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                 [2013/01/31 v2.12
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`	
`\DVD`	
`\DVI`	
`\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)

`\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 `\TBremark`s (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 2ε *TUGboat* class file

3.1 Setup and options

Check for reloading. Hmmm. . . Does this happen with LaTeX 2ε 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     \@tubrunningfull
48   }%
49 }
```

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

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

Similarly, ignore one/two-side/column

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
73 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
74 \ProcessOptions
75 \LoadClass[twoside]{article}
```

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

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

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

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

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

```
83 ⟨*common⟩
84 \IfFileExists{mflogo.sty}%
85   {\RequirePackage{mflogo}}%
86 ⟨!ltugcomn⟩ {\TBWarning
87 ⟨ltugcomn⟩  {\PackageWarning{ltugcomn}
88      {Package mflogo.sty not available --\MessageBreak
89        Proceeding to emulate mflogo.sty}
90    \DeclareRobustCommand\logofamily{%
91      \not@math@alphabet\logofamily\relax
92      \fontencoding{U}\fontfamily{logo}\selectfont}
93    \DeclareTextFontCommand{\textlogo}{\logofamily}
94    \def\MF{\textlogo{META}\-\textlogo{FONT}\@}
95    \def\MP{\textlogo{META}\-\textlogo{POST}\@}
96    \DeclareFontFamily{U}{logo}{}
97    \DeclareFontShape{U}{logo}{m}{n}{%
98      <8><9>gen*logo%
99      <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
100   }{}
101   \DeclareFontShape{U}{logo}{m}{sl}{%
102     <8><9>gen*logosl%
103     <10><10.95><12><14.4><17.28><20.74><24.88>logosl10%
104   }{}
105   \DeclareFontShape{U}{logo}{m}{it}{%
106     <->ssub*logo/m/sl%
107   }{}%
108   }
```

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

```
109 \newtoks\ResetCommands
```

9

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

3.3   Helpful shorthand (common code with Plain styles)

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

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

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

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

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

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

To distinguish between macro files loaded

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

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

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

3.4   Abbreviations and logos

Font used for the METAFONT logo, etc.

```
158 \def\AllTeX{(\La\kern-.075em)\kern-.075em\TeX}
159 \def\AMS{American Mathematical Society}
160 \def\AmS{$\mathcal{A}$\kern-.1667em\lower.5ex\hbox
161   {$\mathcal{M}$}\kern-.125em$\mathcal{S}$}
162 \def\AmSLaTeX{\AmS-\LaTeX}
163 \def\AmSTeX{\AmS-\TeX}
164 \def\ANSI{\acro{ANSI}}
165 \def\API{\acro{API}}
166 \def\ASCII{\acro{ASCII}}
167 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}
168 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
169 %
170 % make \BibTeX work in slanted contexts too; it's common in titles, and
171 % especially burdensome to hack in .bib files.
172 \def\Bib{%
173   \ifdim \fontdimen1\font>0pt
174     B{\SMC\SMC IB}%
175   \else
176     \textsc{Bib}%
177   \fi
178 }
179 \def\BibTeX{\Bib\kern-.08em \TeX}
```

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

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

```
185 \def\ConTeXt{C\kern-.0333emon\-\kern-.0667em\TeX\kern-.0333emt}
186 \def\CMkIV{\ConTeXt\ \MkIV}
187 \def\Cplusplus{C\plusplus}
188 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
189 \def\CSS{\acro{CSS}}
190 \def\CSV{\acro{CSV}}
191 \def\CTAN{\acro{CTAN}}
192 \def\DTD{\acro{DTD}}
193 \def\DTK{\acro{DTK}}
194 \def\DVD{\acro{DVD}}
195 \def\DVI{\acro{DVI}}
196 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
197 \def\DVItoVDU{\DVIto\kern-.12em VDU}
198 \def\ECMA{\acro{ECMA}}
199 \def\EPS{\acro{EPS}}
200 \DeclareRobustCommand\eTeX{\ensuremath{\varepsilon}-\kern-.125em\TeX}
201 \DeclareRobustCommand\ExTeX{%
202   \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}
203 \def\FAQ{\acro{FAQ}}
204 \def\FTP{\acro{FTP}}
205 \def\Ghostscript{Ghost\-script}
206 \def\GNU{\acro{GNU}}
207 \def\GUI{\acro{GUI}}
208 \def\Hawaii{Hawai`i}
209 \def\HTML{\acro{HTML}}
210 \def\HTTP{\acro{HTTP}}
211 \def\IDE{\acro{IDE}}
212 \def\IEEE{\acro{IEEE}}
213 \def\ISBN{\acro{ISBN}}
214 \def\ISO{\acro{ISO}}
215 \def\ISSN{\acro{ISSN}}
216 \def\JPEG{\acro{JPEG}}
217 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
218 \def\JoT{\textsl{The Joy of \TeX}}
219 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
220                   $\m@th$\fontsize\sf@size\z@\selectfont
221                   $\m@th\mathcal{A}$}%
222   \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
223   {$\m@th\mathcal{S}$}-\TeX}
224 % This code
225 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
226 % example) to propagate into the raised (small) `A':
227 %    \begin{macrocode}
```

```
228 \newcommand{\La}%
229    {L\kern-.36em
230        {\setbox0\hbox{T}%
231         \vbox to\ht0{\hbox{$\m@th$%
232                            \csname S@\f@size\endcsname
233                            \fontsize\sf@size\z@
234                            \math@fontsfalse\selectfont
235                            A}%
236                    \vss}%
237        }}
```

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.

```
238 ⟨!latex⟩\def\LaTeX{\La\kern-.15em\TeX}
239 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
240 \def\MacOSX{Mac\,\acro{OS\,X}}
241 \def\MathML{Math\acro{ML}}
242 \def\Mc{\setbox\TestBox=\hbox{M}M\vbox
243    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`

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

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

```
268 \def\Pas{Pascal}
269 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
270 \def\PCTeX{PC\thinspace\TeX}
271 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
272 \def\PDF{\acro{PDF}}
273 \def\PGF{\acro{PGF}}
274 \def\PHP{\acro{PHP}}
275 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
276 \def\PiCTeX{\PiC\kern-.11em\TeX}
277 \def\plain{\texttt{plain}}
278 \def\PNG{\acro{PNG}}
279 \def\POBox{P.\thinspace O.~Box }
280 \def\PS{{Post\-Script}}
281 \def\PSTricks{\acro{PST}ricks}
282 \def\RTF{\acro{RTF}}
283 \def\SC{Steering Committee}
284 \def\SGML{\acro{SGML}}
285 \def\SliTeX{\textrm{S\kern-.06em\textsc{l\kern-.035emi}%
286                     \kern-.06em\TeX}}
287 \def\slMF{\textsl{\MF}} % should never be used
288 \def\SQL{\acro{SQL}}
289 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
290 \def\STIX{\acro{STIX}}
291 \def\SVG{\acro{SVG}}
292 \def\TANGLE{\texttt{TANGLE}\@}
293 \def\TB{\textsl{The \TeX book}}
294 \def\TIFF{\acro{TIFF}}
295 \def\TP{\textsl{\TeX}: \textsl{The Program}}
296 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
297 \def\TeXhax{\TeX hax}
298 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
299    \kern-.2267emG\@}
300 \def\TeXtures{\textit{Textures}}
301 \let\Textures=\TeXtures
302 \def\TeXworks{\TeX\kern-.07em works}
303 \def\TeXXeT{\TeX-{}-\XeT}
304 \def\TFM{\acro{TFM}}
305 \expandafter\ifx\csname XeTeXrevision\endcsname\relax
306 \def\Thanh{H\`an~Th\^e\llap{\raise 0.5ex\hbox{\'{}}}~Th\`anh}% non-XeTeX
307 \else
308 \def\Thanh{H\`an~Th\textcircumacute{e}~Th\`anh}% xunicode drops the acute else
309 \fi
310 \def\TikZ{Ti{\em k}Z}
311 \def\ttn{\textsl{TTN}\@}
312 \def\TTN{\textsl{\TeX{} and TUG News}}
313 \let\texttub\textsl                % redefined in other situations
314 \def\TUB{\texttub{TUGboat}}
315 \def\TUG{\TeX\ \UG}
```

```
316 \def\tug{\acro{TUG}}
317 \def\UG{Users Group}
318 \def\UNIX{\acro{UNIX}}
319 \def\UTF{\acro{UTF}}
320 \def\VAX{V\kern-.12em A\kern-.1em X\@}
321 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
322 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
323 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
324 \def\XML{\acro{XML}}
325 \def\WEB{\texttt{WEB}\@}
326 \def\WEAVE{\texttt{WEAVE}\@}
327 \def\WYSIWYG{\acro{WYSIWYG}}
```

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`.)

