

# The **tugboat** package\*

The *TUGboat* team

(Distributed by Robin Fairbairns)

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tugboat.dtx - main source for LaTeX TUGboat classes.	

## 1 Document preambles

```

1 <ltugboatcls | ltugproccls | ltugcomm>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile                {tugboat.dtx}
4 </dtx>
5 <ltugboatcls>\ProvidesClass  {ltugboat}
6 <ltugproccls>\ProvidesClass  {ltugproc}
7 <ltugboatsty>\ProvidesPackage{ltugboat}
8 <ltugprocsty>\ProvidesPackage{ltugproc}
9 <ltugcomm>   \ProvidesPackage{ltugcomm}
10                [2007/08/27 v2.3
11 <ltugboatcls>                TUGboat journal class%
12 <ltugproccls>                TUG conference proceedings class%
13 <ltugboatsty | ltugprocsty>   TUG compatibility package%
14 <ltugcomm>                   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>	(I <sup>A</sup> )T <sub>E</sub> X
<code>\AMS</code>	American Mathematical Society
<code>\AmSTeX</code>	
<code>\aw</code>	A-W (abbreviation for Addison-Wesley)
<code>\AW</code>	Addison-Wesley
<code>\BibTeX</code>	

<code>\CandT</code>	Computers & Typesetting
<code>\ConTeXt</code>	ConTeXt
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVI</code>	
<code>\DVD</code>	
<code>\DVIPDFMx</code>	DVIPDFMx
<code>\DVItOVDU</code>	DVItOVDU
<code>\eTeX</code>	$\epsilon$ -TeX
<code>\Ghostscript</code>	
<code>\Hawaii</code>	Hawai'i
<code>\HTML</code>	
<code>\ISBN</code>	ISBN
<code>\ISO</code>	
<code>\ISSN</code>	ISSN
<code>\JTeX</code>	
<code>\JoT</code>	The Joy of TeX
<code>\LaTeX</code>	
<code>\MacOSX</code>	Mac OS X
<code>\MathML</code>	
<code>\Mc</code>	M with raised c
<code>\MF</code>	METAFONT
<code>\mf</code>	METAFONT
<code>\MFB</code>	The Metafont book
<code>\MP</code>	METAPOST
<code>\mp</code>	MetaPost (in text only: remains ‘ $\mp$ ’ in maths)
<code>\OMEGA</code>	Omega ‘logo’ ( $\Omega$ )
<code>\OCP</code>	Omega compiled process
<code>\OTP</code>	Omega translation process
<code>\mtex</code>	multilingual TeX
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pCTeX</code>	
<code>\Pas</code>	Pascal
<code>\PiCTeX</code>	
<code>\plain</code>	plain (in typewriter font)
<code>\POBox</code>	P. O. Box
<code>\PS</code>	PostScript (with hyphenation)
<code>\SC</code>	Steering Committee
<code>\SGML</code>	SGML
<code>\SliTeX</code>	
<code>\slMF</code>	Metafont (slanted) — deprecated: use <code>\textsl</code> instead
<code>\stTeX</code>	TeX for the Atari ST
<code>\SVG</code>	
<code>\TANGLE</code>	
<code>\TB</code>	The TeXbook

<code>\TeX</code>	(Although nearly every package defines this, most—including plain—are missing the space-factor adjustment)
<code>\TeXhax</code>	
<code>\TeXMaG</code>	(defunct)
<code>\TeXtures</code>	
<code>\TeXXeT</code>	
<code>\Thanh</code>	
<code>\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>\VorTeX</code>	
<code>\XeT</code>	
<code>\XeTeX</code>	reflected and lowered first ‘E’
<code>\XML</code>	
<code>\WEB</code>	
<code>\WEAVE</code>	

Macros for things that are slightly more significant.

<code>\NoBlackBoxes</code>	turns off marginal rules marking overfull boxes
<code>\BlackBoxes</code>	turns them back on
<code>\newline</code>	horizontal glue plus a break
<code>\ifundefined#1</code>	checks argument with <code>\curname</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>\midrtitlex</code>	information for center of running head
<code>\HorzR@gisterRule</code>	pieces of registration marks (‘trimmarks’)
<code>\DownShortR@gisterRule</code>	

<code>\UpShortR@gisterRule</code>	
<code>\ttopregister</code>	top registration line with ‘T’ in center
<code>\tbotregister</code>	bottom registration line with inverted ‘T’ in center
<code>\topregister</code>	register actually used
<code>\botregister</code>	
<code>\raggedskip</code>	parameters used for ragged settings
<code>\raggedstretch</code>	
<code>\raggedparfill</code>	
<code>\raggedspaces</code>	
<code>\raggedright</code>	
<code>\raggedleft</code>	
<code>\raggedcenter</code>	
<code>\normalspaces</code>	
<code>\raggedbottom</code>	
<code>\bull</code>	square bullet
<code>\cents</code>	‘cents’ sign
<code>\Dag</code>	superscripted dagger
<code>\careof</code>	c/o
<code>\sfrac</code>	slashed fraction (arguments optionally separated by a slash)
<code>\cs</code>	control sequence name <code>\cs{name}→\name</code>
<code>\env</code>	environment name <code>\env{name}→\begin{name}</code>
<code>\meta</code>	meta-argument name <code>\meta{name}→⟨name⟩</code>
<code>\dash</code>	en-dash surrounded by thinspaces; only breakable AFTER
<code>\Dash</code>	em-dash, as above
<code>\hyph</code>	permit automatic hyphenation after an actual hyphen
<code>\slash</code>	‘breakable’ slash
<code>\nth</code>	for obtaining ‘1 <sup>st</sup> ’, ‘2 <sup>nd</sup> ’, 3 <sup>rd</sup> , etc.
<code>\tubissue</code>	gets \TUB followed by volume and issue numbers
<code>\xEdNote</code>	Editor’s Note:
<code>\Review:</code>	Review: (for title of book review article)
<code>\reviewitem</code>	begin data for item being reviewed
<code>\revauth</code>	with one argument, author(s) of item being reviewed
<code>\revtitle</code>	with one argument, title of ...
<code>\revpubinfo</code>	with one argument, other info pertaining to ...
<code>\endreviewitem</code>	end data for item being reviewed
<code>\booktitle</code>	with one argument, format book title in text
<code>\Input</code>	<code>\input</code> with some other bookkeeping for case where multiple articles are put together
<code>\TBremark</code>	reminder to <i>TUGboat</i> editorial staff
<code>\TEnableRemarks</code>	enable <code>\TBremarks</code> (normally suppressed)
<code>\pagexref</code>	used to write out page numbers to screen and

<code>\pagexrefON</code>	external files
<code>\pagexrefOFF</code>	
<code>\xrefTO</code>	used for symbolic cross-reference to other pages
<code>\xrefTOON</code>	in <i>TUGboat</i>
<code>\xrefTOFF</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. Hmmmm... 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 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> 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     }%
48 }

```

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

```

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

```

Similarly, ignore one/two-side/column

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

69 \ExecuteOptions{draft,extralabel,numbersec,rawcite}
70 \ProcessOptions
71 \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.

```
72 \def\sectitlefont{\fontfamily\sfddefault\fontseries{bx}\fontshape{n}%
73     \fontsize\@xvipt\stbaselineskip\selectfont}
74 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
75     \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...

```
76 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
77     \selectfont}
78 \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>).

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

### 3.2 Resetting at start of paper

<code>\ResetCommands</code> <code>\AddToResetCommands</code> <code>\StartNewPaper</code>	<p>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 <code>\ResetCommands</code>) 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</p>
--	---



command `\StartNewPaper`. Things I've not yet thought of may be added to the list of commands, by

```

105 \newtoks\ResetCommands
106 \ResetCommands{%
107   \setcounter{part}{0}%
108   \setcounter{section}{0}%
109   \setcounter{footnote}{0}%
110   \authornumber\z@
111 }
112 \newcommand{\AddToResetCommands}[1]{%
113   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
114 }

```

### 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.

```

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

```

139 \def\savecat#1{%
140   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}}
141 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
142 <!\latex>\savecat\@
143 <!\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.

```
144 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
145   \csname#1\endcsname}
146 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
147   \csname saved@@#1\endcsname}
```

To distinguish between macro files loaded

```
148 \def\plaintubstyle{plain}
149 \def\latextubstyle{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:

```
150 \providecommand\hb@xt@{\hbox to}
151 \providecommand\textsuperscript[1]{\ensuremath{\m@th
152   ~{\mbox{\fontsize\sf@size\z@
153     \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.

