The **tugboat** package*

The *TUGboat* team
(Distributed by Robin Fairbairns)

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Contents

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  tugboat.dtx - main source for LaTeX TUGboat classes.

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                   [2007/09/19 v2.4b
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)
\AW	Addison-Wesley
\BibTeX	

`\CandT`	Computers & Typesetting
`\ConTeXt`	ConTeXt
`\Cplusplus`	C++
`\DTD`	
`\DVI`	
`\DVD`	
`\DVIPDFMx`	DVIPDFMx
`\DVItoVDU`	DVItoVDU
`\eTeX`	ε-TeX
`\Ghostscript`	
`\Hawaii`	Hawai'i
`\HTML`	
`\ISBN`	ISBN
`\ISO`	
`\ISSN`	ISSN
`\JTeX`	
`\JoT`	The Joy of TeX
`\LaTeX`	
`\MacOSX`	Mac OS X
`\MathML`	
`\Mc`	M with raised c
`\MF`	METAFONT
`\mf`	METAFONT
`\MFB`	The Metafont book
`\MP`	METAPOST
`\mp`	MetaPost (in text only: remains '∓' in maths)
`\OMEGA`	Omega 'logo' (Ω)
`\OCP`	Omega compiled process
`\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`	
`\VorTeX`	
`\XeT`	
`\XeTeX`	reflected and lowered first 'E'
`\XeLaTeX`	with extra space before 'L'
`\XML`	
`\WEB`	
`\WEAVE`	

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}`→$\langle name \rangle$
`\dash`	en-dash surrounded by thinspaces; only breakable AFTER
`\Dash`	em-dash, as above
`\hyph`	permit automatic hyphenation after an actual hyphen
`\slash`	'breakable' slash
`\nth`	for obtaining '1st', '2nd', 3rd, etc.
`\tubissue`	gets `\TUB` followed by volume and issue numbers
`\xEdNote`	Editor's Note:
`\Review:`	Review: (for title of book review article)
`\reviewitem`	begin data for item being reviewed
`\revauth`	with one argument, author(s) of item being reviewed
`\revtitle`	with one argument, title of . . .
`\revpubinfo`	with one argument, other info pertaining to . . .
`\endreviewitem`	end data for item being reviewed
`\booktitle`	with one argument, format book title in text
`\Input`	`\input` with some other bookkeeping for case where multiple articles are put together
`\TBremark`	reminder to *TUGboat* editorial staff
`\TBEnableRemarks`	enable `\TBremark`s (normally suppressed)

`\pagexref`	used to write out page numbers to screen and
`\pagexrefON`	external files
`\pagexrefOFF`	
`\xrefto`	used for symbolic cross-reference to other pages
`\xreftoON`	in *TUGboat*
`\xreftoOFF`	
`\TBdriver`	marks code which only takes effect when articles
	are run together in a driver file
`\signaturemark`	items for signatures
`\signaturewidth`	

3 LaTeX 2ε *TUGboat* class file

3.1 Setup and options

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

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

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

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

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

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

Some trivial options, just flicking switches, etc.

```
30 \newif\ifpreprint
31 \def\preprint{\preprinttrue}
32 \DeclareOption{draft}{%
33   \AtEndOfClass{%
34     \setcounter{page}{1001}%
35     \BlackBoxes
36     \def\MakeRegistrationMarks{}%
37     \PrelimDrafttrue
38     }%
39 }
40 \DeclareOption{preprint}{%
41     \preprinttrue
42 }
43 \DeclareOption{final}{%
44   \AtEndOfClass{%
```

```
45     \NoBlackBoxes
46     \PrelimDraftfalse
47     }%
48 }
```

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

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

Similarly, ignore one/two-side/column

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

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

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

Option `rawcite` (the default) specifies the default citation mechanism (as built-in to LATEX); option `harvardcite` specifies the author-date citation mechanism defined in section 3.22 below.

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

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

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

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

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

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

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

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

```
69 \ExecuteOptions{draft,extralabel,numbersec,rawcite}
70 \ProcessOptions
71 \LoadClass[twoside]{article}
```

7

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

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

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

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

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

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

3.2   Resetting at start of paper

\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

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

3.3 Helpful shorthand (common code with Plain styles)

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

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

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

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

`\SaveCS#1` and `\RestoreCS#1` save and restore 'meanings' of control sequences. Again this is useful in cases where one doesn't want to localize or where

global definitions clobber a control sequence which is needed later with its 'old' definition.

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

To distinguish between macro files loaded

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

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

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

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

3.4   Abbreviations and logos

Font used for the METAFONT logo, etc.

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

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

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

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

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.

```
221 ⟨!latex⟩\def\LaTeX{\La\kern-.15em\TeX}
222 \def\MacOSX{Mac\,\acro{OS\,X}}
223 \def\MathML{Math\acro{ML}}
224 \def\Mc{\setbox\TestBox=\hbox{M}M\vbox
225    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

```
226 \def\mf{\textsc{Metafont}}
227 \def\MFB{\textsl{The \MF book}}
228 \let\TB@@mp\mp
229 \DeclareRobustCommand\mp{\ifmmode\TB@@mp\else MetaPost\fi}
230 %
231 % In order that the \cs{OMEGA} command will switch to using the TS1
232 % variant of the capital Omega character if \texttt{textcomp.sty} is
233 % loaded, we define it in terms of the \cs{textohm} command.  Note
234 % that this requires us to interpose a level of indirection, rather
235 % than to use \cs{let}\dots
236 %
237 %     \begin{macrocode}
238 \DeclareTextSymbol{\textohm}{OT1}{'012}
239 \DeclareTextSymbolDefault{\textohm}{OT1}
240 \newcommand\OMEGA{\textohm}
241 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
242 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
243 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}
```

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

```
244 \DeclareRobustCommand\NTS{\ensuremath{\mathcal{N}}\mkern-4mu
245   \raisebox{-0.5ex}{$\mathcal{T}$}\mkern-2mu \mathcal{S}}}
246 \def\Pas{Pascal}
247 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
248 \def\PCTeX{PC\thinspace\TeX}
249 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
250 \def\PDF{\acro{PDF}}
251 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
252 \def\PiCTeX{\PiC\kern-.11em\TeX}
253 \def\PGF{\acro{PGF}}
254 \def\plain{\texttt{plain}}
255 \def\PNG{\acro{PNG}}
256 \def\POBox{P.\thinspace O.~Box }
257 \def\PS{{Post\-Script}}
258 \def\PSTricks{\acro{PST}ricks}
259 \def\RTF{\acro{RTF}}
260 \def\SC{Steering Committee}
261 \def\SGML{\acro{SGML}}
262 \def\SliTeX{\textrm{S\kern-.06em\textsc{l\kern-.035emi}%
263                     \kern-.06em\TeX}}
264 \def\slMF{\textsl{\MF}} % should never be used
265 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
266 \def\STIX{\acro{STIX}}
267 \def\SVG{\acro{SVG}}
268 \def\TANGLE{\texttt{TANGLE}\@}
269 \def\TB{\textsl{The \TeX book}}
270 \def\TIFF{\acro{TIFF}}
271 \def\TP{\textsl{\TeX}: \textsl{The Program}}
272 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
273 \def\TeXhax{\TeX hax}
274 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
```

```
275     \kern-.2267emG\@}
276 \def\TeXtures{\textit{Textures}}
277 \let\Textures=\TeXtures
278 \def\TeXXeT{\TeX-{}-\XeT}
279 \def\TFM{\acro{TFM}}
280 \def\Thanh{H\`an~Th\^e\llap{\raise 0.5ex\hbox{\'{}}}~Th\`anh}
281 \def\TikZ{Ti{\em k}Z}
282 \def\ttn{\textsl{TTN}\@}
283 \def\TTN{\textsl{\TeX{} and TUG News}}
284 \let\texttub\textsl              % redefined in other situations
285 \def\TUB{\texttub{TUGboat}}
286 \def\TUG{\TeX\ \UG}
287 \def\tug{\acro{TUG}}
288 \def\UG{Users Group}
289 \def\UNIX{\acro{UNIX}}
290 \def\UTF{\acro{UTF}}
291 \def\VAX{V\kern-.12em A\kern-.1em X\@}
292 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
293 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
294 \def\XML{\acro{XML}}
295 \def\WEB{\texttt{WEB}\@}
296 \def\WEAVE{\texttt{WEAVE}\@}
```

XeTEX requires reflecting the first E, hence we complain if the graphics package is not present. (For plain documents, this can be loaded via Eplain.) Also, at Barbara's suggestion, if the current font is slanted, we rotate by 180 instead of reflecting so there is at least a chance to look ok. (The magic values here seem more or less ok for `cmsl` and `cmti`.)