```
328 \def\tubreflect#1{%
329   \@ifundefined{reflectbox}{%
330     \TBerror{A graphics package must be loaded for \string\XeTeX}%
331   }{%
332     \ifdim \fontdimen1\font>0pt
333       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
334     \else
335       \reflectbox{#1}%
336     \fi
337   }%
338 }
339 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
340 \DeclareRobustCommand\Xe[1]{\leavevmode
341   \tubhideheight{\hbox{X%
342     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
343     \lower\dp0\hbox{\raise\dp1\hbox{\kern-.125em\tubreflect{E}}}%
344     \kern-.1667em #1}}}
345 \def\XeTeX{\Xe\TeX}
346 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
347 %
348 \def\XHTML{\acro{XHTML}}
349 \def\XSL{\acro{XSL}}
350 \def\XSLFO{\acro{XSL}\raise.08ex\hbox{-}\acro{FO}}
351 \def\XSLT{\acro{XSLT}}
```

3.5   General typesetting rules

```
352 \newlinechar='\^^J
353 \normallineskiplimit=\p@
354 \clubpenalty=10000
355 \widowpenalty=10000
356 \def\NoParIndent{\parindent=\z@}
```

```
357 \newdimen\normalparindent
358 \normalparindent=20\p@
359 \def\NormalParIndent{\global\parindent=\normalparindent}
360 \NormalParIndent
361 \def\BlackBoxes{\overfullrule=5\p@}
362 \def\NoBlackBoxes{\overfullrule=\z@}
363 \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.

```
364 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
365    \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
366 \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`.

```
367 \newbox\T@stBox                \newbox\TestBox
368 \newcount\T@stCount            \newcount\TestCount
369 \newdimen\T@stDimen            \newdimen\TestDimen
370 \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).

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

LaTeX conventions which are also useful here.

```
372 ⟨∗!latex⟩
373   \let\@@input\input
374   \def\iinput#1{\@@input#1 }
375   \def\@inputcheck{\if\@nextchar\bgroup
376     \expandafter\iinput\else\expandafter\@@input\fi}
377   \def\input{\futurelet\@nextchar\@inputcheck}
378 ⟨/!latex⟩
```

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

```
379 \newif\iftop@          \newif\ifbot@
380 \def\topsmash{\top@true\bot@false\smash@}
381 \def\botsmash{\top@false\bot@true\smash@}
382 \def\smash{\top@true\bot@true\smash@}
383 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
```

```
384            \else\let\next\makesm@sh\fi \next }
385  \def\finsm@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}
```

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

```
386  \long\def\ulap#1{\vbox to \z@{\vss#1}}
387  \long\def\dlap#1{\vbox to \z@{#1\vss}}
```

And centered horizontal and vertical 'laps'

```
388  \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
389  \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
390  \long\def\zlap#1{\ylap{\xlap{#1}}}
```

Avoid unwanted vertical glue when making up pages.

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

Empty rules for special occasions

```
392  \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
393  \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

```
395  \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
396          \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
397            \vss\hb@xt@#2{\vrule \@width\T@stDimen
398              \hfil\makestrut[#1;\z@]%
399              \vrule \@width\T@stDimen}\vss
400          \hrule \@height\T@stDimen \@depth\z@}}
```

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

```
401  ⟨*!latex⟩
402  \def\today{\number\day\space \ifcase\month\or
403          Jan \or Feb \or Mar \or Apr \or May \or Jun \or
404          Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
405          \number\year}
406  ⟨/!latex⟩
```

Current time; this may be system dependent!

```
407  \newcount\hours
408  \newcount\minutes
409  \def\SetTime{\hours=\time
410          \global\divide\hours by 60
411          \minutes=\hours
412          \multiply\minutes by 60
413          \advance\minutes by-\time
414          \global\multiply\minutes by-1 }
415  \SetTime
416  \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
417  \def\Now{\today\ \now}
418  \newif\ifPrelimDraft
419  \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.

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

\raggedright
\raggedleft
\raggedcenter
\normalspaces

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

```
424 \def\raggedright{%
425   \nohyphens
426   \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
427   \parfillskip=\raggedparfill
428 }
429 \def\raggedleft{%
430   \nohyphens
431   \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
432   \parfillskip=\z@skip
433 }
434 \def\raggedcenter{%
435   \nohyphens
436   \leftskip=\raggedskip\@plus\raggedstretch
437   \rightskip=\leftskip \raggedspaces
438   \parindent=\z@ \parfillskip=\z@skip
439 }
440 \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).

```
441 \DeclareRobustCommand{\nobreakspace}{%
442   \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...)

```
443 \def\boxcs#1{\box\csname#1\endcsname}
444 \def\setboxcs#1{\setbox\csname#1\endcsname}
```

---

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

```
445 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
446 \let\gobble\@gobble
447 \def\vellipsis{%
448     \leavevmode\kern0.5em
449     \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
450     }
451 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
452 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
453 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
454                 /\kern-.125em\smash{\lower.3ex\hbox{o}}} \ignorespaces}
455 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
456 %
457 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}%
458                                             {\@sfrac{#1}/}}
459 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
460         \hbox{$\m@th\mbox{\fontsize\sf@size\z@
461                             \selectfont#1}$}\kern-.1em
462         /\kern-.15em\lower.25ex
463          \hbox{$\m@th\mbox{\fontsize\sf@size\z@
464                             \selectfont#2}$}}
465 %
466 % don't stay bold in description items, bold italic is too weird.
467 \DeclareRobustCommand\meta[1]{%
468     \ensuremath{\langle}%
469     \ifmmode \mbox\bgroup \fi % if in math
470     {\it #1\/}% no typewriter italics, please
471     \ifmmode \egroup \fi
472     \ensuremath{\rangle}%
473 }
474 %
475 \DeclareRobustCommand\cs[1]{\texttt{\char`\\#1}}
476 %
477 \DeclareRobustCommand\env[1]{%
478     \cs{begin}\texttt{\char`\{#1\char`\}}}
479 %
480 \def\thinskip{\hskip 0.16667em\relax}
```

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

```
481 \def\endash{--}
482 \def\emdash{\endash-}
483 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
484 \def\dash{\d@sh\nobreak\endash}
485 \def\Dash{\d@sh\nobreak\emdash}
486 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
487 \def\rdash{\d@sh\nobreak\endash}
488 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
489 \def\Rdash{\d@sh\nobreak\emdash}
```

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

```
490 \def\hyph{-\penalty\z@\hskip\z@skip }
491 \def\slash{/\penalty\z@\hskip\z@skip }
```

Adapted from `comp.text.tex` posting by Donald Arseneau, 26 May 93. LaTeX 2_ε-isation added by Robin Fairbairns. Destroys both the `TestCounts`.

```
492 \def\nth#1{%
493     \def\reserved@a##1##2\@nil{\ifcat##1n%
494           0%
495           \let\reserved@b\ensuremath
496       \else##1##2%
497           \let\reserved@b\relax
498       \fi}%
499     \TestCount=\reserved@a#1\@nil\relax
500     \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
501     \T@stCount=\TestCount
502     \divide\T@stCount by 100 \multiply\T@stCount by 100
503     \advance\TestCount by-\T@stCount      % n mod 100
504     \ifnum\TestCount >20 \T@stCount=\TestCount
505       \divide\T@stCount by 10 \multiply\T@stCount by 10
506       \advance\TestCount by-\T@stCount    % n mod 10
507     \fi
508     \reserved@b{#1}%
509       \textsuperscript{\ifcase\TestCount th%    0th
510                        \or   st%              1st
511                        \or   nd%              2nd
512                        \or   rd%              3rd
513                        \else th%              nth
514                        \fi}%
515 }
```

3.8   Reviews

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

```
516 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
517 \def\@Review:{\@ifnextchar[%
518   {\@Rev}%
519   {\@Rev[Book review]}}
520 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
521                                   \slshape\mdseries#2}}
522 \def\reviewitem{\addvspace{\BelowTitleSkip}%
523   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
524   \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
525   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
526 }
```

```
527 \def\endreviewitem{{\noindent\interlinepenalty=10000
528     \therevauth\therevtitle\therevpubinfo\endgraf}%
529     \vskip\medskipamount
530 }
531 \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`.

To use:
```
            \vol 19, 1.
            \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.

