

The `tugboat` package*

The *TUGboat* team

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1 Document preambles

```

1 <ltugboatcls | ltugproccls | ltugcomm>\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 <ltugcomm>  \ProvidesPackage{ltugcomm}
10           [2018-12-14 v2.21
11 <ltugboatcls>           TUGboat journal class%
12 <ltugproccls>          TUG conference proceedings class%
13 <ltugboatsty | ltugprocsty> TUG compatibility package%
14 <ltugcomm>             TUGboat 'common macros' package%
15 <*dtx>
16
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_EX and L^AT_EX 2_ε.

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>	(L) <code>TeX</code>
<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 <code>TeX</code> t
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVD</code>	
<code>\DVI</code>	
<code>\DVIPDFMx</code>	DVIPDFM <i>x</i>
<code>\DVItOVDU</code>	DVItoVDU
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	ε - <code>TeX</code>
<code>\ExTeX</code>	ε_X <code>TeX</code>
<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 <code>TeX</code>
<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 Metafontbook
<code>\MP</code>	METAPOST
<code>\mp</code>	MetaPost (in text only: still ‘ \mp ’ in math)
<code>\OMEGA</code>	Omega ‘logo’ (Ω)
<code>\OCP</code>	Omega compiled process
<code>\OOXML</code>	
<code>\OTP</code>	Omega translation process
<code>\mtex</code>	multilingual <code>TeX</code>
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pCTeX</code>	

<code>\Pas</code>	Pascal
<code>\PiCTeX</code>	
<code>\plain</code>	plain (in typewriter font)
<code>\POBox</code>	P. O. Box
<code>\PS</code>	PostScript (with hyphenation)
<code>\SC</code>	Steering Committee
<code>\SGML</code>	SGML
<code>\SliTeX</code>	
<code>\slMF</code>	Metafont, slanted: deprecated: use <code>\textsl</code> instead
<code>\stTeX</code>	\TeX for the Atari ST
<code>\SVG</code>	
<code>\TANGLE</code>	
<code>\TB</code>	The \TeX book
<code>\TeX</code>	(Although nearly every package defines this, most, including plain, are missing the spacefactor 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>\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>\rtitlenexttopage</code>	next to page number in running head
<code>\HorzR@gisterRule</code>	pieces of registration marks ('trimmarks')
<code>\DownShortR@gisterRule</code>	
<code>\UpShortR@gisterRule</code>	
<code>\ttopregister</code>	top registration line with 'T' in center
<code>\tbotregister</code>	bottom registration line with inverted 'T' in center
<code>\topregister</code>	register actually used
<code>\botregister</code>	
<code>\raggedskip</code>	parameters used for ragged settings
<code>\raggedstretch</code>	
<code>\raggedparfill</code>	
<code>\raggedspaces</code>	
<code>\raggedright</code>	
<code>\raggedleft</code>	
<code>\raggedcenter</code>	
<code>\normalspaces</code>	
<code>\raggedbottom</code>	
<code>\bull</code>	square bullet
<code>\cents</code>	'cents' sign
<code>\Dag</code>	superscripted dagger
<code>\careof</code>	c/o
<code>\sfrac</code>	slashed fraction (arguments optionally separated by a slash)
<code>\cs</code>	control sequence name
	<code>\cs{name}→\name</code>
<code>\env</code>	environment name
	<code>\env{name}→\begin{name}</code>

<code>\meta</code>	meta-argument name <code>\meta{name}→⟨name⟩</code>
<code>\dash</code>	en-dash surrounded by thinspaces; only breakable AFTER
<code>\Dash</code>	em-dash, as above
<code>\hyph</code>	permit automatic hyphenation after an actual hyphen
<code>\slash</code>	‘breakable’ slash
<code>\nth</code>	for obtaining ‘1 st ’, ‘2 nd ’, 3 rd , etc.
<code>\tubissue</code>	gets <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 in <i>TUGboat</i>
<code>\xreftoON</code>	
<code>\xreftoOFF</code>	
<code>\TBdriver</code>	marks code which only takes effect when articles are run together in a driver file
<code>\signaturemark</code>	items for signatures
<code>\signaturewidth</code>	

3 L^AT_EX 2_ε *TUGboat* class file

3.1 Setup and options

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

```

22 ⟨*tugboatcls⟩
23 \csname tugstyloaded@⟨endcsname⟩
24 \def\tugstyloaded@{⟨tugstyinit⟩⟨endinput⟩}

```

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

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

Warnings/error messages/information messages — if we're using L^AT_εX 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}}
```

draft vs. preprint vs. final.

```
30 \newif\ifpreprint
31 \def\preprint{\preprinttrue}
32 \DeclareOption{draft}{%
33   \AtEndOfClass{%
34     \setcounter{page}{901}%
35     %
36     % Put a question mark into the page number in draft mode.
37     \let\tuborigthepage = \thepage
38     \def\thepage{%
39       \ifnum\value{page}>900
40         \textsl{?}\,\@arabic{\numexpr\the\c@page-900\relax}}%
41     \else
42       \arabic{page}%
43     \fi}%
44   %
45   \BlackBoxes
46   \def\MakeRegistrationMarks{}%
47   \PrelimDrafttrue
48 }%
49 }
50 \DeclareOption{preprint}{%
51   \preprinttrue
52 }
53 \DeclareOption{final}{%
54   \AtEndOfClass{%
55     \let\thepage=\tuborigthepage
56     \NoBlackBoxes
57     % Insert draft date into the header even with [final], if we are not
58     % doing a production run. (tugboat.dates sets up page numbers
59     % above 900 in such pseudo-draft mode.) We use [final] in the first
60     % place for this case because draft can change page layout, wrt
61     % registration marks, etc.
62     \ifnum\value{page}>900 \PrelimDrafttrue \else \PrelimDraftfalse \fi
63     \@tubrunningfull
64   }%
65 }
```

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

```
66 \DeclareOption{11pt}{%
67   \TBWarning{The \@tugclass\space class only supports 10pt fonts:
68     \MessageBreak option \CurrentOption\space ignored}%
69 }
70 \DeclareOption{12pt}{\csname ds@11pt\endcsname}
```

Similarly, ignore one/two-side options.

```
71 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
72 \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`.)

