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                 [2015/03/24 v2.17
11 ⟨ltugboatcls⟩                    TUGboat journal class%
12 ⟨ltugproccls⟩                    TUG conference proceedings class%
13 ⟨ltugboatsty | ltugprocsty⟩       TUG compatibility package%
14 ⟨ltugcomn⟩                        TUGboat 'common macros' package%
15 ⟨*dtx⟩
16                                   TUG macros source file%
17 ⟨/dtx⟩
18                 ]
19 ⟨*dtx⟩
20 \newif\ifoldlongtable
21 ⟨/dtx⟩
```

2 Introduction

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

2.1 Summary of control sequences

Abbreviations. Just a listing with indications of expansion where that may not be obvious. For full definitions, see real code below (Section 3.4).

\AllTeX	(LA)TEX
\AMS	American Mathematical Society
\AmSTeX	
\aw	A-W (abbreviation for Addison-Wesley)
\API	
\AW	Addison-Wesley
\BibTeX	
\CandT	Computers & Typesetting
\ConTeXt	ConTEXt
\Cplusplus	C++
\DTD	
\DVD	
\DVI	
\DVIPDFMx	DVIPDFMx
\DVItoVDU	DVItoVDU
\ECMA	
\EPS	
\eTeX	ε-TEX
\ExTeX	ε_χTEX
\Ghostscript	
\Hawaii	Hawai'i
\HTML	
\ISBN	ISBN
\ISO	
\ISSN	ISSN
\JTeX	
\JoT	The Joy of TEX
\LaTeX	
\LyX	
\MacOSX	Mac OS X
\MathML	
\Mc	M with raised c
\MF	METAFONT
\mf	METAFONT
\MFB	The Metafont book
\MP	METAPOST
\mp	MetaPost (in text only: still '∓' in math)
\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 2$_\varepsilon$ *TUGboat* class file

3.1 Setup and options

Check for reloading. Hmmm…Does this happen with LaTeX 2$_\varepsilon$ classes? Probably, in fact, as well that it doesn't, since the `\tugstyinit` referenced here doesn't exist; however, it's possible that we might need a similar mechanism in the future, so we retain its skeleton, without fleshing out the `\tugstyinit` bones.

```
22 ⟨∗ltugboatcls⟩
23 \csname tugstyloaded@\endcsname
24 \def\tugstyloaded@{\tugstyinit\endinput}
```

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

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

Warnings/error messages/information messages — if we're using LaTeX 2_ε we can use the `\Class*` commands:

```
26 \def\TBInfo{\ClassInfo{\@tugclass}}
27 \def\TBError{\ClassError{\@tugclass}}
28 \def\TBWarning{\ClassWarning{\@tugclass}}
29 \def\TBWarningNL{\ClassWarningNoLine{\@tugclass}}
```

`draft` vs. `preprint` vs. `final`.

```
30 \newif\ifpreprint
31 \def\preprint{\preprinttrue}
32 \DeclareOption{draft}{%
33   \AtEndOfClass{%
34     \setcounter{page}{901}%
35     %
36     % Put a question mark into the page number in draft mode.
37     \let\tuborigthepage = \thepage
38     \def\thepage{%
39       \ifnum\value{page}>900
40         \textsl{?\,\@arabic{\numexpr\the\c@page-900\relax}}}%
41       \else
42         \arabic{page}%
43       \fi}%
44     %
45     \BlackBoxes
46     \def\MakeRegistrationMarks{}%
47     \PrelimDrafttrue
48   }%
49 }
50 \DeclareOption{preprint}{%
51     \preprinttrue
52 }
53 \DeclareOption{final}{%
54   \AtEndOfClass{%
55     \let\thepage=\tuborigthepage
56     \NoBlackBoxes
57     \PrelimDraftfalse
58     \@tubrunningfull
59     }%
60 }
```

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

```
61 \DeclareOption{11pt}{%
62   \TBWarning{The \@tugclass\space class only supports 10pt fonts:
63     \MessageBreak option \CurrentOption\space ignored}%
```

```
64 }
65 \DeclareOption{12pt}{\csname ds@11pt\endcsname}
```

Similarly, ignore one/two-side options.

```
66 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
67 \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`.)

```
68 \DeclareOption{tugproc}{%
69   \TBWarning{Option \CurrentOption\space ignored: use class ltugproc
70     instead of \@tugclass}%
71 }
```

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.

```
72 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
73 \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...

```
74 \DeclareOption{extralabel}{\let\UseExtraLabel\@firstofone}
75 \DeclareOption{noextralabel}{\let\UseExtraLabel\@gobble}
```

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

```
76 \DeclareOption{numbersec}{\let\if@numbersec\iftrue}
77 \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.

```
78 \DeclareOption{runningoff}{\AtEndOfClass{\@tubrunningoff}}
79 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
80 \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`.

```
81 \newif\if@tubtwocolumn  \@tubtwocolumntrue
82 \DeclareOption{onecolumn}{\@tubtwocolumnfalse}
```

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

```
83 \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.

```
84 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
85 \ProcessOptions
86 \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.

```
87 \def\sectitlefont{\fontfamily\sfdefault\fontseries{bx}\fontshape{n}%
88        \fontsize\@xviipt\stbaselineskip\selectfont}
89 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xiipt
90        \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...

```
91 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
92        \selectfont}
93 ⟨/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 LaTeX2_ε).

```
94 ⟨*common⟩
95 \IfFileExists{mflogo.sty}%
96   {\RequirePackage{mflogo}}%
97 ⟨!ltugcomn⟩  {\TBWarning
98 ⟨ltugcomn⟩  {\PackageWarning{ltugcomn}
99      {Package mflogo.sty not available --\MessageBreak
100       Proceeding to emulate mflogo.sty}
101   \DeclareRobustCommand{\logofamily}{%
102     \not@math@alphabet\logofamily\relax
103     \fontencoding{U}\fontfamily{logo}\selectfont}
104   \DeclareTextFontCommand{\textlogo}{\logofamily}
105   \def\MF{\textlogo{META}\-\textlogo{FONT}\@}
106   \def\MP{\textlogo{META}\-\textlogo{POST}\@}
107   \DeclareFontFamily{U}{logo}{}
108   \DeclareFontShape{U}{logo}{m}{n}{%
109     <8><9>gen*logo%
110     <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
111   }{}
112   \DeclareFontShape{U}{logo}{m}{sl}{%
113     <8><9>gen*logosl%
```

```
114     <10><10.95><12><14.4><17.28><20.74><24.88>logosl10%
115   }{}
116   \DeclareFontShape{U}{logo}{m}{it}{%
117     <->ssub*logo/m/sl%
118   }{}%
119   }
```

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

```
120 \newtoks\ResetCommands
121 \ResetCommands{%
122   \setcounter{part}{0}%
123   \setcounter{section}{0}%
124   \setcounter{footnote}{0}%
125   \authornumber\z@
126 }
127 \newcommand{\AddToResetCommands}[1]{%
128   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
129 }
```

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.

```
130 ⟨∗!latex⟩
131 \def\makeescape#1{\catcode'#1=0 }
132 \def\makebgroup#1{\catcode'#1=1 }
133 \def\makeegroup#1{\catcode'#1=2 }
134 \def\makemath  #1{\catcode'#1=3 }
135 ⟨/!latex⟩
136 ⟨∗latex⟩
137 \def\makeescape#1{\catcode'#1=\z@}
138 \def\makebgroup#1{\catcode'#1=\@ne}
139 \def\makeegroup#1{\catcode'#1=\tw@}
140 \def\makemath  #1{\catcode'#1=\thr@@}
141 ⟨/latex⟩
142 \def\makealign #1{\catcode'#1=4 }
143 \def\makeeol   #1{\catcode'#1=5 }
144 \def\makeparm  #1{\catcode'#1=6 }
145 \def\makesup   #1{\catcode'#1=7 }
```

```
146 \def\makesub   #1{\catcode`#1=8 }
147 \def\makeignore#1{\catcode`#1=9 }
148 \def\makespace #1{\catcode`#1=10 }
149 \def\makeletter#1{\catcode`#1=11 }
150 \chardef\other=12
151 \let\makeother\@makeother
152 \def\makeactive#1{\catcode`#1=13 }
153 \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.

```
154 \def\savecat#1{%
155   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode`#1}}
156 \def\restorecat#1{\catcode`#1=\csname\string#1savedcat\endcsname}
157 ⟨!latex⟩\savecat\@
158 ⟨!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.

```
159 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
160   \csname#1\endcsname}
161 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
162   \csname saved@@#1\endcsname}
```

To distinguish between macro files loaded

```
163 \def\plaintubstyle{plain}
164 \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:

```
165 \providecommand\hb@xt@{\hbox to}
166 \providecommand\textsuperscript[1]{\ensuremath{\m@th
167                         ^{\mbox{\fontsize\sf@size\z@
168                               \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.