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

(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

```
550 ⟨!latex⟩\def\tubissue#1(#2)%
551 ⟨*latex⟩
```

```
552 \def\tubissue#1{\@ifnextchar(%
553   {\@tubissue@b{#1}}
554   {\@tubissue@a{#1}}}
555 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
556 \def\@tubissue@a#1#2%
557 ⟨/latex⟩
558   {\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`

```
559 \def\infil@{\jobname}
560 \def\Input #1 {\ifnum\issueseqno<0
561     \def\infil@{#1}%
562   \else
563     \def\infil@{tb\number\issueseqno#1}
564   \fi
565   \edef\jobname{\infil@}\@readFLN
566   \@@input \infil@\relax
567   \if@RMKopen
568     \immediate\closeout\@TBremarkfile\@RMKopenfalse
569   \fi
570 }
```

`\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).

```
571 \newif\if@RMKopen        \@RMKopenfalse
572 \newwrite\@TBremarkfile
573 \def\@TBremark#1{%
574   \if@RMKopen
575   \else
576     \@RMKopentrue\immediate\openout\@TBremarkfile=\infil@.rmk
577   \fi
578   \toks@={#1}%
579   \immediate\write\@TBremarkfile{^^J\the\toks@}%
580   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
581 }
```

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

```
582 \let\TBremark=\gobble
```

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

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

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

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

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

```
585 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
586 \newread\@altfilenames
587 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
588   \ifeof\@altfilenames\let\@result\relax\else
589   \def\@result{\@@input\jobname.fln }\fi
590   \immediate\closein\@altfilenames
591   \@result}
592 \@readFLN
593 \everyjob=\expandafter{\the\everyjob\@readFLN}
594 \InputIfFileExists{\jobname.fln}%
595     {\TBInfo{Reading alternative file file \jobname.fln}}{}
```

The following needs to work entirely in TEX's mouth

```
596 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
597   #1\else\csname file@@#1\endcsname\fi}
598 \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.

```
599 ⟨*!latex⟩
600 \def\pagexrefON#1{%
601         \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
602         \write\ppoutfile{%
603                 \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
604         }
605 \def\PageXrefON#1{%
606         \immediate\write-1{\def\expandafter
607                         \noexpand\csname#1\endcsname{\number\pageno}}%
608         \immediate\write\ppoutfile{\def\expandafter
609                         \noexpand\csname#1\endcsname{\number\pageno}}}
610 ⟨/!latex⟩
611 ⟨*latex⟩
612 \def\pagexrefON#1{%
613         \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
614         \write\ppoutfile{%
615                 \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
616         }
617 \def\PageXrefON#1{%
618         \immediate\write-1{\def\expandafter
619                         \noexpand\csname#1\endcsname{\number\c@page}}%
620         \immediate\write\ppoutfile{\def\expandafter
```

```
621                              \noexpand\csname#1\endcsname{\number\c@page}}}
622 ⟨/latex⟩
623 \def\pagexrefOFF#1{}
624 \let\pagexref=\pagexrefOFF
625 \def\PageXrefOFF#1{}
626 \let\PageXref=\PageXrefOFF
627 \def\xreftoON#1{%
628   \ifundefined{#1}%
629     ???\TBremark{Need cross reference for #1.}%
630   \else\csname#1\endcsname\fi}
631 \def\xreftoOFF#1{???}
632 \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.

```
633 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```
634 \ifx\tubomithyphenations\@thisisundefined
635 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
636   Flor-i-da Free-BSD Ghost-script Ghost-view
637   Hara-lam-bous Jac-kow-ski Karls-ruhe
638   Mac-OS Ma-la-ya-lam Math-Sci-Net
639   Net-BSD Open-BSD Open-Office
640   Pfa-Edit Post-Script Rich-ard Skoup South-all
641   Vieth VM-ware Win-Edt
642   acro-nym acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
643   bib-lio-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
644   col-umns com-put-able com-put-abil-ity cus-tom-iz-able
645   data-base data-bases
646    de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
647    de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able
648   es-sence
649   fall-ing
650   half-way
651   in-fra-struc-ture
652   key-note
653   long-est
654   ma-gyar man-u-script man-u-scripts meta-table meta-tables
655    mne-mon-ic mne-mon-ics mono-space mono-spaced
656   name-space name-spaces
657   off-line over-view
658   pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
659    pipe-line pipe-lines
660    plug-in plug-ins pres-ent-ly pro-gram-mable
661   re-allo-cate re-allo-cates re-allo-cated re-printed
662   set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
663    sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
```

24

```
664   text-height text-length text-width
665    time-stamp time-stamped time-stamps
666   vis-ual vis-ual-ly
667   which-ever white-space white-spaces wide-spread wrap-around
668 }
669 \fi
670 ⟨!latex⟩\restorecat\@
671 ⟨/common⟩
672 ⟨*classtail⟩
673 \PrelimDrafttrue
```

3.10   Page dimensions, glue, penalties etc

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

In LaTeX 2ε, 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.

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

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

```
701 \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):

```
702 \DeclareLaTeXLogo{cmss}{bx}n{.3}{.15}
703 \DeclareLaTeXLogo{cmr}m{it}{.3}{.27}
704 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
705 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
706 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
707 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a
708    \csname @LaTeX@\f@family/\f@series/\f@shape\endcsname
709    \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
710    \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.

```
711 \newcommand\@LaTeX[2]{L\kern-#1em
712        {\sbox\z@ T%
713         \vbox to\ht0{\hbox{$\m@th$%
714                        \csname S@\f@size\endcsname
715                        \fontsize\sf@size\z@
716                        \math@fontsfalse\selectfont
717                        A}%
718                     \vss}%
719        }%
720        \kern-#2em%
721        \TeX}
```

3.12   Authors, contributors, addresses, signatures

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

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

```
722 \def\theauthor#1{\csname theauthor#1\endcsname}
723 \def\theaddress#1{\csname theaddress#1\endcsname}
724 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
725 \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.

```
726 ⟨!latex⟩\newcount\@tempcnta
727 \def\@defaultauthorlist{%
728   \@getauthorlist\@firstofone
729 }
```

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

```
730 \def\@getauthorlist#1{%
731   \count@\authornumber
732   \advance\count@ by -2
733   \@tempcnta0
```

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

```
734   \loop
735     \ifnum\count@>0
736       \advance\@tempcnta by \@ne
737       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
738       \advance\count@ by \m@ne
739   \repeat
740   \count@\authornumber
741   \advance\count@ by -\@tempcnta
742   \ifnum\authornumber>0
```

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

```
743     \ifnum\count@>1
744       \count@\authornumber
745       \advance\count@ by \m@ne
746       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
747     \fi
```

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

```
748     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
749   \fi
750 }
```

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...)

```
751 \def\signature#1{\def\@signature{#1}}
752 \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`

```
753 \def\@defaultsignature{{%
754     \let\thanks\@gobble
755     \frenchspacing
756     %
757     \ifnum\authornumber<0
```

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

```
758         \medskip
759         \signaturemark
760         \theauthor{\number\authornumber}\\
761         \theaddress{\number\authornumber}\\
762         \allowhyphens
763         \thenetaddress{\number\authornumber}\\
764         \thePersonalURL{\number\authornumber}\\
765     \else
```

`\authornumber`≥ 0, so we are in the body of an ordinary article

```
766         \count@=0
767         \loop
768           \ifnum\count@<\authornumber
769             \medskip
770             \advance\count@ by \@ne
771             \signaturemark
772             \theauthor{\number\count@}\\
773             \theaddress{\number\count@}\\
774             {%
775               \allowhyphens
776               \thenetaddress{\number\count@}\\
777               \thePersonalURL{\number\count@}\\
778             }%
779         \repeat
780     \fi
781   }%
782 }
783 \newdimen\signaturewidth    \signaturewidth=12pc
```

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

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

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

```
785   \@tempdima\signaturewidth
786   \advance\@tempdima 1.5pc
787   \ifdim \@tempdima>\columnwidth
788     \signaturewidth \columnwidth
```

```
789     \advance\signaturewidth -1.5pc
790   \fi
791   \par
792   \penalty9000
793   \vspace{#1}%
794   \rightline{%
795     \vbox{\hsize\signaturewidth \ninepoint \raggedright
796       \parindent \z@ \everypar={\hangindent 1pc }
797       \parskip \z@skip
798       \def\|{\unskip\hfil\break}%
799       \def\\{\endgraf}%
800       \def\phone{\rm Phone: }
801       \rm\@signature}%
802   }%
803   \ifnum\authornumber<0 \endgroup\fi
804 }
805 \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.

```
806 \newcount\authornumber
807 \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`).

