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                  [2014/11/12 v2.16
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`	$\varepsilon_{\mathcal{X}}$TEX
`\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 '∓' 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}{901}%
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 options.

```
55 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
56 \DeclareOption{twoside}{\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`.)

```
57 \DeclareOption{tugproc}{%
58   \TBWarning{Option \CurrentOption\space ignored: use class ltugproc
```

```
59     instead of \@tugclass}%
60 }
```

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.

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

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

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

```
65 \DeclareOption{numbersec}{\let\if@numbersec\iftrue}
66 \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.

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

\if@tubtwocolumn Occasionally (`tb107jackowski`, and past conference preprints), we need the option `onecolumn`. For alternative approaches to one-column articles, see `tb92hagen-euler` and `tb78milo`.

```
70 \newif\if@tubtwocolumn  \@tubtwocolumntrue
71 \DeclareOption{onecolumn}{\@tubtwocolumnfalse}
```

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$_\varepsilon$).

```
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   }
```

9

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
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 \DeclareRobustCommand{\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}}
```

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

```
183 \def\ConTeXt{C\kern-.0333emon\-\kern-.0667em\TeX\kern-.0333emt}
184 \def\CMkIV{\ConTeXt\ \MkIV}
185 \def\Cplusplus{C\plusplus}
186 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
187 \def\CPU{\acro{CPU}}
188 \def\CSS{\acro{CSS}}
189 \def\CSV{\acro{CSV}}
190 \def\CTAN{\acro{CTAN}}
191 \def\DTD{\acro{DTD}}
192 \def\DTK{\acro{DTK}}
193 \def\DVD{\acro{DVD}}
194 \def\DVI{\acro{DVI}}
195 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
196 \def\DVItoVDU{DVIto\kern-.12em VDU}
197 \def\ECMA{\acro{ECMA}}
198 \def\EPS{\acro{EPS}}
199 \DeclareRobustCommand{\eTeX}{\ensuremath{\varepsilon}-\kern-.125em\TeX}
200 \DeclareRobustCommand{\ExTeX}{%
201   \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}
202 \def\FAQ{\acro{FAQ}}
203 \def\FTP{\acro{FTP}}
204 \def\Ghostscript{Ghost\-script}
205 \def\GNU{\acro{GNU}}
206 \def\GUI{\acro{GUI}}
207 \def\Hawaii{Hawai'i}
208 \def\HTML{\acro{HTML}}
209 \def\HTTP{\acro{HTTP}}
210 \def\IDE{\acro{IDE}}
211 \def\IEEE{\acro{IEEE}}
212 \def\ISBN{\acro{ISBN}}
213 \def\ISO{\acro{ISO}}
214 \def\ISSN{\acro{ISSN}}
215 \def\JPEG{\acro{JPEG}}
216 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
217 \def\JoT{\textsl{The Joy of \TeX}}
218 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
```

```
219                    $\m@th$\fontsize\sf@size\z@\selectfont
220                    $\m@th\mathcal{A}$}%
221     \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
222     {$\m@th\mathcal{S}$}-\TeX}
223 % This code
224 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
225 % example) to propagate into the raised (small) 'A':
226 %    \begin{macrocode}
227 \DeclareRobustCommand{\La}%
228     {L\kern-.36em
229         {\setbox0\hbox{T}%
230          \vbox to\ht0{\hbox{$\m@th$%
231                        \csname S@\f@size\endcsname
232                        \fontsize\sf@size\z@
233                        \math@fontsfalse\selectfont
234                        A}%
235                    \vss}%
236         }}
```

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.

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

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

```
243 \def\mf{\textsc{Metafont}}
244 \def\MFB{\textsl{The \MF book}}
245 \def\MkIV{Mk\acro{IV}}
246 \let\TB@@mp\mp
247 \DeclareRobustCommand{\mp}{\ifmmode\TB@@mp\else MetaPost\fi}
248 %
249 % In order that the \cs{OMEGA} command will switch to using the TS1
250 % variant of the capital Omega character if \texttt{textcomp.sty} is
251 % loaded, we define it in terms of the \cs{textohm} command.  Note
252 % that this requires us to interpose a level of indirection, rather
253 % than to use \cs{let}\dots
254 %
255 %    \begin{macrocode}
256 \DeclareRobustCommand{\NTG}{\acro{NTG}}
257 \DeclareRobustCommand{\NTS}{\ensuremath{\mathcal{N}}\mkern-4mu
258   \raisebox{-0.5ex}{$\mathcal{T}$}\mkern-2mu \mathcal{S}}}
```

```
259 \DeclareTextSymbol{\textohm}{OT1}{'012}
260 \DeclareTextSymbolDefault{\textohm}{OT1}
261 \newcommand{\OMEGA}{\textohm}
262 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
263 \DeclareRobustCommand{\OOXML}{\acro{OOXML}}
264 \DeclareRobustCommand{\OTF}{\acro{OTF}}
265 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
266 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}
```

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

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

```
307 \def\Thanh{H\`an~Th\textcircumacute{e}~Th\`anh}% xunicode drops the acute else
308 \fi
309 \def\TikZ{Ti{\em k}Z}
310 \def\ttn{\textsl{TTN}\@}
311 \def\TTN{\textsl{\TeX{} and TUG News}}
312 \let\texttub\textsl                 % redefined in other situations
313 \def\TUB{\texttub{TUGboat}}
314 \def\TUG{\TeX\ \UG}
315 \def\tug{\acro{TUG}}
316 \def\UG{Users Group}
317 \def\UNIX{\acro{UNIX}}
318 % let's not do \UTF, since other packages use it for Unicode character access.
319 \def\VAX{V\kern-.12em A\kern-.1em X\@}
320 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
321 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
322 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
323 \def\XML{\acro{XML}}
324 \def\WEB{\texttt{WEB}\@}
325 \def\WEAVE{\texttt{WEAVE}\@}
326 \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`.)

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

```
351 \def\XSLFO{\acro{XSL}\raise.08ex\hbox{-}\acro{FO}}
352 \def\XSLT{\acro{XSLT}}
```

3.5   General typesetting rules

```
353 \newlinechar='\^^J
354 \normallineskiplimit=\p@
355 \clubpenalty=10000
356 \widowpenalty=10000
357 \def\NoParIndent{\parindent=\z@}
358 \newdimen\normalparindent
359 \normalparindent=20\p@
360 \def\NormalParIndent{\global\parindent=\normalparindent}
361 \NormalParIndent
362 \def\BlackBoxes{\overfullrule=5\p@}
363 \def\NoBlackBoxes{\overfullrule=\z@}
364 \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.

```
365 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
366    \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
367 \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`.

```
368 \newbox\T@stBox            \newbox\TestBox
369 \newcount\T@stCount        \newcount\TestCount
370 \newdimen\T@stDimen        \newdimen\TestDimen
371 \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).

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

LaTeX conventions which are also useful here.

```
373 ⟨∗!latex⟩
374    \let\@@input\input
375    \def\iinput#1{\@@input#1 }
376    \def\@inputcheck{\if\@nextchar\bgroup
```

```
377        \expandafter\iinput\else\expandafter\@@input\fi}
378    \def\input{\futurelet\@nextchar\@inputcheck}
379 ⟨/!latex⟩
```

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

```
380 \newif\iftop@          \newif\ifbot@
381 \def\topsmash{\top@true\bot@false\smash@}
382 \def\botsmash{\top@false\bot@true\smash@}
383 \def\smash{\top@true\bot@true\smash@}
384 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
385        \else\let\next\makesm@sh\fi \next }
386 \def\finsm@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}
```

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

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

And centered horizontal and vertical 'laps'

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

Avoid unwanted vertical glue when making up pages.

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

Empty rules for special occasions

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

Support ad-hoc strut construction.

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

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

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

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

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

Current time; this may be system dependent!

```
408 \newcount\hours
409 \newcount\minutes
```

```
410 \def\SetTime{\hours=\time
411        \global\divide\hours by 60
412        \minutes=\hours
413        \multiply\minutes by 60
414        \advance\minutes by-\time
415        \global\multiply\minutes by-1 }
416 \SetTime
417 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
418 \def\Now{\today\ \now}
419 \newif\ifPrelimDraft
420 \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.

```
421 \newdimen\raggedskip     \raggedskip=\z@
422 \newdimen\raggedstretch \raggedstretch=5em    % ems of font set now (10pt)
423 \newskip\raggedparfill  \raggedparfill=\z@\@plus 1fil
424 \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.

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

Miscellaneous useful stuff. Note that LATEX 2_ε 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_ε version has \leavevmode and doesn't care about surrounding space).