```
297 \def\tubreflect#1{%
298   \@ifundefined{reflectbox}{%
299     \TBerror{A graphics package must be loaded for \string\XeTeX}%
300   }{%
301     \ifdim \fontdimen1\font>0pt
302       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
303     \else
304       \reflectbox{#1}%
305     \fi
306   }%
307 }
308 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
309 \def\Xe#1{\leavevmode
310   \tubhideheight{\hbox{X%
311     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
312     \lower\dp0\hbox{\raise\dp1\hbox{\kern-.125em\tubreflect{E}}}%
313     \kern-.1667em #1}}}
314 \def\XeTeX{\Xe\TeX}
315 \def\XeLaTeX{\Xe{\,\LaTeX}}
316 %
317 \def\XHTML{\acro{XHTML}}
318 \def\XSLT{\acro{XSLT}}
```

3.5   General typesetting rules

```
319 \newlinechar=`\^^J
```

```
320 \normallineskiplimit=\p@
321 \clubpenalty=10000
322 \widowpenalty=10000
323 \def\NoParIndent{\parindent=\z@}
324 \newdimen\normalparindent
325 \normalparindent=20\p@
326 \def\NormalParIndent{\global\parindent=\normalparindent}
327 \NormalParIndent
328 \def\BlackBoxes{\overfullrule=5\p@}
329 \def\NoBlackBoxes{\overfullrule=\z@}
330 \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.

```
331 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
332    \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
333 \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`.

```
334 \newbox\T@stBox                \newbox\TestBox
335 \newcount\T@stCount            \newcount\TestCount
336 \newdimen\T@stDimen            \newdimen\TestDimen
337 \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).

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

LaTeX conventions which are also useful here.

```
339 ⟨*!latex⟩
340   \let\@@input\input
341   \def\iinput#1{\@@input#1 }
342   \def\@inputcheck{\if\@nextchar\bgroup
343     \expandafter\iinput\else\expandafter\@@input\fi}
344   \def\input{\futurelet\@nextchar\@inputcheck}
345 ⟨/!latex⟩
```

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

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

14

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

```
353 \long\def\ulap#1{\vbox to \z@{\vss#1}}
354 \long\def\dlap#1{\vbox to \z@{#1\vss}}
```

And centered horizontal and vertical 'laps'

```
355 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
356 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
357 \long\def\zlap#1{\ylap{\xlap{#1}}}
```

Avoid unwanted vertical glue when making up pages.

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

Empty rules for special occasions

```
359 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
360 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

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

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

```
368 ⟨∗!latex⟩
369 \def\today{\number\day\space \ifcase\month\or
370         Jan \or Feb \or Mar \or Apr \or May \or Jun \or
371         Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
372         \number\year}
373 ⟨/!latex⟩
```

Current time; this may be system dependent!

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

3.7 Ragged right and friends

`\raggedskip`
`\raggedstretch`
`\raggedparfill`
`\raggedspaces`

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

```
387 \newdimen\raggedskip    \raggedskip=\z@
388 \newdimen\raggedstretch \raggedstretch=5em    % ems of font set now (10pt)
389 \newskip\raggedparfill  \raggedparfill=\z@\@plus 1fil
390 \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

```
391 \def\raggedright{%
392   \nohyphens
393   \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
394   \parfillskip=\raggedparfill
395 }
396 \def\raggedleft{%
397   \nohyphens
398   \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
399   \parfillskip=\z@skip
400 }
401 \def\raggedcenter{%
402   \nohyphens
403   \leftskip=\raggedskip\@plus\raggedstretch
404   \rightskip=\leftskip \raggedspaces
405   \parindent=\z@ \parfillskip=\z@skip
406 }
407 \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).

```
408 \DeclareRobustCommand{\nobreakspace}{%
409   \unskip\nobreak\ \ignorespaces}
```

    Plain TEX defines \newbox as \outer. We solemnly preserve the following, which removes the \outerness; of course, we carefully exclude it from what we generate... (\outerness is a spawn of the devil, is it not? Barbara Beeton responded to the previous sentence "\outerness has its place: it avoids register buildup, hence running out of memory". In another context, David Carlisle remarked that an error control mechanism that causes more confusing errors than it prevents is rather a poor one. This is perhaps not the place to conduct a serious debate...)

```
410 \def\boxcs#1{\box\csname#1\endcsname}
411 \def\setboxcs#1{\setbox\csname#1\endcsname}
412 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
413 \let\gobble\@gobble
414 \def\vellipsis{%
415   \leavevmode\kern0.5em
416   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
417   }
418 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
419 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
420 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
```

---

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

```
421 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
422                 /\kern-.125em\smash{\lower.3ex\hbox{o}}}} \ignorespaces}
423 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}%
424                                         {\@sfrac{#1}/}}
425 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
426         \hbox{$\m@th\mbox{\fontsize\sf@size\z@
427                         \selectfont#1}$}\kern-.1em
428         /\kern-.15em\lower.25ex
429          \hbox{$\m@th\mbox{\fontsize\sf@size\z@
430                         \selectfont#2}$}}
431 \DeclareRobustCommand\cs[1]{\texttt{\char`\\#1}}
432 \DeclareRobustCommand\meta[1]{% don't stay bold in description items
433   \ensuremath{\langle}{\mdseries\emph{#1}}\ensuremath{\rangle}}
434 \DeclareRobustCommand\env[1]{%
435   \cs{begin}\texttt{\char`\{#1\char`\}}}
436 \def\thinskip{\hskip 0.16667em\relax}
```

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

```
437 \def\endash{--}
438 \def\emdash{\endash-}
439 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
440 \def\dash{\d@sh\nobreak\endash}
441 \def\Dash{\d@sh\nobreak\emdash}
442 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
443 \def\rdash{\d@sh\nobreak\endash}
444 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
445 \def\Rdash{\d@sh\nobreak\emdash}
```

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

```
446 \def\hyph{-\penalty\z@\hskip\z@skip }
447 \def\slash{/\penalty\z@\hskip\z@skip }
```

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

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

```
466                         \or   st%              1st
467                         \or   nd%              2nd
468                         \or   rd%              3rd
469                         \else th%              nth
470                         \fi}%
471 }
```

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...

```
472 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
473 \def\@Review:{\@ifnextchar[%]
474   {\@Rev}%
475   {\@Rev[Book review]}}
476 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
477                                     \slshape\mdseries#2}}
478 \def\reviewitem{\addvspace{\BelowTitleSkip}%
479   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
480   \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
481   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
482 }
483 \def\endreviewitem{{\noindent\interlinepenalty=10000
484   \therevauth\therevtitle\therevpubinfo\endgraf}%
485   \vskip\medskipamount
486 }
487 \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 cur-
    rent directory or its parent. This is easy except under 'odd' operating sys-
    tems (VMS is an example that springs to mind, RISCos may be even worse)
    whose syntax is out of the ordinary.

```
488 \newcount\issueseqno            \issueseqno=-1
489 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
490 \def\volyr{}
491 \def\volno{}
492 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
```

18

```
493        \gdef\issno{\ignorespaces#2\unskip}%
494        \setbox\TestBox=\hbox{\volyr}%
495        \ifdim \wd\TestBox > .2em \v@lx \fi }
496 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
497        \gdef\bigissdt{#1}%
498        \setbox\TestBox=\hbox{\volno}%
499        \ifdim \wd\TestBox > .2em \v@lx \fi }
500 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
501        \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
502        \setbox\TestBox=\hbox{\volno}%
503        \ifdim \wd\TestBox > .2em \v@lx \fi }
504 \vol 0, 0.
505 \issdate Thermidor, 2060.
```

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

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

```
506 ⟨!latex⟩\def\tubissue#1(#2)%
507 ⟨*latex⟩
508 \def\tubissue#1{\@ifnextchar(%
509    {\@tubissue@b{#1}}
510    {\@tubissue@a{#1}}}
511 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
512 \def\@tubissue@a#1#2%
513 ⟨/latex⟩
514    {\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`

```
515 \def\infil@{\jobname}
516 \def\Input #1 {\ifnum\issueseqno<0
517    \def\infil@{#1}%
518  \else
519    \def\infil@{tb\number\issueseqno#1}
520  \fi
521  \edef\jobname{\infil@}\@readFLN
522  \@@input \infil@\relax
523  \if@RMKopen
524    \immediate\closeout\@TBremarkfile\@RMKopenfalse
525  \fi
526 }
```

`\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).

