The **tugboat** package[*]

The *TUGboat* team

(Distributed by Robin Fairbairns)

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Contents

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[*]This file has version number v2.5, last revised 2008/09/14

    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                  [2008/09/14 v2.5
11 ⟨ltugboatcls⟩                      TUGboat journal class%
12 ⟨ltugproccls⟩                     TUG conference proceedings class%
13 ⟨ltugboatsty | ltugprocsty⟩        TUG compatibility package%
14 ⟨ltugcomn⟩                         TUGboat 'common macros' package%
15 ⟨*dtx⟩
16                                    TUG macros source file%
17 ⟨/dtx⟩
18                  ]
19 ⟨*dtx⟩
20 \newif\ifoldlongtable
21 ⟨/dtx⟩
```

2   Introduction

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

2.1   Summary of control sequences

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

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

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

Macros for things that are slightly more significant.

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

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

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

3   LaTeX 2_ε *TUGboat* class file

3.1   Setup and options

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

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

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

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

Warnings/error messages/information messages — if we're using LaTeX 2$_\varepsilon$ 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}
```

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 LaTeX2_ε).

```
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$_\varepsilon$ 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\API{\acro{API}}
162 \def\ASCII{\acro{ASCII}}
163 \def\aw{A\kern.1em-W}
164 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
165 %
166 % make \BibTeX work in slanted contexts too; it's common in titles, and
167 % especially burdensome to hack in .bib files.
168 \def\BibTeX{%
169    \ifdim \fontdimen1\font>0pt
170       B{\SMC\SMC IB}%
171    \else
172       \textsc{Bib}\kern-.08em
173    \fi
174    \TeX}
175 %
176 \def\CandT{\textsl{Computers \& Typesetting}}
```

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

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

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

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.

```
226 ⟨!latex⟩\def\LaTeX{\La\kern-.15em\TeX}
227 \def\MacOSX{Mac\,\acro{OS\,X}}
```

```
228 \def\MathML{Math\acro{ML}}
229 \def\Mc{\setbox\TestBox=\hbox{M}M\vbox
230    to\ht\TestBox{\hbox{c}\vfil}} %  for Robert McGaffey
```

If we're running under LaTeX 2ε, 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

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

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

```
250 \DeclareRobustCommand\NTS{\ensuremath{\mathcal{N}}\mkern-4mu
251    \raisebox{-0.5ex}{$\mathcal{T}$}\mkern-2mu \mathcal{S}}}
252 \def\Pas{Pascal}
253 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
254 \def\PCTeX{PC\thinspace\TeX}
255 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
256 \def\PDF{\acro{PDF}}
257 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
258 \def\PiCTeX{\PiC\kern-.11em\TeX}
259 \def\PGF{\acro{PGF}}
260 \def\plain{\texttt{plain}}
261 \def\PNG{\acro{PNG}}
262 \def\POBox{P.\thinspace O.~Box }
263 \def\PS{{Post\-Script}}
264 \def\PSTricks{\acro{PST}ricks}
265 \def\RTF{\acro{RTF}}
266 \def\SC{Steering Committee}
267 \def\SGML{\acro{SGML}}
268 \def\SliTeX{\textrm{S\kern-.06em\textsc{l\kern-.035emi}%
269                     \kern-.06em\TeX}}
270 \def\slMF{\textsl{\MF}} % should never be used
271 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
```

```
272 \def\STIX{\acro{STIX}}
273 \def\SVG{\acro{SVG}}
274 \def\TANGLE{\texttt{TANGLE}\@}
275 \def\TB{\textsl{The \TeX book}}
276 \def\TIFF{\acro{TIFF}}
277 \def\TP{\textsl{\TeX}: \textsl{The Program}}
278 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
279 \def\TeXhax{\TeX hax}
280 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
281    \kern-.2267emG\@}
282 \def\TeXtures{\textit{Textures}}
283 \let\Textures=\TeXtures
284 \def\TeXXeT{\TeX-{}-\XeT}
285 \def\TFM{\acro{TFM}}
286 \def\Thanh{H\`an~Th\^e\llap{\raise 0.5ex\hbox{\'{}}}~Th\`anh}
287 \def\TikZ{Ti{\em k}Z}
288 \def\ttn{\textsl{TTN}\@}
289 \def\TTN{\textsl{\TeX{} and TUG News}}
290 \let\texttub\textsl          % redefined in other situations
291 \def\TUB{\texttub{TUGboat}}
292 \def\TUG{\TeX\ \UG}
293 \def\tug{\acro{TUG}}
294 \def\UG{Users Group}
295 \def\UNIX{\acro{UNIX}}
296 \def\UTF{\acro{UTF}}
297 \def\VAX{V\kern-.12em A\kern-.1em X\@}
298 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
299 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
300 \def\XML{\acro{XML}}
301 \def\WEB{\texttt{WEB}\@}
302 \def\WEAVE{\texttt{WEAVE}\@}
303 \def\WYSIWYG{\acro{WYSIWYG}}
```

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

```
304 \def\tubreflect#1{%
305    \@ifundefined{reflectbox}{%
306      \TBerror{A graphics package must be loaded for \string\XeTeX}%
307    }{%
308      \ifdim \fontdimen1\font>0pt
309        \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
310      \else
311        \reflectbox{#1}%
312      \fi
313    }%
314 }
315 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
```

```
316 \DeclareRobustCommand\Xe[1]{\leavevmode
317   \tubhideheight{\hbox{X%
318     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
319     \lower\dp0\hbox{\raise\dp1\hbox{\kern-.125em\tubreflect{E}}}}%
320     \kern-.1667em #1}}}
321 \def\XeTeX{\Xe\TeX}
322 \def\XeLaTeX{\Xe{\,\LaTeX}}
323 %
324 \def\XHTML{\acro{XHTML}}
325 \def\XSLT{\acro{XSLT}}
```

3.5   General typesetting rules

```
326 \newlinechar='\^^J
327 \normallineskiplimit=\p@
328 \clubpenalty=10000
329 \widowpenalty=10000
330 \def\NoParIndent{\parindent=\z@}
331 \newdimen\normalparindent
332 \normalparindent=20\p@
333 \def\NormalParIndent{\global\parindent=\normalparindent}
334 \NormalParIndent
335 \def\BlackBoxes{\overfullrule=5\p@}
336 \def\NoBlackBoxes{\overfullrule=\z@}
337 \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.

```
338 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
339   \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
340 \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`.

```
341 \newbox\T@stBox              \newbox\TestBox
342 \newcount\T@stCount          \newcount\TestCount
343 \newdimen\T@stDimen          \newdimen\TestDimen
344 \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).

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

LATEX conventions which are also useful here.