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

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

```
176 \newcommand\ConTeXt{C\kern-.0333em\kern-.0667emTeX\kern-.0333em}
177 \newcommand\Cplusplus{C\raisebox{.7ex}{$_{++}$}}
178 \def\CSS{\acro{CSS}}
179 \def\CTAN{\acro{CTAN}}
180 \def\DTD{\acro{DTD}}
```

```

181 \def\DVD{\acro{DVD}}
182 \def\DVI{\acro{DVI}}
183 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
184 \def\DVIttoVDU{DVItto\kern-.12em VDU}
185 \DeclareRobustCommand\TeX{\ensuremath{\varepsilon}-\kern-.125em\TeX}
186 \def\FAQ{\acro{FAQ}}
187 \def\FTP{\acro{FTP}}
188 \def\Ghostscript{Ghost\script}
189 \def\GNU{\acro{GNU}}
190 \def\GUI{\acro{GUI}}
191 \def\Hawaii{Hawai'i}
192 \def\HTML{\acro{HTML}}
193 \def\HTTP{\acro{HTTP}}
194 \def\IEEE{\acro{IEEE}}
195 \def\ISBN{\acro{ISBN}}
196 \def\ISO{\acro{ISO}}
197 \def\ISSN{\acro{ISSN}}
198 \def\JPEG{\acro{JPEG}}
199 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
200 \def\JoT{\textsl{The Joy of \TeX}}
201 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
202             $\m@th$\fontsize\sf@size\z@\selectfont
203             $\m@th\mathcal{A}$}%
204     \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
205     {$\m@th\mathcal{S}$}-\TeX}
206 % This code
207 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
208 % example) to propagate into the raised (small) 'A':
209 % \begin{macrocode}
210 \newcommand{\La}%
211   {L\kern-.36em
212     {\setbox0\hbox{T}%
213       \vbox to\ht0{\hbox{$\m@th$%
214                     \csname S@f@size\endcsname
215                     \fontsize\sf@size\z@
216                     \math@fontsfalse\selectfont
217                     A}%
218                 \vss}%
219     }}

```

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.

```

220 <!\latex>\def\LaTeX{L\kern-.15em\TeX}
221 \def\MacOSX{Mac\,\acro{OS}\,X}
222 \def\MathML{Math\acro{ML}}
223 \def\Mc{\setbox\TestBox=\hbox{M}\vbox
224   to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we're running under  $\text{\LaTeX} 2_{\epsilon}$ , 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`

```

225 \def\mf{\textsc{Metafont}}
226 \def\MTB{\textsl{The \MF book}}
227 \let\TB@@mp\mp
228 \DeclareRobustCommand\mp{\ifmmode\TB@@mp\else MetaPost\fi}
229 %
230 % In order that the \cs{OMEGA} command will switch to using the TS1
231 % variant of the capital Omega character if \texttt{textcomp.sty} is
232 % loaded, we define it in terms of the \cs{textohm} command. Note
233 % that this requires us to interpose a level of indirection, rather
234 % than to use \cs{let}\dots
235 %
236 % \begin{macrocode}
237 \DeclareTextSymbol{\textohm}{OT1}{'012}
238 \DeclareTextSymbolDefault{\textohm}{OT1}
239 \newcommand\OMEGA{\textohm}
240 \DeclareRobustCommand\OCP{\OMEGA\acro{CP}}
241 \DeclareRobustCommand\OTP{\OMEGA\acro{TP}}
242 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}
243
244 Revised definition of \NTS based on that used by Phil Taylor.
245 \DeclareRobustCommand\NTS{\ensuremath{\mathcal{N}}\mkern-4mu
246 \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
247 \def\Pas{Pascal}
248 \def\pCMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
249 \def\PCTeX{PC\thinspace\TeX}
250 \def\pCTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
251 \def\PDF{\acro{PDF}}
252 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
253 \def\PiCTeX{\PiC\kern-.11em\TeX}
254 \def\PGF{\acro{PGF}}
255 \def\plain{\texttt{plain}}
256 \def\PNG{\acro{PNG}}
257 \def\POBox{P.\thinspace O.\thinspace Box }
258 \def\PS{{Post}\thinspace Script}
259 \def\PS Tricks{\acro{PST}ricks}
260 \def\RTF{\acro{RTF}}
261 \def\SC{Steering Committee}
262 \def\SGML{\acro{SGML}}
263 \def\SliTeX{\textrm{S\kern-.06em\textsc{l}\kern-.035emi}%
264 \kern-.06em\TeX}}
265 \def\sLMF{\textsl{MF}} % should never be used
266 \def\stTeX{\textsc{st}\kern-.013em\TeX}
267 \def\STIX{\acro{STIX}}
268 \def\SVG{\acro{SVG}}
269 \def\TANGLE{\texttt{TANGLE}\@}
270 \def\TB{\textsl{The \TeX book}}
271 \def\TIFF{\acro{TIFF}}
272 \def\TP{\textsl{The Program}}
273 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
274 \def\TeXhax{\TeX hax}
275 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
276 \kern-.2267emG\@}
277 \def\TeXtures{\textit{Textures}}
278 \let\Textures=\TeXtures
279 \def\TeXXeT{\TeX-{}-\XeT}

```

```

278 \def\TFM{\acro{TFM}}
279 \def\Thanh{H\`an~Th\`e\llap{\raise 0.5ex\hbox{\`{}}}-Th\`anh}
280 \def\TikZ{Ti{\em k}Z}
281 \def\ttn{\textsl{TTN}\@}
282 \def\TTN{\textsl{\TeX{}} and TUG News}}
283 \let\texttub\textsl % redefined in other situations
284 \def\TUB{\texttub{TUGboat}}
285 \def\TUG{\TeX\ \UG}
286 \def\tug{\acro{TUG}}
287 \def\UG{Users Group}
288 \def\UNIX{\acro{UNIX}}
289 \def\UTF{\acro{UTF}}
290 \def\VAX{V\kern-.12em A\kern-.1em X\@}
291 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
292 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
293 \def\XML{\acro{XML}}
294 \def\WEB{\texttt{WEB}\@}
295 \def\WEAVE{\texttt{WEAVE}\@}

```

XeTeX requires reflecting the first E, hence we complain if the graphics package 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.)

```

296 \def\tubreflect#1{%
297   \@ifundefined{reflectbox}{%
298     \TBerror{A graphics package must be loaded for \string\XeTeX}%
299   }{%
300     \ifdim \fontdimen1\font>0pt
301       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
302     \else
303       \reflectbox{#1}%
304     \fi
305   }%
306 }
307 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
308 \def\XeTeX{\leavevmode
309   \tubhideheight{\hbox{X%
310     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
311     \lower\dp0\hbox{\raise\dp1\hbox{\kern-.125em\tubreflect{E}}}%
312     \kern-.1667em \TeX}}
313 %
314 \def\XHTML{\acro{XHTML}}
315 \def\XSLT{\acro{XSLT}}

```

### 3.5 General typesetting rules

```

316 \newlinechar=`^^J
317 \normallineskiplimit=\p@
318 \clubpenalty=10000
319 \widowpenalty=10000
320 \def\NoParIndent{\parindent=\z@}
321 \newdimen\normalparindent
322 \normalparindent=20\p@

```

```

323 \def\NormalParIndent{\global\parindent=\normalparindent}
324 \NormalParIndent
325 \def\BlackBoxes{\overfullrule=5\p@}
326 \def\NoBlackBoxes{\overfullrule=\z@}
327 \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.

```

328 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
329 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
330 \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`.

```

331 \newbox\T@stBox          \newbox\TestBox
332 \newcount\T@stCount     \newcount\TestCount
333 \newdimen\T@stDimen     \newdimen\TestDimen
334 \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).

```

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

```

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

```

336 \*!latex
337 \let\@@input\input
338 \def\iinput#1{\@@input#1 }
339 \def\@inputcheck{\if\@nextchar\bgroup
340 \expandafter\iinput\else\expandafter\@@input\fi}
341 \def\input{\futurelet\@nextchar\@inputcheck}
342 \*!latex

```

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

```

343 \newif\iftop@           \newif\ifbot@
344 \def\topsmash{\top@true\bot@false\smash@}
345 \def\botsmash{\top@false\bot@true\smash@}
346 \def\smash{\top@true\bot@true\smash@}
347 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
348 \else\let\next\makesm@sh\fi \next }
349 \def\finsm@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}

```

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

```

350 \long\def\ulap#1{\vbox to \z@\vss#1}}
351 \long\def\dlap#1{\vbox to \z@{#1\vss}}

```

And centered horizontal and vertical ‘laps’

```
352 \def\xlap#1{\hb@xt@{z@{\hss#1\hss}}
353 \long\def\ylap#1{\vbox to {z@{\vss#1\vss}}
354 \long\def\zlap#1{\ylap{\xlap{#1}}}
```

Avoid unwanted vertical glue when making up pages.

```
355 \def\basezero{\baselineskip\z@skip \lineskip\z@skip}
```

Empty rules for special occasions

```
356 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
357 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

```
359 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
360 \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
361 \vss\hb@xt@#2{\vrule \@width\T@stDimen
362 \hfil\makestrut[#1;\z@]%
363 \vrule \@width\T@stDimen}\vss
364 \hrule \@height\T@stDimen \@depth\z@}}
```

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

```
365 (*!latex)
366 \def\today{\number\day\space \ifcase\month\or
367 Jan \or Feb \or Mar \or Apr \or May \or Jun \or
368 Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
369 \number\year}
370 (!/latex)
```

Current time; this may be system dependent!

```
371 \newcount\hours
372 \newcount\minutes
373 \def\SetTime{\hours=\time
374 \global\divide\hours by 60
375 \minutes=\hours
376 \multiply\minutes by 60
377 \advance\minutes by-\time
378 \global\multiply\minutes by-1 }
379 \SetTime
380 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
381 \def\Now{\today\ \now}
382 \newif\ifPrelimDraft
383 \def\midrttitle{\ifPrelimDraft {\textsl{preliminary draft, \Now}}\fi}
```

### 3.7 Ragged right and friends

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

`\raggedstretch`

`\raggedparfill`

`\raggedspaces`

```
384 \newdimen\raggedskip \raggedskip=\z@
385 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
386 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil
387 \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 388 \def\raggedright{%
\normalspaces 389 \nohyphens
390 \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
391 \parfillskip=\raggedparfill
392 }
393 \def\raggedleft{%
394 \nohyphens
395 \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
396 \parfillskip=\z@skip
397 }
398 \def\raggedcenter{%
399 \nohyphens
400 \leftskip=\raggedskip\@plus\raggedstretch
401 \rightskip=\leftskip \raggedspaces
402 \parindent=\z@ \parfillskip=\z@skip
403 }
404 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}

```

Miscellaneous useful stuff. Note that L<sup>A</sup>T<sub>E</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>E</sub>X 2<sub>ε</sub> version has `\leavevmode` and doesn't care about surrounding space).

