

# The **tugboat** package\*

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## 1 Document preambles

```

1 <|tugboatcls | ltugproccls | ltugcomn>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile                {tugboat.dtx}
4 </dtx>
5 <|tugboatcls>\ProvidesClass  {ltugboat}
6 <|tugproccls>\ProvidesClass  {ltugproc}
7 <|tugboatsty>\ProvidesPackage{ltugboat}
8 <|tugprocsty>\ProvidesPackage{ltugproc}
9 <|tugcomn>   \ProvidesPackage{ltugcomn}
10                [2009/05/06 v2.6
11 <|tugboatcls>                TUGboat journal class%
12 <|tugproccls>                TUG conference proceedings class%
13 <|tugboatsty | ltugprocsty>   TUG compatibility package%
14 <|tugcomn>                   TUGboat 'common macros' package%
15 <*dtx>
16                                TUG macros source file%
17 </dtx>
18                                ]
19 <*dtx>
20 \newif\ifoldlongtable
21 </dtx>

Checksum4568

```

## 2 Introduction

This file contains all the macros for typesetting *TUGboat* with both plain T<sub>E</sub>X and L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>.

## 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).

<code>\AllTeX</code>	$(\mathbb{A})\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<code>\AMS</code>	American Mathematical Society
<code>\AmSTeX</code>	
<code>\aw</code>	A-W (abbreviation for Addison-Wesley)
<code>\API</code>	
<code>\AW</code>	Addison-Wesley
<code>\BibTeX</code>	
<code>\CandT</code>	Computers & Typesetting
<code>\ConTeXt</code>	$\mathrm{ConT}_{\mathrm{E}}\mathrm{Xt}$
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVI</code>	
<code>\DVD</code>	
<code>\DVIPDFMx</code>	$\mathrm{DVIPDFM}x$
<code>\DVItOVDU</code>	$\mathrm{DVItOVDU}$
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	$\varepsilon\mathrm{-T}_{\mathrm{E}}\mathrm{X}$
<code>\exTeX</code>	$\varepsilon x\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<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 $\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<code>\LaTeX</code>	
<code>\MacOSX</code>	Mac OS X
<code>\MathML</code>	
<code>\Mc</code>	M with raised c
<code>\MF</code>	$\mathrm{METAFont}$
<code>\mf</code>	$\mathrm{METAFont}$
<code>\MFB</code>	The Metafont book
<code>\MP</code>	$\mathrm{METAPOST}$
<code>\mp</code>	MetaPost (in text only: remains ‘ $\mp$ ’ in maths)
<code>\OMEGA</code>	Omega ‘logo’ ( $\Omega$ )
<code>\OCP</code>	Omega compiled process
<code>\OOXML</code>	
<code>\OTP</code>	Omega translation process
<code>\mtex</code>	multilingual $\mathrm{T}_{\mathrm{E}}\mathrm{X}$

<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>	$\TeX$ for the Atari ST
<code>\SVG</code>	
<code>\TANGLE</code>	
<code>\TB</code>	The $\TeX$ book
<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>\XeLaTeX</code>	with extra space before ‘L’
<code>\XML</code>	
<code>\WEB</code>	
<code>\WEAVE</code>	
<code>\WYSIWYG</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 <code>baselineskip</code> and <code>lineskip</code> 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>\midrttitle</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 <sup>st</sup> ’, ‘2 <sup>nd</sup> ’, 3 <sup>rd</sup> , 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>	<code>\input</code> with some other bookkeeping for case where multiple articles are put together
<code>\TBremark</code>	reminder to <i>TUGboat</i> editorial staff
<code>\TBenableRemarks</code>	enable \TBremarks (normally suppressed)
<code>\pagexref</code>	used to write out page numbers to screen and external files
<code>\pagexrefON</code>	
<code>\pagexrefOFF</code>	
<code>\xref to</code>	used for symbolic cross-reference to other pages
<code>\xref toON</code>	in <i>TUGboat</i>
<code>\xref toOFF</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<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> *TUGboat* class file

#### 3.1 Setup and options

Check for reloading. Hmmmm... Does this happen with L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> 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  $\text{\LaTeX} 2_{\varepsilon}$  we can use the `\Class*` commands:

```

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

```

Some trivial options, just flicking switches, etc.

```

30 \newif\ifpreprint
31 \def\preprint{\preprinttrue}
32 \DeclareOption{draft}{%
33   \AtEndOfClass{%
34     \setcounter{page}{1001}%
35     \BlackBoxes
36     \def\MakeRegistrationMarks{}%
37     \PrelimDrafttrue
38   }%
39 }
40 \DeclareOption{preprint}{%
41   \preprinttrue
42 }
43 \DeclareOption{final}{%
44   \AtEndOfClass{%
45     \NoBlackBoxes
46     \PrelimDraftfalse
47   }%
48 }

```

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

```

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

```

Similarly, ignore one/two-side/column

```

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

```

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

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

Option `rawcite` (the default) specifies the default citation mechanism (as built-in to `LATEX`); option `harvardcite` specifies the author-date citation mechanism defined in section 3.23 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}
```

Minimal running headers/footers contain just the TUGboat volume/issue identification and page number. ‘runningfull’ is the default, and includes title and author.

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

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

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

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

```
71 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningfull}
72 \ProcessOptions
73 \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.

```
74 \def\sectitlefont{\fontfamily\sfddefault\fontseries{bx}\fontshape{n}%
```



```

75         \fontsize\@xvipt\stbaselineskip\selectfont}
76 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
77         \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...

```

78 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
79         \selectfont}
80 \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<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>).

```

81 \common
82 \IfFileExists{mflogo.sty}%
83   {\RequirePackage{mflogo}}%
84 \ltugcomn {\TBWarning
85 \tugcomn} {\PackageWarning{\tugcomn}
86   {Package mflogo.sty not available --\MessageBreak
87     Proceeding to emulate mflogo.sty}
88 \DeclareRobustCommand\logofamily{%
89   \not@math@alphabet\logofamily\relax
90   \fontencoding{U}\fontfamily{logo}\selectfont}
91 \DeclareTextFontCommand{\textlogo}{\logofamily}
92 \def\MF{\textlogo{META}\-\textlogo{FONT}\@}
93 \def\MP{\textlogo{META}\-\textlogo{POST}\@}
94 \DeclareFontFamily{U}{logo}{}
95 \DeclareFontShape{U}{logo}{m}{n}{%
96   <8><9>gen*logo%
97   <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
98 }{}
99 \DeclareFontShape{U}{logo}{m}{sl}{%
100   <8><9>gen*logosl%
101   <10><10.95><12><14.4><17.28><20.74><24.88>logosl10%
102 }{}
103 \DeclareFontShape{U}{logo}{m}{it}{%
104   <->ssub*logo/m/sl%
105 }{}%
106 }

```

### 3.2 Resetting at start of paper

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

command `\StartNewPaper`. Things I've not yet thought of may be added to the list of commands, by

```

107 \newtoks\ResetCommands
108 \ResetCommands{%
109   \setcounter{part}{0}%
110   \setcounter{section}{0}%
111   \setcounter{footnote}{0}%
112   \authornumber\z@
113 }
114 \newcommand{\AddToResetCommands}[1]{%
115   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
116 }

```

### 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.

```

117 <*\latex>
118 \def\makeescape#1{\catcode'#1=0 }
119 \def\makebgroup#1{\catcode'#1=1 }
120 \def\makeegroup#1{\catcode'#1=2 }
121 \def\makemath #1{\catcode'#1=3 }
122 </!\latex>
123 <*\latex>
124 \def\makeescape#1{\catcode'#1=\z@}
125 \def\makebgroup#1{\catcode'#1=\@ne}
126 \def\makeegroup#1{\catcode'#1=\tw@}
127 \def\makemath #1{\catcode'#1=\thr@@}
128 </!\latex>
129 \def\makealign #1{\catcode'#1=4 }
130 \def\makeeol #1{\catcode'#1=5 }
131 \def\makeparm #1{\catcode'#1=6 }
132 \def\makesup #1{\catcode'#1=7 }
133 \def\makesub #1{\catcode'#1=8 }
134 \def\makeignore#1{\catcode'#1=9 }
135 \def\makespace #1{\catcode'#1=10 }
136 \def\makeletter#1{\catcode'#1=11 }
137 \chardef\other=12
138 \let\makeother\@makeother
139 \def\makeactive#1{\catcode'#1=13 }
140 \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.

```

141 \def\savecat#1{%
142   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}
143 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}

```

```

144 <!!latex>\savecat\@
145 <!!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.

```

146 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
147   \csname#1\endcsname}
148 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
149   \csname saved@@#1\endcsname}

```

To distinguish between macro files loaded

```

150 \def\plaintubstyle{plain}
151 \def\latextubstyle{latex}

```

Control sequences that were first defined in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> of 1995/06/01 (or later), but which we merrily use. Only define if necessary:

```

152 \providecommand\hb@xt@{\hbox to}
153 \providecommand\textsuperscript[1]{\ensuremath{\m@th
154   ^{\mbox{\fontsize\sf@size\z@
155     \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.