```
442 \DeclareRobustCommand{\nobreakspace}{%
```

---

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

```
443   \unskip\nobreak\ \ignorespaces}
```

Plain TEX defines `\newbox` as `\outer`. We solemnly preserve the following, which removes the `\outer`ness; of course, we carefully exclude it from what we generate... (`\outer`ness is a spawn of the devil, is it not? Barbara Beeton responded to the previous sentence "`\outer`ness 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...)

```
444 \def\boxcs#1{\box\csname#1\endcsname}
445 \def\setboxcs#1{\setbox\csname#1\endcsname}
446 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
447 \let\gobble\@gobble
448 \def\vellipsis{%
449   \leavevmode\kern0.5em
450   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
451   }
452 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
453 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
454 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
455                 /\kern-.125em\smash{\lower.3ex\hbox{o}}} \ignorespaces}
456 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
457 %
458 \DeclareRobustCommand{\sfrac}[1]{\@ifnextchar/{\@sfrac{#1}}%
459                                          {\@sfrac{#1}/}}
460 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
461         \hbox{$\m@th\mbox{\fontsize\sf@size\z@
462                         \selectfont#1}$}\kern-.1em
463         /\kern-.15em\lower.25ex
464          \hbox{$\m@th\mbox{\fontsize\sf@size\z@
465                         \selectfont#2}$}}
466 %
467 % don't stay bold in description items, bold italic is too weird.
468 \DeclareRobustCommand\meta[1]{%
469   \ensuremath{\langle}%
470   \ifmmode \mbox\bgroup \fi % if in math
471   {\it #1\/}% no typewriter italics, please
472   \ifmmode \egroup \fi
473   \ensuremath{\rangle}%
474 }
475 %
476 % Use \tt rather than \texttt because italic typewriter is just too ugly,
477 % and upright works well enough in both italic and bold contexts.
478 \DeclareRobustCommand{\cs}[1]{{\tt \char`\\#1}}
479 %
480 % This command was defined much later than the other, so let's not
481 % conflict with any existing definitions that might be out there.
482 % Don't allow hyphenations or other line breaks.
```

```
483 \DeclareRobustCommand{\tubbraced}[1]{\mbox{\texttt{\char`\{#1\char`\}}}}
484 %
485 % Well, just the \begin part.  Never seen it used.
486 \DeclareRobustCommand{\env}[1]{\cs{begin}\tubbraced{#1}}
487 %
488 % Not sure why we ever want this instead of LaTeX's \, (using \kern),
489 % but fine, just keeping it.
490 \DeclareRobustCommand{\thinskip}{\hskip 0.16667em\relax}
491 %
```

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

```
492 \def\endash{--}
493 \def\emdash{\endash-}
494 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
495 \def\dash{\d@sh\nobreak\endash}
496 \def\Dash{\d@sh\nobreak\emdash}
497 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
498 \def\rdash{\d@sh\nobreak\endash}
499 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
500 \def\Rdash{\d@sh\nobreak\emdash}
```

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

```
501 \def\hyph{-\penalty\z@\hskip\z@skip }
502 \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`.

```
503 \def\nth#1{%
504     \def\reserved@a##1##2\@nil{\ifcat##1n%
505          0%
506          \let\reserved@b\ensuremath
507      \else##1##2%
508          \let\reserved@b\relax
509      \fi}%
510     \TestCount=\reserved@a#1\@nil\relax
511     \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
512     \T@stCount=\TestCount
513     \divide\T@stCount by 100 \multiply\T@stCount by 100
514     \advance\TestCount by-\T@stCount      % n mod 100
515     \ifnum\TestCount >20 \T@stCount=\TestCount
516       \divide\T@stCount by 10 \multiply\T@stCount by 10
517       \advance\TestCount by-\T@stCount    % n mod 10
518     \fi
519      \reserved@b{#1}%
520        \textsuperscript{\ifcase\TestCount th%    0th
521                        \or   st%              1st
522                        \or   nd%              2nd
523                        \or   rd%              3rd
```

```
524                             \else th%                    nth
525                             \fi}%
526 }
```

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...

```
527 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
528 \def\@Review:{\@ifnextchar[%
529   {\@Rev}%
530   {\@Rev[Book review]}}
531 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
532                                \slshape\mdseries#2}}
533 \def\reviewitem{\addvspace{\BelowTitleSkip}%
534   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
535   \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
536   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
537 }
538 \def\endreviewitem{{\noindent\interlinepenalty=10000
539   \therevauth\therevtitle\therevpubinfo\endgraf}%
540   \vskip\medskipamount
541 }
542 \def\booktitle#1{{\slshape#1\/}}
```

3.9   Dates, volume and issue numbers, etc.

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

```
          \vol 19, 1.
To use:   \issdate March 1998.
          \issueseqno=58
```

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

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

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

```
543 \newcount\issueseqno            \issueseqno=-1
544 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
545 \def\volyr{}
546 \def\volno{}
```

```
547 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
548        \gdef\issno{\ignorespaces#2\unskip}%
549        \setbox\TestBox=\hbox{\volyr}%
550        \ifdim \wd\TestBox > .2em \v@lx \fi }
551 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
552        \gdef\bigissdt{#1}%
553        \setbox\TestBox=\hbox{\volno}%
554        \ifdim \wd\TestBox > .2em \v@lx \fi }
555 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
556        \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
557        \setbox\TestBox=\hbox{\volno}%
558        \ifdim \wd\TestBox > .2em \v@lx \fi }
559 \vol 0, 0.
560 \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

```
561 ⟨!latex⟩\def\tubissue#1(#2)%
562 ⟨*latex⟩
563 \def\tubissue#1{\@ifnextchar(%
564   {\@tubissue@b{#1}}
565   {\@tubissue@a{#1}}}
566 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
567 \def\@tubissue@a#1#2%
568 ⟨/latex⟩
569   {\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

```
570 \def\infil@{\jobname}
571 \def\Input #1 {\ifnum\issueseqno<0
572    \def\infil@{#1}%
573  \else
574    \def\infil@{tb\number\issueseqno#1}
575  \fi
576  \edef\jobname{\infil@}\@readFLN
577  \@@input \infil@\relax
578  \if@RMKopen
579    \immediate\closeout\@TBremarkfile\@RMKopenfalse
580  \fi
581 }
```

\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).

```
582 \newif\if@RMKopen          \@RMKopenfalse
583 \newwrite\@TBremarkfile
584 \def\@TBremark#1{%
585   \if@RMKopen
586   \else
587     \@RMKopentrue\immediate\openout\@TBremarkfile=\infil@.rmk
588   \fi
589   \toks@={#1}%
590   \immediate\write\@TBremarkfile{^^J\the\toks@}%
591   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
592 }
```

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

```
593 \let\TBremark=\gobble
```

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

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

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

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

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

```
596 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
597 \newread\@altfilenames
598 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
599   \ifeof\@altfilenames\let\@result\relax\else
600   \def\@result{\@@input\jobname.fln }\fi
601   \immediate\closein\@altfilenames
602   \@result}
603 \@readFLN
604 \everyjob=\expandafter{\the\everyjob\@readFLN}
605 \InputIfFileExists{\jobname.fln}%
606     {\TBInfo{Reading alternative file file \jobname.fln}}{}
```

The following needs to work entirely in TeX's mouth

```
607 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
608   #1\else\csname file@@#1\endcsname\fi}
609 \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.

