

# The **tugboat** package\*

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## 1 Document preambles

```

1 <ltugboatcls | ltugproccls | ltugcomn>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile                {tugboat.dtx}
4 </dtx>
5 <ltugboatcls>\ProvidesClass  {ltugboat}
6 <ltugproccls>\ProvidesClass  {ltugproc}
7 <ltugboatsty>\ProvidesPackage{ltugboat}
8 <ltugprocsty>\ProvidesPackage{ltugproc}
9 <ltugcomn>   \ProvidesPackage{ltugcomn}
10                [2013/12/23 v2.14
11 <ltugboatcls>                TUGboat journal class%
12 <ltugproccls>                TUG conference proceedings class%
13 <ltugboatsty | ltugprocsty>   TUG compatibility package%
14 <ltugcomn>                    TUGboat 'common macros' package%
15 <*dtx>
16                                TUG macros source file%
17 </dtx>
18                                ]
19 <*dtx>
20 \newif\ifoldlongtable
21 </dtx>

```

## 2 Introduction

This file contains all the macros for typesetting *TUGboat* with both plain 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>	Con $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ t
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVD</code>	
<code>\DVI</code>	
<code>\DVIPDFMx</code>	DVIPDFM $x$
<code>\DVItOVDU</code>	DVItOVDU
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	$\varepsilon\text{-}\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<code>\ExTeX</code>	$\varepsilon_{\chi}\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<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>\LyX</code>	
<code>\MacOSX</code>	Mac OS X
<code>\MathML</code>	
<code>\Mc</code>	M with raised c
<code>\MF</code>	METAFONT
<code>\mf</code>	METAFONT
<code>\MFB</code>	The Metafont book
<code>\MP</code>	METAPOST
<code>\mp</code>	MetaPost (in text only: remains ‘ $\mp$ ’ in maths)
<code>\OMEGA</code>	Omega ‘logo’ ( $\Omega$ )
<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 TeXbook
<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>\VnTeX</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 <code>\TUB</code> 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 <code>\TBremarks</code> (normally suppressed)
<code>\pagexref</code>	used to write out page numbers to screen and external files
<code>\pagexrefON</code>	
<code>\pagexrefOFF</code>	
<code>\xrefto</code>	used for symbolic cross-reference to other pages
<code>\xreftoON</code>	in <i>TUGboat</i>
<code>\xreftoOFF</code>	
<code>\TBdriver</code>	marks code which only takes effect when articles are run together in a driver file
<code>\signaturemark</code>	items for signatures
<code>\signaturewidth</code>	

### 3 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> *TUGboat* class file

#### 3.1 Setup and options

Check for reloading. Hmmm... 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 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> 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     \@tubrunningfull
48   }%
49 }
```

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

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

Similarly, ignore one/two-side options.

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

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

```
57 \DeclareOption{tugproc}{%
58   \TBWarning{Option \CurrentOption\space ignored: use class ltugproc}
```

```

59     instead of \@tugclass}%
60 }

```

Option `rawcite` (the default) specifies the default citation mechanism (as built-in to L<sup>A</sup>T<sub>E</sub>X); option `harvardcite` specifies the author-date citation mechanism defined in section 3.23 below.

```

61 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
62 \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...

```

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

```

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

```

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

```

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

```

67 \DeclareOption{runningoff}{\AtEndOfClass{\@tubrunningoff}}
68 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
69 \DeclareOption{runningfull}{\AtEndOfClass{\@tubrunningfull}}

```

`\if@tubtwocolumn` Occasionally (tb107jackowski, and past conference preprints), we need the option `onecolumn`. For alternative approaches to one-column articles, see `tb92hagen-euler` and `tb78milo`.

```

70 \newif\if@tubtwocolumn \@tubtwocolumntrue
71 \DeclareOption{onecolumn}{\@tubtwocolumnfalse}

```

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

```

72 \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.

```

73 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
74 \ProcessOptions
75 \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.

```
76 \def\sectitlefont{\fontfamily\sfdefault\fontseries{bx}\fontshape{n}%
77     \fontsize\@xviipt\stbaselineskip\selectfont}
78 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
79     \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...

```
80 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
81     \selectfont}
82 \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>).

```
83 \*common
84 \IfFileExists{mflogo.sty}%
85     {\RequirePackage{mflogo}}%
86 \ltugcomn {\TBWarning
87 \tugcomn} {\PackageWarning{ltugcomn}
88     {Package mflogo.sty not available --\MessageBreak
89     Proceeding to emulate mflogo.sty}
90 \DeclareRobustCommand\logofamily{%
91     \not@math@alphabet\logofamily\relax
92     \fontencoding{U}\fontfamily{logo}\selectfont}
93 \DeclareTextFontCommand{\textlogo}{\logofamily}
94 \def\MF{\textlogo{META}\-\textlogo{FONT}\@}
95 \def\MP{\textlogo{META}\-\textlogo{POST}\@}
96 \DeclareFontFamily{U}{logo}{}
97 \DeclareFontShape{U}{logo}{m}{n}{%
98     <8><9>gen*logo%
99     <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
100 }{}
101 \DeclareFontShape{U}{logo}{m}{sl}{%
102     <8><9>gen*logosl%
103     <10><10.95><12><14.4><17.28><20.74><24.88>logosl10%
104 }{}
105 \DeclareFontShape{U}{logo}{m}{it}{%
106     <->ssub*logo/m/sl%
107 }{}%
108 }
```

## 3.2 Resetting at start of paper

`\ResetCommands` We store a set of commands that should be executed at the start of each paper, before any paper-specific customisation. These commands (stored in the token register `\ResetCommands`) include things such as resetting section and footnote numbers, re-establishing default settings of typesetting parameters, and so on. The user (or more typically, editor) may execute the commands by using the command `\StartNewPaper`. Things I've not yet thought of may be added to the list of commands, by

```

109 \newtoks\ResetCommands
110 \ResetCommands{%
111   \setcounter{part}{0}%
112   \setcounter{section}{0}%
113   \setcounter{footnote}{0}%
114   \authornumber\z@
115 }
116 \newcommand{\AddToResetCommands}[1]{%
117   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
118 }
```

## 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.

```

119 <!*latex>
120 \def\makeescape#1{\catcode'#1=0 }
121 \def\makebgroup#1{\catcode'#1=1 }
122 \def\makeegroup#1{\catcode'#1=2 }
123 \def\makemath #1{\catcode'#1=3 }
124 </!latex>
125 <*latex>
126 \def\makeescape#1{\catcode'#1=\z@}
127 \def\makebgroup#1{\catcode'#1=\@ne}
128 \def\makeegroup#1{\catcode'#1=\tw@}
129 \def\makemath #1{\catcode'#1=\thr@@}
130 </latex>
131 \def\makealign #1{\catcode'#1=4 }
132 \def\makeeol #1{\catcode'#1=5 }
133 \def\makeparm #1{\catcode'#1=6 }
134 \def\makesup #1{\catcode'#1=7 }
135 \def\makesub #1{\catcode'#1=8 }
136 \def\makeignore#1{\catcode'#1=9 }
137 \def\makespace #1{\catcode'#1=10 }
138 \def\makeletter#1{\catcode'#1=11 }
139 \chardef\other=12
140 \let\makeother\@makeother
141 \def\makeactive#1{\catcode'#1=13 }
142 \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.

```

143 \def\savecat#1{%
144   \expandafter\edef\csname\string#1savedcat\endcsname{\the\catcode'#1}}
145 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
146 \!latex\savecat\@
147 \!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.

```

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

```

To distinguish between macro files loaded

```

152 \def\plaintubstyle{plain}
153 \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:

```

154 \providecommand\hb@xt@{\hbox to}
155 \providecommand\textsuperscript[1]{\ensuremath{\m@th
156   ^{\mbox{\fontsize\sf@size\z@
157     \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.

```

158 \DeclareRobustCommand{\AllTeX}{(\La\kern-.075em)\kern-.075emTeX}
159 \def\AMS{American Mathematical Society}
160 \def\AmS{$\mathcal{A}$\kern-.1667em\lower.5ex\hbox
161   {$\mathcal{M}$}\kern-.125em$\mathcal{S}$}
162 \def\AmSLaTeX{\AmS-\LaTeX}
163 \def\AmSTeX{\AmS-\TeX}
164 \def\ANSI{\acro{ANSI}}
165 \def\API{\acro{API}}
166 \def\ASCII{\acro{ASCII}}
167 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}
168 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
169 %
170 % make \BibTeX work in slanted contexts too; it's common in titles, and

```

171 % especially burdensome to hack in .bib files.

172 \def\Bib{%

173   \ifdim \fontdimen1\font>0pt

174     B{\SMC\SMC IB}%

175   \else

176     \textsc{Bib}%

177   \fi

178 }

179 \def\BibTeX{\Bib\kern-.08em \TeX}

180 %

181 \def\BSD{\acro{BSD}}

182 \def\CandT{\textsl{Computers \& Typesetting}}

183 \def\CD{\acro{CD}}

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

184 \def\ConTeXt{C\kern-.0333em\on{-\kern-.0667em\TeX\kern-.0333em}

185 \def\CMkIV{\ConTeXt\ MkIV}

186 \def\Cplusplus{C\plusplus}

187 \def\plusplus{\raisebox{.7ex}{\$\_{++}\$}}

188 \def\CPU{\acro{CPU}}

189 \def\CSS{\acro{CSS}}

190 \def\CSV{\acro{CSV}}

191 \def\CTAN{\acro{CTAN}}

192 \def\DTD{\acro{DTD}}

193 \def\DTK{\acro{DTK}}

194 \def\DVD{\acro{DVD}}

195 \def\DVI{\acro{DVI}}

196 \def\DVIPDFMx{\acro{DVIPDFM}\$x\$}

197 \def\DVitoVDU{DVito\kern-.12em VDU}

198 \def\ECMA{\acro{ECMA}}

199 \def\EPS{\acro{EPS}}

200 \DeclareRobustCommand\TeX{\ensuremath{\varepsilon}\kern-.125em\TeX}

201 \DeclareRobustCommand\ExTeX{%

202   \ensuremath{\textstyle\varepsilon\_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}

