalse
1511 \def\smc{\sc}
1512 \def\ninepoint{\small}
1513 </classtail>

```

`\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 `\@currsize`: if the user does something silly re. selecting fonts, we’ll get the wrong results. The following code is adapted from an old version of `relsize.sty` by Donald Arseneau and Matt Swift. (The order of examination of `\@currsize` is to get the commonest cases out of the way first.)

```

1514 (*common)
1515 \DeclareRobustCommand\SMC{%
1516 \ifx\@currsize\normalsize\small\else
1517 \ifx\@currsize\small\footnotesize\else
1518 \ifx\@currsize\footnotesize\scriptsize\else
1519 \ifx\@currsize\large\normalsize\else
1520 \ifx\@currsize\Large\large\else
1521 \ifx\@currsize\LARGE\Large\else
1522 \ifx\@currsize\scriptsize\tiny\else
1523 \ifx\@currsize\tiny\tiny\else
1524 \ifx\@currsize\huge\LARGE\else
1525 \ifx\@currsize\Huge\huge\else

```



```

1563 \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1564 \toks@\expandafter{\@evenhead}%
1565 \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1566 \def\ps@titlepage{}%
1567 }
1568 \def\ps@titlepage{}
1569
1570 \long\def\@makefnmark#1{\parindent 1em\noindent\hb@xt@2em{}%
1571 \llap{\@makefnmark}\null$\mskip5mu$#1}
1572
1573 %% \long\def\@makefnmark#1{\parindent 1em
1574 %% \noindent
1575 %% \hb@xt@2em{\hss\@makefnmark}%
1576 %% \hskip0.27778\fontdimen6\textfont\z@\relax
1577 %% #1%
1578 %% }

```

`\creditfootnote` Sometimes we want the label “Editor’s Note:”, sometimes not.

```

\supportfootnote 1579 \def\creditfootnote{\nomarkfootnote\xEdNote}
1580 \def\supportfootnote{\nomarkfootnote\relax}

```

General macro `\nomarkfootnote` to make a footnote without a reference mark, etc. #1 is an extra command to insert, #2 the user’s text.

```

1581 \gdef\nomarkfootnote#1#2{\begingroup
1582 \def\thefootnote{}%
1583 % no period, please, also no fnmark.
1584 \def\@makefnmark##1{##1}%
1585 \footnotetext{\noindent #1#2}%
1586 \endgroup
1587 }

```

### 3.29 Initialization

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

```

1588 \if@Harvardcite
1589 \AtBeginDocument{%
1590 \bibliographystyle{ltugbib}%
1591 }
1592 \fi
1593 \authornumber\z@
1594 \let\@signature\@defaultsignature
1595 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1596 configuration information}}{}
1597 </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:

```
1598 <*ltugproccls>
1599 \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.

```
1600 \newif\if@proctw@column \@proctw@columntrue
1601 \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.

```
1602 \newif\if@proc@sober
1603 \newif\if@proc@numerable
1604 \DeclareOption{tug95}{%
1605   \@proc@soberfalse
1606   \@proc@numerablefalse
1607 }
1608 \DeclareOption{tug96}{%
1609   \@proc@sobertrue
1610   \@proc@numerablefalse
1611 }
1612 \DeclareOption{tug97}{%
1613   \@proc@sobertrue
1614   \@proc@numerabletrue
1615 }
1616 \DeclareOption{tug2002}{%
1617   \@proc@sobertrue
1618   \@proc@numerabletrue
1619   \let\if@proc@numbersec\iftrue
1620   \PassOptionsToClass{numbersec}{ltugboat}%
1621 }
```

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

```
1622 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1623   \PassOptionsToClass{numbersec}{ltugboat}%
1624 }
1625 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1626   \PassOptionsToClass{nonumber}{ltugboat}%
1627 }
```

`\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`.

```

1628 \newif\ifTB@title
1629 \DeclareOption{title}{\TB@titeltrue}
1630 \DeclareOption{notitle}{\TB@titlefalse}
1631 \AtBeginDocument{\stepcounter{page}}

```

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

```

1632 \DeclareOption{tugproc}{%
1633   \ClassWarning{@tugclass}{Option \CurrentOption\space ignored}%
1634 }

```

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

```

1635 \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...)

```

1636 \InputIfFileExists{@tugclass.cfg}{\ClassInfo{ltugproc}%
1637   {Loading ltugproc configuration information}}{}
1638 \@ifundefined{TUGprocExtraOptions}%
1639   {\let\TUGprocExtraOptions\empty}%
1640   {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}

```

`\tugProcYear` Now work out what year it is

```

1641 \@tempcnta\year
1642 \ifnum\@tempcnta<2000
1643   \divide\@tempcnta by100
1644   \multiply\@tempcnta by100
1645   \advance\@tempcnta-\year
1646   \@tempcnta-\@tempcnta
1647 \fi

```

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

```

1648 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1649   {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1650 \@tempa
1651 \ClassInfo{ltugproc}{Class believes year is
1652   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1653   \@gobble}

```

Check that this is a “sensible year” (one for which we have a class option defined). If not, make it a ‘suitable’ year, in particular, one that allows numbering sections.