```
610 ⟨*!latex⟩
611 \def\pagexrefON#1{%
612        \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
```

```
613            \write\ppoutfile{%
614                    \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
615            }
616 \def\PageXrefON#1{%
617            \immediate\write-1{\def\expandafter
618                            \noexpand\csname#1\endcsname{\number\pageno}}%
619            \immediate\write\ppoutfile{\def\expandafter
620                            \noexpand\csname#1\endcsname{\number\pageno}}}
621 ⟨/!latex⟩
622 ⟨∗latex⟩
623 \def\pagexrefON#1{%
624            \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
625            \write\ppoutfile{%
626                    \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
627            }
628 \def\PageXrefON#1{%
629            \immediate\write-1{\def\expandafter
630                            \noexpand\csname#1\endcsname{\number\c@page}}%
631            \immediate\write\ppoutfile{\def\expandafter
632                            \noexpand\csname#1\endcsname{\number\c@page}}}
633 ⟨/latex⟩
634 \def\pagexrefOFF#1{}
635 \let\pagexref=\pagexrefOFF
636 \def\PageXrefOFF#1{}
637 \let\PageXref=\PageXrefOFF
638 \def\xreftoON#1{%
639   \ifundefined{#1}%
640     ???\TBremark{Need cross reference for #1.}%
641   \else\csname#1\endcsname\fi}
642 \def\xreftoOFF#1{???}
643 \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.

```
644 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```
645 \ifx\tubomithyphenations\@thisisundefined
646 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
647   Flor-i-da Free-BSD Ghost-script Ghost-view
648   Hara-lam-bous Jac-kow-ski Karls-ruhe
649   Mac-OS Ma-la-ya-lam Math-Sci-Net
650   Net-BSD Open-BSD Open-Office
651   Pfa-Edit Post-Script Rich-ard Skoup South-all
652   Vieth VM-ware Win-Edt
653   acro-nym acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
654   bib-lio-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
655   col-umns com-put-able com-put-abil-ity cus-tom-iz-able
```

```
656    data-base data-bases
657     de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
658     de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able
659    es-sence
660    fall-ing
661    half-way
662    in-fra-struc-ture
663    key-note
664    long-est
665    ma-gyar man-u-script man-u-scripts meta-table meta-tables
666     mne-mon-ic mne-mon-ics mono-space mono-spaced
667    name-space name-spaces
668    off-line over-view
669    pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
670     pipe-line pipe-lines
671     plug-in plug-ins pres-ent-ly pro-gram-mable
672    re-allo-cate re-allo-cates re-allo-cated re-printed
673    set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
674     sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
675    text-height text-length text-width
676     time-stamp time-stamped time-stamps
677    vis-ual vis-ual-ly
678    which-ever white-space white-spaces wide-spread wrap-around
679  }
680  \fi
681  ⟨!latex⟩\restorecat\@
682  ⟨/common⟩
683  ⟨∗classtail⟩
684  \PrelimDrafttrue
```

3.10   Page dimensions, glue, penalties etc

```
685  \textheight 54pc
686  \textwidth 39pc
687  \columnsep 1.5pc
688  \columnwidth 18.75pc
689  \parindent \normalparindent
690  \parskip \z@ % \@plus\p@
691  \leftmargini 2em
692  \leftmarginv .5em
693  \leftmarginvi .5em
694  \oddsidemargin \z@
695  \evensidemargin \z@
696  \topmargin -2.5pc
697  \headheight 12\p@
698  \headsep 20\p@
699  \marginparwidth 48\p@
700  \marginparsep 10\p@
701  \partopsep=\z@
702  \topsep=3\p@\@plus\p@\@minus\p@
```

```
703 \parsep=3\p@\@plus\p@\@minus\p@
704 \itemsep=\parsep
705 %
706 % Ordinarily we typeset in two columns.  But if option is given, revert to one.
707 \if@tubtwocolumn \twocolumn \else \onecolumn \textwidth=34pc \fi
708 %
709 \newdimen\pagewd        \pagewd=\textwidth
710 \newdimen\trimwd        \trimwd=\pagewd
711 \newdimen\trimlgt       \trimlgt=11in
712 \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 a new version. The arguments are font family, series and shape, and then the two kern values used in placing the raised 'A' of LaTeX.

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

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

```
715 \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). Duplicate for Latin Modern.

```
716 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
717 \DeclareLaTeXLogo{lmss}{bx}{n}{.3}{.15}
718 %
719 \DeclareLaTeXLogo{cmr}{m}{it}{.29}{.2}
720 \DeclareLaTeXLogo{lmr}{m}{it}{.29}{.2}
721 %
722 \DeclareLaTeXLogo{cmr}{m}{sl}{.29}{.15}
723 \DeclareLaTeXLogo{lmr}{m}{sl}{.29}{.15}
724 %
725 \DeclareLaTeXLogo{cmr}{bx}{it}{.29}{.2}
726 \DeclareLaTeXLogo{lmr}{bx}{it}{.29}{.2}
727 %
728 \DeclareLaTeXLogo{cmr}{bx}{sl}{.29}{.2}
729 \DeclareLaTeXLogo{lmr}{bx}{sl}{.29}{.2}
730 %
731 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
732 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
733 \DeclareRobustCommand{\LaTeX}{\expandafter\let\expandafter\reserved@a
```

```
734    \csname @LaTeX@\f@family/\f@series/\f@shape\endcsname
735    \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
736    \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.

```
737 \newcommand{\@LaTeX}[2]{%
738    %\wlog{latex logo family=\f@family/\f@series/\f@shape -> #1, #2.}%
739    L\kern-#1em
740    {\sbox\z@ T%
741     \vbox to\ht0{\hbox{$\m@th$%
742                         \csname S@\f@size\endcsname
743                         \fontsize\sf@size\z@
744                         \math@fontsfalse\selectfont
745                         A}%
746                 \vss}%
747    }%
748    \kern-#2em%
749    \TeX}
```

3.12   Authors, contributors, addresses, signatures

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

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

```
750 \def\theauthor#1{\csname theauthor#1\endcsname}
751 \def\theaddress#1{\csname theaddress#1\endcsname}
752 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
753 \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.

```
754 ⟨!latex⟩\newcount\@tempcnta
755 \def\@defaultauthorlist{%
756    \@getauthorlist\@firstofone
757 }
```

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

```
758 \def\@getauthorlist#1{%
759   \count@\authornumber
760   \advance\count@ by -2
761   \@tempcnta0
```

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

```
762   \loop
763     \ifnum\count@>0
764       \advance\@tempcnta by \@ne
765       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
766       \advance\count@ by \m@ne
767   \repeat
768   \count@\authornumber
769   \advance\count@ by -\@tempcnta
770   \ifnum\authornumber>0
```

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

```
771     \ifnum\count@>1
772       \count@\authornumber
773       \advance\count@ by \m@ne
774       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
775     \fi
```

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

```
776     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
777   \fi
778 }
```

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. . .)

```
779 \def\signature#1{\def\@signature{#1}}
780 \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`

```
781 \def\@defaultsignature{{%
782     \let\thanks\@gobble
783     \frenchspacing
784     %
785     \ifnum\authornumber<0
```

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

```
786       \medskip
787       \signaturemark
788       \theauthor{\number\authornumber}\\
```

28

```
789        \theaddress{\number\authornumber}\\
790        \allowhyphens
791        \thenetaddress{\number\authornumber}\\
792        \thePersonalURL{\number\authornumber}\\
793     \else
```

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

```
794        \count@=0
795        \loop
796          \ifnum\count@<\authornumber
797            \medskip
798            \advance\count@ by \@ne
799            \signaturemark
800            \theauthor{\number\count@}\\
801            \theaddress{\number\count@}\\
802            {%
803              \allowhyphens
804              \thenetaddress{\number\count@}\\
805              \thePersonalURL{\number\count@}\\
806            }%
807        \repeat
808     \fi
809   }%
810 }
811 \newdimen\signaturewidth   \signaturewidth=12pc
```

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

```
812 \newcommand{\makesignature}[1][\medskipamount]{%
```

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

```
813   \@tempdima\signaturewidth
814   \advance\@tempdima 1.5pc
815   \ifdim \@tempdima>\columnwidth
816     \signaturewidth \columnwidth
817     \advance\signaturewidth -1.5pc
818   \fi
819   \par
820   \penalty9000
821   \vspace{#1}%
822   \rightline{%
823     \vbox{\hsize\signaturewidth \ninepoint \raggedright
824       \parindent \z@ \everypar={\hangindent 1pc }
825       \parskip \z@skip
826       \def\|{\unskip\hfil\break}%
827       \def\\{\endgraf}%
828       \def\phone{\rm Phone: }
829       \rm\@signature}%
830   }%
831   \ifnum\authornumber<0 \endgroup\fi
```

```
832 }
833 \def\signaturemark{\leavevmode\llap{$\diamond$\enspace}}
```

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

```
834 \newcount\authornumber
835 \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`).

```
836 \def\author{%
837   \global\advance\authornumber\@ne
838   \TB@author
839 }
```

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

```
840 \def\contributor{%
841   \begingroup
842   \authornumber\m@ne
843   \TB@author
844 }
```

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).

```
845 \def\TB@author#1{%
846   \expandafter\def\csname theauthor\number\authornumber\endcsname
847       {\ignorespaces#1\unskip}%
848   \expandafter\def\csname theaddress\number\authornumber\endcsname
849     {\TBWarningNL{Address for #1\space missing}\@gobble}%
850   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
851     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
852   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
853     \@gobble
854   }
855 \def\EDITORnoaddress{%
856   \expandafter\let\csname theaddress\number\authornumber\endcsname
857     \@gobble
858 }
859 \def\EDITORnonetaddress{%
860   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
861     \@gobble
862 }
```

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

```
863 \def\address#1{%
864   \expandafter\def\csname theaddress\number\authornumber\endcsname
865       {\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*!

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

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

```
867 \newcommand{\netaddress}[1][\relax]{%
868   \begingroup
869   \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$_\varepsilon$.

```
870   #1\@sanitize\makespace\ \makeactive\@
871   \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*?!**)

```
872 \def\@relay@netaddress#1{%
873   \ProtectNetChars
874   \expandafter\protected@xdef
875       \csname thenetaddress\number\authornumber\endcsname
876     {\protect\leavevmode\textrm{\@network}%
877      {\protect\NetAddrChars\net
878       \ignorespaces#1\unskip}}%
879   \endgroup
880   }
```

`\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.