```

405 \DeclareRobustCommand{\nobreakspace}{%
406 \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...)

```

407 \def\boxcs#1{\box\cname#1\endcname}
408 \def\setboxcs#1{\setbox\cname#1\endcname}
409 \def\newboxcs#1{\expandafter\newbox\cname#1\endcname}
410 \let\gobble\@gobble
411 \def\vellipsis{%
412 \leavevmode\kern0.5em
413 \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
414 }
415 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
416 \def\cents{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}
417 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
418 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
419 \kern-.125em\smash{\lower.3ex\hbox{o}}}\ignorespaces}
420 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}%
421 {\@sfrac{#1}/}}
422 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex

```

---

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



```

423 \hbox{$\m@th\mbox{\fontsize\sf@size\z@
424 \selectfont#1}$}\kern-.1em
425 /\kern-.15em\lower.25ex
426 \hbox{$\m@th\mbox{\fontsize\sf@size\z@
427 \selectfont#2}$}}
428 \DeclareRobustCommand\cs[1]{\texttt{\char'\#1}}
429 \DeclareRobustCommand\meta[1]{%
430 \ensuremath{\langle}\emph{#1}\ensuremath{\rangle}}
431 \DeclareRobustCommand\env[1]{%
432 \cs{begin}\texttt{\char'\#1\char'\}}
433 \def\thinspace{\hspace 0.16667em\relax}

```

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

```

434 \def\endash{--}
435 \def\emdash{\endash-}
436 \def\d@sh#1#2{\unskip#1\thinspace#2\thinspace\ignorespaces}
437 \def\dash{\d@sh\nobreak\endash}
438 \def\Dash{\d@sh\nobreak\emdash}
439 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
440 \def\rdash{\d@sh\nobreak\endash}
441 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
442 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

443 \def\hyph{-\penalty\z@\hspace\z@skip }
444 \def\slash{/\penalty\z@\hspace\z@skip }

```

Adapted from `comp.text.tex` posting by Donald Arseneau, 26 May 93.

L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>-isation added by Robin Fairbairns. Destroys both the `TestCounts`.

```

445 \def\nth#1{%
446 \def\reserved@a##1##2\@nil{\ifcat##1n%
447 0%
448 \let\reserved@b\ensuremath
449 \else##1##2%
450 \let\reserved@b\relax
451 \fi}%
452 \TestCount=\reserved@a#1\@nil\relax
453 \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
454 \TestCount=\TestCount
455 \divide\TestCount by 100 \multiply\TestCount by 100
456 \advance\TestCount by-\TestCount % n mod 100
457 \ifnum\TestCount >20 \TestCount=\TestCount
458 \divide\TestCount by 10 \multiply\TestCount by 10
459 \advance\TestCount by-\TestCount % n mod 10
460 \fi
461 \reserved@b{#1}%
462 \textsuperscript{\ifcase\TestCount th% 0th
463 \or st% 1st
464 \or nd% 2nd
465 \or rd% 3rd
466 \else th% nth
467 \fi}%
468 }

```

### 3.8 Reviews

Format information on reviewed items for book review articles. For the L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> version, we follow Fairbairns' maxim, and define something that can even look like a L<sup>A</sup>T<sub>E</sub>X macro...

```

469 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
470 \def\@Review:{\@ifnextchar[%]
471   {\@Rev}%
472   {\@Rev[Book review]}}
473 \def\@Rev[#1]#2{\ignorespaces#1\unskip:\enspace\ignorespaces
474               \slshape\mdseries#2}}
475 \def\reviewitem{\addvspace{\BelowTitleSkip}%
476   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
477   \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
478   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
479 }
480 \def\endreviewitem{{\noindent\interlinepenalty=10000
481   \therevauth\therevtitle\therevpubinfo\endgraf}%
482   \vskip\medskipamount
483 }
484 \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.

```

485 \newcount\issueseqno          \issueseqno=-1
486 \def\volx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
487 \def\volyr{}
488 \def\volno{}
489 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
490   \gdef\issno{\ignorespaces#2\unskip}%
491   \setbox\TestBox=\hbox{\volyr}%
492   \ifdim \wd\TestBox > .2em \volx \fi }
493 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
494   \gdef\bigissdt{#1}%
495   \setbox\TestBox=\hbox{\volno}%
496   \ifdim \wd\TestBox > .2em \volx \fi }
497 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}}

```

```

498      \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
499      \setbox\TestBox=\hbox{\volno}%
500      \ifdim \wd\TestBox > .2em \v@l{x} \fi }
501 \vol 0, 0.
502 \issdate Thermidor, 2060.

```

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

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

```

503 \!latex\def\tubissue#1(#2)%
504 \*latex
505 \def\tubissue#1{\@ifnextchar(%)
506   {\@tubissue@b{#1}}
507   {\@tubissue@a{#1}}}%
508 \def\tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
509 \def\tubissue@a#1#2%
510 \!latex
511 {\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

```

512 \def\infil@{\jobname}
513 \def\Input #1 {\ifnum\issueseqno<0
514   \def\infil@{#1}%
515   \else
516     \def\infil@{tb\number\issueseqno#1}
517   \fi
518   \edef\jobname{\infil@}\@readFLN
519   \@@input \infil@\relax
520   \if@RMKopen
521     \immediate\closeout\@TBremarkfile\@RMKopenfalse
522   \fi
523 }

```

\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 \TEnableRemarks command, which can be included in the configuration file ltugboat.cfg (or ltugproc.cfg, if that's what we're at).

```

524 \newif\if@RMKopen      \@RMKopenfalse
525 \newwrite\@TBremarkfile
526 \def\@TBremark#1{%
527   \if@RMKopen
528   \else
529     \@RMKopentrue\immediate\openout\@TBremarkfile=\infil@.rmk
530   \fi
531   \toks@={#1}%
532   \immediate\write\@TBremarkfile{^^J\the\toks@}%
533   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
534 }

```

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

```
535 \let\TBremark=\gobble
```

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

```
536 \def\TEnableRemarks{\let\TBremark\@TBremark}
```

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

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

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

```
538 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
```

```
539 \newread\@altfilenames
```

```
540 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
```

```
541 \ifeof\@altfilenames\let\@result\relax\else
```

```
542 \def\@result{\@input\jobname.fln }\fi
```

```
543 \immediate\closein\@altfilenames
```

```
544 \@result}
```

```
545 \@readFLN
```

```
546 \everyjob=\expandafter{\the\everyjob\@readFLN}
```

```
547 \InputIfFileExists{\jobname.fln}%
```

```
548 {\TBInfo{Reading alternative file file \jobname.fln}}{}
```

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

```
549 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
```

```
550 #1\else\csname file@@#1\endcsname\fi}
```

```
551 \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.

```
552 <*\latex>
```

```
553 \def\pagexrefON#1{%
```

```
554 \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
```

```
555 \write\ppoutfile{%
```

```
556 \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
```

```
557 }
```

```
558 \def\PageXrefON#1{%
```

```
559 \immediate\write-1{\def\expandafter
```

```
560 \noexpand\csname#1\endcsname{\number\pageno}}%
```

```
561 \immediate\write\ppoutfile{\def\expandafter
```

```
562 \noexpand\csname#1\endcsname{\number\pageno}}%
```

```
563 </!\latex>
```

```
564 <*\latex>
```

```
565 \def\pagexrefON#1{%
```

```
566 \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
```

```
567 \write\ppoutfile{%
```

```
568 \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
```

```
569 }
```

```
570 \def\PageXrefON#1{%
```

```

571 \immediate\write-1{\def\expandafter
572 \noexpand\csname#1\endcsname{\number\c@page}}}%
573 \immediate\write\ppoutfile{\def\expandafter
574 \noexpand\csname#1\endcsname{\number\c@page}}}%
575 </latex>
576 \def\pagexrefOFF#1{}
577 \let\pagexref=\pagexrefOFF
578 \def\PageXrefOFF#1{}
579 \let\PageXref=\PageXrefOFF
580 \def\xreftoON#1{%
581 \ifundefined{#1}%
582 ???\TBremark{Need cross reference for #1.}%
583 \else\csname#1\endcsname\fi}
584 \def\xreftoOFF#1{???}
585 \let\xrefto=\xreftoOFF

```

\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.