```

1654 \expandafter\ifx\curname ds@tug\tugProcYear\endcsname\relax
1655 \def\tugProcYear{2002}\fi

```

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

```

1656 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1657 \ProcessOptions
1658 \if@proc@numbersec
1659   \if@proc@numerable
1660   \else
1661     \ClassWarning{\@tugclass}{This year's proceedings may not have
1662       numbered sections}%
1663   \fi
1664 \fi

      Call ltugboat, adding whichever section numbering option is appropriate
1665 \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-boat* proper. Note the tedious L<sup>A</sup>T<sub>E</sub>X bug-avoidance in the `\@TB@test@document` macro.

```

1666 \def\maketitle{%
1667   \begingroup

      first, a bit of flim-flam to generate an initial value for \rhAuthor (unless the
      user's already given one with a \shortAuthor comand).

1668   \ifshortAuthor\else
1669     \global\let\rhAuthor\@empty
1670     \def\g@addto@rhAuthor##1{%
1671       \begingroup
1672         \toks@\expandafter{\rhAuthor}%
1673         \let\thanks\@gobble
1674         \protected@xdef\rhAuthor{\the\toks@##1}%
1675       \endgroup
1676     }%
1677     \@getauthorlist\g@addto@rhAuthor
1678   \fi

      now, the real business of setting the title

1679   \ifTB@title
1680     \setcounter{footnote}{0}%
1681     \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1682     \if@proctw@column
1683       \twocolumn[\@maketitle]%
1684     \else
1685       \onecolumn
1686       \global\@topnum\z@
1687       \@maketitle
1688     \fi
1689     \@thanks
1690     \thispagestyle{TBproctitle}
1691   \fi
1692 \endgroup

```

```

1693 \TB@madetitletrue
1694 }
1695 \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 LATEX bug report latex/2212, submitted by Robin Fair-
bairns, for details.

1696 \def\@TB@test@document{%
1697 \edef\@tempa{\the\everypar}
1698 \def \@tempb{\@nodocument}
1699 \ifx \@tempa\@tempb
1700 \@nodocument
1701 \fi
1702 }

\AUTHORfont Define the fonts for titles and things
\TITLEfont 1703 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1704 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1705 \def\addressfont{\small\rmfamily\mdseries\upshape}
1706 \def\netaddrfont{\small\ttfamily\mdseries\upshape}

\aboveauthorskip Some changeable skips to permit variability in page layout depending on the par-
\belowauthorskip ticular paper's page breaks.
\belowabstractskip 1707 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
1708 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1709 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

\@maketitle The body of \maketitle
1710 \def\@maketitle{%
1711 {\parskip\z@
1712 \frenchspacing
1713 \TITLEfont\raggedright\noindent\@title\par
1714 \count@=0
1715 \loop
1716 \ifnum\count@<\authornumber
1717 \vskip\aboveauthorskip
1718 \advance\count@\@ne
1719 {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1720 \addressfont\theaddress{\number\count@}\endgraf
1721 {%
1722 \allowhyphens
1723 \hangindent1.5pc
1724 \netaddrfont\thenetaddress{\number\count@}\endgraf
1725 \hangindent1.5pc
1726 \thePersonalURL{\number\count@}\endgraf
1727 }%
1728 \repeat
1729 \vskip\belowauthorskip}%
1730 \if@abstract

```

```

1731     \centerline{\bfseries Abstract}%
1732     \vskip.5\baselineskip\rmfamily
1733     \list{}{\listparindent20\p@
1734         \itemindent\z@ \leftmargin\tubfullpageindent
1735         \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1736         \the\abstract@toks
1737     \endlist\global\@ignoretrue
1738     \fi
1739     \vskip\belowabstractskip
1740     \global\@afterindentfalse\aftergroup\@afterheading
1741 }

```

**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@`

```

1742 \newtoks\abstract@toks \abstract@toks{}
1743 \let\if@abstract\iffalse
1744 \def\abstract{%

```

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

```

1745 \ifTB@madetitle
1746     \TBWarning{abstract environment after \string\maketitle}
1747 \fi
1748 \def\@abstract@{abstract}%
1749 \ifx\@currenvir\@abstract@
1750 \else
1751     \TBEError{\string\abstract\space is illegal:%
1752         \MessageBreak
1753         use \string\begin{\@abstract@} instead}%
1754     {\@abstract@\space may only be used as an environment}
1755 \fi
1756 \global\let\if@abstract\iftrue
1757 {\ifnum0='}\fi
1758 \@abstract@getbody}
1759 \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}`

```

1760 \long\def\@abstract@getbody#1\end{%
1761     \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1762     \@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.

```
1763 \def\@abstract@findend#1{%
1764   \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.