203 \def\FAQ{\acro{FAQ}}

204 \def\FTP{\acro{FTP}}

205 \def\Ghostscript{Ghost\script}

206 \def\GNU{\acro{GNU}}

207 \def\GUI{\acro{GUI}}

208 \def\Hawaii{Hawai'i}

209 \def\HTML{\acro{HTML}}

210 \def\HTTP{\acro{HTTP}}

211 \def\IDE{\acro{IDE}}

212 \def\IEEE{\acro{IEEE}}

213 \def\ISBN{\acro{ISBN}}

214 \def\ISO{\acro{ISO}}

215 \def\ISSN{\acro{ISSN}}

216 \def\JPEG{\acro{JPEG}}

217 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}

218 \def\JoT{\textsl{The Joy of \TeX}}

```

219 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
220     $\m@th$\fontsize\sf@size\z@\selectfont
221     $\m@th\mathcal{A}$}%
222     \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
223     {$\m@th\mathcal{S}$}-\TeX}
224 % This code
225 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
226 % example) to propagate into the raised (small) 'A':
227 % \begin{macrocode}
228 \DeclareRobustCommand{\La}%
229     {L\kern-.36em
230     {\setbox0\hbox{T}%
231     \vbox to\ht0{\hbox{$\m@th$%
232         \csname S@\f@size\endcsname
233         \fontsize\sf@size\z@
234         \math@fontsfalse\selectfont
235         A}%
236         \vss}%
237     }}

```

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.

```

238 <!!latex>\def\LaTeX{L\kern-.15em\TeX}
239 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
240 \def\MacOSX{Mac\,\acro{OS}\,X}
241 \def\MathML{Math\acro{ML}}
242 \def\Mc{\setbox\TestBox=\hbox{M}\vbox
243     to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we're running under L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub> , we're using (at least pro tem) Ulrik Vieth's `mflogo.sty` if it's present. Otherwise, we're using a short extract of Vieth's stuff. Either way, we don't need to specify `\MF` or `\MP`

```

244 \def\mf{\textsc{Metafont}}
245 \def\MFB{\textsl{The \MF book}}
246 \def\MkIV{Mk\acro{IV}}
247 \let\TB@omp\mp
248 \DeclareRobustCommand\mp{\ifmmode\TB@omp\else MetaPost\fi}
249 %
250 % In order that the \cs{OMEGA} command will switch to using the TS1
251 % variant of the capital Omega character if \texttt{textcomp.sty} is
252 % loaded, we define it in terms of the \cs{textohm} command. Note
253 % that this requires us to interpose a level of indirection, rather
254 % than to use \cs{let}\dots
255 %
256 % \begin{macrocode}
257 \DeclareRobustCommand{\NTG}{\acro{NTG}}
258 \DeclareRobustCommand{\NTS}{\ensuremath{\mathcal{N}}\mkern-4mu

```

```

259 \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
260 \DeclareTextSymbol{\textohm}{OT1}{'012}
261 \DeclareTextSymbolDefault{\textohm}{OT1}
262 \newcommand\OMEGA{\textohm}
263 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
264 \DeclareRobustCommand{\OOXML}{\acro{OOXML}}
265 \DeclareRobustCommand{\OTF}{\acro{OTF}}
266 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
267 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}

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

268 \def\Pas{Pascal}
269 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
270 \def\PCTeX{PC\thinspace\TeX}
271 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
272 \def\PDF{\acro{PDF}}
273 \def\PGF{\acro{PGF}}
274 \def\PHP{\acro{PHP}}
275 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
276 \def\PiCTeX{\PiC\kern-.11em\TeX}
277 \def\plain{\texttt{plain}}
278 \def\PNG{\acro{PNG}}
279 \def\POBox{P.\thinspace 0.\~Box }
280 \def\PS{{Post}\-Script}}
281 \def\PSTricks{\acro{PST}ricks}
282 \def\RTF{\acro{RTF}}
283 \def\SC{Steering Committee}
284 \def\SGML{\acro{SGML}}
285 \def\SliTeX{\textrm{S\kern-.06em\textsc{l}\kern-.035em}%
286 \kern-.06em\TeX}}
287 \def\sLMF{\textsl{MF}} % should never be used
288 \def\SQL{\acro{SQL}}
289 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
290 \def\STIX{\acro{STIX}}
291 \def\SVG{\acro{SVG}}
292 \def\TANGLE{\texttt{TANGLE}\@}
293 \def\TB{\textsl{The \TeX book}}
294 \def\TIFF{\acro{TIFF}}
295 \def\TP{\textsl{\TeX}: \textsl{The Program}}
296 \DeclareRobustCommand\TeX{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
297 \def\TeXhax{\TeX hax}
298 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
299 \kern-.2267emG\@}
300 \def\TeXtures{\textit{Textures}}
301 \let\Textures=\TeXtures
302 \def\TeXworks{\TeX\kern-.07em works}
303 \def\TeXXeT{\TeX-}\-XeT}
304 \def\TFM{\acro{TFM}}
305 \expandafter\ifx\csname XeTeXrevision\endcsname\relax
306 \def\Thanh{H\^an\~Th\^e\llap{\raise 0.5ex\hbox{\^'}}\~Th\^anh}% non-XeTeX

```

```

307 \else
308 \def\Thanh{H\`an~Th\textcirc{e}~Th\`anh}% xunicode drops the acute else
309 \fi
310 \def\TikZ{Ti{\em k}Z}
311 \def\TTN{\textsl{TTN}\@}
312 \def\TTN{\textsl{\TeX{} and TUG News}}
313 \let\texttub\textsl % redefined in other situations
314 \def\TUB{\texttub{TUGboat}}
315 \def\TUG{\TeX\ \UG}
316 \def\tug{\acro{TUG}}
317 \def\UG{Users Group}
318 \def\UNIX{\acro{UNIX}}
319 % let's not do \UTF, since other packages use it for Unicode character access.
320 \def\VAX{V\kern-.12em A\kern-.1em X\@}
321 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
322 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{0\kern-1.4\p@ R}\kern-2.6\p@\TeX}
323 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
324 \def\XML{\acro{XML}}
325 \def\WEB{\texttt{WEB}\@}
326 \def\WEAVE{\texttt{WEAVE}\@}
327 \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.)

```

328 \def\tubreflect#1{%
329   \ifundefined{reflectbox}{%
330     \TBerror{A graphics package must be loaded for \string\XeTeX}%
331   }{%
332     \ifdim \fontdimen1\font>0pt
333       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
334     \else
335       \reflectbox{#1}%
336     \fi
337   }%
338 }
339 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
340 \def\XekernbeforeE{-.125em}
341 \def\XekernafterE{-.1667em}
342 \DeclareRobustCommand\Xe{\leavevmode
343   \tubhideheight{\hbox{X%
344     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
345     \lower\dp0\hbox{\raise\dp1\hbox{\kern\XekernbeforeE\tubreflect{E}}}%
346     \kern\XekernafterE}}}%
347 \def\XeTeX{\Xe\TeX}
348 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
349 %
350 \def\XHTML{\acro{XHTML}}

```

```

351 \def\XSL{\acro{XSL}}
352 \def\XSLF0{\acro{XSL}\raise.08ex\hbox{-}\acro{F0}}
353 \def\XSLT{\acro{XSLT}}

```

### 3.5 General typesetting rules

```

354 \newlinechar='^^J
355 \normallineskiplimit=\p@
356 \clubpenalty=10000
357 \widowpenalty=10000
358 \def\NoParIndent{\parindent=\z@}
359 \newdimen\normalparindent
360 \normalparindent=20\p@
361 \def\NormalParIndent{\global\parindent=\normalparindent}
362 \NormalParIndent
363 \def\BlackBoxes{\overfullrule=5\p@}
364 \def\NoBlackBoxes{\overfullrule=\z@}
365 \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.

```

366 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
367 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
368 \def\nohyphens{\hyphenpenalty\@M\exhyphenpenalty\@M}

```

### 3.6 Utility registers and definitions

We define a few scratch registers (and the like) for transient use; they're all paired: an internal one (`\T@st*`) and an external one (`\Test*`).

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

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

```

369 \newbox\T@stBox           \newbox\TestBox
370 \newcount\T@stCount       \newcount\TestCount
371 \newdimen\T@stDimen       \newdimen\TestDimen
372 \newif\ifT@stIf           \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).

```

373 \def\ifundefined#1{\expandafter\ifx\curname#1\endcsname\relax }

```

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

```

374 <*\latex>
375 \let\@input\input
376 \def\iinput#1{\@input#1 }

```



```

377 \def\@inputcheck{\if\@nextchar\bgroup
378   \expandafter\iinput\else\expandafter\@input\fi}
379 \def\input{\futurelet\@nextchar\@inputcheck}
380 </!latex>

```

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

```

381 \newif\iftop@           \newif\ifbot@
382 \def\topsmash{\top@true\bot@false\smash@}
383 \def\botsmash{\top@false\bot@true\smash@}
384 \def\smash{\top@true\bot@true\smash@}
385 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
386   \else\let\next\makesm@sh\fi \next }
387 \def\fin@msh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}

```

Vertical ‘laps’; cf. \llap and \rlap

```

388 \long\def\ulap#1{\vbox to \z@{\vss#1}}
389 \long\def\dlap#1{\vbox to \z@{\#1\vss}}

```

And centered horizontal and vertical ‘laps’

```

390 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
391 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
392 \long\def\zlap#1{\ylap{\xlap{\#1}}}

```

Avoid unwanted vertical glue when making up pages.

```

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

```

Empty rules for special occasions

```

394 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
395 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }

```

Support ad-hoc strut construction.

```

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

```

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

```

397 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
398   \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
399     \vss\hb@xt@#2{\vrule \@width\T@stDimen
400       \hfil\makestrut[#1;\z@]%
401       \vrule \@width\T@stDimen}\vss
402     \hrule \@height\T@stDimen \@depth\z@}}

```

Today’s date, to be printed on drafts. Based on TeXbook, p.406.

```

403 <!*latex>
404 \def\today{\number\day\space \ifcase\month\or
405   Jan \or Feb \or Mar \or Apr \or May \or Jun \or
406   Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
407   \number\year}
408 </!latex>

