The **tugboat** package*

The *TUGboat* team
(Distributed by Robin Fairbairns)

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Contents

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1 Document preambles

```
 1 ⟨ltugboatcls | ltugproccls | ltugcomn⟩\NeedsTeXFormat{LaTeX2e}[1994/12/01]
 2 ⟨*dtx⟩
 3 \ProvidesFile                {tugboat.dtx}
 4 ⟨/dtx⟩
 5 ⟨ltugboatcls⟩\ProvidesClass  {ltugboat}
 6 ⟨ltugproccls⟩\ProvidesClass  {ltugproc}
 7 ⟨ltugboatsty⟩\ProvidesPackage{ltugboat}
 8 ⟨ltugprocsty⟩\ProvidesPackage{ltugproc}
 9 ⟨ltugcomn⟩   \ProvidesPackage{ltugcomn}
10                   [2009/06/21 v2.6
11 ⟨ltugboatcls⟩                      TUGboat journal class%
12 ⟨ltugproccls⟩                      TUG conference proceedings class%
13 ⟨ltugboatsty | ltugprocsty⟩        TUG compatibility package%
14 ⟨ltugcomn⟩                         TUGboat 'common macros' package%
15 ⟨*dtx⟩
16                                    TUG macros source file%
17 ⟨/dtx⟩
18                   ]
19 ⟨*dtx⟩
20 \newif\ifoldlongtable
21 ⟨/dtx⟩
```

2 Introduction

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

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).

`\AllTeX`	(LA)TEX
`\AMS`	American Mathematical Society
`\AmSTeX`	
`\aw`	A-W (abbreviation for Addison-Wesley)
`\API`	
`\AW`	Addison-Wesley
`\BibTeX`	
`\CandT`	Computers & Typesetting
`\ConTeXt`	ConTEXt
`\Cplusplus`	C++
`\DTD`	
`\DVI`	
`\DVD`	
`\DVIPDFMx`	DVIPDFMx
`\DVItoVDU`	DVItoVDU
`\ECMA`	
`\EPS`	
`\eTeX`	ε-TEX
`\ExTeX`	ε_χTEX
`\Ghostscript`	
`\Hawaii`	Hawai'i
`\HTML`	
`\ISBN`	ISBN
`\ISO`	
`\ISSN`	ISSN
`\JTeX`	
`\JoT`	The Joy of TEX
`\LaTeX`	
`\LyX`	
`\MacOSX`	Mac OS X
`\MathML`	
`\Mc`	M with raised c
`\MF`	METAFONT
`\mf`	METAFONT
`\MFB`	The Metafont book
`\MP`	METAPOST
`\mp`	MetaPost (in text only: remains '$\mp$' in maths)
`\OMEGA`	Omega 'logo' (Ω)
`\OCP`	Omega compiled process
`\OOXML`	
`\OTP`	Omega translation process
`\mtex`	multilingual TEX
`\NTS`	New Typesetting System
`\pcMF`	pcMF
`\PCTeX`	
`\pcTeX`	

`\Pas`	Pascal
`\PiCTeX`	
`\plain`	plain (in typewriter font)
`\POBox`	P. O. Box
`\PS`	PostScript (with hyphenation)
`\SC`	Steering Committee
`\SGML`	SGML
`\SliTeX`	
`\slMF`	Metafont (slanted) — deprecated: use `\textsl` instead
`\stTeX`	TeX for the Atari ST
`\SVG`	
`\TANGLE`	
`\TB`	The TeXbook
`\TeX`	(Although nearly every package defines this, most — including plain — are missing the space-factor adjustment)
`\TeXhax`	
`\TeXMaG`	(defunct)
`\TeXtures`	
`\TeXXeT`	
`\Thanh`	
`\TFM`	TFM
`\TUB`	*TUGboat*
`\TUG`	TeX Users Group
`\UNIX`	
`\UTF`	
`\VAX`	
`\VnTeX`	
`\VorTeX`	
`\XeT`	
`\XeTeX`	reflected and lowered first 'E'
`\XeLaTeX`	with extra space before 'L'
`\XML`	
`\WEB`	
`\WEAVE`	
`\WYSIWYG`	

Macros for things that are slightly more significant.

`\NoBlackBoxes`	turns off marginal rules marking overfull boxes
`\BlackBoxes`	turns them back on
`\newline`	horizontal glue plus a break
`\ifundefined#1`	checks argument with `\csname` against `\relax`
`\topsmash`	smashes above baseline (from AMSTeX)
`\botsmash`	smashes below baseline (from AMSTeX)

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\smash	smashes both (from plain)
\ulap	lap upwards
\dlap	lap downwards
\xlap	reference point at center horizontally; 0 width
\ylap	reference point at center vertically; 0 height, depth
\zlap	combination \xlap and \ylap
\basezero	to avoid insertion of baselineskip and lineskip glue
\nullhrule	empty \hrule
\nullvrule	empty \vrule
\makestrut[#1;#2]	ad hoc struts; #1=height, #2=depth
\today	today's date
\SetTime	converts \time to hours, minutes
\now	displays time in hours and minutes
\Now	shows current date and time
\ifPrelimDraft	flag to indicate status as preliminary draft
\rtitlex	*TUGboat* volume and number info for running head
\midrtitle	information for center of running head
\HorzR@gisterRule	pieces of registration marks ('trimmarks')
\DownShortR@gisterRule	
\UpShortR@gisterRule	
\ttopregister	top registration line with 'T' in center
\tbotregister	bottom registration line with inverted 'T' in center
\topregister	register actually used
\botregister	
\raggedskip	parameters used for ragged settings
\raggedstretch	
\raggedparfill	
\raggedspaces	
\raggedright	
\raggedleft	
\raggedcenter	
\normalspaces	
\raggedbottom	
\bull	square bullet
\cents	'cents' sign
\Dag	superscripted dagger
\careof	c/o
\sfrac	slashed fraction (arguments optionally separated by a slash)
\cs	control seqence name
	\cs{name}→\name
\env	environment name
	\env{name}→\begin{name}

`\meta`	meta-argument name
	`\meta{name}`→⟨*name*⟩
`\dash`	en-dash surrounded by thinspaces; only breakable AFTER
`\Dash`	em-dash, as above
`\hyph`	permit automatic hyphenation after an actual hyphen
`\slash`	'breakable' slash
`\nth`	for obtaining '1st', '2nd', 3rd, etc.
`\tubissue`	gets `\TUB` followed by volume and issue numbers
`\xEdNote`	Editor's Note:
`\Review:`	Review: (for title of book review article)
`\reviewitem`	begin data for item being reviewed
`\revauth`	with one argument, author(s) of item being reviewed
`\revtitle`	with one argument, title of . . .
`\revpubinfo`	with one argument, other info pertaining to . . .
`\endreviewitem`	end data for item being reviewed
`\booktitle`	with one argument, format book title in text
`\Input`	`\input` with some other bookkeeping for case where multiple articles are put together
`\TBremark`	reminder to *TUGboat* editorial staff
`\TBEnableRemarks`	enable `\TBremarks` (normally suppressed)
`\pagexref`	used to write out page numbers to screen and
`\pagexrefON`	external files
`\pagexrefOFF`	
`\xrefto`	used for symbolic cross-reference to other pages
`\xreftoON`	in *TUGboat*
`\xreftoOFF`	
`\TBdriver`	marks code which only takes effect when articles are run together in a driver file
`\signaturemark`	items for signatures
`\signaturewidth`	

3   LATEX 2$_\varepsilon$ *TUGboat* class file

3.1   Setup and options

Check for reloading. Hmmm. . . Does this happen with LATEX 2$_\varepsilon$ 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 ⟨∗ltugboatcls⟩
23 \csname tugstyloaded@\endcsname
24 \def\tugstyloaded@{\tugstyinit\endinput}
```

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

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

Warnings/error messages/information messages — if we're using LaTeX 2_ε 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 LaTeX); option `harvardcite` specifies the author-date citation mechanism defined in section 3.23 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}
```

Minimal running headers/footers contain just the TUGboat volume/issue identification and page number. 'runningfull' is the default, and includes title and author.

```
68 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
69 \DeclareOption{runningfull}{\AtEndOfClass{\@tubrunningfull}}
```

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

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

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

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

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

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

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

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

If Ulrik Vieth's `mflogo.sty` is around, we'll use it. Otherwise (pro tem, at least) we'll warn the user and define the absolute minimum of machinery that *TUGboat* requires (that which was used prior to the invention of LaTeX 2_ε).

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

3.2   Resetting at start of paper

\ResetCommands
\AddToResetCommands
\StartNewPaper

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

```
107 \newtoks\ResetCommands
```

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

3.3 Helpful shorthand (common code with Plain styles)

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

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

```
141 \def\savecat#1{%
142   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}}
143 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
144 ⟨!latex⟩\savecat\@
145 ⟨!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.

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

To distinguish between macro files loaded

```
150 \def\plaintubstyle{plain}
151 \def\latextubstyle{latex}
```

Control sequences that were first defined in LaTeX 2_ε of 1995/06/01 (or later), but which we merrily use. Only define if necessary:

```
152 \providecommand\hb@xt@{\hbox to}
153 \providecommand\textsuperscript[1]{\ensuremath{\m@th
154                            ^{\mbox{\fontsize\sf@size\z@
155                                \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.