```
808 \def\author{%
809   \global\advance\authornumber\@ne
810   \TB@author
811 }
```

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

```
812 \def\contributor{%
813    \begingroup
814    \authornumber\m@ne
815    \TB@author
816 }
```

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).

```
817 \def\TB@author#1{%
818    \expandafter\def\csname theauthor\number\authornumber\endcsname
819       {\ignorespaces#1\unskip}%
820    \expandafter\def\csname theaddress\number\authornumber\endcsname
821      {\TBWarningNL{Address for #1\space missing}\@gobble}%
822    \expandafter\def\csname thenetaddress\number\authornumber\endcsname
823      {\TBWarningNL{Net address for #1\space missing}\@gobble}%
824    \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
825      \@gobble
826    }
827 \def\EDITORnoaddress{%
828    \expandafter\let\csname theaddress\number\authornumber\endcsname
829      \@gobble
830 }
831 \def\EDITORnonetaddress{%
832    \expandafter\let\csname thenetaddress\number\authornumber\endcsname
833      \@gobble
834 }
```

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

```
835 \def\address#1{%
836    \expandafter\def\csname theaddress\number\authornumber\endcsname
837       {\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*!

```
838 \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_ε, we use the default-argument form of `\newcommand`; otherwise we write it out in all its horribleness.

30

```
839 \newcommand\netaddress[1][\relax]{%
840   \begingroup
841   \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$_\varepsilon$.

```
842   #1\@sanitize\makespace\ \makeactive\@
843   \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?!**)

```
844 \def\@relay@netaddress#1{%
845   \ProtectNetChars
846   \expandafter\protected@xdef
847       \csname thenetaddress\number\authornumber\endcsname
848     {\protect\leavevmode\textrm{\@network}%
849      {\protect\NetAddrChars\net
850       \ignorespaces#1\unskip}}%
851   \endgroup
852   }
```

\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.

```
853 \def\personalURL{\begingroup
854   \@sanitize\makespace\ \makeactive\@
855   \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
856 \def\@personalURL#1{%
857   \ProtectNetChars
858   \expandafter\protected@xdef
859     \csname thePersonalURL\number\authornumber\endcsname{%
860       \protect\leavevmode
861       {%
862         \protect\URLchars\net
863         \ignorespaces#1\unskip
864       }%
865     }%
866   \endgroup
867   }
```

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. . .

```
868 {%
869   \makecomment\*
870   \makeactive\@
```

```
871    \gdef\netaddrat{\makeactive\@*
872      \def@{\discretionary{\char"40}{}{\char"40}}}
873    \makeactive\%
874    \gdef\netaddrpercent{\makeactive\%*
875      \def%{\discretionary{\char"25}{}{\char"25}}}
876    \makeactive\.
877    \gdef\netaddrdot{\makeactive\.*
878      \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.

```
879    \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
880    \makeactive\/
881    \gdef\URLchars{*
882      \NetAddrChars
883      \makeactive\/*
884      \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.

```
885    \gdef\ProtectNetChars{*
886      \def@{\protect@}*
887      \def%{\protect%}*
888      \def.{\protect.}*
889      \def/{\protect/}*
890      }
891 }
```

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).

```
892 \if@compatibility
893   \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\symtypewriter}
894 \else
895   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
896 \fi
897 \def\authorlist#1{\def\@author{#1}}
898 \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

```
899 \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.

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

\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.

```
924 \def\rhTitle{}% avoid error if no author or title
925 \renewcommand\title{\@dblarg\TB@title}
926 \def\TB@title[#1]#2{\gdef\@title{#2}%
927   \bgroup
928     \let\thanks\@gobble
929     \def\\{\unskip\space\ignorespaces}%
930     \protected@xdef\rhTitle{#1}%
```

```
931    \egroup
932 }
```

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

```
933 \def\shortTitle #1{\def\rhTitle{#1}}
934 \newif\ifshortAuthor
935 \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:

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

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

```
937 \newdimen\stbaselineskip        \stbaselineskip=18\p@
938 \newdimen\stfontheight
939 \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.

```
940 \newif\ifSecTitle
941 \SecTitlefalse
942 \newif\ifWideSecTitle
943 \newcommand\sectitle{%
944   \SecTitletrue
945   \@ifstar
946     {\WideSecTitletrue\def\s@ctitle}%
947     {\WideSecTitlefalse\def\s@ctitle}%
948 }
```

\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.

```
949 \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'ld expect; `\strulethickness` is the value to use for `\fboxrule` when setting the title.

```
950 \newskip\AboveTitleSkip   \AboveTitleSkip=12\p@
951 \newskip\BelowTitleSkip   \BelowTitleSkip=8\p@
952 \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. . .

```
953 \def\@sectitle #1{%
954   \par
955   \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.

```
956   \ifWideSecTitle\else\secsep\fi
957   {%
958     \fboxrule\strulethickness
959     \fboxsep\z@
960     \noindent\framebox[\hsize]{%
961       \vbox{%
962         \raggedcenter
963         \let\\\@sectitle@newline
964         \sectitlefont
965         \makestrut[2\stfontheight;\z@]%
966         #1%
967         \makestrut[\z@;\stfontheight]\endgraf
968       }%
969     }%
970   }%
971   \nobreak
972   \vskip\baselineskip
973 }
```

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

```
974 \newcommand{\@sectitle@newline}[1][\z@]{%
975   \ifdim#1>\z@
976     \makestrut[\z@;#1]%
977   \fi
978   \unskip\break
979 }
```

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).

```
980 \def\@makesectitle{\ifSecTitle
981    \global\SecTitlefalse
982    \ifWideSecTitle
983      \twocolumn[\@sectitle{\s@ctitle}]%
984      \global\WideSecTitlefalse
985    \else
986      \@sectitle{\s@ctitle}%
987    \fi
988  \else
989    \vskip\AboveTitleSkip
990    \kern\topskip
991    \hrule \@height\z@ \@depth\z@ \@width 10\p@
992    \kern-\topskip
993    \kern-\strulethickness
994    \hrule \@height\strulethickness \@depth\z@
995    \kern\medskipamount
996    \nobreak
997  \fi
998 }
```

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

```
999  \def\@maketitle{%
1000   \@makesectitle
1001   \if@articletitle{%
1002     \nohyphens \interlinepenalty\@M
1003     \setbox0=\hbox{%
1004       \let\thanks\@gobble
1005       \let\\=\quad
1006       \let\and=\quad
1007       \ignorespaces\@author}%
1008     {%
1009       \noindent\bf\raggedright\ignorespaces\@title\endgraf
1010     }%
1011     \ifdim \wd0 < 5\p@              % omit if author is null
1012     \else
```

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

```
1013       \nobreak \vskip 4\p@
1014       {%
1015         \leftskip=\normalparindent
1016         \raggedright
1017         \def\and{\unskip\\}%
1018         \noindent\@author\endgraf
1019       }%
1020     \fi
1021     \nobreak
1022     \vskip\BelowTitleSkip
1023   }\fi%
```

36

```
1024    \global\@afterindentfalse
1025    \aftergroup\@afterheading
1026 }
```

Dedications are ragged right, in italics.

```
1027 \newenvironment{dedication}%
1028    {\raggedright\noindent\itshape\ignorespaces}%
1029    {\endgraf\medskip}
```

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

```
1030 \renewenvironment{abstract}%
1031    {%
1032       \begin{SafeSection}%
1033       \section*{Abstract}%
1034    }%
1035    {\end{SafeSection}}
1036 \newenvironment{longabstract}%
1037    {%
1038       \begin{SafeSection}%
1039       \section*{Abstract}%
1040       \bgroup\small
1041    }%
1042    {%
1043       \endgraf\egroup
1044       \end{SafeSection}%
1045    \vspace{.25\baselineskip}
1046    \begin{center}
1047       {$--*--$}
1048    \end{center}
1049    \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.