```

Current time; this may be system dependent!

```

409 \newcount\hours

```

```

410 \newcount\minutes
411 \def\SetTime{\hours=\time
412         \global\divide\hours by 60
413         \minutes=\hours
414         \multiply\minutes by 60
415         \advance\minutes by-\time
416         \global\multiply\minutes by-1 }
417 \SetTime
418 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
419 \def\Now{\today\ \now}
420 \newif\ifPrelimDraft
421 \def\midrttitle{\ifPrelimDraft {\textsl{preliminary draft, \Now}}\fi}

```

### 3.7 Ragged right and friends

<p><code>\raggedskip</code></p> <p><code>\raggedstretch</code></p> <p><code>\raggedparfill</code></p> <p><code>\raggedspaces</code></p>	<p>Plain T<sub>E</sub>X's definition of <code>\raggedright</code> doesn't permit any stretch, and results in too many overfull boxes. We also turn off hyphenation. This code lies somewhere between that of Plain T<sub>E</sub>X and of L<sup>A</sup>T<sub>E</sub>X.</p> <pre> 422 \newdimen\raggedskip \raggedskip=\z@ 423 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt) 424 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil 425 \def\raggedspaces{\spaceskip=.3333em \relax \xspaceskip=.5em \relax } </pre>
<p><code>\raggedright</code></p> <p><code>\raggedleft</code></p> <p><code>\raggedcenter</code></p> <p><code>\normalspaces</code></p>	<p>Some applications may have to add stretch, in order to avoid all overfull boxes.</p> <p>We define the following uses of the above skips, etc.</p> <pre> 426 \def\raggedright{% 427   \nohyphens 428   \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces 429   \parfillskip=\raggedparfill 430 } 431 \def\raggedleft{% 432   \nohyphens 433   \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces 434   \parfillskip=\z@skip 435 } 436 \def\raggedcenter{% 437   \nohyphens 438   \leftskip=\raggedskip\@plus\raggedstretch 439   \rightskip=\leftskip \raggedspaces 440   \parindent=\z@ \parfillskip=\z@skip 441 } 442 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip} </pre>

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-T<sub>E</sub>X — the L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> version has `\leavevmode` and doesn't care about surrounding space).

---

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

```

443 \DeclareRobustCommand{\nobreakspace}{%
444   \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 re-
sponded to the previous sentence “\outerness has its place: it avoids register
buildup, hence running out of memory”. In another context, David Carlisle re-
marked 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...)

445 \def\boxcs#1{\box\csname#1\endcsname}
446 \def\setboxcs#1{\setbox\csname#1\endcsname}
447 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
448 \let\gobble\@gobble
449 \def\vellipsis{%
450   \leavevmode\kern0.5em
451   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
452 }
453 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
454 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
455 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
456   /\kern-.125em\smash{\lower.3ex\hbox{o}}}\ \ignorespaces}
457 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
458 %
459 \DeclareRobustCommand\sfrac[1]{\@ifnextchar/{\@sfrac{#1}}%
460   {\@sfrac{#1}/}}
461 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
462   \hbox{$\m@th\mbox{\fontsize\sf@size\z@
463     \selectfont#1}$}\kern-.1em
464   /\kern-.15em\lower.25ex
465   \hbox{$\m@th\mbox{\fontsize\sf@size\z@
466     \selectfont#2}$}}
467 %
468 % don't stay bold in description items, bold italic is too weird.
469 \DeclareRobustCommand\meta[1]{%
470   \ensuremath{\langle}%
471   \ifmmode \mbox\bgroup \fi % if in math
472   {\it #1\}/}% no typewriter italics, please
473   \ifmmode \egroup \fi
474   \ensuremath{\rangle}%
475 }
476 %
477 \DeclareRobustCommand\cs[1]{\texttt{\char'\#1}}
478 %
479 \DeclareRobustCommand\env[1]{%
480   \cs{begin}\texttt{\char'\#1\char'\}}
481 %
482 \def\thinskip{\hskip 0.16667em\relax}

```

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

```

483 \def\endash{--}
484 \def\emdash{\endash-}
485 \def\d@sh#1#2{\unskip#1\thinspace#2\thinspace\ignorespaces}
486 \def\dash{\d@sh\nobreak\endash}
487 \def\Dash{\d@sh\nobreak\emdash}
488 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
489 \def\rdash{\d@sh\nobreak\endash}
490 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
491 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

492 \def\hyph{-\penalty\z@\hskip\z@skip }
493 \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`.

```

494 \def\nth#1{%
495   \def\reserved@a##1##2\@nil{\ifcat##1n%
496     0%
497     \let\reserved@b\ensuremath
498     \else##1##2%
499     \let\reserved@b\relax
500     \fi}%
501   \TestCount=\reserved@a#1\@nil\relax
502   \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
503   \T@stCount=\TestCount
504   \divide\T@stCount by 100 \multiply\T@stCount by 100
505   \advance\TestCount by-\T@stCount % n mod 100
506   \ifnum\TestCount >20 \T@stCount=\TestCount
507     \divide\T@stCount by 10 \multiply\T@stCount by 10
508     \advance\TestCount by-\T@stCount % n mod 10
509   \fi
510   \reserved@b{#1}%
511   \textsuperscript{\ifcase\TestCount th%      0th
512                     \or st%                    1st
513                     \or nd%                    2nd
514                     \or rd%                    3rd
515                     \else th%                  nth
516                     \fi}%
517 }

```

### 3.8 Reviews

Format information on reviewed items for book review articles. For the  $\text{\LaTeX} 2_{\epsilon}$  version, we follow Fairbairns' maxim, and define something that can even look like a  $\text{\LaTeX}$  macro...

```

518 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
519 \def\@Review:{\@ifnextchar[%]
520   {\@Rev}%
521   {\@Rev[Book review]}}
522 \def\@Rev[#1]#2{\ignorespaces#1\unskip:\enspace\ignorespaces
523               \slshape\mdseries#2}}
524 \def\reviewitem{\addvspace{\BelowTitleSkip}}%
525 \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
526 \def\revtitle##1{\def\therevtitle{\slshape##1. }\ignorespaces}%
527 \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
528 }
529 \def\endreviewitem{\noindent\interlinepenalty=10000
530 \therevauth\therevtitle\therevpubinfo\endgraf}%
531 \vskip\medskipamount
532 }
533 \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.

```

534 \newcount\issueseqno          \issueseqno=-1
535 \def\volx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
536 \def\volyr{}
537 \def\volno{}
538 \def\vol #1,#2.{\gdef\volno{#1\unskip}}%
539   \gdef\issno{\ignorespaces#2\unskip}%
540   \setbox\TestBox=\hbox{\volyr}%
541   \ifdim \wd\TestBox > .2em \volx \fi }
542 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}}%
543   \gdef\bigissdt{#1}}%
544   \setbox\TestBox=\hbox{\volno}%
545   \ifdim \wd\TestBox > .2em \volx \fi }
546 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}}%
547   \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}}%

```

```

548      \setbox\TestBox=\hbox{\volno}%
549      \ifdim \wd\TestBox > .2em \v@l{x} \fi }
550 \vol 0, 0.
551 \issdate Thermidor, 9999.

```

(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

```

552 <!!latex>\def\tubissue#1(#2)%
553 <*latex>
554 \def\tubissue#1{\@ifnextchar(%)
555   {\@tubissue@b{#1}}
556   {\@tubissue@a{#1}}}}
557 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
558 \def\@tubissue@a#1#2%
559 </latex>
560 {\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`

```

561 \def\infil@{\jobname}
562 \def\Input #1 {\ifnum\issueseqno<0
563   \def\infil@{#1}%
564   \else
565     \def\infil@{tb\number\issueseqno#1}
566   \fi
567   \edef\jobname{\infil@}\@readFLN
568   \@input \infil@\relax
569   \ifRMKopen
570     \immediate\closeout\@TBremarkfile\@RMKopenfalse
571   \fi
572 }

```

`\TBremarks` are things that need to be drawn to the attention of the editors; the conscientious author will include such things in the article file. By default, remarks are suppressed, but their appearance may be enabled by the `\TBEnableRemarks` command, which can be included in the configuration file `ltugboat.cfg` (or `ltugproc.cfg`, if that's what we're at).

```

573 \newif\if@RMKopen      \@RMKopenfalse
574 \newwrite\@TBremarkfile
575 \def\@TBremark#1{%
576   \if@RMKopen
577   \else
578     \@RMKopenttrue\immediate\openout\@TBremarkfile=\infil@.rmk
579   \fi
580   \toks@={#1}%
581   \immediate\write\@TBremarkfile{^^J\the\toks@}%

```

```

582 \immediate\write16{^^JTBremark:: \the\toks@^^J}%
583 }

```

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

```

584 \let\TBremark=\gobble

```

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

```

585 \def\TBenableRemarks{\let\TBremark@\TBremark}

```

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

```

586 \def\TUBedit#1{}

```

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

```

587 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
588 \newread\altfilenames
589 \def\@readFLN{\immediate\openin\altfilenames=jobname.fln
590 \ifeof\altfilenames\let\@result\relax\else
591 \def\@result{\@input\jobname.fln }\fi
592 \immediate\closein\altfilenames
593 \@result}
594 \@readFLN
595 \everyjob=\expandafter{\the\everyjob\@readFLN}
596 \InputIfFileExists{jobname.fln}%
597 {\TBInfo{Reading alternative file file jobname.fln}}{}

```

The following needs to work entirely in  $\text{\TeX}$ 's mouth

```

598 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
599 #1\else\csname file@@#1\endcsname\fi}
600 \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.

```

601 <!*latex>
602 \def\pagexrefON#1{%
603     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
604     \write\ppoutfile{%
605         \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
606     }
607 \def\PageXrefON#1{%
608     \immediate\write-1{\def\expandafter
609         \noexpand\csname#1\endcsname{\number\pageno}}}%
610     \immediate\write\ppoutfile{\def\expandafter
611         \noexpand\csname#1\endcsname{\number\pageno}}}%
612 </!latex>

```

```

613 <*\latex>
614 \def\pagexrefON#1{%
615     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
616     \write\ppoutfile{%
617         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
618     }
619 \def\PageXrefON#1{%
620     \immediate\write-1{\def\expandafter
621         \noexpand\csname#1\endcsname{\number\c@page}}}%
622     \immediate\write\ppoutfile{\def\expandafter
623         \noexpand\csname#1\endcsname{\number\c@page}}}%
624 </\latex>
625 \def\pagexrefOFF#1{}
626 \let\pagexref=\pagexrefOFF
627 \def\PageXrefOFF#1{}
628 \let\PageXref=\PageXrefOFF
629 \def\xreftoON#1{%
630     \ifundefined{#1}%
631     ???\TBremark{Need cross reference for #1.}%
632     \else\csname#1\endcsname\fi}
633 \def\xreftoOFF#1{???}
634 \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.