```
73 \DeclareOption{tugproc}{%
74   \TBWarning{Option \CurrentOption\space ignored: use class ltugproc
75     instead of \@tugclass}%
76 }
```

Option `rawcite` (the default) specifies the default citation mechanism (as built-in to L^AT_EX); option `harvardcite` specifies the author-date citation mechanism defined in section 3.23 below.

```
77 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
78 \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 reader can work out the correspondence one with the other...

```
79 \DeclareOption{extralabel}{\let\UseExtraLabel\@firstofone}
80 \DeclareOption{noextralabel}{\let\UseExtraLabel\@gobble}
```

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

```
81 \DeclareOption{numbersec}{\let\if@numbersec\iftrue}
82 \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.

```
83 \DeclareOption{runningoff}{\AtEndOfClass{\@tubrunningoff}}
84 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
85 \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`.

```
86 \newif\if@tubtwocolumn \@tubtwocolumntrue
87 \DeclareOption{onecolumn}{\@tubtwocolumnfalse}
```


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

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

Request default options (draft mode, standard citation, numbered sections, etc.), process all options, and then get the base document class on top of which we reside, namely `article`. Always call `article` with the `twoside` option, since we want the ability to have odd/even headers/footers.

```
89 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
90 \ProcessOptions
91 \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.

```
92 \def\sectitlefont{\fontfamily\sfdefault\fontseries{bx}\fontshape{n}%
93     \fontsize\@xvipt\stbaselineskip\selectfont}
94 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
95     \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...

```
96 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
97     \selectfont}
98 \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 $\text{\LaTeX} 2_{\epsilon}$).

```
99 \*common
100 \IfFileExists{mflogo.sty}%
101     {\RequirePackage{mflogo}}%
102 \ltugcomn {\TBWarning
103 \ltugcomn} {\PackageWarning{ltugcomn}
104     {Package mflogo.sty not available --\MessageBreak
105     Proceeding to emulate mflogo.sty}
106 \DeclareRobustCommand{\logofamily}{%
107     \not@math@alphabet\logofamily\relax
108     \fontencoding{U}\fontfamily{logo}\selectfont}
109 \DeclareTextFontCommand{\textlogo}{\logofamily}
110 \def\MF{\textlogo{META}\-\textlogo{FONT}\@}
111 \def\MP{\textlogo{META}\-\textlogo{POST}\@}
112 \DeclareFontFamily{U}{logo}{}
113 \DeclareFontShape{U}{logo}{m}{n}{%
114     <8><9>gen*logo%
115     <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
116 }{}
117 \DeclareFontShape{U}{logo}{m}{sl}{%
```

```

118     <8><9>gen*logos1%
119     <10><10.95><12><14.4><17.28><20.74><24.88>logos110%
120   }{}
121   \DeclareFontShape{U}{logo}{m}{it}{%
122     <->ssub*logo/m/sl%
123   }{}%
124 }

```

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

```

125 \newtoks\ResetCommands
126 \ResetCommands{%
127   \setcounter{part}{0}%
128   \setcounter{section}{0}%
129   \setcounter{footnote}{0}%
130   \authornumber\z@
131 }
132 \newcommand{\AddToResetCommands}[1]{%
133   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
134 }

```

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.

```

135 <!*latex>
136 \def\makeescape#1{\catcode'#1=0 }
137 \def\makebgroup#1{\catcode'#1=1 }
138 \def\makeegroup#1{\catcode'#1=2 }
139 \def\makemath #1{\catcode'#1=3 }
140 </!latex>
141 <!*latex>
142 \def\makeescape#1{\catcode'#1=\z@}
143 \def\makebgroup#1{\catcode'#1=\@ne}
144 \def\makeegroup#1{\catcode'#1=\tw@}
145 \def\makemath #1{\catcode'#1=\thr@@}
146 </!latex>
147 \def\makealign #1{\catcode'#1=4 }
148 \def\makeeol #1{\catcode'#1=5 }
149 \def\makeparm #1{\catcode'#1=6 }

```

```

150 \def\makesup #1{\catcode'#1=7 }
151 \def\makesub #1{\catcode'#1=8 }
152 \def\makeignore#1{\catcode'#1=9 }
153 \def\makespace #1{\catcode'#1=10 }
154 \def\makeletter#1{\catcode'#1=11 }
155 \chardef\other=12
156 \let\makeother\@makeother
157 \def\makeactive#1{\catcode'#1=13 }
158 \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.

```

159 \def\savecat#1{%
160   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}}
161 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
162 \<!!latex>\savecat\@
163 \<!!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.

```

164 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
165   \csname#1\endcsname}
166 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
167   \csname saved@@#1\endcsname}

```

To distinguish between macro files loaded

```

168 \def\plaintubstyle{plain}
169 \def\latextubstyle{latex}

```

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

```

170 \providecommand\hb@xt@{\hbox to}
171 \providecommand\textsuperscript[1]{\ensuremath{\m@th
172   ~{\mbox{\fontsize\sf@size\z@
173     \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.

```

174 \DeclareRobustCommand{\AllTeX}{(\La\kern-.075em)\kern-.075em\TeX}
175 \def\AMS{American Mathematical Society}
176 \def\AMS{\mathcal{A}}\kern-.1667em\lower.5ex\hbox
177   {\mathcal{M}}\kern-.125em\mathcal{S}}