```
881 \def\personalURL{\begingroup
```

```
882    \@sanitize\makespace\ \makeactive\@
883    \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
884 \def\@personalURL#1{%
885    \ProtectNetChars
886    \expandafter\protected@xdef
887      \csname thePersonalURL\number\authornumber\endcsname{%
888        \protect\leavevmode
889        {%
890          \protect\URLchars\net
891          \ignorespaces#1\unskip
892        }%
893      }%
894    \endgroup
895    }
```

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...

```
896 {%
897    \makecomment\*
898    \makeactive\@
899    \gdef\netaddrat{\makeactive\@*
900      \def@{\discretionary{\char"40}{}{\char"40}}}
901    \makeactive\%
902    \gdef\netaddrpercent{\makeactive\%*
903      \def%{\discretionary{\char"25}{}{\char"25}}}
904    \makeactive\.
905    \gdef\netaddrdot{\makeactive\.*
906      \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.

```
907    \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
908    \makeactive\/
909    \gdef\URLchars{*
910      \NetAddrChars
911      \makeactive\/*
912      \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.

```
913    \gdef\ProtectNetChars{*
914      \def@{\protect@}*
915      \def%{\protect%}*
916      \def.{\protect.}*
917      \def/{\protect/}*
918      }
919 }
```

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).

```
920 \if@compatibility
921   \DeclareRobustCommand{\net}{\normalfont\ttfamily\mathgroup\symtypewriter}
922 \else
923   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
924 \fi
925 \def\authorlist#1{\def\@author{#1}}
926 \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. And this initiative never came to anything, so it is not used at all.

`\mspmetavar`

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

3.13 Article title

`\if@articletitle`
`\maketitle`
`\@r@maketitle`

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

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

```
928 \newif\if@articletitle
929 \def\maketitle{\@ifstar
930   {\@articletitlefalse\@r@maketitle}%
931   {\@articletitletrue\@r@maketitle}%
932 }
933 \def\@r@maketitle{\par
934 \ifdim\PreTitleDrop > \z@
935   \loop
936   \ifdim \PreTitleDrop > \textheight
937     \vbox{}\vfil\eject
938     \advance\PreTitleDrop by -\textheight
939   \repeat
940   \vbox to \PreTitleDrop{}
941   \global\PreTitleDrop=\z@
942 \fi
943 \begingroup
```

33

```
944  \setcounter{footnote}{0}
945  \def\thefootnote{\fnsymbol{footnote}}
946  \@maketitle
947  \@thanks
948  \endgroup
949  \setcounter{footnote}{0}
950  \gdef\@thanks{}
951  }
```

\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.

```
952 \def\rhTitle{}% avoid error if no author or title
953 \renewcommand{\title}{\@dblarg\TB@title}
954 \def\TB@title[#1]#2{\gdef\@title{#2}%
955   \bgroup
956     \let\thanks\@gobble
957     \def\\{\unskip\space\ignorespaces}%
958     \protected@xdef\rhTitle{#1}%
959   \egroup
960 }
```

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

```
961 \def\shortTitle #1{\def\rhTitle{#1}}
962 \newif\ifshortAuthor
963 \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:

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

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

```
965 \newdimen\stbaselineskip        \stbaselineskip=18\p@
966 \newdimen\stfontheight
967 \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

34

only as and when papers have appeared. Only the last `\sectitle` will actually be executed.

```
968 \newif\ifSecTitle
969 \SecTitlefalse
970 \newif\ifWideSecTitle
971 \newcommand{\sectitle}{%
972   \SecTitletrue
973   \@ifstar
974     {\WideSecTitletrue\def\s@ctitle}%
975     {\WideSecTitlefalse\def\s@ctitle}%
976 }
```

`\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.

```
977 \newdimen\PreTitleDrop    \PreTitleDrop=\z@
```

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

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

```
978 \newskip\AboveTitleSkip   \AboveTitleSkip=12\p@
979 \newskip\BelowTitleSkip   \BelowTitleSkip=8\p@
980 \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. . .

```
981 \def\@sectitle #1{%
982   \par
983   \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.

```
984   \ifWideSecTitle\else\secsep\fi
985   {%
986     \fboxrule\strulethickness
987     \fboxsep\z@
988     \noindent\framebox[\hsize]{%
989       \vbox{%
990         \raggedcenter
991         \let\\\@sectitle@newline
992         \sectitlefont
```

```
993          \makestrut[2\stfontheight;\z@]%
994          #1%
995          \makestrut[\z@;\stfontheight]\endgraf
996        }%
997      }%
998    }%
999    \nobreak
1000    \vskip\baselineskip
1001 }
```

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

```
1002 \newcommand{\@sectitle@newline}[1][\z@]{%
1003    \ifdim#1>\z@
1004      \makestrut[\z@;#1]%
1005    \fi
1006    \unskip\break
1007 }
```

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).

```
1008 \def\@makesectitle{\ifSecTitle
1009    \global\SecTitlefalse
1010    \ifWideSecTitle
1011      \twocolumn[\@sectitle{\s@ctitle}]%
1012      \global\WideSecTitlefalse
1013    \else
1014      \@sectitle{\s@ctitle}%
1015    \fi
1016  \else
1017    \vskip\AboveTitleSkip
1018    \kern\topskip
1019    \hrule \@height\z@ \@depth\z@ \@width 10\p@
1020    \kern-\topskip
1021    \kern-\strulethickness
1022    \hrule \@height\strulethickness \@depth\z@
1023    \kern\medskipamount
1024    \nobreak
1025  \fi
1026 }
```

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

```
1027 \def\@maketitle{%
1028  \@makesectitle
1029  \if@articletitle{%
1030    \nohyphens \interlinepenalty\@M
1031    \setbox0=\hbox{%
1032      \let\thanks\@gobble
1033      \let\\=\quad
```

```
1034        \let\and=\quad
1035        \ignorespaces\@author}%
1036     {%
1037        \noindent\bf\raggedright\ignorespaces\@title\endgraf
1038     }%
1039     \ifdim \wd0 < 5\p@                    % omit if author is null
1040     \else
```

Since we have $\mathtt{\backslash BelowTitleSkip} + 4\mathrm{pt} = \mathtt{\backslash baselineskip}$, we say:

```
1041        \nobreak \vskip 4\p@
1042        {%
1043           \leftskip=\normalparindent
1044           \raggedright
1045           \def\and{\unskip\\}%
1046           \noindent\@author\endgraf
1047        }%
1048     \fi
1049     \nobreak
1050     \vskip\BelowTitleSkip
1051   }\fi%
1052   \global\@afterindentfalse
1053   \aftergroup\@afterheading
1054 }
```

Dedications are ragged right, in italics.

```
1055 \newenvironment{dedication}%
1056   {\raggedright\noindent\itshape\ignorespaces}%
1057   {\endgraf\medskip}
```