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

```
178 %
179 \def\CandT{\textsl{Computers \& Typesetting}}
180 \def\CJK{\acro{CJK}}
```

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

```
181 \newcommand\ConTeXt{C\kern-.0333emon\-\kern-.0667em\TeX\kern-.0333emt}
182 \newcommand\Cplusplus{C\plusplus}
183 \newcommand\plusplus{\raisebox{.7ex}{$_{++}$}}
184 \def\CSS{\acro{CSS}}
185 \def\CTAN{\acro{CTAN}}
186 \def\DTD{\acro{DTD}}
187 \def\DVD{\acro{DVD}}
188 \def\DVI{\acro{DVI}}
189 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
190 \def\DVItoVDU{DVIto\kern-.12em VDU}
191 \def\ECMA{\acro{ECMA}}
192 \def\EPS{\acro{EPS}}
193 \DeclareRobustCommand\eTeX{\ensuremath{\varepsilon}-\kern-.125em\TeX}
194 \DeclareRobustCommand\ExTeX{%
195     \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}
196 \def\FAQ{\acro{FAQ}}
197 \def\FTP{\acro{FTP}}
198 \def\Ghostscript{Ghost\-script}
199 \def\GNU{\acro{GNU}}
200 \def\GUI{\acro{GUI}}
201 \def\Hawaii{Hawai'i}
202 \def\HTML{\acro{HTML}}
203 \def\HTTP{\acro{HTTP}}
204 \def\IEEE{\acro{IEEE}}
205 \def\ISBN{\acro{ISBN}}
206 \def\ISO{\acro{ISO}}
207 \def\ISSN{\acro{ISSN}}
208 \def\JPEG{\acro{JPEG}}
209 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
210 \def\JoT{\textsl{The Joy of \TeX}}
211 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
212                          $\m@th$\fontsize\sf@size\z@\selectfont
213                          $\m@th\mathcal{A}$}%
214     \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
215     {$\m@th\mathcal{S}$}-\TeX}
216 % This code
217 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
218 % example) to propagate into the raised (small) 'A':
219 %     \begin{macrocode}
220 \newcommand{\La}%
221     {L\kern-.36em
222         {\setbox0\hbox{T}%
223          \vbox to\ht0{\hbox{$\m@th$%
224                          \csname S@\f@size\endcsname
225                          \fontsize\sf@size\z@
```

12

```
226                            \math@fontsfalse\selectfont
227                            A}%
228                       \vss}%
229          }}
```

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.

```
230 ⟨!latex⟩ \def\LaTeX{\La\kern-.15em\TeX}
231 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
232 \def\MacOSX{Mac\,\acro{OS\,X}}
233 \def\MathML{Math\acro{ML}}
234 \def\Mc{\setbox\TestBox=\hbox{M}M\vbox
235    to\ht\TestBox{\hbox{c}\vfil}} %  for Robert McGaffey
```

If we're running under LATEX 2_ε, 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`

```
236 \def\mf{\textsc{Metafont}}
237 \def\MFB{\textsl{The \MF book}}
238 \let\TB@@mp\mp
239 \DeclareRobustCommand\mp{\ifmmode\TB@@mp\else MetaPost\fi}
240 %
241 % In order that the \cs{OMEGA} command will switch to using the TS1
242 % variant of the capital Omega character if \texttt{textcomp.sty} is
243 % loaded, we define it in terms of the \cs{textohm} command.  Note
244 % that this requires us to interpose a level of indirection, rather
245 % than to use \cs{let}\dots
246 %
247 %     \begin{macrocode}
248 \DeclareTextSymbol{\textohm}{OT1}{'012}
249 \DeclareTextSymbolDefault{\textohm}{OT1}
250 \newcommand\OMEGA{\textohm}
251 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
252 \def\OOXML{\acro{OOXML}}
253 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
254 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}
```

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

```
255 \DeclareRobustCommand\NTS{\ensuremath{\mathcal{N}\mkern-4mu
256    \raisebox{-0.5ex}{$\mathcal{T}$}\mkern-2mu \mathcal{S}}}
257 \def\Pas{Pascal}
258 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
259 \def\PCTeX{PC\thinspace\TeX}
260 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
261 \def\PDF{\acro{PDF}}
262 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
263 \def\PiCTeX{\PiC\kern-.11em\TeX}
```

```
264 \def\PGF{\acro{PGF}}
265 \def\PHP{\acro{PHP}}
266 \def\plain{\texttt{plain}}
267 \def\PNG{\acro{PNG}}
268 \def\POBox{P.\thinspace O.~Box }
269 \def\PS{{Post\-Script}}
270 \def\PSTricks{\acro{PST}ricks}
271 \def\RTF{\acro{RTF}}
272 \def\SC{Steering Committee}
273 \def\SGML{\acro{SGML}}
274 \def\SliTeX{\textrm{S\kern-.06em\textsc{l\kern-.035emi}%
275                        \kern-.06em\TeX}}
276 \def\slMF{\textsl{\MF}} % should never be used
277 \def\SQL{\acro{SQL}}
278 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
279 \def\STIX{\acro{STIX}}
280 \def\SVG{\acro{SVG}}
281 \def\TANGLE{\texttt{TANGLE}\@}
282 \def\TB{\textsl{The \TeX book}}
283 \def\TIFF{\acro{TIFF}}
284 \def\TP{\textsl{\TeX}: \textsl{The Program}}
285 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
286 \def\TeXhax{\TeX hax}
287 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
288     \kern-.2267emG\@}
289 \def\TeXtures{\textit{Textures}}
290 \let\Textures=\TeXtures
291 \def\TeXXeT{\TeX-{}-\XeT}
292 \def\TFM{\acro{TFM}}
293 \def\Thanh{H\`an~Th\^e\llap{\raise 0.5ex\hbox{\'{}}}~Th\`anh}
294 \def\TikZ{Ti{\em k}Z}
295 \def\ttn{\textsl{TTN}\@}
296 \def\TTN{\textsl{\TeX{} and TUG News}}
297 \let\texttub\textsl              % redefined in other situations
298 \def\TUB{\texttub{TUGboat}}
299 \def\TUG{\TeX\ \UG}
300 \def\tug{\acro{TUG}}
301 \def\UG{Users Group}
302 \def\UNIX{\acro{UNIX}}
303 \def\UTF{\acro{UTF}}
304 \def\VAX{V\kern-.12em A\kern-.1em X\@}
305 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
306 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
307 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
308 \def\XML{\acro{XML}}
309 \def\WEB{\texttt{WEB}\@}
310 \def\WEAVE{\texttt{WEAVE}\@}
311 \def\WYSIWYG{\acro{WYSIWYG}}
```

14

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`.)

```
312 \def\tubreflect#1{%
313   \@ifundefined{reflectbox}{%
314     \TBerror{A graphics package must be loaded for \string\XeTeX}%
315   }{%
316     \ifdim \fontdimen1\font>0pt
317       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
318     \else
319       \reflectbox{#1}%
320     \fi
321   }%
322 }
323 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
324 \DeclareRobustCommand\Xe[1]{\leavevmode
325   \tubhideheight{\hbox{X%
326     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
327     \lower\dp0\hbox{\raise\dp1\hbox{\kern-.125em\tubreflect{E}}}%
328     \kern-.1667em #1}}}
329 \def\XeTeX{\Xe\TeX}
330 \def\XeLaTeX{\Xe{\,\LaTeX}}
331 %
332 \def\XHTML{\acro{XHTML}}
333 \def\XSLT{\acro{XSLT}}
```

3.5 General typesetting rules

```
334 \newlinechar='\^^J
335 \normallineskiplimit=\p@
336 \clubpenalty=10000
337 \widowpenalty=10000
338 \def\NoParIndent{\parindent=\z@}
339 \newdimen\normalparindent
340 \normalparindent=20\p@
341 \def\NormalParIndent{\global\parindent=\normalparindent}
342 \NormalParIndent
343 \def\BlackBoxes{\overfullrule=5\p@}
344 \def\NoBlackBoxes{\overfullrule=\z@}
345 \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 `\netaddress`es, which typically occur when `\raggedright` is set, but which need to be allowed to break at their artificial discretionaries.

```
346 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
347   \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
```

15

348 `\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 LaTeX temporaries for some (or all) of the `\T@st*` ones.

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

349 `\newbox\T@stBox`   `\newbox\TestBox`
350 `\newcount\T@stCount`   `\newcount\TestCount`
351 `\newdimen\T@stDimen`   `\newdimen\TestDimen`
352 `\newif\ifT@stIf`   `\newif\ifTestIf`

Control sequence existence test, stolen from TeXbook exercise 7.7 (note that this provides functionality that in some sense duplicates something within LaTeX).

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

LaTeX conventions which are also useful here.

354 `⟨*!latex⟩`
355   `\let\@@input\input`
356   `\def\iinput#1{\@@input#1 }`
357   `\def\@inputcheck{\if\@nextchar\bgroup`
358   `\expandafter\iinput\else\expandafter\@@input\fi}`
359   `\def\input{\futurelet\@nextchar\@inputcheck}`
360 `⟨/!latex⟩`

Smashes repeated from AMS-TeX; plain TeX implements only full `\smash`.

361 `\newif\iftop@`   `\newif\ifbot@`
362 `\def\topsmash{\top@true\bot@false\smash@}`
363 `\def\botsmash{\top@false\bot@true\smash@}`
364 `\def\smash{\top@true\bot@true\smash@}`
365 `\def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%`
366   `\else\let\next\makesm@sh\fi \next }`
367 `\def\finsm@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}`

Vertical 'laps'; cf. `\llap` and `\rlap`

368 `\long\def\ulap#1{\vbox to \z@{\vss#1}}`
369 `\long\def\dlap#1{\vbox to \z@{#1\vss}}`

And centered horizontal and vertical 'laps'

370 `\def\xlap#1{\hb@xt@\z@{\hss#1\hss}}`
371 `\long\def\ylap#1{\vbox to \z@{\vss#1\vss}}`
372 `\long\def\zlap#1{\ylap{\xlap{#1}}}`

Avoid unwanted vertical glue when making up pages.

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

Empty rules for special occasions

```
374 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
375 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

```
377 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
378        \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
379            \vss\hb@xt@#2{\vrule \@width\T@stDimen
380                \hfil\makestrut[#1;\z@]%
381                \vrule \@width\T@stDimen}\vss
382            \hrule \@height\T@stDimen \@depth\z@}}
```

Today's date, to be printed on drafts. Based on TEXbook, p.406.

```
383 ⟨*!latex⟩
384 \def\today{\number\day\space \ifcase\month\or
385        Jan \or Feb \or Mar \or Apr \or May \or Jun \or
386        Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
387        \number\year}
388 ⟨/!latex⟩
```

Current time; this may be system dependent!

```
389 \newcount\hours
390 \newcount\minutes
391 \def\SetTime{\hours=\time
392        \global\divide\hours by 60
393        \minutes=\hours
394        \multiply\minutes by 60
395        \advance\minutes by-\time
396        \global\multiply\minutes by-1 }
397 \SetTime
398 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
399 \def\Now{\today\ \now}
400 \newif\ifPrelimDraft
401 \def\midrtitle{\ifPrelimDraft {\textsl{preliminary draft, \Now}}\fi}
```

3.7   Ragged right and friends

\raggedskip
\raggedstretch
\raggedparfill
\raggedspaces

Plain TEX'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 TEX and of LATEX.

