

The `tugboat` package*

The *TUGboat* team
(Distributed by Robin Fairbairns)

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tugboat.dtx - main source for LaTeX TUGboat classes.	

1 Document preambles

```

1 <tugboatcls | ltugproccls | ltugcommn>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile                {tugboat.dtx}
4 </dtx>
5 <tugboatcls>\ProvidesClass   {ltugboat}
6 <ltugproccls>\ProvidesClass   {ltugproc}
7 <tugboatsty>\ProvidesPackage{ltugboat}
8 <ltugprocsty>\ProvidesPackage{ltugproc}
9 <ltugcommn>  \ProvidesPackage{ltugcommn}
10                                     [2007/08/11 v2.2
11 <tugboatcls>                        TUGboat journal class%
12 <ltugproccls>                        TUG conference proceedings class%
13 <ltugboatsty | ltugprocsty>          TUG compatibility package%
14 <ltugcommn>                          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 $\LaTeX 2_{\epsilon}$.

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).

\backslash AllTeX	(\mathbb{A}) \TeX
\backslash AMS	American Mathematical Society
\backslash AmSTeX	
\backslash aw	A-W (abbreviation for Addison-Wesley)
\backslash AW	Addison-Wesley
\backslash BibTeX	

<code>\CandT</code>	Computers & Typesetting
<code>\ConTeXt</code>	ConT _E Xt
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVI</code>	
<code>\DVD</code>	
<code>\DVIPDFMx</code>	DVIPDFM <i>x</i>
<code>\DVItOVDU</code>	DVItOVDU
<code>\eTeX</code>	ε -T _E X
<code>\Ghostscript</code>	
<code>\Hawaii</code>	Hawai‘i
<code>\HTML</code>	
<code>\ISBN</code>	ISBN
<code>\ISO</code>	
<code>\ISSN</code>	ISSN
<code>\JTeX</code>	
<code>\JoT</code>	The Joy of T _E X
<code>\LaTeX</code>	
<code>\MacOSX</code>	Mac OS X
<code>\MathML</code>	
<code>\Mc</code>	M with raised c
<code>\MF</code>	METAFONT
<code>\mf</code>	METAFONT
<code>\MFB</code>	The Metafont book
<code>\MP</code>	METAPOST
<code>\mp</code>	MetaPost (in text only: remains ‘ \mp ’ in maths)
<code>\OMEGA</code>	Omega ‘logo’ (Ω)
<code>\OCP</code>	Omega compiled process
<code>\OTP</code>	Omega translation process
<code>\mtex</code>	multilingual T _E X
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pcTeX</code>	
<code>\Pas</code>	Pascal
<code>\PiCTeX</code>	
<code>\plain</code>	plain (in typewriter font)
<code>\POBox</code>	P. O. Box
<code>\PS</code>	PostScript (with hyphenation)
<code>\SC</code>	Steering Committee
<code>\SGML</code>	SGML
<code>\SliTeX</code>	
<code>\slMF</code>	Metafont (slanted) — deprecated: use <code>\textsl</code> instead
<code>\stTeX</code>	T _E X for the Atari ST
<code>\SVG</code>	
<code>\TANGLE</code>	
<code>\TB</code>	The T _E Xbook

<code>\TeX</code>	(Although nearly every package defines this, most—including plain—are missing the space-factor adjustment)
<code>\TeXhax</code>	
<code>\TeXMaG</code>	(defunct)
<code>\TeXtures</code>	
<code>\TeXXeT</code>	
<code>\Thanh</code>	
<code>\TFM</code>	TFM
<code>\TUB</code>	<i>TUGboat</i>
<code>\TUG</code>	TeX Users Group
<code>\UNIX</code>	
<code>\UTF</code>	
<code>\VAX</code>	
<code>\VorTeX</code>	
<code>\XeT</code>	
<code>\XeTeX</code>	reflected and lowered first ‘E’
<code>\XML</code>	
<code>\WEB</code>	
<code>\WEAVE</code>	

Macros for things that are slightly more significant.

<code>\NoBlackBoxes</code>	turns off marginal rules marking overfull boxes
<code>\BlackBoxes</code>	turns them back on
<code>\newline</code>	horizontal glue plus a break
<code>\ifundefined#1</code>	checks argument with <code>\csname</code> against <code>\relax</code>
<code>\topsmash</code>	smashes above baseline (from AMSTeX)
<code>\botsmash</code>	smashes below baseline (from AMSTeX)
<code>\smash</code>	smashes both (from plain)
<code>\ulap</code>	lap upwards
<code>\dlap</code>	lap downwards
<code>\xlap</code>	reference point at center horizontally; 0 width
<code>\ylap</code>	reference point at center vertically; 0 height, depth
<code>\zlap</code>	combination <code>\xlap</code> and <code>\ylap</code>
<code>\basezero</code>	to avoid insertion of baselineskip and lineskip glue
<code>\nullhrule</code>	empty <code>\hrule</code>
<code>\nullvrule</code>	empty <code>\vrule</code>
<code>\makestrut[#1;#2]</code>	ad hoc struts; #1=height, #2=depth
<code>\today</code>	today’s date
<code>\SetTime</code>	converts <code>\time</code> to hours, minutes
<code>\now</code>	displays time in hours and minutes
<code>\Now</code>	shows current date and time
<code>\ifPrelimDraft</code>	flag to indicate status as preliminary draft
<code>\rtitlex</code>	<i>TUGboat</i> volume and number info for running head
<code>\midrtitlex</code>	information for center of running head
<code>\HorzR@gisterRule</code>	pieces of registration marks (‘trimmarks’)
<code>\DownShortR@gisterRule</code>	

<code>\UpShortR@gisterRule</code>	
<code>\ttopregister</code>	top registration line with ‘T’ in center
<code>\tbotregister</code>	bottom registration line with inverted ‘T’ in center
<code>\topregister</code>	register actually used
<code>\botregister</code>	
<code>\raggedskip</code>	parameters used for ragged settings
<code>\raggedstretch</code>	
<code>\raggedparfill</code>	
<code>\raggedspaces</code>	
<code>\raggedright</code>	
<code>\raggedleft</code>	
<code>\raggedcenter</code>	
<code>\normalspaces</code>	
<code>\raggedbottom</code>	
<code>\bull</code>	square bullet
<code>\cents</code>	‘cents’ sign
<code>\Dag</code>	superscripted dagger
<code>\careof</code>	c/o
<code>\sfrac</code>	slashed fraction (arguments optionally separated by a slash)
<code>\cs</code>	control sequence name <code>\cs{name}→\name</code>
<code>\env</code>	environment name <code>\env{name}→\begin{name}</code>
<code>\meta</code>	meta-argument name <code>\meta{name}→⟨name⟩</code>
<code>\dash</code>	en-dash surrounded by thinspaces; only breakable AFTER
<code>\Dash</code>	em-dash, as above
<code>\hyph</code>	permit automatic hyphenation after an actual hyphen
<code>\slash</code>	‘breakable’ slash
<code>\nth</code>	for obtaining ‘1 st ’, ‘2 nd ’, 3 rd , etc.
<code>\tubissue</code>	gets \TUB followed by volume and issue numbers
<code>\xEdNote</code>	Editor’s Note:
<code>\Review:</code>	Review: (for title of book review article)
<code>\reviewitem</code>	begin data for item being reviewed
<code>\revauth</code>	with one argument, author(s) of item being reviewed
<code>\revtitle</code>	with one argument, title of ...
<code>\revpubinfo</code>	with one argument, other info pertaining to ...
<code>\endreviewitem</code>	end data for item being reviewed
<code>\booktitle</code>	with one argument, format book title in text
<code>\Input</code>	\input with some other bookkeeping for case where multiple articles are put together
<code>\TBremark</code>	reminder to <i>TUGboat</i> editorial staff
<code>\TEnableRemarks</code>	enable \TBremarks (normally suppressed)
<code>\pagexref</code>	used to write out page numbers to screen and

<code>\pagexrefON</code>	external files
<code>\pagexrefOFF</code>	
<code>\xrefto</code>	used for symbolic cross-reference to other pages
<code>\xreftoON</code>	in <i>TUGboat</i>
<code>\xreftoOFF</code>	
<code>\TBdriver</code>	marks code which only takes effect when articles are run together in a driver file
<code>\signaturemark</code>	items for signatures
<code>\signaturewidth</code>	

3 L^AT_EX 2_ε *TUGboat* class file

3.1 Setup and options

Check for reloading. Hmmmm... Does this happen with L^AT_EX 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 \*!tugboatcls)
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 L^AT_EX 2_ε we can use the `\Class*` commands:

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

Some trivial options, just flicking switches, etc.

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

```

47 }%
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 L^AT_EX); 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\@xipt
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 L^AT_EX 2_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` 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 such 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 `\StartNewPaper`

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\edef\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\latexstyle{latex}

```

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

```

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

```

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

3.4 Abbreviations and logos

Font used for the METAFONT logo, etc.

```

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

```

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

```

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

```

```

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

```

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.