```

```

178 \def\AmSLaTeX{\AmS-\LaTeX}
179 \def\AmSTeX{\AmS-\TeX}
180 \def\ANSI{\acro{ANSI}}
181 \def\API{\acro{API}}
182 \def\ASCII{\acro{ASCII}}
183 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}
184 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
185 %
186 % make \BibTeX work in slanted contexts too; it's common in titles, and
187 % especially burdensome to hack in .bib files.
188 \def\Bib{%
189   \ifdim \fontdimen1\font>0pt
190     B{\SMC\SMC IB}%
191   \else
192     B\textsc{ib}%
193   \fi
194 }
195 \def\BibLaTeX{\Bib\kern.02em \LaTeX}
196 \def\BibTeX{\Bib\kern-.08em \TeX}
197 %
198 \def\BSD{\acro{BSD}}
199 \def\CandT{\textsl{Computers \& Typesetting}}
200 % must not define \CJK, because the CJK package does.
201 %
202 % We place our \kern after \- so that it disappears if the hyphenation is taken:
201 \def\ConTeXt{C\kern-.0333em\-\kern-.0667em\TeX\kern-.0333em}
202 \def\CMkIV{\ConTeXt\ \MkIV}
203 \def\Cplusplus{Cplusplus}
204 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
205 \def\CPU{\acro{CPU}}
206 \def\CSzabbr{\ensuremath{\cal C}\kern-.1667em\lower.5ex\hbox{\$ \cal S}}
207 \def\CSS{\acro{CSS}}
208 \def\CSTUG{\CSzabbr\acro{TUG}}
209 \def\CSV{\acro{CSV}}
210 \def\CTAN{\acro{CTAN}}
211 \def\DTD{\acro{DTD}}
212 \def\DTK{\acro{DTK}}
213 \def\DVD{\acro{DVD}}
214 \def\DVI{\acro{DVI}}
215 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
216 \def\DVItovDU{DVItov\kern-.12em VDU}
217 \def\ECMA{\acro{ECMA}}
218 \def\EPS{\acro{EPS}}
219 \DeclareRobustCommand{\eTeX}{\ensuremath{\varepsilon}\kern-.125em\TeX}
220 \DeclareRobustCommand{\ExTeX}{%
221   \ensuremath{\textstyle\varepsilon}_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}
222 \def\FAQ{\acro{FAQ}}
223 \def\FTP{\acro{FTP}}
224 \def\Ghostscript{Ghost\script}
225 \def\GNU{\acro{GNU}}

```

```

226 \def\GUI{\acro{GUI}}
227 \def\Hawaii{Hawai'i}
228 \def\HTML{\acro{HTML}}
229 \def\HTTP{\acro{HTTP}}
230 \def\IDE{\acro{IDE}}
231 \def\IEEE{\acro{IEEE}}
232 \def\ISBN{\acro{ISBN}}
233 \def\ISO{\acro{ISO}}
234 \def\ISSN{\acro{ISSN}}
235 \def\JPEG{\acro{JPEG}}
236 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
237 \def\JoT{\textsl{The Joy of \TeX}}
238 \DeclareRobustCommand{\KOMAScript}{\textsf{K\kern.05em O\kern.05em%
239   M\kern.05em A\kern.1em-\kern.1em Script}}
240 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
241   $\m@th$\fontsize\sf@size\z@\selectfont
242   $\m@th\mathcal{A}$}%
243   \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
244   {$\m@th\mathcal{S}$}-\TeX}
245 % This code
246 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
247 % example) to propagate into the raised (small) 'A':
248 % \begin{macrocode}
249 \DeclareRobustCommand{\La}%
250   {L\kern-.36em
251   {\setbox0\hbox{T}%
252     \vbox to\ht0{\hbox{$\m@th$%
253       \csname S@\f@size\endcsname
254       \fontsize\sf@size\z@
255       \math@fontsfalse\selectfont
256       A}%
257     \vss}%
258   }}

```

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.

```

259 <!!latex>\def\LaTeX{\La\kern-.15em\TeX}
260 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
261 \def\MacOSX{Mac\,\acro{OS\,X}}
262 \def\MathML{Math\acro{ML}}
263 \def\Mc{\setbox\TestBox=\hbox{M}\vbox
264   to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we're running under $\text{\LaTeX}_{2\epsilon}$, we're using (at least pro tem) Ulrik Vieth's `mflogo.sty` if it's present. Otherwise, we're using a short extract of Vieth's stuff. Either way, we don't need to specify `\MF` or `\MP`

```

265 \def\mf{\textsc{Metafont}}

```

```

266 \def\MFB{\textsl{The \MF\kern1pt book}}
267 \def\MkIV{Mk\acro{IV}}
268 \let\TB@mp\mp
269 \DeclareRobustCommand{\mp}{\ifmode\TB@mp\else MetaPost\fi}
270 %
271 % In order that the \cs{OMEGA} command will switch to using the TS1
272 % variant of the capital Omega character if \texttt{textcomp.sty} is
273 % loaded, we define it in terms of the \cs{textohm} command. Note
274 % that this requires us to interpose a level of indirection, rather
275 % than to use \cs{let}\dots
276 %
277 % \begin{macrocode}
278 \DeclareRobustCommand{NTG}{\acro{NTG}}
279 \DeclareRobustCommand{NTS}{\ensuremath{\mathcal{N}\mkern-4mu
280 \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}}
281 \DeclareTextSymbol{\textohm}{OT1}{'012}
282 \DeclareTextSymbolDefault{\textohm}{OT1}
283 \newcommand{\OMEGA}{\textohm}
284 \DeclareRobustCommand{OCP}{\OMEGA\acro{CP}}
285 \DeclareRobustCommand{OOXML}{\acro{OOXML}}
286 \DeclareRobustCommand{OTF}{\acro{OTF}}
287 \DeclareRobustCommand{OTP}{\OMEGA\acro{TP}}
288 \def\mtex{T\kern-.1667em\lower.424ex\hbox{^E}\kern-.125emX\@}

Revised definition of \NTS based on that used by Phil Taylor.
289 \def\Pas{Pascal}
290 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
291 \def\PCTeX{PC\thinspace\TeX}
292 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
293 \def\PDF{\acro{PDF}}
294 \def\PGF{\acro{PGF}}
295 \def\PHP{\acro{PHP}}
296 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
297 \def\PiCTeX{\PiC\kern-.11em\TeX}
298 \def\plain{\texttt{plain}}
299 \def\PNG{\acro{PNG}}
300 \def\POBox{P.\thinspace 0.~Box }
301 \def\PS{{Post}\-Script}}
302 \def\PSTricks{\acro{PST}ricks}
303 \def\RTF{\acro{RTF}}
304 \def\SC{Steering Committee}
305 \def\SGML{\acro{SGML}}
306 \def\SliTeX{\textrm{S\kern-.06em\textsc{l}\kern-.035em}\%
307 \kern-.06em\TeX}}
308 \def\sLMF{\textsl{\MF}} % should never be used
309 \def\SQL{\acro{SQL}}
310 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
311 \def\STIX{\acro{STIX}}
312 \def\SVG{\acro{SVG}}
313 \def\TANGLE{\texttt{TANGLE}\@}

```