```
169 \DeclareRobustCommand{\AllTeX}{(\La\kern-.075em)\kern-.075em\TeX}
170 \def\AMS{American Mathematical Society}
171 \def\AmS{$\mathcal{A}$\kern-.1667em\lower.5ex\hbox
172   {$\mathcal{M}$}\kern-.125em$\mathcal{S}$}
173 \def\AmSLaTeX{\AmS-\LaTeX}
```

```
174 \def\AmSTeX{\AmS-\TeX}
175 \def\ANSI{\acro{ANSI}}
176 \def\API{\acro{API}}
177 \def\ASCII{\acro{ASCII}}
178 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}
179 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
180 %
181 % make \BibTeX work in slanted contexts too; it's common in titles, and
182 % especially burdensome to hack in .bib files.
183 \def\Bib{%
184   \ifdim \fontdimen1\font>0pt
185     B{\SMC\SMC IB}%
186   \else
187     \textsc{Bib}%
188   \fi
189 }
190 \def\BibTeX{\Bib\kern-.08em \TeX}
191 %
192 \def\BSD{\acro{BSD}}
193 \def\CandT{\textsl{Computers \& Typesetting}}
```

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

```
194 \def\ConTeXt{C\kern-.0333emon\-\kern-.0667em\TeX\kern-.0333emt}
195 \def\CMkIV{\ConTeXt\ \MkIV}
196 \def\Cplusplus{C\plusplus}
197 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
198 \def\CPU{\acro{CPU}}
199 \def\CSS{\acro{CSS}}
200 \def\CSV{\acro{CSV}}
201 \def\CTAN{\acro{CTAN}}
202 \def\DTD{\acro{DTD}}
203 \def\DTK{\acro{DTK}}
204 \def\DVD{\acro{DVD}}
205 \def\DVI{\acro{DVI}}
206 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
207 \def\DVItoVDU{DVIto\kern-.12em VDU}
208 \def\ECMA{\acro{ECMA}}
209 \def\EPS{\acro{EPS}}
210 \DeclareRobustCommand{\eTeX}{\ensuremath{\varepsilon}-\kern-.125em\TeX}
211 \DeclareRobustCommand{\ExTeX}{%
212   \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}
213 \def\FAQ{\acro{FAQ}}
214 \def\FTP{\acro{FTP}}
215 \def\Ghostscript{Ghost\-script}
216 \def\GNU{\acro{GNU}}
217 \def\GUI{\acro{GUI}}
218 \def\Hawaii{Hawai'i}
219 \def\HTML{\acro{HTML}}
220 \def\HTTP{\acro{HTTP}}
221 \def\IDE{\acro{IDE}}
```

```
222 \def\IEEE{\acro{IEEE}}
223 \def\ISBN{\acro{ISBN}}
224 \def\ISO{\acro{ISO}}
225 \def\ISSN{\acro{ISSN}}
226 \def\JPEG{\acro{JPEG}}
227 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
228 \def\JoT{\textsl{The Joy of \TeX}}
229 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
230                   $\m@th$\fontsize\sf@size\z@\selectfont
231                   $\m@th\mathcal{A}$}%
232    \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
233    {$\m@th\mathcal{S}$}-\TeX}
234 % This code
235 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
236 % example) to propagate into the raised (small) 'A':
237 %    \begin{macrocode}
238 \DeclareRobustCommand{\La}%
239   {L\kern-.36em
240       {\setbox0\hbox{T}%
241        \vbox to\ht0{\hbox{$\m@th$%
242                         \csname S@\f@size\endcsname
243                         \fontsize\sf@size\z@
244                         \math@fontsfalse\selectfont
245                         A}%
246                    \vss}%
247        }}
```

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.

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

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

```
254 \def\mf{\textsc{Metafont}}
255 \def\MFB{\textsl{The \MF book}}
256 \def\MkIV{Mk\acro{IV}}
257 \let\TB@@mp\mp
258 \DeclareRobustCommand{\mp}{\ifmmode\TB@@mp\else MetaPost\fi}
259 %
260 % In order that the \cs{OMEGA} command will switch to using the TS1
261 % variant of the capital Omega character if \texttt{textcomp.sty} is
```

```
262 % loaded, we define it in terms of the \cs{textohm} command.  Note
263 % that this requires us to interpose a level of indirection, rather
264 % than to use \cs{let}\dots
265 %
266 %    \begin{macrocode}
267 \DeclareRobustCommand{\NTG}{\acro{NTG}}
268 \DeclareRobustCommand{\NTS}{\ensuremath{\mathcal{N}\mkern-4mu
269   \raisebox{-0.5ex}{$\mathcal{T}$}\mkern-2mu \mathcal{S}}}
270 \DeclareTextSymbol{\textohm}{OT1}{'012}
271 \DeclareTextSymbolDefault{\textohm}{OT1}
272 \newcommand{\OMEGA}{\textohm}
273 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
274 \DeclareRobustCommand{\OOXML}{\acro{OOXML}}
275 \DeclareRobustCommand{\OTF}{\acro{OTF}}
276 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
277 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}
```

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

```
278 \def\Pas{Pascal}
279 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
280 \def\PCTeX{PC\thinspace\TeX}
281 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
282 \def\PDF{\acro{PDF}}
283 \def\PGF{\acro{PGF}}
284 \def\PHP{\acro{PHP}}
285 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
286 \def\PiCTeX{\PiC\kern-.11em\TeX}
287 \def\plain{\texttt{plain}}
288 \def\PNG{\acro{PNG}}
289 \def\POBox{P.\thinspace O.~Box }
290 \def\PS{{Post\-Script}}
291 \def\PSTricks{\acro{PST}ricks}
292 \def\RTF{\acro{RTF}}
293 \def\SC{Steering Committee}
294 \def\SGML{\acro{SGML}}
295 \def\SliTeX{\textrm{S\kern-.06em\textsc{l\kern-.035emi}%
296                      \kern-.06em\TeX}}
297 \def\slMF{\textsl{\MF}} % should never be used
298 \def\SQL{\acro{SQL}}
299 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
300 \def\STIX{\acro{STIX}}
301 \def\SVG{\acro{SVG}}
302 \def\TANGLE{\texttt{TANGLE}\@}
303 \def\TB{\textsl{The \TeX book}}
304 \def\TIFF{\acro{TIFF}}
305 \def\TP{\textsl{\TeX}: \textsl{The Program}}
306 \DeclareRobustCommand{\TeX}{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
307 \def\TeXhax{\TeX hax}
308 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
309   \kern-.2267emG\@}
```

```
310 \def\TeXtures{\textit{Textures}}
311 \let\Textures=\TeXtures
312 \def\TeXworks{\TeX\kern-.07em works}
313 \def\TeXXeT{\TeX-{}-\XeT}
314 \def\TFM{\acro{TFM}}
315 \expandafter\ifx\csname XeTeXrevision\endcsname\relax
316 \def\Thanh{H\`an~Th\^e\llap{\raise 0.5ex\hbox{\'{}}}~Th\`anh}% non-XeTeX
317 \else
318 \def\Thanh{H\`an~Th\textcircumacute{e}~Th\`anh}% xunicode drops the acute else
319 \fi
320 \def\TikZ{Ti{\em k}Z}
321 \def\ttn{\textsl{TTN}\@}
322 \def\TTN{\textsl{\TeX{} and TUG News}}
323 \let\texttub\textsl               % redefined in other situations
324 \def\TUB{\texttub{TUGboat}}
325 \def\TUG{\TeX\ \UG}
326 \def\tug{\acro{TUG}}
327 \def\UG{Users Group}
328 \def\UNIX{\acro{UNIX}}
329 % let's not do \UTF, since other packages use it for Unicode character access.
330 \def\VAX{V\kern-.12em A\kern-.1em X\@}
331 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
332 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
333 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
334 \def\XML{\acro{XML}}
335 \def\WEB{\texttt{WEB}\@}
336 \def\WEAVE{\texttt{WEAVE}\@}
337 \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.)

```
338 \def\tubreflect#1{%
339   \@ifundefined{reflectbox}{%
340     \TBerror{A graphics package must be loaded for \string\XeTeX}%
341   }{%
342     \ifdim \fontdimen1\font>0pt
343       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
344     \else
345       \reflectbox{#1}%
346     \fi
347   }%
348 }
349 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
350 \def\XekernbeforeE{-.125em}
351 \def\XekernafterE{-.1667em}
352 \DeclareRobustCommand{\Xe}{\leavevmode
353   \tubhideheight{\hbox{X%
```

```
354     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
355     \lower\dp0\hbox{\raise\dp1\hbox{\kern\XekernbeforeE\tubreflect{E}}}%
356     \kern\XekernafterE}}}
357 \def\XeTeX{\Xe\TeX}
358 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
359 %
360 \def\XHTML{\acro{XHTML}}
361 \def\XSL{\acro{XSL}}
362 \def\XSLFO{\acro{XSL}\raise.08ex\hbox{-}\acro{FO}}
363 \def\XSLT{\acro{XSLT}}
```

3.5   General typesetting rules

```
364 \newlinechar='\^^J
365 \normallineskiplimit=\p@
366 \clubpenalty=10000
367 \widowpenalty=10000
368 \def\NoParIndent{\parindent=\z@}
369 \newdimen\normalparindent
370 \normalparindent=20\p@
371 \def\NormalParIndent{\global\parindent=\normalparindent}
372 \NormalParIndent
373 \def\BlackBoxes{\overfullrule=5\p@}
374 \def\NoBlackBoxes{\overfullrule=\z@}
375 \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.

```
376 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
377     \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
378 \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`.

```
379 \newbox\T@stBox               \newbox\TestBox
380 \newcount\T@stCount           \newcount\TestCount
381 \newdimen\T@stDimen           \newdimen\TestDimen
382 \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).

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

LaTeX conventions which are also useful here.