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

Some applications may have to add stretch, in order to avoid all overfull boxes. We define the following uses of the above skips, etc.

```
406 \def\raggedright{%
407   \nohyphens
408   \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
409   \parfillskip=\raggedparfill
410 }
411 \def\raggedleft{%
412   \nohyphens
413   \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
414   \parfillskip=\z@skip
415 }
416 \def\raggedcenter{%
417   \nohyphens
418   \leftskip=\raggedskip\@plus\raggedstretch
419   \rightskip=\leftskip \raggedspaces
420   \parindent=\z@ \parfillskip=\z@skip
421 }
422 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}
```

Miscellaneous useful stuff. Note that LaTeX 2$_\varepsilon$ defines a robust \,, but that we provide a new definition of ~ by redefining its robust underpinnings[1] (based on the version in AMS-TeX — the LaTeX 2$_\varepsilon$ version has \leavevmode and doesn't care about surrounding space).

```
423 \DeclareRobustCommand{\nobreakspace}{%
424   \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...)

```
425 \def\boxcs#1{\box\csname#1\endcsname}
426 \def\setboxcs#1{\setbox\csname#1\endcsname}
427 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
428 \let\gobble\@gobble
429 \def\vellipsis{%
430   \leavevmode\kern0.5em
431   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
432   }
433 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
434 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
435 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
436                /\kern-.125em\smash{\lower.3ex\hbox{o}}} \ignorespaces}
```

---

[1] \DeclareRobustCommand doesn't mind redefinition, fortunately

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```
437 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
438 %
439 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}%
440                                            {\@sfrac{#1}/}}
441 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
442         \hbox{$\m@th\mbox{\fontsize\sf@size\z@
443                         \selectfont#1}$}\kern-.1em
444         /\kern-.15em\lower.25ex
445          \hbox{$\m@th\mbox{\fontsize\sf@size\z@
446                         \selectfont#2}$}}
447 %
448 % don't stay bold in description items, bold italic is too weird.
449 \DeclareRobustCommand\meta[1]{%
450   \ensuremath{\langle}%
451   \ifmmode \mbox\bgroup \fi % if in math
452   {\it #1}% no typewriter italics, please
453   \ifmmode \egroup \fi
454   \ensuremath{\rangle}%
455 }
456 %
457 \DeclareRobustCommand\cs[1]{\texttt{\char'\\#1}}
458 %
459 \DeclareRobustCommand\env[1]{%
460   \cs{begin}\texttt{\char'\{#1\char'\}}}
461 %
462 \def\thinskip{\hskip 0.16667em\relax}
```

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

```
463 \def\endash{--}
464 \def\emdash{\endash-}
465 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
466 \def\dash{\d@sh\nobreak\endash}
467 \def\Dash{\d@sh\nobreak\emdash}
468 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
469 \def\rdash{\d@sh\nobreak\endash}
470 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
471 \def\Rdash{\d@sh\nobreak\emdash}
```

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

```
472 \def\hyph{-\penalty\z@\hskip\z@skip }
473 \def\slash{/\penalty\z@\hskip\z@skip }
```

Adapted from `comp.text.tex` posting by Donald Arseneau, 26 May 93. LaTeX2_ε-isation added by Robin Fairbairns. Destroys both the `TestCounts`.

```
474 \def\nth#1{%
475     \def\reserved@a##1##2\@nil{\ifcat##1n%
476         0%
477         \let\reserved@b\ensuremath
```

```
478        \else##1##2%
479            \let\reserved@b\relax
480        \fi}%
481     \TestCount=\reserved@a#1\@nil\relax
482     \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
483     \T@stCount=\TestCount
484     \divide\T@stCount by 100 \multiply\T@stCount by 100
485     \advance\TestCount by-\T@stCount        % n mod 100
486     \ifnum\TestCount >20 \T@stCount=\TestCount
487       \divide\T@stCount by 10 \multiply\T@stCount by 10
488       \advance\TestCount by-\T@stCount    % n mod 10
489     \fi
490      \reserved@b{#1}%
491        \textsuperscript{\ifcase\TestCount th%    0th
492                         \or    st%               1st
493                         \or    nd%               2nd
494                         \or    rd%               3rd
495                         \else th%                nth
496                         \fi}%
497 }
```

One more accent.

```
498 \def\r#1{\accent"17 #1}
```

3.8   Reviews

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

```
499 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
500 \def\@Review:{\@ifnextchar[%
501   {\@Rev}%
502   {\@Rev[Book review]}}
503 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
504                                     \slshape\mdseries#2}}
505 \def\reviewitem{\addvspace{\BelowTitleSkip}%
506   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
507   \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
508   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
509 }
510 \def\endreviewitem{{\noindent\interlinepenalty=10000
511   \therevauth\therevtitle\therevpubinfo\endgraf}%
512   \vskip\medskipamount
513 }
514 \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.

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

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

For LATEX use, define a version of the issue declaration that can take or leave the old plain syntax

```
533 ⟨!latex⟩\def\tubissue#1(#2)%
534 ⟨*latex⟩
535 \def\tubissue#1{\@ifnextchar(%
536   {\@tubissue@b{#1}}
537   {\@tubissue@a{#1}}}
538 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
539 \def\@tubissue@a#1#2%
540 ⟨/latex⟩
541   {\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`

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

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

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

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

```
565 \let\TBremark=\gobble
```

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

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

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

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

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

```
568 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
569 \newread\@altfilenames
```

```
570 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
571   \ifeof\@altfilenames\let\@result\relax\else
572   \def\@result{\@@input\jobname.fln }\fi
573   \immediate\closein\@altfilenames
574   \@result}
575 \@readFLN
576 \everyjob=\expandafter{\the\everyjob\@readFLN}
577 \InputIfFileExists{\jobname.fln}%
578     {\TBInfo{Reading alternative file file \jobname.fln}}{}
```

The following needs to work entirely in TeX's mouth

```
579 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
580   #1\else\csname file@@#1\endcsname\fi}
581 \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.

```
582 ⟨*!latex⟩
583 \def\pagexrefON#1{%
584        \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
585        \write\ppoutfile{%
586                \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
587        }
588 \def\PageXrefON#1{%
589        \immediate\write-1{\def\expandafter
590                        \noexpand\csname#1\endcsname{\number\pageno}}%
591        \immediate\write\ppoutfile{\def\expandafter
592                        \noexpand\csname#1\endcsname{\number\pageno}}}
593 ⟨/!latex⟩
594 ⟨*latex⟩
595 \def\pagexrefON#1{%
596        \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
597        \write\ppoutfile{%
598                \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
599        }
600 \def\PageXrefON#1{%
601        \immediate\write-1{\def\expandafter
602                        \noexpand\csname#1\endcsname{\number\c@page}}%
603        \immediate\write\ppoutfile{\def\expandafter
604                        \noexpand\csname#1\endcsname{\number\c@page}}}
605 ⟨/latex⟩
606 \def\pagexrefOFF#1{}
607 \let\pagexref=\pagexrefOFF
608 \def\PageXrefOFF#1{}
609 \let\PageXref=\PageXrefOFF
610 \def\xreftoON#1{%
611   \ifundefined{#1}%
612     ???\TBremark{Need cross reference for #1.}%
```

```
613    \else\csname#1\endcsname\fi}
614 \def\xreftoOFF#1{???}
615 \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.

```
616 \let\TBdriver\gobble
```

Some hyphenation exceptions:

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

3.10 Page dimensions, glue, penalties etc

```
655 \textheight 54pc
656 \textwidth 39pc
657 \columnsep 1.5pc
658 \columnwidth 18.75pc
659 \parindent \normalparindent
660 \parskip \z@ % \@plus\p@
661 \leftmargini 2em
662 \leftmarginv .5em
663 \leftmarginvi .5em
664 \oddsidemargin \z@
665 \evensidemargin \z@
666 \topmargin -2.5pc
667 \headheight 12\p@
668 \headsep 20\p@
669 \marginparwidth 48\p@
670 \marginparsep 10\p@
671 \partopsep=\z@
672 \topsep=3\p@\@plus\p@\@minus\p@
673 \parsep=3\p@\@plus\p@\@minus\p@
674 \itemsep=\parsep
675 \twocolumn
676 \newdimen\pagewd          \pagewd=39pc
677 \newdimen\trimwd          \trimwd=\pagewd
678 \newdimen\trimlgt         \trimlgt=11in
679 \newdimen\headmargin      \headmargin=3.5pc
```

In LATEX 2$_\varepsilon$, twoside option is forced on when `article.cls` is loaded.