```

314 \def\TB{\textsl{The \TeX book}}
315 \def\TIFF{\acro{TIFF}}
316 \def\TP{\textsl{\TeX}: \textsl{The Program}}
317 \DeclareRobustCommand{\TeX}{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
318 \def\TeXhax{\TeX hax}
319 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
320   \kern-.2267emG\@}
321 \def\TeXtures{\textit{Textures}}
322 \let\Textures=\TeXtures
323 \def\TeXworks{\TeX\kern-.07em works}
324 \def\TeXXeT{\TeX-{\XeT}}
325 \def\TFM{\acro{TFM}}
326 \expandafter\ifx\csname XeTeXrevision\endcsname\relax
327 \def\Thanh{H\`an\~Th\`e\llap{\raise 0.5ex\hbox{'{}}}\~Th\`anh}% non-XeTeX
328 \else
329 \def\Thanh{H\`an\~Th\textcirc{e}\~Th\`anh}% else xunicode drops the acute
330 \fi
331 \def\TikZ{Ti{\em k}Z}
332 \def\TTN{\textsl{TTN}\@}
333 \def\TTN{\textsl{\TeX} and TUG News}
334 \let\texttub\textsl % redefined in other situations
335 \def\TUB{\texttub{TUGboat}}
336 \def\TUG{\TeX\ \UG}
337 \def\tug{\acro{TUG}}
338 \def\UG{Users Group}
339 \def\UNIX{\acro{UNIX}}
340 % omit \UTF, since other packages use it for Unicode character access.
341 \def\VAX{V\kern-.12em A\kern-.1em X\@}
342 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
343 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{0}\kern-1.4\p@ R}\kern-2.6\p@\TeX}
344 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
345 \def\XML{\acro{XML}}
346 \def\WEB{\texttt{WEB}\@}
347 \def\WEAVE{\texttt{WEAVE}\@}
348 \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.)

```

349 \def\tubreflect#1{%
350   \ifundefined{reflectbox}{%
351     \TBerror{A graphics package must be loaded for \string\XeTeX}%
352   }{%
353     \ifdim \fontdimen1\font>0pt
354       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
355     \else
356       \reflectbox{#1}%
357     \fi

```

```

358 }%
359 }
360 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
361 \def\XekernbeforeE{-.125em}
362 \def\XekernafterE{-.1667em}
363 \DeclareRobustCommand{\Xe}{\leavevmode
364 \tubhideheight{\hbox{X%
365 \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
366 \lower\dp0\hbox{\raise\dp1\hbox{\kern\XekernbeforeE\tubreflect{E}}}%
367 \kern\XekernafterE}}}}
368 \def\XeTeX{\Xe\TeX}
369 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
370 %
371 \def\XHTML{\acro{XHTML}}
372 \def\XSL{\acro{XSL}}
373 \def\XSLFO{\acro{XSL}\raise.08ex\hbox{-}\acro{FO}}
374 \def\XSLT{\acro{XSLT}}

```

3.5 General typesetting rules

```

375 \newlinechar='^^J
376 \normallineskiplimit=\p@
377 \clubpenalty=10000
378 \widowpenalty=10000
379 \def\NoParIndent{\parindent=\z@}
380 \newdimen\normalparindent
381 \normalparindent=20\p@
382 \def\NormalParIndent{\global\parindent=\normalparindent}
383 \NormalParIndent
384 \def\BlackBoxes{\overfullrule=5\p@}
385 \def\NoBlackBoxes{\overfullrule=\z@}
386 \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.

```

387 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
388 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
389 \def\nohyphens{\hyphenpenalty\@M\exhyphenpenalty\@M}

```

3.6 Utility registers and definitions

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

Comment: Exercise for an idle day: find whether all these are necessary, or whether we can use the L^AT_EX temporaries for some (or all) of the `\T@st*` ones.

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


```

390 \newbox\T@stBox          \newbox\TestBox
391 \newcount\T@stCount      \newcount\TestCount
392 \newdimen\T@stDimen     \newdimen\TestDimen
393 \newif\ifT@stIf         \newif\ifTestIf

```

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

```

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

```

L^AT_EX conventions which are also useful here.

```

395 <!*latex>
396 \let\@input\input
397 \def\iinput#1{\@input#1 }
398 \def\inputcheck{\if\nextchar\bgroup
399 \expandafter\iinput\else\expandafter\@input\fi}
400 \def\input{\futurelet\nextchar\inputcheck}
401 </!latex>

```

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

```

402 \newif\iftop@           \newif\ifbot@
403 \def\topsmash{\top@true\bot@false\smash@}
404 \def\botsmash{\top@false\bot@true\smash@}
405 \def\smash{\top@true\bot@true\smash@}
406 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
407 \else\let\next\makesm@sh\fi\next }
408 \def\finm@sh{\iftop@ht\z@\z@\fi\ifbot@dp\z@\z@\fi\box\z@}

```

Vertical ‘laps’; cf. \llap and \rlap

```

409 \long\def\ulap#1{\vbox to \z@{\vss#1}}
410 \long\def\dlap#1{\vbox to \z@{\#1\vss}}

```

And centered horizontal and vertical ‘laps’

```

411 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
412 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
413 \long\def\zlap#1{\ylap{\xlap{#1}}}

```

Avoid unwanted vertical glue when making up pages.

```

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

```

Empty rules for special occasions

```

415 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
416 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }

```

Support ad-hoc strut construction.

```

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

```

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

```

418 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
419 \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
420 \vss\hb@xt@#2{\vrule \@width\T@stDimen

```

```

421             \hfil\makestrut[#1;\z@]%
422             \vrule \@width\T@stDimen}\vss
423             \hrule \@height\T@stDimen \@depth\z@}]
Today's date, to be printed on drafts. Based on TEXbook, p.406.
424 <*\latex>
425 \def\today{\number\day\space \ifcase\month\or
426         Jan \or Feb \or Mar \or Apr \or May \or Jun \or
427         Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
428         \number\year}
429 </*!latex>
Current time; this may be system dependent!
430 \newcount\hours
431 \newcount\minutes
432 \def\SetTime{\hours=\time
433         \global\divide\hours by 60
434         \minutes=\hours
435         \multiply\minutes by 60
436         \advance\minutes by-\time
437         \global\multiply\minutes by-1 }
438 \SetTime
439 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
440 \def\Now{\today\ \now}
441 \newif\ifPrelimDraft
442 \def\midrttitle{} % center of running heads
443 \def\rtitlenexttopage{\ifPrelimDraft \textsl{\small draft: \Now}\fi}

```

3.7 Ragged right and friends

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

```

\raggedspaces 444 \newdimen\raggedskip \raggedskip=\z@
445 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
446 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil
447 \def\raggedspaces{\spaceskip=.3333em \relax \xspaceskip=.5em \relax }

```

`\raggedright` Some applications may have to add stretch, in order to avoid all overfull boxes.

`\raggedleft` We define the following uses of the above skips, etc.