```

586 \let\TBdriver\gobble

```

Some hyphenation exceptions:

```

587 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
588 Flor-i-da Free-BSD Ghost-script Ghost-view
589 Hara-lam-bous Jac-kow-ski Karls-ruhe
590 Mac-OS Math-Sci-Net
591 Net-BSD Open-BSD Open-Office
592 Pfa-Edit Post-Script Rich-ard Skoup South-all
593 VM-ware Win-Edt
594 acro-nym ap-pen-dix asyn-chro-nous
595 bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
596 col-umns cus-tom-iz-able
597 data-base data-bases
598 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion
599 fall-ing
600 half-way
601 key-note
602 long-est
603 ma-gyar man-u-script man-u-scripts mne-mon-ic mne-mon-ics
604 off-line over-view
605 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
606 pipe-line pipe-lines
607 plug-in plug-ins pro-gram-mable
608 se-vere-ly spell-ing spell-ings stand-alone strong-est
609 sub-ex-pres-sion syn-chro-ni-city syn-chro-nous
610 time-stamp time-stamped
611 vis-ual vis-ual-ly
612 which-ever white-space white-spaces wide-spread wrap-around
613 }
614 <||latex>\restorecat\@
615 </common>
616 <*clashtail>
617 \PrelimDrafttrue

```

### 3.10 Page dimensions, glue, penalties etc

```

618 \textheight 54pc
619 \textwidth 39pc
620 \columnsep 1.5pc
621 \columnwidth 18.75pc
622 \parindent \normalparindent
623 \parskip \z@ % \@plus\p@
624 \leftmargini 2em
625 \leftmarginv .5em
626 \leftmarginvi .5em
627 \oddsidemargin \z@
628 \evensidemargin \z@
629 \topmargin -2.5pc
630 \headheight 12\p@
631 \headsep 20\p@
632 \marginparwidth 48\p@
633 \marginparsep 10\p@
634 \partopsep=\z@
635 \topsep=3\p@\@plus\p@\@minus\p@
636 \parsep=3\p@\@plus\p@\@minus\p@
637 \itemsep=\parsep
638 \twocolumn
639 \newdimen\pagewd \pagewd=39pc
640 \newdimen\trimwd \trimwd=\pagewd
641 \newdimen\trimlgt \trimlgt=11in
642 \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 his own new version. The arguments are font family, series and shape, and then the two kern values used in placing the raised 'A' of L<sup>A</sup>T<sub>E</sub>X.

```

643 \newcommand\DeclareLaTeXLogo[5]{\expandafter\def
644 \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:

```

645 \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):

```

646 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
647 \DeclareLaTeXLogo{cmr}{m}{it}{.3}{.27}
648 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
649 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
650 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}

```

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

```

651 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a

```

```

652 \csname @LaTeX@f@family/f@series/f@shape\endcsname
653 \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
654 \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.

```

655 \newcommand\@LaTeX[2]{L\kern-#1em
656     {\sbox\z@ T%
657       \vbox to\ht0{\hbox{$\m@th$%
658         \csname S@f@size\endcsname
659         \fontsize\sf@size\z@
660         \math@fontsfalse\selectfont
661         A}%
662         \vss}%
663     }%
664     \kern-#2em%
665     \TeX}

```

### 3.12 Authors, contributors, addresses, signatures

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

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

```

666 \def\theauthor#1{\csname theauthor#1\endcsname}
667 \def\theaddress#1{\csname theaddress#1\endcsname}
668 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
669 \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.

```

670 (!latex)\newcount\@tempcnta
671 \def\@defaultauthorlist{%
672   \@getauthorlist\@firstofone
673 }

```

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

```

674 \def\@getauthorlist#1{%
675   \count@\authornumber
676   \advance\count@ by -2
677   \@tempcnta0

```

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

```

678 \loop
679 \ifnum\count@>0
680 \advance\@tempcnta by \@ne
681 #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
682 \advance\count@ by \m@ne
683 \repeat
684 \count@\authornumber
685 \advance\count@ by -\@tempcnta
686 \ifnum\authornumber>0

```

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

```

687 \ifnum\count@>1
688 \count@\authornumber
689 \advance\count@ by \m@ne
690 #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
691 \fi

```

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

```

692 #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
693 \fi
694 }

```

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...)

```

695 \def\signature#1{\def\@signature{#1}}
696 \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`

```

697 \def\@defaultsignature{[%
698 \let\thanks\@gobble
699 \ifnum\authornumber<0

```

if  $\text{authornumber} < 0$ , we are in a contributor's section

```

700 \medskip
701 \frenchspacing
702 \signaturemark
703 \theauthor{\number\authornumber}\\
704 \theaddress{\number\authornumber}\\
705 \allowhyphens
706 \thenetaddress{\number\authornumber}\\
707 \thePersonalURL{\number\authornumber}\\
708 \else

```

$\text{authornumber} \geq 0$ , so we are in the body of an ordinary article

```

709 \count@=0
710 \loop
711 \ifnum\count@<\authornumber

```



```

712         \medskip
713         \advance\count@ by \@ne
714         \signaturemark
715         \theauthor{\number\count@}\
716         \theaddress{\number\count@}\
717         {%
718         \allowhyphens
719         \thenetaddress{\number\count@}\
720         \thePersonalURL{\number\count@}\
721         }%
722     \repeat
723 \fi
724 }%
725 }
726 \newdimen\signaturewidth \signaturewidth=12pc

```

The optional argument to `\makesignature` is useful in some circumstances (e.g., multi-contributor articles)

```

727 \newcommand\makesignature[1][\medskipamount]{%
    check the value the user has put in \signaturewidth: it may be at most
    1.5pc short of \columnwidth
728 \@tempdima\signaturewidth
729 \advance\@tempdima 1.5pc
730 \ifdim \@tempdima>\columnwidth
731     \signaturewidth \columnwidth
732     \advance\signaturewidth -1.5pc
733 \fi
734 \par
735 \penalty9000
736 \vspace{#1}%
737 \rightline{%
738     \vbox{\hsize\signaturewidth \ninepoint \raggedright
739         \parindent \z@ \everypar={\hangindent 1pc }
740         \parskip \z@skip
741         \def\|{\unskip\hfil\break}%
742         \def\\{\endgraf}%
743         \def\phone{\rm Phone: }
744         \rm\@signature}%
745     }%
746 \ifnum\authornumber<0 \endgroup\fi
747 }
748 \def\signaturemark{\leavevmode\llap{$\diamond$\enspace}}

```

The code used to define the following:

```

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

```

However, they were never used within the class (or within `ltugproc.cls`). They have therefore been deleted; the identically defined `\netaddrat` and

`\netaddrpercent` may be used in the unlikely event that they're needed elsewhere.

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

```
749 \newcount\authornumber
750 \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`).

```
751 \def\author{%
752   \global\advance\authornumber\@ne
753   \TB@author
754 }
```

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

```
755 \def\contributor{%
756   \begingroup
757   \authornumber\m@ne
758   \TB@author
759 }
```

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).

```
760 \def\TB@author#1{%
761   \expandafter\def\csname theauthor\number\authornumber\endcsname
762     {\ignorespaces#1\unskip}%
763   \expandafter\def\csname theaddress\number\authornumber\endcsname
764     {\TBWarningNL{Address for #1\space missing}\@gobble}%
765   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
766     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
767   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
768     \@gobble
769   }
770 \def\EDITORnoaddress{%
771   \expandafter\let\csname theaddress\number\authornumber\endcsname
772     \@gobble
773 }
774 \def\EDITORnonetaddress{%
775   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
776     \@gobble
777 }
```

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

```
778 \def\address#1{%
779   \expandafter\def\csname theaddress\number\authornumber\endcsname
780     {\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!*

```
781 \def\network#1{\def\@network{#1: }}

```

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

```
782 \newcommand\netaddress[1][\relax]{%
783   \begingroup
784   \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 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>.

```
785   #1\@sanitize\makespace\ \makeactive\@
786   \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?!*)

```
787 \def\@relay@netaddress#1{%
788   \ProtectNetChars
789   \expandafter\protected@xdef
790     \csname thenetaddress\number\authornumber\endcsname
791     {\protect\leavevmode\textrm{\@network}%
792     {\protect\NetAddrChars\net
793       \ignorespaces#1\unskip}}}%
794   \endgroup
795 }

```

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

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

```
796 \def\personalURL{\begingroup
797   \@sanitize\makespace\ \makeactive\@
798   \makeactive\.\makeactive%\makeactive\/\@personalURL}%
799 \def\@personalURL#1{%
800   \ProtectNetChars
801   \expandafter\protected@xdef
802     \csname thePersonalURL\number\authornumber\endcsname{%
803     \protect\leavevmode
804     {%

```

```

805     \protect\URLchars\net
806     \ignorespaces#1\unskip
807   }%
808 }%
809 \endgroup
810 }

```

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...

```

811 {%
812   \makecomment\*
813   \makeactive\@
814   \gdef\netaddrat{\makeactive\@*
815     \def@{\discretionary{\char"40}{-}{\char"40}}
816   \makeactive\%
817   \gdef\netaddrpercent{\makeactive\%*
818     \def@{\discretionary{\char"25}{-}{\char"25}}
819   \makeactive\.
820   \gdef\netaddrdot{\makeactive\.*
821     \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.

```

822   \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
823   \makeactive\/
824   \gdef\URLchars{*
825     \NetAddrChars
826     \makeactive\/*
827     \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.

```

828   \gdef\ProtectNetChars{*
829     \def@{\protect@}*
830     \def%{\protect%}*
831     \def.{\protect.}*
832     \def/{\protect/}*
833   }
834 }

```

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

```

835 \if@compatibility
836   \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\syntypewriter}
837 \else
838   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
839 \fi
840 \def\authorlist#1{\def\@author{#1}}
841 \def\@author{\@defaultauthorlist}

```

`\if@articletitle` `\maketitle` takes an optional “\*”; if present, the operation is not defining the title of a paper, merely that of a “business” section (such as the participants at 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>.