```

635 \let\TBdriver\gobble

```

Some hyphenation exceptions:

```

636 \ifx\tubomithyphenations\@thisisundefined
637 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
638 Flor-i-da Free-BSD Ghost-script Ghost-view
639 Hara-lam-bous Jac-kow-ski Karls-ruhe
640 Mac-OS Ma-la-ya-lam Math-Sci-Net
641 Net-BSD Open-BSD Open-Office
642 Pfa-Edit Post-Script Rich-ard Skoup South-all
643 Vieth VM-ware Win-Edt
644 acro-nym acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
645 bib-lio-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
646 col-umns com-put-able com-put-abil-ity cus-tom-iz-able
647 data-base data-bases
648 de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
649 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able
650 es-sence
651 fall-ing
652 half-way
653 in-fra-struc-ture
654 key-note
655 long-est

```



```

656 ma-gyar man-u-script man-u-scripts meta-table meta-tables
657 mne-mon-ic mne-mon-ics mono-space mono-spaced
658 name-space name-spaces
659 off-line over-view
660 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
661 pipe-line pipe-lines
662 plug-in plug-ins pres-ent-ly pro-gram-mable
663 re-allo-cate re-allo-cates re-allo-cated re-printed
664 set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
665 sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
666 text-height text-length text-width
667 time-stamp time-stamped time-stamps
668 vis-ual vis-ual-ly
669 which-ever white-space white-spaces wide-spread wrap-around
670 }
671 \fi
672 <!!latex>\restorecat\@
673 </common>
674 <*classtail>
675 \PrelimDrafttrue

```

### 3.10 Page dimensions, glue, penalties etc

```

676 \textheight 54pc
677 \textwidth 39pc
678 \columnsep 1.5pc
679 \columnwidth 18.75pc
680 \parindent \normalparindent
681 \parskip \z@ % \@plus\p@
682 \leftmargini 2em
683 \leftmarginv .5em
684 \leftmarginvi .5em
685 \oddsidemargin \z@
686 \evensidemargin \z@
687 \topmargin -2.5pc
688 \headheight 12\p@
689 \headsep 20\p@
690 \marginparwidth 48\p@
691 \marginparsep 10\p@
692 \partopsep=\z@
693 \topsep=3\p@\@plus\p@\@minus\p@
694 \parsep=3\p@\@plus\p@\@minus\p@
695 \itemsep=\parsep
696 %
697 % Ordinarily we typeset in two columns. But if option is given, revert to one.
698 \if@tubtwocolumn \twocolumn \else \onecolumn \textwidth=34pc \fi
699 %
700 \newdimen\pagewd \pagewd=\textwidth
701 \newdimen\trimwd \trimwd=\pagewd
702 \newdimen\trimlgt \trimlgt=11in

```

```
703 \newdimen\headmargin \headmargin=3.5pc
```

In L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, twoside option is forced on when `article.cls` is loaded.

### 3.11 Messing about with the L<sup>A</sup>T<sub>E</sub>X logo

Barbara Beeton's pleas for L<sup>A</sup>T<sub>E</sub>X 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 his own new version. The arguments are font family, series and shape, and then the two kern values used in placing the raised 'A' of L<sup>A</sup>T<sub>E</sub>X.

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

The default values are as used in the source of L<sup>A</sup>T<sub>E</sub>X itself:

```
706 \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):

```
707 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
708 \DeclareLaTeXLogo{cmr}{m}{it}{.3}{.27}
709 \DeclareLaTeXLogo{cmr}{bx}{it}{.3}{.27}
710 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
711 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
712 \DeclareRobustCommand\LaTeX{\expandafter\let\expandafter\reserved@a
713 \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
714 \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
715 \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 L<sup>A</sup>T<sub>E</sub>X, and then bits stuck in on the side.

`\@LaTeX@default` provides parameters as one finds in the original; other versions are added as needed.

```
716 \newcommand\@LaTeX[2]{L\kern-#1em
717     {\sbox\z@ T%
718       \vbox to\ht0{\hbox{$\m@th$%
719         \csname S@\f@size\endcsname
720         \fontsize\sf@size\z@
721         \math@fontsfalse\selectfont
722         A}%
723       \vss}%
724     }%
725     \kern-#2em%
726     \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.

```
727 \def\theauthor#1{\csname theauthor#1\endcsname}
728 \def\theaddress#1{\csname theaddress#1\endcsname}
729 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
730 \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.

```
731 <!!latex>\newcount\@tempcnta
732 \def\@defaultauthorlist{%
733   \@getauthorlist\@firstofone
734 }
```

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

```
735 \def\@getauthorlist#1{%
736   \count@\authornumber
737   \advance\count@ by -2
738   \@tempcnta0
```

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

```
739   \loop
740     \ifnum\count@>0
741       \advance\@tempcnta by \@ne
742       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
743       \advance\count@ by \m@ne
744   \repeat
745   \count@\authornumber
746   \advance\count@ by -\@tempcnta
747   \ifnum\authornumber>0
```

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

```
748     \ifnum\count@>1
749       \count@\authornumber
750       \advance\count@ by \m@ne
751       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
752     \fi
```

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

```
753   #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
754   \fi
755 }
```

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...)

```
756 \def\signature#1{\def\@signature{#1}}
757 \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`

```
758 \def\@defaultsignature{%
759   \let\thanks\@gobble
760   \frenchspacing
761   %
762   \ifnum\authornumber<0
763     \medskip
764     \signaturemark
765     \theauthor{\number\authornumber}\\
766     \theaddress{\number\authornumber}\\
767     \allowhyphens
768     \thenetaddress{\number\authornumber}\\
769     \thePersonalURL{\number\authornumber}\\
770   \else
771     \count@=0
772     \loop
773       \ifnum\count@<\authornumber
774         \medskip
775         \advance\count@ by \@ne
776         \signaturemark
777         \theauthor{\number\count@}\\
778         \theaddress{\number\count@}\\
779         {%
780           \allowhyphens
781           \thenetaddress{\number\count@}\\
782           \thePersonalURL{\number\count@}\\
783         }%
784       \repeat
785     \fi
786   }%
787 }
788 \newdimen\signaturewidth \signaturewidth=12pc
```

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

```

789 \newcommand\makesignature[1][\medskipamount]{%
    check the value the user has put in \signaturewidth: it may be at most
    1.5pc short of \columnwidth
790 \@tempdima\signaturewidth
791 \advance\@tempdima 1.5pc
792 \ifdim \@tempdima>\columnwidth
793 \signaturewidth \columnwidth
794 \advance\signaturewidth -1.5pc
795 \fi
796 \par
797 \penalty9000
798 \vspace{#1}%
799 \rightline{%
800 \vbox{\hsize\signaturewidth \ninepoint \raggedright
801 \parindent \z@ \everypar={\hangindent 1pc }
802 \parskip \z@skip
803 \def||{\unskip\hfil\break}%
804 \def\\{\endgraf}%
805 \def\phone{\rm Phone: }
806 \rm\@signature}%
807 }%
808 \ifnum\authornumber<0 \endgroup\fi
809 }
810 \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.

```

811 \newcount\authornumber
812 \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`).

```
813 \def\author{%
814   \global\advance\authornumber\@ne
815   \TB@author
816 }
```

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

```
817 \def\contributor{%
818   \begingroup
819   \authornumber\m@ne
820   \TB@author
821 }
```

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).

```
822 \def\TB@author#1{%
823   \expandafter\def\csname theauthor\number\authornumber\endcsname
824     {\ignorespaces#1\unskip}%
825   \expandafter\def\csname theaddress\number\authornumber\endcsname
826     {\TBWarningNL{Address for #1\space missing}\@gobble}%
827   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
828     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
829   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
830     \@gobble
831 }
832 \def\EDITORnoaddress{%
833   \expandafter\let\csname theaddress\number\authornumber\endcsname
834     \@gobble
835 }
836 \def\EDITORnonetaddress{%
837   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
838     \@gobble
839 }
```

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

```
840 \def\address#1{%
841   \expandafter\def\csname theaddress\number\authornumber\endcsname
842     {\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!*

```
843 \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.

```
844 \newcommand\netaddress[1][\relax]{%
```

```
845   \begingroup
```

```
846   \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>.

```
847   #1\@sanitize\makespace\ \makeactive\@
```

```
848   \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?!***)

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

```
850   \ProtectNetChars
```

```
851   \expandafter\protected@xdef
```

```
852     \csname thenetaddress\number\authornumber\endcsname
```

```
853     {\protect\leavevmode\textrm{\@network}}%
```

```
854     {\protect\NetAddrChars\net
```

```
855     \ignorespaces#1\unskip}}%
```

```
856   \endgroup
```

```
857 }
```

`\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.

```
858 \def\personalURL{\begingroup
```

```
859   \@sanitize\makespace\ \makeactive\@
```

```
860   \makeactive\.\makeactive%\makeactive\/\@personalURL}%
```

```
861 \def\@personalURL#1{%
```

```
862   \ProtectNetChars
```

```
863   \expandafter\protected@xdef
```

```
864     \csname thePersonalURL\number\authornumber\endcsname{%
```

```
865     \protect\leavevmode
```

```
866     {%
```

```
867     \protect\URLchars\net
```

```
868     \ignorespaces#1\unskip
```

```
869     }%
```

```
870   }%
```

```
871   \endgroup
```

```
872 }
```

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...

```

873 {%
874   \makecomment\*
875   \makeactive\@
876   \gdef\netaddrat{\makeactive\@*
877     \def@{\discretionary{\char"40}{\char"40}}
878     \makeactive\%
879     \gdef\netaddrpercent{\makeactive\%*
880       \def%{\discretionary{\char"25}{\char"25}}
881       \makeactive\%
882       \gdef\netaddrdot{\makeactive\%*
883         \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.