```

\raggedcenter 448 \def\raggedright{%
\normalspaces 449 \nohyphens
450 \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
451 \parfillskip=\raggedparfill
452 }
453 \def\raggedleft{%
454 \nohyphens
455 \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
456 \parfillskip=\z@skip
457 }

```

```

458 \def\raggedcenter{%
459   \nohyphens
460   \leftskip=\raggedskip\@plus\raggedstretch
461   \rightskip=\leftskip \raggedspaces
462   \parindent=\z@ \parfillskip=\z@skip
463 }
464 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}

```

Miscellaneous useful stuff. Note that L^AT_εE_X 2_ε defines a robust `\,`, but that we provide a new definition of `~` by redefining `\` (`\DeclareRobustCommand` doesn't mind redefinition, fortunately). This is based on the version in AMS-`TεEX`—the L^AT_εE_X 2_ε version (`ltspace.dtx`) has `\leavevmode` and does not do anything with the surrounding space(s). Our version messes up with the `\pfill` used in doc-generated indexes (github.com/latex3/latex2e/issues/75), but later (2018++) versions of doc should be protected against our redefinition.

```

465 \let\latenobreakspace=\nobreakspace
466 \DeclareRobustCommand{\nobreakspace}{\unskip\nobreak \ignorespaces}

```

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

```

467 \def\boxcs#1{\box\csname#1\endcsname}
468 \def\setboxcs#1{\setbox\csname#1\endcsname}
469 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
470 \let\gobble@gobble
471 \def\vellipsis{%
472   \leavevmode\kern0.5em
473   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
474 }
475 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
476 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
477 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
478   /\kern-.125em\smash{\lower.3ex\hbox{o}}}} \ignorespaces}
479 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
480 %
481 \DeclareRobustCommand{\sfrac}[1]{\@ifnextchar/{\@sfrac{#1}}%
482   {\@sfrac{#1}/}}
483 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
484   \hbox{$\m@th\mbox{\fontsize\sf@size\z@
485     \selectfont#1}$}\kern-.1em
486   /\kern-.15em\lower.25ex
487   \hbox{$\m@th\mbox{\fontsize\sf@size\z@
488     \selectfont#2}$}}
489 %

```

```

490 % don't stay bold in description items, bold italic is too weird.
491 \DeclareRobustCommand\meta[1]{%
492   \ensuremath{\langle}%
493   \ifmmode \expandafter\mbox \fi % if in math
494   {\it #1\}/}% no typewriter italics, please
495   \ensuremath{\rangle}%
496 }
497 %
498 % Use \tt rather than \texttt because italic typewriter is just too ugly,
499 % and upright works well enough in both italic and bold contexts.
500 \DeclareRobustCommand\cscs[1]{\tt \char'\#1}
501 %
502 % This command was defined much later than the other, so let's not
503 % conflict with any existing definitions that might be out there.
504 % Don't allow hyphenations or other line breaks.
505 \DeclareRobustCommand\tubbraced[1]{\mbox{\texttt{\char'\#1\char'\}}}
506 %
507 % Well, just the \begin part. Never seen it used.
508 \DeclareRobustCommand\env[1]{\cscs{begin}\tubbraced{#1}}
509 %
510 % Not sure why we ever want this instead of LaTeX's \, (using \kern),
511 % but fine, just keeping it.
512 \DeclareRobustCommand\thinskip{\hskip 0.16667em\relax}
513 %

```

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

```

514 \def\endash{--}
515 \def\emdash{\endash-}
516 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
517 \def\dash{\d@sh\nobreak\endash}
518 \def\Dash{\d@sh\nobreak\emdash}
519 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
520 \def\rdash{\d@sh\nobreak\endash}
521 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
522 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

523 \def\hyph{-\penalty\z@\hskip\z@skip }
524 \def\slash{/\penalty\z@\hskip\z@skip }

```

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

```

525 \def\nth#1{%
526   \def\reserved@a##1##2\@nil{\ifcat##1n%
527     0%
528     \let\reserved@b\ensuremath
529     \else##1##2%
530     \let\reserved@b\relax

```

```

531     \fi}%
532     \TestCount=\reserved@a#1\@nil\relax
533     \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
534     \T@stCount=\TestCount
535     \divide\T@stCount by 100 \multiply\T@stCount by 100
536     \advance\TestCount by-\T@stCount      % n mod 100
537     \ifnum\TestCount >20 \T@stCount=\TestCount
538     \divide\T@stCount by 10 \multiply\T@stCount by 10
539     \advance\TestCount by-\T@stCount      % n mod 10
540     \fi
541     \reserved@b#1}%
542     \textsuperscript{\ifcase\TestCount th%      0th
543                     \or st%                    1st
544                     \or nd%                    2nd
545                     \or rd%                    3rd
546                     \else th%                  nth
547                     \fi}%
548 }

```

3.8 Reviews

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

```

549 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
550 \def\@Review:{\@ifnextchar[%]
551   {\@Rev}%
552   {\@Rev[Book review]}}
553 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
554                \slshape\mdseries#2}}
555 \def\reviewitem{\addvspace{\BelowTitleSkip}}%
556 \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
557 \def\revtitle##1{\def\therevtitle{\slshape##1}. }\ignorespaces}%
558 \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
559 }
560 \def\endreviewitem{{\noindent\interlinepenalty=10000
561 \therevauth\therevtitle\therevpubinfo\endgraf}}%
562 \vskip\medskipamount
563 }
564 \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.

```

565 \newcount\issueseqno          \issueseqno=-1
566 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
567 \def\volyr{}
568 \def\volno{}
569 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
570     \gdef\issno{\ignorespaces#2\unskip}%
571     \setbox\TestBox=\hbox{\volyr}%
572     \ifdim \wd\TestBox > .2em \v@lx \fi }
573 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
574     \gdef\bigissdt{#1}%
575     \setbox\TestBox=\hbox{\volno}%
576     \ifdim \wd\TestBox > .2em \v@lx \fi }
577 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
578     \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
579     \setbox\TestBox=\hbox{\volno}%
580     \ifdim \wd\TestBox > .2em \v@lx \fi }
581 \vol 0, 0.
582 \issdate Thermidor, 9999.