```

842 \newif\if@articletitle
843 \def\maketitle{\@ifstar
844   {\@articletitlefalse\@r@maketitle}%
845   {\@articletitletrue\@r@maketitle}%
846 }
847 \def\@r@maketitle{\par
848   \ifdim\PreTitleDrop > \z@
849     \loop
850       \ifdim \PreTitleDrop > \textheight
851         \vbox{}\vfil\eject
852         \advance\PreTitleDrop by -\textheight
853       \repeat
854       \vbox to \PreTitleDrop{}
855       \global\PreTitleDrop=\z@
856   \fi
857   \begingroup
858   \setcounter{footnote}{0}
859   \def\thefootnote{\fnsymbol{footnote}}
860   \@maketitle
861   \@thanks
862   \endgroup
863   \setcounter{footnote}{0}
864   \gdef\@thanks{}
865 }
```

### 3.13 Section titles

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

Define the distance between articles which are run together:

```

866 \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).

```

867 \newdimen\stbaselineskip          \stbaselineskip=18\p@
868 \newdimen\stfontheight
869 \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.

```

870 \newif\ifSecTitle
871 \SecTitlefalse
872 \newif\ifWideSecTitle
873 \newcommand\sectitle{%
874   \SecTitletrue
875   \@ifstar
876     {\WideSecTitletrue\def\s@ctitle}%
877     {\WideSecTitlefalse\def\s@ctitle}%
878 }

```

`\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.

```

879 \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.

```

880 \newskip\AboveTitleSkip   \AboveTitleSkip=12\p@
881 \newskip\BelowTitleSkip   \BelowTitleSkip=8\p@
882 \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...

```

883 \def\@sectitle #1{%
884   \par
885   \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.

```

886 \ifWideSecTitle\else\secsep\fi
887 {%
888   \fboxrule\strulethickness
889   \fboxsep\z@
890   \noindent\framebox[\hsize]{%
891     \vbox{%
892       \raggedcenter
893       \let\\ \@sectitle@newline
894       \sectitlefont
895       \makestrut[2\stfontheight;\z@]%
896       #1%
897       \makestrut[\z@;\stfontheight]\endgraf
898     }%
899   }%

```

```

900 }%
901 \nobreak
902 \vskip\baselineskip
903 }

```

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

```

904 \newcommand{\@sectitle@newline}[1][\z@]{%
905   \ifdim#1>\z@
906     \makestrut[\z@;#1]%
907   \fi
908   \unskip\break
909 }

```

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).

```

910 \def\@makesectitle{\ifSecTitle
911   \global\SecTitlefalse
912   \ifWideSecTitle
913     \twocolumn[\@sectitle{\s@ctitle}]%
914     \global\WideSecTitlefalse
915   \else
916     \@sectitle{\s@ctitle}%
917   \fi
918 \else
919   \vskip\AboveTitleSkip
920   \kern\topskip
921   \hrule \@height\z@ \@depth\z@ \@width 10\p@
922   \kern-\topskip
923   \kern-\strulethickness
924   \hrule \@height\strulethickness \@depth\z@
925   \kern\medskipamount
926   \nobreak
927 \fi
928 }

```

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

```

929 \def\@maketitle{%
930   \@makesectitle
931   \if@articletitle{%
932     \nohyphens \interlinepenalty\@M
933     \setbox0=\hbox{%
934       \let\thanks\@gobble
935       \let\=\quad
936       \let\and=\quad
937       \ignorespaces\@author}%
938     {%
939       \noindent\bf\raggedright\ignorespaces\@title\endgraf
940     }%
941     \ifdim \wd0 < 5\p@ % omit if author is null
942     \else

```

Since we have `\BelowTitleSkip + 4pt = \baselineskip`, we say:

```

943   \nobreak \vskip 4\p@

```

```

944     {%
945         \leftskip=\normalparindent
946         \raggedright
947         \def\and{\unskip\\}%
948         \noindent\@author\endgraf
949     }%
950     \fi
951     \nobreak
952     \vskip\BelowTitleSkip
953 } \fi%
954 \global\@afterindentfalse
955 \aftergroup\@afterheading
956 }

```

Dedications are ragged right, in italics.

```

957 \newenvironment{dedication}%
958 { \raggedright\noindent\itshape\ignorespaces}%
959 { \endgraf\medskip}

```

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

```

960 \renewenvironment{abstract}%
961 {%
962     \begin{SafeSection}%
963     \section*{Abstract}%
964 }%
965 {\end{SafeSection}}
966 \newenvironment{longabstract}%
967 {%
968     \begin{SafeSection}%
969     \section*{Abstract}%
970     \bgroup\small
971 }%
972 {%
973     \endgraf\egroup
974     \end{SafeSection}%
975     \vspace{.25\baselineskip}
976     \begin{center}
977     {$---$}
978     \end{center}
979     \vspace{.5\baselineskip}}

```

### 3.14 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.

```

980 \if@numbersec
981   \def\section{\TB@startsection{\section}%

```



```

982             1%
983             \z@
984             {-8\p@}%
985             {4\p@}%
986             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
987 \def\subsection{\TB@startsection{\subsection}%
988             2%
989             \z@
990             {-8\p@}%
991             {4\p@}%
992             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
993 \def\subsubsection{\TB@startsection{\subsubsection}%
994             3%
995             \z@
996             {-8\p@}%
997             {4\p@}%
998             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
999 \def\paragraph{\TB@startsection{\paragraph}%
1000             4%
1001             \z@
1002             {2.5ex\@plus 1ex}%
1003             {-1em}%
1004             {\normalsize\bf}}

```

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

```

1005 \else
1006   \setcounter{secnumdepth}{0}
1007   \def\section{\TB@nolimlabel
1008             \TB@startsection{\section}%
1009             1%
1010             \z@
1011             {-8\p@}%
1012             {4\p@}%
1013             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1014   \def\subsection{\TB@nolimlabel
1015             \TB@startsection{\subsection}%
1016             2%
1017             \z@
1018             {-8\p@}%
1019             {-0.5em\@plus-\fontdimen3\font}%
1020             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1021   \def\subsubsection{\TB@nolimlabel
1022             \TB@startsection{\subsubsection}%
1023             3%
1024             \parindent
1025             {-8\p@}%
1026             {-0.5em\@plus-\fontdimen3\font}%
1027             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1028 \fi

```

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

```

1029 \if@numbersec

```

```

1030 \def\TB@startsection#1{\@startsection#1}%
1031 \else
1032 \def\TB@startsection#1{%
1033   \@ifstar
1034     {\TBWarning{*-form of \expandafter\string\csname\@firstofsix#1%
1035               \endcsname\space
1036               \MessageBreak
1037               conflicts with nonumber class option}%
1038     \@startsection#1}%
1039   {\@startsection#1}%
1040 }
1041 \fi
1042 \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).

```

1043 \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.

```

1044 \newenvironment{SafeSection}%
1045 {\let\TB@startsection\TB@safe@startsection}%
1046 {}

```

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

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.

```

1047 \if@numbersec
1048 \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1049 \else
1050 \def\paragraph{\TB@nosection\paragraph\subsubsection}
1051 \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1052 \fi
1053 \def\chapter{\TB@nosection\chapter\section}
1054 \def\part{\TB@nosection\part\section}
1055 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1056   \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.

```

1057 \def\TBtocsectionfont{\normalfont}
1058 \newskip\TBtocsectionspace \TBtocsectionspace=1.0em\@plus\p@

```

---

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

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...

```

1059 %\def\l@part#1#2{\addpenalty{\@secpenalty}%
1060 % \addvspace{2.25em\@plus\p@}%
1061 % \begingroup
1062 % \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
1063 % {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1064 % \nobreak
1065 % \endgroup}
1066 %
1067 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1068 \addvspace{\TBtocsectionspace}%
1069 \@tempdima 1.5em
1070 \begingroup
1071 \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1072 \parfillskip\z@
1073 \TBtocsectionfont
1074 \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1075 \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1076 \endgroup}

```

### 3.15 Appendices

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

```

1077 \renewcommand\appendix{\par
1078 \renewcommand\thesection{\@Alph@c@section}%
1079 \setcounter{section}{0}%
1080 \if@numbersec
1081 \else
1082 \setcounter{secnumdepth}{1}%
1083 \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.

```

1084 \def\@tempa{appendix}
1085 \ifx\@tempa\@currentenv
1086 \expandafter\@appendix@env
1087 \fi
1088 }

```

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

```

1089 \newcommand\app@prefix@section{}
1090 \newcommand\@appendix@env[1][Appendix]{%
1091 \renewcommand\@secntformat[1]{\csname app@prefix@##1\endcsname
1092 \csname the##1\endcsname\quad}%
1093 \renewcommand\app@prefix@section{#1 }%
1094 }

```

Ending an appendix environment is pretty trivial...

```
1095 \let\endappendix\relax
```

### 3.16 References

If the sections aren't numbered, the natural tendency of the author to cross-reference (which, after all, is one of the things 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

```
1096 \def\TB@nolimelabel{%
1097   \def\@currentlabel{%
1098     \protect\TBWarning{%
1099       Invalid reference to numbered label on page \thepage
1100       \MessageBreak made%
1101     }%
1102     \textbf{?!?}%
1103   }%
1104 }
```

### 3.17 Title references

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

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

```
1105 \let\TB@@sect\@sect
1106 \let\TB@@ssect\@ssect
1107 \def\@sect#1#2#3#4#5#6[#7]#8{%
1108   \def\@currentlabelname{#7}%
1109   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1110 }
1111 \def\@ssect#1#2#3#4#5{%
1112   \def\@currentlabelname{#5}%
1113   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1114 }
```