```
346 ⟨∗!latex⟩
347   \let\@@input\input
348   \def\iinput#1{\@@input#1 }
349   \def\@inputcheck{\if\@nextchar\bgroup
350     \expandafter\iinput\else\expandafter\@@input\fi}
351   \def\input{\futurelet\@nextchar\@inputcheck}
352 ⟨/!latex⟩
```

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

```
353 \newif\iftop@          \newif\ifbot@
354 \def\topsmash{\top@true\bot@false\smash@}
355 \def\botsmash{\top@false\bot@true\smash@}
356 \def\smash{\top@true\bot@true\smash@}
357 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
358         \else\let\next\makesm@sh\fi \next }
359 \def\finsm@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}
```

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

```
360 \long\def\ulap#1{\vbox to \z@{\vss#1}}
361 \long\def\dlap#1{\vbox to \z@{#1\vss}}
```

And centered horizontal and vertical 'laps'

```
362 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
363 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
364 \long\def\zlap#1{\ylap{\xlap{#1}}}
```

Avoid unwanted vertical glue when making up pages.

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

Empty rules for special occasions

```
366 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
367 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

```
369 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
370         \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
371             \vss\hb@xt@#2{\vrule \@width\T@stDimen
372                 \hfil\makestrut[#1;\z@]%
373                 \vrule \@width\T@stDimen}\vss
374             \hrule \@height\T@stDimen \@depth\z@}}
```

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

```
375 ⟨∗!latex⟩
376 \def\today{\number\day\space \ifcase\month\or
377        Jan \or Feb \or Mar \or Apr \or May \or Jun \or
378        Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
379        \number\year}
380 ⟨/!latex⟩
```

Current time; this may be system dependent!

```
381 \newcount\hours
382 \newcount\minutes
383 \def\SetTime{\hours=\time
384        \global\divide\hours by 60
385        \minutes=\hours
386        \multiply\minutes by 60
387        \advance\minutes by-\time
388        \global\multiply\minutes by-1 }
389 \SetTime
390 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
391 \def\Now{\today\ \now}
392 \newif\ifPrelimDraft
393 \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.

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

\raggedright
\raggedleft
\raggedcenter
\normalspaces

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

```
398 \def\raggedright{%
399   \nohyphens
400   \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
401   \parfillskip=\raggedparfill
402 }
403 \def\raggedleft{%
404   \nohyphens
405   \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
406   \parfillskip=\z@skip
407 }
408 \def\raggedcenter{%
409   \nohyphens
410   \leftskip=\raggedskip\@plus\raggedstretch
411   \rightskip=\leftskip \raggedspaces
```

```
412    \parindent=\z@ \parfillskip=\z@skip
413 }
414 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}
```

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

```
415 \DeclareRobustCommand{\nobreakspace}{%
416    \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. . .)

```
417 \def\boxcs#1{\box\csname#1\endcsname}
418 \def\setboxcs#1{\setbox\csname#1\endcsname}
419 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
420 \let\gobble\@gobble
421 \def\vellipsis{%
422    \leavevmode\kern0.5em
423    \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
424    }
425 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
426 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
427 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
428 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
429                /\kern-.125em\smash{\lower.3ex\hbox{o}}} \ignorespaces}
430 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}%
431                                          {\@sfrac{#1}/}}
432 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
433         \hbox{$\m@th\mbox{\fontsize\sf@size\z@
434                         \selectfont#1}$}\kern-.1em
435         /\kern-.15em\lower.25ex
436          \hbox{$\m@th\mbox{\fontsize\sf@size\z@
437                         \selectfont#2}$}}
438 \DeclareRobustCommand\cs[1]{\texttt{\char`\\#1}}
439 \DeclareRobustCommand\meta[1]{% don't stay bold in description items
440    \ensuremath{\langle}{\mdseries\emph{#1}}\ensuremath{\rangle}}
441 \DeclareRobustCommand\env[1]{%
442    \cs{begin}\texttt{\char`\{#1\char`\}}}
443 \def\thinskip{\hskip 0.16667em\relax}
```

---

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

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

```
444 \def\endash{--}
445 \def\emdash{\endash-}
446 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
447 \def\dash{\d@sh\nobreak\endash}
448 \def\Dash{\d@sh\nobreak\emdash}
449 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
450 \def\rdash{\d@sh\nobreak\endash}
451 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
452 \def\Rdash{\d@sh\nobreak\emdash}
```

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

```
453 \def\hyph{-\penalty\z@\hskip\z@skip }
454 \def\slash{/\penalty\z@\hskip\z@skip }
```

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

```
455 \def\nth#1{%
456     \def\reserved@a##1##2\@nil{\ifcat##1n%
457           0%
458          \let\reserved@b\ensuremath
459      \else##1##2%
460          \let\reserved@b\relax
461      \fi}%
462    \TestCount=\reserved@a#1\@nil\relax
463    \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
464    \T@stCount=\TestCount
465    \divide\T@stCount by 100 \multiply\T@stCount by 100
466    \advance\TestCount by-\T@stCount      % n mod 100
467    \ifnum\TestCount >20 \T@stCount=\TestCount
468      \divide\T@stCount by 10 \multiply\T@stCount by 10
469      \advance\TestCount by-\T@stCount    % n mod 10
470    \fi
471    \reserved@b{#1}%
472      \textsuperscript{\ifcase\TestCount th%      0th
473                       \or    st%               1st
474                       \or    nd%               2nd
475                       \or    rd%               3rd
476                       \else th%                nth
477                       \fi}%
478 }
```

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. . .

```
479 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
480 \def\@Review:{\@ifnextchar[%
481    {\@Rev}%
482    {\@Rev[Book review]}}
483 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
484                                         \slshape\mdseries#2}}
485 \def\reviewitem{\addvspace{\BelowTitleSkip}%
486    \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
487    \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
488    \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
489 }
490 \def\endreviewitem{{\noindent\interlinepenalty=10000
491    \therevauth\therevtitle\therevpubinfo\endgraf}%
492    \vskip\medskipamount
493 }
494 \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.

```
495 \newcount\issueseqno              \issueseqno=-1
496 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
497 \def\volyr{}
498 \def\volno{}
499 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
500        \gdef\issno{\ignorespaces#2\unskip}%
501        \setbox\TestBox=\hbox{\volyr}%
502        \ifdim \wd\TestBox > .2em \v@lx \fi }
503 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
504        \gdef\bigissdt{#1}%
505        \setbox\TestBox=\hbox{\volno}%
506        \ifdim \wd\TestBox > .2em \v@lx \fi }
507 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
508        \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
```

```
509          \setbox\TestBox=\hbox{\volno}%
510          \ifdim \wd\TestBox > .2em \v@lx \fi }
511 \vol 0, 0.
512 \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

```
513 ⟨!latex⟩\def\tubissue#1(#2)%
514 ⟨*latex⟩
515 \def\tubissue#1{\@ifnextchar(%
516   {\@tubissue@b{#1}}
517   {\@tubissue@a{#1}}}
518 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
519 \def\@tubissue@a#1#2%
520 ⟨/latex⟩
521   {\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`

```
522 \def\infil@{\jobname}
523 \def\Input #1 {\ifnum\issueseqno<0
524     \def\infil@{#1}%
525   \else
526     \def\infil@{tb\number\issueseqno#1}
527   \fi
528   \edef\jobname{\infil@}\@readFLN
529   \@@input \infil@\relax
530   \if@RMKopen
531     \immediate\closeout\@TBremarkfile\@RMKopenfalse
532   \fi
533 }
```

`\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).

```
534 \newif\if@RMKopen         \@RMKopenfalse
535 \newwrite\@TBremarkfile
536 \def\@TBremark#1{%
537   \if@RMKopen
538   \else
539     \@RMKopentrue\immediate\openout\@TBremarkfile=\infil@.rmk
540   \fi
541   \toks@={#1}%
542   \immediate\write\@TBremarkfile{^^J\the\toks@}%
```

```
543    \immediate\write16{^^JTBremark:: \the\toks@^^J}%
544 }
```

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

```
545 \let\TBremark=\gobble
```

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

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

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

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

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

```
548 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
549 \newread\@altfilenames
550 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
551    \ifeof\@altfilenames\let\@result\relax\else
552    \def\@result{\@@input\jobname.fln }\fi
553    \immediate\closein\@altfilenames
554    \@result}
555 \@readFLN
556 \everyjob=\expandafter{\the\everyjob\@readFLN}
557 \InputIfFileExists{\jobname.fln}%
558       {\TBInfo{Reading alternative file file \jobname.fln}}{}
```

The following needs to work entirely in TeX's mouth