```

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

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

```

583 <!\latex>\def\tubissue#1(#2)%
584 <*\latex>
585 \def\tubissue#1{\@ifnextchar(%)
586   {\@tubissue@b{#1}}
587   {\@tubissue@a{#1}}}}
588 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
589 \def\@tubissue@a#1#2%
590 </\latex>
591   {\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`

```

592 \def\infil@{\jobname}
593 \def\Input #1 {\ifnum\issueseqno<0
594   \def\infil@{#1}%

```

```

595 \else
596   \def\infil@{tb\number\issueseqno#1}
597 \fi
598 \edef\jobname{\infil@}\@readFLN
599 \@@input \infil@\relax
600 \if@RMKopen
601   \immediate\closeout\@TBremarkfile\@RMKopenfalse
602 \fi
603 }

```

\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).

```

604 \newif\if@RMKopen      \@RMKopenfalse
605 \newwrite\@TBremarkfile
606 \def\@TBremark#1{%
607   \if@RMKopen
608   \else
609     \@RMKopentruetrue\immediate\openout\@TBremarkfile=\infil@.rmk
610   \fi
611   \toks@={#1}%
612   \immediate\write\@TBremarkfile{^^J\the\toks@}%
613   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
614 }

```

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

```
615 \let\TBremark=\gobble
```

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

```
616 \def\TBenableRemarks{\let\TBremark\@TBremark}
```

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

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

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

```

618 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
619 \newread\@altfilenames
620 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
621   \ifeof\@altfilenames\let\@result\relax\else
622   \def\@result{\@@input\jobname.fln }\fi
623   \immediate\closein\@altfilenames
624   \@result}
625 \@readFLN

```

```

626 \everyjob=\expandafter{\the\everyjob\@readFLN}
627 \InputIfFileExists{\jobname.fln}%
628     {\TBInfo{Reading alternative file file \jobname.fln}}{}

```

The following needs to work entirely in T_EX's mouth

```

629 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
630 #1\else\csname file@@#1\endcsname\fi}
631 \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.

```

632 <!*latex>
633 \def\pagexrefON#1{%
634     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
635     \write\ppoutfile{%
636         \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
637     }
638 \def\PageXrefON#1{%
639     \immediate\write-1{\def\expandafter
640         \noexpand\csname#1\endcsname{\number\pageno}}}%
641     \immediate\write\ppoutfile{\def\expandafter
642         \noexpand\csname#1\endcsname{\number\pageno}}}%
643 </!latex>
644 <!*latex>
645 \def\pagexrefON#1{%
646     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
647     \write\ppoutfile{%
648         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
649     }
650 \def\PageXrefON#1{%
651     \immediate\write-1{\def\expandafter
652         \noexpand\csname#1\endcsname{\number\c@page}}}%
653     \immediate\write\ppoutfile{\def\expandafter
654         \noexpand\csname#1\endcsname{\number\c@page}}}%
655 </!latex>
656 \def\pagexrefOFF#1{}
657 \let\pagexref=\pagexrefOFF
658 \def\PageXrefOFF#1{}
659 \let\PageXref=\PageXrefOFF
660 \def\xreftoON#1{%
661     \ifundefined{#1}%
662     ???\TBremark{Need cross reference for #1.}%
663     \else\csname#1\endcsname\fi}
664 \def\xreftoOFF#1{???}
665 \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.

```
666 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```
667 \ifx\tubomithyphenations\@thisisundefined
668 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
669 Flor-i-da Free-BSD Ghost-script Ghost-view
670 Hara-lam-bous Jac-kow-ski Karls-ruhe
671 Mac-OS Ma-la-ya-lam Math-Sci-Net
672 Net-BSD Open-BSD Open-Office
673 Pfa-Edit Post-Script Rich-ard Skoup South-all
674 Vieth VM-ware Win-Edt
675 acro-nym acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
676 bib-lio-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
677 col-umns com-put-able com-put-abil-ity cus-tom-iz-able
678 data-base data-bases
679 de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
680 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able
681 es-sence
682 fall-ing
683 half-way
684 in-fra-struc-ture
685 key-note
686 long-est
687 ma-gyar man-u-script man-u-scripts meta-table meta-tables
688 mne-mon-ic mne-mon-ics mono-space mono-spaced
689 name-space name-spaces
690 off-line over-view
691 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
692 pipe-line pipe-lines
693 plug-in plug-ins pres-ent-ly pro-gram-mable
694 re-allo-cate re-allo-cates re-allo-cated re-printed
695 set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
696 sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
697 text-height text-length text-width
698 time-stamp time-stamped time-stamps
699 vis-ual vis-ual-ly
700 which-ever white-space white-spaces wide-spread wrap-around
701 }
702 \fi
703 <!!latex>\restorecat\@
704 </common>
705 <*classtail>
706 \PrelimDraffttrue
```

3.10 Page dimensions, glue, penalties etc

```
707 \textheight 54pc
```

```

708 \textwidth 39pc
709 \columnsep 1.5pc
710 \columnwidth 18.75pc
711 \hfuzz 1pt
712 \parindent \normalparindent
713 \parskip \z@ % \@plus\p@
714 \leftmargini 2em
715 \leftmarginv .5em
716 \leftmarginvi .5em
717 \oddsidemargin \z@
718 \evensidemargin \z@
719 \topmargin -2.5pc
720 \headheight 12\p@
721 \headsep 20\p@
722 \marginparwidth 48\p@
723 \marginparsep 10\p@
724 \partopsep=\z@
725 \topsep=3\p@\@plus\p@\@minus\p@
726 \parsep=3\p@\@plus\p@\@minus\p@
727 \itemsep=\parsep
728 %
729 % Ordinarily we typeset in two columns, but the onecolumn option
730 % goes to one. In which case we want to center the text block on an
731 % 8.5in width, given the default 72.27pt offset with margins of zero.
732 % We are always in LaTeX's twoside mode because of how we load article,
733 % and this is a good thing, since we want different headings.
734 \if@tubtwocolumn \twocolumn \else
735   \onecolumn
736   \textwidth=34pc
737   \oddsidemargin=30.8775pt
738   \evensidemargin=\oddsidemargin
739 \fi
740 %
741 \newdimen\pagewd      \pagewd=\textwidth
742 \newdimen\trimwd     \trimwd=\pagewd
743 \newdimen\trimlgt    \trimlgt=11in
744 \newdimen\headmargin \headmargin=3.5pc

```

In L^AT_EX 2_ε, twoside option is forced on when `article.cls` is loaded.

3.11 Messing about with the L^AT_EX logo

Barbara Beeton's pleas for L^AT_EX 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 a new version. The arguments are font family, series and shape, and then the two kern values used in placing the raised 'A' of L^AT_EX.