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

```
1115 \def\label#1#{%
```

```

1116 \bsphack
1117 \let\label\@gobble
1118 \let\index\@gobble
1119 \if@filesw
1120 \protected@write\@auxout{}%
1121 {\string\newlabel{#1}{%
1122 {\@currentlabel}{\thepage}{\@currentlabelname}}}%
1123 }%
1124 \fi
1125 \esphack
1126 }%
1127 }

```

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

```

1128 \let\@currentlabelname\@empty

```

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

```

1129 \DeclareRobustCommand\ref[1]{\expandafter\@setref
1130 \csname r@#1\endcsname\@firstofthree{#1}}
1131 \DeclareRobustCommand\pageref[1]{\expandafter\@setref
1132 \csname r@#1\endcsname\@secondofthree{#1}}
1133 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1134 \csname r@#1\endcsname\@thirdofthree{#1}}
1135 \long\def\@firstofthree#1#2#3{#1}
1136 \long\def\@secondofthree#1#2#3{#2}
1137 \long\def\@thirdofthree#1#2#3{#3}

```

### 3.18 Float captions

By analogy with what we’ve just done to section titles and the like, we now do our best to discourage hyphenation within captions. We also typeset them in `\small`.

```

1138 \long\def\@makecaption#1#2{%
1139 \vskip\abovecaptionskip
1140 \sbox\@tempboxa{\small #1: #2}%
1141 \ifdim \wd\@tempboxa >\hsize
1142 \raggedright\hyphenpenalty=\@M \parindent=1em
1143 {\small \noindent #1: #2\par}%
1144 \else
1145 \global \@minipagefalse
1146 \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1147 \fi
1148 \vskip\belowcaptionskip}

```

Also use `\small` for the caption labels, and put the label itself (Figure xx) in bold.

```

1149 \def\fnun@figure{{\small \bf \figurename\nobreakspace\thefigure}}
1150 \def\fnun@table{{\small \bf \tablename\nobreakspace\thetable}}

```

### 3.19 Size changing commands

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

```

1151 \renewcommand\normalsize{%
1152   \setfontsize\normalsize\@xpt\@xipt
1153   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1154   \belowdisplayskip=\abovedisplayskip
1155   \abovedisplayshortskip=\z@\@plus 3\p@
1156   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1157 }
1158
1159 \renewcommand\small{%
1160   \setfontsize\small\@ixpt{11}%
1161   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1162   \belowdisplayskip=\abovedisplayskip
1163   \abovedisplayshortskip=\z@\@plus 2\p@
1164   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1165 }
1166 \renewcommand\footnotesize{%
1167   \setfontsize\footnotesize\@viipt{9.5}%
1168   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1169   \belowdisplayskip=\abovedisplayskip
1170   \abovedisplayshortskip=\z@\@plus 3\p@
1171   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1172 }

```

### 3.20 Lists and other text inclusions

```

1173 \def\@listi{%
1174   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1175   \itemsep=\parsep
1176   \listparindent=1em
1177 }
1178
1179 \def\@listii{%
1180   \leftmargin\leftmarginii
1181   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1182   \topsep=2\p@\@plus\p@\@minus\p@
1183   \parsep=\p@\@plus\p@\@minus\p@
1184   \itemsep=\parsep
1185   \listparindent=1em
1186 }
1187
1188 \def\@listiii{%
1189   \leftmargin=\leftmarginiii
1190   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1191   \topsep=\p@\@plus\p@\@minus\p@
1192   \parsep=\z@
1193   \itemsep=\topsep
1194   \listparindent=1em
1195 }
1196 \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.

```

1197 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1198   \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]

```

### 3.21 Some fun with verbatim

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

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

```
1199 %\let\@TB@verbatim\@verbatim
1200 \let\@TBverbatim\verbatim
1201 \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.)

```
1202 \def\verbatim{\par\obeylines
1203   \futurelet\reserved@a\@switch@sqbverbatim}
1204 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1205   \expandafter\@sqbverbatim\else
1206   \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1207 \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.

```
1208   \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.

```
1209   #1\@TBverbatim}
```

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

```
1210 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1211   \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1212   \trivlist \item\relax
1213   \if@minipage\else\vskip\parskip\fi
1214   \leftskip\@totalleftmargin\rightskip\z@skip
1215   \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1216   \@@par
1217   \@tempwafalse
```

```

1218 \def\par{%
1219   \if@tempswa
1220     \leavevmode \null \@@par\penalty\interlinepenalty
1221   \else
1222     \@tempswatrue
1223     \ifhmode\@@par\penalty\interlinepenalty\fi
1224   \fi}%
1225 \obeylines \verbatim@font \@noligs
1226 \let\do\@makeother \dospecials
1227 \everypar \expandafter{\the\everypar \unpenalty}%
1228 }%

```

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).

```

1229 \def\endverbatim{\@TBendverbatim
1230   \if@ruled\kern5\p@\hrule\endtrivlist\fi}

   \enablemetacode simply typesets3 something that looks (verbatim) like:
   <meta-text>

as:
   <meta-text>

1231 {\makeactive<
1232   \gdef<#1>{\reset@font\ensuremath{\langle}%
1233     \textit{#1}}%
1234   \ensuremath{\rangle}}
1235 }

```

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

```

1236 \let\if@ruled\iffalse

```

### 3.22 Bibliography

This is more or less copied verbatim from Glenn Paulley's *chicago.sty* (gnpaulle@bluebox.uwaterloo.ca). It produces an author-year citation style bibliography, using output from the `BIBTEX` style file based on that by Patrick Daly. It needs extra macros beyond those in standard `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:

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

---

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



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.

```
1237 \if@Harvardcite
1238 \let\@internalcite\cite
```

Normal forms.

```
1239 \def\cite{\def\@citesep{~}\@citesep{-1000}}%
1240 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1241 \def\citeauthoryear##1##2##3{##1, ##2\@internalcite}%
1242 \def\citeNP{\def\@citesep{~}\@citesep{-1000}}%
1243 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1244 \def\citeauthoryear##1##2##3{##1, ##2\@internalcite}%
1245 \def\citeN{\def\@citesep{~}\@citesep{-1000}}%
1246 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1247 \def\citeauthoryear##1##2##3{##1 (##2\@citedata}%
1248 \def\citeA{\def\@citesep{~}\@citesep{-1000}}%
1249 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1250 \def\citeauthoryear##1##2##3{##1\@internalcite}%
1251 \def\citeANP{\def\@citesep{~}\@citesep{-1000}}%
1252 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1253 \def\citeauthoryear##1##2##3{##1\@internalcite}}
```

Abbreviated forms (using *et al.*)

```
1254 \def\shortcite{\def\@citesep{~}\@citesep{-1000}}%
1255 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1256 \def\citeauthoryear##1##2##3{##2, ##3\@internalcite}%
1257 \def\shortciteNP{\def\@citesep{~}\@citesep{-1000}}%
1258 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1259 \def\citeauthoryear##1##2##3{##2, ##3\@internalcite}%
1260 \def\shortciteN{\def\@citesep{~}\@citesep{-1000}}%
1261 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1262 \def\citeauthoryear##1##2##3{##2 (##3\@citedata}%
1263 \def\shortciteA{\def\@citesep{~}\@citesep{-1000}}%
1264 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1265 \def\citeauthoryear##1##2##3{##2\@internalcite}%
1266 \def\shortciteANP{\def\@citesep{~}\@citesep{-1000}}%
1267 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1268 \def\citeauthoryear##1##2##3{##2\@internalcite}}
```

When just the year is needed:

```
1269 \def\citeyear{\def\@citesep{~}\@citesep{-1000}}%
1270 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1271 \def\citeauthoryear##1##2##3{##3\@citedata}%
1272 \def\citeyearNP{\def\@citesep{~}\@citesep{-1000}}%
1273 \def\@cite##1##2{(\@citesep{~}\@citesep{-1000}}%
1274 \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.

```
1275 \def\@citedata{%
1276 \ifnextchar [{\@tempwatrue\@citedatax}%
1277 {\@tempwafalse\@citedatax[]}%
1278 }
1279
```

```

1280 \def\@citedatax[#1]#2{%
1281 \if@files\immediate\write\@auxout{\string\citation{#2}}\fi%
1282 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1283   {\@citea\def\@citea{, }\@ifundefined% by Young
1284     {b@\@citeb}\{\bf ?}%
1285     \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1286 {\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.

```

1287 \def\@citex[#1]#2{%
1288 \if@files\immediate\write\@auxout{\string\citation{#2}}\fi%
1289 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1290   {\@citea\def\@citea{; }\@ifundefined% by Young
1291     {b@\@citeb}\{\bf ?}%
1292     \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1293 {\csname b@\@citeb\endcsname}}{\#1}}%

```

No labels in the bibliography.

```

1294 \def\@biblabel#1{}

```

Set length of hanging indentation for bibliography entries.

```

1295 \newlength{\bibhang}
1296 \setlength{\bibhang}{2em}

```

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

```

1297 \newdimen\bibindent
1298 \bibindent=1.5em
1299 \@ifundefined{refname}%
1300   {\newcommand{\refname}{References}}%
1301   {}%

```

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

```

1302 \def\thebibliography#1{%
1303   \let\TB@startsection\TB@safe@startsection
1304   \section*{\refname
1305     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1306   \list{[\arabic{enumi}]}{%
1307     \labelwidth\z@ \labelsep\z@
1308     \leftmargin\bibindent
1309     \itemindent -\bibindent
1310     \listparindent \itemindent
1311     \parsep \z@
1312     \usecounter{enumi}}
1313   \def\newblock{}
1314   \BibJustification
1315   \sfcode'\.=1000\relax
1316 }