```

219 \iflatex\def\LaTeX{La\kern-.15em\TeX}
220 \def\MacOSX{Mac\,\acro{OS},X}
221 \def\MathML{Math\acro{ML}}
222 \def\Mc{\setbox\TestBox=\hbox{M}M\vbox
223   to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we're running under $\text{\LaTeX 2}_{\epsilon}$, 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`

```

224 \def\mf{\textsc{Metafont}}

```

```

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

```

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

```

242 \DeclareRobustCommand\NTS{\ensuremath{\mathcal{N}}\mkern-4mu
243 \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
244 \def\Pas{Pascal}
245 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3p@ c}MF\@}
246 \def\PCTeX{PC\thinspace\TeX}
247 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3p@ c}\TeX}
248 \def\PDF{\acro{PDF}}
249 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
250 \def\PiCTeX{\PiC\kern-.11em\TeX}
251 \def\plain{\texttt{plain}}
252 \def\PNG{\acro{PNG}}
253 \def\POBox{P.\thinspace O.\^Box }
254 \def\PS{{Post}\-Script}}
255 \def\RTF{\acro{RTF}}
256 \def\SC{Steering Committee}
257 \def\SGML{\acro{SGML}}
258 \def\SliTeX{\textrm{S\kern-.06em\textsc{l}\kern-.035eml}%
259 \kern-.06em\TeX}}
260 \def\slMF{\textsl{MF}} % should never be used
261 \def\stTeX{\textsc{st}\kern-.013em\TeX}
262 \def\SVG{\acro{SVG}}
263 \def\TANGLE{\texttt{TANGLE}\@}
264 \def\TB{\textsl{The \TeX book}}
265 \def\TIFF{\acro{TIFF}}
266 \def\TP{\textsl{\TeX}: \textsl{The Program}}
267 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
268 \def\TeXhax{\TeX hax}
269 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
270 \kern-.2267emG\@}
271 \def\TeXtures{\textit{Textures}}
272 \let\Textures=\TeXtures
273 \def\TeXXeT{\TeX{-}\XeT}
274 \def\TFM{\acro{TFM}}
275 \def\Thanh{H\^an\^Th\^e\llap{\raise.5ex\hbox{\^{\^}}}\^Th\^anh}
276 \def\ttn{\textsl{TTN}\@}
277 \def\TTN{\textsl{\TeX} and TUG News}

```

```

278 \let\texttub\textsl           % redefined in other situations
279 \def\TUB{\texttub{TUGboat}}
280 \def\TUG{\TeX\ \UG}
281 \def\tug{\acro{TUG}}
282 \def\UG{Users Group}
283 \def\UNIX{\acro{UNIX}}
284 \def\UTF{\acro{UTF}}
285 \def\VAX{V\kern-.12em A\kern-.1em X\@}
286 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{0\kern-1.4\p@ R}\kern-2.6\p@\TeX}
287 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
288 \def\XML{\acro{XML}}
289 \def\WEB{\texttt{WEB}\@}
290 \def\WEAVE{\texttt{WEAVE}\@}

```

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

```

291 \def\tubreflect#1{%
292   \@ifundefined{reflectbox}{%
293     \TBerror{A graphics package must be loaded for \string\XeTeX}%
294   }{%
295     \ifdim \fontdimen1\font>0pt
296       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
297     \else
298       \reflectbox{#1}%
299     \fi
300   }%
301 }
302 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
303 \def\XeTeX{\leavevmode
304   \tubhideheight{\hbox{X%
305     \lower.5ex \hbox{\kern-.125em\tubreflect{E}}}%
306     \kern-.1667em \TeX}}
307 %
308 \def\XHTML{\acro{XHTML}}
309 \def\XSLT{\acro{XSLT}}

```

3.5 General typesetting rules

```

310 \newlinechar='^^J
311 \normallineskiplimit=\p@
312 \clubpenalty=10000
313 \widowpenalty=10000
314 \def\NoParIndent{\parindent=\z@}
315 \newdimen\normalparindent
316 \normalparindent=20\p@
317 \def\NormalParIndent{\global\parindent=\normalparindent}
318 \NormalParIndent
319 \def\BlackBoxes{\overfullrule=5\p@}
320 \def\NoBlackBoxes{\overfullrule=\z@}
321 \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 `\netaddresses`, which typically occur when `\raggedright` is set, but which need to be allowed to break at their artificial discretionaries.

```
322 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
323 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
324 \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 L^AT_EX temporaries for some (or all) of the `\T@st*` ones.

Comment: (bb) All these registers are used in the plain version, `tugboat.sty`.

```
325 \newbox\T@stBox          \newbox\TestBox
326 \newcount\T@stCount      \newcount\TestCount
327 \newdimen\T@stDimen      \newdimen\TestDimen
328 \newif\ifT@stIf          \newif\ifTestIf
```

Control sequence existence test, stolen from T_EXbook exercise 7.7 (note that this provides functionality that in some sense duplicates something within L^AT_EX).

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

L^AT_EX conventions which are also useful here.

```
330 <!!latex>
331 \let\@@input\input
332 \def\iinput#1{\@@input#1 }
333 \def\@inputcheck{\if\@nextchar\bgroup
334 \expandafter\iinput\else\expandafter\@@input\fi}
335 \def\input{\futurelet\@nextchar\@inputcheck}
336 </!!latex>
```

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

```
337 \newif\iftop@           \newif\ifbot@
338 \def\topsmash{\top@true\bot@false\smash@}
339 \def\botsmash{\top@false\bot@true\smash@}
340 \def\smash{\top@true\bot@true\smash@}
341 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
342 \else\let\next\makesm@sh\fi \next }
343 \def\finism@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}
```

Vertical ‘laps’; cf. `\llap` and `\rlap`

```
344 \long\def\ulap#1{\vbox to \z@{\vss#1}}
345 \long\def\dlap#1{\vbox to \z@{\#1\vss}}
```

And centered horizontal and vertical ‘laps’

```
346 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
347 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
348 \long\def\zlap#1{\ylap{\xlap{\#1}}}
```

Avoid unwanted vertical glue when making up pages.

```

349 \def\basezero{\baselineskip\z@skip \lineskip\z@skip}

Empty rules for special occasions
350 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
351 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }

Support ad-hoc strut construction.
352 \def\makestrut[#1;#2]{\vrule \@height#1 \@depth#2 \@width\z@ }

Construct box for figure pasteup, etc.; height = #1, width = #2, rule thickness
= #3
353 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
354     \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
355         \vss\hb@xt@#2{\vrule \@width\T@stDimen
356             \hfil\makestrut[#1;\z@]\%
357             \vrule \@width\T@stDimen}\vss
358             \hrule \@height\T@stDimen \@depth\z@}}

Today's date, to be printed on drafts. Based on TEXbook, p.406.
359 \langle\!*\!latex\rangle
360 \def\today{\number\day\space \ifcase\month\or
361     Jan \or Feb \or Mar \or Apr \or May \or Jun \or
362     Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
363     \number\year}
364 \rangle\!*\!latex\rangle

Current time; this may be system dependent!
365 \newcount\hours
366 \newcount\minutes
367 \def\SetTime{\hours=\time
368     \global\divide\hours by 60
369     \minutes=\hours
370     \multiply\minutes by 60
371     \advance\minutes by-\time
372     \global\multiply\minutes by-1 }
373 \SetTime
374 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
375 \def\Now{\today\ \now}
376 \newif\ifPrelimDraft
377 \def\midrttitle{\ifPrelimDraft {\textsl{preliminary draft, \Now}}\fi}

```

3.7 Ragged right and friends

<pre> \raggedskip \raggedstretch \raggedparfill \raggedspaces </pre>	<p>Plain T_EX's definition of <code>\raggedright</code> 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 T_EX and of L^AT_EX.</p> <pre> 378 \newdimen\raggedskip \raggedskip=\z@ 379 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt) 380 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil 381 \def\raggedspaces{\spaceskip=.3333em \relax \xspaceskip=.5em \relax } </pre>
<pre> \raggedright \raggedleft \raggedcenter \normalspaces </pre>	<p>Some applications may have to add stretch, in order to avoid all overfull boxes. We define the following uses of the above skips, etc.</p> <pre> 382 \def\raggedright{% </pre>

```

383 \nohyphens
384 \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
385 \parfillskip=\raggedparfill
386 }
387 \def\raggedleft{%
388 \nohyphens
389 \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
390 \parfillskip=\z@skip
391 }
392 \def\raggedcenter{%
393 \nohyphens
394 \leftskip=\raggedskip\@plus\raggedstretch
395 \rightskip=\leftskip \raggedspaces
396 \parindent=\z@ \parfillskip=\z@skip
397 }
398 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}

```

Miscellaneous useful stuff. Note that L^AT_EX 2_ε defines a robust `\,`, but that we provide a new definition of `~` by redefining its robust underpinnings¹ (based on the version in AMS-_TE_X — the L^AT_EX 2_ε version has `\leavevmode` and doesn't care about surrounding space).

```

399 \DeclareRobustCommand{\nobreakspace}{%
400 \unskip\nobreak\ \ignorespaces}