The `abstract` and `longabstract` environments both use `\section*`. For one-column articles (or in `ltugproc` class), indent the abstract. This is done in the usual bizarre LaTeX way, by treating it as a one-item list with an empty item marker.

```
1058 \def\@tubonecolumnabstractstart{%
1059        \list{}{\listparindent\normalparindent
1060           \itemindent\z@ \leftmargin\@tubfullpageindent
1061           \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1062 }
1063 \def\@tubonecolumnabstractfinish{%
1064        \endlist
1065 }
1066 \renewenvironment{abstract}%
1067   {\begin{SafeSection}%
1068     \section*{%
1069        \if@tubtwocolumn\else \hspace*{\@tubfullpageindent}\fi
1070        Abstract}%
1071     \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1072   }%
1073   {\if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1074    \end{SafeSection}}
```

```
1075 \newenvironment{longabstract}%
1076   {\begin{SafeSection}%
1077     \section*{Abstract}%
1078     \bgroup\small
1079   }%
1080   {\endgraf\egroup
1081     \end{SafeSection}%
1082   \vspace{.25\baselineskip}
1083   \begin{center}
1084     {$--*--$}
1085   \end{center}
1086   \vspace{.5\baselineskip}}
```

3.15   Section headings

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

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

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

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

```
1087 \if@numbersec
1088   \def\section{\TB@startsection{{section}%
1089                                1%
1090                                \z@
1091                                {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1092                                {4\p@}%
1093         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1094   \def\subsection{\TB@startsection{{subsection}%
1095                                   2%
1096                                   \z@
1097                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1098                                   {4\p@}%
1099         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1100   \def\subsubsection{\TB@startsection{{subsubsection}%
1101                                      3%
1102                                      \z@
1103                                      {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1104                                      {4\p@}%
1105         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1106   \def\paragraph{\TB@startsection{{paragraph}%
1107                                  4%
1108                                  \z@
1109                                  {4\p@ \@plus1\p@ \@minus1\p@}%
1110                                  {-1em}%
1111                                  {\normalsize\bf}}}
```

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

```
1112 \else
1113   \setcounter{secnumdepth}{0}
1114   \def\section{\TB@nolimelabel
1115             \TB@startsection{{section}%
1116                              1%
1117                              \z@
1118                              {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1119                              {4\p@}%
1120         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1121   \def\subsection{\TB@nolimelabel
1122             \TB@startsection{{subsection}%
1123                                2%
1124                                \z@
1125                                {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1126                                {-0.5em\@plus-\fontdimen3\font}%
1127         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1128   \def\subsubsection{\TB@nolimelabel
1129             \TB@startsection{{subsubsection}%
1130                                3%
1131                                \parindent
1132                                {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1133                                {-0.5em\@plus-\fontdimen3\font}%
1134         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1135 \fi
```

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

```
1136 \if@numbersec
1137   \def\TB@startsection#1{\@startsection#1}%
1138 \else
1139   \def\TB@startsection#1{%
1140     \@ifstar
1141       {\TBWarning{*-form of \expandafter\string\csname\@firstofsix#1%
1142                   \endcsname\space
1143                   \MessageBreak
1144                   conflicts with nonumber class option}%
1145        \@startsection#1}%
1146       {\@startsection#1}%
1147   }
1148 \fi
1149 \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).

```
1150 \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.

```
1151 \newenvironment{SafeSection}%
1152   {\let\TB@startsection\TB@safe@startsection}%
1153   {}
```

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.

```
1154 \if@numbersec
1155   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1156 \else
1157   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1158   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1159 \fi
1160 \def\chapter{\TB@nosection\chapter\section}
1161 \def\part{\TB@nosection\part\section}
1162 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1163     \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 and Frank Mittelbach's articles often have toc's (and few others). Also turn off microtype protrusion after

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or leaders get messed up.

```
1164 \def\TBtocsectionfont{\normalfont}
1165 \newskip\TBtocsectionspace  \TBtocsectionspace=1.0em\@plus\p@

1166 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1167   \addvspace{\TBtocsectionspace}%
1168   \@tempdima 1.5em
1169   \begingroup
1170     \parindent\z@ \rightskip\z@  % article style makes \rightskip > 0
1171     \parfillskip\z@
1172     \TBtocsectionfont
1173     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
```

---

[2]Thurber, *The Wonderful O*

```
1174        \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1175    \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:

```
1176 \renewcommand{\appendix}{\par
1177    \renewcommand{\thesection}{\@Alph\c@section}%
1178    \setcounter{section}{0}%
1179    \if@numbersec
1180    \else
1181      \setcounter{secnumdepth}{1}%
1182    \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.

```
1183    \def\@tempa{appendix}
1184    \ifx\@tempa\@currenvir
1185      \expandafter\@appendix@env
1186    \fi
1187 }
```

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

```
1188 \newcommand{\app@prefix@section}{}
1189 \newcommand{\@appendix@env}[1][Appendix]{%
1190    \renewcommand{\@seccntformat}[1]{\csname app@prefix@##1\endcsname
1191      \csname the##1\endcsname\quad}%
1192    \renewcommand{\app@prefix@section}{#1 }%
1193 }
```

Ending an appendix environment is pretty trivial...

```
1194 \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

```
1195 \def\TB@nolimelabel{%
1196   \def\@currentlabel{%
1197     \protect\TBWarning{%
1198       Invalid reference to numbered label on page \thepage
1199       \MessageBreak made%
1200     }%
1201     \textbf{?!?}%
1202   }%
1203 }
```

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.

```
1204 \let\TB@@sect\@sect
1205 \let\TB@@ssect\@ssect
1206 \def\@sect#1#2#3#4#5#6[#7]#8{%
1207   \def\@currentlabelname{#7}%
1208   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1209 }
1210 \def\@ssect#1#2#3#4#5{%
1211   \def\@currentlabelname{#5}%
1212   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1213 }
```

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>`.

```
1214 \let\@savelatexlabel=\label  % so save original LaTeX command
1215 %
1216 \def\label#1{% de
1217   \@savelatexlabel{#1}%
1218   \@bsphack
1219   \if@filesw
1220     \protected@write\@auxout{}%
1221       {\string\newlabel{nr@#1}{{\@currentlabel}{\@currentlabelname}}}%
1222   \fi
```

```
1223    \@esphack
1224 }
```

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

```
1225 \let\@currentlabelname\@empty
```

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

```
1226 \DeclareRobustCommand{\nameref}[1]{\expandafter\@setref
1227    \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` (actually `\tubcaptionfonts`).

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`

```
1228 \newdimen\@tubfullpageindent
1229 \@tubfullpageindent = \if@tubtwocolumn 4.875pc \else 3.875pc \fi
```

Ok, here is the `\@makecaption`.

```
1230 \def\tubcaptionfonts{\small}%
1231 \long\def\@makecaption#1#2{%
1232    \vskip\abovecaptionskip
1233    \sbox\@tempboxa{\tubcaptionfonts \tubmakecaptionbox{#1}{#2}}% try in an hbox
1234    \ifdim \wd\@tempboxa > \hsize
1235      {% caption doesn't fit on one line; set as a paragraph.
1236      \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1237      % indent full-width captions {figure*}, but not single-column {figure}.
1238      \ifdim\hsize = \textwidth
1239        \leftskip=\@tubfullpageindent \rightskip=\leftskip
1240        \advance\rightskip by 0pt plus2em  % increase acceptable raggedness
1241      \fi
1242      \noindent \tubmakecaptionbox{#1}{#2}\par}%
1243    \else
1244      % fits on one line; use the hbox, centered.  Do not reset its glue.
1245      \global\@minipagefalse
1246      \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1247    \fi
1248    \vskip\belowcaptionskip}
1249 %
1250 \def\tubmakecaptionbox#1#2{#1: #2}% allow overriding for a paper
```

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

```
1251 \def\fnum@figure{{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}}
```

```
1252 \def\fnum@table{{\tubcaptionfonts \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.

```
1253 \setlength\abovecaptionskip{6pt plus1pt minus1pt}
```

3.20   Size changing commands

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

```
1254 \renewcommand{\normalsize}{%
1255    \@setfontsize\normalsize\@xpt\@xiipt
1256    \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1257    \belowdisplayskip=\abovedisplayskip
1258    \abovedisplayshortskip=\z@\@plus 3\p@
1259    \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1260 }
1261
1262 \renewcommand{\small}{%
1263    \@setfontsize\small\@ixpt{11}%
1264    \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1265    \belowdisplayskip=\abovedisplayskip
1266    \abovedisplayshortskip=\z@\@plus 2\p@
1267    \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1268 }
1269
1270 \renewcommand{\footnotesize}{%
1271    \@setfontsize\footnotesize\@viiipt{9.5}%
1272    \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1273    \belowdisplayskip=\abovedisplayskip
1274    \abovedisplayshortskip=\z@\@plus 3\p@
1275    \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1276 }
```

3.21   Lists and other text inclusions

```
1277 \def\@listi{%
1278    \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1279    \itemsep=\parsep
1280    \listparindent=1em
1281    }
1282
1283 \def\@listii{%
1284    \leftmargin\leftmarginii
1285    \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1286    \topsep=2\p@\@plus\p@\@minus\p@
1287    \parsep=\p@\@plus\p@\@minus\p@
1288    \itemsep=\parsep
1289    \listparindent=1em
```

```
1290    }
1291
1292 \def\@listiii{%
1293    \leftmargin=\leftmarginiii
1294    \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1295    \topsep=\p@\@plus\p@\@minus\p@
1296    \parsep=\z@
1297    \itemsep=\topsep
1298    \listparindent=1em
1299    }
1300 \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.