3.11 Messing about with the LATEX logo

Barbara Beeton's pleas for LATEX logos that look right in any font shape provoked me to generate the following stuff that is configurable.

Here's the command for the user to define hir own new version. The arguments are font family, series and shape, and then the two kern values used in placing the raised 'A' of LATEX.

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

The default values are as used in the source of LATEX itself:

```
682 \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):

```
683 \DeclareLaTeXLogo{cmss}{bx}n{.3}{.15}
684 \DeclareLaTeXLogo{cmr}m{it}{.3}{.27}
685 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
686 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
687 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
688 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a
689     \csname @LaTeX@\f@family/\f@series/\f@shape\endcsname
690     \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
691     \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.

```
692 \newcommand\@LaTeX[2]{L\kern-#1em
693         {\sbox\z@ T%
694          \vbox to\ht0{\hbox{$\m@th$%
695                              \csname S@\f@size\endcsname
696                              \fontsize\sf@size\z@
697                              \math@fontsfalse\selectfont
698                              A}%
699                       \vss}%
700         }%
701         \kern-#2em%
702         \TeX}
```

3.12 Authors, contributors, addresses, signatures

An article may have several authors (of course), so we permit an `\author` command for each of them. The names are then stored in a set of `\csname`s 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.

```
703 \def\theauthor#1{\csname theauthor#1\endcsname}
704 \def\theaddress#1{\csname theaddress#1\endcsname}
705 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
706 \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.

```
707 ⟨!latex⟩\newcount\@tempcnta
708 \def\@defaultauthorlist{%
709     \@getauthorlist\@firstofone
710 }
```

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

```
711 \def\@getauthorlist#1{%
712   \count@\authornumber
713   \advance\count@ by -2
714   \@tempcnta0
```

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

```
715   \loop
716     \ifnum\count@>0
717       \advance\@tempcnta by \@ne
718       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
719       \advance\count@ by \m@ne
720   \repeat
721   \count@\authornumber
722   \advance\count@ by -\@tempcnta
723   \ifnum\authornumber>0
```

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

```
724     \ifnum\count@>1
725       \count@\authornumber
726       \advance\count@ by \m@ne
727       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
728     \fi
```

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

```
729     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
730   \fi
731 }
```

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...)

```
732 \def\signature#1{\def\@signature{#1}}
733 \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`

```
734 \def\@defaultsignature{{%
735     \let\thanks\@gobble
736     \ifnum\authornumber<0
```

if `\authornumber`< 0, we are in a contributor's section

```
737       \medskip
738       \frenchspacing
```

```
739        \signaturemark
740        \theauthor{\number\authornumber}\\
741        \theaddress{\number\authornumber}\\
742        \allowhyphens
743        \thenetaddress{\number\authornumber}\\
744        \thePersonalURL{\number\authornumber}\\
745     \else
```

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

```
746        \count@=0
747        \loop
748          \ifnum\count@<\authornumber
749            \medskip
750            \advance\count@ by \@ne
751            \signaturemark
752            \theauthor{\number\count@}\\
753            \theaddress{\number\count@}\\
754            {%
755              \allowhyphens
756              \thenetaddress{\number\count@}\\
757              \thePersonalURL{\number\count@}\\
758            }%
759        \repeat
760     \fi
761   }%
762 }
763 \newdimen\signaturewidth   \signaturewidth=12pc
```

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

```
764 \newcommand\makesignature[1][\medskipamount]{%
```

check the value the user has put in \signaturewidth: it may be at most 1.5pc short of \columnwidth

```
765   \@tempdima\signaturewidth
766   \advance\@tempdima 1.5pc
767   \ifdim \@tempdima>\columnwidth
768     \signaturewidth \columnwidth
769     \advance\signaturewidth -1.5pc
770   \fi
771   \par
772   \penalty9000
773   \vspace{#1}%
774   \rightline{%
775     \vbox{\hsize\signaturewidth \ninepoint \raggedright
776       \parindent \z@ \everypar={\hangindent 1pc }
777       \parskip \z@skip
778       \def\|{\unskip\hfil\break}%
779       \def\\{\endgraf}%
780       \def\phone{\rm Phone: }
781       \rm\@signature}%
```

```
782    }%
783    \ifnum\authornumber<0 \endgroup\fi
784 }
785 \def\signaturemark{\leavevmode\llap{$\diamond$\enspace}}
```

The code previously defined the following:

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

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

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

```
786 \newcount\authornumber
787 \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`).

```
788 \def\author{%
789    \global\advance\authornumber\@ne
790    \TB@author
791 }
```

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

```
792 \def\contributor{%
793    \begingroup
794    \authornumber\m@ne
795    \TB@author
796 }
```

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).

```
797 \def\TB@author#1{%
798    \expandafter\def\csname theauthor\number\authornumber\endcsname
799        {\ignorespaces#1\unskip}%
800    \expandafter\def\csname theaddress\number\authornumber\endcsname
```

```
801      {\TBWarningNL{Address for #1\space missing}\@gobble}%
802    \expandafter\def\csname thenetaddress\number\authornumber\endcsname
803      {\TBWarningNL{Net address for #1\space missing}\@gobble}%
804    \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
805      \@gobble
806    }
807  \def\EDITORnoaddress{%
808    \expandafter\let\csname theaddress\number\authornumber\endcsname
809      \@gobble
810  }
811  \def\EDITORnonetaddress{%
812    \expandafter\let\csname thenetaddress\number\authornumber\endcsname
813      \@gobble
814  }
```

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

```
815  \def\address#1{%
816    \expandafter\def\csname theaddress\number\authornumber\endcsname
817        {\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*!

```
818  \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 LATEX 2$_\varepsilon$, we use the default-argument form of \newcommand; otherwise we write it out in all its horribleness.

```
819  \newcommand\netaddress[1][\relax]{%
820    \begingroup
821    \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 LATEX 2$_\varepsilon$.

```
822    #1\@sanitize\makespace\ \makeactive\@
823    \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*?!)

```
824  \def\@relay@netaddress#1{%
```

```
825    \ProtectNetChars
826    \expandafter\protected@xdef
827        \csname thenetaddress\number\authornumber\endcsname
828      {\protect\leavevmode\textrm{\@network}%
829        {\protect\NetAddrChars\net
830        \ignorespaces#1\unskip}}%
831    \endgroup
832    }
```

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

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

```
833 \def\personalURL{\begingroup
834    \@sanitize\makespace\ \makeactive\@
835    \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
836 \def\@personalURL#1{%
837    \ProtectNetChars
838    \expandafter\protected@xdef
839      \csname thePersonalURL\number\authornumber\endcsname{%
840        \protect\leavevmode
841        {%
842          \protect\URLchars\net
843          \ignorespaces#1\unskip
844        }%
845      }%
846    \endgroup
847    }
```

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...

```
848 {%
849    \makecomment\*
850    \makeactive\@
851    \gdef\netaddrat{\makeactive\@*
852      \def@{\discretionary{\char"40}{}{\char"40}}}
853    \makeactive\%
854    \gdef\netaddrpercent{\makeactive\%*
855      \def%{\discretionary{\char"25}{}{\char"25}}}
856    \makeactive\.
857    \gdef\netaddrdot{\makeactive\.*
858      \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.

```
859    \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
860    \makeactive\/
```

```
861  \gdef\URLchars{*
862    \NetAddrChars
863    \makeactive\/*
864    \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.

```
865  \gdef\ProtectNetChars{*
866    \def@{\protect@}*
867    \def%{\protect%}*
868    \def.{\protect.}*
869    \def/{\protect/}*
870    }
871  }
```

LaTeX 2_ε (in its wisdom) suppresses \DeclareOldFontCommand when in compatibility mode, so that in that circumstance we need to use a declaration copied from `latex209.def` rather than the way we would normally do the thing (using the command LaTeX 2_ε defines for the job).

```
872  \if@compatibility
873    \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\symtypewriter}
874  \else
875    \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
876  \fi
877  \def\authorlist#1{\def\@author{#1}}
878  \def\@author{\@defaultauthorlist}
```

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

\mspmetavar

```
879  \def\mspmetavar#1#2{}
```

3.13 Article title

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

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

32

```
880 \newif\if@articletitle
881 \def\maketitle{\@ifstar
882   {\@articletitlefalse\@r@maketitle}%
883   {\@articletitletrue\@r@maketitle}%
884 }
885 \def\@r@maketitle{\par
886 \ifdim\PreTitleDrop > \z@
887   \loop
888   \ifdim \PreTitleDrop > \textheight
889     \vbox{}\vfil\eject
890     \advance\PreTitleDrop by -\textheight
891   \repeat
892   \vbox to \PreTitleDrop{}
893   \global\PreTitleDrop=\z@
894 \fi
895 \begingroup
896 \setcounter{footnote}{0}
897 \def\thefootnote{\fnsymbol{footnote}}
898 \@maketitle
899 \@thanks
900 \endgroup
901 \setcounter{footnote}{0}
902 \gdef\@thanks{}
903 }
```

\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.

```
904 \def\rhTitle{}% avoid error if no author or title
905 \renewcommand\title{\@dblarg\TB@title}
906 \def\TB@title[#1]#2{\gdef\@title{#2}%
907   \bgroup
908     \let\thanks\@gobble
909     \def\\{\unskip\space\ignorespaces}%
910     \protected@xdef\rhTitle{#1}%
911   \egroup
912 }
```

\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.