```

Plain T_EX 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...)

```

401 \def\boxcs#1{\box\csname#1\endcsname}
402 \def\setboxcs#1{\setbox\csname#1\endcsname}
403 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
404 \let\gobble\@gobble
405 \def\vellipsis{%
406 \leavevmode\kern0.5em
407 \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
408 }
409 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
410 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
411 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
412 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}}\kern-.15em
413 \kern-.125em\smash{\lower.3ex\hbox{o}}}\ignorespaces}
414 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}}%
415 \def\@sfrac{#1}{#2}\@sfrac{#1}{#2}}
416 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
417 \hbox{$\m@th\mbox{\fontsize\sf@size\z@
418 \selectfont#1}$}\kern-.1em
419 /\kern-.15em\lower.25ex
420 \hbox{$\m@th\mbox{\fontsize\sf@size\z@

```

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


```

421 \selectfont#2}$}}
422 \DeclareRobustCommand\cs[1]{\texttt{\char'\#1}}
423 \DeclareRobustCommand\meta[1]{%
424   \ensuremath{\langle}\emph{#1}\ensuremath{\rangle}}
425 \DeclareRobustCommand\env[1]{%
426   \cs{begin}\texttt{\char'\#1\char'}}
427 \def\thinspace{\hspace 0.16667em\relax}

```

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

```

428 \def\endash{--}
429 \def\emdash{\endash-}
430 \def\d@sh#1#2{\unskip#1\thinspace#2\thinspace\ignorespaces}
431 \def\dash{\d@sh\nobreak\endash}
432 \def\Dash{\d@sh\nobreak\emdash}
433 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
434 \def\rdash{\d@sh\nobreak\endash}
435 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
436 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

437 \def\hyph{-\penalty\z@\hspace\z@skip }
438 \def\slash{/\penalty\z@\hspace\z@skip }

```

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

```

439 \def\nth#1{%
440   \def\reserved@a##1##2\@nil{\ifcat##1n%
441     0%
442     \let\reserved@b\ensuremath
443     \else##1##2%
444     \let\reserved@b\relax
445     \fi}%
446   \TestCount=\reserved@a#1\@nil\relax
447   \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
448   \T@stCount=\TestCount
449   \divide\T@stCount by 100 \multiply\T@stCount by 100
450   \advance\TestCount by-\T@stCount % n mod 100
451   \ifnum\TestCount >20 \T@stCount=\TestCount
452     \divide\T@stCount by 10 \multiply\T@stCount by 10
453     \advance\TestCount by-\T@stCount % n mod 10
454   \fi
455   \reserved@b{#1}%
456   \textsuperscript{\ifcase\TestCount th%      0th
457     \or st%      1st
458     \or nd%      2nd
459     \or rd%      3rd
460     \else th%    nth
461     \fi}%
462 }

```

3.8 Reviews

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

```

463 \def\Review{\@ifnextchar:{\@Review}\@Review:}
464 \def\@Review:{\@ifnextchar[%]
465   {\@Rev}%
466   {\@Rev[Book review]}}
467 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
468                  \slshape\mdseries#2}}
469 \def\reviewitem{\addvspace{\BelowTitleSkip}%
470   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
471   \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
472   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
473 }
474 \def\endreviewitem{{\noindent\interlinepenalty=10000
475   \therevauth\therevtitle\therevpubinfo\endgraf}%
476   \vskip\medskipamount
477 }
478 \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 `\issyyear` instead of `\issdate`, because issues don't have months any more.

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

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

```

479 \newcount\issueseqno          \issueseqno=-1
480 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
481 \def\volyr{}
482 \def\volno{}
483 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
484   \gdef\issno{\ignorespaces#2\unskip}%
485   \setbox\TestBox=\hbox{\volyr}%
486   \ifdim \wd\TestBox > .2em \v@lx \fi }
487 \def\issyyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
488   \gdef\bigissdt{#1}%
489   \setbox\TestBox=\hbox{\volno}%
490   \ifdim \wd\TestBox > .2em \v@lx \fi }
491 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%

```

```

492 \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
493 \setbox\TestBox=\hbox{\volno}%
494 \ifdim \wd\TestBox > .2em \v@l{x} \fi }
495 \vol 0, 0.
496 \issdate Thermidor, 2060.

```

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

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

```

497 \!latex\def\tubissue#1(#2)%
498 \*latex
499 \def\tubissue#1{\ifnextchar(%)
500   {\@tubissue@b{#1}}
501   {\@tubissue@a{#1}}}
502 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
503 \def\@tubissue@a#1#2%
504 \!latex
505   {\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`

```

506 \def\infil@{\jobname}
507 \def\Input #1 {\ifnum\issueseqno<0
508   \def\infil@{#1}%
509   \else
510     \def\infil@{tb\number\issueseqno#1}
511   \fi
512   \edef\jobname{\infil@}\@readFLN
513   \@@input \infil@\relax
514   \if@RMKopen
515     \immediate\closeout\@TBremarkfile\@RMKopenfalse
516   \fi
517 }

```

`\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 `\TBEEnableRemarks` command, which can be included in the configuration file `ltugboat.cfg` (or `ltugproc.cfg`, if that's what we're at).

```

518 \newif\if@RMKopen \@RMKopenfalse
519 \newwrite\@TBremarkfile
520 \def\@TBremark#1{%
521   \if@RMKopen
522   \else
523     \@RMKopentrue\immediate\openout\@TBremarkfile=\infil@.rmk
524   \fi
525   \toks@={#1}%
526   \immediate\write\@TBremarkfile{^^J\the\toks@}%
527   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
528 }

```

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

```
529 \let\TBremark=\gobble
```

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

```
530 \def\TEnableRemarks{\let\TBremark\@TBremark}
```

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

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

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

```
532 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
```

```
533 \newread\@altfilenames
```

```
534 \def\@readFLN{\immediate\openin\@altfilenames=jobname.fln
```

```
535 \ifeof\@altfilenames\let\@result\relax}else
```

```
536 \def\@result{\@input\jobname.fln }\fi
```

```
537 \immediate\closein\@altfilenames
```

```
538 \@result}
```

```
539 \@readFLN
```

```
540 \everyjob=\expandafter{\the\everyjob\@readFLN}
```

```
541 \InputIfFileExists{jobname.fln}%
```

```
542 {\TBInfo{Reading alternative file file jobname.fln}}{}}
```

The following needs to work entirely in \TeX 's mouth

```
543 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
```

```
544 #1\else\csname file@@#1\endcsname\fi}
```

```
545 \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.

```
546 \<!*latex>
```

```
547 \def\pagexrefON#1{%
```

```
548 \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
```

```
549 \write\ppoutfile{%
```

```
550 \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
```

```
551 }
```

```
552 \def\PageXrefON#1{%
```

```
553 \immediate\write-1{\def\expandafter
```

```
554 \noexpand\csname#1\endcsname{\number\pageno}}%
```

```
555 \immediate\write\ppoutfile{\def\expandafter
```

```
556 \noexpand\csname#1\endcsname{\number\pageno}}%
```

```
557 \<!/!latex>
```

```
558 \<!*latex>
```

```
559 \def\pagexrefON#1{%
```

```
560 \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
```

```
561 \write\ppoutfile{%
```

```
562 \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
```

```
563 }
```

```
564 \def\PageXrefON#1{%
```

```

565         \immediate\write-1{\def\expandafter
566             \noexpand\csname#1\endcsname{\number\c@page}}}%
567         \immediate\write\ppoutfile{\def\expandafter
568             \noexpand\csname#1\endcsname{\number\c@page}}}%
569 \
```

`\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.

```

580 \let\TBdriver\gobble

```

Some hyphenation exceptions:

```

581 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
582 Flor-i-da Free-BSD Ghost-script Ghost-view
583 Hara-lam-bous Jac-kow-ski Karls-ruhe
584 Mac-OS Math-Sci-Net
585 Net-BSD Open-BSD Open-Office
586 Pfa-Edit Post-Script Rich-ard Skoup South-all
587 VM-ware Win-Edt
588 acro-nym ap-pen-dix asyn-chro-nous
589 bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
590 col-umns cus-tom-iz-able
591 data-base data-bases
592 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion
593 fall-ing
594 half-way
595 key-note
596 long-est
597 ma-gyar man-u-script man-u-scripts
598 off-line over-view
599 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
600 pipe-line pipe-lines
601 plug-in plug-ins pro-gram-mable
602 se-vere-ly spell-ing spell-ings stand-alone strong-est
603 sub-ex-pres-sion syn-chro-ni-city syn-chro-nous
604 time-stamp time-stamped
605 vis-ual vis-u-al-ly
606 which-ever white-space white-spaces wide-spread wrap-around
607 }
608 \
```

3.10 Page dimensions, glue, penalties etc

```

612 \textheight 54pc
613 \textwidth 39pc
614 \columnsep 1.5pc
615 \columnwidth 18.75pc
616 \parindent \normalparindent
617 \parskip \z@ % \@plus\p@
618 \leftmargini 2em
619 \leftmarginv .5em
620 \leftmarginvi .5em
621 \oddsidemargin \z@
622 \evensidemargin \z@
623 \topmargin -2.5pc
624 \headheight 12\p@
625 \headsep 20\p@
626 \marginparwidth 48\p@
627 \marginparsep 10\p@
628 \partopsep=\z@
629 \topsep=3\p@\@plus\p@\@minus\p@
630 \parsep=3\p@\@plus\p@\@minus\p@
631 \itemsep=\parsep
632 \twocolumn
633 \newdimen\pagewd \pagewd=39pc
634 \newdimen\trimwd \trimwd=\pagewd
635 \newdimen\trimlgt \trimlgt=11in
636 \newdimen\headmargin \headmargin=3.5pc

```

In $\text{\LaTeX} 2_{\epsilon}$, `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 .