```
1301 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1302        \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}
```

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

```
1303 \newenvironment{compactitemize}%
1304    {\begin{itemize}%
1305        \setlength{\itemsep}{0pt}%
1306        \setlength{\parskip}{0pt}%
1307        \setlength{\parsep} {0pt}%
1308    }%
1309    {\end{itemize}}
1310 %
1311 \newenvironment{compactenumerate}%
1312    {\begin{enumerate}%
1313        \setlength{\itemsep}{0pt}%
1314        \setlength{\parskip}{0pt}%
1315        \setlength{\parsep} {0pt}%
1316    }%
1317    {\end{enumerate}}
1318 %
1319 \newenvironment{compactdescription}%
1320    {\begin{description}%
1321        \setlength{\itemsep}{0pt}%
1322        \setlength{\parskip}{0pt}%
1323        \setlength{\parsep} {0pt}%
1324    }%
1325    {\end{description}}
1326 %
```

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.

```
1327 %\let\@TB@verbatim\@verbatim
1328 \let\@TBverbatim\verbatim
1329 \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.)

```
1330 \def\verbatim{\par\obeylines
1331   \futurelet\reserved@a\@switch@sqbverbatim}
1332 %
1333 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1334   \expandafter\@sqbverbatim\else
1335   \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1336 %
1337 \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.

```
1338   \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.

```
1339   #1\@TBverbatim}
```

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

```
1340 \def\@verbatim{%
```

First, we deal with \ruled:

```
1341   \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1342   \trivlist \item\relax
1343   \if@minipage\else\vskip\parskip\fi
1344   \leftskip\@totalleftmargin\rightskip\z@skip
1345   \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1346   \@@par
1347   \@tempswafalse
```

46

```
1348    \def\par{%
1349      \if@tempswa
1350        \leavevmode \null \@@par\penalty\interlinepenalty
1351      \else
1352        \@tempswatrue
1353        \ifhmode\@@par\penalty\interlinepenalty\fi
1354      \fi}%
1355    \obeylines \verbatim@font \@noligs
1356    \let\do\@makeother \dospecials
1357    \everypar \expandafter{\the\everypar \unpenalty}%
1358 }%
```

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).

```
1359 \def\endverbatim{\@TBendverbatim
1360    \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

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

```
1361 \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.

```
1362 \AtBeginDocument{%
1363    \@ifpackageloaded{microtype}
1364      {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{}
1365 }
```

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.

```
1366 \if@Harvardcite
1367 \let\@internalcite\cite
```

Normal forms.

```
1368 \def\cite{\def\@citeseppen{-1000}%
1369     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1370     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1371 \def\citeNP{\def\@citeseppen{-1000}%
1372     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1373     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1374 \def\citeN{\def\@citeseppen{-1000}%
1375     \def\@cite##1##2{##1\if@tempswa , ##2)\else()}\fi}%
1376     \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1377 \def\citeA{\def\@citeseppen{-1000}%
1378     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1379     \def\citeauthoryear##1##2##3{##1}\@internalcite}
1380 \def\citeANP{\def\@citeseppen{-1000}%
1381     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1382     \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1383 \def\shortcite{\def\@citeseppen{-1000}%
1384     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1385     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1386 \def\shortciteNP{\def\@citeseppen{-1000}%
1387     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1388     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1389 \def\shortciteN{\def\@citeseppen{-1000}%
1390     \def\@cite##1##2{##1\if@tempswa , ##2)\else()}\fi}%
1391     \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1392 \def\shortciteA{\def\@citeseppen{-1000}%
1393     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1394     \def\citeauthoryear##1##2##3{##2}\@internalcite}
1395 \def\shortciteANP{\def\@citeseppen{-1000}%
1396     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1397     \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1398 \def\citeyear{\def\@citeseppen{-1000}%
1399     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1400     \def\citeauthoryear##1##2##3{##3}\@citedata}
1401 \def\citeyearNP{\def\@citeseppen{-1000}%
1402     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1403     \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.

```
1404 \def\@citedata{%
1405        \@ifnextchar [{\@tempswatrue\@citedatax}%
1406                                {\@tempswafalse\@citedatax[]}%
1407 }
1408
1409 \def\@citedatax[#1]#2{%
1410 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1411   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1412     {\@citea\def\@citea{, }\@ifundefined% by Young
1413        {b@\@citeb}{{\bf ?}%
1414        \@warning{Citation '\@citeb' on page \thepage \space undefined}}%
1415 {\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.

```
1416 \def\@citex[#1]#2{%
1417 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1418   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1419     {\@citea\def\@citea{; }\@ifundefined% by Young
1420        {b@\@citeb}{{\bf ?}%
1421        \@warning{Citation '\@citeb' on page \thepage \space undefined}}%
1422 {\csname b@\@citeb\endcsname}}}{#1}}%
```

No labels in the bibliography.

```
1423 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```
1424 \newlength{\bibhang}
1425 \setlength{\bibhang}{2em}
```

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

```
1426 \newdimen\bibindent
1427 \bibindent=1.5em
1428 \@ifundefined{refname}%
1429   {\newcommand{\refname}{References}}%
1430   {}%
```

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

```
1431 \def\thebibliography#1{%
1432   \let\TB@startsection\TB@safe@startsection
1433   \section*{\refname
1434     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1435   \list{[\arabic{enumi}]}{%
1436     \labelwidth\z@ \labelsep\z@
1437     \leftmargin\bibindent
1438     \itemindent -\bibindent
1439     \listparindent \itemindent
1440     \parsep \z@
1441     \usecounter{enumi}}
1442   \def\newblock{}
```

```
1443    \BibJustification
1444    \sfcode`\.=1000\relax
1445 }
```

etal   Other bibliography odds and ends.

\bibentry
```
1446 \def\etal{et\,al.\@}
1447 \def\bibentry{%
1448    \smallskip
1449    \hangindent=\parindent
1450    \hangafter=1
1451    \noindent
1452    \sloppy
1453    \clubpenalty500 \widowpenalty500
1454    \frenchspacing
1455 }
```

\bibliography   Changes made to accommodate TUB file naming conventions

\bibliographystyle
```
1456 \def\bibliography#1{%
1457    \if@filesw
1458      \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1459    \fi
1460    \@input{\jobname.bbl}%
1461 }
1462 \def\bibliographystyle#1{%
1463    \if@filesw
1464      \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1465    \fi
1466 }
```

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

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

```
1467 \else
1468 \let\TB@@thebibliography\thebibliography
1469 \def\thebibliography{%
1470    \let\TB@startsection\TB@safe@startsection
1471    \let\sloppy\BibJustification
1472    \TB@@thebibliography}
1473 \fi
```

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

```
1474 \let\TB@@sloppy\sloppy
1475 \let\BibJustification\TB@@sloppy
1476 \newcommand{\SetBibJustification}[1]{%
```

```
1477    \renewcommand{\BibJustification}{#1}%
1478 }
1479 \ResetCommands\expandafter{\the\ResetCommands
1480    \let\BibJustification\TB@@sloppy
1481 }
```

3.24   Registration marks

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

```
1482 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1483 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1484 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
```

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

```
1485 \def\ttopregister{\dlap{%
1486         \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1487                         \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1488         \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1489 \def\tbotregister{\ulap{%
1490         \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1491         \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1492                         \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1493 \def\topregister{\ttopregister}
1494 \def\botregister{\tbotregister}
```