```
559 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
560    #1\else\csname file@@#1\endcsname\fi}
561 \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.

```
562 ⟨∗!latex⟩
563 \def\pagexrefON#1{%
564        \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
565        \write\ppoutfile{%
566                \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
567        }
568 \def\PageXrefON#1{%
569        \immediate\write-1{\def\expandafter
570                        \noexpand\csname#1\endcsname{\number\pageno}}%
571        \immediate\write\ppoutfile{\def\expandafter
572                        \noexpand\csname#1\endcsname{\number\pageno}}}
573 ⟨/!latex⟩
```

```
574 ⟨*latex⟩
575 \def\pagexrefON#1{%
576         \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
577         \write\ppoutfile{%
578                 \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
579         }
580 \def\PageXrefON#1{%
581         \immediate\write-1{\def\expandafter
582                         \noexpand\csname#1\endcsname{\number\c@page}}%
583         \immediate\write\ppoutfile{\def\expandafter
584                         \noexpand\csname#1\endcsname{\number\c@page}}}
585 ⟨/latex⟩
586 \def\pagexrefOFF#1{}
587 \let\pagexref=\pagexrefOFF
588 \def\PageXrefOFF#1{}
589 \let\PageXref=\PageXrefOFF
590 \def\xreftoON#1{%
591   \ifundefined{#1}%
592     ???\TBremark{Need cross reference for #1.}%
593   \else\csname#1\endcsname\fi}
594 \def\xreftoOFF#1{???}
595 \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.

```
596 \let\TBdriver\gobble
```

Some hyphenation exceptions:

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

```
617    mono-space mono-spaced
618    name-space name-spaces
619    off-line over-view
620    pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
621     pipe-line pipe-lines
622     plug-in plug-ins pres-ent-ly pro-gram-mable
623    re-allo-cate re-allo-cates re-allo-cated
624    set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
625     sub-ex-pres-sion syn-chro-ni-city syn-chro-nous
626    text-height text-length text-width
627     time-stamp time-stamped
628    vis-ual vis-ual-ly
629    which-ever white-space white-spaces wide-spread wrap-around
630 }
631 ⟨!latex⟩\restorecat\@
632 ⟨/common⟩
633 ⟨∗classtail⟩
634 \PrelimDrafttrue
```

3.10   Page dimensions, glue, penalties etc

```
635 \textheight 54pc
636 \textwidth 39pc
637 \columnsep 1.5pc
638 \columnwidth 18.75pc
639 \parindent \normalparindent
640 \parskip \z@ % \@plus\p@
641 \leftmargini 2em
642 \leftmarginv .5em
643 \leftmarginvi .5em
644 \oddsidemargin \z@
645 \evensidemargin \z@
646 \topmargin -2.5pc
647 \headheight 12\p@
648 \headsep 20\p@
649 \marginparwidth 48\p@
650 \marginparsep 10\p@
651 \partopsep=\z@
652 \topsep=3\p@\@plus\p@\@minus\p@
653 \parsep=3\p@\@plus\p@\@minus\p@
654 \itemsep=\parsep
655 \twocolumn
656 \newdimen\pagewd        \pagewd=39pc
657 \newdimen\trimwd        \trimwd=\pagewd
658 \newdimen\trimlgt       \trimlgt=11in
659 \newdimen\headmargin    \headmargin=3.5pc
```

In LaTeX 2ε, twoside option is forced on when article.cls is loaded.

3.11 Messing about with the LaTeX logo

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

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

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

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

```
662 \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):

```
663 \DeclareLaTeXLogo{cmss}{bx}n{.3}{.15}
664 \DeclareLaTeXLogo{cmr}m{it}{.3}{.27}
665 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
666 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
667 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
668 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a
669     \csname @LaTeX@\f@family/\f@series/\f@shape\endcsname
670     \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
671     \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.

```
672 \newcommand\@LaTeX[2]{L\kern-#1em
673         {\sbox\z@ T%
674          \vbox to\ht0{\hbox{$\m@th$%
675                              \csname S@\f@size\endcsname
676                              \fontsize\sf@size\z@
677                              \math@fontsfalse\selectfont
678                              A}%
679                      \vss}%
680         }%
681         \kern-#2em%
682         \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.

```
683 \def\theauthor#1{\csname theauthor#1\endcsname}
684 \def\theaddress#1{\csname theaddress#1\endcsname}
685 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
686 \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.

```
687 ⟨!latex⟩\newcount\@tempcnta
688 \def\@defaultauthorlist{%
689   \@getauthorlist\@firstofone
690 }
```

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

```
691 \def\@getauthorlist#1{%
692   \count@\authornumber
693   \advance\count@ by -2
694   \@tempcnta0
```

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

```
695   \loop
696     \ifnum\count@>0
697       \advance\@tempcnta by \@ne
698       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
699       \advance\count@ by \m@ne
700   \repeat
701   \count@\authornumber
702   \advance\count@ by -\@tempcnta
703   \ifnum\authornumber>0
```

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

```
704     \ifnum\count@>1
705       \count@\authornumber
706       \advance\count@ by \m@ne
707       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
708     \fi
```

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

```
709     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
710   \fi
711 }
```

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...)

```
712 \def\signature#1{\def\@signature{#1}}
713 \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`

```
714 \def\@defaultsignature{{%
715     \let\thanks\@gobble
716     \ifnum\authornumber<0
```

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

```
717         \medskip
718         \frenchspacing
719         \signaturemark
720         \theauthor{\number\authornumber}\\
721         \theaddress{\number\authornumber}\\
722         \allowhyphens
723         \thenetaddress{\number\authornumber}\\
724         \thePersonalURL{\number\authornumber}\\
725     \else
```

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

```
726         \count@=0
727         \loop
728           \ifnum\count@<\authornumber
729             \medskip
730             \advance\count@ by \@ne
731             \signaturemark
732             \theauthor{\number\count@}\\
733             \theaddress{\number\count@}\\
734             {%
735               \allowhyphens
736               \thenetaddress{\number\count@}\\
737               \thePersonalURL{\number\count@}\\
738             }%
739         \repeat
740     \fi
741   }%
742 }
743 \newdimen\signaturewidth   \signaturewidth=12pc
```

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

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

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

```
745    \@tempdima\signaturewidth
746    \advance\@tempdima 1.5pc
747    \ifdim \@tempdima>\columnwidth
748      \signaturewidth \columnwidth
749      \advance\signaturewidth -1.5pc
750    \fi
751    \par
752    \penalty9000
753    \vspace{#1}%
754    \rightline{%
755      \vbox{\hsize\signaturewidth \ninepoint \raggedright
756        \parindent \z@ \everypar={\hangindent 1pc }
757        \parskip \z@skip
758        \def\|{\unskip\hfil\break}%
759        \def\\{\endgraf}%
760        \def\phone{\rm Phone: }
761        \rm\@signature}%
762    }%
763    \ifnum\authornumber<0 \endgroup\fi
764 }
765 \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.

```
766 \newcount\authornumber
767 \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`).

```
768 \def\author{%
769   \global\advance\authornumber\@ne
770   \TB@author
771 }
```

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

```
772 \def\contributor{%
773   \begingroup
774   \authornumber\m@ne
775   \TB@author
776 }
```

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).

```
777 \def\TB@author#1{%
778   \expandafter\def\csname theauthor\number\authornumber\endcsname
779       {\ignorespaces#1\unskip}%
780   \expandafter\def\csname theaddress\number\authornumber\endcsname
781     {\TBWarningNL{Address for #1\space missing}\@gobble}%
782   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
783     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
784   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
785     \@gobble
786   }
787 \def\EDITORnoaddress{%
788   \expandafter\let\csname theaddress\number\authornumber\endcsname
789     \@gobble
790 }
791 \def\EDITORnonetaddress{%
792   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
793     \@gobble
794 }
```

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

```
795 \def\address#1{%
796   \expandafter\def\csname theaddress\number\authornumber\endcsname
797       {\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*!