```

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

```

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

```

639 \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):

```

640 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
641 \DeclareLaTeXLogo{cmr}{m}{it}{.3}{.27}
642 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
643 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
644 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}

```

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

```

645 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a

```

```

646 \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
647 \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
648 \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.

```

649 \newcommand\@LaTeX[2]{L\kern-#1em
650     {\sbox\z@ T%
651         \vbox to\ht0{\hbox{$\m@th$%
652             \csname S@\f@size\endcsname
653             \fontsize\sf@size\z@
654             \math@fontsfalse\selectfont
655             A}%
656         \vss}%
657     }%
658     \kern-#2em%
659     \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.

```

660 \def\theauthor#1{\csname theauthor#1\endcsname}
661 \def\theaddress#1{\csname theaddress#1\endcsname}
662 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
663 \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.

```

664 \!latex\newcount\@tempcnta
665 \def\@defaultauthorlist{%
666     \@getauthorlist\@firstofone
667 }

```

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

```

668 \def\@getauthorlist#1{%
669     \count@\authornumber
670     \advance\count@ by -2
671     \@tempcnta0

```

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

```

672 \loop
673   \ifnum\count@>0
674     \advance\@tempcnta by \@ne
675     #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
676     \advance\count@ by \m@ne
677 \repeat
678 \count@\authornumber
679 \advance\count@ by -\@tempcnta
680 \ifnum\authornumber>0

```

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

```

681   \ifnum\count@>1
682     \count@\authornumber
683     \advance\count@ by \m@ne
684     #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
685 \fi

```

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

```

686   #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
687 \fi
688 }

```

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...)

```

689 \def\signature#1{\def\@signature{#1}}
690 \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`

```

691 \def\@defaultsignature{%
692   \let\thanks\@gobble
693   \ifnum\authornumber<0
694     \medskip
695     \frenchspacing
696     \signaturemark
697     \theauthor{\number\authornumber}\\
698     \theaddress{\number\authornumber}\\
699     \allowhyphens
700     \thenetaddress{\number\authornumber}\\
701     \thePersonalURL{\number\authornumber}\\
702   \else

```

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

```

703     \count@=0
704     \loop
705     \ifnum\count@<\authornumber

```



```

706         \medskip
707         \advance\count@ by \@ne
708         \signaturemark
709         \theauthor{\number\count@}\
710         \theaddress{\number\count@}\
711         {%
712             \allowhyphens
713             \thenetaddress{\number\count@}\
714             \thePersonalURL{\number\count@}\
715         }%
716     \repeat
717 \fi
718 }%
719 }
720 \newdimen\signaturewidth \signaturewidth=12pc

```

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

```

721 \newcommand\makesignature[1][\medskipamount]{%

```

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

```

722 \@tempdima\signaturewidth
723 \advance\@tempdima 1.5pc
724 \ifdim \@tempdima>\columnwidth
725     \signaturewidth \columnwidth
726     \advance\signaturewidth -1.5pc
727 \fi
728 \par
729 \penalty9000
730 \vspace{#1}%
731 \rightline{%
732     \vbox{\hsize\signaturewidth \ninepoint \raggedright
733         \parindent \z@ \everypar={\hangindent 1pc }
734         \parskip \z@skip
735         \def\|{\unskip\hfil\break}%
736         \def\\{\endgraf}%
737         \def\phone{\rm Phone: }
738         \rm\@signature}%
739     }%
740 \ifnum\authornumber<0 \endgroup\fi
741 }
742 \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.

```
743 \newcount\authornumber
744 \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`).

```
745 \def\author{%
746   \global\advance\authornumber\@ne
747   \TB@author
748 }
```

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

```
749 \def\contributor{%
750   \begingroup
751   \authornumber\m@ne
752   \TB@author
753 }
```

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).

```
754 \def\TB@author#1{%
755   \expandafter\def\csname theauthor\number\authornumber\endcsname
756     {\ignorespaces#1\unskip}%
757   \expandafter\def\csname theaddress\number\authornumber\endcsname
758     {\TBWarningNL{Address for #1\space missing}\@gobble}%
759   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
760     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
761   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
762     \@gobble
763 }
764 \def\EDITORnoaddress{%
765   \expandafter\let\csname theaddress\number\authornumber\endcsname
766     \@gobble
767 }
768 \def\EDITORnonetaddress{%
769   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
770     \@gobble
771 }
```

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

```
772 \def\address#1{%
773   \expandafter\def\csname theaddress\number\authornumber\endcsname
774     {\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*!

```
775 \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 L^AT_EX 2_ε, we use the default-argument form of `\newcommand`; otherwise we write it out in all its horribleness.

```
776 \newcommand\netaddress[1][\relax]{%
777   \begingroup
778   \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 L^AT_EX 2_ε.

```
779   #1\@sanitize\makespace\ \makeactive\@
780   \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?!**)

```
781 \def\@relay@netaddress#1{%
782   \ProtectNetChars
783   \expandafter\protected@xdef
784     \csname thenetaddress\number\authornumber\endcsname
785     {\protect\leavevmode\textrm{\@network}%
786      {\protect\NetAddrChars\net
787       \ignorespaces#1\unskip}}}%
788 \endgroup
789 }
```

`\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.

```
790 \def\personalURL{\begingroup
791   \@sanitize\makespace\ \makeactive\@
792   \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
793 \def\@personalURL#1{%
794   \ProtectNetChars
795   \expandafter\protected@xdef
796     \csname thePersonalURL\number\authornumber\endcsname{%
797     \protect\leavevmode
798     {%
```

```

799     \protect\URLchars\net
800     \ignorespaces#1\unskip
801   }%
802 }%
803 \endgroup
804 }

```

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...

```

805 {%
806   \makecomment\*
807   \makeactive\@
808   \gdef\netaddrat{\makeactive\@*
809     \def@{\discretionary{\char"40}{\char"40}}
810     \makeactive\%
811     \gdef\netaddrpercent{\makeactive\%*
812       \def%{\discretionary{\char"25}{\char"25}}
813       \makeactive\.
814       \gdef\netaddrdot{\makeactive\.*
815         \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.

```

816   \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
817   \makeactive\/
818   \gdef\URLchars{*
819     \NetAddrChars
820     \makeactive\/*
821     \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.

```

822   \gdef\ProtectNetChars{*
823     \def@{\protect@}*
824     \def%{\protect%}*
825     \def.{\protect.}*
826     \def/{\protect/}*
827   }
828 }

```

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

```

829 \if@compatibility
830   \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\syntypewriter}
831 \else
832   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
833 \fi
834 \def\authorlist#1{\def\@author{#1}}
835 \def\@author{\@defaultauthorlist}

```

`\if@articletitle` `\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 L^AT_EX 2_ε.

```

836 \newif\if@articletitle
837 \def\maketitle{\@ifstar
838   {\@articletitlefalse\@r@maketitle}%
839   {\@articletitletrue\@r@maketitle}%
840 }
841 \def\@r@maketitle{\par
842   \ifdim\PreTitleDrop > \z@
843     \loop
844       \ifdim \PreTitleDrop > \textheight
845         \vbox{}\vfil\@eject
846         \advance\PreTitleDrop by -\textheight
847       \repeat
848     \vbox to \PreTitleDrop{}
849     \global\PreTitleDrop=\z@
850   \fi
851   \begingroup
852   \setcounter{footnote}{0}
853   \def\thefootnote{\fnsymbol{footnote}}
854   \@maketitle
855   \@thanks
856   \endgroup
857   \setcounter{footnote}{0}
858   \gdef\@thanks{}
859 }
```

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:

```

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

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

```

861 \newdimen\stbaselineskip          \stbaselineskip=18\p@
862 \newdimen\stfontheight
863 \settoheight{\stfontheight}{\sectitlefont 0}
```

Declaring section titles; the conditional `\ifSecTitle` records the occurrence 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.

```

864 \newif\ifSecTitle
865 \SecTitlefalse
866 \newif\ifWideSecTitle
867 \newcommand\sectitle{%
868   \SecTitletrue
869   \@ifstar
870     {\WideSecTitletrue\def\s@ctitle}%
871     {\WideSecTitlefalse\def\s@ctitle}%
872 }

```

`\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.