```
1050 \if@numbersec
1051    \def\section{\TB@startsection{{section}%
1052                                  1%
1053                                  \z@
1054                                  {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1055                                  {4\p@}%
1056          {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
```

```
1057    \def\subsection{\TB@startsection{{subsection}%
1058                                    2%
1059                                    \z@
1060                                    {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1061                                    {4\p@}%
1062            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1063    \def\subsubsection{\TB@startsection{{subsubsection}%
1064                                      3%
1065                                      \z@
1066                                      {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1067                                      {4\p@}%
1068            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1069    \def\paragraph{\TB@startsection{{paragraph}%
1070                                    4%
1071                                    \z@
1072                                    {4\p@ \@plus1\p@ \@minus1\p@}%
1073                                    {-1em}%
1074                                    {\normalsize\bf}}}
```

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

```
1075 \else
1076    \setcounter{secnumdepth}{0}
1077    \def\section{\TB@nolimelabel
1078            \TB@startsection{{section}%
1079                                    1%
1080                                    \z@
1081                                    {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1082                                    {4\p@}%
1083            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1084    \def\subsection{\TB@nolimelabel
1085            \TB@startsection{{subsection}%
1086                                      2%
1087                                      \z@
1088                                      {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1089                                      {-0.5em\@plus-\fontdimen3\font}%
1090            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1091    \def\subsubsection{\TB@nolimelabel
1092                \TB@startsection{{subsubsection}%
1093                                        3%
1094                                        \parindent
1095                                        {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1096                                        {-0.5em\@plus-\fontdimen3\font}%
1097            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1098 \fi
```

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

```
1099 \if@numbersec
1100    \def\TB@startsection#1{\@startsection#1}%
```

```
1101 \else
1102   \def\TB@startsection#1{%
1103     \@ifstar
1104       {\TBWarning{*-form of \expandafter\string\csname\@firstofsix#1%
1105                  \endcsname\space
1106                  \MessageBreak
1107                  conflicts with nonumber class option}%
1108        \@startsection#1}%
1109       {\@startsection#1}%
1110   }
1111 \fi
1112 \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).

```
1113 \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.

```
1114 \newenvironment{SafeSection}%
1115   {\let\TB@startsection\TB@safe@startsection}%
1116   {}
```

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.

```
1117 \if@numbersec
1118   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1119 \else
1120   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1121   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1122 \fi
1123 \def\chapter{\TB@nosection\chapter\section}
1124 \def\part{\TB@nosection\part\section}
1125 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1126     \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.

---

[2]Thurber, *The Wonderful O*

```
1127 \def\TBtocsectionfont{\normalfont}
1128 \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...

```
1129 %\def\l@part#1#2{\addpenalty{\@secpenalty}%
1130 %   \addvspace{2.25em\@plus\p@}%
1131 %   \begingroup
1132 %     \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
1133 %     {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1134 %     \nobreak
1135 %   \endgroup}
1136 %
1137 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1138   \addvspace{\TBtocsectionspace}%
1139   \@tempdima 1.5em
1140   \begingroup
1141     \parindent\z@ \rightskip\z@  % article style makes \rightskip > 0
1142     \parfillskip\z@
1143     \TBtocsectionfont
1144     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1145     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1146   \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:

```
1147 \renewcommand\appendix{\par
1148   \renewcommand\thesection{\@Alph\c@section}%
1149   \setcounter{section}{0}%
1150   \if@numbersec
1151   \else
1152     \setcounter{secnumdepth}{1}%
1153   \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.

```
1154   \def\@tempa{appendix}
1155   \ifx\@tempa\@currenvir
1156     \expandafter\@appendix@env
1157   \fi
1158 }
```

40

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

```
1159 \newcommand\app@prefix@section{}
1160 \newcommand\@appendix@env[1][Appendix]{%
1161   \renewcommand\@seccntformat[1]{\csname app@prefix@##1\endcsname
1162     \csname the##1\endcsname\quad}%
1163   \renewcommand\app@prefix@section{#1 }%
1164 }
```

Ending an appendix environment is pretty trivial. . .

```
1165 \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

```
1166 \def\TB@nolimelabel{%
1167   \def\@currentlabel{%
1168     \protect\TBWarning{%
1169       Invalid reference to numbered label on page \thepage
1170       \MessageBreak made%
1171     }%
1172     \textbf{?!?}%
1173   }%
1174 }
```

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.

```
1175 \let\TB@@sect\@sect
```

```
1176 \let\TB@@ssect\@ssect
1177 \def\@sect#1#2#3#4#5#6[#7]#8{%
1178   \def\@currentlabelname{#7}%
1179   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1180 }
1181 \def\@ssect#1#2#3#4#5{%
1182   \def\@currentlabelname{#5}%
1183   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1184 }
```

We output the name label as a second `\newlabel` command in the `.aux` file. That way, packages such as `varioref` which also read the `.aux` information can still work. So we redefine `\label` to first call the standard LATEX `\label` and then write our named label as `nr<label>`.

```
1185 \let\@savelatexlabel=\label  % so save original LaTeX command
1186 %
1187 \def\label#1{% de
1188   \@savelatexlabel{#1}%
1189   \@bsphack
1190   \if@filesw
1191     \protected@write\@auxout{}%
1192       {\string\newlabel{nr@#1}{{\@currentlabel}{\@currentlabelname}}}%
1193   \fi
1194   \@esphack
1195 }
```

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

```
1196 \let\@currentlabelname\@empty
```

Getting named references is then just like getting page references in the LATEX kernel (see `ltxref.dtx`).

```
1197 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1198   \csname r@nr@#1\endcsname\@secondoftwo{#1}}
```

3.19 Float captions

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

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

`\tubfullpageindent`

```
1199 \newdimen\tubfullpageindent  \tubfullpageindent=4.875pc
```

Ok, here is the `\@makecaption`.

```
1200 \long\def\@makecaption#1#2{%
1201   \vskip\abovecaptionskip
1202   \sbox\@tempboxa{\small \tubmakecaptionbox{#1}{#2}}% try in an hbox
1203   \ifdim \wd\@tempboxa > \hsize
```

```
1204     {% caption doesn't fit on one line; set as a paragraph.
1205       \small \raggedright \hyphenpenalty=\@M \parindent=1em
1206       % indent full-width captions {figure*}, but not single-column {figure}.
1207       \ifdim\hsize = \textwidth
1208         \leftskip=\tubfullpageindent \rightskip=\leftskip
1209         \advance\rightskip by 0pt plus2em  % increase acceptable raggedness
1210       \fi
1211       \noindent \tubmakecaptionbox{#1}{#2}\par}%
1212   \else
1213     % fits on one line; use the hbox, centered.  Do not reset its glue.
1214     \global\@minipagefalse
1215     \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1216   \fi
1217   \vskip\belowcaptionskip}
1218 %
1219 \def\tubmakecaptionbox#1#2{#1: #2}% allow overriding for a paper
```

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

```
1220 \def\fnum@figure{{\small \bf \figurename\nobreakspace\thefigure}}
1221 \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.

```
1222 \setlength\abovecaptionskip{6pt plus1pt minus1pt}
```

3.20   Size changing commands

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

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

```
1242     \abovedisplayshortskip=\z@\@plus 3\p@
1243     \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1244 }
```

3.21   Lists and other text inclusions

```
1245 \def\@listi{%
1246   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1247   \itemsep=\parsep
1248   \listparindent=1em
1249   }
1250
1251 \def\@listii{%
1252   \leftmargin\leftmarginii
1253   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1254   \topsep=2\p@\@plus\p@\@minus\p@
1255   \parsep=\p@\@plus\p@\@minus\p@
1256   \itemsep=\parsep
1257   \listparindent=1em
1258   }
1259
1260 \def\@listiii{%
1261   \leftmargin=\leftmarginiii
1262   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1263   \topsep=\p@\@plus\p@\@minus\p@
1264   \parsep=\z@
1265   \itemsep=\topsep
1266   \listparindent=1em
1267   }
1268 \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.

```
1269 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1270     \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}
```

The `compactitemize` and `compactenumerate` environments, without space between the items.

```
1271 \newenvironment{compactitemize}%
1272   {\begin{itemize}%
1273     \setlength{\itemsep}{0pt}%
1274     \setlength{\parskip}{0pt}%
1275     \setlength{\parsep} {0pt}%
1276   }%
1277   {\end{itemize}}
1278 %
1279 \newenvironment{compactenumerate}%
1280   {\begin{enumerate}%
1281     \setlength{\itemsep}{0pt}%
1282     \setlength{\parskip}{0pt}%
1283     \setlength{\parsep} {0pt}%
```

```
1284    }%
1285    {\end{enumerate}}
```

3.22   Some fun with `verbatim`

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

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

```
1286 %\let\@TB@verbatim\@verbatim
1287 \let\@TBverbatim\verbatim
1288 \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.)