3.25   Running heads

```
1495 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1496 \def\PrelimDraftfooter{%
1497   \dlap{\kern\textheight\kern3pc
1498         \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}
1499   }}
```

  registration marks; these are temporarily inserted in the running head

```
1500 \def\MakeRegistrationMarks{}
1501 \def\UseTrimMarks{%
1502   \def\MakeRegistrationMarks{%
1503     \ulap{\rlap{%
1504       \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}%
1505             \topregister\vskip \headmargin \vskip 10\p@}}}}%
1506   }
1507 % put issue identification and page number in header.
1508 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1509   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1510   \rtitlex\qquad\midrtitle \hfil \thepage}
1511 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1512   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1513   \thepage\hfil\midrtitle\qquad\rtitlex}
1514
1515 % can be used to reset the font, e.g., tb98kuester.
```

```
1516 \def\tubheadhook{}
1517
1518 % put title and author in footer.
1519 \def\@tubrunningfull{%
1520   \def\@oddfoot{% make line break commands produce a normal space
1521     \def\\{\unskip\ \ignorespaces}%
1522     \let\newline=\\%
1523     \hfil\rhTitle}
1524   \def\@evenfoot{\@author\hfil}
1525 }
1526
1527 \def\@tubrunninggetauthor#1{#1
1528   \begingroup
1529     \let\thanks\@gobble
1530     \protected@xdef\rhAuthor{\the\toks@##1}%
1531   \endgroup
1532 }%
1533
1534 % empty footer.
1535 \def\@tubrunningminimal{%
1536   \def\@oddfoot{\hfil}%
1537   \def\@evenfoot{\hfil}%
1538 }
1539
1540 % empty footer and header.
1541 \def\@tubrunningoff{%
1542   \def\@oddfoot{\hfil}%
1543   \def\@evenfoot{\hfil}%
1544   \def\@oddhead{\hfil}%
1545   \def\@evenhead{\hfil}%
1546 }
1547
1548 \def\ps@headings{}
1549 \pagestyle{headings}
```

3.26   Output routine

Modified to alter `\brokenpenalty` across columns

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

```
1550 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1551     \global\setbox\@leftcolumn\box\@outputbox
1552     \global\brokenpenalty10000
1553   \else \global\@firstcolumntrue
1554     \global\brokenpenalty100
1555     \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1556       {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1557         \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
```

```
1558        \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1559        \@whilesw\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1560    \fi}
```

3.27   Font-related definitions and machinery

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

```
1561 \newif\ifFirstPar        \FirstParfalse
1562 \def\smc{\sc}
1563 \def\ninepoint{\small}
1564 ⟨/classtail⟩
```

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

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

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

```
1565 ⟨∗common⟩
1566 \DeclareRobustCommand{\SMC}{%
1567  \ifx\@currsize\normalsize\small\else
1568   \ifx\@currsize\small\footnotesize\else
1569    \ifx\@currsize\footnotesize\scriptsize\else
1570     \ifx\@currsize\large\normalsize\else
1571      \ifx\@currsize\Large\large\else
1572       \ifx\@currsize\LARGE\Large\else
1573        \ifx\@currsize\scriptsize\tiny\else
1574         \ifx\@currsize\tiny\tiny\else
1575          \ifx\@currsize\huge\LARGE\else
1576           \ifx\@currsize\Huge\huge\else
1577            \small\SMC@unknown@warning
1578  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1579 }
1580 \newcommand{\SMC@unknown@warning}{\TBWarning{\string\SMC: nonstandard
1581    text font size command -- using \string\small}}
```

```
1582 \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.

```
1583 \newcommand{\acro}[1]{\textSMC{#1}\@}
1584 ⟨/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!)

```
1585 ⟨*classtail⟩
1586 \def\xEdNote{{\EdNoteFont Editor's note:\enspace }}
1587 \def \EdNote{\@ifnextchar[%
1588   {%
1589     \ifvmode
1590       \smallskip\noindent\let\@EdNote@\@EdNote@v
1591     \else
1592       \unskip\quad\def\@EdNote@{\unskip\quad}%
1593     \fi
1594     \@EdNote
1595   }%
1596   \xEdNote
1597 }
1598 \long\def\@EdNote[#1]{%
1599   [\thinspace\xEdNote\ignorespaces
1600    #1%
1601    \unskip\thinspace]%
1602   \@EdNote@
1603 }
1604 \def\@EdNote@v{\par\smallskip}
```

Macros for Mittelbach's self-documenting style

```
1605 \def\SelfDocumenting{%
1606   \setlength\textwidth{31pc}
1607   \onecolumn
1608   \parindent \z@
1609   \parskip 2\p@\@plus\p@\@minus\p@
1610   \oddsidemargin 8pc
1611   \evensidemargin 8pc
1612   \marginparwidth 8pc
1613   \toks@\expandafter{\@oddhead}%
1614   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1615   \toks@\expandafter{\@evenhead}%
1616   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1617   \def\ps@titlepage{}%
1618 }
```

```
1619 \def\ps@titlepage{}
1620
1621 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}%
1622   \llap{\@makefnmark}\null$\mskip5mu$#1}
1623
1624 %% \long\def\@makefntext#1{\parindent 1em
1625 %%   \noindent
1626 %%   \hb@xt@2em{\hss\@makefnmark}%
1627 %%   \hskip0.27778\fontdimen6\textfont\z@\relax
1628 %%   #1%
1629 %% }
```

\tubraggedfoot   To get a ragged-right footnote.

```
1630 \newcommand{\tubraggedfoot}{\rightskip=\raggedskip plus\raggedstretch\relax}
```

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

\supportfootnote
```
1631 \def\creditfootnote{\nomarkfootnote\xEdNote}
1632 \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.

```
1633 \gdef\nomarkfootnote#1#2{\begingroup
1634   \def\thefootnote{}%
1635   % no period, please, also no fnmark.
1636   \def\@makefntext##1{##1}%
1637   \footnotetext{\noindent #1#2}%
1638   \endgroup
1639 }
```

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.

```
1640 \if@Harvardcite
1641   \AtBeginDocument{%
1642     \bibliographystyle{ltugbib}%
1643   }
1644 \fi
1645 \authornumber\z@
1646 \let\@signature\@defaultsignature
1647 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1648                                 configuration information}}{}
1649 ⟨/classtail⟩
```

4   LaTeX 2ε Proceedings class

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

```
1650 ⟨∗ltugproccls⟩
1651 \def\@tugclass{ltugproc}
```

\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.

```
1652 \newif\if@proc@sober
1653 \newif\if@proc@numerable
1654 \DeclareOption{tug95}{%
1655   \@proc@soberfalse
1656   \@proc@numerablefalse
1657 }
1658 \DeclareOption{tug96}{%
1659   \@proc@sobertrue
1660   \@proc@numerablefalse
1661 }
1662 \DeclareOption{tug97}{%
1663   \@proc@sobertrue
1664   \@proc@numerabletrue
1665 }
1666 \DeclareOption{tug2002}{%
1667   \@proc@sobertrue
1668   \@proc@numerabletrue
1669   \let\if@proc@numbersec\iftrue
1670   \PassOptionsToClass{numbersec}{ltugboat}%
1671 }
```

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

```
1672 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1673   \PassOptionsToClass{numbersec}{ltugboat}%
1674 }
1675 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1676   \PassOptionsToClass{nonumber}{ltugboat}%
1677 }
```

\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.

```
1678 \newif\ifTB@title
1679 \DeclareOption{title}{\TB@titletrue}
1680 \DeclareOption{notitle}{\TB@titlefalse
1681   \AtBeginDocument{\stepcounter{page}}}
```

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

```
1682 \DeclareOption{tugproc}{%
1683   \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1684 }
```

56

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

1685 `\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...)

1686 `\InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%`
1687 `        {Loading ltugproc configuration information}}{}`
1688 `\@ifundefined{TUGprocExtraOptions}%`
1689 `  {\let\TUGprocExtraOptions\@empty}%`
1690 `  {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}`

`\tugProcYear`   Now work out what year it is

1691 `\@tempcnta\year`
1692 `\ifnum\@tempcnta<2000`
1693 `  \divide\@tempcnta by100`
1694 `  \multiply\@tempcnta by100`
1695 `  \advance\@tempcnta-\year`
1696 `  \@tempcnta-\@tempcnta`
1697 `\fi`

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

1698 `\edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear`
1699 `                {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}`
1700 `\@tempa`
1701 `\ClassInfo{ltugproc}{Class believes year is`
1702 `  \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear`
1703 `    \@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.

1704 `\expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax`
1705 `  \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.

1706 `\ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}`
1707 `\ProcessOptions`
1708 `\if@proc@numbersec`
1709 `  \if@proc@numerable`
1710 `  \else`
1711 `    \ClassWarning{\@tugclass}{This year's proceedings may not have`
1712 `      numbered sections}%`
1713 `  \fi`
1714 `\fi`

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

1715 `\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.