```
798 \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.

```
799 \newcommand\netaddress[1][\relax]{%
800   \begingroup
801   \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.

```
802   #1\@sanitize\makespace\ \makeactive\@
803   \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?!**)

```
804 \def\@relay@netaddress#1{%
805   \ProtectNetChars
806   \expandafter\protected@xdef
807       \csname thenetaddress\number\authornumber\endcsname
808     {\protect\leavevmode\textrm{\@network}%
809      {\protect\NetAddrChars\net
810       \ignorespaces#1\unskip}}%
811   \endgroup
812   }
```

\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.

```
813 \def\personalURL{\begingroup
814   \@sanitize\makespace\ \makeactive\@
815   \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
816 \def\@personalURL#1{%
817   \ProtectNetChars
818   \expandafter\protected@xdef
819     \csname thePersonalURL\number\authornumber\endcsname{%
820       \protect\leavevmode
821       {%
822         \protect\URLchars\net
823         \ignorespaces#1\unskip
824       }%
825     }%
```

```
826    \endgroup
827    }
```

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...

```
828 {%
829    \makecomment\*
830    \makeactive\@
831    \gdef\netaddrat{\makeactive\@*
832      \def@{\discretionary{\char"40}{}{\char"40}}}
833    \makeactive\%
834    \gdef\netaddrpercent{\makeactive\%*
835      \def%{\discretionary{\char"25}{}{\char"25}}}
836    \makeactive\.
837    \gdef\netaddrdot{\makeactive\.*
838      \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.

```
839    \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
840    \makeactive\/
841    \gdef\URLchars{*
842      \NetAddrChars
843      \makeactive\/*
844      \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.

```
845    \gdef\ProtectNetChars{*
846      \def@{\protect@}*
847      \def%{\protect%}*
848      \def.{\protect.}*
849      \def/{\protect/}*
850      }
851 }
```

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

```
852 \if@compatibility
853    \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\symtypewriter}
854 \else
855    \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
856 \fi
857 \def\authorlist#1{\def\@author{#1}}
858 \def\@author{\@defaultauthorlist}
```

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

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

```
859 \newif\if@articletitle
860 \def\maketitle{\@ifstar
861   {\@articletitlefalse\@r@maketitle}%
862   {\@articletitletrue\@r@maketitle}%
863 }
864 \def\@r@maketitle{\par
865  \ifdim\PreTitleDrop > \z@
866    \loop
867    \ifdim \PreTitleDrop > \textheight
868      \vbox{}\vfil\eject
869      \advance\PreTitleDrop by -\textheight
870    \repeat
871    \vbox to \PreTitleDrop{}
872    \global\PreTitleDrop=\z@
873  \fi
874  \begingroup
875  \setcounter{footnote}{0}
876  \def\thefootnote{\fnsymbol{footnote}}
877  \@maketitle
878  \@thanks
879  \endgroup
880  \setcounter{footnote}{0}
881  \gdef\@thanks{}
882  }
```

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:

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

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

```
884 \newdimen\stbaselineskip        \stbaselineskip=18\p@
885 \newdimen\stfontheight
886 \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.

```
887 \newif\ifSecTitle
888 \SecTitlefalse
889 \newif\ifWideSecTitle
890 \newcommand\sectitle{%
891   \SecTitletrue
892   \@ifstar
893     {\WideSecTitletrue\def\s@ctitle}%
894     {\WideSecTitlefalse\def\s@ctitle}%
895 }
```

\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.

```
896 \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.

```
897 \newskip\AboveTitleSkip  \AboveTitleSkip=12\p@
898 \newskip\BelowTitleSkip  \BelowTitleSkip=8\p@
899 \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...

```
900 \def\@sectitle #1{%
901   \par
902   \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.

```
903   \ifWideSecTitle\else\secsep\fi
904   {%
905     \fboxrule\strulethickness
906     \fboxsep\z@
907     \noindent\framebox[\hsize]{%
908       \vbox{%
909         \raggedcenter
```

```
910        \let\\\@sectitle@newline
911        \sectitlefont
912        \makestrut[2\stfontheight;\z@]%
913        #1%
914        \makestrut[\z@;\stfontheight]\endgraf
915      }%
916    }%
917  }%
918  \nobreak
919  \vskip\baselineskip
920 }
```

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

```
921 \newcommand{\@sectitle@newline}[1][\z@]{%
922   \ifdim#1>\z@
923     \makestrut[\z@;#1]%
924   \fi
925   \unskip\break
926 }
```

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).

```
927 \def\@makesectitle{\ifSecTitle
928     \global\SecTitlefalse
929     \ifWideSecTitle
930       \twocolumn[\@sectitle{\s@ctitle}]%
931       \global\WideSecTitlefalse
932     \else
933       \@sectitle{\s@ctitle}%
934     \fi
935   \else
936     \vskip\AboveTitleSkip
937     \kern\topskip
938     \hrule \@height\z@ \@depth\z@ \@width 10\p@
939     \kern-\topskip
940     \kern-\strulethickness
941     \hrule \@height\strulethickness \@depth\z@
942     \kern\medskipamount
943     \nobreak
944   \fi
945 }
```

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

```
946 \def\@maketitle{%
947   \@makesectitle
948   \if@articletitle{%
949     \nohyphens \interlinepenalty\@M
950     \setbox0=\hbox{%
```

```
951        \let\thanks\@gobble
952        \let\\=\quad
953        \let\and=\quad
954        \ignorespaces\@author}%
955      {%
956        \noindent\bf\raggedright\ignorespaces\@title\endgraf
957      }%
958      \ifdim \wd0 < 5\p@              % omit if author is null
959      \else
```

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

```
960        \nobreak \vskip 4\p@
961        {%
962          \leftskip=\normalparindent
963          \raggedright
964          \def\and{\unskip\\}%
965          \noindent\@author\endgraf
966        }%
967      \fi
968      \nobreak
969      \vskip\BelowTitleSkip
970    }\fi%
971    \global\@afterindentfalse
972    \aftergroup\@afterheading
973 }
```

Dedications are ragged right, in italics.

```
974 \newenvironment{dedication}%
975    {\raggedright\noindent\itshape\ignorespaces}%
976    {\endgraf\medskip}
```

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

```
977 \renewenvironment{abstract}%
978    {%
979      \begin{SafeSection}%
980      \section*{Abstract}%
981    }%
982    {\end{SafeSection}}
983 \newenvironment{longabstract}%
984    {%
985      \begin{SafeSection}%
986      \section*{Abstract}%
987      \bgroup\small
988    }%
989    {%
990      \endgraf\egroup
991      \end{SafeSection}%
992    \vspace{.25\baselineskip}
993    \begin{center}
994      {$--*--$}
```

```
995   \end{center}
996   \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.