```
527 \newif\if@RMKopen       \@RMKopenfalse
528 \newwrite\@TBremarkfile
529 \def\@TBremark#1{%
530   \if@RMKopen
531   \else
```

```
532      \@RMKopentrue\immediate\openout\@TBremarkfile=\infil@.rmk
533    \fi
534    \toks@={#1}%
535    \immediate\write\@TBremarkfile{^^J\the\toks@}%
536    \immediate\write16{^^JTBremark:: \the\toks@^^J}%
537 }
```

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

```
538 \let\TBremark=\gobble
```

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

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

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

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

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

```
541 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
542 \newread\@altfilenames
543 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
544    \ifeof\@altfilenames\let\@result\relax\else
545    \def\@result{\@@input\jobname.fln }\fi
546    \immediate\closein\@altfilenames
547    \@result}
548 \@readFLN
549 \everyjob=\expandafter{\the\everyjob\@readFLN}
550 \InputIfFileExists{\jobname.fln}%
551      {\TBInfo{Reading alternative file file \jobname.fln}}{}
```

The following needs to work entirely in TeX's mouth

```
552 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
553    #1\else\csname file@@#1\endcsname\fi}
554 \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.

```
555 ⟨∗!latex⟩
556 \def\pagexrefON#1{%
557      \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
558      \write\ppoutfile{%
559          \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
560      }
561 \def\PageXrefON#1{%
562      \immediate\write-1{\def\expandafter
563                  \noexpand\csname#1\endcsname{\number\pageno}}%
564      \immediate\write\ppoutfile{\def\expandafter
565                  \noexpand\csname#1\endcsname{\number\pageno}}}
566 ⟨/!latex⟩
```

```
567 ⟨*latex⟩
568 \def\pagexrefON#1{%
569        \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
570         \write\ppoutfile{%
571              \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
572         }
573 \def\PageXrefON#1{%
574        \immediate\write-1{\def\expandafter
575                          \noexpand\csname#1\endcsname{\number\c@page}}%
576        \immediate\write\ppoutfile{\def\expandafter
577                          \noexpand\csname#1\endcsname{\number\c@page}}}
578 ⟨/latex⟩
579 \def\pagexrefOFF#1{}
580 \let\pagexref=\pagexrefOFF
581 \def\PageXrefOFF#1{}
582 \let\PageXref=\PageXrefOFF
583 \def\xreftoON#1{%
584   \ifundefined{#1}%
585     ???\TBremark{Need cross reference for #1.}%
586   \else\csname#1\endcsname\fi}
587 \def\xreftoOFF#1{???}
588 \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.

```
589 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```
590 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
591   Flor-i-da Free-BSD Ghost-script Ghost-view
592   Hara-lam-bous Jac-kow-ski Karls-ruhe
593   Mac-OS Ma-la-ya-lam Math-Sci-Net
594   Net-BSD Open-BSD Open-Office
595   Pfa-Edit Post-Script Rich-ard Skoup South-all
596   Vieth VM-ware Win-Edt
597   acro-nym ap-pen-dix asyn-chro-nous
598   bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
599   col-umns com-put-able com-put-abil-ity cus-tom-iz-able
600   data-base data-bases
601    de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
602    de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion
603   es-sence
604   fall-ing
605   half-way
606   in-fra-struc-ture
607   key-note
608   long-est
609   ma-gyar man-u-script man-u-scripts mne-mon-ic mne-mon-ics
610    mono-space mono-spaced
611   name-space name-spaces
612   off-line over-view
613   pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
```

```
614     pipe-line pipe-lines
615      plug-in plug-ins pres-ent-ly pro-gram-mable
616    re-allo-cate re-allo-cates re-allo-cated
617    set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
618      sub-ex-pres-sion syn-chro-ni-city syn-chro-nous
619    text-height text-length text-width
620      time-stamp time-stamped
621    vis-ual vis-ual-ly
622    which-ever white-space white-spaces wide-spread wrap-around
623 }
624 ⟨!latex⟩ \restorecat\@
625 ⟨/common⟩
626 ⟨∗classtail⟩
627 \PrelimDrafttrue
```

3.10   Page dimensions, glue, penalties etc

```
628 \textheight 54pc
629 \textwidth 39pc
630 \columnsep 1.5pc
631 \columnwidth 18.75pc
632 \parindent \normalparindent
633 \parskip \z@ % \@plus\p@
634 \leftmargini 2em
635 \leftmarginv .5em
636 \leftmarginvi .5em
637 \oddsidemargin \z@
638 \evensidemargin \z@
639 \topmargin -2.5pc
640 \headheight 12\p@
641 \headsep 20\p@
642 \marginparwidth 48\p@
643 \marginparsep 10\p@
644 \partopsep=\z@
645 \topsep=3\p@\@plus\p@\@minus\p@
646 \parsep=3\p@\@plus\p@\@minus\p@
647 \itemsep=\parsep
648 \twocolumn
649 \newdimen\pagewd        \pagewd=39pc
650 \newdimen\trimwd        \trimwd=\pagewd
651 \newdimen\trimlgt       \trimlgt=11in
652 \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 hir own new version. The arguments are font family, series and shape, and then the two kern values used in placing the raised 'A' of LaTeX.

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

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

```
655 \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):

```
656 \DeclareLaTeXLogo{cmss}{bx}n{.3}{.15}
657 \DeclareLaTeXLogo{cmr}m{it}{.3}{.27}
658 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
659 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
660 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
661 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a
662     \csname @LaTeX@\f@family/\f@series/\f@shape\endcsname
663     \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
664     \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.

```
665 \newcommand\@LaTeX[2]{L\kern-#1em
666         {\sbox\z@ T%
667          \vbox to\ht0{\hbox{$\m@th$%
668                          \csname S@\f@size\endcsname
669                          \fontsize\sf@size\z@
670                          \math@fontsfalse\selectfont
671                          A}%
672                      \vss}%
673         }%
674         \kern-#2em%
675         \TeX}
```

3.12 Authors, contributors, addresses, signatures

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

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

```
676 \def\theauthor#1{\csname theauthor#1\endcsname}
677 \def\theaddress#1{\csname theaddress#1\endcsname}
678 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
679 \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.

```
680 ⟨!latex⟩\newcount\@tempcnta
681 \def\@defaultauthorlist{%
682   \@getauthorlist\@firstofone
683 }
```

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

```
684 \def\@getauthorlist#1{%
685   \count@\authornumber
686   \advance\count@ by -2
687   \@tempcnta0
```

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

```
688   \loop
689     \ifnum\count@>0
690       \advance\@tempcnta by \@ne
691       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
692       \advance\count@ by \m@ne
693   \repeat
694   \count@\authornumber
695   \advance\count@ by -\@tempcnta
696   \ifnum\authornumber>0
```

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

```
697     \ifnum\count@>1
698       \count@\authornumber
699       \advance\count@ by \m@ne
700       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
701     \fi
```

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

```
702     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
703   \fi
704 }
```

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…)

```
705 \def\signature#1{\def\@signature{#1}}
706 \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`

```
707 \def\@defaultsignature{{%
708     \let\thanks\@gobble
709     \ifnum\authornumber<0
```

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

```
710      \medskip
711      \frenchspacing
712      \signaturemark
713      \theauthor{\number\authornumber}\\
714      \theaddress{\number\authornumber}\\
715      \allowhyphens
716      \thenetaddress{\number\authornumber}\\
717      \thePersonalURL{\number\authornumber}\\
718    \else
```

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

```
719      \count@=0
720      \loop
721        \ifnum\count@<\authornumber
722          \medskip
723          \advance\count@ by \@ne
724          \signaturemark
725          \theauthor{\number\count@}\\
726          \theaddress{\number\count@}\\
727          {%
728            \allowhyphens
729            \thenetaddress{\number\count@}\\
730            \thePersonalURL{\number\count@}\\
731          }%
732        \repeat
733      \fi
734    }%
735 }
736 \newdimen\signaturewidth    \signaturewidth=12pc
```

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

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

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

```
738    \@tempdima\signaturewidth
739    \advance\@tempdima 1.5pc
740    \ifdim \@tempdima>\columnwidth
741      \signaturewidth \columnwidth
742      \advance\signaturewidth -1.5pc
743    \fi
744    \par
745    \penalty9000
746    \vspace{#1}%
747    \rightline{%
748      \vbox{\hsize\signaturewidth \ninepoint \raggedright
749        \parindent \z@ \everypar={\hangindent 1pc }
750        \parskip \z@skip
751        \def\|{\unskip\hfil\break}%
752        \def\\{\endgraf}%
753        \def\phone{\rm Phone: }
754        \rm\@signature}%
755    }%
```

```
756    \ifnum\authornumber<0 \endgroup\fi
757  }
758  \def\signaturemark{\leavevmode\llap{$\diamond$\enspace}}
```

The code used to define the following:

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

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

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

```
759  \newcount\authornumber
760  \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`).