```
1289 \def\verbatim{\par\obeylines
1290    \futurelet\reserved@a\@switch@sqbverbatim}
1291 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1292    \expandafter\@sqbverbatim\else
1293    \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1294 \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.

```
1295    \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.

```
1296    #1\@TBverbatim}
```

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

```
1297 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1298    \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1299    \trivlist \item\relax
1300    \if@minipage\else\vskip\parskip\fi
1301    \leftskip\@totalleftmargin\rightskip\z@skip
1302    \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1303    \@@par
1304    \@tempswafalse
1305    \def\par{%
1306      \if@tempswa
1307        \leavevmode \null \@@par\penalty\interlinepenalty
1308      \else
1309        \@tempswatrue
1310        \ifhmode\@@par\penalty\interlinepenalty\fi
1311      \fi}%
1312    \obeylines \verbatim@font \@noligs
1313    \let\do\@makeother \dospecials
1314    \everypar \expandafter{\the\everypar \unpenalty}%
1315 }%
```

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).

```
1316 \def\endverbatim{\@TBendverbatim
1317    \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

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

```
    <meta-text>
```

as:

$\langle meta\text{-}text\rangle$

```
1318 {\makeactive<
1319    \gdef<#1>{{\reset@font\ensuremath{\langle}%
1320      \textit{#1}%
1321      \ensuremath{\rangle}}}
1322 }
```

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

```
1323 \let\if@ruled\iffalse
```

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

```
1324 \AtBeginDocument{%
1325    \@ifpackageloaded{microtype}
1326      {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{}
1327 }
```

---

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

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.

```
1328 \if@Harvardcite
1329 \let\@internalcite\cite
```

Normal forms.

```
1330 \def\cite{\def\@citeseppen{-1000}%
1331     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1332     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1333 \def\citeNP{\def\@citeseppen{-1000}%
1334     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1335     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1336 \def\citeN{\def\@citeseppen{-1000}%
1337     \def\@cite##1##2{##1\if@tempswa , ##2)\else()}\fi}%
1338     \def\citeauthoryear##1##2##3{##1 (##3)}\@citedata}
1339 \def\citeA{\def\@citeseppen{-1000}%
1340     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1341     \def\citeauthoryear##1##2##3{##1}\@internalcite}
1342 \def\citeANP{\def\@citeseppen{-1000}%
1343     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1344     \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1345 \def\shortcite{\def\@citeseppen{-1000}%
1346     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1347     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1348 \def\shortciteNP{\def\@citeseppen{-1000}%
1349     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1350     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
```

```
1351 \def\shortciteN{\def\@citeseppen{-1000}%
1352     \def\@cite##1##2{##1\if@tempswa , ##2)\else{)}\fi}%
1353     \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1354 \def\shortciteA{\def\@citeseppen{-1000}%
1355     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1356     \def\citeauthoryear##1##2##3{##2}\@internalcite}
1357 \def\shortciteANP{\def\@citeseppen{-1000}%
1358     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1359     \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1360 \def\citeyear{\def\@citeseppen{-1000}%
1361     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1362     \def\citeauthoryear##1##2##3{##3}\@citedata}
1363 \def\citeyearNP{\def\@citeseppen{-1000}%
1364     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1365     \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.

```
1366 \def\@citedata{%
1367         \@ifnextchar [{\@tempswatrue\@citedatax}%
1368                             {\@tempswafalse\@citedatax[]}%
1369 }
1370
1371 \def\@citedatax[#1]#2{%
1372 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1373   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1374     {\@citea\def\@citea{, }\@ifundefined% by Young
1375       {b@\@citeb}{{\bf ?}%
1376       \@warning{Citation `\@citeb' on page \thepage \space undefined}}%
1377 {\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.

```
1378 \def\@citex[#1]#2{%
1379 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1380   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1381     {\@citea\def\@citea{; }\@ifundefined% by Young
1382       {b@\@citeb}{{\bf ?}%
1383       \@warning{Citation `\@citeb' on page \thepage \space undefined}}%
1384 {\csname b@\@citeb\endcsname}}}{#1}}%
```

No labels in the bibliography.

```
1385 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```
1386 \newlength{\bibhang}
1387 \setlength{\bibhang}{2em}
```

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

```
1388 \newdimen\bibindent
1389 \bibindent=1.5em
1390 \@ifundefined{refname}%
1391     {\newcommand{\refname}{References}}%
1392     {}%
```

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

```
1393 \def\thebibliography#1{%
1394    \let\TB@startsection\TB@safe@startsection
1395    \section*{\refname
1396      \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1397    \list{[\arabic{enumi}]}{%
1398      \labelwidth\z@ \labelsep\z@
1399      \leftmargin\bibindent
1400      \itemindent -\bibindent
1401      \listparindent \itemindent
1402      \parsep \z@
1403      \usecounter{enumi}}
1404    \def\newblock{}
1405    \BibJustification
1406    \sfcode`\.=1000\relax
1407 }
```

etal   Other bibliography odds and ends.

`\bibentry`
```
1408 \def\etal{et\,al.\@}
1409 \def\bibentry{%
1410    \smallskip
1411    \hangindent=\parindent
1412    \hangafter=1
1413    \noindent
1414    \sloppy
1415    \clubpenalty500 \widowpenalty500
1416    \frenchspacing
1417 }
```

`\bibliography`   Changes made to accommodate TUB file naming conventions
`\bibliographystyle`
```
1418 \def\bibliography#1{%
1419    \if@filesw
1420      \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1421    \fi
1422    \@input{\jobname.bbl}%
1423 }
1424 \def\bibliographystyle#1{%
1425    \if@filesw
1426      \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1427    \fi
1428 }
```

\thebibliography
\TB@@thebibliography

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

We also patch `\sloppy` in case there's a need for alternative justification of the body of the bibliography.

```
1429 \else
1430 \let\TB@@thebibliography\thebibliography
1431 \def\thebibliography{%
1432    \let\TB@startsection\TB@safe@startsection
1433    \let\sloppy\BibJustification
1434    \TB@@thebibliography}
1435 \fi
```

\BibJustification
\SetBibJustification
\TB@@sloppy

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

```
1436 \let\TB@@sloppy\sloppy
1437 \let\BibJustification\TB@@sloppy
1438 \newcommand{\SetBibJustification}[1]{%
1439    \renewcommand{\BibJustification}{#1}%
1440 }
1441 \ResetCommands\expandafter{\the\ResetCommands
1442    \let\BibJustification\TB@@sloppy
1443 }
```

3.24 Registration marks

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

```
1444 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1445 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1446 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
```

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

```
1447 \def\ttopregister{\dlap{%
1448        \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1449                      \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1450        \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1451 \def\tbotregister{\ulap{%
1452        \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1453        \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1454                      \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1455 \def\topregister{\ttopregister}
1456 \def\botregister{\tbotregister}
```