```

873 \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.

```

874 \newskip\AboveTitleSkip   \AboveTitleSkip=12\p@
875 \newskip\BelowTitleSkip   \BelowTitleSkip=8\p@
876 \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 L^AT_EX's `\framebox` command, on the grounds that one doesn't keep a dog and bark for oneself...

```

877 \def\@sectitle #1{%
878   \par
879   \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.

```

880   \ifWideSecTitle\else\secsep\fi
881   {%
882     \fboxrule\strulethickness
883     \fboxsep\z@
884     \noindent\framebox[\hsize]{%
885       \vbox{%
886         \raggedcenter
887         \let\\\@sectitle@newline
888         \sectitlefont
889         \makestrut[2\stfontheight;\z@]%
890         #1%
891         \makestrut[\z@;\stfontheight]\endgraf
892       }%
893     }%

```

```

894 }%
895 \nobreak
896 \vskip\baselineskip
897 }

```

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

```

898 \newcommand{\@sectitle@newline}[1][\z@]{%
899   \ifdim#1>\z@
900     \makestrut[\z@;#1]%
901   \fi
902   \unskip\break
903 }

```

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).

```

904 \def\@makesectitle{\ifSecTitle
905   \global\SecTitlefalse
906   \ifWideSecTitle
907     \twocolumn[\@sectitle{\s@ctitle}]%
908     \global\WideSecTitlefalse
909   \else
910     \@sectitle{\s@ctitle}%
911   \fi
912 \else
913   \vskip\AboveTitleSkip
914   \kern\topskip
915   \hrule \@height\z@ \@depth\z@ \@width 10\p@
916   \kern-\topskip
917   \kern-\strulethickness
918   \hrule \@height\strulethickness \@depth\z@
919   \kern\medskipamount
920   \nobreak
921 \fi
922 }

```

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

```

923 \def\@maketitle{%
924   \@makesectitle
925   \if@articletitle{%
926     \nohyphens \interlinepenalty\@M
927     \setbox0=\hbox{%
928       \let\thanks\@gobble
929       \let\=\quad
930       \let\and=\quad
931       \ignorespaces\@author}%
932     {%
933       \noindent\bf\raggedright\ignorespaces\@title\endgraf
934     }%
935     \ifdim \wd0 < 5\p@ % omit if author is null
936     \else

```

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

```

937   \nobreak \vskip 4\p@

```

```

938     {%
939         \leftskip=\normalparindent
940         \raggedright
941         \def\and{\unskip\\}%
942         \noindent\@author\endgraf
943     }%
944     \fi
945     \nobreak
946     \vskip\BelowTitleSkip
947 } \fi%
948 \global\@afterindentfalse
949 \aftergroup\@afterheading
950 }

```

Dedications are ragged right, in italics.

```

951 \newenvironment{dedication}%
952 { \raggedright\noindent\itshape\ignorespaces}%
953 { \endgraf\medskip}

```

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

```

954 \renewenvironment{abstract}%
955 {%
956     \begin{SafeSection}%
957     \section*{Abstract}%
958 }%
959 {\end{SafeSection}}
960 \newenvironment{longabstract}%
961 {%
962     \begin{SafeSection}%
963     \section*{Abstract}%
964     \bgroup\small
965 }%
966 {%
967     \endgraf\egroup
968     \end{SafeSection}%
969     \vspace{.25\baselineskip}
970     \begin{center}
971     {$--*--$}
972     \end{center}
973     \vspace{.5\baselineskip}}

```

3.14 Headings

Redefine style of section headings to match plain *TUGboat*. Negative before skip 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.

```

974 \if@numbersec
975   \def\section{\TB@startsection{{section}%

```



```

976             1%
977             \z@
978             {-8\p@}%
979             {4\p@}%
980             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
981 \def\subsection{\TB@startsection{subsection}%
982             2%
983             \z@
984             {-8\p@}%
985             {4\p@}%
986             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
987 \def\subsubsection{\TB@startsection{subsubsection}%
988             3%
989             \z@
990             {-8\p@}%
991             {4\p@}%
992             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
993 \def\paragraph{\TB@startsection{paragraph}%
994             4%
995             \z@
996             {2.5ex\@plus 1ex}%
997             {-1em}%
998             {\normalsize\bf}}

```

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

```

999 \else
1000 \setcounter{secnumdepth}{0}
1001 \def\section{\TB@nolimlabel
1002             \TB@startsection{section}%
1003             1%
1004             \z@
1005             {-8\p@}%
1006             {4\p@}%
1007             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1008 \def\subsection{\TB@nolimlabel
1009             \TB@startsection{subsection}%
1010             2%
1011             \z@
1012             {-8\p@}%
1013             {-0.5em\@plus-\fontdimen3\font}%
1014             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1015 \def\subsubsection{\TB@nolimlabel
1016             \TB@startsection{subsubsection}%
1017             3%
1018             \parindent
1019             {-8\p@}%
1020             {-0.5em\@plus-\fontdimen3\font}%
1021             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1022 \fi

```

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

```
1023 \if@numbersec
```

```

1024 \def\TB@startsection#1{\@startsection#1}%
1025 \else
1026 \def\TB@startsection#1{%
1027 \ifstar
1028 {\TBWarning{*--form of \expandafter\string\csname\@firstofsix#1%
1029 \endcsname\space
1030 \MessageBreak
1031 conflicts with nonumber class option}%
1032 \@startsection#1}%
1033 {\@startsection#1}%
1034 }
1035 \fi
1036 \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).

```

1037 \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.

```

1038 \newenvironment{SafeSection}%
1039 {\let\TB@startsection\TB@safe@startsection}%
1040 {}

```

And now for the exciting sectioning commands that L^AT_EX 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'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.

```

1041 \if@numbersec
1042 \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1043 \else
1044 \def\paragraph{\TB@nosection\paragraph\subsubsection}
1045 \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1046 \fi
1047 \def\chapter{\TB@nosection\chapter\section}
1048 \def\part{\TB@nosection\part\section}
1049 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1050 \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.

```

1051 \def\TBtocsectionfont{\normalfont}
1052 \newskip\TBtocsectionspace \TBtocsectionspace=1.0em\@plus\p@

```

²Thurber, *The Wonderful O*

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...

```

1053 %\def\l@part#1#2{\addpenalty{\@secpenalty}%
1054 % \addvspace{2.25em\@plus\p@}%
1055 % \begingroup
1056 % \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
1057 % {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1058 % \nobreak
1059 % \endgroup}
1060 %
1061 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1062 \addvspace{\TBtocsectionspace}%
1063 \@tempdima 1.5em
1064 \begingroup
1065 \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1066 \parfillskip\z@
1067 \TBtocsectionfont
1068 \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1069 \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1070 \endgroup}

```

3.15 Appendices

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

```

1071 \renewcommand\appendix{\par
1072 \renewcommand\thesection{\@Alph{c@section}}%
1073 \setcounter{section}{0}%
1074 \if@numbersec
1075 \else
1076 \setcounter{secnumdepth}{1}%
1077 \fi

```

Now: is this the start of an appendix environment? This can be detected by looking at `\@currentvir`; if we are, we need to relay to `\@appendix@env` to pick up the optional argument.

```

1078 \def\@tempa{appendix}
1079 \ifx\@tempa\@currentvir
1080 \expandafter\@appendix@env
1081 \fi
1082 }

```

Here we deal with `\begin{appendix}[\langle app-name \rangle]`

```

1083 \newcommand\app@prefix@section{}
1084 \newcommand\@appendix@env[1][Appendix]{%
1085 \renewcommand\@secntformat[1]{\csname app@prefix@##1\endcsname
1086 \csname the##1\endcsname\quad}%
1087 \renewcommand\app@prefix@section{#1 }%
1088 }

```

Ending an appendix environment is pretty trivial...

```
1089 \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 L^AT_EX 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 mediaeval Latin for ‘label’).

Comment To come (perhaps): detection of the act of labelling, and an analogue of `\ifG@refundefined` for this sort of label

```
1090 \def\TB@nolimelabel{%
1091   \def\@currentlabel{%
1092     \protect\TBWarning{%
1093       Invalid reference to numbered label on page \thepage
1094       \MessageBreak made%
1095     }%
1096     \textbf{?!?}%
1097   }%
1098 }
```

3.17 Title references

This is a first cut at a mechanism 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.

```
1099 \let\TB@@sect\@sect
1100 \let\TB@@ssect\@ssect
1101 \def\@sect#1#2#3#4#5#6[#7]#8{%
1102   \def\@currentlabelname{#7}%
1103   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1104 }
1105 \def\@ssect#1#2#3#4#5{%
1106   \def\@currentlabelname{#5}%
1107   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1108 }
```

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

```
1109 \def\label#1{%
```

```

1110 \@bsphack
1111 \let\label\@gobble
1112 \let\index\@gobble
1113 \if@filesw
1114   \protected@write\@auxout{%
1115     {\string\newlabel{#1}{%
1116       {\@currentlabel}{\thepage}{\@currentlabelname}}}%
1117   }%
1118 \fi
1119 \@esphack
1120 }%
1121 }

```

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

```
1122 \let\@currentlabelname\@empty
```

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

```

1123 \DeclareRobustCommand\ref[1]{\expandafter\@setref
1124   \csname r@#1\endcsname\@firstofthree{#1}}
1125 \DeclareRobustCommand\pageref[1]{\expandafter\@setref
1126   \csname r@#1\endcsname\@secondofthree{#1}}
1127 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1128   \csname r@#1\endcsname\@thirdofthree{#1}}
1129 \long\def\@firstofthree#1#2#3{#1}
1130 \long\def\@secondofthree#1#2#3{#2}
1131 \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`.