```

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

```

```

176 \TeX}
177 %
178 \def\CandT{\textsl{Computers \& Typesetting}}

We place our \kern after \- so that it disappears if the hyphenation is taken:
179 \newcommand\ConTeXt{C\kern-.0333emon\-\kern-.0667em\TeX\kern-.0333emt}
180 \newcommand\Cplusplus{C\plusplus}
181 \newcommand\plusplus{\raisebox{.7ex}{$_{++}$}}
182 \def\CSS{\acro{CSS}}
183 \def\CTAN{\acro{CTAN}}
184 \def\DTD{\acro{DTD}}
185 \def\DVD{\acro{DVD}}
186 \def\DVI{\acro{DVI}}
187 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
188 \def\DVItOVDU{DVItO\kern-.12em VDU}
189 \def\ECMA{\acro{ECMA}}
190 \def\EPS{\acro{EPS}}
191 \DeclareRobustCommand\TeX{\ensuremath{\varepsilon}\kern-.125em\TeX}
192 \DeclareRobustCommand\ExTeX{%
193   \ensuremath{\textstyle\varepsilon_{\kern0.15em\cal{X}}}\kern-.2em\TeX}
194 \def\FAQ{\acro{FAQ}}
195 \def\FTP{\acro{FTP}}
196 \def\Ghostscript{Ghost\script}
197 \def\GNU{\acro{GNU}}
198 \def\GUI{\acro{GUI}}
199 \def\Hawaii{Hawai'i}
200 \def\HTML{\acro{HTML}}
201 \def\HTTP{\acro{HTTP}}
202 \def\IEEE{\acro{IEEE}}
203 \def\ISBN{\acro{ISBN}}
204 \def\ISO{\acro{ISO}}
205 \def\ISSN{\acro{ISSN}}
206 \def\JPEG{\acro{JPEG}}
207 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
208 \def\JoT{\textsl{The Joy of \TeX}}
209 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
210   $\m@th$\fontsize\sf@size\z@\selectfont
211   $\m@th\mathcal{A}$}%
212   \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
213   {$\m@th\mathcal{S}$}\kern-.125em\TeX}
214 % This code
215 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
216 % example) to propagate into the raised (small) 'A':
217 % \begin{macrocode}
218 \newcommand{\La}%
219   {\L\kern-.36em
220   {\setbox0\hbox{T}%
221     \vbox to\ht0{\hbox{$\m@th$%
222       \csname S@\f@size\endcsname
223       \fontsize\sf@size\z@

```

```

224 \math@fontsfalse\selectfont
225 A}%
226 \vss}%
227 }

```

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.

```

228 <[latex]>\def\LaTeX{\La\kern-.15em\TeX}
229 \def\MacOSX{Mac\,\acro{OS}\,X}
230 \def\MathML{Math\acro{ML}}
231 \def\Mc{\setbox\TestBox=\hbox{M}M\vbox
232   to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we're running under L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, we're using (at least pro tem) Ulrik Vieth's `mflgo.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`

```

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

```

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

```

252 \DeclareRobustCommand\NTS{\ensuremath{\mathcal{N}}\mkern-4mu
253   \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
254 \def\Pas{Pascal}
255 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
256 \def\PCTeX{PC\thinspace\TeX}
257 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
258 \def\PDF{\acro{PDF}}
259 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
260 \def\PiCTeX{\PiC\kern-.11em\TeX}
261 \def\PGF{\acro{PGF}}

```

```

262 \def\plain{\texttt{plain}}
263 \def\PNG{\acro{PNG}}
264 \def\POBox{P.\thinspace 0.\~Box }
265 \def\PS{{Post}\-Script}}
266 \def\PSTricks{\acro{PST}ricks}
267 \def\RTF{\acro{RTF}}
268 \def\SC{Steering Committee}
269 \def\SGML{\acro{SGML}}
270 \def\SliTeX{\textrm{S\kern-.06em\textsc{l\kern-.035em}%
271 \kern-.06em\TeX}}
272 \def\slMF{\textsl{MF}} % should never be used
273 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
274 \def\STIX{\acro{STIX}}
275 \def\SVG{\acro{SVG}}
276 \def\TANGLE{\texttt{TANGLE}\@}
277 \def\TB{\textsl{The \TeX book}}
278 \def\TIFF{\acro{TIFF}}
279 \def\TP{\textsl{\TeX}: \textsl{The Program}}
280 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
281 \def\TeXhax{\TeX hax}
282 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
283 \kern-.2267emG\@}
284 \def\TeXtures{\textit{Textures}}
285 \let\Textures=\TeXtures
286 \def\TeXXeT{\TeX-}\-XeT}
287 \def\TFM{\acro{TFM}}
288 \def\Thanh{H\`an\~Th\^e\llap{\raise 0.5ex\hbox{\`{}}}\~Th\`anh}
289 \def\TikZ{Ti{\em k}Z}
290 \def\TTN{\textsl{TTN}\@}
291 \def\TTN{\textsl{\TeX} and TUG News}}
292 \let\texttub\textsl % redefined in other situations
293 \def\TUB{\texttub{TUGboat}}
294 \def\TUG{\TeX\ \UG}
295 \def\tug{\acro{TUG}}
296 \def\UG{Users Group}
297 \def\UNIX{\acro{UNIX}}
298 \def\UTF{\acro{UTF}}
299 \def\VAX{V\kern-.12em A\kern-.1em X\@}
300 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
301 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
302 \def\XML{\acro{XML}}
303 \def\WEB{\texttt{WEB}\@}
304 \def\WEAVE{\texttt{WEAVE}\@}
305 \def\WYSIWYG{\acro{WYSIWYG}}

```

XeTeX requires reflecting the first E, hence we complain if the graphics package is not present. (For plain documents, this can be loaded via Eplain.) Also, at Barbara's suggestion, if the current font is slanted, we rotate by 180 instead of

reflecting so there is at least a chance to look ok. (The magic values here seem more or less ok for cmsl and cmti.)

```

306 \def\tubreflect#1{%
307   \ifundefined{reflectbox}{%
308     \TBerror{A graphics package must be loaded for \string\XeTeX}%
309   }{%
310     \ifdim \fontdimen1\font>0pt
311       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
312     \else
313       \reflectbox{#1}%
314     \fi
315   }%
316 }
317 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
318 \DeclareRobustCommand\Xe[1]{\leavevmode
319   \tubhideheight{\hbox{X%
320     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
321     \lower\dp0\hbox{\raise\dp1\hbox{\kern-.125em\tubreflect{E}}}%
322     \kern-.1667em #1}}}
323 \def\XeTeX{\Xe\TeX}
324 \def\XeLaTeX{\Xe{\,\,LaTeX}}
325 %
326 \def\XHTML{\acro{XHTML}}
327 \def\XSLT{\acro{XSLT}}

```

### 3.5 General typesetting rules

```

328 \newlinechar='^^J
329 \normallineskiplimit=\p@
330 \clubpenalty=10000
331 \widowpenalty=10000
332 \def\NoParIndent{\parindent=\z@}
333 \newdimen\normalparindent
334 \normalparindent=20\p@
335 \def\NormalParIndent{\global\parindent=\normalparindent}
336 \NormalParIndent
337 \def\BlackBoxes{\overfullrule=5\p@}
338 \def\NoBlackBoxes{\overfullrule=\z@}
339 \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.

```

340 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
341   \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
342 \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 (`\Tst*`) and an external one (`\Test*`).

*Comment:* Exercise for an idle day: find whether all these are necessary, or whether we can use the L<sup>A</sup>T<sub>E</sub>X temporaries for some (or all) of the `\Tst*` ones.

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

```

343 \newbox\TstBox           \newbox\TestBox
344 \newcount\TstCount      \newcount\TestCount
345 \newdimen\TstDimen      \newdimen\TestDimen
346 \newif\ifTstIf          \newif\ifTestIf

```

Control sequence existence test, stolen from T<sub>E</sub>Xbook exercise 7.7 (note that this provides functionality that in some sense duplicates something within L<sup>A</sup>T<sub>E</sub>X).

```

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

```

L<sup>A</sup>T<sub>E</sub>X conventions which are also useful here.

```

348 <*\latex>
349   \let\@@input\input
350   \def\iinput#1{\@@input#1 }
351   \def\@inputcheck{\if\@nextchar\bgroup
352     \expandafter\iinput\else\expandafter\@@input\fi}
353   \def\input{\futurelet\@nextchar\@inputcheck}
354 </!\latex>

```

Smashes repeated from AMS-T<sub>E</sub>X; plain T<sub>E</sub>X implements only full `\smash`.

```

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

```

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

```

362 \long\def\ulap#1{\vbox to \z@{\vss#1}}
363 \long\def\dlap#1{\vbox to \z@{\#1\vss}}

```

And centered horizontal and vertical ‘laps’

```

364 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
365 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
366 \long\def\zlap#1{\ylap{\xlap{\#1}}}

```

Avoid unwanted vertical glue when making up pages.

```

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

```



Empty rules for special occasions

```
368 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
369 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

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

Today's date, to be printed on drafts. Based on T<sub>E</sub>Xbook, p.406.

```
377 <!*latex>
378 \def\today{\number\day\space \ifcase\month\or
379     Jan \or Feb \or Mar \or Apr \or May \or Jun \or
380     Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
381     \number\year}
382 </!latex>
```

Current time; this may be system dependent!

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

### 3.7 Ragged right and friends

`\raggedskip` Plain T<sub>E</sub>X's definition of `\raggedright` doesn't permit any stretch, and results in too many overfull boxes. We also turn off hyphenation. This code lies somewhere between that of Plain T<sub>E</sub>X and of L<sup>A</sup>T<sub>E</sub>X.

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

`\raggedright` Some applications may have to add stretch, in order to avoid all overfull boxes.  
`\raggedleft` We define the following uses of the above skips, etc.  
`\raggedcenter` 400 `\def\raggedright{%`  
`\normalspaces` 401 `\nohyphens`  
402 `\rightskip=\raggedskip\@plus\raggedstretch \raggedspaces`  
403 `\parfillskip=\raggedparfill`  
404 `}`  
405 `\def\raggedleft{%`  
406 `\nohyphens`  
407 `\leftskip=\raggedskip\@plus\raggedstretch \raggedspaces`  
408 `\parfillskip=\z@skip`  
409 `}`  
410 `\def\raggedcenter{%`  
411 `\nohyphens`  
412 `\leftskip=\raggedskip\@plus\raggedstretch`  
413 `\rightskip=\leftskip \raggedspaces`  
414 `\parindent=\z@ \parfillskip=\z@skip`  
415 `}`  
416 `\def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}`

Miscellaneous useful stuff. Note that L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> defines a robust `\,`, but that we provide a new definition of `\~` by redefining its robust underpinnings<sup>1</sup> (based on the version in AMS- $\TeX$  — the L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> version has `\leavevmode` and doesn't care about surrounding space).

417 `\DeclareRobustCommand{\nobreakspace}{%`  
418 `\unskip\nobreak\ \ignorespaces}`

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

419 `\def\boxcs#1{\box\csname#1\endcsname}`  
420 `\def\setboxcs#1{\setbox\csname#1\endcsname}`  
421 `\def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}`  
422 `\let\gobble\@gobble`  
423 `\def\vellipsis{%`  
424 `\leavevmode\kern0.5em`  
425 `\raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}`  
426 `}`  
427 `\def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }`  
428 `\def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}`  
429 `\def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em`  
430 `\kern-.125em\smash{\lower.3ex\hbox{o}}}\ignorespaces}`

---

<sup>1</sup>`\DeclareRobustCommand` doesn't mind redefinition, fortunately