```
384 ⟨∗!latex⟩
385   \let\@@input\input
386   \def\iinput#1{\@@input#1 }
387   \def\@inputcheck{\if\@nextchar\bgroup
388     \expandafter\iinput\else\expandafter\@@input\fi}
389   \def\input{\futurelet\@nextchar\@inputcheck}
390 ⟨/!latex⟩
```

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

```
391 \newif\iftop@          \newif\ifbot@
392 \def\topsmash{\top@true\bot@false\smash@}
393 \def\botsmash{\top@false\bot@true\smash@}
394 \def\smash{\top@true\bot@true\smash@}
395 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
396       \else\let\next\makesm@sh\fi \next }
397 \def\finsm@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}
```

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

```
398 \long\def\ulap#1{\vbox to \z@{\vss#1}}
399 \long\def\dlap#1{\vbox to \z@{#1\vss}}
```

And centered horizontal and vertical 'laps'

```
400 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
401 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
402 \long\def\zlap#1{\ylap{\xlap{#1}}}
```

Avoid unwanted vertical glue when making up pages.

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

Empty rules for special occasions

```
404 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
405 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

```
407 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
408       \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
409           \vss\hb@xt@#2{\vrule \@width\T@stDimen
410               \hfil\makestrut[#1;\z@]%
411               \vrule \@width\T@stDimen}\vss
412           \hrule \@height\T@stDimen \@depth\z@}}
```

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

```
413 ⟨*!latex⟩
414 \def\today{\number\day\space \ifcase\month\or
415        Jan \or Feb \or Mar \or Apr \or May \or Jun \or
416        Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
417        \number\year}
418 ⟨/!latex⟩
```

Current time; this may be system dependent!

```
419 \newcount\hours
420 \newcount\minutes
421 \def\SetTime{\hours=\time
422        \global\divide\hours by 60
423        \minutes=\hours
424        \multiply\minutes by 60
425        \advance\minutes by-\time
426        \global\multiply\minutes by-1 }
427 \SetTime
428 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
429 \def\Now{\today\ \now}
430 \newif\ifPrelimDraft
431 \def\midrtitle{\ifPrelimDraft {\textsl{preliminary draft, \Now}}\fi}
```

3.7 Ragged right and friends

\raggedskip Plain TEX's definition of \raggedright doesn't permit any stretch, and results in
\raggedstretch too many overfull boxes. We also turn off hyphenation. This code lies somewhere
\raggedparfill between that of Plain TEX and of LATEX.
\raggedspaces

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

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

```
436 \def\raggedright{%
437   \nohyphens
438   \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
439   \parfillskip=\raggedparfill
440 }
441 \def\raggedleft{%
442   \nohyphens
443   \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
444   \parfillskip=\z@skip
445 }
446 \def\raggedcenter{%
447   \nohyphens
448   \leftskip=\raggedskip\@plus\raggedstretch
449   \rightskip=\leftskip \raggedspaces
```

```
450    \parindent=\z@ \parfillskip=\z@skip
451 }
452 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}
```

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

```
453 \DeclareRobustCommand{\nobreakspace}{%
454    \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...)

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

---

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

19

```
483   \ifmmode \egroup \fi
484   \ensuremath{\rangle}%
485 }
486 %
487 % Use \tt rather than \texttt because italic typewriter is just too ugly,
488 % and upright works well enough in both italic and bold contexts.
489 \DeclareRobustCommand{\cs}[1]{{\tt \char`\\#1}}
490 %
491 % This command was defined much later than the other, so let's not
492 % conflict with any existing definitions that might be out there.
493 % Don't allow hyphenations or other line breaks.
494 \DeclareRobustCommand{\tubbraced}[1]{\mbox{\texttt{\char`\{#1\char`\}}}}
495 %
496 % Well, just the \begin part.  Never seen it used.
497 \DeclareRobustCommand{\env}[1]{\cs{begin}\tubbraced{#1}}
498 %
499 % Not sure why we ever want this instead of LaTeX's \, (using \kern),
500 % but fine, just keeping it.
501 \DeclareRobustCommand{\thinskip}{\hskip 0.16667em\relax}
502 %
```

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

```
503 \def\endash{--}
504 \def\emdash{\endash-}
505 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
506 \def\dash{\d@sh\nobreak\endash}
507 \def\Dash{\d@sh\nobreak\emdash}
508 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
509 \def\rdash{\d@sh\nobreak\endash}
510 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
511 \def\Rdash{\d@sh\nobreak\emdash}
```

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

```
512 \def\hyph{-\penalty\z@\hskip\z@skip }
513 \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 `TestCount`s.

```
514 \def\nth#1{%
515     \def\reserved@a##1##2\@nil{\ifcat##1n%
516          0%
517          \let\reserved@b\ensuremath
518        \else##1##2%
519          \let\reserved@b\relax
520        \fi}%
521     \TestCount=\reserved@a#1\@nil\relax
522     \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
523     \T@stCount=\TestCount
```

```
524     \divide\T@stCount by 100 \multiply\T@stCount by 100
525     \advance\TestCount by-\T@stCount      % n mod 100
526     \ifnum\TestCount >20 \T@stCount=\TestCount
527       \divide\T@stCount by 10 \multiply\T@stCount by 10
528       \advance\TestCount by-\T@stCount    % n mod 10
529     \fi
530      \reserved@b{#1}%
531        \textsuperscript{\ifcase\TestCount th%     0th
532                        \or    st%              1st
533                        \or    nd%              2nd
534                        \or    rd%              3rd
535                        \else th%               nth
536                        \fi}%
537 }
```

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...

```
538 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
539 \def\@Review:{\@ifnextchar[%
540   {\@Rev}%
541   {\@Rev[Book review]}}
542 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
543                                 \slshape\mdseries#2}}
544 \def\reviewitem{\addvspace{\BelowTitleSkip}%
545   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
546   \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
547   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
548 }
549 \def\endreviewitem{{\noindent\interlinepenalty=10000
550   \therevauth\therevtitle\therevpubinfo\endgraf}%
551   \vskip\medskipamount
552 }
553 \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.

```
554 \newcount\issueseqno              \issueseqno=-1
555 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
556 \def\volyr{}
557 \def\volno{}
558 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
559         \gdef\issno{\ignorespaces#2\unskip}%
560         \setbox\TestBox=\hbox{\volyr}%
561         \ifdim \wd\TestBox > .2em \v@lx \fi }
562 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
563         \gdef\bigissdt{#1}%
564         \setbox\TestBox=\hbox{\volno}%
565         \ifdim \wd\TestBox > .2em \v@lx \fi }
566 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
567         \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
568         \setbox\TestBox=\hbox{\volno}%
569         \ifdim \wd\TestBox > .2em \v@lx \fi }
570 \vol 0, 0.
571 \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

```
572 ⟨!latex⟩\def\tubissue#1(#2)%
573 ⟨∗latex⟩
574 \def\tubissue#1{\@ifnextchar(%
575   {\@tubissue@b{#1}}
576   {\@tubissue@a{#1}}}
577 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
578 \def\@tubissue@a#1#2%
579 ⟨/latex⟩
580   {\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`

```
581 \def\infil@{\jobname}
582 \def\Input #1 {\ifnum\issueseqno<0
583     \def\infil@{#1}%
584   \else
585     \def\infil@{tb\number\issueseqno#1}
```

```
586   \fi
587   \edef\jobname{\infil@}\@readFLN
588   \@@input \infil@\relax
589   \if@RMKopen
590     \immediate\closeout\@TBremarkfile\@RMKopenfalse
591   \fi
592 }
```

    \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).

```
593 \newif\if@RMKopen        \@RMKopenfalse
594 \newwrite\@TBremarkfile
595 \def\@TBremark#1{%
596   \if@RMKopen
597   \else
598     \@RMKopentrue\immediate\openout\@TBremarkfile=\infil@.rmk
599   \fi
600   \toks@={#1}%
601   \immediate\write\@TBremarkfile{^^J\the\toks@}%
602   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
603 }
```

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

```
604 \let\TBremark=\gobble
```

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

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

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

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

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

```
607 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
608 \newread\@altfilenames
609 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
610   \ifeof\@altfilenames\let\@result\relax\else
611   \def\@result{\@@input\jobname.fln }\fi
612   \immediate\closein\@altfilenames
613   \@result}
614 \@readFLN
615 \everyjob=\expandafter{\the\everyjob\@readFLN}
616 \InputIfFileExists{\jobname.fln}%
617     {\TBInfo{Reading alternative file file \jobname.fln}}{}
```

The following needs to work entirely in TeX's mouth

```
618 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
619   #1\else\csname file@@#1\endcsname\fi}
620 \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.

```
621 ⟨∗!latex⟩
622 \def\pagexrefON#1{%
623         \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
624         \write\ppoutfile{%
625                 \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
626         }
627 \def\PageXrefON#1{%
628         \immediate\write-1{\def\expandafter
629                         \noexpand\csname#1\endcsname{\number\pageno}}%
630         \immediate\write\ppoutfile{\def\expandafter
631                         \noexpand\csname#1\endcsname{\number\pageno}}}
632 ⟨/!latex⟩
633 ⟨∗latex⟩
634 \def\pagexrefON#1{%
635         \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
636         \write\ppoutfile{%
637                 \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
638         }
639 \def\PageXrefON#1{%
640         \immediate\write-1{\def\expandafter
641                         \noexpand\csname#1\endcsname{\number\c@page}}%
642         \immediate\write\ppoutfile{\def\expandafter
643                         \noexpand\csname#1\endcsname{\number\c@page}}}
644 ⟨/latex⟩
645 \def\pagexrefOFF#1{}
646 \let\pagexref=\pagexrefOFF
647 \def\PageXrefOFF#1{}
648 \let\PageXref=\PageXrefOFF
649 \def\xreftoON#1{%
650   \ifundefined{#1}%
651     ???\TBremark{Need cross reference for #1.}%
652   \else\csname#1\endcsname\fi}
653 \def\xreftoOFF#1{???}
654 \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.