```
997  \if@numbersec
998    \def\section{\TB@startsection{{section}%
999                                 1%
1000                                \z@
1001                                {-8\p@}%
1002                                {4\p@}%
1003         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1004    \def\subsection{\TB@startsection{{subsection}%
1005                                   2%
1006                                   \z@
1007                                   {-8\p@}%
1008                                   {4\p@}%
1009         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1010    \def\subsubsection{\TB@startsection{{subsubsection}%
1011                                      3%
1012                                      \z@
1013                                      {-8\p@}%
1014                                      {4\p@}%
1015         {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1016    \def\paragraph{\TB@startsection{{paragraph}%
1017                                  4%
1018                                  \z@
1019                                  {2.5ex\@plus 1ex}%
1020                                  {-1em}%
1021                                  {\normalsize\bf}}}
```

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

```
1022  \else
1023    \setcounter{secnumdepth}{0}
1024    \def\section{\TB@nolimelabel
1025               \TB@startsection{{section}%
1026                                  1%
1027                                  \z@
1028                                  {-8\p@}%
```

```
1029                                    {4\p@}%
1030            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1031 \def\subsection{\TB@nolimelabel
1032             \TB@startsection{{subsection}%
1033                                  2%
1034                                  \z@
1035                                  {-8\p@}%
1036                                  {-0.5em\@plus-\fontdimen3\font}%
1037            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1038 \def\subsubsection{\TB@nolimelabel
1039                \TB@startsection{{subsubsection}%
1040                                    3%
1041                                    \parindent
1042                                    {-8\p@}%
1043                                    {-0.5em\@plus-\fontdimen3\font}%
1044            {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1045 \fi
```

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

```
1046 \if@numbersec
1047   \def\TB@startsection#1{\@startsection#1}%
1048 \else
1049   \def\TB@startsection#1{%
1050     \@ifstar
1051       {\TBWarning{*-form of \expandafter\string\csname\@firstofsix#1%
1052                   \endcsname\space
1053                   \MessageBreak
1054                   conflicts with nonnumber class option}%
1055        \@startsection#1}%
1056       {\@startsection#1}%
1057   }
1058 \fi
1059 \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).

```
1060 \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.

```
1061 \newenvironment{SafeSection}%
1062   {\let\TB@startsection\TB@safe@startsection}%
1063   {}
```

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.

```
1064 \if@numbersec
1065   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1066 \else
1067   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1068   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1069 \fi
1070 \def\chapter{\TB@nosection\chapter\section}
1071 \def\part{\TB@nosection\part\section}
1072 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1073     \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.

```
1074 \def\TBtocsectionfont{\normalfont}
1075 \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. . .

```
1076 %\def\l@part#1#2{\addpenalty{\@secpenalty}%
1077 %   \addvspace{2.25em\@plus\p@}%
1078 %   \begingroup
1079 %     \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
1080 %     {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1081 %     \nobreak
1082 %   \endgroup}
1083 %
1084 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1085   \addvspace{\TBtocsectionspace}%
1086   \@tempdima 1.5em
1087   \begingroup
1088     \parindent\z@ \rightskip\z@  % article style makes \rightskip > 0
1089     \parfillskip\z@
1090     \TBtocsectionfont
1091     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1092     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1093   \endgroup}
```

---

[2]Thurber, *The Wonderful O*

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:

```
1094 \renewcommand\appendix{\par
1095    \renewcommand\thesection{\@Alph\c@section}%
1096    \setcounter{section}{0}%
1097    \if@numbersec
1098    \else
1099      \setcounter{secnumdepth}{1}%
1100    \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.

```
1101    \def\@tempa{appendix}
1102    \ifx\@tempa\@currenvir
1103      \expandafter\@appendix@env
1104    \fi
1105 }
```

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

```
1106 \newcommand\app@prefix@section{}
1107 \newcommand\@appendix@env[1][Appendix]{%
1108    \renewcommand\@seccntformat[1]{\csname app@prefix@##1\endcsname
1109      \csname the##1\endcsname\quad}%
1110    \renewcommand\app@prefix@section{#1 }%
1111 }
```

Ending an appendix environment is pretty trivial...

```
1112 \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

```
1113 \def\TB@nolimelabel{%
1114   \def\@currentlabel{%
1115     \protect\TBWarning{%
1116       Invalid reference to numbered label on page \thepage
1117       \MessageBreak made%
1118     }%
1119     \textbf{?!?}%
1120   }%
1121 }
```

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.

```
1122 \let\TB@@sect\@sect
1123 \let\TB@@ssect\@ssect
1124 \def\@sect#1#2#3#4#5#6[#7]#8{%
1125   \def\@currentlabelname{#7}%
1126   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1127 }
1128 \def\@ssect#1#2#3#4#5{%
1129  \def\@currentlabelname{#5}%
1130  \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1131 }
```

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

```
1132 \def\label#1{{%
1133     \@bsphack
1134     \let\label\@gobble
1135     \let\index\@gobble
1136     \if@filesw
1137       \protected@write\@auxout{}%
1138         {\string\newlabel{#1}{%
1139           {\@currentlabel}{\thepage}{\@currentlabelname}}%
1140       }%
1141     \fi
1142     \@esphack
1143   }%
1144 }
```

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

```
1145 \let\@currentlabelname\@empty
```

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

```
1146 \DeclareRobustCommand\ref[1]{\expandafter\@setref
1147   \csname r@#1\endcsname\@firstofthree{#1}}
1148 \DeclareRobustCommand\pageref[1]{\expandafter\@setref
1149   \csname r@#1\endcsname\@secondofthree{#1}}
1150 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1151   \csname r@#1\endcsname\@thirdofthree{#1}}
1152 \long\def\@firstofthree#1#2#3{#1}
1153 \long\def\@secondofthree#1#2#3{#2}
1154 \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`.

```
1155 \long\def\@makecaption#1#2{%
1156   \vskip\abovecaptionskip
1157   \sbox\@tempboxa{\small #1: #2}%
1158   \ifdim \wd\@tempboxa >\hsize
1159     \raggedright\hyphenpenalty=\@M \parindent=1em
1160     {\small \noindent #1: #2\par}%
1161   \else
1162     \global \@minipagefalse
1163     \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1164   \fi
1165   \vskip\belowcaptionskip}
```

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

```
1166 \def\fnum@figure{{\small \bf \figurename\nobreakspace\thefigure}}
1167 \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.

```
1168 \renewcommand\normalsize{%
1169   \@setfontsize\normalsize\@xpt\@xiipt
1170   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1171   \belowdisplayskip=\abovedisplayskip
1172   \abovedisplayshortskip=\z@\@plus 3\p@
1173   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1174 }
```

```
1175
1176 \renewcommand\small{%
1177     \@setfontsize\small\@ixpt{11}%
1178     \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1179     \belowdisplayskip=\abovedisplayskip
1180     \abovedisplayshortskip=\z@\@plus 2\p@
1181     \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1182 }
1183 \renewcommand\footnotesize{%
1184     \@setfontsize\footnotesize\@viiipt{9.5}%
1185     \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1186     \belowdisplayskip=\abovedisplayskip
1187     \abovedisplayshortskip=\z@\@plus 3\p@
1188     \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1189 }
```

3.20   Lists and other text inclusions

```
1190 \def\@listi{%
1191   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1192   \itemsep=\parsep
1193   \listparindent=1em
1194   }
1195
1196 \def\@listii{%
1197   \leftmargin\leftmarginii
1198   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1199   \topsep=2\p@\@plus\p@\@minus\p@
1200   \parsep=\p@\@plus\p@\@minus\p@
1201   \itemsep=\parsep
1202   \listparindent=1em
1203   }
1204
1205 \def\@listiii{%
1206   \leftmargin=\leftmarginiii
1207   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1208   \topsep=\p@\@plus\p@\@minus\p@
1209   \parsep=\z@
1210   \itemsep=\topsep
1211   \listparindent=1em
1212   }
1213 \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.

```
1214 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1215       \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}
```

3.21   Some fun with `verbatim`

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

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

```
1216 %\let\@TB@verbatim\@verbatim
1217 \let\@TBverbatim\verbatim
1218 \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.)

```
1219 \def\verbatim{\par\obeylines
1220    \futurelet\reserved@a\@switch@sqbverbatim}
1221 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1222    \expandafter\@sqbverbatim\else
1223    \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1224 \def\@sqbverbatim[#1]{%
```

The optional argument consists entirely of functions that modify the appearance of the environment. Following the `plain` style, we define the functions we can execute in the optional argument here.

The command `\ruled` tells us that there should be rules above and below the verbatim block.