```

431 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
432 %
433 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}%
434                                     {\@sfrac{#1}/}}
435 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
436     \hbox{$\m@th\mbox{\fontsize\sf@size\z@
437         \selectfont#1}$}\kern-.1em
438     /\kern-.15em\lower.25ex
439     \hbox{$\m@th\mbox{\fontsize\sf@size\z@
440         \selectfont#2}$}}
441 %
442 % don't stay bold in description items, bold italic is too weird.
443 \DeclareRobustCommand\meta[1]{%
444     \ensuremath{\langle}%
445     \ifmmode \mbox\bgroup \fi % if in math
446     {\it #1}% no typewriter italics, please
447     \ifmmode \egroup \fi
448     \ensuremath{\rangle}%
449 }
450 %
451 \DeclareRobustCommand\cs[1]{\texttt{\char'\@#1}}
452 %
453 \DeclareRobustCommand\env[1]{%
454     \cs{begin}\texttt{\char'\@#1\char'\@}}
455 %
456 \def\thinskip{\hskip 0.16667em\relax}

```

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

```

457 \def\endash{--}
458 \def\emdash{\endash-}
459 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
460 \def\dash{\d@sh\nobreak\endash}
461 \def\Dash{\d@sh\nobreak\emdash}
462 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
463 \def\rdash{\d@sh\nobreak\endash}
464 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
465 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

466 \def\hyph{-\penalty\z@\hskip\z@skip }
467 \def\slash{/\penalty\z@\hskip\z@skip }

```

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

```

468 \def\nth#1{%
469     \def\reserved@a##1##2\@nil{\ifcat##1n%
470         0%
471         \let\reserved@b\ensuremath

```

```

472     \else##1##2%
473         \let\reserved@b\relax
474     \fi}%
475 \TestCount=\reserved@a#1\@nil\relax
476 \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
477 \T@stCount=\TestCount
478 \divide\T@stCount by 100 \multiply\T@stCount by 100
479 \advance\TestCount by-\T@stCount % n mod 100
480 \ifnum\TestCount >20 \T@stCount=\TestCount
481     \divide\T@stCount by 10 \multiply\T@stCount by 10
482     \advance\TestCount by-\T@stCount % n mod 10
483 \fi
484 \reserved@b{#1}%
485     \textsuperscript{\ifcase\TestCount th%      0th
486                     \or st%                    1st
487                     \or nd%                    2nd
488                     \or rd%                    3rd
489                     \else th%                  nth
490                     \fi}%
491 }

```

### 3.8 Reviews

Format information on reviewed items for book review articles. For the L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> version, we follow Fairbairns' maxim, and define something that can even look like a L<sup>A</sup>T<sub>E</sub>X macro...

```

492 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
493 \def\@Review:{\@ifnextchar[%]
494     {\@Rev}%
495     {\@Rev[Book review]}}
496 \def\@Rev[#1]#2{\@ignorespaces#1\unskip:\enspace\ignorespaces
497                 \slshape\mdseries#2}}
498 \def\reviewitem{\addvspace{\BelowTitleSkip}}%
499 \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
500 \def\revtitle##1{\def\therevtitle{\slshape##1}. }\ignorespaces}%
501 \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
502 }
503 \def\endreviewitem{\noindent\interlinepenalty=10000
504     \therevauth\therevtitle\therevpubinfo\endgraf}%
505 \vskip\medskipamount
506 }
507 \def\booktitle#1{\slshape#1/}

```

### 3.9 Dates, volume and issue numbers, etc.

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

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

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

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

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

```

508 \newcount\issueseqno          \issueseqno=-1
509 \def\volx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
510 \def\volyr{}
511 \def\volno{}
512 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
513           \gdef\issno{\ignorespaces#2\unskip}%
514           \setbox\TestBox=\hbox{\volyr}%
515           \ifdim \wd\TestBox > .2em \volx \fi }
516 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
517           \gdef\bigissdt{#1}%
518           \setbox\TestBox=\hbox{\volno}%
519           \ifdim \wd\TestBox > .2em \volx \fi }
520 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
521           \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
522           \setbox\TestBox=\hbox{\volno}%
523           \ifdim \wd\TestBox > .2em \volx \fi }
524 \vol 0, 0.
525 \issdate Thermidor, 2060.

```

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

For L<sup>A</sup>T<sub>E</sub>X use, define a version of the issue declaration that can take or leave the old plain syntax

```

526 <!!latex>\def\tubissue#1(#2)%
527 <*latex>
528 \def\tubissue#1{\@ifnextchar(%)
529   {\@tubissue@b{#1}}
530   {\@tubissue@a{#1}}}
531 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
532 \def\@tubissue@a#1#2%
533 </latex>
534 {\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`

```

535 \def\infil@{\jobname}
536 \def\Input #1 {\ifnum\issueseqno<0
537   \def\infil@{#1}%
538   \else
539     \def\infil@{tb\number\issueseqno#1}
540   \fi
541   \edef\jobname{\infil@}\@readFLN
542   \@input \infil@relax
543   \if@RMKopen
544     \immediate\closeout\@TBremarkfile\@RMKopenfalse
545   \fi
546 }

```

\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).

```

547 \newif\if@RMKopen      \@RMKopenfalse
548 \newwrite\@TBremarkfile
549 \def\@TBremark#1{%
550   \if@RMKopen
551   \else
552     \@RMKopenttrue\immediate\openout\@TBremarkfile=\infil@.rmk
553   \fi
554   \toks@={#1}%
555   \immediate\write\@TBremarkfile{^^J\the\toks@}%
556   \immediate\write16{^^JTremark:: \the\toks@^^J}%
557 }

```

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

```

558 \let\TBremark=\gobble

```

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

```

559 \def\TBEenableRemarks{\let\TBremark\@TBremark}

```

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

```

560 \def\TUBedit#1{}

```

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

```

561 \def\TUBfilename#1#2{\expandafter\def\csname file@#1\endcsname{#2}}
562 \newread\@altfilenames
563 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
564   \ifeof\@altfilenames\let\@result\relax\else
565   \def\@result{\@input\jobname.fln }\fi

```

```

566 \immediate\closein\@altfilenames
567 \@result}
568 \@readFLN
569 \everyjob=\expandafter\the\everyjob\@readFLN}
570 \InputIfFileExists{\jobname.fln}%
571 {\TBInfo{Reading alternative file file \jobname.fln}}{}

```

The following needs to work entirely in T<sub>E</sub>X's mouth

```

572 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
573 #1\else\csname file@@#1\endcsname\fi}
574 \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.

```

575 <*\latex>
576 \def\pagexrefON#1{%
577     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
578     \write\ppoutfile{%
579         \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
580     }
581 \def\PageXrefON#1{%
582     \immediate\write-1{\def\expandafter
583         \noexpand\csname#1\endcsname{\number\pageno}}}%
584     \immediate\write\ppoutfile{\def\expandafter
585         \noexpand\csname#1\endcsname{\number\pageno}}}%
586 </!\latex>
587 <*\latex>
588 \def\pagexrefON#1{%
589     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
590     \write\ppoutfile{%
591         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
592     }
593 \def\PageXrefON#1{%
594     \immediate\write-1{\def\expandafter
595         \noexpand\csname#1\endcsname{\number\c@page}}}%
596     \immediate\write\ppoutfile{\def\expandafter
597         \noexpand\csname#1\endcsname{\number\c@page}}}%
598 </\latex>
599 \def\pagexrefOFF#1{}
600 \let\pagexref=\pagexrefOFF
601 \def\PageXrefOFF#1{}
602 \let\PageXref=\PageXrefOFF
603 \def\xreftoON#1{%
604     \ifundefined{#1}%
605     ???\TBremark{Need cross reference for #1.}%
606     \else\csname#1\endcsname\fi}
607 \def\xreftoOFF#1{???}
608 \let\xrefto=\xreftoOFF

```

`\TBdriver` ‘marks code for use when articles are run together in a driver file’. Since we don’t yet have a definition of that arrangement, we don’t have a definition of `\TBdriver`. Its argument (which one presumes was intended as the code for this unusual state) is just gobbled.