```
655 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```
656 \ifx\tubomithyphenations\@thisisundefined
657 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
658   Flor-i-da Free-BSD Ghost-script Ghost-view
659   Hara-lam-bous Jac-kow-ski Karls-ruhe
660   Mac-OS Ma-la-ya-lam Math-Sci-Net
661   Net-BSD Open-BSD Open-Office
662   Pfa-Edit Post-Script Rich-ard Skoup South-all
663   Vieth VM-ware Win-Edt
664   acro-nym acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
665   bib-lio-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
666   col-umns com-put-able com-put-abil-ity cus-tom-iz-able
667   data-base data-bases
668    de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
669    de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able
670   es-sence
671   fall-ing
672   half-way
673   in-fra-struc-ture
674   key-note
675   long-est
676   ma-gyar man-u-script man-u-scripts meta-table meta-tables
677    mne-mon-ic mne-mon-ics mono-space mono-spaced
678   name-space name-spaces
679   off-line over-view
680   pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
681    pipe-line pipe-lines
682    plug-in plug-ins pres-ent-ly pro-gram-mable
683   re-allo-cate re-allo-cates re-allo-cated re-printed
684   set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
685    sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
686   text-height text-length text-width
687    time-stamp time-stamped time-stamps
688   vis-ual vis-ual-ly
689   which-ever white-space white-spaces wide-spread wrap-around
690 }
691 \fi
692 ⟨!latex⟩\restorecat\@
693 ⟨/common⟩
694 ⟨∗classtail⟩
695 \PrelimDrafttrue
```

3.10   Page dimensions, glue, penalties etc

```
696 \textheight 54pc
697 \textwidth 39pc
698 \columnsep 1.5pc
699 \columnwidth 18.75pc
700 \parindent \normalparindent
```

```
701 \parskip \z@ % \@plus\p@
702 \leftmargini 2em
703 \leftmarginv .5em
704 \leftmarginvi .5em
705 \oddsidemargin \z@
706 \evensidemargin \z@
707 \topmargin -2.5pc
708 \headheight 12\p@
709 \headsep 20\p@
710 \marginparwidth 48\p@
711 \marginparsep 10\p@
712 \partopsep=\z@
713 \topsep=3\p@\@plus\p@\@minus\p@
714 \parsep=3\p@\@plus\p@\@minus\p@
715 \itemsep=\parsep
716 %
717 % Ordinarily we typeset in two columns.  But if option is given, revert to one.
718 \if@tubtwocolumn \twocolumn \else \onecolumn \textwidth=34pc \fi
719 %
720 \newdimen\pagewd        \pagewd=\textwidth
721 \newdimen\trimwd        \trimwd=\pagewd
722 \newdimen\trimlgt       \trimlgt=11in
723 \newdimen\headmargin    \headmargin=3.5pc
```

In LaTeX 2_ε, 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.

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

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

```
726 \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.

```
727 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
728 \DeclareLaTeXLogo{lmss}{bx}{n}{.3}{.15}
729 %
730 \DeclareLaTeXLogo{cmr}{m}{it}{.29}{.2}
731 \DeclareLaTeXLogo{lmr}{m}{it}{.29}{.2}
732 %
733 \DeclareLaTeXLogo{cmr}{m}{sl}{.29}{.15}
734 \DeclareLaTeXLogo{lmr}{m}{sl}{.29}{.15}
```

```
735 %
736 \DeclareLaTeXLogo{cmr}{bx}{it}{.29}{.2}
737 \DeclareLaTeXLogo{lmr}{bx}{it}{.29}{.2}
738 %
739 \DeclareLaTeXLogo{cmr}{bx}{sl}{.29}{.2}
740 \DeclareLaTeXLogo{lmr}{bx}{sl}{.29}{.2}
741 %
742 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
743 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
744 \DeclareRobustCommand{\LaTeX}{\expandafter\let\expandafter\reserved@a
745    \csname @LaTeX@\f@family/\f@series/\f@shape\endcsname
746    \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
747    \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.

```
748 \newcommand{\@LaTeX}[2]{%
749    %\wlog{latex logo family=\f@family/\f@series/\f@shape -> #1, #2.}%
750    L\kern-#1em
751    {\sbox\z@ T%
752     \vbox to\ht0{\hbox{$\m@th$%
753                       \csname S@\f@size\endcsname
754                       \fontsize\sf@size\z@
755                       \math@fontsfalse\selectfont
756                       A}%
757                 \vss}%
758    }%
759    \kern-#2em%
760    \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.

```
761 \def\theauthor#1{\csname theauthor#1\endcsname}
```

27

```
762 \def\theaddress#1{\csname theaddress#1\endcsname}
763 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
764 \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.

```
765 ⟨!latex⟩\newcount\@tempcnta
766 \def\@defaultauthorlist{%
767   \@getauthorlist\@firstofone
768 }
```

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

```
769 \def\@getauthorlist#1{%
770   \count@\authornumber
771   \advance\count@ by -2
772   \@tempcnta0
```

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

```
773   \loop
774     \ifnum\count@>0
775       \advance\@tempcnta by \@ne
776       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
777       \advance\count@ by \m@ne
778   \repeat
779   \count@\authornumber
780   \advance\count@ by -\@tempcnta
781   \ifnum\authornumber>0
```

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

```
782     \ifnum\count@>1
783       \count@\authornumber
784       \advance\count@ by \m@ne
785       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
786     \fi
```

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

```
787     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
788   \fi
789 }
```

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. . .)

```
790 \def\signature#1{\def\@signature{#1}}
791 \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`

```
792 \def\@defaultsignature{{%
793     \let\thanks\@gobble
794     \frenchspacing
795     %
796     \ifnum\authornumber<0
```

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

```
797         \medskip
798         \signaturemark
799         \theauthor{\number\authornumber}\\
800         \theaddress{\number\authornumber}\\
801         \allowhyphens
802         \thenetaddress{\number\authornumber}\\
803         \thePersonalURL{\number\authornumber}\\
804     \else
```

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

```
805         \count@=0
806         \loop
807           \ifnum\count@<\authornumber
808             \medskip
809             \advance\count@ by \@ne
810             \signaturemark
811             \theauthor{\number\count@}\\
812             \theaddress{\number\count@}\\
813             {%
814               \allowhyphens
815               \thenetaddress{\number\count@}\\
816               \thePersonalURL{\number\count@}\\
817             }%
818         \repeat
819     \fi
820   }%
821 }
822 \newdimen\signaturewidth   \signaturewidth=12pc
```

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

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

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

```
824   \@tempdima\signaturewidth
825   \advance\@tempdima 1.5pc
826   \ifdim \@tempdima>\columnwidth
827     \signaturewidth \columnwidth
```

```
828    \advance\signaturewidth -1.5pc
829  \fi
830  \par
831  \penalty9000
832  \vspace{#1}%
833  \rightline{%
834    \vbox{\hsize\signaturewidth \ninepoint \raggedright
835      \parindent \z@ \everypar={\hangindent 1pc }
836      \parskip \z@skip
837      \def\|{\unskip\hfil\break}%
838      \def\\{\endgraf}%
839      \def\phone{\rm Phone: }
840      \rm\@signature}%
841  }%
842  \ifnum\authornumber<0 \endgroup\fi
843 }
844 \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.

```
845 \newcount\authornumber
846 \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`).

```
847 \def\author{%
848   \global\advance\authornumber\@ne
849   \TB@author
850 }
```

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

```
851 \def\contributor{%
852   \begingroup
853   \authornumber\m@ne
854   \TB@author
855 }
```

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).

```
856 \def\TB@author#1{%
857   \expandafter\def\csname theauthor\number\authornumber\endcsname
858       {\ignorespaces#1\unskip}%
859   \expandafter\def\csname theaddress\number\authornumber\endcsname
```

```
860     {\TBWarningNL{Address for #1\space missing}\@gobble}%
861   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
862     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
863   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
864     \@gobble
865   }
866 \def\EDITORnoaddress{%
867   \expandafter\let\csname theaddress\number\authornumber\endcsname
868     \@gobble
869 }
870 \def\EDITORnonetaddress{%
871   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
872     \@gobble
873 }
```

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

```
874 \def\address#1{%
875   \expandafter\def\csname theaddress\number\authornumber\endcsname
876       {\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*!

```
877 \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.

```
878 \newcommand{\netaddress}[1][\relax]{%
879   \begingroup
880   \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$_\varepsilon$.

```
881   #1\@sanitize\makespace\ \makeactive\@
882   \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?!***)

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

```
884    \ProtectNetChars
885    \expandafter\protected@xdef
886        \csname thenetaddress\number\authornumber\endcsname
887      {\protect\leavevmode\textrm{\@network}%
888       {\protect\NetAddrChars\net
889        \ignorespaces#1\unskip}}%
890    \endgroup
891    }
```

\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.

```
892 \def\personalURL{\begingroup
893   \@sanitize\makespace\ \makeactive\@
894   \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
895 \def\@personalURL#1{%
896   \ProtectNetChars
897   \expandafter\protected@xdef
898     \csname thePersonalURL\number\authornumber\endcsname{%
899       \protect\leavevmode
900       {%
901         \protect\URLchars\net
902         \ignorespaces#1\unskip
903       }%
904     }%
905   \endgroup
906   }
```

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. . .

```
907 {%
908   \makecomment\*
909   \makeactive\@
910   \gdef\netaddrat{\makeactive\@*
911     \def@{\discretionary{\char"40}{}{\char"40}}}
912   \makeactive\%
913   \gdef\netaddrpercent{\makeactive\%*
914     \def%{\discretionary{\char"25}{}{\char"25}}}
915   \makeactive\.
916   \gdef\netaddrdot{\makeactive\.*
917     \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.