```

1132 \long\def\@makecaption#1#2{%
1133   \vskip\abovecaptionskip
1134   \sbox\@tempboxa{#1: #2}%
1135   \ifdim \wd\@tempboxa >\hsize
1136     \raggedright\hyphenpenalty=\@M \parindent=1em
1137     \small \noindent #1: #2%
1138   \else
1139     \global \@minipagefalse
1140     \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1141   \fi
1142   \vskip\belowcaptionskip}

```

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

```

1143 \def\fnun@figure{\small \bf \figurename\nobreakspace\thefigure}
1144 \def\fnun@table{\small \bf \tablename\nobreakspace\thetable}

```

3.19 Size changing commands

Apart from their ‘normal’ effects, these commands are

```

1145 \renewcommand\normalsize{%
1146   \@setfontsize\normalsize\@xpt\@xipt
1147   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1148   \belowdisplayskip=\abovedisplayskip
1149   \abovedisplayshortskip=\z@\@plus 3\p@
1150   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1151 }
1152
1153 \renewcommand\small{%
1154   \@setfontsize\small\@ixpt{11}%
1155   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1156   \belowdisplayskip=\abovedisplayskip
1157   \abovedisplayshortskip=\z@\@plus 2\p@
1158   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1159 }
1160 \renewcommand\footnotesize{%
1161   \@setfontsize\footnotesize\@viipt{9.5}%
1162   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1163   \belowdisplayskip=\abovedisplayskip
1164   \abovedisplayshortskip=\z@\@plus 3\p@
1165   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1166 }

```

3.20 Lists and other text inclusions

```

1167 \def\@listi{%
1168   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1169   \itemsep=\parsep
1170   \listparindent=1em
1171 }
1172
1173 \def\@listii{%
1174   \leftmargin\leftmarginii
1175   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1176   \topsep=2\p@\@plus\p@\@minus\p@
1177   \parsep=\p@\@plus\p@\@minus\p@
1178   \itemsep=\parsep
1179   \listparindent=1em
1180 }
1181
1182 \def\@listiii{%
1183   \leftmargin=\leftmarginiii
1184   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1185   \topsep=\p@\@plus\p@\@minus\p@
1186   \parsep=\z@
1187   \itemsep=\topsep
1188   \listparindent=1em
1189 }
1190 \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.

```

1191 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1192   \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.

```
1193 %\let\@TB@verbatim\@verbatim
1194 \let\@TBverbatim\verbatim
1195 \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.)

```
1196 \def\verbatim{\par\obeylines
1197   \futurelet\reserved@a\@switch@sqbverbatim}
1198 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1199   \expandafter\@sqbverbatim\else
1200   \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1201 \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.

```
1202   \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.

```
1203   #1\@TBverbatim}
```

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

```
1204 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1205   \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1206   \trivlist \item\relax
1207   \if@minipage\else\vskip\parskip\fi
1208   \leftskip\@totalleftmargin\rightskip\z@skip
1209   \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1210   \@@par
1211   \@tempwafalse
```

```

1212 \def\par{%
1213   \if@tempswa
1214     \leavevmode \null \@@par\penalty\interlinepenalty
1215   \else
1216     \@tempswatrue
1217     \ifhmode\@@par\penalty\interlinepenalty\fi
1218   \fi}%
1219 \obeylines \verbatim@font \@noligs
1220 \let\do\@makeother \dospecials
1221 \everypar \expandafter{\the\everypar \unpenalty}%
1222 }%

```

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).

```

1223 \def\endverbatim{\@TBendverbatim
1224   \if@ruled\kern5\p@hrule\endtrivlist\fi}

   \enablemetacode simply typesets3 something that looks (verbatim) like:
   <meta-text>

as:
   <meta-text>

1225 {\makeactive<
1226   \gdef<#1>{\reset@font\ensuremath{\langle}%
1227     \textit{#1}%
1228     \ensuremath{\rangle}}}
1229 }

```

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

```

1230 \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}]...

```

The available citation commands are:

<code>\cite{key}</code>	→ (Jones, Baker, and Smith 1990)
<code>\citeA{key}</code>	→ (Jones, Baker, and Smith)
<code>\citeNP{key}</code>	→ Jones, Baker, and Smith 1990
<code>\citeANP{key}</code>	→ Jones, Baker, and Smith
<code>\citeN{key}</code>	→ Jones, Baker, and Smith (1990)
<code>\shortcite</code>	→ (Jones et al. 1990)
<code>\citeyear</code>	→ (1990)
<code>\citeyearNP</code>	→ 1990

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

First of all (after checking that we're to use Harvard citation at all), make a copy of L^AT_EX's default citation mechanism.

```
1231 \if@Harvardcite
1232 \let\@internalcite\cite
```

Normal forms.

```
1233 \def\cite{\def\@citesep{-1000}}%
1234   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1235   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1236 \def\citeNP{\def\@citesep{-1000}}%
1237   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1238   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1239 \def\citeN{\def\@citesep{-1000}}%
1240   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}}%
1241   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1242 \def\citeA{\def\@citesep{-1000}}%
1243   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1244   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1245 \def\citeANP{\def\@citesep{-1000}}%
1246   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1247   \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1248 \def\shortcite{\def\@citesep{-1000}}%
1249   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1250   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1251 \def\shortciteNP{\def\@citesep{-1000}}%
1252   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1253   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1254 \def\shortciteN{\def\@citesep{-1000}}%
1255   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}}%
1256   \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1257 \def\shortciteA{\def\@citesep{-1000}}%
1258   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1259   \def\citeauthoryear##1##2##3{##2}\@internalcite}
1260 \def\shortciteANP{\def\@citesep{-1000}}%
1261   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1262   \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1263 \def\citeyear{\def\@citesep{-1000}}%
1264   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1265   \def\citeauthoryear##1##2##3{##3}\@citedata}
1266 \def\citeyearNP{\def\@citesep{-1000}}%
1267   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1268   \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.

```
1269 \def\@citedata{%
1270   \ifnextchar [{\@tempswatrue\@citedatax}%
1271               {\@tempswafalse\@citedatax[]}%
1272 }
1273
```

```

1274 \def\@citedatax[#1]#2{%
1275 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1276 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1277   {\@citea\def\@citea{, }\@ifundefined% by Young
1278     {b\@citeb}{\bf ?}%
1279     \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1280 {\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.

```

1281 \def\@citex[#1]#2{%
1282 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1283 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1284   {\@citea\def\@citea{; }\@ifundefined% by Young
1285     {b\@citeb}{\bf ?}%
1286     \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1287 {\csname b\@citeb\endcsname}}{#1}}%

```

No labels in the bibliography.

```
1288 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```

1289 \newlength{\bibhang}
1290 \setlength{\bibhang}{2em}

```

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

```

1291 \newdimen\bibindent
1292 \bibindent=1.5em
1293 \@ifundefined{refname}%
1294   {\newcommand{\refname}{References}}%
1295   {}%

```

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

```

1296 \def\thebibliography#1{%
1297   \let\TB@startsection\TB@safe@startsection
1298   \section*{\refname
1299     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1300   \list{[\arabic{enumi}]}{%
1301     \labelwidth\z@ \labelsep\z@
1302     \leftmargin\bibindent
1303     \itemindent -\bibindent
1304     \listparindent \itemindent
1305     \parsep \z@
1306     \usecounter{enumi}}
1307   \def\newblock{}
1308   \BibJustification
1309   \sfcode'\.=1000\relax
1310 }

```

etal Other bibliography odds and ends.

```

\bibentry 1311 \def\etal{et\,al.\@}
1312 \def\bibentry{%
1313   \smallskip
1314   \hangindent=\parindent

```

```

1315 \hangafter=1
1316 \noindent
1317 \sloppy
1318 \clubpenalty500 \widowpenalty500
1319 \frenchspacing
1320 }

```

`\bibliography` Changes made to accommodate TUB file naming conventions

```

\bibliographystyle 1321 \def\bibliography#1{%
1322   \if@files
1323     \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1324   \fi
1325   \input{\jobname.bbl}%
1326 }
1327 \def\bibliographystyle#1{%
1328   \if@files
1329     \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1330   \fi
1331 }

```

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

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

```

1332 \else
1333 \let\tb@thebibliography\thebibliography
1334 \def\thebibliography{%
1335   \let\tb@startsection\tb@safe@startsection
1336   \let\sloppy\BibJustification
1337   \tb@thebibliography}
1338 \fi