```
609 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```
610 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
611 Flor-i-da Free-BSD Ghost-script Ghost-view
612 Hara-lam-bous Jac-kow-ski Karls-ruhe
613 Mac-OS Ma-la-ya-lam Math-Sci-Net
614 Net-BSD Open-BSD Open-Office
615 Pfa-Edit Post-Script Rich-ard Skoup South-all
616 Vieth VM-ware Win-Edt
617 acro-nym ap-pen-dix asyn-chro-nous
618 bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
619 col-umns com-put-able com-put-abil-ity cus-tom-iz-able
620 data-base data-bases
621 de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
622 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion
623 es-sence
624 fall-ing
625 half-way
626 in-fra-struc-ture
627 key-note
628 long-est
629 ma-gyar man-u-script man-u-scripts mne-mon-ic mne-mon-ics
630 mono-space mono-spaced
631 name-space name-spaces
632 off-line over-view
633 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
634 pipe-line pipe-lines
635 plug-in plug-ins pres-ent-ly pro-gram-mable
636 re-allo-cate re-allo-cates re-allo-cated
637 set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
638 sub-ex-pres-sion syn-chro-ni-city syn-chro-nous
639 text-height text-length text-width
640 time-stamp time-stamped
641 vis-ual vis-u-al-ly
642 which-ever white-space white-spaces wide-spread wrap-around
643 }
644 <!!latex>\restorecat\@
645 </common>
646 <*classtail>
647 \PrelimDrafttrue
```

### 3.10 Page dimensions, glue, penalties etc

```
648 \textheight 54pc
```



```

649 \textwidth 39pc
650 \columnsep 1.5pc
651 \columnwidth 18.75pc
652 \parindent \normalparindent
653 \parskip \z@ % \@plus\p@
654 \leftmargini 2em
655 \leftmarginv .5em
656 \leftmarginvi .5em
657 \oddsidemargin \z@
658 \evensidemargin \z@
659 \topmargin -2.5pc
660 \headheight 12\p@
661 \headsep 20\p@
662 \marginparwidth 48\p@
663 \marginparsep 10\p@
664 \partopsep=\z@
665 \topsep=3\p@ \@plus\p@ \@minus\p@
666 \parsep=3\p@ \@plus\p@ \@minus\p@
667 \itemsep=\parsep
668 \twocolumn
669 \newdimen\pagewd \pagewd=39pc
670 \newdimen\trimwd \trimwd=\pagewd
671 \newdimen\trimlgt \trimlgt=11in
672 \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 $\text{\LaTeX}$ logo

Barbara Beeton's pleas for  $\text{\LaTeX}$  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  $\text{\LaTeX}$ .

```

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

```

The default values are as used in the source of  $\text{\LaTeX}$  itself:

```

675 \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):

```

676 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
677 \DeclareLaTeXLogo{cmr}{m}{it}{.3}{.27}
678 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
679 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
680 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}

```

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

```

681 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a
682   \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
683   \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
684   \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.

```

685 \newcommand\@LaTeX[2]{L\kern-#1em
686   {\sbox\z@ T%
687     \vbox to\ht0{\hbox{$\m@th$%
688       \csname S@\f@size\endcsname
689       \fontsize\sf@size\z@
690       \math@fontsfalse\selectfont
691       A}%
692     \vss}%
693   }%
694   \kern-#2em%
695   \TeX}

```

### 3.12 Authors, contributors, addresses, signatures

An article may have several authors (of course), so we permit an `\author` command for each of them. The names are then stored in a set of `\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.

```

696 \def\theauthor#1{\csname theauthor#1\endcsname}
697 \def\theaddress#1{\csname theaddress#1\endcsname}
698 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
699 \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.

```

700 <!!latex>\newcount\@tempcnta
701 \def\@defaultauthorlist{%
702   \@getauthorlist\@firstofone
703 }

```

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

```

704 \def\@getauthorlist#1{%

```

```

705 \count@\authornumber
706 \advance\count@ by -2
707 \@tempcnta0

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

708 \loop
709   \ifnum\count@>0
710     \advance\@tempcnta by \@ne
711     #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
712     \advance\count@ by \m@ne
713 \repeat
714 \count@\authornumber
715 \advance\count@ by -\@tempcnta
716 \ifnum\authornumber>0

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

717   \ifnum\count@>1
718     \count@\authornumber
719     \advance\count@ by \m@ne
720     #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
721   \fi

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

722   #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
723 \fi
724 }

    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...)

725 \def\signature#1{\def\@signature{#1}}
726 \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

727 \def\@defaultsignature{%
728   \let\thanks\@gobble
729   \ifnum\authornumber<0

    if  $\text{authornumber} < 0$ , we are in a contributor's section

730     \medskip
731     \frenchspacing
732     \signaturemark
733     \theauthor{\number\authornumber}\\
734     \theaddress{\number\authornumber}\\
735     \allowhyphens

```

```

736     \thenetaddress{\number\authornumber}\\
737     \thePersonalURL{\number\authornumber}\\
738     \else
    \authornumber $\geq$  0, so we are in the body of an ordinary article
739     \count@=0
740     \loop
741     \ifnum\count@<\authornumber
742     \medskip
743     \advance\count@ by \@ne
744     \signaturemark
745     \theauthor{\number\count@}\\
746     \theaddress{\number\count@}\\
747     {%
748     \allowhyphens
749     \thenetaddress{\number\count@}\\
750     \thePersonalURL{\number\count@}\\
751     }%
752     \repeat
753     \fi
754     }%
755 }
756 \newdimen\signaturewidth \signaturewidth=12pc
    The optional argument to \makesignature is useful in some circumstances (e.g.,
    multi-contributor articles)
757 \newcommand\makesignature[1][\medskipamount]{%
    check the value the user has put in \signaturewidth: it may be at most
    1.5pc short of \columnwidth
758 \@tempdima\signaturewidth
759 \advance\@tempdima 1.5pc
760 \ifdim \@tempdima>\columnwidth
761     \signaturewidth \columnwidth
762     \advance\signaturewidth -1.5pc
763 \fi
764 \par
765 \penalty9000
766 \vspace{#1}%
767 \rightline{%
768     \vbox{\hsize\signaturewidth \ninepoint \raggedright
769         \parindent \z@ \everypar={\hangindent 1pc }
770         \parskip \z@skip
771         \def\|{\unskip\hfil\break}%
772         \def\\{\endgraf}%
773         \def\phone{\rm Phone: }
774         \rm\@signature}%
775     }%
776 \ifnum\authornumber<0 \endgroup\fi
777 }
778 \def\signaturemark{\leavevmode\llap{\$\diamond$\enspace}}

```

The code previously defined 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.

```
779 \newcount\authornumber
780 \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`).

```
781 \def\author{%
782   \global\advance\authornumber\@ne
783   \TB@author
784 }
```

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

```
785 \def\contributor{%
786   \begingroup
787   \authornumber\m@ne
788   \TB@author
789 }
```

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).

```
790 \def\TB@author#1{%
791   \expandafter\def\csname theauthor\number\authornumber\endcsname
792     {\ignorespaces#1\unskip}%
793   \expandafter\def\csname theaddress\number\authornumber\endcsname
794     {\TBWarningNL{Address for #1\space missing}\@gobble}%
795   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
796     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
797   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
```

```

798     \@gobble
799 }
800 \def\EDITORnoaddress{%
801   \expandafter\let\csname theaddress\number\authornumber\endcsname
802     \@gobble
803 }
804 \def\EDITORnonetaddress{%
805   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
806     \@gobble
807 }

```

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

```

808 \def\address#1{%
809   \expandafter\def\csname theaddress\number\authornumber\endcsname
810     {\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!*

```

811 \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<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, we use the default-argument form of `\newcommand`; otherwise we write it out in all its horribleness.

```

812 \newcommand\netaddress[1][\relax]{%
813   \begingroup
814   \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<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>.

```

815 #1\@sanitize\makespace\ \makeactive\@
816 \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?!**)

```

817 \def\@relay@netaddress#1{%
818   \ProtectNetChars
819   \expandafter\protected@xdef
820     \csname thenetaddress\number\authornumber\endcsname
821     {\protect\leavevmode\texttrm{\@network}%

```

```

822     {\protect\NetAddrChars\net
823      \ignorespaces#1\unskip}}%
824 \endgroup
825 }

```

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

For general URLs, `url.sty` (with or without `hyperref`) suffices and is recommended.

```

826 \def\personalURL{\begingroup
827  \@sanitize\makespace\ \makeactive\@
828  \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
829 \def\@personalURL#1{%
830  \ProtectNetChars
831  \expandafter\protected@xdef
832   \csname thePersonalURL\number\authornumber\endcsname{%
833    \protect\leavevmode
834    {%
835     \protect\URLchars\net
836     \ignorespaces#1\unskip
837    }%
838   }%
839 \endgroup
840 }

```

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...

```

841 {%
842  \makecomment\*
843  \makeactive\@
844  \gdef\netaddrat{\makeactive\@*
845   \def@{\discretionary{\char"40}{\char"40}}
846   \makeactive\%
847   \gdef\netaddrpercent{\makeactive\%*
848    \def%{\discretionary{\char"25}{\char"25}}
849   \makeactive\.
850   \gdef\netaddrdot{\makeactive\.*
851    \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`.

```

852 \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
853 \makeactive\/
854 \gdef\URLchars{*
855  \NetAddrChars
856  \makeactive\/*
857  \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.

```
858 \gdef\ProtectNetChars{*
859   \def@{\protect@}*
860   \def%{\protect%}*
861   \def.{\protect.}*
862   \def/{\protect/}*
863   }
864 }
```

L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> (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<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> defines for the job).

```
865 \if@compatibility
866   \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\sympewriter}
867 \else
868   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
869 \fi
870 \def\authorlist#1{\def\@author{#1}}
871 \def\@author{\@defaultauthorlist}
```

For the online re-publication (as of 2009) by Mathematical Sciences Publishers <http://mathscipub.org>), lots and lots of metadata is needed, much of it redundant with things we already do. They are flexible enough to allow us to specify it in any reasonable way, so let’s make one command `\mspmetavar` which takes two arguments. Example: `\mspmetavar{volumenumber}{30}`. For our purposes, it is just a no-op.