```

884   \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
885   \makeactive\%
886   \gdef\URLchars{*
887     \NetAddrChars
888     \makeactive\%
889     \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.

```

890   \gdef\ProtectNetChars{*
891     \def@{\protect@}*
892     \def%{\protect%}*
893     \def.\{\protect.}*
894     \def/{\protect/}*
895   }
896 }

```

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).

```

897 \if@compatibility
898   \DeclareRobustCommand\net{\normalfont\ttfamily\mathgroup\syntypewriter}
899 \else
900   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
901 \fi
902 \def\authorlist#1{\def\@author{#1}}
903 \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`

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

### 3.13 Article title

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

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

```
905 \newif\if@articletitle
906 \def\maketitle{\@ifstar
907   {\@articletitlefalse\@r@maketitle}%
908   {\@articletitletrue\@r@maketitle}%
909 }
910 \def\@r@maketitle{\par
911   \ifdim\PreTitleDrop > \z@
912     \loop
913       \ifdim \PreTitleDrop > \textheight
914         \vbox{}\vfil\eject
915         \advance\PreTitleDrop by -\textheight
916       \repeat
917       \vbox to \PreTitleDrop{}
918     \global\PreTitleDrop=\z@
919   \fi
920   \begingroup
921     \setcounter{footnote}{0}
922     \def\thefootnote{\fnsymbol{footnote}}
923     \@maketitle
924     \@thanks
925   \endgroup
926   \setcounter{footnote}{0}
927   \gdef\@thanks{}
928 }
```

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

```

929 \def\rhTitle{}% avoid error if no author or title
930 \renewcommand\title{\@dblarg\TB@title}
931 \def\TB@title[#1]#2{\gdef\@title{#2}%
932   \bgroup
933     \let\thanks\@gobble
934     \def\{\{\unskip\space\ignorespaces}%
935     \protected@xdef\rhTitle{#1}%
936   \egroup
937 }

```

`\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.

```

938 \def\shortTitle #1{\def\rhTitle{#1}}
939 \newif\ifshortAuthor
940 \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:

```

941 \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).

```

942 \newdimen\stbaselineskip      \stbaselineskip=18\p@
943 \newdimen\stfontheight
944 \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.

```

945 \newif\ifSecTitle
946 \SecTitlefalse
947 \newif\ifWideSecTitle
948 \newcommand\sectitle{%
949   \SecTitletrue
950   \@ifstar
951     {\WideSecTitletrue\def\s@ctitle}%
952     {\WideSecTitlefalse\def\s@ctitle}%
953 }

```

`\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.

```
954 \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.

```
955 \newskip\AboveTitleSkip \AboveTitleSkip=12\p@
956 \newskip\BelowTitleSkip \BelowTitleSkip=8\p@
957 \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...

```
958 \def\@sectitle #1{%
959   \par
960   \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.

```
961   \ifWideSecTitle\else\secsep\fi
962   {%
963     \fboxrule\strulethickness
964     \fboxsep\z@
965     \noindent\framebox[\hsize]{%
966       \vbox{%
967         \raggedcenter
968         \let\\ \@sectitle@newline
969         \sectitlefont
970         \makestrut[2\stfontheight;\z@]%
971         #1%
972         \makestrut[\z@;\stfontheight]\endgraf
973       }%
974     }%
975   }%
976   \nobreak
977   \vskip\baselineskip
978 }
```

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

```

979 \newcommand{\@sectitle@newline}[1][\z@]{%
980   \ifdim#1>\z@
981     \makestrut[\z@;#1]%
982   \fi
983   \unskip\break
984 }

```

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).

```

985 \def\@makesectitle{\ifSecTitle
986   \global\SecTitlefalse
987   \ifWideSecTitle
988     \twocolumn[\@sectitle{\s@ctitle}]%
989   \global\WideSecTitlefalse
990   \else
991     \@sectitle{\s@ctitle}%
992   \fi
993 \else
994   \vskip\AboveTitleSkip
995   \kern\topskip
996   \hrule \@height\z@ \@depth\z@ \@width 10\p@
997   \kern-\topskip
998   \kern-\strulethickness
999   \hrule \@height\strulethickness \@depth\z@
1000   \kern\medskipamount
1001   \nobreak
1002 \fi
1003 }

```

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

```

1004 \def\@maketitle{%
1005   \@makesectitle
1006   \if@articletitle{%
1007     \nohyphens \interlinepenalty\@M
1008     \setbox0=\hbox{%
1009       \let\thanks\@gobble
1010       \let\=\quad
1011       \let\and=\quad
1012       \ignorespaces\@author}%
1013     {%
1014       \noindent\bf\raggedright\ignorespaces\@title\endgraf
1015     }%
1016     \ifdim \wd0 < 5\p@ % omit if author is null
1017     \else

```

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

```

1018   \nobreak \vskip 4\p@
1019   {%
1020     \leftskip=\normalparindent
1021     \raggedright

```

```

1022         \def\and{\unskip\\}%
1023         \noindent\@author\endgraf
1024     }%
1025     \fi
1026     \nobreak
1027     \vskip\BelowTitleSkip
1028 } \fi%
1029 \global\@afterindentfalse
1030 \aftergroup\@afterheading
1031 }

```

Dedications are ragged right, in italics.

```

1032 \newenvironment{dedication}%
1033 { \raggedright\noindent\itshape\ignorespaces}%
1034 { \endgraf\medskip}

```

The `abstract` and `longabstract` environments both use `\section*`. For one-column articles (or in `ltugproc` class), indent the abstract. This is done in the usual bizarre L<sup>A</sup>T<sub>E</sub>X way, by treating it as a one-item list with an empty item marker.

```

1035 \def\@tubonecolumnabstractstart{%
1036     \list{}{\listparindent\normalparindent
1037         \itemindent\z@ \leftmargin\@tubfullpageindent
1038         \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1039 }
1040 \def\@tubonecolumnabstractfinish{%
1041     \endlist
1042 }
1043 \renewenvironment{abstract}%
1044 { \begin{SafeSection}%
1045     \section*{%
1046         \if@tubtwocolumn\else \hspace*\@tubfullpageindent\fi
1047         Abstract}%
1048     \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1049 }%
1050 { \if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1051     \end{SafeSection}}
1052 \newenvironment{longabstract}%
1053 { \begin{SafeSection}%
1054     \section*{Abstract}%
1055     \bgroup\small
1056 }%
1057 { \endgraf\egroup
1058     \end{SafeSection}%
1059     \vspace{.25\baselineskip}
1060     \begin{center}
1061         {\$--*--\$}
1062     \end{center}
1063     \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.

```

1064 \if@numbersec
1065   \def\section{\TB@startsection{{section}%
1066                                   1%
1067                                   \z@
1068                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1069                                   {4\p@}%
1070                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1071   \def\subsection{\TB@startsection{{subsection}%
1072                                   2%
1073                                   \z@
1074                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1075                                   {4\p@}%
1076                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1077   \def\subsubsection{\TB@startsection{{subsubsection}%
1078                                   3%
1079                                   \z@
1080                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1081                                   {4\p@}%
1082                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1083   \def\paragraph{\TB@startsection{{paragraph}%
1084                                   4%
1085                                   \z@
1086                                   {4\p@ \@plus1\p@ \@minus1\p@}%
1087                                   {-1em}%
1088                                   {\normalsize\bf}}}

```

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

```

1089 \else
1090   \setcounter{secnumdepth}{0}
1091   \def\section{\TB@nolimlabel
1092               \TB@startsection{{section}%
1093                                   1%
1094                                   \z@
1095                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1096                                   {4\p@}%
1097                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}}
1098   \def\subsection{\TB@nolimlabel
1099               \TB@startsection{{subsection}%

```

```

1100                2%
1101                \z@
1102                {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1103                {-0.5em\@plus-\fontdimen3\font}%
1104                {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1105 \def\subsubsection{\TB@nolimelabel
1106                \TB@startsection{{subsubsection}%
1107                3%
1108                \parindent
1109                {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1110                {-0.5em\@plus-\fontdimen3\font}%
1111                {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1112 \fi

```

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

```

1113 \if@numbersec
1114 \def\TB@startsection#1{\@startsection#1}%
1115 \else
1116 \def\TB@startsection#1{%
1117     \ifstar
1118     {\TBWarning{*form of \expandafter\string\csname\@firstofsix#1%
1119                 \endcsname\space
1120                 \MessageBreak
1121                 conflicts with nonumber class option}%
1122     \@startsection#1}%
1123     {\@startsection#1}%
1124 }
1125 \fi
1126 \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).

```

1127 \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.

```

1128 \newenvironment{SafeSection}%
1129 {\let\TB@startsection\TB@safe@startsection}%
1130 {}

```

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'<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

---

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

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.

```

1131 \if@numbersec
1132   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1133 \else
1134   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1135   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1136 \fi
1137 \def\chapter{\TB@nosection\chapter\section}
1138 \def\part{\TB@nosection\part\section}
1139 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1140   \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.

```

1141 \def\TBtocsectionfont{\normalfont}
1142 \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...

```

1143 %\def\l@part#1#2{\addpenalty{\@secpenalty}}%
1144 % \addvspace{2.25em\@plus\p@}%
1145 % \begingroup
1146 %   \@tempdima 3em \parindent\z@ \rightskip\z@ \parfillskip\z@
1147 %   {\large \bf \leavevmode #1\hfil \hbox to\@pnumwidth{\hss #2}}\par
1148 %   \nobreak
1149 % \endgroup}
1150 %
1151 \def\l@section#1#2{\addpenalty{\@secpenalty}}%
1152 \addvspace{\TBtocsectionspace}%
1153 \@tempdima 1.5em
1154 \begingroup
1155   \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1156   \parfillskip\z@
1157   \TBtocsectionfont
1158   \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1159   \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1160 \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:

```
1161 \renewcommand\appendix{\par
1162   \renewcommand\thesection{\@Alph\c@section}%
1163   \setcounter{section}{0}%
1164   \if@numbersec
1165   \else
1166     \setcounter{secnumdepth}{1}%
1167   \fi
```

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

```
1168   \def\@tempa{appendix}
1169   \ifx\@tempa\@currentenv
1170     \expandafter\@appendix@env
1171   \fi
1172 }
```

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

```
1173 \newcommand\app@prefix@section{}
1174 \newcommand\@appendix@env[1][Appendix]{%
1175   \renewcommand\@seccntformat[1]{\csname app@prefix@##1\endcsname
1176     \csname the##1\endcsname\quad}%
1177   \renewcommand\app@prefix@section{#1 }%
1178 }
```

Ending an appendix environment is pretty trivial...