```
761  \def\author{%
762    \global\advance\authornumber\@ne
763    \TB@author
764  }
```

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

```
765  \def\contributor{%
766    \begingroup
767    \authornumber\m@ne
768    \TB@author
769  }
```

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).

```
770  \def\TB@author#1{%
771    \expandafter\def\csname theauthor\number\authornumber\endcsname
772       {\ignorespaces#1\unskip}%
773    \expandafter\def\csname theaddress\number\authornumber\endcsname
774      {\TBWarningNL{Address for #1\space missing}\@gobble}%
775    \expandafter\def\csname thenetaddress\number\authornumber\endcsname
776      {\TBWarningNL{Net address for #1\space missing}\@gobble}%
777    \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
778      \@gobble
```

```
779  }
780  \def\EDITORnoaddress{%
781    \expandafter\let\csname theaddress\number\authornumber\endcsname
782      \@gobble
783  }
784  \def\EDITORnonetaddress{%
785    \expandafter\let\csname thenetaddress\number\authornumber\endcsname
786      \@gobble
787  }
```

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

```
788  \def\address#1{%
789    \expandafter\def\csname theaddress\number\authornumber\endcsname
790        {\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*!

```
791  \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 2ε, we use the default-argument form of \newcommand; otherwise we write it out in all its horribleness.

```
792  \newcommand\netaddress[1][\relax]{%
793    \begingroup
794    \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 2ε.

```
795    #1\@sanitize\makespace\ \makeactive\@
796    \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*?!**)

```
797  \def\@relay@netaddress#1{%
798    \ProtectNetChars
799    \expandafter\protected@xdef
800        \csname thenetaddress\number\authornumber\endcsname
801      {\protect\leavevmode\textrm{\@network}%
802       {\protect\NetAddrChars\net
803        \ignorespaces#1\unskip}}%
804    \endgroup
805    }
```

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

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

```
806 \def\personalURL{\begingroup
807   \@sanitize\makespace\ \makeactive\@
808   \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
809 \def\@personalURL#1{%
810   \ProtectNetChars
811   \expandafter\protected@xdef
812     \csname thePersonalURL\number\authornumber\endcsname{%
813       \protect\leavevmode
814       {%
815         \protect\URLchars\net
816         \ignorespaces#1\unskip
817       }%
818     }%
819   \endgroup
820   }
```

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...

```
821 {%
822   \makecomment\*
823   \makeactive\@
824   \gdef\netaddrat{\makeactive\@*
825     \def@{\discretionary{\char"40}{}{\char"40}}}
826   \makeactive\%
827   \gdef\netaddrpercent{\makeactive\%*
828     \def%{\discretionary{\char"25}{}{\char"25}}}
829   \makeactive\.
830   \gdef\netaddrdot{\makeactive\.*
831     \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`.

```
832   \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
833   \makeactive\/
834   \gdef\URLchars{*
835     \NetAddrChars
836     \makeactive\/*
837     \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.

```
838   \gdef\ProtectNetChars{*
839     \def@{\protect@}*
840     \def%{\protect%}*
```

```
841    \def.{\protect.}*
842    \def/{\protect/}*
843    }
844 }
```

LaTeX 2ε (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 2ε defines for the job).

```
845 \if@compatibility
846    \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\symtypewriter}
847 \else
848    \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
849 \fi
850 \def\authorlist#1{\def\@author{#1}}
851 \def\@author{\@defaultauthorlist}
```

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

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

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

```
852 \newif\if@articletitle
853 \def\maketitle{\@ifstar
854    {\@articletitlefalse\@r@maketitle}%
855    {\@articletitletrue\@r@maketitle}%
856 }
857 \def\@r@maketitle{\par
858 \ifdim\PreTitleDrop > \z@
859    \loop
860    \ifdim \PreTitleDrop > \textheight
861      \vbox{}\vfil\eject
862      \advance\PreTitleDrop by -\textheight
863    \repeat
864    \vbox to \PreTitleDrop{}
865    \global\PreTitleDrop=\z@
866 \fi
867 \begingroup
868 \setcounter{footnote}{0}
869 \def\thefootnote{\fnsymbol{footnote}}
870 \@maketitle
871 \@thanks
872 \endgroup
873 \setcounter{footnote}{0}
874 \gdef\@thanks{}
875 }
```

3.13 Section titles

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

Define the distance between articles which are run together:

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

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

```
877 \newdimen\stbaselineskip          \stbaselineskip=18\p@
878 \newdimen\stfontheight
879 \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.

```
880 \newif\ifSecTitle
881 \SecTitlefalse
882 \newif\ifWideSecTitle
883 \newcommand\sectitle{%
884   \SecTitletrue
885   \@ifstar
886     {\WideSecTitletrue\def\s@ctitle}%
887     {\WideSecTitlefalse\def\s@ctitle}%
888 }
```

`\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.

```
889 \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.

```
890 \newskip\AboveTitleSkip   \AboveTitleSkip=12\p@
891 \newskip\BelowTitleSkip   \BelowTitleSkip=8\p@
892 \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...

```
893 \def\@sectitle #1{%
894   \par
895   \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.

```
896    \ifWideSecTitle\else\secsep\fi
897    {%
898      \fboxrule\strulethickness
899      \fboxsep\z@
900      \noindent\framebox[\hsize]{%
901        \vbox{%
902          \raggedcenter
903          \let\\\@sectitle@newline
904          \sectitlefont
905          \makestrut[2\stfontheight;\z@]%
906          #1%
907          \makestrut[\z@;\stfontheight]\endgraf
908        }%
909      }%
910    }%
911    \nobreak
912    \vskip\baselineskip
913 }
```

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

```
914 \newcommand{\@sectitle@newline}[1][\z@]{%
915    \ifdim#1>\z@
916      \makestrut[\z@;#1]%
917    \fi
918    \unskip\break
919 }
```

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).

```
920 \def\@makesectitle{\ifSecTitle
921      \global\SecTitlefalse
922      \ifWideSecTitle
923        \twocolumn[\@sectitle{\s@ctitle}]%
924        \global\WideSecTitlefalse
925      \else
926        \@sectitle{\s@ctitle}%
927      \fi
928    \else
929      \vskip\AboveTitleSkip
930      \kern\topskip
931      \hrule \@height\z@ \@depth\z@ \@width 10\p@
932      \kern-\topskip
933      \kern-\strulethickness
934      \hrule \@height\strulethickness \@depth\z@
935      \kern\medskipamount
936      \nobreak
937    \fi
938 }
```

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

```
939 \def\@maketitle{%
940   \@makesectitle
941   \if@articletitle{%
942     \nohyphens \interlinepenalty\@M
943     \setbox0=\hbox{%
944       \let\thanks\@gobble
945       \let\\=\quad
946       \let\and=\quad
947       \ignorespaces\@author}%
948     {%
949       \noindent\bf\raggedright\ignorespaces\@title\endgraf
950     }%
951     \ifdim \wd0 < 5\p@            % omit if author is null
952     \else
```

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

```
953       \nobreak \vskip 4\p@
954       {%
955         \leftskip=\normalparindent
956         \raggedright
957         \def\and{\unskip\\}%
958         \noindent\@author\endgraf
959       }%
960     \fi
961     \nobreak
962     \vskip\BelowTitleSkip
963   }\fi%
964   \global\@afterindentfalse
965   \aftergroup\@afterheading
966 }
```

Dedications are ragged right, in italics.