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

### 3.13 Article title

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

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

```
873 \newif\if@articletitle
874 \def\maketitle{\@ifstar
875   {\@articletitlefalse\@r@maketitle}%
876   {\@articletitletrue\@r@maketitle}%
877 }
```



```

878 \def\@r@maketitle{\par
879 \ifdim\PreTitleDrop > \z@
880   \loop
881   \ifdim \PreTitleDrop > \textheight
882     \vbox{}\vfil\eject
883     \advance\PreTitleDrop by -\textheight
884   \repeat
885   \vbox to \PreTitleDrop{}
886   \global\PreTitleDrop=\z@
887 \fi
888 \begingroup
889 \setcounter{footnote}{0}
890 \def\thefootnote{\fnsymbol{footnote}}
891 \@maketitle
892 \@thanks
893 \endgroup
894 \setcounter{footnote}{0}
895 \gdef\@thanks{}
896 }

```

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

```

897 \def\rhTitle{}% avoid error if no author or title
898 \renewcommand\title{\@dblarg\TB@title}
899 \def\TB@title[#1]#2{\gdef\@title{#2}%
900   \bgroup
901     \let\thanks\@gobble
902     \def\{\{\unskip\space\ignorespaces}%
903     \protected@xdef\rhTitle{#1}%
904   \egroup
905 }

```

`\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.

```

906 \def\shortTitle #1{\def\rhTitle{#1}}
907 \newif\ifshortAuthor
908 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}

```

### 3.14 Section titles

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

Define the distance between articles which are run together:

```

909 \def\secsep{\vskip 5\baselineskip}

```

Note that `\stbaselineskip` is used in the definition of `\sectitlefont`, in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, so that it has (at least) to be defined before `\sectitlefont` is used (we do the whole job).

```
910 \newdimen\stbaselineskip      \stbaselineskip=18\p@
911 \newdimen\stfontheight
912 \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.

```
913 \newif\ifSecTitle
914 \SecTitlefalse
915 \newif\ifWideSecTitle
916 \newcommand\sectitle{%
917   \SecTiteltrue
918   \@ifstar
919     {\WideSecTiteltrue\def\s@ctitle}%
920     {\WideSecTitlefalse\def\s@ctitle}%
921 }
```

`\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.

```
922 \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.

```
923 \newskip\AboveTitleSkip      \AboveTitleSkip=12\p@
924 \newskip\BelowTitleSkip      \BelowTitleSkip=8\p@
925 \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<sup>A</sup>T<sub>E</sub>X's `\framebox` command, on the grounds that one doesn't keep a dog and bark for oneself...

```
926 \def\@sectitle #1{%
927   \par
928   \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.

```

929 \ifWideSecTitle\else\secsep\fi
930 {%
931   \fboxrule\strulethickness
932   \fboxsep\z@
933   \noindent\framebox[\hsize]{%
934     \vbox{%
935       \raggedcenter
936       \let\\ \@sectitle@newline
937       \sectitlefont
938       \makestrut[2\stfontheight;\z@]%
939       #1%
940       \makestrut[\z@;\stfontheight]\endgraf
941     }%
942   }%
943 }%
944 \nobreak
945 \vskip\baselineskip
946 }

```

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

```

947 \newcommand{\@sectitle@newline}[1][\z@]{%
948   \ifdim#1>\z@
949     \makestrut[\z@;#1]%
950   \fi
951   \unskip\break
952 }

```

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).

```

953 \def\@makesectitle{\ifSecTitle
954   \global\SecTitlefalse
955   \ifWideSecTitle
956     \twocolumn[\@sectitle{\s@ctitle}]%
957     \global\WideSecTitlefalse
958   \else
959     \@sectitle{\s@ctitle}%
960   \fi
961 \else
962   \vskip\AboveTitleSkip
963   \kern\topskip
964   \hrule \@height\z@ \@depth\z@ \@width 10\p@
965   \kern-\topskip
966   \kern-\strulethickness
967   \hrule \@height\strulethickness \@depth\z@
968   \kern\medskipamount

```

```

969     \nobreak
970   \fi
971 }

\@maketitle Finally, the body of \maketitle itself.
972 \def\@maketitle{%
973   \@makesecttitle
974   \if@articletitle{%
975     \nohyphens \interlinepenalty\@M
976     \setbox0=\hbox{%
977       \let\thanks\@gobble
978       \let\=\quad
979       \let\and=\quad
980       \ignorespaces\@author}%
981     {%
982       \noindent\bf\raggedright\ignorespaces\@title\endgraf
983     }%
984     \ifdim \wd0 < 5\p@           % omit if author is null
985     \else
    Since we have \BelowTitleSkip + 4pt = \baselineskip, we say:
986       \nobreak \vskip 4\p@
987       {%
988         \leftskip=\normalparindent
989         \raggedright
990         \def\and{\unskip\}%
991         \noindent\@author\endgraf
992       }%
993     \fi
994     \nobreak
995     \vskip\BelowTitleSkip
996   }\fi%
997   \global\@afterindentfalse
998   \aftergroup\@afterheading
999 }

```

Dedications are ragged right, in italics.

```

1000 \newenvironment{dedication}%
1001   {\raggedright\noindent\itshape\ignorespaces}%
1002   {\endgraf\medskip}

```

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

```

1003 \renewenvironment{abstract}%
1004   {%
1005     \begin{SafeSection}%
1006     \section*{Abstract}%
1007   }%
1008   {\end{SafeSection}}
1009 \newenvironment{longabstract}%
1010   {%

```

```

1011 \begin{SafeSection}%
1012 \section*{Abstract}%
1013 \bgroup\small
1014 }%
1015 {%
1016 \endgraf\egroup
1017 \end{SafeSection}%
1018 \vspace{.25\baselineskip}
1019 \begin{center}
1020 {\$--*--\$}
1021 \end{center}
1022 \vspace{.5\baselineskip}}

```

### 3.15 Section 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.

```

1023 \if@numbersec
1024 \def\section{\TB@startsection{{section}%
1025                               1%
1026                               \z@
1027                               {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1028                               {4\p@}%
1029                               {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1030 \def\subsection{\TB@startsection{{subsection}%
1031                                  2%
1032                                  \z@
1033                                  {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1034                                  {4\p@}%
1035                                  {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1036 \def\subsubsection{\TB@startsection{{subsubsection}%
1037                                     3%
1038                                     \z@
1039                                     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1040                                     {4\p@}%
1041                                     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1042 \def\paragraph{\TB@startsection{{paragraph}%
1043                                 4%
1044                                 \z@
1045                                 {4\p@ \@plus1\p@ \@minus1\p@}%
1046                                 {-1em}%
1047                                 {\normalsize\bf}}}

```

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

```

1048 \else
1049   \setcounter{secnumdepth}{0}
1050   \def\section{\TB@nolimelabel
1051             \TB@startsection{section}%
1052                             1%
1053                             \z@
1054                             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1055                             {4\p@}%
1056             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1057   \def\subsection{\TB@nolimelabel
1058                 \TB@startsection{subsection}%
1059                                 2%
1060                                 \z@
1061                                 {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1062                                 {-0.5em\@plus-\fontdimen3\font}%
1063                 {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1064   \def\subsubsection{\TB@nolimelabel
1065                     \TB@startsection{subsubsection}%
1066                                     3%
1067                                     \parindent
1068                                     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1069                                     {-0.5em\@plus-\fontdimen3\font}%
1070                     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1071 \fi

```

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

```

1072 \if@numbersec
1073   \def\TB@startsection#1{\@startsection#1}%
1074 \else
1075   \def\TB@startsection#1{%
1076     \ifstar
1077       {\TBWarning{*-form of \expandafter\string\csname\@firstofsix#1%
1078                 \endcsname\space
1079                 \MessageBreak
1080                 conflicts with nonumber class option}%
1081       \@startsection#1}%
1082     {\@startsection#1}%
1083   }
1084 \fi
1085 \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).

```

1086 \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.

```
1087 \newenvironment{SafeSection}%
1088   {\let\TB@startsection\TB@safe@startsection}%
1089   {}}
```

And now for the exciting sectioning commands that L<sup>A</sup>T<sub>E</sub>X defines but we don't have a definition for (whatever else, we don't want Lamport's originals, which come out 'like the blare of a bugle in a lullaby'<sup>2</sup>).

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.

```
1090 \if@numbersec
1091   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1092 \else
1093   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1094   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1095 \fi
1096 \def\chapter{\TB@nosection\chapter\section}
1097 \def\part{\TB@nosection\part\section}
1098 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1099   \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.

```
1100 \def\TBtocsectionfont{\normalfont}
1101 \newskip\TBtocsectionspace \TBtocsectionspace=1.0em\@plus\p@
```

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

```
1102 %\def\l@part#1#2{\addpenalty{\@secpenalty}%
1103 %  \addvspace{2.25em\@plus\p@}%
1104 %  \begingroup
1105 %    \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
1106 %    {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1107 %    \nobreak
1108 %  \endgroup}
1109 %
1110 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1111   \addvspace{\TBtocsectionspace}%
1112   \@tempdima 1.5em
```

---

<sup>2</sup>Thurber, *The Wonderful O*

```

1113 \begingroup
1114 \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1115 \parfillskip\z@
1116 \TBtocsectionfont
1117 \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1118 \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1119 \endgroup}

```

### 3.16 Appendices

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

```

1120 \renewcommand\appendix{\par
1121 \renewcommand\thesection{\@Alph\c@section}%
1122 \setcounter{section}{0}%
1123 \if@numbersec
1124 \else
1125 \setcounter{secnumdepth}{1}%
1126 \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.

```

1127 \def\@tempa{appendix}
1128 \ifx\@tempa\@currentvir
1129 \expandafter\@appendix@env
1130 \fi
1131 }

```

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

```

1132 \newcommand\app@prefix@section{}
1133 \newcommand\@appendix@env[1][Appendix]{%
1134 \renewcommand\@seccntformat[1]{\csname app@prefix@##1\endcsname
1135 \csname the##1\endcsname\quad}%
1136 \renewcommand\app@prefix@section{#1 }%
1137 }

```

Ending an appendix environment is pretty trivial...

```

1138 \let\endappendix\relax

```

### 3.17 References

If the sections aren't numbered, the natural tendency of the author to cross-reference (which, after all, is one of the things  $\text{\LaTeX}$  is for ever being advertised as being good at) can cause headaches for the editor. (Yes it can; believe me ... there's always one.)



The following command is used by each of the sectioning commands to make a following `\ref` command bloop at the author. Even if the author then ignores the complaint, the poor old editor may find the offending `\label` rather more easily.

(Note that macro name is to be read as “*noli me label*” (I don’t know the mediæval Latin for ‘label’).