```

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

```

The default values are as used in the source of L^AT_EX itself:

```
747 \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). Duplicate for Latin Modern.

```
748 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
749 \DeclareLaTeXLogo{lmss}{bx}{n}{.3}{.15}
750 %
751 \DeclareLaTeXLogo{cmr}{m}{it}{.29}{.2}
752 \DeclareLaTeXLogo{lmr}{m}{it}{.29}{.2}
753 %
754 \DeclareLaTeXLogo{cmr}{m}{sl}{.29}{.15}
755 \DeclareLaTeXLogo{lmr}{m}{sl}{.29}{.15}
756 %
757 \DeclareLaTeXLogo{cmr}{bx}{it}{.29}{.2}
758 \DeclareLaTeXLogo{lmr}{bx}{it}{.29}{.2}
759 %
760 \DeclareLaTeXLogo{cmr}{bx}{sl}{.29}{.2}
761 \DeclareLaTeXLogo{lmr}{bx}{sl}{.29}{.2}
762 %
763 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
764 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
765 \DeclareRobustCommand{\LaTeX}{\expandafter\let\expandafter\reserved@a
766 \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
767 \ifx\reserved@a\relax\let\reserved@a@\LaTeX@default\fi
768 \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^AT_EX, and then bits stuck in on the side.

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

```
769 \newcommand{\@LaTeX}[2]{%
770   %\wlog{latex logo family=\f@family/\f@series/\f@shape -> #1, #2.}%
771   L\kern-#1em
772   {\sbox\z@ T%
773     \vbox to\ht0{\hbox{\$m@th$%
774       \csname S@\f@size\endcsname
775       \fontsize\sf@size\z@
776       \math@fontsfalse\selectfont
777       A}%
778     \vss}%
779   }%
780   \kern-#2em%
781   \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>` and `\ORCID<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.

```
782 \def\theauthor#1{\csname theauthor#1\endcsname}
783 \def\theaddress#1{\csname theaddress#1\endcsname}
784 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
785 \def\thePersonalURL#1{\csname thePersonalURL#1\endcsname}
786 \def\theORCID#1{\csname theORCID#1\endcsname}
```

The standard way of listing authors is to iterate from 1 to `\count@` and to pick the author names as we go.

```
787 <!!latex>\newcount\@tempcnta
788 \def\@defaultauthorlist{%
789   \@getauthorlist\@firstofone
790 }
```

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

```
791 \def\@getauthorlist#1{%
792   \count@\authornumber
793   \advance\count@ by -2
794   \@tempcnta0
```

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

```
795   \loop
796     \ifnum\count@>0
797       \advance\@tempcnta by \@ne
798       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
799       \advance\count@ by \m@ne
800   \repeat
801   \count@\authornumber
802   \advance\count@ by -\@tempcnta
803   \ifnum\authornumber>0
```

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

```
804     \ifnum\count@>1
805       \count@\authornumber
806       \advance\count@ by \m@ne
807       #1{\ignorespaces\theauthor{\number\count@}\unskip\@tubauthorlastsep}%
808     \fi
```

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

```
809 #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
810 \fi
811 }
812 %
813 \def\tubauthorlastsep{, }% until 2018, was: "\ and "
```

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...)

```
814 \def\signature#1{\def\@signature{#1}}
815 \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`

```
816 \def\@defaultsignature{%
817   \let\thanks\@gobble
818   \frenchspacing
819   %
820   \ifnum\authornumber<0
821     \medskip
822     \signaturemark
823     \theauthor{\number\authornumber}\\
824     \theaddress{\number\authornumber}\\
825     \allowhyphens
826     \thenetaddress{\number\authornumber}\\
827     \thePersonalURL{\number\authornumber}\\
828     \theORCID{\number\authornumber}\\
829   \else
830     \authornumber≥ 0, so we are in the body of an ordinary article
831     \count@=0
832     \loop
833       \ifnum\count@<\authornumber
834         \medskip
835         \advance\count@ by \@ne
836         \signaturemark
837         \theauthor{\number\count@}\\
838         \theaddress{\number\count@}\\
839         \allowhyphens
840         \thenetaddress{\number\count@}\\
841         \thePersonalURL{\number\count@}\\
842         \theORCID{\number\count@}\\
843       }%
844     \repeat
```

```

845   \fi
846 }%
847 }
848 \newdimen\signaturewidth   \signaturewidth=12pc

```

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

```

849 \newcommand{\makesignature}[1][\medskipamount]{%

```

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

```

850   \@tempdima\signaturewidth
851   \advance\@tempdima 1.5pc
852   \ifdim \@tempdima>\columnwidth
853     \signaturewidth \columnwidth
854     \advance\signaturewidth -1.5pc
855   \fi
856   \par
857   \penalty9000
858   \vspace{#1}%
859   \rightline{%
860     \vbox{\hsize\signaturewidth \ninepoint \raggedright
861       \parindent \z@ \everypar={\hangindent 1pc }%
862       \parskip \z@skip
863       \def\|{\unskip\hfil\break}%
864       \def\|\{\endgraf}%
865       \def\phone{\rm Phone: }%
866       \def\tubmultipleaffilauthor{\|\hspace*{1em}}%
867       \rm\@signature}%
868   }%
869   \ifnum\authornumber<0 \endgroup\fi
870 }
871 \def\signaturemark{\leavevmode\llap{\$\diamond$\enspace}}

```

The idea here is that if multiple authors share affiliation information, we need only typeset the affiliation once. We separate by commas for the `\maketitle`, and put on separate lines in the `\makesignature`. Similarly, within `\netaddress`, `!tubmultipleaffilnet` separates with a space before and after the comma, while `.` (All this per bb.) See `tb122childs-trotter.ltx` for an example.