```

`\BibJustification` `\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.)

```

1339 \let\tb@sloppy\sloppy
1340 \let\BibJustification\tb@sloppy
1341 \newcommand{\SetBibJustification}[1]{%
1342   \renewcommand{\BibJustification}{#1}%
1343 }
1344 \ResetCommands\expandafter{\the\ResetCommands
1345   \let\BibJustification\tb@sloppy
1346 }

```

3.23 Registration marks

```

1347 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1348 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1349 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }

```

“T” marks centered on top and bottom edges of paper

```

1350 \def\ttopregister{\dlap{%
1351     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1352         \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1353     \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1354 \def\tbotregister{\ulap{%
1355     \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1356     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1357         \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1358 \def\topregister{\ttopregister}
1359 \def\botregister{\tbotregister}

```

3.24 Running heads

```

1360 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1361 \def\PrelimDraftfooter{%
1362     \dlap{\kern\textheight\kern3pc
1363         \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}}
1364     }}
1365

```

registration marks; these are temporarily inserted in the running head

```

1366 \def\MakeRegistrationMarks{}
1367 \def\UseTrimMarks{%
1368     \def\MakeRegistrationMarks{%
1369         \ulap{\rlap{%
1370             \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1371             \topregister\vskip \headmargin \vskip 10\p@}}}%
1372     }
1373
1374 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1375     \normalsize\csize normalshape\endcsize\rm
1376     \rtitlex\qquad\midrtitle \hfil \thepage}
1377 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1378     \normalsize\csize normalshape\endcsize\rm
1379     \thepage\hfil\midrtitle\qquad\rtitlex}
1380 \def\@oddfoot{}
1381 \def\@evenfoot{}
1382 \def\ps@headings{}
1383 \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 $\text{\LaTeX} 2_{\epsilon}$ for 1995/06/01 (with the use of `\hb@xt@`). *This* time there's no semantic change, but...

```

1384 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1385     \global\setbox\@leftcolumn\box\@outputbox
1386     \global\brokenpenalty10000
1387     \else \global\@firstcolumntrue
1388         \global\brokenpenalty100
1389         \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1390             {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1391             \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats

```

```

1392      \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1393      \whilesw\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1394      \fi}

```

3.26 Font-related definitions and machinery

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

```

1395 \newif\ifFirstPar      \FirstParfalse
1396 \def\smc{\sc}
1397 \def\ninepoint{\small}
1398 \</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.)

```

1399 \<common>
1400 \DeclareRobustCommand\SMC{%
1401   \ifx\@currsize\normalsize\small\else
1402   \ifx\@currsize\small\footnotesize\else
1403   \ifx\@currsize\footnotesize\scriptsize\else
1404   \ifx\@currsize\large\normalsize\else
1405   \ifx\@currsize\Large\large\else
1406   \ifx\@currsize\LARGE\Large\else
1407   \ifx\@currsize\scriptsize\tiny\else
1408   \ifx\@currsize\tiny\tiny\else
1409   \ifx\@currsize\huge\LARGE\else
1410   \ifx\@currsize\Huge\huge\else
1411   \small\SMC@unknown@warning
1412 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1413 }
1414 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: nonstandard
1415   text font size command -- using \string\small}}
1416 \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.

```

1417 \newcommand\acro[1]{\textSMC{#1}\@}
1418 \</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!)

```

1419 \*classtail
1420 \def\xEdNote{\@EdNoteFont Editor's note:\enspace }
1421 \def \EdNote{\@ifnextchar[%]
1422   {%
1423     \ifvmode
1424       \smallskip\noindent\let\@EdNote@\@EdNote@v
1425     \else
1426       \unskip\quad\def\@EdNote@{\unskip\quad}%
1427     \fi
1428     \@EdNote
1429   }%
1430   \xEdNote
1431 }
1432 \long\def\@EdNote[#1]{%
1433   [\thinspace\xEdNote\ignorespaces
1434   #1%
1435   \unskip\thinspace]%
1436   \@EdNote@
1437 }
1438 \def\@EdNote@v{\par\smallskip}

```

Macros for Mittelbach's self-documenting style

```

1439 \def\SelfDocumenting{%
1440   \setlength\textwidth{31pc}
1441   \onecolumn
1442   \parindent \z@
1443   \parskip 2\p@\@plus\p@\@minus\p@
1444   \oddsidemargin 8pc
1445   \evensidemargin 8pc
1446   \marginparwidth 8pc
1447   \toks\expandafter{\@oddhead}%
1448   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1449   \toks\expandafter{\@evenhead}%
1450   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1451   \def\ps@titlepage{}%
1452 }
1453 \def\ps@titlepage{}
1454
1455 \long\def\@makefnmark#1{\parindent 1em\noindent\hb@xt@2em{}%
1456   \llap{\@makefnmark}\null$\mskip5mu$#1}
1457
1458 %% \long\def\@makefnmark#1{\parindent 1em
1459 %%   \noindent
1460 %%   \hb@xt@2em{\hss\@makefnmark}%
1461 %%   \hskip0.27778\fontdimen6\textfont\z@relax
1462 %%   #1%

```

```

1463 %% }

\creditfootnote Sometimes we want the label "Editor's Note:", sometimes not.
\supportfootnote
1464 \def\creditfootnote{\nomarkfootnote\xEdNote}
1465 \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.
1466 \gdef\nomarkfootnote#1#2{\begingroup
1467   \def\thefootnote{}%
1468   % no period, please, also no fnmark.
1469   \def\@makefnmark{\@#1}%
1470   \footnotetext{\noindent #1#2}%
1471   \endgroup
1472 }

```

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.

```

1473 \if@Harvardcite
1474   \AtBeginDocument{%
1475     \bibliographystyle{ltugbib}%
1476   }
1477 \fi
1478 \authornumber\z@
1479 \let\@signature\@defaultsignature
1480 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1481                                           configuration information}}{}
1482 </classtail>

```

4 L^AT_EX 2_ε Proceedings class

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

```

1483 (*!tugproccls)
1484 \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.

```

1485 \newif\if@proctw@column \@proctw@columntrue
1486 \DeclareOption{onecolumn}{\@proctw@columnfalse}

```

\if@proc@sober 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.

```

1487 \newif\if@proc@sober
1488 \newif\if@proc@numerable
1489 \DeclareOption{tug95}{%
1490   \@proc@soberfalse

```

```

1491 \@proc@numerablefalse
1492 }
1493 \DeclareOption{tug96}{%
1494 \@proc@sobertrue
1495 \@proc@numerablefalse
1496 }
1497 \DeclareOption{tug97}{%
1498 \@proc@sobertrue
1499 \@proc@numerabletrue
1500 }
1501 \DeclareOption{tug2002}{%
1502 \@proc@sobertrue
1503 \@proc@numerabletrue
1504 \let\if@proc@numbersec\iftrue
1505 \PassOptionsToClass{numbersec}{ltugboat}%
1506 }

```

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

```

1507 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1508 \PassOptionsToClass{numbersec}{ltugboat}%
1509 }
1510 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1511 \PassOptionsToClass{nonumber}{ltugboat}%
1512 }

```

`\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`.

```

1513 \newif\ifTB@title
1514 \DeclareOption{title}{\TB@titletrue}
1515 \DeclareOption{notitle}{\TB@titlefalse}
1516 \AtBeginDocument{\stepcounter{page}}

```

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

```

1517 \DeclareOption{tugproc}{%
1518 \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1519 }

```

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

```

1520 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{ltugboat}}

```

If there's a `tugproc` defaults file, input it now: it may tell us which year we're to perform for... (Note: this code *is* millenium-proof. It's not terribly classy for years beyond 2069, but then I'm not going to be around then—this will be an interesting task for a future `TEXie`...)

```

1521 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1522 \Loading ltugproc configuration information}}{}
1523 \@ifundefined{TUGprocExtraOptions}%
1524 {\let\TUGprocExtraOptions\@empty}%
1525 {\edef\TUGprocExtraOptions{\,\TUGprocExtraOptions}}

```


`\tugProcYear` Now work out what year it is

```
1526 \@tempcnta\year
1527 \ifnum\@tempcnta<2000
1528   \divide\@tempcnta by100
1529   \multiply\@tempcnta by100
1530   \advance\@tempcnta-\year
1531   \@tempcnta-\@tempcnta
1532 \fi
```

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

```
1533 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1534             {\ifnum10>\@tempcnta0\fi the\@tempcnta}}
1535 \@tempa
1536 \ClassInfo{ltugproc}{Class believes year is
1537   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1538   \@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.

```
1539 \expandafter\ifx\curname ds\tug\tugProcYear\endcurname\relax
1540 \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.