```
918   \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
919   \makeactive\/
```

```
920  \gdef\URLchars{*
921    \NetAddrChars
922    \makeactive\/*
923    \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.

```
924  \gdef\ProtectNetChars{*
925    \def@{\protect@}*
926    \def%{\protect%}*
927    \def.{\protect.}*
928    \def/{\protect/}*
929    }
930 }
```

LaTeX 2$_\varepsilon$ (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$_\varepsilon$ defines for the job).

```
931 \if@compatibility
932   \DeclareRobustCommand{\net}{\normalfont\ttfamily\mathgroup\symtypewriter}
933 \else
934   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
935 \fi
936 \def\authorlist#1{\def\@author{#1}}
937 \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

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

3.13   Article title

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

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

```
939 \newif\if@articletitle
940 \def\maketitle{\@ifstar
941   {\@articletitlefalse\@r@maketitle}%
942   {\@articletitletrue\@r@maketitle}%
943 }
944 \def\@r@maketitle{\par
945  \ifdim\PreTitleDrop > \z@
946    \loop
947    \ifdim \PreTitleDrop > \textheight
948      \vbox{}\vfil\eject
949      \advance\PreTitleDrop by -\textheight
950    \repeat
951    \vbox to \PreTitleDrop{}
952    \global\PreTitleDrop=\z@
953  \fi
954  \begingroup
955  \setcounter{footnote}{0}
956  \def\thefootnote{\fnsymbol{footnote}}
957  \@maketitle
958  \@thanks
959  \endgroup
960  \setcounter{footnote}{0}
961  \gdef\@thanks{}
962  }
```

\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.

```
963 \def\rhTitle{}% avoid error if no author or title
964 \renewcommand{\title}{\@dblarg\TB@title}
965 \def\TB@title[#1]#2{\gdef\@title{#2}%
966   \bgroup
967     \let\thanks\@gobble
968     \def\\{\unskip\space\ignorespaces}%
969     \protected@xdef\rhTitle{#1}%
970   \egroup
971 }
```

\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.

```
972 \def\shortTitle #1{\def\rhTitle{#1}}
973 \newif\ifshortAuthor
974 \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:

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

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

```
976 \newdimen\stbaselineskip        \stbaselineskip=18\p@
977 \newdimen\stfontheight
978 \settoheight{\stfontheight}{\sectitlefont O}
```

Declaring section titles; the conditional `\ifSecTitle` records the occurence of a `\sectitle` command. If (when) a subsequent `\maketitle` occurs, the section title box will get flushed out; as a result of this, one could in principle have a set of `\sectitle` commands in a semi-fixed steering file, and inclusions of files inserted only as and when papers have appeared. Only the last `\sectitle` will actually be executed.

```
979 \newif\ifSecTitle
980 \SecTitlefalse
981 \newif\ifWideSecTitle
982 \newcommand{\sectitle}{%
983   \SecTitletrue
984   \@ifstar
985     {\WideSecTitletrue\def\s@ctitle}%
986     {\WideSecTitlefalse\def\s@ctitle}%
987 }
```

`\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.

```
988 \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.

```
989 \newskip\AboveTitleSkip  \AboveTitleSkip=12\p@
990 \newskip\BelowTitleSkip  \BelowTitleSkip=8\p@
991 \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. . .

```
992 \def\@sectitle #1{%
993   \par
994   \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.

```
995   \ifWideSecTitle\else\secsep\fi
996   {%
997     \fboxrule\strulethickness
998     \fboxsep\z@
999     \noindent\framebox[\hsize]{%
1000       \vbox{%
1001         \raggedcenter
1002         \let\\\@sectitle@newline
1003         \sectitlefont
1004         \makestrut[2\stfontheight;\z@]%
1005         #1%
1006         \makestrut[\z@;\stfontheight]\endgraf
1007       }%
1008     }%
1009   }%
1010   \nobreak
1011   \vskip\baselineskip
1012 }
```

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

```
1013 \newcommand{\@sectitle@newline}[1][\z@]{%
1014   \ifdim#1>\z@
1015     \makestrut[\z@;#1]%
1016   \fi
1017   \unskip\break
1018 }
```

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).

```
1019 \def\@makesectitle{\ifSecTitle
1020     \global\SecTitlefalse
1021     \ifWideSecTitle
1022       \twocolumn[\@sectitle{\s@ctitle}]%
1023       \global\WideSecTitlefalse
1024     \else
1025       \@sectitle{\s@ctitle}%
1026     \fi
1027   \else
```

```
1028        \vskip\AboveTitleSkip
1029        \kern\topskip
1030        \hrule \@height\z@ \@depth\z@ \@width 10\p@
1031        \kern-\topskip
1032        \kern-\strulethickness
1033        \hrule \@height\strulethickness \@depth\z@
1034        \kern\medskipamount
1035        \nobreak
1036     \fi
1037 }
```

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

```
1038 \def\@maketitle{%
1039    \@makesectitle
1040    \if@articletitle{%
1041       \nohyphens \interlinepenalty\@M
1042       \setbox0=\hbox{%
1043          \let\thanks\@gobble
1044          \let\\=\quad
1045          \let\and=\quad
1046          \ignorespaces\@author}%
1047       {%
1048          \noindent\bf\raggedright\ignorespaces\@title\endgraf
1049       }%
1050       \ifdim \wd0 < 5\p@               % omit if author is null
1051       \else
```

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

```
1052          \nobreak \vskip 4\p@
1053          {%
1054             \leftskip=\normalparindent
1055             \raggedright
1056             \def\and{\unskip\\}%
1057             \noindent\@author\endgraf
1058          }%
1059       \fi
1060       \nobreak
1061       \vskip\BelowTitleSkip
1062    }\fi%
1063    \global\@afterindentfalse
1064    \aftergroup\@afterheading
1065 }
```

Dedications are ragged right, in italics.

```
1066 \newenvironment{dedication}%
1067    {\raggedright\noindent\itshape\ignorespaces}%
1068    {\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.

```
1069 \def\@tubonecolumnabstractstart{%
1070      \list{}{\listparindent\normalparindent
1071        \itemindent\z@ \leftmargin\@tubfullpageindent
1072        \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1073 }
1074 \def\@tubonecolumnabstractfinish{%
1075      \endlist
1076 }
1077 \renewenvironment{abstract}%
1078   {\begin{SafeSection}%
1079     \section*{%
1080         \if@tubtwocolumn\else \hspace*{\@tubfullpageindent}\fi
1081         Abstract}%
1082     \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1083   }%
1084   {\if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1085    \end{SafeSection}}
1086 \newenvironment{longabstract}%
1087   {\begin{SafeSection}%
1088     \section*{Abstract}%
1089     \bgroup\small
1090   }%
1091   {\endgraf\egroup
1092     \end{SafeSection}%
1093   \vspace{.25\baselineskip}
1094   \begin{center}
1095     {$--*--$}
1096   \end{center}
1097   \vspace{.5\baselineskip}}
```

3.15   Section headings

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

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

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

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

```
1098 \if@numbersec
1099   \def\section{\TB@startsection{{section}%
1100                                1%
1101                                \z@
1102                                {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1103                                {4\p@}%
```

```
1104              {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1105  \def\subsection{\TB@startsection{{subsection}%
1106                                  2%
1107                                  \z@
1108                                  {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1109                                  {4\p@}%
1110          {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1111  \def\subsubsection{\TB@startsection{{subsubsection}%
1112                                     3%
1113                                     \z@
1114                                     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1115                                     {4\p@}%
1116          {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1117  \def\paragraph{\TB@startsection{{paragraph}%
1118                                 4%
1119                                 \z@
1120                                 {4\p@ \@plus1\p@ \@minus1\p@}%
1121                                 {-1em}%
1122                                 {\normalsize\bf}}}
```

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

```
1123 \else
1124    \setcounter{secnumdepth}{0}
1125    \def\section{\TB@nolimelabel
1126              \TB@startsection{{section}%
1127                              1%
1128                              \z@
1129                              {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1130                              {4\p@}%
1131          {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1132    \def\subsection{\TB@nolimelabel
1133              \TB@startsection{{subsection}%
1134                              2%
1135                              \z@
1136                              {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1137                              {-0.5em\@plus-\fontdimen3\font}%
1138          {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1139    \def\subsubsection{\TB@nolimelabel
1140              \TB@startsection{{subsubsection}%
1141                              3%
1142                              \parindent
1143                              {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1144                              {-0.5em\@plus-\fontdimen3\font}%
1145          {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1146 \fi
```

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

```
1147 \if@numbersec
```

```
1148    \def\TB@startsection#1{\@startsection#1}%
1149 \else
1150    \def\TB@startsection#1{%
1151      \@ifstar
1152        {\TBWarning{*-form of \expandafter\string\csname\@firstofsix#1%
1153                   \endcsname\space
1154                   \MessageBreak
1155                   conflicts with nonumber class option}%
1156         \@startsection#1}%
1157        {\@startsection#1}%
1158    }
1159 \fi
1160 \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).

```
1161 \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.

```
1162 \newenvironment{SafeSection}%
1163    {\let\TB@startsection\TB@safe@startsection}%
1164    {}
```

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.

```
1165 \if@numbersec
1166    \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1167 \else
1168    \def\paragraph{\TB@nosection\paragraph\subsubsection}
1169    \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1170 \fi
1171 \def\chapter{\TB@nosection\chapter\section}
1172 \def\part{\TB@nosection\part\section}
1173 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1174    \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

---

[2]Thurber, *The Wonderful O*

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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.

```
1175 \def\TBtocsectionfont{\normalfont}
1176 \newskip\TBtocsectionspace  \TBtocsectionspace=1.0em\@plus\p@

1177 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1178   \addvspace{\TBtocsectionspace}%
1179   \@tempdima 1.5em
1180   \begingroup
1181     \parindent\z@ \rightskip\z@  % article style makes \rightskip > 0
1182     \parfillskip\z@
1183     \TBtocsectionfont
1184     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1185     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1186   \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:

```
1187 \renewcommand{\appendix}{\par
1188   \renewcommand{\thesection}{\@Alph\c@section}%
1189   \setcounter{section}{0}%
1190   \if@numbersec
1191   \else
1192     \setcounter{secnumdepth}{1}%
1193   \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.