```
967 \newenvironment{dedication}%
968   {\raggedright\noindent\itshape\ignorespaces}%
969   {\endgraf\medskip}
```

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

```
970 \renewenvironment{abstract}%
971   {%
972     \begin{SafeSection}%
973     \section*{Abstract}%
974   }%
975   {\end{SafeSection}}
976 \newenvironment{longabstract}%
977   {%
978     \begin{SafeSection}%
979     \section*{Abstract}%
980     \bgroup\small
981   }%
982   {%
983     \endgraf\egroup
984     \end{SafeSection}%
985   \vspace{.25\baselineskip}
```

```
986  \begin{center}
987    {$--*--$}
988  \end{center}
989  \vspace{.5\baselineskip}}
```

3.14   Headings

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

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

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

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

```
990  \if@numbersec
991    \def\section{\TB@startsection{{section}%
992                                 1%
993                                 \z@
994                                 {-8\p@}%
995                                 {4\p@}%
996            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
997    \def\subsection{\TB@startsection{{subsection}%
998                                 2%
999                                 \z@
1000                                {-8\p@}%
1001                                {4\p@}%
1002           {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1003   \def\subsubsection{\TB@startsection{{subsubsection}%
1004                                 3%
1005                                 \z@
1006                                 {-8\p@}%
1007                                 {4\p@}%
1008           {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1009   \def\paragraph{\TB@startsection{{paragraph}%
1010                                 4%
1011                                 \z@
1012                                 {2.5ex\@plus 1ex}%
1013                                 {-1em}%
1014                                 {\normalsize\bf}}}
```

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

```
1015 \else
1016   \setcounter{secnumdepth}{0}
1017   \def\section{\TB@nolimelabel
1018           \TB@startsection{{section}%
1019                                 1%
1020                                 \z@
1021                                 {-8\p@}%
1022                                 {4\p@}%
1023           {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1024   \def\subsection{\TB@nolimelabel
```

```
1025                  \TB@startsection{{subsection}%
1026                                  2%
1027                                  \z@
1028                                  {-8\p@}%
1029                                  {-0.5em\@plus-\fontdimen3\font}%
1030          {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1031  \def\subsubsection{\TB@nolimelabel
1032                  \TB@startsection{{subsubsection}%
1033                                  3%
1034                                  \parindent
1035                                  {-8\p@}%
1036                                  {-0.5em\@plus-\fontdimen3\font}%
1037          {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1038  \fi
```

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

```
1039  \if@numbersec
1040    \def\TB@startsection#1{\@startsection#1}%
1041  \else
1042    \def\TB@startsection#1{%
1043      \@ifstar
1044        {\TBWarning{*-form of \expandafter\string\csname\@firstofsix#1%
1045                  \endcsname\space
1046                  \MessageBreak
1047                  conflicts with nonumber class option}%
1048          \@startsection#1}%
1049        {\@startsection#1}%
1050    }
1051  \fi
1052  \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).

```
1053  \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.

```
1054  \newenvironment{SafeSection}%
1055    {\let\TB@startsection\TB@safe@startsection}%
1056    {}
```

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.

---

[2]Thurber, *The Wonderful O*

34

```
1057 \if@numbersec
1058    \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1059 \else
1060    \def\paragraph{\TB@nosection\paragraph\subsubsection}
1061    \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1062 \fi
1063 \def\chapter{\TB@nosection\chapter\section}
1064 \def\part{\TB@nosection\part\section}
1065 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1066       \string#2\space used instead}#2}
```

\l@<sectioning-name> is for table of contents (of an article).

We define new macros to allow easily changing the font used for toc entries (for *TUGboat*, we usually want roman, not bold), and the space between entries. Nelson Beebe's articles are almost the only ones that ever have toc's.

```
1067 \def\TBtocsectionfont{\normalfont}
1068 \newskip\TBtocsectionspace  \TBtocsectionspace=1.0em\@plus\p@
```

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

```
1069 %\def\l@part#1#2{\addpenalty{\@secpenalty}%
1070 %   \addvspace{2.25em\@plus\p@}%
1071 %   \begingroup
1072 %     \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
1073 %     {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1074 %     \nobreak
1075 %   \endgroup}
1076 %
1077 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1078    \addvspace{\TBtocsectionspace}%
1079    \@tempdima 1.5em
1080    \begingroup
1081      \parindent\z@ \rightskip\z@  % article style makes \rightskip > 0
1082      \parfillskip\z@
1083      \TBtocsectionfont
1084      \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1085      \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1086    \endgroup}
```

3.15 Appendices

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

```
1087 \renewcommand\appendix{\par
1088    \renewcommand\thesection{\@Alph\c@section}%
1089    \setcounter{section}{0}%
1090    \if@numbersec
1091    \else
1092      \setcounter{secnumdepth}{1}%
```

```
1093    \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.

```
1094    \def\@tempa{appendix}
1095    \ifx\@tempa\@currenvir
1096      \expandafter\@appendix@env
1097    \fi
1098  }
```

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

```
1099  \newcommand\app@prefix@section{}
1100  \newcommand\@appendix@env[1][Appendix]{%
1101    \renewcommand\@seccntformat[1]{\csname app@prefix@##1\endcsname
1102      \csname the##1\endcsname\quad}%
1103    \renewcommand\app@prefix@section{#1 }%
1104  }
```

Ending an appendix environment is pretty trivial. . .

```
1105  \let\endappendix\relax
```

3.16   References

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

```
1106  \def\TB@nolimelabel{%
1107    \def\@currentlabel{%
1108      \protect\TBWarning{%
1109        Invalid reference to numbered label on page \thepage
1110        \MessageBreak made%
1111      }%
1112      \textbf{?!?}%
1113    }%
1114  }
```

3.17   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.

```
1115 \let\TB@@sect\@sect
1116 \let\TB@@ssect\@ssect
1117 \def\@sect#1#2#3#4#5#6[#7]#8{%
1118    \def\@currentlabelname{#7}%
1119    \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1120 }
1121 \def\@ssect#1#2#3#4#5{%
1122    \def\@currentlabelname{#5}%
1123    \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1124 }
```

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

```
1125 \def\label#1{{%
1126     \@bsphack
1127     \let\label\@gobble
1128     \let\index\@gobble
1129     \if@filesw
1130       \protected@write\@auxout{}%
1131         {\string\newlabel{#1}{%
1132             {\@currentlabel}{\thepage}{\@currentlabelname}}%
1133         }%
1134     \fi
1135     \@esphack
1136   }%
1137 }
```

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

```
1138 \let\@currentlabelname\@empty
```

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

```
1139 \DeclareRobustCommand\ref[1]{\expandafter\@setref
1140    \csname r@#1\endcsname\@firstofthree{#1}}
1141 \DeclareRobustCommand\pageref[1]{\expandafter\@setref
1142    \csname r@#1\endcsname\@secondofthree{#1}}
1143 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1144    \csname r@#1\endcsname\@thirdofthree{#1}}
1145 \long\def\@firstofthree#1#2#3{#1}
1146 \long\def\@secondofthree#1#2#3{#2}
1147 \long\def\@thirdofthree#1#2#3{#3}
```

3.18   Float captions

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

```
1148 \long\def\@makecaption#1#2{%
1149    \vskip\abovecaptionskip
```

```
1150    \sbox\@tempboxa{\small #1: #2}%
1151    \ifdim \wd\@tempboxa >\hsize
1152      \raggedright\hyphenpenalty=\@M \parindent=1em
1153      {\small \noindent #1: #2\par}%
1154    \else
1155      \global \@minipagefalse
1156      \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1157    \fi
1158    \vskip\belowcaptionskip}
```

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

```
1159 \def\fnum@figure{{\small \bf \figurename\nobreakspace\thefigure}}
1160 \def\fnum@table{{\small \bf \tablename\nobreakspace\thetable}}
```

3.19   Size changing commands

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

```
1161 \renewcommand\normalsize{%
1162    \@setfontsize\normalsize\@xpt\@xiipt
1163    \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1164    \belowdisplayskip=\abovedisplayskip
1165    \abovedisplayshortskip=\z@\@plus 3\p@
1166    \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1167 }
1168
1169 \renewcommand\small{%
1170    \@setfontsize\small\@ixpt{11}
1171    \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1172    \belowdisplayskip=\abovedisplayskip
1173    \abovedisplayshortskip=\z@\@plus 2\p@
1174    \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1175 }
1176 \renewcommand\footnotesize{%
1177    \@setfontsize\footnotesize\@viiipt{9.5}
1178    \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1179    \belowdisplayskip=\abovedisplayskip
1180    \abovedisplayshortskip=\z@\@plus 3\p@
1181    \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1182 }
```

3.20   Lists and other text inclusions

```
1183 \def\@listi{%
1184    \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1185    \itemsep=\parsep
1186    \listparindent=1em
1187    }
1188
1189 \def\@listii{%
1190    \leftmargin\leftmarginii
1191    \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
```

```
1192    \topsep=2\p@\@plus\p@\@minus\p@
1193    \parsep=\p@\@plus\p@\@minus\p@
1194    \itemsep=\parsep
1195    \listparindent=1em
1196    }
1197
1198 \def\@listiii{%
1199    \leftmargin=\leftmarginiii
1200    \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1201    \topsep=\p@\@plus\p@\@minus\p@
1202    \parsep=\z@
1203    \itemsep=\topsep
1204    \listparindent=1em
1205    }
1206 \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.