3.25 Running heads

```
1457 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
```

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```
1458 \def\PrelimDraftfooter{%
1459   \dlap{\kern\textheight\kern3pc
1460         \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}
1461   }}
```

registration marks; these are temporarily inserted in the running head
```
1462 \def\MakeRegistrationMarks{}
1463 \def\UseTrimMarks{%
1464   \def\MakeRegistrationMarks{%
1465     \ulap{\rlap{%
1466       \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}%
1467             \topregister\vskip \headmargin \vskip 10\p@}}}}%
1468   }
1469 % put issue identification and page number in header.
1470 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1471   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1472   \rtitlex\qquad\midrtitle \hfil \thepage}
1473 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1474   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1475   \thepage\hfil\midrtitle\qquad\rtitlex}
1476
1477 % can be used to reset the font, e.g., tb98kuester.
1478 \def\tubheadhook{}
1479
1480 % put title and author in footer.
1481 \def\@tubrunningfull{%
1482   \def\@oddfoot{% make line break commands produce a normal space
1483     \def\\{\unskip\ \ignorespaces}%
1484     \let\newline=\\%
1485     \hfil\rhTitle}
1486   \def\@evenfoot{\@author\hfil}
1487 }
1488
1489 \def\@tubrunninggetauthor#1{#1
1490   \begingroup
1491     \let\thanks\@gobble
1492     \protected@xdef\rhAuthor{\the\toks@##1}%
1493   \endgroup
1494 }%
1495
1496 % empty footer.
1497 \def\@tubrunningminimal{%
1498   \def\@oddfoot{\hfil}%
1499   \def\@evenfoot{\hfil}%
1500 }
1501
1502 % empty footer and header.
1503 \def\@tubrunningoff{%
1504   \def\@oddfoot{\hfil}%
1505   \def\@evenfoot{\hfil}%
```

```
1506    \def\@oddhead{\hfil}%
1507    \def\@evenhead{\hfil}%
1508 }
1509
1510 \def\ps@headings{}
1511 \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_ε for 1995/06/01 (with the use of `\hb@xt@`). *This* time
> there's no semantic change, but. . .

```
1512 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1513      \global\setbox\@leftcolumn\box\@outputbox
1514      \global\brokenpenalty10000
1515    \else \global\@firstcolumntrue
1516      \global\brokenpenalty100
1517      \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1518        {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1519          \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1520          \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1521          \@whilesw\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1522      \fi}
```

3.27   Font-related definitions and machinery

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

```
1523 \newif\ifFirstPar        \FirstParfalse
1524 \def\smc{\sc}
1525 \def\ninepoint{\small}
1526 ⟨/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, run-
> ning heads, and, on occasion, words to which some emphasis is to be
> given. \SMC was designed to be used for acronyms and all-caps abbre-
> viations, 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.

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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.)

```
1527 ⟨*common⟩
1528 \DeclareRobustCommand\SMC{%
1529   \ifx\@currsize\normalsize\small\else
1530    \ifx\@currsize\small\footnotesize\else
1531     \ifx\@currsize\footnotesize\scriptsize\else
1532      \ifx\@currsize\large\normalsize\else
1533       \ifx\@currsize\Large\large\else
1534        \ifx\@currsize\LARGE\Large\else
1535         \ifx\@currsize\scriptsize\tiny\else
1536          \ifx\@currsize\tiny\tiny\else
1537           \ifx\@currsize\huge\LARGE\else
1538            \ifx\@currsize\Huge\huge\else
1539             \small\SMC@unknown@warning
1540  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1541 }
1542 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: nonstandard
1543     text font size command -- using \string\small}}
1544 \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.

```
1545 \newcommand\acro[1]{\textSMC{#1}\@}
1546 ⟨/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!)

```
1547 ⟨*classtail⟩
1548 \def\xEdNote{{\EdNoteFont Editor's note:\enspace }}
1549 \def \EdNote{\@ifnextchar[%
1550   {%
1551     \ifvmode
1552       \smallskip\noindent\let\@EdNote@\@EdNote@v
1553     \else
1554       \unskip\quad\def\@EdNote@{\unskip\quad}%
1555     \fi
1556     \@EdNote
1557   }%
1558   \xEdNote
1559 }
```

```
1560 \long\def\@EdNote[#1]{%
1561   [\thinspace\xEdNote\ignorespaces
1562    #1%
1563    \unskip\thinspace]%
1564   \@EdNote@
1565 }
1566 \def\@EdNote@v{\par\smallskip}
```

Macros for Mittelbach's self-documenting style

```
1567 \def\SelfDocumenting{%
1568   \setlength\textwidth{31pc}
1569   \onecolumn
1570   \parindent \z@
1571   \parskip 2\p@\@plus\p@\@minus\p@
1572   \oddsidemargin 8pc
1573   \evensidemargin 8pc
1574   \marginparwidth 8pc
1575   \toks@\expandafter{\@oddhead}%
1576   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1577   \toks@\expandafter{\@evenhead}%
1578   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1579   \def\ps@titlepage{}%
1580 }
1581 \def\ps@titlepage{}
1582
1583 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}%
1584   \llap{\@makefnmark}\null$\mskip5mu$#1}
1585
1586 %% \long\def\@makefntext#1{\parindent 1em
1587 %%   \noindent
1588 %%   \hb@xt@2em{\hss\@makefnmark}%
1589 %%   \hskip0.27778\fontdimen6\textfont\z@\relax
1590 %%   #1%
1591 %% }
```

Sometimes we want the label "Editor's Note:", sometimes not.
```
1592 \def\creditfootnote{\nomarkfootnote\xEdNote}
1593 \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.

```
1594 \gdef\nomarkfootnote#1#2{\begingroup
1595   \def\thefootnote{}%
1596   % no period, please, also no fnmark.
1597   \def\@makefntext##1{##1}%
1598   \footnotetext{\noindent #1#2}%
1599   \endgroup
1600 }
```

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.

```
1601 \if@Harvardcite
1602   \AtBeginDocument{%
1603     \bibliographystyle{ltugbib}%
1604   }
1605 \fi
1606 \authornumber\z@
1607 \let\@signature\@defaultsignature
1608 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1609                                         configuration information}}{}
1610 ⟨/classtail⟩
```

4   LATEX 2ε Proceedings class

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

```
1611 ⟨*ltugproccls⟩
1612 \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.

```
1613 \newif\if@proctw@column  \@proctw@columntrue
1614 \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.

```
1615 \newif\if@proc@sober
1616 \newif\if@proc@numerable
1617 \DeclareOption{tug95}{%
1618   \@proc@soberfalse
1619   \@proc@numerablefalse
1620 }
1621 \DeclareOption{tug96}{%
1622   \@proc@sobertrue
1623   \@proc@numerablefalse
1624 }
1625 \DeclareOption{tug97}{%
1626   \@proc@sobertrue
1627   \@proc@numerabletrue
1628 }
1629 \DeclareOption{tug2002}{%
1630   \@proc@sobertrue
```

```
1631    \@proc@numerabletrue
1632    \let\if@proc@numbersec\iftrue
1633    \PassOptionsToClass{numbersec}{ltugboat}%
1634 }
```

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

```
1635 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1636    \PassOptionsToClass{numbersec}{ltugboat}%
1637 }
1638 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1639    \PassOptionsToClass{nonumber}{ltugboat}%
1640 }
```

\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.

```
1641 \newif\ifTB@title
1642 \DeclareOption{title}{\TB@titletrue}
1643 \DeclareOption{notitle}{\TB@titlefalse
1644    \AtBeginDocument{\stepcounter{page}}}
```

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

```
1645 \DeclareOption{tugproc}{%
1646    \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1647 }
```

All other options are simply passed to ltugboat. . .

```
1648 \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. . .)

```
1649 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1650             {Loading ltugproc configuration information}}{}
1651 \@ifundefined{TUGprocExtraOptions}%
1652    {\let\TUGprocExtraOptions\@empty}%
1653    {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}
```

\tugProcYear Now work out what year it is

```
1654 \@tempcnta\year
1655 \ifnum\@tempcnta<2000
1656    \divide\@tempcnta by100
1657    \multiply\@tempcnta by100
1658    \advance\@tempcnta-\year
1659    \@tempcnta-\@tempcnta
1660 \fi
```

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

```
1661 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1662                 {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1663 \@tempa
1664 \ClassInfo{ltugproc}{Class believes year is
1665   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1666     \@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.

```
1667 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1668   \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.