```

etal Other bibliography odds and ends.

```

\bibentry 1317 \def\etal{et\,al.\@}
1318 \def\bibentry{%
1319   \smallskip
1320   \hangindent=\parindent

```

```

1321 \hangafter=1
1322 \noindent
1323 \sloppy
1324 \clubpenalty500 \widowpenalty500
1325 \frenchspacing
1326 }

```

`\bibliography` Changes made to accommodate TUB file naming conventions

```

\bibliographystyle 1327 \def\bibliography#1{%
1328   \if@filesw
1329     \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1330   \fi
1331   \@input{\jobname.bbl}%
1332 }
1333 \def\bibliographystyle#1{%
1334   \if@filesw
1335     \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1336   \fi
1337 }

```

`\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.

```

1338 \else
1339 \let\TB@thebibliography\thebibliography
1340 \def\thebibliography{%
1341   \let\TB@startsection\TB@safe@startsection
1342   \let\sloppy\BibJustification
1343   \TB@thebibliography}
1344 \fi

```

`\BibJustification` `\BibJustification` defines how the bibliography is to be justified. The Lamport default is simply “`\sloppy`”, but we regularly find some sort of ragged right setting is appropriate. (`\BibJustification` is nevertheless reset to its default value at the start of a paper.)

`\SetBibJustification`

`\TB@sloppy`

```

1345 \let\TB@sloppy\sloppy
1346 \let\BibJustification\TB@sloppy
1347 \newcommand{\SetBibJustification}[1]{%
1348   \renewcommand{\BibJustification}{#1}%
1349 }
1350 \ResetCommands\expandafter{\the\ResetCommands
1351   \let\BibJustification\TB@sloppy
1352 }

```

### 3.23 Registration marks

```

1353 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1354 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1355 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }

```

“T” marks centered on top and bottom edges of paper

```

1356 \def\ttopregister{\dlap{%
1357     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1358         \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1359     \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1360 \def\tbotregister{\ulap{%
1361     \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1362     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1363         \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1364 \def\ttopregister{\ttopregister}
1365 \def\tbotregister{\tbotregister}

```

### 3.24 Running heads

```

1366 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1367 \def\PrelimDraftfooter{%
1368     \dlap{\kern\textheight\kern3pc
1369         \rlap{\hb@xt@\pagewd{\midrttitle\hfil\midrttitle}}}
1370 }
1371

```

registration marks; these are temporarily inserted in the running head

```

1372 \def\MakeRegistrationMarks{}
1373 \def\UseTrimMarks{%
1374     \def\MakeRegistrationMarks{%
1375         \ulap{\rlap{%
1376             \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1377             \topregister\vskip \headmargin \vskip 10\p@}}}%
1378     }
1379
1380 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1381     \normalsize\cename normalshape\endcename\rm
1382     \rtitlex\quad\midrttitle \hfil \thepage}
1383 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1384     \normalsize\cename normalshape\endcename\rm
1385     \thepage\hfil\midrttitle\quad\rtitlex}
1386 \def\@oddfoot{}
1387 \def\@evenfoot{}
1388 \def\ps@headings{}
1389 \pagestyle{headings}

```

### 3.25 Output routine

Modified to alter \brokenpenalty across columns

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

```

1390 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1391     \global\setbox\@leftcolumn\box\@outputbox
1392     \global\brokenpenalty10000
1393     \else \global\@firstcolumntrue
1394         \global\brokenpenalty100
1395         \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1396             {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1397             \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats

```

```

1398      \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1399      \@whiles\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1400    \fi}

```

### 3.26 Font-related definitions and machinery

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

```

1401 \newif\ifFirstPar      \FirstParfalse
1402 \def\smc{\sc}
1403 \def\ninepoint{\small}
1404 \</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 `\@currsz`: 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. (Note that the order of examination of `\@currsz` is to get the commonest cases out of the way first.)

```

1405 (*common)
1406 \DeclareRobustCommand\SMC{%
1407   \ifx\@currsz\normalsize\small\else
1408   \ifx\@currsz\small\footnotesize\else
1409   \ifx\@currsz\footnotesize\scriptsize\else
1410   \ifx\@currsz\large\normalsize\else
1411   \ifx\@currsz\Large\large\else
1412   \ifx\@currsz\LARGE\Large\else
1413   \ifx\@currsz\scriptsize\tiny\else
1414   \ifx\@currsz\tiny\tiny\else
1415   \ifx\@currsz\huge\LARGE\else
1416   \ifx\@currsz\Huge\huge\else
1417     \small\SMC@unknown@warning
1418 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1419 }
1420 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: nonstandard
1421   text font size command -- using \string\small}}
1422 \newcommand\textSMC[1]{\SMC #1}

```

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

```

1423 \newcommand\acro[1]{\textSMC{#1}\@}
1424 \</common>

```

### 3.27 Miscellaneous definitions

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

```

1425 \*classtail\
1426 \def\xEdNote{{\EdNoteFont Editor's note:\enspace }}
1427 \def \EdNote{\@ifnextchar[%]
1428   {%
1429     \ifvmode
1430       \smallskip\noindent\let\@EdNote@\@EdNote@v
1431     \else
1432       \unskip\quad\def\@EdNote@{\unskip\quad}%
1433     \fi
1434     \@EdNote
1435   }%
1436   \xEdNote
1437 }
1438 \long\def\@EdNote[#1]{%
1439   [\thinspace\xEdNote\ignorespaces
1440   #1%
1441   \unskip\thinspace]%
1442   \@EdNote@
1443 }
1444 \def\@EdNote@v{\par\smallskip}

```

Macros for Mittelbach's self-documenting style

```

1445 \def\SelfDocumenting{%
1446   \setlength\textwidth{31pc}
1447   \onecolumn
1448   \parindent \z@
1449   \parskip 2\p@\@plus\p@\@minus\p@
1450   \oddsidemargin 8pc
1451   \evensidemargin 8pc
1452   \marginparwidth 8pc
1453   \toks@\expandafter{\@oddhead}%
1454   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1455   \toks@\expandafter{\@evenhead}%
1456   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1457   \def\ps@titlepage{%
1458   }
1459   \def\ps@titlepage{}
1460
1461   \long\def\@makefnmark#1{\parindent 1em\noindent\hb@xt@2em{}}%
1462   \llap{\@makefnmark}\null$\mskip5mu$#1}
1463
1464   %% \long\def\@makefnmark#1{\parindent 1em
1465   %%   \noindent
1466   %%   \hb@xt@2em{\hss\@makefnmark}%
1467   %%   \hskip0.27778\fontdimen6\textfont\z@\relax
1468   %%   #1%

```

```
1469 %% }
```

```
\creditfootnote Sometimes we want the label "Editor's Note:", sometimes not.
\supportfootnote
```

```
1470 \def\creditfootnote{\nomarkfootnote\xEdNote}
1471 \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.

```
1472 \gdef\nomarkfootnote#1#2{\begingroup
1473   \def\thefootnote{}%
1474   % no period, please, also no fnmark.
1475   \def\@makefnmark##1{##1}%
1476   \footnotetext{\noindent #1#2}%
1477   \endgroup
1478 }
```

### 3.28 Initialization

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

```
1479 \if@Harvardcite
1480   \AtBeginDocument{%
1481     \bibliographystyle{ltugbib}%
1482   }
1483 \fi
1484 \authornumber\z@
1485 \let\@signature\@defaultsignature
1486 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1487                                           configuration information}}{}
1488 \</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:

```
1489 (*ltugproccls)
1490 \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.

```
1491 \newif\if@proctw@column \@proctw@columntrue
1492 \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.

```
1493 \newif\if@proc@sober
1494 \newif\if@proc@numerable
1495 \DeclareOption{tug95}{%
1496   \@proc@soberfalse
```

```

1497 \@proc@numerablefalse
1498 }
1499 \DeclareOption{tug96}{%
1500 \@proc@sobertrue
1501 \@proc@numerablefalse
1502 }
1503 \DeclareOption{tug97}{%
1504 \@proc@sobertrue
1505 \@proc@numerabletrue
1506 }
1507 \DeclareOption{tug2002}{%
1508 \@proc@sobertrue
1509 \@proc@numerabletrue
1510 \let\if@proc@numbersec\iftrue
1511 \PassOptionsToClass{numbersec}{ltugboat}%
1512 }

```

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

```

1513 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1514 \PassOptionsToClass{numbersec}{ltugboat}%
1515 }
1516 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1517 \PassOptionsToClass{nonumber}{ltugboat}%
1518 }

```

`\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`.

```

1519 \newif\ifTB@title
1520 \DeclareOption{title}{\TB@titlettrue}
1521 \DeclareOption{notitle}{\TB@titlefalse}
1522 \AtBeginDocument{\stepcounter{page}}

```

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

```

1523 \DeclareOption{tugproc}{%
1524 \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1525 }

```

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

```

1526 \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...)

```

1527 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1528 {Loading ltugproc configuration information}}{}
1529 \@ifundefined{TUGprocExtraOptions}%
1530 {\let\TUGprocExtraOptions\empty}%
1531 {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}

```



`\tugProcYear` Now work out what year it is

```
1532 \@tempcnta\year
1533 \ifnum\@tempcnta<2000
1534   \divide\@tempcnta by100
1535   \multiply\@tempcnta by100
1536   \advance\@tempcnta-\year
1537   \@tempcnta-\@tempcnta
1538 \fi
```

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

```
1539 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1540             {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1541 \@tempa
1542 \ClassInfo{ltugproc}{Class believes year is
1543   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1544   \@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.