```
913 \def\shortTitle #1{\def\rhTitle{#1}}
914 \newif\ifshortAuthor
915 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}
```

3.14 Section titles

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

Define the distance between articles which are run together:

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

Note that `\stbaselineskip` is used in the definition of `\sectitlefont`, in LaTeX 2ε, so that it has (at least) to be defined before `\sectitlefont` is used (we do the whole job).

```
917 \newdimen\stbaselineskip        \stbaselineskip=18\p@
918 \newdimen\stfontheight
919 \settoheight{\stfontheight}{\sectitlefont O}
```

Declaring section titles; the conditional `\ifSecTitle` records the occurence 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.

```
920 \newif\ifSecTitle
921 \SecTitlefalse
922 \newif\ifWideSecTitle
923 \newcommand\sectitle{%
924   \SecTitletrue
925   \@ifstar
926     {\WideSecTitletrue\def\s@ctitle}%
927     {\WideSecTitlefalse\def\s@ctitle}%
928 }
```

`\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.

```
929 \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.

```
930 \newskip\AboveTitleSkip  \AboveTitleSkip=12\p@
931 \newskip\BelowTitleSkip  \BelowTitleSkip=8\p@
932 \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 LATEX's `\framebox` command, on the grounds that one doesn't keep a dog and bark for oneself. . .

```
933 \def\@sectitle #1{%
934   \par
935   \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.

```
936   \ifWideSecTitle\else\secsep\fi
937   {%
938     \fboxrule\strulethickness
939     \fboxsep\z@
940     \noindent\framebox[\hsize]{%
941       \vbox{%
942         \raggedcenter
943         \let\\\@sectitle@newline
944         \sectitlefont
945         \makestrut[2\stfontheight;\z@]%
946         #1%
947         \makestrut[\z@;\stfontheight]\endgraf
948       }%
949     }%
950   }%
951   \nobreak
952   \vskip\baselineskip
953 }
```

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

```
954 \newcommand{\@sectitle@newline}[1][\z@]{%
955   \ifdim#1>\z@
956     \makestrut[\z@;#1]%
957   \fi
958   \unskip\break
959 }
```

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).

```
960 \def\@makesectitle{\ifSecTitle
961     \global\SecTitlefalse
962     \ifWideSecTitle
963       \twocolumn[\@sectitle{\s@ctitle}]%
964       \global\WideSecTitlefalse
965     \else
966       \@sectitle{\s@ctitle}%
967     \fi
968   \else
```

```
969     \vskip\AboveTitleSkip
970     \kern\topskip
971     \hrule \@height\z@ \@depth\z@ \@width 10\p@
972     \kern-\topskip
973     \kern-\strulethickness
974     \hrule \@height\strulethickness \@depth\z@
975     \kern\medskipamount
976     \nobreak
977   \fi
978 }
```

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

```
979 \def\@maketitle{%
980   \@makesectitle
981   \if@articletitle{%
982     \nohyphens \interlinepenalty\@M
983     \setbox0=\hbox{%
984       \let\thanks\@gobble
985       \let\\=\quad
986       \let\and=\quad
987       \ignorespaces\@author}%
988     {%
989       \noindent\bf\raggedright\ignorespaces\@title\endgraf
990     }%
991     \ifdim \wd0 < 5\p@              % omit if author is null
992     \else
```

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

```
993       \nobreak \vskip 4\p@
994       {%
995         \leftskip=\normalparindent
996         \raggedright
997         \def\and{\unskip\\}%
998         \noindent\@author\endgraf
999       }%
1000    \fi
1001    \nobreak
1002    \vskip\BelowTitleSkip
1003  }\fi%
1004  \global\@afterindentfalse
1005  \aftergroup\@afterheading
1006 }
```

Dedications are ragged right, in italics.

```
1007 \newenvironment{dedication}%
1008   {\raggedright\noindent\itshape\ignorespaces}%
1009   {\endgraf\medskip}
```

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

```
1010 \renewenvironment{abstract}%
```

```
1011  {%
1012    \begin{SafeSection}%
1013    \section*{Abstract}%
1014  }%
1015  {\end{SafeSection}}
1016  \newenvironment{longabstract}%
1017  {%
1018    \begin{SafeSection}%
1019    \section*{Abstract}%
1020    \bgroup\small
1021  }%
1022  {%
1023    \endgraf\egroup
1024    \end{SafeSection}%
1025  \vspace{.25\baselineskip}
1026  \begin{center}
1027    {$--*--$}
1028  \end{center}
1029  \vspace{.5\baselineskip}}
```

3.15   Section headings

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

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

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

```
1030 \if@numbersec
1031   \def\section{\TB@startsection{{section}%
1032                                1%
1033                                \z@
1034                                {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1035                                {4\p@}%
1036        {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1037   \def\subsection{\TB@startsection{{subsection}%
1038                                   2%
1039                                   \z@
1040                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1041                                   {4\p@}%
1042        {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1043   \def\subsubsection{\TB@startsection{{subsubsection}%
1044                                      3%
1045                                      \z@
1046                                      {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1047                                      {4\p@}%
```

```
1048                {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1049   \def\paragraph{\TB@startsection{{paragraph}%
1050                              4%
1051                              \z@
1052                              {4\p@ \@plus1\p@ \@minus1\p@}%
1053                              {-1em}%
1054                              {\normalsize\bf}}}
```

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

```
1055 \else
1056   \setcounter{secnumdepth}{0}
1057   \def\section{\TB@nolimelabel
1058            \TB@startsection{{section}%
1059                            1%
1060                            \z@
1061                            {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1062                            {4\p@}%
1063            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1064   \def\subsection{\TB@nolimelabel
1065                \TB@startsection{{subsection}%
1066                                2%
1067                                \z@
1068                                {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1069                                {-0.5em\@plus-\fontdimen3\font}%
1070            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1071   \def\subsubsection{\TB@nolimelabel
1072                   \TB@startsection{{subsubsection}%
1073                                   3%
1074                                   \parindent
1075                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1076                                   {-0.5em\@plus-\fontdimen3\font}%
1077            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1078 \fi
```

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

```
1079 \if@numbersec
1080   \def\TB@startsection#1{\@startsection#1}%
1081 \else
1082   \def\TB@startsection#1{%
1083     \@ifstar
1084       {\TBWarning{*-form of \expandafter\string\csname\@firstofsix#1%
1085                  \endcsname\space
1086                  \MessageBreak
1087                  conflicts with nonumber class option}%
1088        \@startsection#1}%
1089       {\@startsection#1}%
1090   }
1091 \fi
```

38

```
1092 \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).

```
1093 \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.

```
1094 \newenvironment{SafeSection}%
1095   {\let\TB@startsection\TB@safe@startsection}%
1096   {}
```

And now for the exciting sectioning commands that LaTeX defines but we don't have a definition for (whatever else, we don't want Lamport's originals, which come out 'like the blare of a bugle in a lullaby'[2]).

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.

```
1097 \if@numbersec
1098   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1099 \else
1100   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1101   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1102 \fi
1103 \def\chapter{\TB@nosection\chapter\section}
1104 \def\part{\TB@nosection\part\section}
1105 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1106     \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.

```
1107 \def\TBtocsectionfont{\normalfont}
1108 \newskip\TBtocsectionspace  \TBtocsectionspace=1.0em\@plus\p@
```

Don't ask me (RF) why \l@part is there; I commented it out because I couldn't understand why it had been left there for me. To be finally deleted in a future release of these macros. . .

```
1109 %\def\l@part#1#2{\addpenalty{\@secpenalty}%
1110 %  \addvspace{2.25em\@plus\p@}%
1111 %  \begingroup
1112 %    \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
```

---

[2]Thurber, *The Wonderful O*

```
1113 %    {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1114 %     \nobreak
1115 %   \endgroup}
1116 %
1117 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1118   \addvspace{\TBtocsectionspace}%
1119   \@tempdima 1.5em
1120   \begingroup
1121     \parindent\z@ \rightskip\z@  % article style makes \rightskip > 0
1122     \parfillskip\z@
1123     \TBtocsectionfont
1124     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1125     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1126   \endgroup}
```

3.16   Appendices

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

```
1127 \renewcommand\appendix{\par
1128   \renewcommand\thesection{\@Alph\c@section}%
1129   \setcounter{section}{0}%
1130   \if@numbersec
1131   \else
1132     \setcounter{secnumdepth}{1}%
1133   \fi
```

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

```
1134   \def\@tempa{appendix}
1135   \ifx\@tempa\@currenvir
1136     \expandafter\@appendix@env
1137   \fi
1138 }
```

Here we deal with `\begin{appendix}[`⟨*app-name*⟩`]`

```
1139 \newcommand\app@prefix@section{}
1140 \newcommand\@appendix@env[1][Appendix]{%
1141   \renewcommand\@seccntformat[1]{\csname app@prefix@##1\endcsname
1142     \csname the##1\endcsname\quad}%
1143   \renewcommand\app@prefix@section{#1 }%
1144 }
```

Ending an appendix environment is pretty trivial...

```
1145 \let\endappendix\relax
```

3.17   References

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

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

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

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

```
1146 \def\TB@nolimelabel{%
1147   \def\@currentlabel{%
1148     \protect\TBWarning{%
1149       Invalid reference to numbered label on page \thepage
1150       \MessageBreak made%
1151     }%
1152     \textbf{?!?}%
1153   }%
1154 }
```

3.18   Title references

This is a first cut at a mecahnism 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.