```
1225    \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.

```
1226    #1\@TBverbatim}
```

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

```
1227 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1228    \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1229    \trivlist \item\relax
```

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```
1230    \if@minipage\else\vskip\parskip\fi
1231    \leftskip\@totalleftmargin\rightskip\z@skip
1232    \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1233    \@@par
1234    \@tempswafalse
1235    \def\par{%
1236      \if@tempswa
1237        \leavevmode \null \@@par\penalty\interlinepenalty
1238      \else
1239        \@tempswatrue
1240        \ifhmode\@@par\penalty\interlinepenalty\fi
1241      \fi}%
1242    \obeylines \verbatim@font \@noligs
1243    \let\do\@makeother \dospecials
1244    \everypar \expandafter{\the\everypar \unpenalty}%
1245 }%
```

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).

```
1246 \def\endverbatim{\@TBendverbatim
1247    \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

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

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

```
1248 {\makeactive<
1249   \gdef<#1>{{\reset@font\ensuremath{\langle}%
1250     \textit{#1}%
1251     \ensuremath{\rangle}}}
1252 }
```

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

```
1253 \let\if@ruled\iffalse
```

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}...
```

---

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

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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.

```
1254 \if@Harvardcite
1255 \let\@internalcite\cite
```

Normal forms.

```
1256 \def\cite{\def\@citeseppen{-1000}%
1257     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1258     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1259 \def\citeNP{\def\@citeseppen{-1000}%
1260     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1261     \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1262 \def\citeN{\def\@citeseppen{-1000}%
1263     \def\@cite##1##2{##1\if@tempswa , ##2)\else()}\fi}%
1264     \def\citeauthoryear##1##2##3{##1 (##3}\@citedata}
1265 \def\citeA{\def\@citeseppen{-1000}%
1266     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1267     \def\citeauthoryear##1##2##3{##1}\@internalcite}
1268 \def\citeANP{\def\@citeseppen{-1000}%
1269     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1270     \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1271 \def\shortcite{\def\@citeseppen{-1000}%
1272     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1273     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1274 \def\shortciteNP{\def\@citeseppen{-1000}%
1275     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1276     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1277 \def\shortciteN{\def\@citeseppen{-1000}%
1278     \def\@cite##1##2{##1\if@tempswa , ##2)\else()}\fi}%
1279     \def\citeauthoryear##1##2##3{##2 (##3}\@citedata}
1280 \def\shortciteA{\def\@citeseppen{-1000}%
1281     \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1282     \def\citeauthoryear##1##2##3{##2}\@internalcite}
1283 \def\shortciteANP{\def\@citeseppen{-1000}%
1284     \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1285     \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1286 \def\citeyear{\def\@citeseppen{-1000}%
```

```
1287      \def\@cite##1##2{(##1\if@tempswa , ##2\fi)}%
1288      \def\citeauthoryear##1##2##3{##3}\@citedata}
1289 \def\citeyearNP{\def\@citeseppen{-1000}%
1290      \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1291      \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.

```
1292 \def\@citedata{%
1293        \@ifnextchar [{\@tempswatrue\@citedatax}%
1294                               {\@tempswafalse\@citedatax[]}%
1295 }
1296
1297 \def\@citedatax[#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}}%
```

Don't box citations, separate with ; and a space; Make the penalty between citations negative: a good place to break.

```
1304 \def\@citex[#1]#2{%
1305 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1306   \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1307     {\@citea\def\@citea{; }\@ifundefined% by Young
1308        {b@\@citeb}{{\bf ?}%
1309        \@warning{Citation `\@citeb' on page \thepage \space undefined}}%
1310 {\csname b@\@citeb\endcsname}}}{#1}}%
```

No labels in the bibliography.

```
1311 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```
1312 \newlength{\bibhang}
1313 \setlength{\bibhang}{2em}
```

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

```
1314 \newdimen\bibindent
1315 \bibindent=1.5em
1316 \@ifundefined{refname}%
1317    {\newcommand{\refname}{References}}%
1318    {}%
```

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

```
1319 \def\thebibliography#1{%
1320   \let\TB@startsection\TB@safe@startsection
1321   \section*{\refname
```

```
1322     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1323   \list{[\arabic{enumi}]}{%
1324     \labelwidth\z@ \labelsep\z@
1325     \leftmargin\bibindent
1326     \itemindent -\bibindent
1327     \listparindent \itemindent
1328     \parsep \z@
1329     \usecounter{enumi}}
1330   \def\newblock{}
1331   \BibJustification
1332   \sfcode'\.=1000\relax
1333 }
```

etal   Other bibliography odds and ends.

```
\bibentry 1334 \def\etal{et\,al.\@}
1335 \def\bibentry{%
1336   \smallskip
1337   \hangindent=\parindent
1338   \hangafter=1
1339   \noindent
1340   \sloppy
1341   \clubpenalty500 \widowpenalty500
1342   \frenchspacing
1343 }
```

\bibliography   Changes made to accommodate TUB file naming conventions

```
\bibliographystyle 1344 \def\bibliography#1{%
1345   \if@filesw
1346     \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1347   \fi
1348   \@input{\jobname.bbl}%
1349 }
1350 \def\bibliographystyle#1{%
1351   \if@filesw
1352     \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1353   \fi
1354 }
```

\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.

```
1355 \else
1356 \let\TB@@thebibliography\thebibliography
1357 \def\thebibliography{%
1358   \let\TB@startsection\TB@safe@startsection
1359   \let\sloppy\BibJustification
1360   \TB@@thebibliography}
1361 \fi
```

\BibJustification
\SetBibJustification
\TB@@sloppy

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

```
1362 \let\TB@@sloppy\sloppy
1363 \let\BibJustification\TB@@sloppy
1364 \newcommand{\SetBibJustification}[1]{%
1365   \renewcommand{\BibJustification}{#1}%
1366 }
1367 \ResetCommands\expandafter{\the\ResetCommands
1368   \let\BibJustification\TB@@sloppy
1369 }
```

3.23   Registration marks

```
1370 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1371 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1372 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
```

"T" marks centered on top and bottom edges of paper
```
1373 \def\ttopregister{\dlap{%
1374         \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1375                       \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1376         \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1377 \def\tbotregister{\ulap{%
1378         \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1379         \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1380                       \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1381 \def\topregister{\ttopregister}
1382 \def\botregister{\tbotregister}
```

3.24   Running heads

```
1383 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1384 \def\PrelimDraftfooter{%
1385   \dlap{\kern\textheight\kern3pc
1386         \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}
1387   }}
1388
```

registration marks; these are temporarily inserted in the running head
```
1389 \def\MakeRegistrationMarks{}
1390 \def\UseTrimMarks{%
1391   \def\MakeRegistrationMarks{%
1392     \ulap{\rlap{%
1393       \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}%
1394             \topregister\vskip \headmargin \vskip 10\p@}}}}%
1395   }
1396
1397 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1398   \normalsize\csname normalshape\endcsname\rm
```

```
1399      \rtitlex\qquad\midrtitle \hfil \thepage}
1400 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1401    \normalsize\csname normalshape\endcsname\rm
1402    \thepage\hfil\midrtitle\qquad\rtitlex}
1403 \def\@oddfoot{}
1404 \def\@evenfoot{}
1405 \def\ps@headings{}
1406 \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 LATEX 2$_\varepsilon$ for 1995/06/01 (with the use of `\hb@xt@`). *This* time there's no semantic change, but...