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

```

1139 \def\TB@nolimelabel{%
1140   \def\@currentlabel{%
1141     \protect\TBWarning{%
1142       Invalid reference to numbered label on page \thepage
1143       \MessageBreak made%
1144     }%
1145     \textbf{?!?}%
1146   }%
1147 }
```

### 3.18 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.

```

1148 \let\TB@@sect\@sect
1149 \let\TB@@ssect\@ssect
1150 \def\@sect#1#2#3#4#5#6[#7]#8{%
1151   \def\@currentlabelname{#7}%
1152   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1153 }
1154 \def\@ssect#1#2#3#4#5{%
1155   \def\@currentlabelname{#5}%
1156   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1157 }
```

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

```

1158 \def\label#1{%
1159   \bsphack
1160   \let\label\@gobble
1161   \let\index\@gobble
1162   \if@filesw
1163     \protected@write\@auxout{%
1164       {\string\newlabel{#1}{%

```

```

1165         {\@currentlabel}{\thepage}{\@currentlabelname}}}%
1166     }%
1167     \fi
1168     \@esphack
1169 }%
1170 }

```

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

```
1171 \let\@currentlabelname\@empty
```

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

```

1172 \DeclareRobustCommand\ref[1]{\expandafter\@setref
1173   \csname r@#1\endcsname\@firstofthree{#1}}
1174 \DeclareRobustCommand\pageref[1]{\expandafter\@setref
1175   \csname r@#1\endcsname\@secondofthree{#1}}
1176 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1177   \csname r@#1\endcsname\@thirdofthree{#1}}
1178 \long\def\@firstofthree#1#2#3{#1}
1179 \long\def\@secondofthree#1#2#3{#2}
1180 \long\def\@thirdofthree#1#2#3{#3}

```

### 3.19 Float captions

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

First, let’s define a dimension by which we will indent full-page captions. We’ll also use this to indent abstracts in proceedings style.

```
\tubfullpageindent
```

```
1181 \newdimen\tubfullpageindent \tubfullpageindent=4.875pc
```

Ok, here is the `\@makecaption`.

```

1182 \long\def\@makecaption#1#2{%
1183   \vskip\abovcaptionskip
1184   \sbox\@tempboxa{\small #1: #2}% try in an hbox
1185   \ifdim \wd\@tempboxa > \hsize
1186     {% caption doesn’t fit on one line; set as a paragraph.
1187       \small \raggedright \hyphenpenalty=\@M \parindent=1em
1188       % indent full-width captions {figure*}, but not single-column {figure}.
1189       \ifdim\hsize = \textwidth
1190         \leftskip=\tubfullpageindent \rightskip=\leftskip
1191       \fi
1192       \noindent #1: #2\par}%
1193   \else
1194     % fits on one line; use the hbox, centered. Do not reset its glue.
1195     \global\@minipagefalse
1196     \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1197   \fi

```

```
1198 \vskip\belowcaptionskip}
```

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

```
1199 \def\fnun@figure{{\small \bf \figurename\nobreakspace\thefigure}}
```

```
1200 \def\fnun@table{{\small \bf \tablename\nobreakspace\thetable}}
```

Let’s reduce the default space above captions a bit, and give it some flexibility. The default is 10pt.

```
1201 \setlength\abovcaptionskip{6pt plus1pt minus1pt}
```

### 3.20 Size changing commands

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

```
1202 \renewcommand\normalsize{%
1203   \setfontsize\normalsize\@xpt\@xipt
1204   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1205   \belowdisplayskip=\abovedisplayskip
1206   \abovedisplayshortskip=\z@\@plus 3\p@
1207   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1208 }
```

```
1209
1210 \renewcommand\small{%
1211   \setfontsize\small\@ixpt{11}%
1212   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1213   \belowdisplayskip=\abovedisplayskip
1214   \abovedisplayshortskip=\z@\@plus 2\p@
1215   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1216 }
```

```
1217 \renewcommand\footnotesize{%
1218   \setfontsize\footnotesize\@viii{9.5}%
1219   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1220   \belowdisplayskip=\abovedisplayskip
1221   \abovedisplayshortskip=\z@\@plus 3\p@
1222   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1223 }
```

### 3.21 Lists and other text inclusions

```
1224 \def\@listi{%
1225   \leftmargin\leftmargin\parsep=\p@\@plus\p@\@minus\p@
1226   \itemsep=\parsep
1227   \listparindent=1em
1228 }
1229
1230 \def\@listii{%
1231   \leftmargin\leftmarginii
1232   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
```

```

1233 \topsep=2\p@\@plus\p@\@minus\p@
1234 \parsep=\p@\@plus\p@\@minus\p@
1235 \itemsep=\parsep
1236 \listparindent=1em
1237 }
1238
1239 \def\@listiii{%
1240 \leftmargin=\leftmarginiii
1241 \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1242 \topsep=\p@\@plus\p@\@minus\p@
1243 \parsep=\z@
1244 \itemsep=\topsep
1245 \listparindent=1em
1246 }
1247 \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.

```

1248 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1249 \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}

```

### 3.22 Some fun with verbatim

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

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

```

1250 %\let\@TB@verbatim\@verbatim
1251 \let\@TB@verbatim\verbatim
1252 \let\@TB@endverbatim\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.)

```

1253 \def\verbatim{\par\obeylines
1254 \futurelet\reserved@a\@switch@sqbverbatim}
1255 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1256 \expandafter\@sqbverbatim\else
1257 \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1258 \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.

```
1259 \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.

```
1260 #1\@TBverbatim}
```

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

```
1261 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1262 \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1263 \trivlist \item\relax
1264 \if@minipage\else\vskip\parskip\fi
1265 \leftskip\@totalleftmargin\rightskip\z@skip
1266 \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1267 \@@par
1268 \@tempswafalse
1269 \def\par{%
1270 \if@tempswa
1271 \leavevmode \null \@@par\penalty\interlinepenalty
1272 \else
1273 \@tempswatrue
1274 \ifhmode\@@par\penalty\interlinepenalty\fi
1275 \fi}%
1276 \obeylines \verbatim@font \@noligs
1277 \let\do\@makeother \dospecials
1278 \everypar \expandafter{\the\everypar \unpenalty}%
1279 }%
```

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).

```
1280 \def\endverbatim{\@TBendverbatim
```

```
1281 \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

`\enablemetacode` simply typesets<sup>3</sup> something that looks (verbatim) like:

```
<meta-text>
```

as:

```
<meta-text>
```

---

<sup>3</sup>Or will simply typeset, when we get around to implementation proper

```

1282 {\makeactive<
1283   \gdef<#1>{{\reset@font\ensuremath{\langle}%
1284     \textit{#1}%
1285     \ensuremath{\rangle}}}
1286 }

```

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

```

1287 \let\if@ruled\iffalse

```

### 3.23 Bibliography

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

```

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

```

The available citation commands are:

```

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

```

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

```

1288 \if@Harvardcite
1289 \let\@internalcite\cite

```

Normal forms.

```

1290 \def\cite{\def\@citesep{-1000}%
1291   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1292   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1293 \def\citeNP{\def\@citesep{-1000}%
1294   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1295   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1296 \def\citeN{\def\@citesep{-1000}%
1297   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1298   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1299 \def\citeA{\def\@citesep{-1000}%
1300   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1301   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1302 \def\citeANP{\def\@citesep{-1000}%

```

```

1303 \def\cite##1##2{##1\if@tempswa , ##2\fi}%
1304 \def\citeauthoryear##1##2##3{##1}\@internalcite}
Abbreviated forms (using et al.)
1305 \def\shortcite{\def\@citesep{-1000}%
1306 \def\cite##1##2{##1\if@tempswa , ##2\fi}}%
1307 \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1308 \def\shortciteNP{\def\@citesep{-1000}%
1309 \def\cite##1##2{##1\if@tempswa , ##2\fi}%
1310 \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1311 \def\shortciteN{\def\@citesep{-1000}%
1312 \def\cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1313 \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1314 \def\shortciteA{\def\@citesep{-1000}%
1315 \def\cite##1##2{##1\if@tempswa , ##2\fi}}%
1316 \def\citeauthoryear##1##2##3{##2}\@internalcite}
1317 \def\shortciteANP{\def\@citesep{-1000}%
1318 \def\cite##1##2{##1\if@tempswa , ##2\fi}%
1319 \def\citeauthoryear##1##2##3{##2}\@internalcite}

```

When just the year is needed:

```

1320 \def\citeyear{\def\@citesep{-1000}%
1321 \def\cite##1##2{##1\if@tempswa , ##2\fi}}%
1322 \def\citeauthoryear##1##2##3{##3}\@citedata}
1323 \def\citeyearNP{\def\@citesep{-1000}%
1324 \def\cite##1##2{##1\if@tempswa , ##2\fi}%
1325 \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.

```

1326 \def\@citedata{%
1327 \ifnextchar [{\@tempwatrue\@citedatax}%
1328 {\@tempwafalse\@citedatax[]}%
1329 }
1330
1331 \def\@citedatax[#1]#2{%
1332 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1333 \def\@citea{\@cite{\@for\@citeb:=#2\do%
1334 {\@citea\def\@citea{ }\@ifundefined% by Young
1335 {b@\@citeb}{\bf ?}%
1336 \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1337 {\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.

```

1338 \def\@citex[#1]#2{%
1339 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1340 \def\@citea{\@cite{\@for\@citeb:=#2\do%
1341 {\@citea\def\@citea{ }\@ifundefined% by Young
1342 {b@\@citeb}{\bf ?}%

```

```

1343      \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}}%
1344 {\csname b@\@citeb\endcsname}}}{#1}}%

```

No labels in the bibliography.

```

1345 \def\@biblabel#1{}

```

Set length of hanging indentation for bibliography entries.