```
1155 \let\TB@@sect\@sect
1156 \let\TB@@ssect\@ssect
1157 \def\@sect#1#2#3#4#5#6[#7]#8{%
1158   \def\@currentlabelname{#7}%
1159   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1160 }
1161 \def\@ssect#1#2#3#4#5{%
1162   \def\@currentlabelname{#5}%
1163   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1164 }
```

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

```
1165 \def\label#1{{%
```

```
1166     \@bsphack
1167     \let\label\@gobble
1168     \let\index\@gobble
1169     \if@filesw
1170       \protected@write\@auxout{}%
1171         {\string\newlabel{#1}{%
1172             {\@currentlabel}{\thepage}{\@currentlabelname}}%
1173         }%
1174     \fi
1175     \@esphack
1176   }%
1177 }
```

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

```
1178 \let\@currentlabelname\@empty
```

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

```
1179 \DeclareRobustCommand\ref[1]{\expandafter\@setref
1180   \csname r@#1\endcsname\@firstofthree{#1}}
1181 \DeclareRobustCommand\pageref[1]{\expandafter\@setref
1182   \csname r@#1\endcsname\@secondofthree{#1}}
1183 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1184   \csname r@#1\endcsname\@thirdofthree{#1}}
1185 \long\def\@firstofthree#1#2#3{#1}
1186 \long\def\@secondofthree#1#2#3{#2}
1187 \long\def\@thirdofthree#1#2#3{#3}
```

3.19   Float captions

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

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

`\tubfullpageindent`

```
1188 \newdimen\tubfullpageindent  \tubfullpageindent=4.875pc
```

Ok, here is the `\@makecaption`.

```
1189 \long\def\@makecaption#1#2{%
1190   \vskip\abovecaptionskip
1191   \sbox\@tempboxa{\small #1: #2}% try in an hbox
1192   \ifdim \wd\@tempboxa > \hsize
1193     {% caption doesn't fit on one line; set as a paragraph.
1194     \small \raggedright \hyphenpenalty=\@M \parindent=1em
1195     % indent full-width captions {figure*}, but not single-column {figure}.
1196     \ifdim\hsize = \textwidth
1197       \leftskip=\tubfullpageindent \rightskip=\leftskip
1198       \advance\rightskip by 0pt plus2em  % increase acceptable raggedness
```

```
1199     \fi
1200     \noindent #1: #2\par}%
1201   \else
1202     % fits on one line; use the hbox, centered.  Do not reset its glue.
1203     \global\@minipagefalse
1204     \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1205   \fi
1206   \vskip\belowcaptionskip}
```

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

```
1207 \def\fnum@figure{{\small \bf \figurename\nobreakspace\thefigure}}
1208 \def\fnum@table{{\small \bf \tablename\nobreakspace\thetable}}
```

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

```
1209 \setlength\abovecaptionskip{6pt plus1pt minus1pt}
```

3.20   Size changing commands

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

```
1210 \renewcommand\normalsize{%
1211   \@setfontsize\normalsize\@xpt\@xiipt
1212   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1213   \belowdisplayskip=\abovedisplayskip
1214   \abovedisplayshortskip=\z@\@plus 3\p@
1215   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1216 }
1217
1218 \renewcommand\small{%
1219   \@setfontsize\small\@ixpt{11}%
1220   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1221   \belowdisplayskip=\abovedisplayskip
1222   \abovedisplayshortskip=\z@\@plus 2\p@
1223   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1224 }
1225 \renewcommand\footnotesize{%
1226   \@setfontsize\footnotesize\@viiipt{9.5}%
1227   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1228   \belowdisplayskip=\abovedisplayskip
1229   \abovedisplayshortskip=\z@\@plus 3\p@
1230   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1231 }
```

3.21   Lists and other text inclusions

```
1232 \def\@listi{%
1233   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
```

```
1234    \itemsep=\parsep
1235    \listparindent=1em
1236    }
1237
1238 \def\@listii{%
1239    \leftmargin\leftmarginii
1240    \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1241    \topsep=2\p@\@plus\p@\@minus\p@
1242    \parsep=\p@\@plus\p@\@minus\p@
1243    \itemsep=\parsep
1244    \listparindent=1em
1245    }
1246
1247 \def\@listiii{%
1248    \leftmargin=\leftmarginiii
1249    \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1250    \topsep=\p@\@plus\p@\@minus\p@
1251    \parsep=\z@
1252    \itemsep=\topsep
1253    \listparindent=1em
1254    }
1255 \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.

```
1256 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1257        \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}
```

The `compactitemize` environment, without space between the items.

```
1258 \newenvironment{compactitemize}%
1259    {\begin{itemize}%
1260        \setlength{\itemsep}{0pt}%
1261        \setlength{\parskip}{0pt}%
1262        \setlength{\parsep} {0pt}%
1263    }%
1264    {\end{itemize}}
```

3.22   Some fun with verbatim

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

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

```
1265 %\let\@TB@verbatim\@verbatim
1266 \let\@TBverbatim\verbatim
1267 \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.)

```
1268 \def\verbatim{\par\obeylines
1269   \futurelet\reserved@a\@switch@sqbverbatim}
1270 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1271   \expandafter\@sqbverbatim\else
1272   \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1273 \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.

```
1274   \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.

```
1275   #1\@TBverbatim}
```

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

```
1276 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1277     \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1278   \trivlist \item\relax
1279   \if@minipage\else\vskip\parskip\fi
1280   \leftskip\@totalleftmargin\rightskip\z@skip
1281   \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1282   \@@par
1283   \@tempswafalse
1284   \def\par{%
1285     \if@tempswa
1286       \leavevmode \null \@@par\penalty\interlinepenalty
1287     \else
1288       \@tempswatrue
1289       \ifhmode\@@par\penalty\interlinepenalty\fi
1290     \fi}%
1291   \obeylines \verbatim@font \@noligs
1292   \let\do\@makeother \dospecials
1293   \everypar \expandafter{\the\everypar \unpenalty}%
1294 }%
```

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).

```
1295 \def\endverbatim{\@TBendverbatim
1296    \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

`\enablemetacode` simply typesets[3] something that looks (verbatim) like:

```
<meta-text>
```

as:

⟨*meta-text*⟩

```
1297 {\makeactive<
1298    \gdef<#1>{{\reset@font\ensuremath{\langle}%
1299      \textit{#1}%
1300      \ensuremath{\rangle}}}
1301 }
```

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

```
1302 \let\if@ruled\iffalse
```

3.23   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:

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

First of all (after checking that we're to use Harvard citation at all), make a copy of LATEX's default citation mechanism.

```
1303 \if@Harvardcite
1304 \let\@internalcite\cite
```

---

[3]Or will simply typeset, when we get around to implementation proper

Normal forms.

```
1305 \def\cite{\def\@citeseppen{-1000}%
1306     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1307     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1308 \def\citeNP{\def\@citeseppen{-1000}%
1309     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1310     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1311 \def\citeN{\def\@citeseppen{-1000}%
1312     \def\@cite##1##2{##1\if@tempswa , ##2)\else()}\fi}%
1313     \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1314 \def\citeA{\def\@citeseppen{-1000}%
1315     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1316     \def\citeauthoryear##1##2##3{##1}\@internalcite}
1317 \def\citeANP{\def\@citeseppen{-1000}%
1318     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1319     \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1320 \def\shortcite{\def\@citeseppen{-1000}%
1321     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1322     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1323 \def\shortciteNP{\def\@citeseppen{-1000}%
1324     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1325     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1326 \def\shortciteN{\def\@citeseppen{-1000}%
1327     \def\@cite##1##2{##1\if@tempswa , ##2)\else()}\fi}%
1328     \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1329 \def\shortciteA{\def\@citeseppen{-1000}%
1330     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1331     \def\citeauthoryear##1##2##3{##2}\@internalcite}
1332 \def\shortciteANP{\def\@citeseppen{-1000}%
1333     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1334     \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1335 \def\citeyear{\def\@citeseppen{-1000}%
1336     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1337     \def\citeauthoryear##1##2##3{##3}\@citedata}
1338 \def\citeyearNP{\def\@citeseppen{-1000}%
1339     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1340     \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.

```
1341 \def\@citedata{%
1342         \@ifnextchar [{\@tempswatrue\@citedatax}%
1343                               {\@tempswafalse\@citedatax[]}%
1344 }
1345
```

```
1346 \def\@citedatax[#1]#2{%
1347 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1348   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1349     {\@citea\def\@citea{, }\@ifundefined% by Young
1350       {b@\@citeb}{{\bf ?}%
1351       \@warning{Citation '\@citeb' on page \thepage \space undefined}}%
1352 {\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.

```
1353 \def\@citex[#1]#2{%
1354 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1355   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1356     {\@citea\def\@citea{; }\@ifundefined% by Young
1357       {b@\@citeb}{{\bf ?}%
1358       \@warning{Citation '\@citeb' on page \thepage \space undefined}}%
1359 {\csname b@\@citeb\endcsname}}}{#1}}%
```

No labels in the bibliography.

```
1360 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```
1361 \newlength{\bibhang}
1362 \setlength{\bibhang}{2em}
```

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

```
1363 \newdimen\bibindent
1364 \bibindent=1.5em
1365 \@ifundefined{refname}%
1366     {\newcommand{\refname}{References}}%
1367     {}%
```

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

```
1368 \def\thebibliography#1{%
1369   \let\TB@startsection\TB@safe@startsection
1370   \section*{\refname
1371     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1372   \list{[\arabic{enumi}]}{%
1373     \labelwidth\z@ \labelsep\z@
1374     \leftmargin\bibindent
1375     \itemindent -\bibindent
1376     \listparindent \itemindent
1377     \parsep \z@
1378     \usecounter{enumi}}
1379   \def\newblock{}
1380   \BibJustification
1381   \sfcode'\.=1000\relax
1382 }
```

etal   Other bibliography odds and ends.
\bibentry

48

```
1383 \def\etal{et\,al.\@}
1384 \def\bibentry{%
1385   \smallskip
1386   \hangindent=\parindent
1387   \hangafter=1
1388   \noindent
1389   \sloppy
1390   \clubpenalty500 \widowpenalty500
1391   \frenchspacing
1392 }
```

\bibliography Changes made to accommodate TUB file naming conventions
\bibliographystyle
```
1393 \def\bibliography#1{%
1394   \if@filesw
1395     \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1396   \fi
1397   \@input{\jobname.bbl}%
1398 }
1399 \def\bibliographystyle#1{%
1400   \if@filesw
1401     \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1402   \fi
1403 }
```

\thebibliography If the user's asked to use LATEX's default citation mechanism (using the rawcite
\TB@@thebibliography option), we still need to play with \TB@startsection: this is a boring fact of
life. . .