```
1407 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1408      \global\setbox\@leftcolumn\box\@outputbox
1409      \global\brokenpenalty10000
1410   \else \global\@firstcolumntrue
1411      \global\brokenpenalty100
1412    \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1413      {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1414       \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1415       \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1416       \@whilesw\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1417    \fi}
```

3.26 Font-related definitions and machinery

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

```
1418 \newif\ifFirstPar        \FirstParfalse
1419 \def\smc{\sc}
1420 \def\ninepoint{\small}
1421 ⟨/classtail⟩
```

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

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

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

```
1422 ⟨∗common⟩
1423 \DeclareRobustCommand\SMC{%
1424   \ifx\@currsize\normalsize\small\else
1425    \ifx\@currsize\small\footnotesize\else
1426     \ifx\@currsize\footnotesize\scriptsize\else
1427      \ifx\@currsize\large\normalsize\else
1428       \ifx\@currsize\Large\large\else
1429        \ifx\@currsize\LARGE\Large\else
1430         \ifx\@currsize\scriptsize\tiny\else
1431          \ifx\@currsize\tiny\tiny\else
1432           \ifx\@currsize\huge\LARGE\else
1433            \ifx\@currsize\Huge\huge\else
1434             \small\SMC@unknown@warning
1435   \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1436 }
1437 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: nonstandard
1438     text font size command -- using \string\small}}
1439 \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.

```
1440 \newcommand\acro[1]{\textSMC{#1}\@}
1441 ⟨/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!)

```
1442 ⟨∗classtail⟩
1443 \def\xEdNote{{\EdNoteFont Editor's note:\enspace }}
1444 \def \EdNote{\@ifnextchar[%
1445   {%
1446     \ifvmode
1447       \smallskip\noindent\let\@EdNote@\@EdNote@v
1448     \else
1449       \unskip\quad\def\@EdNote@{\unskip\quad}%
1450     \fi
1451     \@EdNote
1452   }%
1453   \xEdNote
1454 }
```

```
1455 \long\def\@EdNote[#1]{%
1456   [\thinspace\xEdNote\ignorespaces
1457     #1%
1458    \unskip\thinspace]%
1459   \@EdNote@
1460 }
1461 \def\@EdNote@v{\par\smallskip}
```

Macros for Mittelbach's self-documenting style

```
1462 \def\SelfDocumenting{%
1463   \setlength\textwidth{31pc}
1464   \onecolumn
1465   \parindent \z@
1466   \parskip 2\p@\@plus\p@\@minus\p@
1467   \oddsidemargin 8pc
1468   \evensidemargin 8pc
1469   \marginparwidth 8pc
1470   \toks@\expandafter{\@oddhead}%
1471   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1472   \toks@\expandafter{\@evenhead}%
1473   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1474   \def\ps@titlepage{}%
1475 }
1476 \def\ps@titlepage{}
1477
1478 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}%
1479   \llap{\@makefnmark}\null$\mskip5mu$#1}
1480
1481 %% \long\def\@makefntext#1{\parindent 1em
1482 %%   \noindent
1483 %%   \hb@xt@2em{\hss\@makefnmark}%
1484 %%   \hskip0.27778\fontdimen6\textfont\z@\relax
1485 %%   #1%
1486 %% }
```

Sometimes we want the label "Editor's Note:", sometimes not.
```
1487 \def\creditfootnote{\nomarkfootnote\xEdNote}
1488 \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.

```
1489 \gdef\nomarkfootnote#1#2{\begingroup
1490   \def\thefootnote{}%
1491   % no period, please, also no fnmark.
1492   \def\@makefntext##1{##1}%
1493   \footnotetext{\noindent #1#2}%
1494   \endgroup
1495 }
```

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.

```
1496 \if@Harvardcite
1497   \AtBeginDocument{%
1498     \bibliographystyle{ltugbib}%
1499   }
1500 \fi
1501 \authornumber\z@
1502 \let\@signature\@defaultsignature
1503 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1504                                         configuration information}}{}
1505 ⟨/classtail⟩
```

4   LaTeX 2ε Proceedings class

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

```
1506 ⟨*ltugproccls⟩
1507 \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.

```
1508 \newif\if@proctw@column  \@proctw@columntrue
1509 \DeclareOption{onecolumn}{\@proctw@columnfalse}
```

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

```
1510 \newif\if@proc@sober
1511 \newif\if@proc@numerable
1512 \DeclareOption{tug95}{%
1513   \@proc@soberfalse
1514   \@proc@numerablefalse
1515 }
1516 \DeclareOption{tug96}{%
1517   \@proc@sobertrue
1518   \@proc@numerablefalse
1519 }
1520 \DeclareOption{tug97}{%
1521   \@proc@sobertrue
1522   \@proc@numerabletrue
1523 }
1524 \DeclareOption{tug2002}{%
1525   \@proc@sobertrue
```

```
1526    \@proc@numerabletrue
1527    \let\if@proc@numbersec\iftrue
1528    \PassOptionsToClass{numbersec}{ltugboat}%
1529 }
```

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

```
1530 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1531    \PassOptionsToClass{numbersec}{ltugboat}%
1532 }
1533 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1534    \PassOptionsToClass{nonumber}{ltugboat}%
1535 }
```

\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.

```
1536 \newif\ifTB@title
1537 \DeclareOption{title}{\TB@titletrue}
1538 \DeclareOption{notitle}{\TB@titlefalse
1539    \AtBeginDocument{\stepcounter{page}}}
```

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

```
1540 \DeclareOption{tugproc}{%
1541    \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1542 }
```

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

```
1543 \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 T_EXie. . .)

```
1544 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1545               {Loading ltugproc configuration information}}{}
1546 \@ifundefined{TUGprocExtraOptions}%
1547    {\let\TUGprocExtraOptions\@empty}%
1548    {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}
```

\tugProcYear Now work out what year it is

```
1549 \@tempcnta\year
1550 \ifnum\@tempcnta<2000
1551    \divide\@tempcnta by100
1552    \multiply\@tempcnta by100
1553    \advance\@tempcnta-\year
1554    \@tempcnta-\@tempcnta
1555 \fi
```

53

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

```
1556 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1557                {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1558 \@tempa
1559 \ClassInfo{ltugproc}{Class believes year is
1560    \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1561      \@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.

```
1562 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1563    \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.

```
1564 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1565 \ProcessOptions
1566 \if@proc@numbersec
1567    \if@proc@numerable
1568    \else
1569      \ClassWarning{\@tugclass}{This year's proceedings may not have
1570        numbered sections}%
1571    \fi
1572 \fi
```

Call ltugboat, adding whichever section numbering option is appropriate

```
1573 \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.

```
1574 \def\maketitle{%
1575    \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).

```
1576      \ifshortAuthor\else
1577        \global\let\rhAuthor\@empty
1578        \def\g@addto@rhAuthor##1{%
1579          \begingroup
1580            \toks@\expandafter{\rhAuthor}%
1581            \let\thanks\@gobble
1582            \protected@xdef\rhAuthor{\the\toks@##1}%
1583          \endgroup
1584        }%
1585        \@getauthorlist\g@addto@rhAuthor
```

54

```
1586    \fi
```
now, the real business of setting the title
```
1587    \ifTB@title
1588      \setcounter{footnote}{0}%
1589      \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1590      \if@proctw@column
1591        \twocolumn[\@maketitle]%
1592      \else
1593        \onecolumn
1594        \global\@topnum\z@
1595        \@maketitle
1596      \fi
1597      \@thanks
1598      \thispagestyle{TBproctitle}
1599    \fi
1600    \endgroup
1601    \TB@madetitletrue
1602 }
1603 \newif\ifTB@madetitle  \TB@madetitlefalse
```

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

```
1604 \def\@TB@test@document{%
1605   \edef\@tempa{\the\everypar}
1606   \def \@tempb{\@nodocument}
1607   \ifx \@tempa\@tempb
1608     \@nodocument
1609   \fi
1610 }
```