```

1346 \newlength{\bibhang}
1347 \setlength{\bibhang}{2em}

```

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

```

1348 \newdimen\bibindent
1349 \bibindent=1.5em
1350 \@ifundefined{refname}%
1351   {\newcommand{\refname}{References}}}%
1352   {}%

```

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

```

1353 \def\thebibliography#1{%
1354   \let\TB@startsection\TB@safe@startsection
1355   \section*{\refname
1356     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1357   \list{[\arabic{enumi}]}{%
1358     \labelwidth\z@ \labelsep\z@
1359     \leftmargin\bibindent
1360     \itemindent -\bibindent
1361     \listparindent \itemindent
1362     \parsep \z@
1363     \usecounter{enumi}}
1364   \def\newblock{}
1365   \BibJustification
1366   \sfcode‘\.=1000\relax
1367 }

```

etal Other bibliography odds and ends.

```

\bibentry 1368 \def\etal{et\,al.\@}
1369 \def\bibentry{%
1370   \smallskip
1371   \hangindent=\parindent
1372   \hangafter=1
1373   \noindent
1374   \sloppy
1375   \clubpenalty500 \widowpenalty500
1376   \frenchspacing
1377 }

```

\bibliography Changes made to accommodate TUB file naming conventions

```

\bibliographystyle 1378 \def\bibliography#1{%
1379   \if@filesw
1380     \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%

```



```

1381 \fi
1382 \@input{\jobname.bbl}%
1383 }
1384 \def\bibliographystyle#1{%
1385 \if@filesw
1386 \immediate\write\auxout{\string\bibstyle{\@tubfilename{#1}}}%
1387 \fi
1388 }

```

`\thebibliography` If the user's asked to use L<sup>A</sup>T<sub>E</sub>X'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.

```

1389 \else
1390 \let\TB@@thebibliography\thebibliography
1391 \def\thebibliography{%
1392 \let\TB@startsection\TB@safe@startsection
1393 \let\sloppy\BibJustification
1394 \TB@@thebibliography}
1395 \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.)

```

1396 \let\TB@@sloppy\sloppy
1397 \let\BibJustification\TB@@sloppy
1398 \newcommand{\SetBibJustification}[1]{%
1399 \renewcommand{\BibJustification}{#1}%
1400 }
1401 \ResetCommands\expandafter{\the\ResetCommands
1402 \let\BibJustification\TB@@sloppy
1403 }

```

### 3.24 Registration marks

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

```

1404 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1405 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1406 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }

```

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

```

1407 \def\ttopregister{\dlap{%
1408 \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1409 \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1410 \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1411 \def\tbotregister{\ulap{%
1412 \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%

```

```

1413      \hb@xt@{\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1414              \HorzR@gisterRule \hfil \HorzR@gisterRule}}}}
1415 \def\topregister{\ttopregister}
1416 \def\botregister{\tbotregister}

```

### 3.25 Running heads

```

1417 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1418 \def\PrelimDraftfooter{%
1419   \dlap{\kern\textheight\kern3pc
1420     \rlap{\hb@xt@{\pagewd{\midrtitle\hfil\midrtitle}}
1421   }}

```

registration marks; these are temporarily inserted in the running head

```

1422 \def\MakeRegistrationMarks{}
1423 \def\UseTrimMarks{%
1424   \def\MakeRegistrationMarks{%
1425     \ulap{\rlap{%
1426       \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1427       \topregister\vskip \headmargin \vskip 10\p@}}}%
1428   }
1429 % put issue identification and page number in header.
1430 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1431   \normalsize\csname normalshape\endcsname\rm
1432   \rtitlex\qquad\midrtitle \hfil \thepage}
1433 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1434   \normalsize\csname normalshape\endcsname\rm
1435   \thepage\hfil\midrtitle\qquad\rtitlex}
1436
1437 % put title and author in footer.
1438 \def\@tubrunningfull{%
1439   \def\@oddfoot{\hfil\rhTitle}
1440   \def\@evenfoot{\@author\hfil}
1441 }
1442
1443 \def\@tubrunninggetauthor#1{#1
1444   \begingroup
1445     \let\thanks\@gobble
1446     \protected@xdef\rhAuthor{\the\toks@##1}%
1447   \endgroup
1448 }%
1449
1450 % empty footer.
1451 \def\@tubrunningminimal{%
1452   \def\@oddfoot{\hfil}
1453   \def\@evenfoot{\hfil}
1454 }
1455
1456 \def\ps@headings{}
1457 \pagestyle{headings}

```

### 3.26 Output routine

Modified to alter `\brokenpenalty` across columns

*Comment* We’re playing with fire here: for example, `\@outputdblcol` has changed in L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> for 1995/06/01 (with the use of `\hb@xt@`). *This* time there’s no semantic change, but...

```
1458 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1459   \global\setbox\@leftcolumn\box\@outputbox
1460   \global\brokenpenalty10000
1461 \else \global\@firstcolumntrue
1462   \global\brokenpenalty100
1463   \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1464     {\box\@leftcolumn \hss}\hfil \vrule \width\columnseprule\hfil
1465     \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1466   \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1467   \@whiles\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1468   \fi}
```

### 3.27 Font-related definitions and machinery

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

```
1469 \newif\ifFirstPar \FirstParfalse
1470 \def\smc{\sc}
1471 \def\ninepoint{\small}
1472 \</classtail>
```

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

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

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

```
1473 \<*common>
```

```

1474 \DeclareRobustCommand\SMC{%
1475   \ifx\@currsize\normalsize\small\else
1476   \ifx\@currsize\small\footnotesize\else
1477   \ifx\@currsize\footnotesize\scriptsize\else
1478   \ifx\@currsize\large\normalsize\else
1479   \ifx\@currsize\Large\large\else
1480   \ifx\@currsize\LARGE\Large\else
1481   \ifx\@currsize\scriptsize\tiny\else
1482   \ifx\@currsize\tiny\tiny\else
1483   \ifx\@currsize\huge\LARGE\else
1484   \ifx\@currsize\Huge\huge\else
1485   \small\SMC@unknown@warning
1486 \fi\fi\fi\fi\fi\fi\fi\fi\fi
1487 }
1488 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: nonstandard
1489   text font size command -- using \string\small}}
1490 \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.

1491 \newcommand\acro[1]{\textSMC{#1}\@}
1492 </common>

```

### 3.28 Miscellaneous definitions

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

```

1493 <(*classtail)
1494 \def\xEdNote{\EdNoteFont Editor's note:\enspace }}
1495 \def \EdNote{\@ifnextchar[%]
1496   {%
1497     \ifvmode
1498     \smallskip\noindent\let\@EdNote@\@EdNote@v
1499     \else
1500     \unskip\quad\def\@EdNote@{\unskip\quad}%
1501     \fi
1502     \@EdNote
1503   }%
1504   \xEdNote
1505 }
1506 \long\def\@EdNote[#1]{%
1507   [\thinspace\xEdNote\ignorespaces
1508     #1%
1509     \unskip\thinspace]%
1510   \@EdNote@
1511 }
1512 \def\@EdNote@v{\par\smallskip}

```

Macros for Mittelbach’s self-documenting style

```

1513 \def\SelfDocumenting{%
1514   \setlength\textwidth{31pc}
1515   \onecolumn
1516   \parindent \z@
1517   \parskip 2\p@\@plus\p@\@minus\p@
1518   \oddsidemargin 8pc
1519   \evensidemargin 8pc
1520   \marginparwidth 8pc
1521   \toks@\expandafter{\@oddhead}%
1522   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1523   \toks@\expandafter{\@evenhead}%
1524   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1525   \def\ps@titlepage{}%
1526 }
1527 \def\ps@titlepage{}
1528
1529 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}}%
1530 \llap{\@makefnmark}\null$\mskip5mu$#1}
1531
1532 %% \long\def\@makefntext#1{\parindent 1em
1533 %%   \noindent
1534 %%   \hb@xt@2em{\hss\@makefnmark}%
1535 %%   \hskip0.27778\fontdimen6\textfont\z@\relax
1536 %%   #1%
1537 %% }
```

`\creditfootnote` Sometimes we want the label “Editor’s Note:”, sometimes not.

```

\supportfootnote 1538 \def\creditfootnote{\nomarkfootnote\xEdNote}
1539 \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.

```

1540 \gdef\nomarkfootnote#1#2{\begingroup
1541   \def\thefootnote{}%
1542   % no period, please, also no fnmark.
1543   \def\@makefntext##1{##1}%
1544   \footnotetext{\noindent #1#2}%
1545   \endgroup
1546 }
```

### 3.29 Initialization

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

```

1547 \if@Harvardcite
1548   \AtBeginDocument{%
1549     \bibliographystyle{ltugbib}%
1550   }
```

```

1551 \fi
1552 \authornumber\z@
1553 \let\@signature\@defaultsignature
1554 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1555                                     configuration information}}{}
1556 \</classtail>

```

## 4 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> Proceedings class

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

```

1557 \<*ltugproccls>
1558 \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.

```

1559 \newif\if@proctw@column \@proctw@columntrue
1560 \DeclareOption{onecolumn}{\@proctw@columnfalse}

```

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

```

1561 \newif\if@proc@sober
1562 \newif\if@proc@numerable
1563 \DeclareOption{tug95}{%
1564   \@proc@soberfalse
1565   \@proc@numerablefalse
1566 }
1567 \DeclareOption{tug96}{%
1568   \@proc@sobertrue
1569   \@proc@numerablefalse
1570 }
1571 \DeclareOption{tug97}{%
1572   \@proc@sobertrue
1573   \@proc@numerabletrue
1574 }
1575 \DeclareOption{tug2002}{%
1576   \@proc@sobertrue
1577   \@proc@numerabletrue
1578   \let\if@proc@numbersec\iftrue
1579   \PassOptionsToClass{numbersec}{ltugboat}%
1580 }

```

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

```

1581 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue}

```

```

1582 \PassOptionsToClass{numbersec}{ltugboat}%
1583 }
1584 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1585 \PassOptionsToClass{nonumber}{ltugboat}%
1586 }

\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.

1587 \newif\ifTB@title
1588 \DeclareOption{title}{\TB@titletrue}
1589 \DeclareOption{notitle}{\TB@titlefalse
1590 \AtBeginDocument{\stepcounter{page}}}

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

1591 \DeclareOption{tugproc}{%
1592 \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1593 }

All other options are simply passed to ltugboat...

1594 \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...)

1595 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1596 {Loading ltugproc configuration information}}{}
1597 \@ifundefined{TUGprocExtraOptions}%
1598 {\let\TUGprocExtraOptions\@empty}%
1599 {\edef\TUGprocExtraOptions{\,\TUGprocExtraOptions}}

\tugProcYear Now work out what year it is

1600 \@tempcnta\year
1601 \ifnum\@tempcnta<2000
1602 \divide\@tempcnta by100
1603 \multiply\@tempcnta by100
1604 \advance\@tempcnta-\year
1605 \@tempcnta-\@tempcnta
1606 \fi

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

1607 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1608 {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1609 \@tempa
1610 \ClassInfo{ltugproc}{Class believes year is
1611 \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1612 \@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.