```
1179 \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 L<sup>A</sup>T<sub>E</sub>X 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

```
1180 \def\TB@nolimelabel{%
1181   \def\@currentlabel{%
```

```

1182 \protect\TBWarning{%
1183     Invalid reference to numbered label on page \thepage
1184     \MessageBreak made%
1185 }%
1186 \textbf{?!?}%
1187 }%
1188 }

```

### 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.

```

1189 \let\TB@@sect\@sect
1190 \let\TB@@ssect\@ssect
1191 \def\@sect#1#2#3#4#5#6[#7]#8{%
1192   \def\@currentlabelname{#7}%
1193   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1194 }
1195 \def\@ssect#1#2#3#4#5{%
1196   \def\@currentlabelname{#5}%
1197   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1198 }

```

We output the name label as a second `\newlabel` command in the `.aux` file. That way, packages such as `varioref` which also read the `.aux` information can still work. So we redefine `\label` to first call the standard L<sup>A</sup>T<sub>E</sub>X `\label` and then write our named label as `nr<label>`.

```

1199 \let\@savelatexlabel=\label % so save original LaTeX command
1200 %
1201 \def\label#1{% de
1202   \@savelatexlabel{#1}%
1203   \@bsphack
1204   \if@filesw
1205     \protected@write\@auxout{%
1206       {\string\newlabel{nr@#1}{{\@currentlabel}{\@currentlabelname}}}%
1207     \fi
1208   \@esphack
1209 }

```

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

```

1210 \let\@currentlabelname\@empty

```

Getting named references is then just like getting page references in the L<sup>A</sup>T<sub>E</sub>X kernel (see `ltxref.dtx`).

```
1211 \DeclareRobustCommand\nameref[1]{\expandafter\@setref
1212 \csname r@nr@#1\endcsname\@secondoftwo{#1}}
```

### 3.19 Float captions

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

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

```
\@tubfullpageindent
```

```
1213 \newdimen\@tubfullpageindent
1214 \@tubfullpageindent = \if@tubtwocolumn 4.875pc \else 3.875pc \fi

    Ok, here is the \@makecaption.
1215 \def\tubcaptionfonts{\small}%
1216 \long\def\@makecaption#1#2{%
1217   \vskip\abovcaptionskip
1218   \sbox\@tempboxa{\tubcaptionfonts \tubmakecaptionbox{#1}{#2}}% try in an hbox
1219   \ifdim \wd\@tempboxa > \hsize
1220     {% caption doesn’t fit on one line; set as a paragraph.
1221       \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1222       % indent full-width captions {figure*}, but not single-column {figure}.
1223       \ifdim\hsize = \textwidth
1224         \leftskip=\@tubfullpageindent \rightskip=\leftskip
1225         \advance\rightskip by 0pt plus2em % increase acceptable raggedness
1226       \fi
1227       \noindent \tubmakecaptionbox{#1}{#2}\par}%
1228   \else
1229     % fits on one line; use the hbox, centered. Do not reset its glue.
1230     \global\@minipagefalse
1231     \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
1232   \fi
1233   \vskip\belowcaptionskip}
1234 %
1235 \def\tubmakecaptionbox#1#2{#1: #2}% allow overriding for a paper
```

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

```
1236 \def\fnun@figure{{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}}
1237 \def\fnun@table{{\tubcaptionfonts \bf \tablename\nobreakspace\thetable}}
```

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

```
1238 \setlength\abovcaptionskip{6pt plus1pt minus1pt}
```

### 3.20 Size changing commands

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

```
1239 \renewcommand\normalsize{%
1240   \setfontsize\normalsize\@xpt\@xipt
1241   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1242   \belowdisplayskip=\abovedisplayskip
1243   \abovedisplayshortskip=\z@\@plus 3\p@
1244   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1245 }
1246
1247 \renewcommand\small{%
1248   \setfontsize\small\@ixpt{11}%
1249   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1250   \belowdisplayskip=\abovedisplayskip
1251   \abovedisplayshortskip=\z@\@plus 2\p@
1252   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1253 }
1254 \renewcommand\footnotesize{%
1255   \setfontsize\footnotesize\@viipt{9.5}%
1256   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1257   \belowdisplayskip=\abovedisplayskip
1258   \abovedisplayshortskip=\z@\@plus 3\p@
1259   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1260 }
```

### 3.21 Lists and other text inclusions

```
1261 \def\@listi{%
1262   \leftmargin\leftmargin\i\parsep=\p@\@plus\p@\@minus\p@
1263   \itemsep=\parsep
1264   \listparindent=1em
1265 }
1266
1267 \def\@listii{%
1268   \leftmargin\leftmarginii
1269   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1270   \topsep=2\p@\@plus\p@\@minus\p@
1271   \parsep=\p@\@plus\p@\@minus\p@
1272   \itemsep=\parsep
1273   \listparindent=1em
1274 }
1275
1276 \def\@listiii{%
1277   \leftmargin=\leftmarginiii
1278   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1279   \topsep=\p@\@plus\p@\@minus\p@
1280   \parsep=\z@
1281   \itemsep=\topsep
```

```

1282 \listparindent=1em
1283 }
1284 \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.

```

1285 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1286 \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}

```

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

```

1287 \newenvironment{compactitemize}%
1288 {\begin{itemize}%
1289 \setlength{\itemsep}{0pt}%
1290 \setlength{\parskip}{0pt}%
1291 \setlength{\parsep}{0pt}%
1292 }%
1293 {\end{itemize}}
1294 %
1295 \newenvironment{compactenumerate}%
1296 {\begin{enumerate}%
1297 \setlength{\itemsep}{0pt}%
1298 \setlength{\parskip}{0pt}%
1299 \setlength{\parsep}{0pt}%
1300 }%
1301 {\end{enumerate}}
1302 %
1303 \newenvironment{compactdescription}%
1304 {\begin{description}%
1305 \setlength{\itemsep}{0pt}%
1306 \setlength{\parskip}{0pt}%
1307 \setlength{\parsep}{0pt}%
1308 }%
1309 {\end{description}}
1310 %

```

### 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.

```

1311 %\let\@TB@verbatim\@verbatim
1312 \let\@TB@verbatim\verbatim
1313 \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.)

```
1314 \def\verbatim{\par\obeylines
1315   \futurelet\reserved@a\@switch@sqbverbatim}
1316 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1317   \expandafter\@sqbverbatim\else
1318   \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1319 \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.

```
1320 \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.

```
1321 #1\@TBverbatim}
```

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

```
1322 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1323   \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1324   \trivlist \item\relax
1325   \if@minipage\else\vskip\parskip\fi
1326   \leftskip\@totalleftmargin\rightskip\z@skip
1327   \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1328   \@@par
1329   \@tempwafalse
1330   \def\par{%
1331     \if@tempswa
1332       \leavevmode \null \@@par\penalty\interlinepenalty
1333     \else
1334       \@tempwattrue
1335       \ifhmode\@@par\penalty\interlinepenalty\fi
1336     \fi}%
1337   \obeylines \verbatim@font \@noligs
1338   \let\do\@makeoother \dospecials
1339   \everypar \expandafter{\the\everypar \unpenalty}%
1340 }%
```

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).

```

1341 \def\endverbatim{\@TBendverbatim
1342   \if@ruled\kern5\p@\hrule\endtrivlist\fi}

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

as:
      <meta-text>

1343 {\makeactive<
1344   \gdef<#1>{\reset@font\ensuremath{\langle#1\rangle}}%
1345   \textit{#1}%
1346   \ensuremath{\langle#1\rangle}}
1347 }
```

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

```

1348 \let\if@ruled\iffalse

      Finally, if microtype is loaded, we want it to be deactivated in verbatim
      blocks. It often manipulates a leading \ rather too much.

1349 \AtBeginDocument{%
1350   \@ifpackageloaded{microtype}
1351     {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{ }
1352 }
```

### 3.23 Bibliography

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

```

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

The available citation commands are:

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

---

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

First of all (after checking that we're to use Harvard citation at all), make a copy of L<sup>A</sup>T<sub>E</sub>X's default citation mechanism.

```
1353 \if@Harvardcite
1354 \let\@internalcite\cite
```

Normal forms.

```
1355 \def\cite{\def\@citesep{-1000}%
1356   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1357   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1358 \def\citeNP{\def\@citesep{-1000}%
1359   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1360   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1361 \def\citeN{\def\@citesep{-1000}%
1362   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1363   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1364 \def\citeA{\def\@citesep{-1000}%
1365   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1366   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1367 \def\citeANP{\def\@citesep{-1000}%
1368   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1369   \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1370 \def\shortcite{\def\@citesep{-1000}%
1371   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1372   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1373 \def\shortciteNP{\def\@citesep{-1000}%
1374   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1375   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1376 \def\shortciteN{\def\@citesep{-1000}%
1377   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1378   \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1379 \def\shortciteA{\def\@citesep{-1000}%
1380   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1381   \def\citeauthoryear##1##2##3{##2}\@internalcite}
1382 \def\shortciteANP{\def\@citesep{-1000}%
1383   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1384   \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1385 \def\citeyear{\def\@citesep{-1000}%
1386   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1387   \def\citeauthoryear##1##2##3{##3}\@citedata}
1388 \def\citeyearNP{\def\@citesep{-1000}%
1389   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1390   \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.



```

1391 \def\@citedata{%
1392     \ifnextchar [{\@tempwattrue\@citedatax}%
1393     {\@tempwafalse\@citedatax[]}%
1394 }
1395
1396 \def\@citedatax[#1]#2{%
1397 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1398 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1399     {\@citea\def\@citea{, }\@ifundefined% by Young
1400         {b@\@citeb}{\bf ?}%
1401         \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1402 {\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.

```

1403 \def\@citex[#1]#2{%
1404 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1405 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1406     {\@citea\def\@citea{; }\@ifundefined% by Young
1407         {b@\@citeb}{\bf ?}%
1408         \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1409 {\csname b@\@citeb\endcsname}}{#1}}%

```

No labels in the bibliography.

```

1410 \def\@biblabel#1{}

```

Set length of hanging indentation for bibliography entries.