\AUTHORfont   Define the fonts for titles and things
\TITLEfont
\addressfont
\netaddrfont
```
1611 \def\AUTHORfont  {\large\rmfamily\mdseries\upshape}
1612 \def\TITLEfont   {\Large\rmfamily\mdseries\upshape}
1613 \def\addressfont{\small\rmfamily\mdseries\upshape}
1614 \def\netaddrfont{\small\ttfamily\mdseries\upshape}
```

\aboveauthorskip   Some stretchable stuff to permit variability in page layout.
\belowauthorskip
\belowabstractskip
```
1615 \newskip\aboveauthorskip    \aboveauthorskip=18\p@ \@plus4\p@
1616 \newskip\belowauthorskip    \belowauthorskip=\aboveauthorskip
1617 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@
```

\@maketitle   The body of \maketitle
```
1618 \def\@maketitle{%
1619   {\parskip\z@
1620    \frenchspacing
1621    \TITLEfont\raggedright\noindent\@title\par
1622      \count@=0
```

```
1623      \loop
1624      \ifnum\count@<\authornumber
1625        \vskip\aboveauthorskip
1626        \advance\count@\@ne
1627        {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1628        \addressfont\theaddress{\number\count@}\endgraf
1629        {%
1630          \allowhyphens
1631          \hangindent1.5pc
1632          \netaddrfont\thenetaddress{\number\count@}\endgraf
1633          \hangindent1.5pc
1634          \thePersonalURL{\number\count@}\endgraf
1635        }%
1636      \repeat
1637    \vskip\belowauthorskip}%
1638    \if@abstract
1639      \centerline{\bfseries Abstract}%
1640      \vskip.5\baselineskip\rmfamily
1641      \list{}{\listparindent20\p@
1642        \itemindent\z@ \leftmargin4.875pc
1643        \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1644          \the\abstract@toks
1645      \endlist\global\@ignoretrue
1646    \fi
1647    \vskip\belowabstractskip
1648    \global\@afterindentfalse\aftergroup\@afterheading
1649  }
```

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

```
1650 %\def\thanks#1{\@bsphack\TBWarning{\string\thanks\space
1651 %                is not supported}\@esphack}
```

abstract \
\if@abstract \
\abstract@toks

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

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

```
1652 \newtoks\abstract@toks  \abstract@toks{}
1653 \let\if@abstract\iffalse
1654 \def\abstract{%
```

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

```
1655   \ifTB@madetitle
```

```
1656      \TBWarning{abstract environment after \string\maketitle}
1657   \fi
1658   \def\@abstract@{abstract}%
1659   \ifx\@currenvir\@abstract@
1660   \else
1661     \TBError{\string\abstract\space is illegal:%
1662        \MessageBreak
1663        use \string\begin{\@abstract@} instead}%
1664        {\@abstract@\space may only be used as an environment}
1665   \fi
1666   \global\let\if@abstract\iftrue
1667   {\ifnum0=`}\fi
1668   \@abstract@getbody}
1669 \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}`

```
1670 \long\def\@abstract@getbody#1\end{%
1671   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1672   \@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.

```
1673 \def\@abstract@findend#1{%
1674   \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.

```
1675   \ifx\@tempa\@abstract@
1676      \expandafter\@abstract@end
1677   \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)

```
1678      \def\@tempb{document}%
1679      \ifx\@tempa\@tempb
1680        \TBError{\string\begin{\@abstract@}
1681           ended by \string\end{\@tempb}}%
1682         {You've forgotten \string\end{\@abstract@}}
1683      \else
1684        \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1685        \expandafter\expandafter\expandafter\@abstract@getbody
1686      \fi
1687   \fi}
```

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

```
1688 \def\@abstract@end{\ifnum0=`{\fi}%
1689   \expandafter\end\expandafter{\@abstract@}}
```

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

```
1690 \renewcommand{\makesignature}{\TBWarning
1691             {\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.

```
1692 \renewcommand\title{\@dblarg\TB@title}
1693 \def\TB@title[#1]#2{\gdef\@title{#2}%
1694   \bgroup
1695     \let\thanks\@gobble
1696     \let\\\ %
1697     \protected@xdef\rhTitle{#1}%
1698   \egroup
1699 }
```

\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.

```
1700 \def\shortTitle #1{\def\rhTitle{#1}}
1701 \newif\ifshortAuthor
1702 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}
```

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

```
1703 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
1704   \let\@evenhead\MakeRegistrationMarks
1705   \TB@definefeet
1706 }
1707 \def\ps@TBproc{%
1708   \def\@oddhead{\MakeRegistrationMarks
1709     {%
1710       \hfil
1711       \def\\{\unskip\ \ignorespaces}%
1712       \rmfamily\rhTitle
1713     }%
1714   }%
1715   \def\@evenhead{\MakeRegistrationMarks
1716     {%
1717       \def\\{\unskip\ \ignorespaces}%
1718       \rmfamily\rhAuthor
1719       \hfil
1720     }%
1721   }%
1722   \TB@definefeet
1723 }
1724
1725 \advance\footskip8\p@    % for deeper running feet
```

```
1726
1727 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1728 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1729   {#2}}
1730 \def\TB@definefeet{%
1731   \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1732     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1733   \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1734     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1735 }
1736
1737 \def\pfoottext{{\smc Preprint}: Proceedings of the \volyr{} Annual Meeting}
1738 \def\rfoottext{\normalfont\TUB, \volx\Dash
1739   {Proceedings of the \volyr{} Annual Meeting}}
1740
1741 \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).

```
1742 \if@proc@numbersec
1743 \else
1744   \setcounter{secnumdepth}{0}
1745 \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.

```
1746 \if@proc@numbersec
1747 \else
1748   \if@proc@sober
1749     \def\section
1750           {\TB@nolimelabel
1751            \TB@startsection{{section}%
1752                            1%
1753                            \z@%
1754                            {-8\p@\@plus-2\p@\@minus-2\p@}%
1755                            {6\p@}%
1756                            {\normalsize\bfseries\raggedright}}}
1757   \else
1758     \def\section
1759           {\TB@nolimelabel
1760            \TB@startsection{{section}%
1761                            1%
```

```
1762                           \z@%
1763                           {-8\p@\@plus-2\p@\@minus-2\p@}%
1764                           {6\p@}%
1765                           {\large\bfseries\raggedright}}}
1766   \fi
1767   \def\subsection
1768         {\TB@nolimelabel
1769          \TB@startsection{{subsection}%
1770                          2%
1771                          \z@%
1772                          {6\p@\@plus 2\p@\@minus2\p@}%
1773                          {-5\p@\@plus -\fontdimen3\the\font}%
1774                          {\normalsize\bfseries}}}
1775   \def\subsubsection
1776         {\TB@nolimelabel
1777          \TB@startsection{{subsubsection}%
1778                          3%
1779                          \parindent%
1780                          \z@%
1781                          {-5\p@\@plus -\fontdimen3\the\font}%
1782                          {\normalsize\bfseries}}}
1783 \fi
1784 ⟨/ltugproccls⟩
```

5   Plain TeX styles

```
1785 ⟨*tugboatsty⟩
1786 % err...
1787 ⟨/tugboatsty⟩
1788 ⟨*tugprocsty⟩
1789 % err...
1790 ⟨/tugprocsty⟩
```

6   The LaTeX 2ε compatibility-mode style files

```
1791 ⟨*ltugboatsty⟩
1792 \@obsoletefile{ltugboat.cls}{ltugboat.sty}
1793 \LoadClass{ltugboat}
1794 ⟨/ltugboatsty⟩
1795 ⟨*ltugprocsty⟩
1796 \@obsoletefile{ltugproc.cls}{ltugproc.sty}
1797 \LoadClass{ltugproc}
1798 ⟨/ltugprocsty⟩
```