```
1194   \def\@tempa{appendix}
1195   \ifx\@tempa\@currenvir
1196     \expandafter\@appendix@env
1197   \fi
1198 }
```

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

```
1199 \newcommand{\app@prefix@section}{}
1200 \newcommand{\@appendix@env}[1][Appendix]{%
1201   \renewcommand{\@seccntformat}[1]{\csname app@prefix@##1\endcsname
```

```
1202    \csname the##1\endcsname\quad}%
1203  \renewcommand{\app@prefix@section}{#1 }%
1204 }
```

Ending an appendix environment is pretty trivial. . .

```
1205 \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

```
1206 \def\TB@nolimelabel{%
1207  \def\@currentlabel{%
1208    \protect\TBWarning{%
1209      Invalid reference to numbered label on page \thepage
1210      \MessageBreak made%
1211    }%
1212    \textbf{?!?}%
1213  }%
1214 }
```

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.

```
1215 \let\TB@@sect\@sect
1216 \let\TB@@ssect\@ssect
1217 \def\@sect#1#2#3#4#5#6[#7]#8{%
1218  \def\@currentlabelname{#7}%
1219  \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1220 }
```

```
1221 \def\@ssect#1#2#3#4#5{%
1222   \def\@currentlabelname{#5}%
1223   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1224 }
```

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>`.

```
1225 \let\@savelatexlabel=\label  % so save original LaTeX command
1226 %
1227 \def\label#1{% de
1228   \@savelatexlabel{#1}%
1229   \@bsphack
1230   \if@filesw
1231     \protected@write\@auxout{}%
1232       {\string\newlabel{nr@#1}{{\@currentlabel}{\@currentlabelname}}}%
1233   \fi
1234   \@esphack
1235 }
```

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

```
1236 \let\@currentlabelname\@empty
```

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

```
1237 \DeclareRobustCommand{\nameref}[1]{\expandafter\@setref
1238   \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`

```
1239 \newdimen\@tubfullpageindent
1240 \@tubfullpageindent = \if@tubtwocolumn 4.875pc \else 3.875pc \fi
```

Ok, here is the `\@makecaption`.

```
1241 \def\tubcaptionfonts{\small}%
1242 \long\def\@makecaption#1#2{%
1243   \vskip\abovecaptionskip
1244   \sbox\@tempboxa{\tubcaptionfonts \tubmakecaptionbox{#1}{#2}}% try in an hbox
1245   \ifdim \wd\@tempboxa > \hsize
1246     {% caption doesn't fit on one line; set as a paragraph.
```

```
1247        \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1248        % indent full-width captions {figure*}, but not single-column {figure}.
1249        \ifdim\hsize = \textwidth
1250          \leftskip=\@tubfullpageindent \rightskip=\leftskip
1251          \advance\rightskip by 0pt plus2em  % increase acceptable raggedness
1252        \fi
1253        \noindent \tubmakecaptionbox{#1}{#2}\par}%
1254      \else
1255        % fits on one line; use the hbox, centered.  Do not reset its glue.
1256        \global\@minipagefalse
1257        \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1258      \fi
1259      \vskip\belowcaptionskip}
1260 %
1261 \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.

```
1262 \def\fnum@figure{{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}}
1263 \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.

```
1264 \setlength\abovecaptionskip{6pt plus1pt minus1pt}
```

3.20   Size changing commands

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

```
1265 \renewcommand{\normalsize}{%
1266    \@setfontsize\normalsize\@xpt\@xiipt
1267    \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1268    \belowdisplayskip=\abovedisplayskip
1269    \abovedisplayshortskip=\z@\@plus 3\p@
1270    \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1271 }
1272
1273 \renewcommand{\small}{%
1274    \@setfontsize\small\@ixpt{11}%
1275    \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1276    \belowdisplayskip=\abovedisplayskip
1277    \abovedisplayshortskip=\z@\@plus 2\p@
1278    \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1279 }
1280
1281 \renewcommand{\footnotesize}{%
1282    \@setfontsize\footnotesize\@viiipt{9.5}%
1283    \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1284    \belowdisplayskip=\abovedisplayskip
```

```
1285      \abovedisplayshortskip=\z@\@plus 3\p@
1286      \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1287 }
```

3.21   Lists and other text inclusions

```
1288 \def\@listi{%
1289   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1290   \itemsep=\parsep
1291   \listparindent=1em
1292   }
1293
1294 \def\@listii{%
1295   \leftmargin\leftmarginii
1296   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1297   \topsep=2\p@\@plus\p@\@minus\p@
1298   \parsep=\p@\@plus\p@\@minus\p@
1299   \itemsep=\parsep
1300   \listparindent=1em
1301   }
1302
1303 \def\@listiii{%
1304   \leftmargin=\leftmarginiii
1305   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1306   \topsep=\p@\@plus\p@\@minus\p@
1307   \parsep=\z@
1308   \itemsep=\topsep
1309   \listparindent=1em
1310   }
1311 \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.

```
1312 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1313     \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}
```

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

```
1314 \newenvironment{compactitemize}%
1315   {\begin{itemize}%
1316     \setlength{\itemsep}{0pt}%
1317     \setlength{\parskip}{0pt}%
1318     \setlength{\parsep} {0pt}%
1319   }%
1320   {\end{itemize}}
1321 %
1322 \newenvironment{compactenumerate}%
1323   {\begin{enumerate}%
1324     \setlength{\itemsep}{0pt}%
1325     \setlength{\parskip}{0pt}%
1326     \setlength{\parsep} {0pt}%
```

```
1327    }%
1328    {\end{enumerate}}
1329 %
1330 \newenvironment{compactdescription}%
1331    {\begin{description}%
1332      \setlength{\itemsep}{0pt}%
1333      \setlength{\parskip}{0pt}%
1334      \setlength{\parsep} {0pt}%
1335    }%
1336    {\end{description}}
1337 %
```

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.

```
1338 %\let\@TB@verbatim\@verbatim
1339 \let\@TBverbatim\verbatim
1340 \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.)

```
1341 \def\verbatim{\par\obeylines
1342    \futurelet\reserved@a\@switch@sqbverbatim}
1343 %
1344 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1345    \expandafter\@sqbverbatim\else
1346    \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1347 %
1348 \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.

```
1349    \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.

```
1350    #1\@TBverbatim}
```

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

```
1351 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1352      \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1353    \trivlist \item\relax
1354    \if@minipage\else\vskip\parskip\fi
1355    \leftskip\@totalleftmargin\rightskip\z@skip
1356    \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1357    \@@par
1358    \@tempswafalse
1359    \def\par{%
1360      \if@tempswa
1361        \leavevmode \null \@@par\penalty\interlinepenalty
1362      \else
1363        \@tempswatrue
1364        \ifhmode\@@par\penalty\interlinepenalty\fi
1365      \fi}%
1366    \obeylines \verbatim@font \@noligs
1367    \let\do\@makeother \dospecials
1368    \everypar \expandafter{\the\everypar \unpenalty}%
1369 }%
```

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).

```
1370 \def\endverbatim{\@TBendverbatim
1371    \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

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

```
1372 \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.

```
1373 \AtBeginDocument{%
1374    \@ifpackageloaded{microtype}
1375      {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{}
1376 }
```

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.

```
1377 \if@Harvardcite
1378 \let\@internalcite\cite
```

Normal forms.

```
1379 \def\cite{\def\@citeseppen{-1000}%
1380     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1381     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1382 \def\citeNP{\def\@citeseppen{-1000}%
1383     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1384     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1385 \def\citeN{\def\@citeseppen{-1000}%
1386     \def\@cite##1##2{##1\if@tempswa , ##2)\else()}\fi}%
1387     \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1388 \def\citeA{\def\@citeseppen{-1000}%
1389     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1390     \def\citeauthoryear##1##2##3{##1}\@internalcite}
1391 \def\citeANP{\def\@citeseppen{-1000}%
1392     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1393     \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1394 \def\shortcite{\def\@citeseppen{-1000}%
1395     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1396     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1397 \def\shortciteNP{\def\@citeseppen{-1000}%
1398     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1399     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
```

```
1400 \def\shortciteN{\def\@citeseppen{-1000}%
1401     \def\@cite##1##2{##1\if@tempswa , ##2)\else{)}\fi}%
1402     \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1403 \def\shortciteA{\def\@citeseppen{-1000}%
1404     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1405     \def\citeauthoryear##1##2##3{##2}\@internalcite}
1406 \def\shortciteANP{\def\@citeseppen{-1000}%
1407     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1408     \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1409 \def\citeyear{\def\@citeseppen{-1000}%
1410     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1411     \def\citeauthoryear##1##2##3{##3}\@citedata}
1412 \def\citeyearNP{\def\@citeseppen{-1000}%
1413     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1414     \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.

```
1415 \def\@citedata{%
1416         \@ifnextchar [{\@tempswatrue\@citedatax}%
1417                             {\@tempswafalse\@citedatax[]}%
1418 }
1419
1420 \def\@citedatax[#1]#2{%
1421 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1422   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1423     {\@citea\def\@citea{, }\@ifundefined% by Young
1424       {b@\@citeb}{{\bf ?}%
1425       \@warning{Citation `\@citeb' on page \thepage \space undefined}}%
1426 {\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.

```
1427 \def\@citex[#1]#2{%
1428 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1429   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1430     {\@citea\def\@citea{; }\@ifundefined% by Young
1431       {b@\@citeb}{{\bf ?}%
1432       \@warning{Citation `\@citeb' on page \thepage \space undefined}}%
1433 {\csname b@\@citeb\endcsname}}}{#1}}%
```

No labels in the bibliography.