```
1541 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1542 \ProcessOptions
1543 \if@proc@numbersec
1544   \if@proc@numerable
1545     \else
1546       \ClassWarning{\@tugclass}{This year’s proceedings may not have
1547         numbered sections}%
1548   \fi
1549 \fi
```

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

```
1550 \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 *TUGboat* proper. Note the tedious L^AT_EX bug-avoidance in the `\@TB@test@document` macro.

```
1551 \def\maketitle{%
1552   \begingroup
1553     \ifshortAuthor\else
1554       \global\let\rhAuthor\@empty
1555       \def\g@addto\rhAuthor##1{%
1556         \begingroup
1557         \toks@\expandafter{\rhAuthor}%
```

```

1558         \let\thanks\@gobble
1559         \protected@xdef\rhAuthor{\the\toks@##1}%
1560     \endgroup
1561 }%
1562 \getauthorlist\g@addto\rhAuthor
1563 \fi

    now, the real business of setting the title
1564 \ifTB@title
1565     \setcounter{footnote}{0}%
1566     \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1567     \if@proctw@column
1568         \twocolumn[\@maketitle]%
1569     \else
1570         \onecolumn
1571         \global\@topnum\z@
1572         \@maketitle
1573     \fi
1574     \@thanks
1575     \thispagestyle{TBproctitle}
1576 \fi
1577 \endgroup
1578 \TB@madetitletrue
1579 }
1580 \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 L^AT_EX bug report latex/2212, submitted by Robin Fairbairns, for details.

```

1581 \def\@TB@test@document{%
1582     \edef\@tempa{\the\everypar}
1583     \def \@tempb{\@nodocument}
1584     \ifx \@tempa\@tempb
1585         \@nodocument
1586     \fi
1587 }

```

`\AUTHORfont` Define the fonts for titles and things

```

\TITLEfont 1588 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1589 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1590 \def\addressfont{\small\rmfamily\mdseries\upshape}
1591 \def\netaddrfont{\small\ttfamily\mdseries\upshape}

```

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

```

\belowauthorskip 1592 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
\belowabstractskip 1593 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1594 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

```

`\@maketitle` The body of `\maketitle`

```

1595 \def\@maketitle{%
1596     {\parskip\z@
1597     \frenchspacing
1598     \TITLEfont\raggedright\noindent\@title\par
1599     \count@=0

```

```

1600 \loop
1601 \ifnum\count@<\authornumber
1602 \vskip\aboveauthorskip
1603 \advance\count@\@ne
1604 {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1605 \addressfont\theaddress{\number\count@}\endgraf
1606 {%
1607 \allowhyphens
1608 \hangindent1.5pc
1609 \netaddrfont\thenetaddress{\number\count@}\endgraf
1610 \hangindent1.5pc
1611 \thePersonalURL{\number\count@}\endgraf
1612 }%
1613 \repeat
1614 \vskip\belowauthorskip}%
1615 \if@abstract
1616 \centerline{\bfseries Abstract}%
1617 \vskip.5\baselineskip\rmfamily
1618 \list{}\listparindent20\p@
1619 \itemindent\z@ \leftmargin4.875pc
1620 \rightmargin\leftmargin \parsep \z@\item[]\ignorespaces
1621 \the\abstract@toks
1622 \endlist\global\@ignoretrue
1623 \fi
1624 \vskip\belowabstractskip
1625 \global\@afterindentfalse\aftergroup\@afterheading
1626 }

```

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

```

1627 %\def\thanks#1{\@bsphack\TBWarning{\string\thanks\space
1628 % is not supported}\@esphack}

```

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

```

1629 \newtoks\abstract@toks \abstract@toks{}
1630 \let\if@abstract\iffalse
1631 \def\abstract{%

```

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

```

1632 \ifTB@madetitle
1633 \TBWarning{abstract environment after \string\maketitle}
1634 \fi
1635 \def\@abstract@{abstract}%
1636 \ifx\@currenvir\@abstract@

```

```

1637 \else
1638   \TError{\string\abstract\space is illegal:%
1639     \MessageBreak
1640     use \string\begin{\@abstract@} instead}%
1641     {\@abstract@\space may only be used as an environment}
1642 \fi
1643 \global\let\if@abstract\iftrue
1644 {\ifnum0='}\fi
1645 \@abstract@getbody}
1646 \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}

1647 \long\def\@abstract@getbody#1\end{%
1648   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1649   \@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.

1650 \def\@abstract@findend#1{%
1651   \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.

1652   \ifx\@tempa\@abstract@
1653     \expandafter\@abstract@end
1654   \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)

1655     \def\@tempb{document}%
1656     \ifx\@tempa\@tempb
1657       \TError{\string\begin{\@abstract@}
1658         ended by \string\end{\@tempb}}%
1659       {You've forgotten \string\end{\@abstract@}}
1660     \else
1661       \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1662       \expandafter\expandafter\expandafter\@abstract@getbody
1663     \fi
1664   \fi}

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

1665 \def\@abstract@end{\ifnum0='{ \fi}%
1666   \expandafter\end\expandafter{\@abstract@}}

```

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

```

1667 \renewcommand{\makesignature}{\TBWarning
1668   {\string\makesignature\space is invalid in proceedings issues}}

```

`\title` We redefine the `\title` command, so as to set the `\rhTitle` command at the same 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.

```
1669 \renewcommand\title{\@dblarg\TB@title}
1670 \def\TB@title[#1]#2{\gdef\@title{#2}%
1671   \bgroup
1672     \let\thanks\@gobble
1673     \let\\\ %
1674     \protected@xdef\rhTitle{#1}%
1675   \egroup
1676 }
```

`\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.

```
1677 \def\shortTitle #1{\def\rhTitle{#1}}
1678 \newif\ifshortAuthor
1679 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}
```

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

```
\ps@TBproc 1680 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1681   \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1682   \TB@definefeet
\TB@definefeet 1683 }
\pfoottext 1684 \def\ps@TBproc{%
\rfoottext 1685   \def\@oddhead{\MakeRegistrationMarks
1686     {%
1687       \hfil
1688       \def\{\unskip\ \ignorespaces}%
1689       \rmfamily\rhTitle
1690     }%
1691   }%
1692   \def\@evenhead{\MakeRegistrationMarks
1693     {%
1694       \def\{\unskip\ \ignorespaces}%
1695       \rmfamily\rhAuthor
1696       \hfil
1697     }%
1698   }%
1699   \TB@definefeet
1700 }
1701
1702 \advance\footskip8\p@    % for deeper running feet
1703
1704 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1705 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1706   {#2}}
1707 \def\TB@definefeet{%
1708   \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1709     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1710   \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1711     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
}
```

```

1712 }
1713
1714 \def\pfoottext{{\smc Preprint}: Proceedings of the \volyr{} Annual Meeting}
1715 \def\rfoottext{\normalfont\TUB, \volx\Dash
1716   {Proceedings of the \volyr{} Annual Meeting}}
1717
1718 \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).

```

1719 \if@proc@numbersec
1720 \else
1721   \setcounter{secnumdepth}{0}
1722 \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.

```

1723 \if@proc@numbersec
1724 \else
1725   \if@proc@sober
1726     \def\section
1727       {\TB@nolimelabel
1728        \TB@startsection{{section}%
1729                          1%
1730                          \z@%
1731                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1732                          {6\p@}%
1733                          {\normalsize\bfseries\raggedright}}}
1734   \else
1735     \def\section
1736       {\TB@nolimelabel
1737        \TB@startsection{{section}%
1738                          1%
1739                          \z@%
1740                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1741                          {6\p@}%
1742                          {\large\bfseries\raggedright}}}
1743   \fi
1744   \def\subsection
1745     {\TB@nolimelabel
1746      \TB@startsection{{subsection}%
1747                        2%
1748                        \z@%
1749                        {6\p@\@plus 2\p@\@minus2\p@}%
1750                        {-5\p@\@plus -\fontdimen3\the\font}%
1751                        {\normalsize\bfseries}}}

```

```

1752 \def\subsubsection
1753     {\TB@nolimelabel
1754     \TB@startsection{\subsubsection}%
1755                     3%
1756                     \parindent%
1757                     \z@%
1758                     {-5\p@\@plus -\fontdimen3\the\font}%
1759                     {\normalsize\bfseries}}}
1760 \fi
1761 \ltugproccls

```

5 Plain T_EX styles

```

1762 \*tugboatsty>
1763 % err...
1764 \tugboatsty>
1765 \*tugprocsty>
1766 % err...
1767 \tugprocsty>

```

6 The L^AT_EX 2_ε compatibility-mode style files

```

1768 \*ltugboatsty>
1769 \@obsoletedefile{ltugboat.cls}{ltugboat.sty}
1770 \LoadClass{ltugboat}
1771 \ltugboatsty>
1772 \*ltugprocsty>
1773 \@obsoletedefile{ltugproc.cls}{ltugproc.sty}
1774 \LoadClass{ltugproc}
1775 \ltugprocsty>

```

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

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\@TB@test@document <u>1581</u>	\belowabstractskip <u>1592</u>	environments:
\@maketitle .. <u>923</u> , <u>1595</u>	\belowauthorskip . <u>1592</u>	abstract <u>1629</u>
\@r@maketitle <u>836</u>	\bibentry <u>1311</u>	\etal <u>1311</u>
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ment) <u>1629</u>	\creditfootnote .. <u>1464</u>	\if@proc@sober ... <u>1487</u>
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