```
1765   \ifx\@tempa\@abstract@
1766     \expandafter\@abstract@end
1767   \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)

```
1768   \def\@tempb{document}%
1769   \ifx\@tempa\@tempb
1770     \TBEError{\string\begin{\@abstract@}
1771       ended by \string\end{\@tempb}}%
1772     {You've forgotten \string\end{\@abstract@}}
1773   \else
1774     \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1775     \expandafter\expandafter\expandafter\@abstract@getbody
1776   \fi
1777 \fi}
```

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

```
1778 \def\@abstract@end{\ifnum0='{\fi}%
1779   \expandafter\end\expandafter{\@abstract@}}
```

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

```
1780 \renewcommand{\makesignature}{\TBWarning
1781   {\string\makesignature\space is invalid in proceedings issues}}
```

`\ps@TBproctitle` Now we define the running heads in terms of the `\rh*` commands.

```
\ps@TBproc 1782 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1783 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1784 \TB@definefeet
\TB@definefeet 1785 }
\pfoottext 1786 \def\ps@TBproc{%
\tfoot 1787   \def\@oddhead{\MakeRegistrationMarks
1788     {%
1789       \hfil
1790       \def\{\unskip\ \ignorespaces}%
1791       \rmfamily\rhTitle
1792     }%
1793   }%
1794   \def\@evenhead{\MakeRegistrationMarks
1795     {%
1796       \def\{\unskip\ \ignorespaces}%
1797       \rmfamily\rhAuthor
```

```

1798     \hfil
1799   }%
1800 }%
1801 \TB@definefeet
1802 }
1803
1804 \advance\footskip8\p@    % for deeper running feet
1805
1806 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1807 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1808   {#2}}
1809 \def\TB@definefeet{%
1810   \def\oddfont{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1811     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1812   \def\@evenfont{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1813     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1814 }
1815
1816 \def\pfoottext{\smc Preprint}:
1817   Proceedings of the \volyr{} Annual Meeting}
1818 \def\rfoottext{\normalfont\TUB, \volx\Dash
1819   {Proceedings of the \volyr{} Annual Meeting}}
1820
1821 \pagestyle{TBproc}

```

## 4.2 Section divisions

Neither sections nor subsections are numbered by default 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. The class option NUMBERSEC once again numbers the sections (and noticeably changes the layout).

```

1822 \if@proc@numbersec
1823 \else
1824   \setcounter{secnumdepth}{0}
1825 \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.

```

1826 \if@proc@numbersec
1827 \else
1828   \if@proc@sober
1829     \def\section
1830       {\TB@nolimelabel
1831         \TB@startsection{section}%
1832           1%
1833           \z@%

```

```

1834             {-8\p@\@plus-2\p@\@minus-2\p@}%
1835             {6\p@}%
1836             {\normalsize\bfseries\raggedright}}
1837 \else
1838   \def\section
1839     {\TB@nolimelabel
1840     \TB@startsection{section}%
1841     1%
1842     \z@%
1843     {-8\p@\@plus-2\p@\@minus-2\p@}%
1844     {6\p@}%
1845     {\large\bfseries\raggedright}}
1846 \fi
1847 \def\subsection
1848   {\TB@nolimelabel
1849   \TB@startsection{subsection}%
1850   2%
1851   \z@%
1852   {6\p@\@plus 2\p@\@minus2\p@}%
1853   {-5\p@\@plus -\fontdimen3\the\font}%
1854   {\normalsize\bfseries}}
1855 \def\subsubsection
1856   {\TB@nolimelabel
1857   \TB@startsection{subsubsection}%
1858   3%
1859   \parindent%
1860   \z@%
1861   {-5\p@\@plus -\fontdimen3\the\font}%
1862   {\normalsize\bfseries}}
1863 \fi
1864 \ltugproccls)

```

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

```

1865 <*tugboatsty>
1866 % err...
1867 </tugboatsty>
1868 <*tugprocsty>
1869 % err...
1870 </tugprocsty>

```

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

```

1871 <*ltugboatsty>
1872 \obsoletefile{ltugboat.cls}{ltugboat.sty}
1873 \LoadClass{ltugboat}
1874 </ltugboatsty>
1875 <*ltugprocsty>
1876 \obsoletefile{ltugproc.cls}{ltugproc.sty}

```

```
1877 \LoadClass{ltugproc}
1878 </ltugprocsty>
```