```
1434 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```
1435 \newlength{\bibhang}
1436 \setlength{\bibhang}{2em}
```

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

```
1437 \newdimen\bibindent
1438 \bibindent=1.5em
1439 \@ifundefined{refname}%
1440     {\newcommand{\refname}{References}}%
1441     {}%
```

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

```
1442 \def\thebibliography#1{%
1443     \let\TB@startsection\TB@safe@startsection
1444     \section*{\refname
1445         \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1446     \list{[\arabic{enumi}]}{%
1447         \labelwidth\z@ \labelsep\z@
1448         \leftmargin\bibindent
1449         \itemindent -\bibindent
1450         \listparindent \itemindent
1451         \parsep \z@
1452         \usecounter{enumi}}
1453     \def\newblock{}
1454     \BibJustification
1455     \sfcode'\.=1000\relax
1456 }
```

etal   Other bibliography odds and ends.

\bibentry
```
1457 \def\etal{et\,al.\@}
1458 \def\bibentry{%
1459     \smallskip
1460     \hangindent=\parindent
1461     \hangafter=1
1462     \noindent
1463     \sloppy
1464     \clubpenalty500 \widowpenalty500
1465     \frenchspacing
1466 }
```

\bibliography   Changes made to accommodate TUB file naming conventions

\bibliographystyle
```
1467 \def\bibliography#1{%
1468     \if@filesw
1469         \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1470     \fi
1471     \@input{\jobname.bbl}%
1472 }
1473 \def\bibliographystyle#1{%
1474     \if@filesw
1475         \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1476     \fi
1477 }
```

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

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

```
1478 \else
1479 \let\TB@@thebibliography\thebibliography
1480 \def\thebibliography{%
1481    \let\TB@startsection\TB@safe@startsection
1482    \let\sloppy\BibJustification
1483    \TB@@thebibliography}
1484 \fi
```

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

```
1485 \let\TB@@sloppy\sloppy
1486 \let\BibJustification\TB@@sloppy
1487 \newcommand{\SetBibJustification}[1]{%
1488    \renewcommand{\BibJustification}{#1}%
1489 }
1490 \ResetCommands\expandafter{\the\ResetCommands
1491    \let\BibJustification\TB@@sloppy
1492 }
```

3.24   Registration marks

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

```
1493 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1494 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1495 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
```

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

```
1496 \def\ttopregister{\dlap{%
1497        \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1498                      \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1499        \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1500 \def\tbotregister{\ulap{%
1501        \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1502        \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1503                      \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1504 \def\topregister{\ttopregister}
1505 \def\botregister{\tbotregister}
```

3.25   Running heads

```
1506 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
```

```
1507 \def\PrelimDraftfooter{%
1508   \dlap{\kern\textheight\kern3pc
1509       \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}
1510   }}
```

registration marks; these are temporarily inserted in the running head

```
1511 \def\MakeRegistrationMarks{}
1512 \def\UseTrimMarks{%
1513   \def\MakeRegistrationMarks{%
1514     \ulap{\rlap{%
1515       \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}%
1516             \topregister\vskip \headmargin \vskip 10\p@}}}}%
1517   }
1518 % put issue identification and page number in header.
1519 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1520   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1521   \rtitlex\qquad\midrtitle \hfil \thepage}
1522 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1523   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1524   \thepage\hfil\midrtitle\qquad\rtitlex}
1525
1526 % can be used to reset the font, e.g., tb98kuester.
1527 \def\tubheadhook{}
1528
1529 % put title and author in footer.
1530 \def\@tubrunningfull{%
1531   \def\@oddfoot{% make line break commands produce a normal space
1532     \def\\{\unskip\ \ignorespaces}%
1533     \let\newline=\\%
1534     \hfil\rhTitle}
1535   \def\@evenfoot{\@author\hfil}
1536 }
1537
1538 \def\@tubrunninggetauthor#1{#1
1539   \begingroup
1540     \let\thanks\@gobble
1541     \protected@xdef\rhAuthor{\the\toks@##1}%
1542   \endgroup
1543 }%
1544
1545 % empty footer.
1546 \def\@tubrunningminimal{%
1547   \def\@oddfoot{\hfil}%
1548   \def\@evenfoot{\hfil}%
1549 }
1550
1551 % empty footer and header.
1552 \def\@tubrunningoff{%
1553   \def\@oddfoot{\hfil}%
1554   \def\@evenfoot{\hfil}%
```

```
1555    \def\@oddhead{\hfil}%
1556    \def\@evenhead{\hfil}%
1557 }
1558
1559 \def\ps@headings{}
1560 \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...

```
1561 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1562     \global\setbox\@leftcolumn\box\@outputbox
1563     \global\brokenpenalty10000
1564   \else \global\@firstcolumntrue
1565     \global\brokenpenalty100
1566     \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1567       {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1568        \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1569        \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1570        \@whilesw\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1571     \fi}
```

3.27 Font-related definitions and machinery

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

```
1572 \newif\ifFirstPar        \FirstParfalse
1573 \def\smc{\sc}
1574 \def\ninepoint{\small}
1575 ⟨/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.)

```
1576 ⟨∗common⟩
1577 \DeclareRobustCommand{\SMC}{%
1578   \ifx\@currsize\normalsize\small\else
1579    \ifx\@currsize\small\footnotesize\else
1580     \ifx\@currsize\footnotesize\scriptsize\else
1581      \ifx\@currsize\large\normalsize\else
1582       \ifx\@currsize\Large\large\else
1583        \ifx\@currsize\LARGE\Large\else
1584         \ifx\@currsize\scriptsize\tiny\else
1585          \ifx\@currsize\tiny\tiny\else
1586           \ifx\@currsize\huge\LARGE\else
1587            \ifx\@currsize\Huge\huge\else
1588             \small\SMC@unknown@warning
1589  \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1590 }
1591 \newcommand{\SMC@unknown@warning}{\TBWarning{\string\SMC: nonstandard
1592    text font size command -- using \string\small}}
1593 \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.

```
1594 \newcommand{\acro}[1]{\textSMC{#1}\@}
1595 ⟨/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!)

```
1596 ⟨∗classtail⟩
1597 \def\xEdNote{{\EdNoteFont Editor's note:\enspace }}
1598 \def \EdNote{\@ifnextchar[%
1599   {%
1600     \ifvmode
1601       \smallskip\noindent\let\@EdNote@\@EdNote@v
1602     \else
1603       \unskip\quad\def\@EdNote@{\unskip\quad}%
1604     \fi
1605     \@EdNote
1606   }%
1607   \xEdNote
1608 }
```

```
1609 \long\def\@EdNote[#1]{%
1610    [\thinspace\xEdNote\ignorespaces
1611      #1%
1612      \unskip\thinspace]%
1613    \@EdNote@
1614 }
1615 \def\@EdNote@v{\par\smallskip}
```

Macros for Mittelbach's self-documenting style

```
1616 \def\SelfDocumenting{%
1617    \setlength\textwidth{31pc}
1618    \onecolumn
1619    \parindent \z@
1620    \parskip 2\p@\@plus\p@\@minus\p@
1621    \oddsidemargin 8pc
1622    \evensidemargin 8pc
1623    \marginparwidth 8pc
1624    \toks@\expandafter{\@oddhead}%
1625    \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1626    \toks@\expandafter{\@evenhead}%
1627    \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1628    \def\ps@titlepage{}%
1629 }
1630 \def\ps@titlepage{}
1631
1632 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}%
1633    \llap{\@makefnmark}\null$\mskip5mu$#1}
1634
1635 %% \long\def\@makefntext#1{\parindent 1em
1636 %%    \noindent
1637 %%    \hb@xt@2em{\hss\@makefnmark}%
1638 %%    \hskip0.27778\fontdimen6\textfont\z@\relax
1639 %%    #1%
1640 %% }
```

\tubraggedfoot   To get a ragged-right footnote.

```
1641 \newcommand{\tubraggedfoot}{\rightskip=\raggedskip plus\raggedstretch\relax}
```

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

\supportfootnote
```
1642 \def\creditfootnote{\nomarkfootnote\xEdNote}
1643 \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.

```
1644 \gdef\nomarkfootnote#1#2{\begingroup
1645    \def\thefootnote{}%
1646    % no period, please, also no fnmark.
1647    \def\@makefntext##1{##1}%
1648    \footnotetext{\noindent #1#2}%
1649    \endgroup
1650 }
```

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.

```
1651 \if@Harvardcite
1652   \AtBeginDocument{%
1653     \bibliographystyle{ltugbib}%
1654   }
1655 \fi
1656 \authornumber\z@
1657 \let\@signature\@defaultsignature
1658 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1659                                        configuration information}}{}
1660 ⟨/classtail⟩
```

4   LATEX 2ε Proceedings class

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

```
1661 ⟨*ltugproccls⟩
1662 \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.

```
1663 \newif\if@proc@sober
1664 \newif\if@proc@numerable
1665 \DeclareOption{tug95}{%
1666   \@proc@soberfalse
1667   \@proc@numerablefalse
1668 }
1669 \DeclareOption{tug96}{%
1670   \@proc@sobertrue
1671   \@proc@numerablefalse
1672 }
1673 \DeclareOption{tug97}{%
1674   \@proc@sobertrue
1675   \@proc@numerabletrue
1676 }
1677 \DeclareOption{tug2002}{%
1678   \@proc@sobertrue
1679   \@proc@numerabletrue
1680   \let\if@proc@numbersec\iftrue
1681   \PassOptionsToClass{numbersec}{ltugboat}%
1682 }
```

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

```
1683 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1684   \PassOptionsToClass{numbersec}{ltugboat}%
1685 }
1686 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1687   \PassOptionsToClass{nonumber}{ltugboat}%
1688 }
```

\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.

```
1689 \newif\ifTB@title
1690 \DeclareOption{title}{\TB@titletrue}
1691 \DeclareOption{notitle}{\TB@titlefalse
1692   \AtBeginDocument{\stepcounter{page}}}
```

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

```
1693 \DeclareOption{tugproc}{%
1694   \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1695 }
```

All other options are simply passed to ltugboat. . .