We also patch \sloppy in case there's a need for alternative justification of
the body of the bibliography.
```
1404 \else
1405 \let\TB@@thebibliography\thebibliography
1406 \def\thebibliography{%
1407   \let\TB@startsection\TB@safe@startsection
1408   \let\sloppy\BibJustification
1409   \TB@@thebibliography}
1410 \fi
```

\BibJustification \BibJustification defines how the bibliography is to be justified. The Lamport
\SetBibJustification default is simply "\sloppy", but we regularly find some sort of ragged right setting
\TB@@sloppy is appropriate. (\BibJustification is nevertheless reset to its default value at
the start of a paper.)
```
1411 \let\TB@@sloppy\sloppy
1412 \let\BibJustification\TB@@sloppy
1413 \newcommand{\SetBibJustification}[1]{%
1414   \renewcommand{\BibJustification}{#1}%
1415 }
1416 \ResetCommands\expandafter{\the\ResetCommands
1417   \let\BibJustification\TB@@sloppy
1418 }
```

3.24   Registration marks

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

```
1419 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1420 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1421 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
```

"T" marks centered on top and bottom edges of paper

```
1422 \def\ttopregister{\dlap{%
1423        \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1424                         \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1425        \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1426 \def\tbotregister{\ulap{%
1427        \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1428        \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1429                         \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1430 \def\topregister{\ttopregister}
1431 \def\botregister{\tbotregister}
```

3.25   Running heads

```
1432 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1433 \def\PrelimDraftfooter{%
1434   \dlap{\kern\textheight\kern3pc
1435        \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}
1436   }}
```

registration marks; these are temporarily inserted in the running head

```
1437 \def\MakeRegistrationMarks{}
1438 \def\UseTrimMarks{%
1439   \def\MakeRegistrationMarks{%
1440     \ulap{\rlap{%
1441       \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}%
1442            \topregister\vskip \headmargin \vskip 10\p@}}}}%
1443   }
1444 % put issue identification and page number in header.
1445 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1446   \normalsize\csname normalshape\endcsname\rm
1447   \rtitlex\qquad\midrtitle \hfil \thepage}
1448 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1449   \normalsize\csname normalshape\endcsname\rm
1450   \thepage\hfil\midrtitle\qquad\rtitlex}
1451
1452 % put title and author in footer.
1453 \def\@tubrunningfull{%
1454   \def\@oddfoot{\hfil\rhTitle}
1455   \def\@evenfoot{\@author\hfil}
1456 }
1457
1458 \def\@tubrunninggetauthor#1{#1
```

```
1459    \begingroup
1460      \let\thanks\@gobble
1461      \protected@xdef\rhAuthor{\the\toks@##1}%
1462    \endgroup
1463 }%
1464
1465 % empty footer.
1466 \def\@tubrunningminimal{%
1467   \def\@oddfoot{\hfil}
1468   \def\@evenfoot{\hfil}
1469 }
1470
1471 \def\ps@headings{}
1472 \pagestyle{headings}
```

3.26   Output routine

Modified to alter `\brokenpenalty` across columns

> **Comment** We're playing with fire here: for example, `\@outputdblcol` has changed in LaTeX 2$_\varepsilon$ for 1995/06/01 (with the use of `\hb@xt@`). *This* time there's no semantic change, but...

```
1473 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1474     \global\setbox\@leftcolumn\box\@outputbox
1475     \global\brokenpenalty10000
1476   \else \global\@firstcolumntrue
1477     \global\brokenpenalty100
1478     \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1479       {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1480        \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1481        \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1482        \@whilesw\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1483     \fi}
```

3.27   Font-related definitions and machinery

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

```
1484 \newif\ifFirstPar        \FirstParfalse
1485 \def\smc{\sc}
1486 \def\ninepoint{\small}
1487 ⟨/classtail⟩
```

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

> For the things it's used for, regular small caps are not appropriate — they're too small. Real small caps are appropriate for author names (and are so used in continental bibliographies), section headings, running heads, and, on occasion, words to which some emphasis is to be

given. \SMC was designed to be used for acronyms and all-caps abbreviations, which look terrible in small caps, but nearly as bad in all caps in the regular text size. The principle of using "one size smaller" than the text size is similar to the design of caps in German — where they are smaller relative to lowercase than are caps in fonts intended for English, to improve the appearance of regular text in which caps are used at the heads of all nouns, not just at the beginnings of sentences.

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

```
1488 ⟨∗common⟩
1489 \DeclareRobustCommand\SMC{%
1490   \ifx\@currsize\normalsize\small\else
1491    \ifx\@currsize\small\footnotesize\else
1492     \ifx\@currsize\footnotesize\scriptsize\else
1493      \ifx\@currsize\large\normalsize\else
1494       \ifx\@currsize\Large\large\else
1495        \ifx\@currsize\LARGE\Large\else
1496         \ifx\@currsize\scriptsize\tiny\else
1497          \ifx\@currsize\tiny\tiny\else
1498           \ifx\@currsize\huge\LARGE\else
1499            \ifx\@currsize\Huge\huge\else
1500             \small\SMC@unknown@warning
1501  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1502 }
1503 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: nonstandard
1504     text font size command -- using \string\small}}
1505 \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.

```
1506 \newcommand\acro[1]{\textSMC{#1}\@}
1507 ⟨/common⟩
```

3.28   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!)

```
1508 ⟨∗classtail⟩
1509 \def\xEdNote{{\EdNoteFont Editor's note:\enspace }}
1510 \def \EdNote{\@ifnextchar[%
1511   {%
1512     \ifvmode
```

```
1513        \smallskip\noindent\let\@EdNote@\@EdNote@v
1514      \else
1515        \unskip\quad\def\@EdNote@{\unskip\quad}%
1516      \fi
1517      \@EdNote
1518    }%
1519    \xEdNote
1520 }
1521 \long\def\@EdNote[#1]{%
1522    [\thinspace\xEdNote\ignorespaces
1523     #1%
1524     \unskip\thinspace]%
1525    \@EdNote@
1526 }
1527 \def\@EdNote@v{\par\smallskip}
```

Macros for Mittelbach's self-documenting style

```
1528 \def\SelfDocumenting{%
1529    \setlength\textwidth{31pc}
1530    \onecolumn
1531    \parindent \z@
1532    \parskip 2\p@\@plus\p@\@minus\p@
1533    \oddsidemargin 8pc
1534    \evensidemargin 8pc
1535    \marginparwidth 8pc
1536    \toks@\expandafter{\@oddhead}%
1537    \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1538    \toks@\expandafter{\@evenhead}%
1539    \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1540    \def\ps@titlepage{}%
1541 }
1542 \def\ps@titlepage{}
1543
1544 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}%
1545    \llap{\@makefnmark}\null$\mskip5mu$#1}
1546
1547 %% \long\def\@makefntext#1{\parindent 1em
1548 %%   \noindent
1549 %%   \hb@xt@2em{\hss\@makefnmark}%
1550 %%   \hskip0.27778\fontdimen6\textfont\z@\relax
1551 %%   #1%
1552 %% }
```

\creditfootnote   Sometimes we want the label "Editor's Note:", sometimes not.
\supportfootnote
```
1553 \def\creditfootnote{\nomarkfootnote\xEdNote}
1554 \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.

```
1555 \gdef\nomarkfootnote#1#2{\begingroup
```

```
1556    \def\thefootnote{}%
1557    % no period, please, also no fnmark.
1558    \def\@makefntext##1{##1}%
1559    \footnotetext{\noindent #1#2}%
1560    \endgroup
1561 }
```

3.29   Initialization

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

```
1562 \if@Harvardcite
1563    \AtBeginDocument{%
1564       \bibliographystyle{ltugbib}%
1565    }
1566 \fi
1567 \authornumber\z@
1568 \let\@signature\@defaultsignature
1569 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1570                                        configuration information}}{}
1571 ⟨/classtail⟩
```

4   LATEX 2ε Proceedings class

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

```
1572 ⟨*ltugproccls⟩
1573 \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.

```
1574 \newif\if@proctw@column  \@proctw@columntrue
1575 \DeclareOption{onecolumn}{\@proctw@columnfalse}
```

\if@proc@sober   TUG'96 proceedings switched to more sober headings still; so the `tug95` option
\if@proc@numerable   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.

```
1576 \newif\if@proc@sober
1577 \newif\if@proc@numerable
1578 \DeclareOption{tug95}{%
1579    \@proc@soberfalse
1580    \@proc@numerablefalse
1581 }
1582 \DeclareOption{tug96}{%
1583    \@proc@sobertrue
1584    \@proc@numerablefalse
```

54

```
1585 }
1586 \DeclareOption{tug97}{%
1587    \@proc@sobertrue
1588    \@proc@numerabletrue
1589 }
1590 \DeclareOption{tug2002}{%
1591    \@proc@sobertrue
1592    \@proc@numerabletrue
1593    \let\if@proc@numbersec\iftrue
1594    \PassOptionsToClass{numbersec}{ltugboat}%
1595 }
```

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

```
1596 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1597    \PassOptionsToClass{numbersec}{ltugboat}%
1598 }
1599 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1600    \PassOptionsToClass{nonumber}{ltugboat}%
1601 }
```

\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.