```
1669 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1670 \ProcessOptions
1671 \if@proc@numbersec
1672   \if@proc@numerable
1673   \else
1674     \ClassWarning{\@tugclass}{This year's proceedings may not have
1675       numbered sections}%
1676   \fi
1677 \fi
```

Call ltugboat, adding whichever section numbering option is appropriate

```
1678 \LoadClass[\if@proc@numbersec numbersec\else nonumber\fi]{ltugboat}
```

4.1   Proceedings titles

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

```
1679 \def\maketitle{%
1680   \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).

```
1681     \ifshortAuthor\else
1682       \global\let\rhAuthor\@empty
1683       \def\g@addto@rhAuthor##1{%
1684         \begingroup
1685           \toks@\expandafter{\rhAuthor}%
1686           \let\thanks\@gobble
1687           \protected@xdef\rhAuthor{\the\toks@##1}%
1688         \endgroup
1689       }%
1690       \@getauthorlist\g@addto@rhAuthor
```

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```
1691      \fi
```

now, the real business of setting the title

```
1692      \ifTB@title
1693        \setcounter{footnote}{0}%
1694        \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1695        \if@proctw@column
1696          \twocolumn[\@maketitle]%
1697        \else
1698          \onecolumn
1699          \global\@topnum\z@
1700          \@maketitle
1701        \fi
1702        \@thanks
1703        \thispagestyle{TBproctitle}
1704      \fi
1705    \endgroup
1706    \TB@madetitletrue
1707 }
1708 \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.

```
1709 \def\@TB@test@document{%
1710    \edef\@tempa{\the\everypar}
1711    \def \@tempb{\@nodocument}
1712    \ifx \@tempa\@tempb
1713      \@nodocument
1714    \fi
1715 }
```

\AUTHORfont   Define the fonts for titles and things
\TITLEfont
\addressfont
\netaddrfont

```
1716 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
1717 \def\TITLEfont  {\Large\rmfamily\mdseries\upshape}
1718 \def\addressfont{\small\rmfamily\mdseries\upshape}
1719 \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

```
1720 \newskip\aboveauthorskip   \aboveauthorskip=18\p@ \@plus4\p@
1721 \newskip\belowauthorskip   \belowauthorskip=\aboveauthorskip
1722 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@
```

\@maketitle   The body of \maketitle

```
1723 \def\@maketitle{%
1724    {\parskip\z@
1725      \frenchspacing
1726      \TITLEfont\raggedright\noindent\@title\par
```

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```
1727        \count@=0
1728        \loop
1729        \ifnum\count@<\authornumber
1730          \vskip\aboveauthorskip
1731          \advance\count@\@ne
1732          {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1733          \addressfont\theaddress{\number\count@}\endgraf
1734          {%
1735            \allowhyphens
1736            \hangindent1.5pc
1737            \netaddrfont\thenetaddress{\number\count@}\endgraf
1738            \hangindent1.5pc
1739            \thePersonalURL{\number\count@}\endgraf
1740          }%
1741        \repeat
1742      \vskip\belowauthorskip}%
1743      \if@abstract
1744        \centerline{\bfseries Abstract}%
1745        \vskip.5\baselineskip\rmfamily
1746        \list{}{\listparindent20\p@
1747          \itemindent\z@ \leftmargin\tubfullpageindent
1748          \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1749            \the\abstract@toks
1750        \endlist\global\@ignoretrue
1751      \fi
1752      \vskip\belowabstractskip
1753      \global\@afterindentfalse\aftergroup\@afterheading
1754    }
```

abstract
\if@abstract
\abstract@toks

Save the contents of the abstract environment in the token register `\abstract@toks`. We need to do this, as otherwise it may get 'typeset' (previously, it got put in a 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@`

```
1755 \newtoks\abstract@toks  \abstract@toks{}
1756 \let\if@abstract\iffalse
1757 \def\abstract{%
```

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

```
1758  \ifTB@madetitle
1759    \TBWarning{abstract environment after \string\maketitle}
1760  \fi
1761  \def\@abstract@{abstract}%
1762  \ifx\@currenvir\@abstract@
1763  \else
1764    \TBError{\string\abstract\space is illegal:%
```

```
1765        \MessageBreak
1766        use \string\begin{\@abstract@} instead}%
1767        {\@abstract@\space may only be used as an environment}
1768    \fi
1769    \global\let\if@abstract\iftrue
1770    {\ifnum0='}\fi
1771    \@abstract@getbody}
1772 \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}

```
1773 \long\def\@abstract@getbody#1\end{%
1774    \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1775    \@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.

```
1776 \def\@abstract@findend#1{%
1777    \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.

```
1778    \ifx\@tempa\@abstract@
1779      \expandafter\@abstract@end
1780    \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)

```
1781      \def\@tempb{document}%
1782      \ifx\@tempa\@tempb
1783        \TBError{\string\begin{\@abstract@}
1784            ended by \string\end{\@tempb}}%
1785          {You've forgotten \string\end{\@abstract@}}
1786      \else
1787        \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1788        \expandafter\expandafter\expandafter\@abstract@getbody
1789      \fi
1790    \fi}
```

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

```
1791 \def\@abstract@end{\ifnum0='{\fi}%
1792    \expandafter\end\expandafter{\@abstract@}}
```

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

```
1793 \renewcommand{\makesignature}{\TBWarning
1794          {\string\makesignature\space is invalid in proceedings issues}}
```

\ps@TBproc

\dopagecommands

\setpagecommands

\TB@definefeet

\pfoottext

\rfoottext

```
1795 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
1796   \let\@evenhead\MakeRegistrationMarks
1797   \TB@definefeet
1798 }
1799 \def\ps@TBproc{%
1800   \def\@oddhead{\MakeRegistrationMarks
1801     {%
1802       \hfil
1803       \def\\{\unskip\ \ignorespaces}%
1804       \rmfamily\rhTitle
1805     }%
1806   }%
1807   \def\@evenhead{\MakeRegistrationMarks
1808     {%
1809       \def\\{\unskip\ \ignorespaces}%
1810       \rmfamily\rhAuthor
1811       \hfil
1812     }%
1813   }%
1814   \TB@definefeet
1815 }
1816
1817 \advance\footskip8\p@    % for deeper running feet
1818
1819 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1820 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1821   {#2}}
1822 \def\TB@definefeet{%
1823   \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1824     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1825   \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1826     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1827 }
1828
1829 \def\pfoottext{{\smc Preprint}:
1830   Proceedings of the \volyr{} Annual Meeting}
1831 \def\rfoottext{\normalfont\TUB, \volx\Dash
1832   {Proceedings of the \volyr{} Annual Meeting}}
1833
1834 \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).

```
1835 \if@proc@numbersec
```

```
1836 \else
1837   \setcounter{secnumdepth}{0}
1838 \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.

```
1839 \if@proc@numbersec
1840 \else
1841   \if@proc@sober
1842     \def\section
1843            {\TB@nolimelabel
1844             \TB@startsection{{section}%
1845                             1%
1846                             \z@%
1847                             {-8\p@\@plus-2\p@\@minus-2\p@}%
1848                             {6\p@}%
1849                             {\normalsize\bfseries\raggedright}}}
1850   \else
1851     \def\section
1852            {\TB@nolimelabel
1853             \TB@startsection{{section}%
1854                             1%
1855                             \z@%
1856                             {-8\p@\@plus-2\p@\@minus-2\p@}%
1857                             {6\p@}%
1858                             {\large\bfseries\raggedright}}}
1859   \fi
1860   \def\subsection
1861          {\TB@nolimelabel
1862           \TB@startsection{{subsection}%
1863                           2%
1864                           \z@%
1865                           {6\p@\@plus 2\p@\@minus2\p@}%
1866                           {-5\p@\@plus -\fontdimen3\the\font}%
1867                           {\normalsize\bfseries}}}
1868   \def\subsubsection
1869          {\TB@nolimelabel
1870           \TB@startsection{{subsubsection}%
1871                           3%
1872                           \parindent%
1873                           \z@%
1874                           {-5\p@\@plus -\fontdimen3\the\font}%
1875                           {\normalsize\bfseries}}}
1876 \fi
1877 ⟨/ltugproccls⟩
```

5   Plain TeX styles

1878 ⟨∗tugboatsty⟩
1879 % err...
1880 ⟨/tugboatsty⟩
1881 ⟨∗tugprocsty⟩
1882 % err...
1883 ⟨/tugprocsty⟩

6   The LaTeX 2ε compatibility-mode style files

1884 ⟨∗ltugboatsty⟩
1885 \@obsoletefile{ltugboat.cls}{ltugboat.sty}
1886 \LoadClass{ltugboat}
1887 ⟨/ltugboatsty⟩
1888 ⟨∗ltugprocsty⟩
1889 \@obsoletefile{ltugproc.cls}{ltugproc.sty}
1890 \LoadClass{ltugproc}
1891 ⟨/ltugprocsty⟩