```
1613 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1614 \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.

```
1615 \ExecuteOptions\tug\tugProcYear,title\TUGprocExtraOptions}
1616 \ProcessOptions
1617 \if@proc@numbersec
1618 \if@proc@numerable
1619 \else
1620 \ClassWarning{\@tugclass}{This year’s proceedings may not have
1621 numbered sections}%
1622 \fi
1623 \fi
```

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

```
1624 \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<sup>A</sup>T<sub>E</sub>X bug-avoidance in the `\@TB@test@document` macro.

```
1625 \def\maketitle{%
1626 \begingroup

first, a bit of flim-flam to generate an initial value for \rhAuthor (unless the
user’s already given one with a \shortAuthor comand).

1627 \ifshortAuthor\else
1628 \global\let\rhAuthor\@empty
1629 \def@g@addto@rhAuthor##1{%
1630 \begingroup
1631 \toks@\expandafter{\rhAuthor}%
1632 \let\thanks\@gobble
1633 \protected@xdef\rhAuthor{\the\toks@##1}%
1634 \endgroup
1635 }%
1636 \@getauthorlist@g@addto@rhAuthor
1637 \fi
```

now, the real business of setting the title

```
1638 \ifTB@title
1639 \setcounter{footnote}{0}%
1640 \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1641 \if@proctw@column
1642 \twocolumn[\@maketitle]%
```



```

1643     \else
1644         \onecolumn
1645         \global\@topnum\z@
1646         \@maketitle
1647     \fi
1648     \@thanks
1649     \thispagestyle{TBproctitle}
1650 \fi
1651 \endgroup
1652 \TB@madetitletrue
1653 }
1654 \newif\ifTB@madetitle \TB@madetitlefalse

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

1655 \def\@TB@test@document{%
1656     \edef\@tempa{\the\everypar}
1657     \def \@tempb{\@nodocument}
1658     \ifx \@tempa\@tempb
1659         \@nodocument
1660     \fi
1661 }

\AUTHORfont Define the fonts for titles and things
\TITLEfont 1662 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1663 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1664 \def\addressfont{\small\rmfamily\mdseries\upshape}
1665 \def\netaddrfont{\small\ttfamily\mdseries\upshape}

\aboveauthorskip Some changeable skips to permit variability in page layout depending on the par-
\belowauthorskip ticular paper's page breaks.
\belowabstractskip 1666 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
1667 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1668 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

\@maketitle The body of \maketitle
1669 \def\@maketitle{%
1670     {\parskip\z@
1671     \frenchspacing
1672     \TITLEfont\raggedright\noindent\@title\par
1673     \count@=0
1674     \loop
1675     \ifnum\count@<\authornumber
1676     \vskip\aboveauthorskip
1677     \advance\count@\@ne
1678     {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1679     \addressfont\theaddress{\number\count@}\endgraf
1680     }%

```

```

1681         \allowhyphens
1682         \hangindent1.5pc
1683         \netaddrfont\thenetaddress{\number\count@}\endgraf
1684         \hangindent1.5pc
1685         \thePersonalURL{\number\count@}\endgraf
1686     }%
1687     \repeat
1688     \vskip\belowauthorskip}%
1689     \if@abstract
1690         \centerline{\bfseries Abstract}%
1691         \vskip.5\baselineskip\rmfamily
1692         \list{}\listparindent20\p@
1693             \itemindent\z@ \leftmargin\tubfullpageindent
1694             \rightmargin\leftmargin \parsep \z@\item[]\ignorespaces
1695             \the\abstract@toks
1696         \endlist\global\@ignoretrue
1697     \fi
1698     \vskip\belowabstractskip
1699     \global\@afterindentfalse\aftergroup\@afterheading
1700 }

```

**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@`

```

1701 \newtoks\abstract@toks \abstract@toks{}
1702 \let\if@abstract\iffalse
1703 \def\abstract{%
    we now warn unsuspecting users who provide an abstract environment after
    the \maketitle that would typeset it...
1704 \ifTB@madetitle
1705     \TBWarning{abstract environment after \string\maketitle}
1706 \fi
1707 \def\@abstract@{abstract}%
1708 \ifx\@currenvir\@abstract@
1709 \else
1710     \TBEError{\string\abstract\space is illegal:%
1711         \MessageBreak
1712         use \string\begin{\@abstract@} instead}%
1713     {\@abstract@\space may only be used as an environment}
1714 \fi
1715 \global\let\if@abstract\iftrue
1716 {\ifnum0='}\fi
1717 \@abstract@getbody}
1718 \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}`

```
1719 \long\def\@abstract@getbody#1\end{%
1720   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1721   \@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.

```
1722 \def\@abstract@findend#1{%
1723   \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.

```
1724   \ifx\@tempa\@abstract@
1725     \expandafter\@abstract@end
1726   \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)

```
1727   \def\@tempb{document}%
1728   \ifx\@tempa\@tempb
1729     \TBError{\string\begin{\@abstract@}
1730       ended by \string\end{\@tempb}}%
1731     {You’ve forgotten \string\end{\@abstract@}}
1732   \else
1733     \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1734     \expandafter\expandafter\expandafter\@abstract@getbody
1735   \fi
1736 \fi}
```

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

```
1737 \def\@abstract@end{\ifnum0=‘{\fi}%
1738   \expandafter\end\expandafter{\@abstract@}}
```

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

```
1739 \renewcommand{\makesignature}{\TBWarning
1740   {\string\makesignature\space is invalid in proceedings issues}}
```

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

```
\ps@TBproc 1741 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1742 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1743 \TB@definefeet
\TB@definefeet 1744 }
\pfoottext 1745 \def\ps@TBproc{%
\rfoottext 1746   \def\@oddhead{\MakeRegistrationMarks
```

```

1747     {%
1748         \hfil
1749         \def\{\unskip\ \ignorespaces}%
1750         \rmfamily\rhTitle
1751     }%
1752 }%
1753 \def\@evenhead{\MakeRegistrationMarks
1754     {%
1755         \def\{\unskip\ \ignorespaces}%
1756         \rmfamily\rhAuthor
1757         \hfil
1758     }%
1759 }%
1760 \TB@definefeet
1761 }
1762
1763 \advance\footskip8\p@    % for deeper running feet
1764
1765 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1766 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1767     {#2}}
1768 \def\TB@definefeet{%
1769     \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1770         \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1771     \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1772         \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1773 }
1774
1775 \def\pfoottext{{\smc Preprint}: Proceedings of the \volyr{ } Annual Meeting}
1776 \def\rfoottext{\normalfont\TUB, \volx\Dash
1777     {Proceedings of the \volyr{ } Annual Meeting}}
1778
1779 \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).

```

1780 \if@proc@numbersec
1781 \else
1782     \setcounter{secnumdepth}{0}
1783 \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

$\langle\textit{afterskip}\rangle$  parameter of  $\backslash\textit{@startsection}$ , since the whole skip is going to end up getting negated. We use  $\backslash\textit{TB@startsection}$  to detect inappropriate forms.

```

1784 \if@proc@numbersec
1785 \else
1786   \if@proc@sober
1787     \def\section
1788       {\TB@nolimelabel
1789        \TB@startsection{{section}%
1790                          1%
1791                          \z@%
1792                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1793                          {6\p@}%
1794                          {\normalsize\bfseries\raggedright}}}
1795   \else
1796     \def\section
1797       {\TB@nolimelabel
1798        \TB@startsection{{section}%
1799                          1%
1800                          \z@%
1801                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1802                          {6\p@}%
1803                          {\large\bfseries\raggedright}}}
1804   \fi
1805   \def\subsection
1806     {\TB@nolimelabel
1807      \TB@startsection{{subsection}%
1808                        2%
1809                        \z@%
1810                        {6\p@\@plus 2\p@\@minus2\p@}%
1811                        {-5\p@\@plus -\fontdimen3\the\font}%
1812                        {\normalsize\bfseries}}}
1813   \def\subsubsection
1814     {\TB@nolimelabel
1815      \TB@startsection{{subsubsection}%
1816                        3%
1817                        \parindent%
1818                        \z@%
1819                        {-5\p@\@plus -\fontdimen3\the\font}%
1820                        {\normalsize\bfseries}}}
1821   \fi
1822 \end{tugproccls}

```

## 5 Plain TeX styles

```

1823 \tugboatsty
1824 % err...
1825 \tugboatsty
1826 \tugprocsty

```

```
1827 % err...
1828 </tugprocsty>
```

## 6 The L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> compatibility-mode style files

```
1829 <*ltugboatsty>
1830 \@obsoletedefile{ltugboat.cls}{ltugboat.sty}
1831 \LoadClass{ltugboat}
1832 </ltugboatsty>
1833 <*ltugprocsty>
1834 \@obsoletedefile{ltugproc.cls}{ltugproc.sty}
1835 \LoadClass{ltugproc}
1836 </ltugprocsty>
```