```
1207 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1208      \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}
```

3.21 Some fun with `verbatim`

The `plain` *TUGboat* style allows [`optional`] arguments to its `\verbatim` com-
mand. 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 re-
served 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.

```
1209 %\let\@TB@verbatim\@verbatim
1210 \let\@TBverbatim\verbatim
1211 \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.)

```
1212 \def\verbatim{\par\obeylines
1213    \futurelet\reserved@a\@switch@sqbverbatim}
1214 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1215    \expandafter\@sqbverbatim\else
1216    \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1217 \def\@sqbverbatim[#1]{%
```

The optional argument consists entirely of functions that modify the appear-
ance 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.

```
1218    \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.

```
1219    #1\@TBverbatim}
```

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

```
1220 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1221    \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1222    \trivlist \item\relax
1223    \if@minipage\else\vskip\parskip\fi
1224    \leftskip\@totalleftmargin\rightskip\z@skip
1225    \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1226    \@@par
1227    \@tempswafalse
1228    \def\par{%
1229      \if@tempswa
1230        \leavevmode \null \@@par\penalty\interlinepenalty
1231      \else
1232        \@tempswatrue
1233        \ifhmode\@@par\penalty\interlinepenalty\fi
1234      \fi}%
1235    \obeylines \verbatim@font \@noligs
1236    \let\do\@makeother \dospecials
1237    \everypar \expandafter{\the\everypar \unpenalty}%
1238 }%
```

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).

```
1239 \def\endverbatim{\@TBendverbatim
1240    \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

`\enablemetacode` simply typesets[3] something that looks (verbatim) like:
```
    <meta-text>
```
as:

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

```
1241 {\makeactive<
1242    \gdef<#1>{{\reset@font\ensuremath{\langle}%
1243      \textit{#1}%
1244      \ensuremath{\rangle}}}
1245 }
```

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

```
1246 \let\if@ruled\iffalse
```

---

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

```

## 3.22 Bibliography

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

```
\bibitem[\protect\citeauthoryear{Jones, Baker, and Smith}
    {Jones et al.}{1990}{key}...
```

The available citation commands are:

| | |
|---|---|
| `\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.

```
1247 \if@Harvardcite
1248 \let\@internalcite\cite
```

Normal forms.

```
1249 \def\cite{\def\@citeseppen{-1000}%
1250     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1251     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1252 \def\citeNP{\def\@citeseppen{-1000}%
1253     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1254     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1255 \def\citeN{\def\@citeseppen{-1000}%
1256     \def\@cite##1##2{##1\if@tempswa , ##2)\else)}\fi}%
1257     \def\citeauthoryear##1##2##3{##1 (##3}\@citedata}
1258 \def\citeA{\def\@citeseppen{-1000}%
1259     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1260     \def\citeauthoryear##1##2##3{##1}\@internalcite}
1261 \def\citeANP{\def\@citeseppen{-1000}%
1262     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1263     \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1264 \def\shortcite{\def\@citeseppen{-1000}%
1265     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1266     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1267 \def\shortciteNP{\def\@citeseppen{-1000}%
1268     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1269     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1270 \def\shortciteN{\def\@citeseppen{-1000}%
1271     \def\@cite##1##2{##1\if@tempswa , ##2)\else)}\fi}%
1272     \def\citeauthoryear##1##2##3{##2 (##3}\@citedata}
1273 \def\shortciteA{\def\@citeseppen{-1000}%
```

```
1274     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1275     \def\citeauthoryear##1##2##3{##2}\@internalcite}
1276 \def\shortciteANP{\def\@citeseppen{-1000}%
1277     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1278     \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1279 \def\citeyear{\def\@citeseppen{-1000}%
1280     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1281     \def\citeauthoryear##1##2##3{##3}\@citedata}
1282 \def\citeyearNP{\def\@citeseppen{-1000}%
1283     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1284     \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.

```
1285 \def\@citedata{%
1286         \@ifnextchar [{\@tempswatrue\@citedatax}%
1287                                 {\@tempswafalse\@citedatax[]}%
1288 }
1289
1290 \def\@citedatax[#1]#2{%
1291 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1292   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1293     {\@citea\def\@citea{, }\@ifundefined% by Young
1294       {b@\@citeb}{{\bf ?}%
1295       \@warning{Citation `\@citeb' on page \thepage \space undefined}}%
1296 {\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.

```
1297 \def\@citex[#1]#2{%
1298 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1299   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1300     {\@citea\def\@citea{; }\@ifundefined% by Young
1301       {b@\@citeb}{{\bf ?}%
1302       \@warning{Citation `\@citeb' on page \thepage \space undefined}}%
1303 {\csname b@\@citeb\endcsname}}}{#1}}%
```

No labels in the bibliography.

```
1304 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```
1305 \newlength{\bibhang}
1306 \setlength{\bibhang}{2em}
```

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

```
1307 \newdimen\bibindent
1308 \bibindent=1.5em
1309 \@ifundefined{refname}%
1310     {\newcommand{\refname}{References}}%
1311     {}%
```

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

```
1312 \def\thebibliography#1{%
1313   \let\TB@startsection\TB@safe@startsection
1314   \section*{\refname
1315     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1316   \list{[\arabic{enumi}]}{%
1317     \labelwidth\z@ \labelsep\z@
1318     \leftmargin\bibindent
1319     \itemindent -\bibindent
1320     \listparindent \itemindent
1321     \parsep \z@
1322     \usecounter{enumi}}
1323   \def\newblock{}
1324   \BibJustification
1325   \sfcode'\.=1000\relax
1326 }
```

etal   Other bibliography odds and ends.

\bibentry
```
1327 \def\etal{et\,al.\@}
1328 \def\bibentry{%
1329   \smallskip
1330   \hangindent=\parindent
1331   \hangafter=1
1332   \noindent
1333   \sloppy
1334   \clubpenalty500 \widowpenalty500
1335   \frenchspacing
1336 }
```

\bibliography   Changes made to accommodate TUB file naming conventions
\bibliographystyle
```
1337 \def\bibliography#1{%
1338   \if@filesw
1339     \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1340   \fi
1341   \@input{\jobname.bbl}%
1342 }
1343 \def\bibliographystyle#1{%
1344   \if@filesw
1345     \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1346   \fi
1347 }
```

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

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

```
1348 \else
1349 \let\TB@@thebibliography\thebibliography
1350 \def\thebibliography{%
1351   \let\TB@startsection\TB@safe@startsection
1352   \let\sloppy\BibJustification
1353   \TB@@thebibliography}
1354 \fi
```

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

```
1355 \let\TB@@sloppy\sloppy
1356 \let\BibJustification\TB@@sloppy
1357 \newcommand{\SetBibJustification}[1]{%
1358   \renewcommand{\BibJustification}{#1}%
1359 }
1360 \ResetCommands\expandafter{\the\ResetCommands
1361   \let\BibJustification\TB@@sloppy
1362 }
```

3.23 Registration marks

```
1363 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1364 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1365 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
```

"T" marks centered on top and bottom edges of paper
```
1366 \def\ttopregister{\dlap{%
1367         \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1368                        \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1369         \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1370 \def\tbotregister{\ulap{%
1371         \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1372         \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1373                        \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1374 \def\topregister{\ttopregister}
1375 \def\botregister{\tbotregister}
```

3.24 Running heads

```
1376 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1377 \def\PrelimDraftfooter{%
1378   \dlap{\kern\textheight\kern3pc
1379         \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}
1380   }}
1381
```

registration marks; these are temporarily inserted in the running head
```
1382 \def\MakeRegistrationMarks{}
1383 \def\UseTrimMarks{%
1384   \def\MakeRegistrationMarks{%
1385     \ulap{\rlap{%
1386       \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}%
1387             \topregister\vskip \headmargin \vskip 10\p@}}}}%
1388   }
1389
1390 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1391   \normalsize\csname normalshape\endcsname\rm
1392   \rtitlex\qquad\midrtitle \hfil \thepage}
1393 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1394   \normalsize\csname normalshape\endcsname\rm
1395   \thepage\hfil\midrtitle\qquad\rtitlex}
```

```
1396 \def\@oddfoot{}
1397 \def\@evenfoot{}
1398 \def\ps@headings{}
1399 \pagestyle{headings}
```

3.25 Output routine

Modified to alter `\brokenpenalty` across columns

> **Comment** We're playing with fire here: for example, `\@outputdblcol` has
> changed in LaTeX2_ε for 1995/06/01 (with the use of `\hb@xt@`). *This* time
> there's no semantic change, but...