```
1696 \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. . .)

```
1697 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1698            {Loading ltugproc configuration information}}{}
1699 \@ifundefined{TUGprocExtraOptions}%
1700   {\let\TUGprocExtraOptions\@empty}%
1701   {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}
```

\tugProcYear   Now work out what year it is

```
1702 \@tempcnta\year
1703 \ifnum\@tempcnta<2000
1704   \divide\@tempcnta by100
1705   \multiply\@tempcnta by100
1706   \advance\@tempcnta-\year
1707   \@tempcnta-\@tempcnta
1708 \fi
```

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

```
1709 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1710                {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1711 \@tempa
1712 \ClassInfo{ltugproc}{Class believes year is
1713   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1714     \@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.

```
1715 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1716   \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.

```
1717 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1718 \ProcessOptions
1719 \if@proc@numbersec
1720   \if@proc@numerable
1721   \else
1722     \ClassWarning{\@tugclass}{This year's proceedings may not have
1723       numbered sections}%
1724   \fi
1725 \fi
```

Call ltugboat, adding whichever section numbering option is appropriate

```
1726 \LoadClass[\if@proc@numbersec numbersec\else nonumber\fi]{ltugboat}
```

4.1   Proceedings titles

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

```
1727 \def\maketitle{%
1728   \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).

```
1729     \ifshortAuthor\else
1730       \global\let\rhAuthor\@empty
1731       \def\g@addto@rhAuthor##1{%
1732         \begingroup
1733           \toks@\expandafter{\rhAuthor}%
1734           \let\thanks\@gobble
1735           \protected@xdef\rhAuthor{\the\toks@##1}%
1736         \endgroup
1737       }%
1738       \@getauthorlist\g@addto@rhAuthor
1739     \fi
```

now, the real business of setting the title

```
1740     \ifTB@title
1741       \setcounter{footnote}{0}%
1742       \renewcommand{\thefootnote}{\@fnsymbol\c@footnote}%
1743       \if@tubtwocolumn
1744         \twocolumn[\@maketitle]%
```

```
1745        \else
1746          \onecolumn
1747          \global\@topnum\z@
1748          \@maketitle
1749        \fi
1750        \@thanks
1751        \thispagestyle{TBproctitle}
1752      \fi
1753    \endgroup
1754    \TB@madetitletrue
1755 }
1756 \newif\ifTB@madetitle  \TB@madetitlefalse
```

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

```
1757 \def\@TB@test@document{%
1758    \edef\@tempa{\the\everypar}
1759    \def \@tempb{\@nodocument}
1760    \ifx \@tempa\@tempb
1761      \@nodocument
1762    \fi
1763 }
```

\AUTHORfont   Define the fonts for titles and things
\TITLEfont
```
1764 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
```
\addressfont
```
1765 \def\TITLEfont  {\Large\rmfamily\mdseries\upshape}
```
\netaddrfont
```
1766 \def\addressfont{\small\rmfamily\mdseries\upshape}
1767 \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
```
1768 \newskip\aboveauthorskip   \aboveauthorskip=18\p@ \@plus4\p@
1769 \newskip\belowauthorskip   \belowauthorskip=\aboveauthorskip
1770 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@
```

\@maketitle   The body of \maketitle
```
1771 \def\@maketitle{%
1772    {\parskip\z@
1773     \frenchspacing
1774     \TITLEfont\raggedright\noindent\@title\par
1775       \count@=0
1776       \loop
1777       \ifnum\count@<\authornumber
1778         \vskip\aboveauthorskip
1779         \advance\count@\@ne
1780         {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1781         \addressfont\theaddress{\number\count@}\endgraf
1782         {%
```

```
1783          \allowhyphens
1784          \hangindent1.5pc
1785          \netaddrfont\thenetaddress{\number\count@}\endgraf
1786          \hangindent1.5pc
1787          \thePersonalURL{\number\count@}\endgraf
1788        }%
1789      \repeat
1790    \vskip\belowauthorskip}%
1791    \if@abstract
1792      \centerline{\bfseries Abstract}%
1793      \vskip.5\baselineskip\rmfamily
1794      \@tubonecolumnabstractstart
1795          \the\abstract@toks
1796      \@tubonecolumnabstractfinish
1797      \global\@ignoretrue
1798    \fi
1799    \vskip\belowabstractskip
1800    \global\@afterindentfalse\aftergroup\@afterheading
1801  }
```

abstract
\if@abstract
\abstract@toks

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

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

```
1802 \newtoks\abstract@toks  \abstract@toks{}
1803 \let\if@abstract\iffalse
1804 \def\abstract{%
```

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

```
1805    \ifTB@madetitle
1806      \TBWarning{abstract environment after \string\maketitle}
1807    \fi
1808    \def\@abstract@{abstract}%
1809    \ifx\@currenvir\@abstract@
1810    \else
1811      \TBError{\string\abstract\space is illegal:%
1812        \MessageBreak
1813        use \string\begin{\@abstract@} instead}%
1814        {\@abstract@\space may only be used as an environment}
1815    \fi
1816    \global\let\if@abstract\iftrue
1817    {\ifnum0=`}\fi
1818    \@abstract@getbody}
1819 \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}`

```
1820 \long\def\@abstract@getbody#1\end{%
1821    \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1822    \@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.

```
1823 \def\@abstract@findend#1{%
1824    \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.

```
1825    \ifx\@tempa\@abstract@
1826       \expandafter\@abstract@end
1827    \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)

```
1828       \def\@tempb{document}%
1829       \ifx\@tempa\@tempb
1830         \TBError{\string\begin{\@abstract@}
1831            ended by \string\end{\@tempb}}%
1832          {You've forgotten \string\end{\@abstract@}}
1833       \else
1834         \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1835         \expandafter\expandafter\expandafter\@abstract@getbody
1836       \fi
1837    \fi}
```

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

```
1838 \def\@abstract@end{\ifnum0=`{\fi}%
1839    \expandafter\end\expandafter{\@abstract@}}
```

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

```
1840 \renewcommand{\makesignature}{\TBWarning
1841            {\string\makesignature\space is invalid in proceedings issues}}
```

`\ps@TBproctitle` Now we define the running heads in terms of the `\rh*` commands.
`\ps@TBproc`
`\dopagecommands`
`\setpagecommands`
`\TB@definefeet`
`\pfoottext`
`\rfoottext`

```
1842 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
1843    \let\@evenhead\MakeRegistrationMarks
1844    \TB@definefeet
1845 }
1846 \def\ps@TBproc{%
1847    \def\@oddhead{\MakeRegistrationMarks
```

```
1848    {%
1849      \hfil
1850      \def\\{\unskip\ \ignorespaces}%
1851      \rmfamily\rhTitle
1852    }%
1853  }%
1854  \def\@evenhead{\MakeRegistrationMarks
1855    {%
1856      \def\\{\unskip\ \ignorespaces}%
1857      \rmfamily\rhAuthor
1858      \hfil
1859    }%
1860  }%
1861  \TB@definefeet
1862 }
1863
1864 \advance\footskip8\p@     % for deeper running feet
1865
1866 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1867 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1868   {#2}}
1869 \def\TB@definefeet{%
1870   \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1871     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1872   \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1873     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1874 }
1875
1876 \def\pfoottext{{\smc Preprint}:
1877   Proceedings of the \volyr{} Annual Meeting}
1878 \def\rfoottext{\normalfont\TUB, \volx\Dash
1879   {Proceedings of the \volyr{} Annual Meeting}}
1880
1881 \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).

```
1882 \if@proc@numbersec
1883 \else
1884   \setcounter{secnumdepth}{0}
1885 \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.

```
1886 \if@proc@numbersec
1887 \else
1888   \if@proc@sober
1889     \def\section
1890           {\TB@nolimelabel
1891            \TB@startsection{{section}%
1892                              1%
1893                              \z@%
1894                              {-8\p@\@plus-2\p@\@minus-2\p@}%
1895                              {6\p@}%
1896                              {\normalsize\bfseries\raggedright}}}
1897   \else
1898     \def\section
1899           {\TB@nolimelabel
1900            \TB@startsection{{section}%
1901                              1%
1902                              \z@%
1903                              {-8\p@\@plus-2\p@\@minus-2\p@}%
1904                              {6\p@}%
1905                              {\large\bfseries\raggedright}}}
1906   \fi
1907   \def\subsection
1908           {\TB@nolimelabel
1909            \TB@startsection{{subsection}%
1910                              2%
1911                              \z@%
1912                              {6\p@\@plus 2\p@\@minus2\p@}%
1913                              {-5\p@\@plus -\fontdimen3\the\font}%
1914                              {\normalsize\bfseries}}}
1915   \def\subsubsection
1916           {\TB@nolimelabel
1917            \TB@startsection{{subsubsection}%
1918                              3%
1919                              \parindent%
1920                              \z@%
1921                              {-5\p@\@plus -\fontdimen3\the\font}%
1922                              {\normalsize\bfseries}}}
1923 \fi
1924 ⟨/ltugproccls⟩
```

5 Plain TEX styles

```
1925 ⟨*tugboatsty⟩
1926 % err...
1927 ⟨/tugboatsty⟩
1928 ⟨*tugprocsty⟩
```

```
1929 % err...
1930 ⟨/tugprocsty⟩
```

6   The LATEX 2ε compatibility-mode style files

```
1931 ⟨*ltugboatsty⟩
1932 \@obsoletefile{ltugboat.cls}{ltugboat.sty}
1933 \LoadClass{ltugboat}
1934 ⟨/ltugboatsty⟩
1935 ⟨*ltugprocsty⟩
1936 \@obsoletefile{ltugproc.cls}{ltugproc.sty}
1937 \LoadClass{ltugproc}
1938 ⟨/ltugprocsty⟩
```