```
1716 \def\maketitle{%
1717   \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).

```
1718     \ifshortAuthor\else
1719       \global\let\rhAuthor\@empty
1720       \def\g@addto@rhAuthor##1{%
1721         \begingroup
1722           \toks@\expandafter{\rhAuthor}%
1723           \let\thanks\@gobble
1724           \protected@xdef\rhAuthor{\the\toks@##1}%
1725         \endgroup
1726       }%
1727       \@getauthorlist\g@addto@rhAuthor
1728     \fi
```

now, the real business of setting the title

```
1729     \ifTB@title
1730       \setcounter{footnote}{0}%
1731       \renewcommand{\thefootnote}{\@fnsymbol\c@footnote}%
1732       \if@tubtwocolumn
1733         \twocolumn[\@maketitle]%
1734       \else
1735         \onecolumn
1736         \global\@topnum\z@
1737         \@maketitle
1738       \fi
1739       \@thanks
1740       \thispagestyle{TBproctitle}
1741     \fi
1742   \endgroup
1743   \TB@madetitletrue
1744 }
1745 \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 Fairbairns, for details.

```
1746 \def\@TB@test@document{%
1747   \edef\@tempa{\the\everypar}
1748   \def \@tempb{\@nodocument}
1749   \ifx \@tempa\@tempb
1750     \@nodocument
1751   \fi
```

1752 }

\AUTHORfont Define the fonts for titles and things

\TITLEfont 1753 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1754 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1755 \def\addressfont{\small\rmfamily\mdseries\upshape}
1756 \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 1757 \newskip\aboveauthorskip   \aboveauthorskip=18\p@ \@plus4\p@
1758 \newskip\belowauthorskip   \belowauthorskip=\aboveauthorskip
1759 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

\@maketitle The body of \maketitle

1760 \def\@maketitle{%
1761   {\parskip\z@
1762   \frenchspacing
1763   \TITLEfont\raggedright\noindent\@title\par
1764   \count@=0
1765   \loop
1766   \ifnum\count@<\authornumber
1767   \vskip\aboveauthorskip
1768   \advance\count@\@ne
1769   {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1770   \addressfont\theaddress{\number\count@}\endgraf
1771   {%
1772   \allowhyphens
1773   \hangindent1.5pc
1774   \netaddrfont\thenetaddress{\number\count@}\endgraf
1775   \hangindent1.5pc
1776   \thePersonalURL{\number\count@}\endgraf
1777   }%
1778   \repeat
1779   \vskip\belowauthorskip}%
1780   \if@abstract
1781   \centerline{\bfseries Abstract}%
1782   \vskip.5\baselineskip\rmfamily
1783   \@tubonecolumnabstractstart
1784   \the\abstract@toks
1785   \@tubonecolumnabstractfinish
1786   \global\@ignoretrue
1787   \fi
1788   \vskip\belowabstractskip
1789   \global\@afterindentfalse\aftergroup\@afterheading
1790 }

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

59

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@`

```
1791 \newtoks\abstract@toks  \abstract@toks{}
1792 \let\if@abstract\iffalse
1793 \def\abstract{%
```

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

```
1794   \ifTB@madetitle
1795     \TBWarning{abstract environment after \string\maketitle}
1796   \fi
1797   \def\@abstract@{abstract}%
1798   \ifx\@currenvir\@abstract@
1799   \else
1800     \TBError{\string\abstract\space is illegal:%
1801       \MessageBreak
1802       use \string\begin{\@abstract@} instead}%
1803       {\@abstract@\space may only be used as an environment}
1804   \fi
1805   \global\let\if@abstract\iftrue
1806   {\ifnum0=`}\fi
1807   \@abstract@getbody}
1808 \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}`

```
1809 \long\def\@abstract@getbody#1\end{%
1810   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1811   \@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.

```
1812 \def\@abstract@findend#1{%
1813   \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.

```
1814   \ifx\@tempa\@abstract@
1815     \expandafter\@abstract@end
1816   \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)

```
1817     \def\@tempb{document}%
```

```
1818      \ifx\@tempa\@tempb
1819        \TBError{\string\begin{\@abstract@}
1820            ended by \string\end{\@tempb}}%
1821          {You've forgotten \string\end{\@abstract@}}
1822      \else
1823        \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1824        \expandafter\expandafter\expandafter\@abstract@getbody
1825      \fi
1826    \fi}
```

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

```
1827 \def\@abstract@end{\ifnum0='{\fi}%
1828    \expandafter\end\expandafter{\@abstract@}}
```

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

```
1829 \renewcommand{\makesignature}{\TBWarning
1830              {\string\makesignature\space is invalid in proceedings issues}}
```

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

```
      \ps@TBproc 1831 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
   \dopagecommands 1832    \let\@evenhead\MakeRegistrationMarks
 \setpagecommands 1833    \TB@definefeet
  \TB@definefeet 1834 }
      \pfoottext 1835 \def\ps@TBproc{%
      \rfoottext 1836    \def\@oddhead{\MakeRegistrationMarks
1837      {%
1838        \hfil
1839        \def\\{\unskip\ \ignorespaces}%
1840        \rmfamily\rhTitle
1841      }%
1842    }%
1843    \def\@evenhead{\MakeRegistrationMarks
1844      {%
1845        \def\\{\unskip\ \ignorespaces}%
1846        \rmfamily\rhAuthor
1847        \hfil
1848      }%
1849    }%
1850    \TB@definefeet
1851 }
1852
1853 \advance\footskip8\p@    % for deeper running feet
1854
1855 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1856 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1857    {#2}}
1858 \def\TB@definefeet{%
1859    \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
```

```
1860    \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1861  \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1862    \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1863 }
1864
1865 \def\pfoottext{{\smc Preprint}:
1866    Proceedings of the \volyr{} Annual Meeting}
1867 \def\rfoottext{\normalfont\TUB, \volx\Dash
1868    {Proceedings of the \volyr{} Annual Meeting}}
1869
1870 \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).

```
1871 \if@proc@numbersec
1872 \else
1873   \setcounter{secnumdepth}{0}
1874 \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.

```
1875 \if@proc@numbersec
1876 \else
1877   \if@proc@sober
1878     \def\section
1879           {\TB@nolimelabel
1880            \TB@startsection{{section}%
1881                           1%
1882                           \z@%
1883                           {-8\p@\@plus-2\p@\@minus-2\p@}%
1884                           {6\p@}%
1885                           {\normalsize\bfseries\raggedright}}}
1886   \else
1887     \def\section
1888           {\TB@nolimelabel
1889            \TB@startsection{{section}%
1890                           1%
1891                           \z@%
1892                           {-8\p@\@plus-2\p@\@minus-2\p@}%
1893                           {6\p@}%
1894                           {\large\bfseries\raggedright}}}
1895   \fi
```

```
1896   \def\subsection
1897          {\TB@nolimelabel
1898           \TB@startsection{{subsection}%
1899                            2%
1900                            \z@%
1901                            {6\p@\@plus 2\p@\@minus2\p@}%
1902                            {-5\p@\@plus -\fontdimen3\the\font}%
1903                            {\normalsize\bfseries}}}
1904   \def\subsubsection
1905          {\TB@nolimelabel
1906           \TB@startsection{{subsubsection}%
1907                            3%
1908                            \parindent%
1909                            \z@%
1910                            {-5\p@\@plus -\fontdimen3\the\font}%
1911                            {\normalsize\bfseries}}}
1912 \fi
1913 ⟨/ltugproccls⟩
```

5   Plain TEX styles

```
1914 ⟨*tugboatsty⟩
1915 % err...
1916 ⟨/tugboatsty⟩
1917 ⟨*tugprocsty⟩
1918 % err...
1919 ⟨/tugprocsty⟩
```

6   The LATEX 2ε compatibility-mode style files

```
1920 ⟨*ltugboatsty⟩
1921 \@obsoletefile{ltugboat.cls}{ltugboat.sty}
1922 \LoadClass{ltugboat}
1923 ⟨/ltugboatsty⟩
1924 ⟨*ltugprocsty⟩
1925 \@obsoletefile{ltugproc.cls}{ltugproc.sty}
1926 \LoadClass{ltugproc}
1927 ⟨/ltugprocsty⟩
```