```
1545 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1546   \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.

```
1547 \ExecuteOptions\tug\tugProcYear,title{TUGprocExtraOptions}
1548 \ProcessOptions
1549 \if@proc@numbersec
1550   \if@proc@numerable
1551     \else
1552       \ClassWarning{\@tugclass}{This year’s proceedings may not have
1553         numbered sections}%
1554   \fi
1555 \fi
```

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

```
1556 \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 *TUGboat* proper. Note the tedious L<sup>A</sup>T<sub>E</sub>X bug-avoidance in the `\@TB@test@document` macro.

```
1557 \def\maketitle{%
1558   \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).

```
1559   \ifshortAuthor\else
1560     \global\let\rhAuthor\@empty
1561     \def\g@addto@rhAuthor##1{%
1562       \begingroup
1563       \toks@\expandafter{\rhAuthor}%
```

```

1564         \let\thanks\@gobble
1565         \protected@xdef\rhAuthor{\the\toks@##1}%
1566     \endgroup
1567 }%
1568 \getauthorlist@g@addto@rhAuthor
1569 \fi

    now, the real business of setting the title
1570 \ifTB@title
1571     \setcounter{footnote}{0}%
1572     \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1573     \if@proctw@column
1574         \twocolumn[\@maketitle]%
1575     \else
1576         \onecolumn
1577         \global\@topnum\z@
1578         \@maketitle
1579     \fi
1580 \@thanks
1581 \thispagestyle{TBproctitle}
1582 \fi
1583 \endgroup
1584 \TB@madetitletrue
1585 }
1586 \newif\ifTB@madetitle \TB@madetitlefalse

```

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

```

1587 \def\@TB@test@document{%
1588     \edef\@tempa{\the\everypar}
1589     \def \@tempb{\@nodocument}
1590     \ifx \@tempa\@tempb
1591         \@nodocument
1592     \fi
1593 }

```

`\AUTHORfont` Define the fonts for titles and things

```

\TITLEfont 1594 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1595 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1596 \def\addressfont {\small\rmfamily\mdseries\upshape}
1597 \def\netaddrfont {\small\ttfamily\mdseries\upshape}

```

`\aboveauthorskip` Some stretchable stuff to permit variability in page layout.

```

\belowauthorskip 1598 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
\belowabstractskip 1599 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1600 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

```

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

```

1601 \def\@maketitle{%
1602     {\parskip\z@
1603     \frenchspacing
1604     \TITLEfont\raggedright\noindent\@title\par
1605     \count@=0

```

```

1606     \loop
1607     \ifnum\count@<\authornumber
1608     \vskip\aboveauthorskip
1609     \advance\count@\@ne
1610     {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1611     \addressfont\theaddress{\number\count@}\endgraf
1612     {%
1613     \allowhyphens
1614     \hangindent1.5pc
1615     \netaddrfont\thenetaddress{\number\count@}\endgraf
1616     \hangindent1.5pc
1617     \thePersonalURL{\number\count@}\endgraf
1618     }%
1619     \repeat
1620 \vskip\belowauthorskip}%
1621 \if@abstract
1622   \centerline{\bfseries Abstract}%
1623   \vskip.5\baselineskip\rmfamily
1624   \list{}{\listparindent20\p@
1625     \itemindent\z@ \leftmargin4.875pc
1626     \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1627     \the\abstract@toks
1628   \endlist\global\@ignoretrue
1629 \fi
1630 \vskip\belowabstractskip
1631 \global\@afterindentfalse\aftergroup\@afterheading
1632 }

```

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

This restriction simply removed 1998/01/09

```

1633 %\def\thanks#1{\@bsphack\TBWarning{\string\thanks\space
1634 %          is not supported}\@esphack}

```

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

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

```

1635 \newtoks\abstract@toks \abstract@toks{}
1636 \let\if@abstract\iffalse
1637 \def\abstract{%

```

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

```

1638   \ifTB@madetitle
1639     \TBWarning{abstract environment after \string\maketitle}
1640   \fi
1641   \def\@abstract@{abstract}%
1642   \ifx\@currenvir\@abstract@

```

```

1643 \else
1644   \TError{\string\abstract\space is illegal:%
1645     \MessageBreak
1646     use \string\begin{\@abstract@} instead}%
1647     {\@abstract@\space may only be used as an environment}
1648 \fi
1649 \global\let\if@abstract\iftrue
1650 {\ifnum0='}\fi
1651 \@abstract@getbody}
1652 \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}`

```

1653 \long\def\@abstract@getbody#1\end{%
1654   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1655   \@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.

```

1656 \def\@abstract@findend#1{%
1657   \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.

```

1658   \ifx\@tempa\@abstract@
1659     \expandafter\@abstract@end
1660   \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)

```

1661     \def\@tempb{document}%
1662     \ifx\@tempa\@tempb
1663       \TError{\string\begin{\@abstract@}
1664         ended by \string\end{\@tempb}}%
1665       {You've forgotten \string\end{\@abstract@}}
1666     \else
1667       \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1668       \expandafter\expandafter\expandafter\@abstract@getbody
1669     \fi
1670 \fi}

```

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

```

1671 \def\@abstract@end{\ifnum0='{ \fi}%
1672   \expandafter\end\expandafter{\@abstract@}}

```

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

```

1673 \renewcommand{\makesignature}{\TBWarning
1674   {\string\makesignature\space is invalid in proceedings issues}}

```

```

\title We redefine the \title command, so as to set the \rhTitle command at the same
\TB@title 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.

1675 \renewcommand\title{\@dblarg\TB@title}
1676 \def\TB@title[#1]#2{\gdef\@title{#2}%
1677 \bgroup
1678 \let\thanks\@gobble
1679 \let\\\ %
1680 \protected@xdef\rhTitle{#1}%
1681 \egroup
1682 }

\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.

1683 \def\shortTitle #1{\def\rhTitle{#1}}
1684 \newif\ifshortAuthor
1685 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}

\ps@TBproctitle Now we define the running heads in terms of the \rh* commands.
\ps@TBproc 1686 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1687 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1688 \TB@definefeet
\TB@definefeet 1689 }
\pfoottext 1690 \def\ps@TBproc{%
\rfoottext 1691 \def\@oddhead{\MakeRegistrationMarks
1692 {%
1693 \hfil
1694 \def\{\unskip\ \ignorespaces}%
1695 \rmfamily\rhTitle
1696 }%
1697 }%
1698 \def\@evenhead{\MakeRegistrationMarks
1699 {%
1700 \def\{\unskip\ \ignorespaces}%
1701 \rmfamily\rhAuthor
1702 \hfil
1703 }%
1704 }%
1705 \TB@definefeet
1706 }
1707
1708 \advance\footskip8\p@ % for deeper running feet
1709
1710 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1711 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1712 {#2}}
1713 \def\TB@definefeet{%
1714 \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1715 \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1716 \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1717 \else\thepage\hfil\rfoottext\fi\dopagecommands}%

```

```

1718 }
1719
1720 \def\pfoottext{\smc Preprint}: Proceedings of the \volyr{} Annual Meeting}
1721 \def\rfoottext{\normalfont\TUB, \volx\Dash
1722   {Proceedings of the \volyr{} Annual Meeting}}
1723
1724 \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).

```

1725 \if@proc@numbersec
1726 \else
1727   \setcounter{secnumdepth}{0}
1728 \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.

```

1729 \if@proc@numbersec
1730 \else
1731   \if@proc@sober
1732     \def\section
1733       {\TB@nolimelabel
1734        \TB@startsection{{section}%
1735                          1%
1736                          \z@%
1737                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1738                          {6\p@}%
1739                          {\normalsize\bfseries\raggedright}}}
1740   \else
1741     \def\section
1742       {\TB@nolimelabel
1743        \TB@startsection{{section}%
1744                          1%
1745                          \z@%
1746                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1747                          {6\p@}%
1748                          {\large\bfseries\raggedright}}}
1749   \fi
1750   \def\subsection
1751     {\TB@nolimelabel
1752      \TB@startsection{{subsection}%
1753                        2%
1754                        \z@%
1755                        {6\p@\@plus 2\p@\@minus2\p@}%
1756                        {-5\p@\@plus -\fontdimen3\the\font}%
1757                        {\normalsize\bfseries}}}

```

```

1758 \def\subsubsection
1759     {\TB@nolimelabel
1760      \TB@startsection{\subsubsection}%
1761                      3%
1762                      \parindent%
1763                      \z@%
1764                      {-5\p@\@plus -\fontdimen3\the\font}%
1765                      {\normalsize\bfseries}}}
1766 \fi
1767 \end{tugproccls}

```

## 5 Plain TeX styles

```

1768 \*tugboatsty>
1769 % err...
1770 \end{tugboatsty}
1771 \*tugprocsty>
1772 % err...
1773 \end{tugprocsty}

```

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

```

1774 \*ltugboatsty>
1775 \obsoletefile{ltugboat.cls}{ltugboat.sty}
1776 \LoadClass{ltugboat}
1777 \end{ltugboatsty}
1778 \*ltugprocsty>
1779 \obsoletefile{ltugproc.cls}{ltugproc.sty}
1780 \LoadClass{ltugproc}
1781 \end{ltugprocsty}

```

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