```

1411 \newlength{\bibhang}
1412 \setlength{\bibhang}{2em}

```

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

```

1413 \newdimen\bibindent
1414 \bibindent=1.5em
1415 \@ifundefined{refname}%
1416     {\newcommand{\refname}{References}}%
1417     {}%

```

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

```

1418 \def\thebibliography#1{%
1419     \let\TB@startsection\TB@safe@startsection
1420     \section*{\refname
1421         \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1422     \list{[\arabic{enumi}]}{%
1423         \labelwidth\z@ \labelsep\z@
1424         \leftmargin\bibindent
1425         \itemindent -\bibindent
1426         \listparindent \itemindent
1427         \parsep \z@
1428         \usecounter{enumi}}
1429     \def\newblock{}

```

```

1430 \BibJustification
1431 \sfcode'\.=1000\relax
1432 }

etal Other bibliography odds and ends.
\bibentry 1433 \def\etal{et\,al.\@}
1434 \def\bibentry{%
1435 \smallskip
1436 \hangindent=\parindent
1437 \hangafter=1
1438 \noindent
1439 \sloppy
1440 \clubpenalty500 \widowpenalty500
1441 \frenchspacing
1442 }

\bibliography Changes made to accommodate TUB file naming conventions
\bibliographystyle 1443 \def\bibliography#1{%
1444 \if@filesw
1445 \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1446 \fi
1447 \@input{\jobname.bbl}%
1448 }
1449 \def\bibliographystyle#1{%
1450 \if@filesw
1451 \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1452 \fi
1453 }

\thebibliography If the user's asked to use LATEX's default citation mechanism (using the rawcite
\TB@thebibliography option), we still need to play with \TB@startsection: this is a boring fact of
life...
We also patch \sloppy in case there's a need for alternative justification of
the body of the bibliography.
1454 \else
1455 \let\TB@thebibliography\thebibliography
1456 \def\thebibliography{%
1457 \let\TB@startsection\TB@safe@startsection
1458 \let\sloppy\BibJustification
1459 \TB@thebibliography}
1460 \fi

\BibJustification \BibJustification defines how the bibliography is to be justified. The Lamport
\SetBibJustification default is simply “\sloppy”, but we regularly find some sort of ragged right setting
\TB@sloppy is appropriate. (\BibJustification is nevertheless reset to its default value at
the start of a paper.)
1461 \let\TB@sloppy\sloppy
1462 \let\BibJustification\TB@sloppy
1463 \newcommand{\SetBibJustification}[1]{%

```

```

1464 \renewcommand{\BibJustification}{#1}%
1465 }
1466 \ResetCommands\expandafter{\the\ResetCommands
1467 \let\BibJustification\TB@@sloppy
1468 }

```

### 3.24 Registration marks

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

```

1469 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1470 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1471 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }

```

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

```

1472 \def\ttopregister{\dlap{%
1473     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1474                 \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1475     \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1476 \def\tbotregister{\ulap{%
1477     \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1478     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1479                 \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1480 \def\topregister{\ttopregister}
1481 \def\botregister{\tbotregister}

```

### 3.25 Running heads

```

1482 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1483 \def\PrelimDraftfooter{%
1484     \dlap{\kern\textheight\kern3pc
1485         \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}}
1486 }

```

registration marks; these are temporarily inserted in the running head

```

1487 \def\MakeRegistrationMarks{}
1488 \def\UseTrimMarks{%
1489     \def\MakeRegistrationMarks{%
1490         \ulap{\rlap{%
1491             \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1492             \topregister\vskip \headmargin \vskip 10\p@}}}%
1493 }
1494 % put issue identification and page number in header.
1495 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1496 \normalsize\csname normalshape\endcsname\rm \tubheadhook
1497 \rtitlex\quad\midrtitle \hfil \thepage}
1498 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1499 \normalsize\csname normalshape\endcsname\rm \tubheadhook
1500 \thepage\hfil\midrtitle\quad\rtitlex}
1501
1502 % can be used to reset the font, e.g., tb98kuester.

```

```

1503 \def\tubheadhook{}
1504
1505 % put title and author in footer.
1506 \def\@tubrunningfull{%
1507   \def\@oddfoot{% make line break commands produce a normal space
1508     \def\{\unskip\ \ignorespaces}%
1509     \let\newline=\%
1510     \hfil\rhTitle}
1511   \def\@evenfoot{\@author\hfil}
1512 }
1513
1514 \def\@tubrunninggetauthor#1{#1
1515   \begingroup
1516     \let\thanks\@gobble
1517     \protected@xdef\rhAuthor{\the\toks@##1}%
1518   \endgroup
1519 }%
1520
1521 % empty footer.
1522 \def\@tubrunningminimal{%
1523   \def\@oddfoot{\hfil}%
1524   \def\@evenfoot{\hfil}%
1525 }
1526
1527 % empty footer and header.
1528 \def\@tubrunningoff{%
1529   \def\@oddfoot{\hfil}%
1530   \def\@evenfoot{\hfil}%
1531   \def\@oddhead{\hfil}%
1532   \def\@evenhead{\hfil}%
1533 }
1534
1535 \def\ps@headings{}
1536 \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...

```

1537 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1538   \global\setbox\@leftcolumn\box\@outputbox
1539   \global\brokenpenalty10000
1540 \else \global\@firstcolumntrue
1541   \global\brokenpenalty100
1542   \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1543     {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1544     \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats

```

```

1545      \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1546      \@whiles\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1547      \fi}

```

### 3.27 Font-related definitions and machinery

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

```

1548 \newif\ifFirstPar      \FirstParfalse
1549 \def\smc{\sc}
1550 \def\ninepoint{\small}
1551 \</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 `resize.sty` by Donald Arseneau and Matt Swift. (The order of examination of `\@currsize` is to get the commonest cases out of the way first.)

```

1552 \<*common>
1553 \DeclareRobustCommand\SMC{%
1554   \ifx\@currsize\normalsize\small\else
1555   \ifx\@currsize\small\footnotesize\else
1556   \ifx\@currsize\footnotesize\scriptsize\else
1557   \ifx\@currsize\large\normalsize\else
1558   \ifx\@currsize\Large\large\else
1559   \ifx\@currsize\LARGE\Large\else
1560   \ifx\@currsize\scriptsize\tiny\else
1561   \ifx\@currsize\tiny\tiny\else
1562   \ifx\@currsize\huge\LARGE\else
1563   \ifx\@currsize\Huge\huge\else
1564   \small\SMC@unknown@warning
1565 \fi\fi\fi\fi\fi\fi\fi\fi\fi
1566 }
1567 \newcommand\SMC@unknown@warning{\TBWarning{\string\SMC: nonstandard
1568   text font size command -- using \string\small}}

```

```
1569 \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.

```
1570 \newcommand\acro[1]{\textSMC{#1}\@}
```

```
1571 \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!)

```
1572 \*classtail
```

```
1573 \def\xEdNote{\EdNoteFont Editor's note:\enspace }
```

```
1574 \def \EdNote{\@ifnextchar [%]
```

```
1575   {%
```

```
1576     \ifvmode
```

```
1577       \smallskip\noindent\let\@EdNote@\@EdNote@v
```

```
1578     \else
```

```
1579       \unskip\quad\def\@EdNote@{\unskip\quad}%
```

```
1580       \fi
```

```
1581       \@EdNote
```

```
1582   }%
```

```
1583   \xEdNote
```

```
1584 }
```

```
1585 \long\def\@EdNote[#1]{%
```

```
1586   [\thinspace\xEdNote\ignorespaces
```

```
1587   #1%
```

```
1588   \unskip\thinspace]%
```

```
1589   \@EdNote@
```

```
1590 }
```

```
1591 \def\@EdNote@v{\par\smallskip}
```

Macros for Mittelbach's self-documenting style

```
1592 \def\SelfDocumenting{%
```

```
1593   \setlength\textwidth{31pc}
```

```
1594   \onecolumn
```

```
1595   \parindent \z@
```

```
1596   \parskip 2\p@\@plus\p@\@minus\p@
```

```
1597   \oddsidemargin 8pc
```

```
1598   \evensidemargin 8pc
```

```
1599   \marginparwidth 8pc
```

```
1600   \toks@\expandafter{\@oddhead}%
```

```
1601   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
```

```
1602   \toks@\expandafter{\@evenhead}%
```

```
1603   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
```

```
1604   \def\ps@titlepage{%
```

```
1605 }
```

```

1606 \def\ps@titlepage{}
1607
1608 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}}%
1609 \llap{\@makefnmark}\null$\mskip5mu$#1}
1610
1611 %% \long\def\@makefntext#1{\parindent 1em
1612 %% \noindent
1613 %% \hb@xt@2em{\hss\@makefnmark}%
1614 %% \hskip0.27778\fontdimen6\textfont\z@\relax
1615 %% #1%
1616 %% }

\creditfootnote Sometimes we want the label “Editor’s Note:”, sometimes not.
\supportfootnote
1617 \def\creditfootnote{\nomarkfootnote\xEdNote}
1618 \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.
1619 \gdef\nomarkfootnote#1#2{\begingroup
1620 \def\thefootnote{}%
1621 % no period, please, also no fnmark.
1622 \def\@makefntext##1{##1}%
1623 \footnotetext{\noindent #1#2}%
1624 \endgroup
1625 }

```

### 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.

```

1626 \if@Harvardcite
1627 \AtBeginDocument{%
1628 \bibliographystyle{ltugbib}%
1629 }
1630 \fi
1631 \authornumber\z@
1632 \let\@signature\@defaultsignature
1633 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1634 configuration information}}{}
1635 </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:

```

1636 < *ltugproccls>
1637 \def\@tugclass{ltugproc}

```

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

```

1638 \newif\if@proc@sober
1639 \newif\if@proc@numerable
1640 \DeclareOption{tug95}{%
1641   \@proc@soberfalse
1642   \@proc@numerablefalse
1643 }
1644 \DeclareOption{tug96}{%
1645   \@proc@sobertrue
1646   \@proc@numerablefalse
1647 }
1648 \DeclareOption{tug97}{%
1649   \@proc@sobertrue
1650   \@proc@numerabletrue
1651 }
1652 \DeclareOption{tug2002}{%
1653   \@proc@sobertrue
1654   \@proc@numerabletrue
1655   \let\if@proc@numbersec\iftrue
1656   \PassOptionsToClass{numbersec}{ltugboat}%
1657 }
```

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

```

1658 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1659   \PassOptionsToClass{numbersec}{ltugboat}%
1660 }
1661 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1662   \PassOptionsToClass{nonumber}{ltugboat}%
1663 }
```

`\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`.

```

1664 \newif\ifTB@title
1665 \DeclareOption{title}{\TB@titletrue}
1666 \DeclareOption{notitle}{\TB@titlefalse}
1667 \AtBeginDocument{\stepcounter{page}}
```

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

```

1668 \DeclareOption{tugproc}{%
1669   \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1670 }
```

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

```

1671 \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 `TeX`ie...)