```
1602 \newif\ifTB@title
1603 \DeclareOption{title}{\TB@titletrue}
1604 \DeclareOption{notitle}{\TB@titlefalse
1605    \AtBeginDocument{\stepcounter{page}}}
```

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

```
1606 \DeclareOption{tugproc}{%
1607    \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1608 }
```

All other options are simply passed to ltugboat...

```
1609 \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 TEXie...)

```
1610 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1611             {Loading ltugproc configuration information}}{}
1612 \@ifundefined{TUGprocExtraOptions}%
1613    {\let\TUGprocExtraOptions\@empty}%
1614    {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}
```

\tugProcYear Now work out what year it is

```
1615 \@tempcnta\year
```

```
1616 \ifnum\@tempcnta<2000
1617   \divide\@tempcnta by100
1618   \multiply\@tempcnta by100
1619   \advance\@tempcnta-\year
1620   \@tempcnta-\@tempcnta
1621 \fi
```

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

```
1622 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1623                 {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1624 \@tempa
1625 \ClassInfo{ltugproc}{Class believes year is
1626   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1627     \@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.

```
1628 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1629   \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.

```
1630 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1631 \ProcessOptions
1632 \if@proc@numbersec
1633   \if@proc@numerable
1634   \else
1635     \ClassWarning{\@tugclass}{This year's proceedings may not have
1636       numbered sections}%
1637   \fi
1638 \fi
```

Call ltugboat, adding whichever section numbering option is appropriate

```
1639 \LoadClass[\if@proc@numbersec numbersec\else nonumber\fi]{ltugboat}
```

4.1 Proceedings titles

\maketitle   There's no provision for 'section titles' in proceedings issues, as there are in *TUG-*
\ifTB@madetitle *boat* proper. Note the tedious LaTeX bug-avoidance in the \@TB@test@document
macro.

```
1640 \def\maketitle{%
1641   \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).

```
1642     \ifshortAuthor\else
1643       \global\let\rhAuthor\@empty
1644       \def\g@addto@rhAuthor##1{%
```

```
1645        \begingroup
1646          \toks@\expandafter{\rhAuthor}%
1647          \let\thanks\@gobble
1648          \protected@xdef\rhAuthor{\the\toks@##1}%
1649        \endgroup
1650      }%
1651      \@getauthorlist\g@addto@rhAuthor
1652    \fi
```

now, the real business of setting the title

```
1653    \ifTB@title
1654      \setcounter{footnote}{0}%
1655      \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1656      \if@proctw@column
1657        \twocolumn[\@maketitle]%
1658      \else
1659        \onecolumn
1660        \global\@topnum\z@
1661        \@maketitle
1662      \fi
1663      \@thanks
1664      \thispagestyle{TBproctitle}
1665    \fi
1666  \endgroup
1667  \TB@madetitletrue
1668 }
1669 \newif\ifTB@madetitle  \TB@madetitlefalse
```

\@TB@test@document \@TB@test@document checks to see, at entry to \maketitle, if we've had
                    \begin{document}. See LATEX bug report latex/2212, submitted by Robin Fair-
                    bairns, for details.

```
1670 \def\@TB@test@document{%
1671  \edef\@tempa{\the\everypar}
1672  \def \@tempb{\@nodocument}
1673  \ifx \@tempa\@tempb
1674    \@nodocument
1675  \fi
1676 }
```

\AUTHORfont   Define the fonts for titles and things
\TITLEfont
\addressfont
```
1677 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
1678 \def\TITLEfont  {\Large\rmfamily\mdseries\upshape}
1679 \def\addressfont{\small\rmfamily\mdseries\upshape}
```
\netaddrfont
```
1680 \def\netaddrfont{\small\ttfamily\mdseries\upshape}
```

\aboveauthorskip   Some changeable skips to permit variability in page layout depending on the par-
\belowauthorskip   ticular paper's page breaks.
\belowabstractskip
```
1681 \newskip\aboveauthorskip   \aboveauthorskip=18\p@ \@plus4\p@
1682 \newskip\belowauthorskip   \belowauthorskip=\aboveauthorskip
1683 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@
```

\@maketitle   The body of \maketitle

```
1684 \def\@maketitle{%
1685   {\parskip\z@
1686    \frenchspacing
1687    \TITLEfont\raggedright\noindent\@title\par
1688      \count@=0
1689      \loop
1690      \ifnum\count@<\authornumber
1691        \vskip\aboveauthorskip
1692        \advance\count@\@ne
1693        {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1694        \addressfont\theaddress{\number\count@}\endgraf
1695        {%
1696          \allowhyphens
1697          \hangindent1.5pc
1698          \netaddrfont\thenetaddress{\number\count@}\endgraf
1699          \hangindent1.5pc
1700          \thePersonalURL{\number\count@}\endgraf
1701        }%
1702      \repeat
1703    \vskip\belowauthorskip}%
1704    \if@abstract
1705      \centerline{\bfseries Abstract}%
1706      \vskip.5\baselineskip\rmfamily
1707      \list{}{\listparindent20\p@
1708        \itemindent\z@ \leftmargin\tubfullpageindent
1709        \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1710          \the\abstract@toks
1711      \endlist\global\@ignoretrue
1712    \fi
1713    \vskip\belowabstractskip
1714    \global\@afterindentfalse\aftergroup\@afterheading
1715  }
```

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@

```
1716 \newtoks\abstract@toks  \abstract@toks{}
1717 \let\if@abstract\iffalse
1718 \def\abstract{%
```

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

```
1719 \ifTB@madetitle
1720   \TBWarning{abstract environment after \string\maketitle}
```

```
1721  \fi
1722  \def\@abstract@{abstract}%
1723  \ifx\@currenvir\@abstract@
1724  \else
1725    \TBError{\string\abstract\space is illegal:%
1726      \MessageBreak
1727      use \string\begin{\@abstract@} instead}%
1728      {\@abstract@\space may only be used as an environment}
1729  \fi
1730  \global\let\if@abstract\iftrue
1731  {\ifnum0=`}\fi
1732  \@abstract@getbody}
1733 \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}

```
1734 \long\def\@abstract@getbody#1\end{%
1735    \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1736    \@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.

```
1737 \def\@abstract@findend#1{%
1738    \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.

```
1739    \ifx\@tempa\@abstract@
1740      \expandafter\@abstract@end
1741    \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)

```
1742      \def\@tempb{document}%
1743      \ifx\@tempa\@tempb
1744        \TBError{\string\begin{\@abstract@}
1745          ended by \string\end{\@tempb}}%
1746         {You've forgotten \string\end{\@abstract@}}
1747      \else
1748        \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1749        \expandafter\expandafter\expandafter\@abstract@getbody
1750      \fi
1751    \fi}
```

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

```
1752 \def\@abstract@end{\ifnum0=`{\fi}%
1753    \expandafter\end\expandafter{\@abstract@}}
```

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

```
1754 \renewcommand{\makesignature}{\TBWarning
1755        {\string\makesignature\space is invalid in proceedings issues}}
```

Now we define the running heads in terms of the \rh* commands.

```
1756 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
1757   \let\@evenhead\MakeRegistrationMarks
1758   \TB@definefeet
1759 }
1760 \def\ps@TBproc{%
1761   \def\@oddhead{\MakeRegistrationMarks
1762     {%
1763       \hfil
1764       \def\\{\unskip\ \ignorespaces}%
1765       \rmfamily\rhTitle
1766     }%
1767   }%
1768   \def\@evenhead{\MakeRegistrationMarks
1769     {%
1770       \def\\{\unskip\ \ignorespaces}%
1771       \rmfamily\rhAuthor
1772       \hfil
1773     }%
1774   }%
1775   \TB@definefeet
1776 }
1777
1778 \advance\footskip8\p@    % for deeper running feet
1779
1780 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1781 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1782   {#2}}
1783 \def\TB@definefeet{%
1784   \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1785     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1786   \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1787     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1788 }
1789
1790 \def\pfoottext{{\smc Preprint}: Proceedings of the \volyr{} Annual Meeting}
1791 \def\rfoottext{\normalfont\TUB, \volx\Dash
1792   {Proceedings of the \volyr{} Annual Meeting}}
1793
1794 \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).

```
1795 \if@proc@numbersec
1796 \else
1797   \setcounter{secnumdepth}{0}
1798 \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.

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

```
1832                             \parindent%
1833                             \z@%
1834                             {-5\p@\@plus -\fontdimen3\the\font}%
1835                             {\normalsize\bfseries}}}
1836 \fi
1837 ⟨/ltugproccls⟩
```

5   Plain TeX styles

```
1838 ⟨∗tugboatsty⟩
1839 % err...
1840 ⟨/tugboatsty⟩
1841 ⟨∗tugprocsty⟩
1842 % err...
1843 ⟨/tugprocsty⟩
```

6   The LaTeX 2ε compatibility-mode style files

```
1844 ⟨∗ltugboatsty⟩
1845 \@obsoletefile{ltugboat.cls}{ltugboat.sty}
1846 \LoadClass{ltugboat}
1847 ⟨/ltugboatsty⟩
1848 ⟨∗ltugprocsty⟩
1849 \@obsoletefile{ltugproc.cls}{ltugproc.sty}
1850 \LoadClass{ltugproc}
1851 ⟨/ltugprocsty⟩
```