```
1400 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1401    \global\setbox\@leftcolumn\box\@outputbox
1402    \global\brokenpenalty10000
1403  \else \global\@firstcolumntrue
1404    \global\brokenpenalty100
1405    \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1406      {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1407       \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1408       \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1409       \@whilesw\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1410    \fi}
```

3.26 Font-related definitions and machinery

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

```
1411 \newif\ifFirstPar      \FirstParfalse
1412 \def\smc{\sc}
1413 \def\ninepoint{\small}
1414 ⟨/classtail⟩
```

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

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

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. (Note that the order of
examination of `\@currsize` is to get the commonest cases out of the way first.)

```
1415 ⟨*common⟩
```

```
1416 \DeclareRobustCommand\SMC{%
1417   \ifx\@currsize\normalsize\small\else
1418    \ifx\@currsize\small\footnotesize\else
1419     \ifx\@currsize\footnotesize\scriptsize\else
1420      \ifx\@currsize\large\normalsize\else
1421       \ifx\@currsize\Large\large\else
1422        \ifx\@currsize\LARGE\Large\else
1423         \ifx\@currsize\scriptsize\tiny\else
1424          \ifx\@currsize\tiny\tiny\else
1425           \ifx\@currsize\huge\LARGE\else
1426            \ifx\@currsize\Huge\huge\else
1427             \small\SMC@unknown@warning
1428   \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1429 }
1430 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: nonstandard
1431    text font size command -- using \string\small}}
1432 \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.

```
1433 \newcommand\acro[1]{\textSMC{#1}\@}
1434 ⟨/common⟩
```

3.27 Miscellaneous definitions

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

```
1435 ⟨*classtail⟩
1436 \def\xEdNote{{\EdNoteFont Editor's note:\enspace }}
1437 \def \EdNote{\@ifnextchar[%
1438   {%
1439     \ifvmode
1440       \smallskip\noindent\let\@EdNote@\@EdNote@v
1441     \else
1442       \unskip\quad\def\@EdNote@{\unskip\quad}%
1443     \fi
1444     \@EdNote
1445   }%
1446   \xEdNote
1447 }
1448 \long\def\@EdNote[#1]{%
1449   [\thinspace\xEdNote\ignorespaces
1450    #1%
1451    \unskip\thinspace]%
1452   \@EdNote@
1453 }
1454 \def\@EdNote@v{\par\smallskip}
```

Macros for Mittelbach's self-documenting style

```
1455 \def\SelfDocumenting{%
1456   \setlength\textwidth{31pc}
1457   \onecolumn
```

```
1458    \parindent \z@
1459    \parskip 2\p@\@plus\p@\@minus\p@
1460    \oddsidemargin 8pc
1461    \evensidemargin 8pc
1462    \marginparwidth 8pc
1463    \toks@\expandafter{\@oddhead}%
1464    \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1465    \toks@\expandafter{\@evenhead}%
1466    \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1467    \def\ps@titlepage{}%
1468 }
1469 \def\ps@titlepage{}
1470
1471 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}%
1472    \llap{\@makefnmark}\null$\mskip5mu$#1}
1473
1474 %% \long\def\@makefntext#1{\parindent 1em
1475 %%    \noindent
1476 %%    \hb@xt@2em{\hss\@makefnmark}%
1477 %%    \hskip0.27778\fontdimen6\textfont\z@\relax
1478 %%    #1%
1479 %% }
```

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

\supportfootnote

```
1480 \def\creditfootnote{\nomarkfootnote\xEdNote}
1481 \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.

```
1482 \gdef\nomarkfootnote#1#2{\begingroup
1483    \def\thefootnote{}%
1484    % no period, please, also no fnmark.
1485    \def\@makefntext##1{##1}%
1486    \footnotetext{\noindent #1#2}%
1487    \endgroup
1488 }
```

3.28 Initialization

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

```
1489 \if@Harvardcite
1490    \AtBeginDocument{%
1491       \bibliographystyle{ltugbib}%
1492    }
1493 \fi
1494 \authornumber\z@
1495 \let\@signature\@defaultsignature
1496 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1497                                       configuration information}}{}
1498 ⟨/classtail⟩
```

4 LATEX 2ε Proceedings class

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

```
1499 ⟨*ltugproccls⟩
1500 \def\@tugclass{ltugproc}
```

\if@proctw@column For the case where we're preparing the preprints, we may not have been able to prepare submissions for typesetting in two columns. In this case, therefore, we may need the option onecolumn, that will suppress the use of twocolumn setting within the article.

```
1501 \newif\if@proctw@column  \@proctw@columntrue
1502 \DeclareOption{onecolumn}{\@proctw@columnfalse}
```

\if@proc@sober   TUG'96 proceedings switched to more sober headings still; so the tug95 option
\if@proc@numerable   establishes the original state. In the absence of any other guidance, we use the '96 for TUG'97 proceedings, but also allow numbering of sections.

```
1503 \newif\if@proc@sober
1504 \newif\if@proc@numerable
1505 \DeclareOption{tug95}{%
1506   \@proc@soberfalse
1507   \@proc@numerablefalse
1508 }
1509 \DeclareOption{tug96}{%
1510   \@proc@sobertrue
1511   \@proc@numerablefalse
1512 }
1513 \DeclareOption{tug97}{%
1514   \@proc@sobertrue
1515   \@proc@numerabletrue
1516 }
1517 \DeclareOption{tug2002}{%
1518   \@proc@sobertrue
1519   \@proc@numerabletrue
1520   \let\if@proc@numbersec\iftrue
1521   \PassOptionsToClass{numbersec}{ltugboat}%
1522 }
```

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

```
1523 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1524   \PassOptionsToClass{numbersec}{ltugboat}%
1525 }
1526 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1527   \PassOptionsToClass{nonumber}{ltugboat}%
1528 }
```

\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.

```
1529 \newif\ifTB@title
1530 \DeclareOption{title}{\TB@titletrue}
1531 \DeclareOption{notitle}{\TB@titlefalse
1532   \AtBeginDocument{\stepcounter{page}}}
```

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

```
1533 \DeclareOption{tugproc}{%
1534    \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1535 }
```

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

```
1536 \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. . .)

```
1537 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1538          {Loading ltugproc configuration information}}{}
1539 \@ifundefined{TUGprocExtraOptions}%
1540    {\let\TUGprocExtraOptions\@empty}%
1541    {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}
```

\tugProcYear   Now work out what year it is

```
1542 \@tempcnta\year
1543 \ifnum\@tempcnta<2000
1544    \divide\@tempcnta by100
1545    \multiply\@tempcnta by100
1546    \advance\@tempcnta-\year
1547    \@tempcnta-\@tempcnta
1548 \fi
```

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

```
1549 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1550                {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1551 \@tempa
1552 \ClassInfo{ltugproc}{Class believes year is
1553    \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1554      \@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.

```
1555 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1556    \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.

```
1557 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1558 \ProcessOptions
1559 \if@proc@numbersec
1560    \if@proc@numerable
1561    \else
1562      \ClassWarning{\@tugclass}{This year's proceedings may not have
1563        numbered sections}%
1564    \fi
1565 \fi
```

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Call ltugboat, adding whichever section numbering option is appropriate

```
1566 \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.

```
1567 \def\maketitle{%
1568   \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).

```
1569     \ifshortAuthor\else
1570       \global\let\rhAuthor\@empty
1571       \def\g@addto@rhAuthor##1{%
1572         \begingroup
1573           \toks@\expandafter{\rhAuthor}%
1574           \let\thanks\@gobble
1575           \protected@xdef\rhAuthor{\the\toks@##1}%
1576         \endgroup
1577       }%
1578       \@getauthorlist\g@addto@rhAuthor
1579     \fi
```

now, the real business of setting the title

```
1580     \ifTB@title
1581       \setcounter{footnote}{0}%
1582       \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1583       \if@proctw@column
1584         \twocolumn[\@maketitle]%
1585       \else
1586         \onecolumn
1587         \global\@topnum\z@
1588         \@maketitle
1589       \fi
1590       \@thanks
1591       \thispagestyle{TBproctitle}
1592     \fi
1593   \endgroup
1594   \TB@madetitletrue
1595 }
1596 \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.