```
1672 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1673           {Loading ltugproc configuration information}}{}
1674 \@ifundefined{TUGprocExtraOptions}%
1675   {\let\TUGprocExtraOptions\@empty}%
1676   {\edef\TUGprocExtraOptions{\TUGprocExtraOptions}}
```

`\tugProcYear` Now work out what year it is

```
1677 \@tempcnta\year
1678 \ifnum\@tempcnta<2000
1679   \divide\@tempcnta by100
1680   \multiply\@tempcnta by100
1681   \advance\@tempcnta-\year
1682   \@tempcnta-\@tempcnta
1683 \fi
```

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

```
1684 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1685             {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1686 \@tempa
1687 \ClassInfo{ltugproc}{Class believes year is
1688   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1689   \@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.

```
1690 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1691   \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.

```
1692 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1693 \ProcessOptions
1694 \if@proc@numbersec
1695   \if@proc@numerable
1696   \else
1697     \ClassWarning{\@tugclass}{This year's proceedings may not have
1698       numbered sections}%
1699   \fi
1700 \fi
```

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

```
1701 \LoadClass[\if@proc@numbersec numbersec\else nonumber\fi]{ltugboat}
```

## 4.1 Proceedings titles

`\maketitle` There's no provision for 'section titles' in proceedings issues, as there are in *TUG-boat* proper. Note the tedious L<sup>A</sup>T<sub>E</sub>X bug-avoidance in the `\@TB@test@document` macro.

```

1702 \def\maketitle{%
1703   \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).

1704   \ifshortAuthor\else
1705     \global\let\rhAuthor\@empty
1706     \def\g@addto@rhAuthor##1{%
1707       \begingroup
1708         \toks@\expandafter{\rhAuthor}%
1709         \let\thanks\@gobble
1710         \protected@xdef\rhAuthor{\the\toks@##1}%
1711       \endgroup
1712     }%
1713     \getauthorlist\g@addto@rhAuthor
1714   \fi
      now, the real business of setting the title

1715   \ifTB@title
1716     \setcounter{footnote}{0}%
1717     \renewcommand\thefootnote{\fnsymbol\c@footnote}%
1718     \if@tubtwocolumn
1719       \twocolumn[\@maketitle]%
1720     \else
1721       \onecolumn
1722       \global\@topnum\z@
1723       \@maketitle
1724     \fi
1725     \@thanks
1726     \thispagestyle{TBproctitle}
1727   \fi
1728 \endgroup
1729 \TB@madetitletrue
1730 }
1731 \newif\ifTB@madetitle \TB@madetitlefalse

```

`\@TB@test@document` `\@TB@test@document` checks to see, at entry to `\maketitle`, if we've had `\begin{document}`. See L<sup>A</sup>T<sub>E</sub>X bug report latex/2212, submitted by Robin Fairbairns, for details.

```

1732 \def\@TB@test@document{%
1733   \edef\@tempa{\the\everypar}
1734   \def \@tempb{\@nodocument}
1735   \ifx \@tempa\@tempb
1736     \@nodocument
1737   \fi

```

1738 }

\AUTHORfont Define the fonts for titles and things

```
\TITLEfont 1739 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1740 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1741 \def\addressfont{\small\rmfamily\mdseries\upshape}
1742 \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 1743 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
1744 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1745 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@
```

\@maketitle The body of \maketitle

```
1746 \def\@maketitle{%
1747   {\parskip\z@
1748     \frenchspacing
1749     \TITLEfont\raggedright\noindent\@title\par
1750     \count@=0
1751     \loop
1752       \ifnum\count@<\authornumber
1753         \vskip\aboveauthorskip
1754         \advance\count@\@ne
1755         {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1756         \addressfont\theaddress{\number\count@}\endgraf
1757         {%
1758           \allowhyphens
1759           \hangindent1.5pc
1760           \netaddrfont\thenetaddress{\number\count@}\endgraf
1761           \hangindent1.5pc
1762           \thePersonalURL{\number\count@}\endgraf
1763         }%
1764       \repeat
1765   \vskip\belowauthorskip}%
1766 \if@abstract
1767   \centerline{\bfseries Abstract}%
1768   \vskip.5\baselineskip\rmfamily
1769   \@tubonecolumnabstractstart
1770   \the\abstract@toks
1771   \@tubonecolumnabstractfinish
1772   \global\@ignoretrue
1773 \fi
1774 \vskip\belowabstractskip
1775 \global\@afterindentfalse\aftergroup\@afterheading
1776 }
```

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@`

```
1777 \newtoks\abstract@toks \abstract@toks{}
1778 \let\if@abstract\iffalse
1779 \def\abstract{%
```

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

```
1780 \ifTB@madetitle
1781   \TBWarning{abstract environment after \string\maketitle}
1782 \fi
1783 \def\@abstract@{abstract}%
1784 \ifx\@currenvir\@abstract@
1785 \else
1786   \TBEError{\string\abstract\space is illegal:%
1787     \MessageBreak
1788     use \string\begin{\@abstract@} instead}%
1789   {\@abstract@\space may only be used as an environment}
1790 \fi
1791 \global\let\if@abstract\iftrue
1792 {\ifnum0='}\fi
1793 \@abstract@getbody}
1794 \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}`

```
1795 \long\def\@abstract@getbody#1\end{%
1796   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1797   \@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.

```
1798 \def\@abstract@findend#1{%
1799   \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.

```
1800 \ifx\@tempa\@abstract@
1801   \expandafter\@abstract@end
1802 \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)

```
1803   \def\@tempb{document}%
```

```

1804 \ifx\@tempa\@tempb
1805 \TBError{\string\begin{\@abstract@}
1806 ended by \string\end{\@tempb}}%
1807 {You've forgotten \string\end{\@abstract@}}
1808 \else
1809 \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1810 \expandafter\expandafter\expandafter\@abstract@getbody
1811 \fi
1812 \fi}

```

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

```

1813 \def\@abstract@end{\ifnum0=‘{\fi}%
1814 \expandafter\end\expandafter{\@abstract@}}

```

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

```

1815 \renewcommand{\makesignature}{\TBWarning
1816 {\string\makesignature\space is invalid in proceedings issues}}

```

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

```

\ps@TBproc 1817 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1818 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1819 \TB@definefeet
\TB@definefeet 1820 }
\pfoottext 1821 \def\ps@TBproc{%
\rfoottext 1822 \def\@oddhead{\MakeRegistrationMarks
1823 {%
1824 \hfil
1825 \def\{\unskip\ \ignorespaces}%
1826 \rmfamily\rhTitle
1827 }%
1828 }%
1829 \def\@evenhead{\MakeRegistrationMarks
1830 {%
1831 \def\{\unskip\ \ignorespaces}%
1832 \rmfamily\rhAuthor
1833 \hfil
1834 }%
1835 }%
1836 \TB@definefeet
1837 }
1838
1839 \advance\footskip8\p@ % for deeper running feet
1840
1841 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1842 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1843 {#2}}
1844 \def\TB@definefeet{%
1845 \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage

```

```

1846 \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1847 \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1848 \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1849 }
1850
1851 \def\pfoottext{{\smc Preprint}:
1852 Proceedings of the \volyr{} Annual Meeting}
1853 \def\rfoottext{\normalfont\TUB, \volx\Dash
1854 {Proceedings of the \volyr{} Annual Meeting}}
1855
1856 \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).

```

1857 \if@proc@numbersec
1858 \else
1859 \setcounter{secnumdepth}{0}
1860 \fi

```

Otherwise, the `\section` command is pretty straightforward. However, the `\subsection` and `\subsubsection` are run-in, and we have to remember to have negative stretch (and shrink if we should in future choose to have one) on the `\afterskip` parameter of `\@startsection`, since the whole skip is going to end up getting negated. We use `TB@startsection` to detect inappropriate forms.

```

1861 \if@proc@numbersec
1862 \else
1863 \if@proc@sober
1864 \def\section
1865 {\TB@nolimelabel
1866 \TB@startsection{section}%
1867 1%
1868 \z@%
1869 {-8\p@\@plus-2\p@\@minus-2\p@}%
1870 {6\p@}%
1871 {\normalsize\bfseries\raggedright}}
1872 \else
1873 \def\section
1874 {\TB@nolimelabel
1875 \TB@startsection{section}%
1876 1%
1877 \z@%
1878 {-8\p@\@plus-2\p@\@minus-2\p@}%
1879 {6\p@}%
1880 {\large\bfseries\raggedright}}
1881 \fi

```

```

1882 \def\subsection
1883     {\TB@nolimelabel
1884      \TB@startsection{{subsection}%
1885                       2%
1886                       \z@%
1887                       {6\p@\@plus 2\p@\@minus2\p@}%
1888                       {-5\p@\@plus -\fontdimen3\the\font}%
1889                       {\normalsize\bfseries}}}
1890 \def\subsubsection
1891     {\TB@nolimelabel
1892      \TB@startsection{{subsubsection}%
1893                       3%
1894                       \parindent%
1895                       \z@%
1896                       {-5\p@\@plus -\fontdimen3\the\font}%
1897                       {\normalsize\bfseries}}}
1898 \fi
1899 </ltugproccls>

```

## 5 Plain T<sub>E</sub>X styles

```

1900 <*tugboatsty>
1901 % err...
1902 </tugboatsty>
1903 <*tugprocsty>
1904 % err...
1905 </tugprocsty>

```

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

```

1906 <*tugboatsty>
1907 \obsoletefile{ltugboat.cls}{ltugboat.sty}
1908 \LoadClass{ltugboat}
1909 </tugboatsty>
1910 <*tugprocsty>
1911 \obsoletefile{ltugproc.cls}{ltugproc.sty}
1912 \LoadClass{ltugproc}
1913 </tugprocsty>

```