```
1597 \def\@TB@test@document{%
1598   \edef\@tempa{\the\everypar}
1599   \def \@tempb{\@nodocument}
1600   \ifx \@tempa\@tempb
1601     \@nodocument
1602   \fi
1603 }
```

<dl>

\AUTHORfont Define the fonts for titles and things

\TITLEfont 1604 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}

\addressfont 1605 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}

\netaddrfont 1606 \def\addressfont{\small\rmfamily\mdseries\upshape}

1607 \def\netaddrfont{\small\ttfamily\mdseries\upshape}

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

\belowauthorskip 1608 \newskip\aboveauthorskip   \aboveauthorskip=18\p@ \@plus4\p@

\belowabstractskip 1609 \newskip\belowauthorskip   \belowauthorskip=\aboveauthorskip

1610 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

\@maketitle The body of \maketitle

1611 \def\@maketitle{%
1612   {\parskip\z@
1613   \frenchspacing
1614   \TITLEfont\raggedright\noindent\@title\par
1615   \count@=0
1616   \loop
1617   \ifnum\count@<\authornumber
1618   \vskip\aboveauthorskip
1619   \advance\count@\@ne
1620   {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1621   \addressfont\theaddress{\number\count@}\endgraf
1622   {%
1623   \allowhyphens
1624   \hangindent1.5pc
1625   \netaddrfont\thenetaddress{\number\count@}\endgraf
1626   \hangindent1.5pc
1627   \thePersonalURL{\number\count@}\endgraf
1628   }%
1629   \repeat
1630   \vskip\belowauthorskip}%
1631   \if@abstract
1632   \centerline{\bfseries Abstract}%
1633   \vskip.5\baselineskip\rmfamily
1634   \list{}{\listparindent20\p@
1635   \itemindent\z@ \leftmargin4.875pc
1636   \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1637   \the\abstract@toks
1638   \endlist\global\@ignoretrue
1639   \fi
1640   \vskip\belowabstractskip
1641   \global\@afterindentfalse\aftergroup\@afterheading
1642 }

</dl>

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

This restriction simply removed 1998/01/09

1643 %\def\thanks#1{\@bsphack\TBWarning{\string\thanks\space
1644 %   is not supported}\@esphack}

<dl>

abstract Save the contents of the abstract environment in the token register \abstract@toks.

\if@abstract We need to do this, as otherwise it may get 'typeset' (previously, it got put in a

\abstract@toks

</dl>

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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@`

```
1645 \newtoks\abstract@toks  \abstract@toks{}
1646 \let\if@abstract\iffalse
1647 \def\abstract{%
```

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

```
1648   \ifTB@madetitle
1649     \TBWarning{abstract environment after \string\maketitle}
1650   \fi
1651   \def\@abstract@{abstract}%
1652   \ifx\@currenvir\@abstract@
1653   \else
1654     \TBError{\string\abstract\space is illegal:%
1655       \MessageBreak
1656       use \string\begin{\@abstract@} instead}%
1657       {\@abstract@\space may only be used as an environment}
1658   \fi
1659   \global\let\if@abstract\iftrue
1660   {\ifnum0=`}\fi
1661   \@abstract@getbody}
1662 \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}

```
1663 \long\def\@abstract@getbody#1\end{%
1664   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1665   \@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.

```
1666 \def\@abstract@findend#1{%
1667   \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.

```
1668   \ifx\@tempa\@abstract@
1669     \expandafter\@abstract@end
1670   \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)

```
1671     \def\@tempb{document}%
1672     \ifx\@tempa\@tempb
1673       \TBError{\string\begin{\@abstract@}
1674         ended by \string\end{\@tempb}}%
1675         {You've forgotten \string\end{\@abstract@}}
```

```
1676        \else
1677            \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1678            \expandafter\expandafter\expandafter\@abstract@getbody
1679        \fi
1680    \fi}
```

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

```
1681 \def\@abstract@end{\ifnum0=`{\fi}%
1682    \expandafter\end\expandafter{\@abstract@}}
```

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

```
1683 \renewcommand{\makesignature}{\TBWarning
1684              {\string\makesignature\space is invalid in proceedings issues}}
```

\title   We redefine the \title command, so as to set the \rhTitle command at the same
\TB@title time. While we're at it, we redefine it to have optional arguments for use as 'short' versions, thus obviating the need for users to use the \shortTitle command.

```
1685 \renewcommand\title{\@dblarg\TB@title}
1686 \def\TB@title[#1]#2{\gdef\@title{#2}%
1687    \bgroup
1688        \let\thanks\@gobble
1689        \let\\ %
1690        \protected@xdef\rhTitle{#1}%
1691    \egroup
1692 }
```

\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.

```
1693 \def\shortTitle #1{\def\rhTitle{#1}}
1694 \newif\ifshortAuthor
1695 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}
```

\ps@TBproctitle   Now we define the running heads in terms of the \rh* commands.
\ps@TBproc
\dopagecommands 1696 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\setpagecommands 1697   \let\@evenhead\MakeRegistrationMarks
\TB@definefeet   1698   \TB@definefeet
                 1699 }
\pfoottext   1700 \def\ps@TBproc{%
\rfoottext   1701   \def\@oddhead{\MakeRegistrationMarks
                 1702   {%
                 1703   \hfil
                 1704   \def\\{\unskip\ \ignorespaces}%
                 1705   \rmfamily\rhTitle
                 1706   }%
                 1707   }%
                 1708   \def\@evenhead{\MakeRegistrationMarks
                 1709   {%
                 1710   \def\\{\unskip\ \ignorespaces}%
                 1711   \rmfamily\rhAuthor
```

```
1712        \hfil
1713      }%
1714    }%
1715    \TB@definefeet
1716 }
1717
1718 \advance\footskip8\p@      % for deeper running feet
1719
1720 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1721 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1722    {#2}}
1723 \def\TB@definefeet{%
1724    \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1725      \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1726    \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1727      \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1728 }
1729
1730 \def\pfoottext{{\smc Preprint}: Proceedings of the \volyr{} Annual Meeting}
1731 \def\rfoottext{\normalfont\TUB, \volx\Dash
1732    {Proceedings of the \volyr{} Annual Meeting}}
1733
1734 \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).

```
1735 \if@proc@numbersec
1736 \else
1737    \setcounter{secnumdepth}{0}
1738 \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.

```
1739 \if@proc@numbersec
1740 \else
1741    \if@proc@sober
1742      \def\section
1743            {\TB@nolimelabel
1744             \TB@startsection{{section}%
1745                             1%
1746                             \z@%
1747                             {-8\p@\@plus-2\p@\@minus-2\p@}%
1748                             {6\p@}%
1749                             {\normalsize\bfseries\raggedright}}}
1750    \else
1751      \def\section
```

```
1752            {\TB@nolimelabel
1753             \TB@startsection{{section}%
1754                              1%
1755                              \z@%
1756                              {-8\p@\@plus-2\p@\@minus-2\p@}%
1757                              {6\p@}%
1758                              {\large\bfseries\raggedright}}}
1759    \fi
1760    \def\subsection
1761            {\TB@nolimelabel
1762             \TB@startsection{{subsection}%
1763                              2%
1764                              \z@%
1765                              {6\p@\@plus 2\p@\@minus2\p@}%
1766                              {-5\p@\@plus -\fontdimen3\the\font}%
1767                              {\normalsize\bfseries}}}
1768    \def\subsubsection
1769            {\TB@nolimelabel
1770             \TB@startsection{{subsubsection}%
1771                              3%
1772                              \parindent%
1773                              \z@%
1774                              {-5\p@\@plus -\fontdimen3\the\font}%
1775                              {\normalsize\bfseries}}}
1776 \fi
1777 ⟨/ltugproccls⟩
```

5   Plain TEX styles

```
1778 ⟨*tugboatsty⟩
1779 % err...
1780 ⟨/tugboatsty⟩
1781 ⟨*tugprocsty⟩
1782 % err...
1783 ⟨/tugprocsty⟩
```

6   The LATEX 2ε compatibility-mode style files

```
1784 ⟨*ltugboatsty⟩
1785 \@obsoletefile{ltugboat.cls}{ltugboat.sty}
1786 \LoadClass{ltugboat}
1787 ⟨/ltugboatsty⟩
1788 ⟨*ltugprocsty⟩
1789 \@obsoletefile{ltugproc.cls}{ltugproc.sty}
1790 \LoadClass{ltugproc}
1791 ⟨/ltugprocsty⟩
```

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Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.