```

872 \def\tubmultipleaffilauthor{\unskip, \ignorespaces}%
873 \def\tubmultipleaffilnet{\unskip\textrm{\,,\ \ignorespaces}}

```

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

```

874 \newcount\authornumber
875 \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`).

```
876 \def\author{%
877   \global\advance\authornumber\@ne
878   \TB@author
879 }
```

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

```
880 \def\contributor{%
881   \begingroup
882   \authornumber\m@ne
883   \TB@author
884 }
```

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* and *ORCID* are optional anyway).

```
885 \def\TB@author#1{%
886   \expandafter\def\csname theauthor\number\authornumber\endcsname
887     {\ignorespaces#1\unskip}%
888   \expandafter\def\csname theaddress\number\authornumber\endcsname
889     {\TBWarningNL{Address for #1\space missing}\@gobble}%
890   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
891     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
892   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
893     \@gobble
894   \expandafter\let\csname theORCID\number\authornumber\endcsname
895     \@gobble
896 }
897 \def\EDITORnoaddress{%
898   \expandafter\let\csname theaddress\number\authornumber\endcsname
899     \@gobble
900 }
901 \def\EDITORnonetaddress{%
902   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
903     \@gobble
904 }
```

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

```
905 \def\address#1{%
906   \expandafter\def\csname theaddress\number\authornumber\endcsname
907     {\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!*

```
908 \def\network#1{\def\@network{#1: }}

```

`\netaddress` begins a group, executes an optional argument (which should not, presumably, contain global commands) and then relays to `\@relay@netaddress` with both `@` and `%` made active (so that they can be discretionary points in the address). If we're using L^AT_ΕX 2_ε, we use the default-argument form of `\newcommand`; otherwise we write it out in all its horribleness.

```
909 \newcommand{\netaddress}[1][\relax]{%
910 \begingroup
911 \def\@network{}%

```

Unfortunately, because of the catcode hackery, we have still to do one stage of relaying within our own code, even if we're using L^AT_ΕX 2_ε.

```
912 #1\@sanitize\makespace\ \makeactive\@%
913 \makeescape! \makebgroup[ \makeegroup]% seems more useful than literals
914 \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?!**)

```
915 \def\@relay@netaddress#1{%
916 \ProtectNetChars
917 \expandafter\protected@xdef
918 \csname thenetaddress\number\authornumber\endcsname
919 {\protect\leavevmode\textrm{\@network}%
920 {\protect\NetAddrChars\net
921 \ignorespaces#1\unskip}}%
922 \endgroup
923 }

```

`\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.

```
924 \def\personalURL{\begingroup
925 \@sanitize\makespace\ \makeactive\@
926 \makeactive\.\makeactive%\makeactive%\@personalURL}%
927 \def\@personalURL#1{%
928 \ProtectNetChars
929 \expandafter\protected@xdef
930 \csname thePersonalURL\number\authornumber\endcsname{%
931 \protect\leavevmode
932 {%
933 \protect\URLchars\net
934 \ignorespaces#1\unskip

```



```

935     }%
936   }%
937 \endgroup
938 }

```

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...

```

939 {%
940 \makecomment\*
941 \makeactive\@
942 \gdef\netaddrat{\makeactive\@*
943   \def@\{ \discretionary{\char"40}{\char"40}}
944 \makeactive\%
945 \gdef\netaddrpercent{\makeactive\%*
946   \def%\{ \discretionary{\char"25}{\char"25}}
947 \makeactive\.
948 \gdef\netaddrdot{\makeactive\.*
949   \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.

```

950 \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
951 \makeactive\/
952 \gdef\URLchars{*
953   \NetAddrChars
954   \makeactive\/*
955   \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.

```

956 \gdef\ProtectNetChars{*
957   \def@\{ \protect@}*
958   \def%\{ \protect%}*
959   \def.\{ \protect.}*
960   \def/{ \protect/}*
961 }
962 }

```

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

```

963 \if@compatibility
964   \DeclareRobustCommand{\net}{\normalfont\ttfamily\mathgroup\sympewriter}
965 \else
966   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}

```

```

967 \fi
968 \def\authorlist#1{\def\@author{#1}}
969 \def\@author{\@defaultauthorlist}

```

\ORCID inserts ‘ORCID’ and then argument into the \theORCID<n> for this author. Also, we want \small for this.

```

970 \def\ORCID#1{%
971 \expandafter\def\csname theORCID\number\authornumber\endcsname
972 {\leavevmode \ignorespaces {\SMC ORCID} #1\unskip}}

```

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. And this initiative never came to anything, so it is not used at all.

\mspmetavar

```

973 \def\mspmetavar#1#2{}

```

3.13 Article title

```

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

```

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

```

974 \newif\if@articletitle
975 \def\maketitle{\@ifstar
976 {\@articletitlefalse\@r@maketitle}%
977 {\@articletitletrue\@r@maketitle}%
978 }
979 \def\@r@maketitle{\par
980 \ifdim\PreTitleDrop > \z@
981 \loop
982 \ifdim \PreTitleDrop > \textheight
983 \vbox{\vfil\eject
984 \advance\PreTitleDrop by -\textheight
985 \repeat
986 \vbox to \PreTitleDrop{}
987 \global\PreTitleDrop=\z@
988 \fi
989 \begingroup
990 \setcounter{footnote}{0}
991 \global\@topnum\z@ % disallow floats above the title
992 \def\thefootnote{\fnsymbol{footnote}}

```

```

993 \@maketitle
994 \@thanks
995 \endgroup
996 \setcounter{footnote}{0}
997 \gdef\@thanks{}
998 }

```

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

```

999 \def\rhTitle{}% avoid error if no author or title
1000 \renewcommand{\title}{\@dblarg\TB@title}
1001 \def\TB@title[#1]#2{\gdef\@title{#2}%
1002 \bgroup
1003 \let\thanks\@gobble
1004 \def\{\unskip\space\ignorespaces}%
1005 \protected@xdef\rhTitle{#1}%
1006 \egroup
1007 }

```

`\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.

```

1008 \def\shortTitle #1{\def\rhTitle{#1}}
1009 \newif\ifshortAuthor
1010 \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:

```

1011 \def\secsep{\vskip 5\baselineskip}

```

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

```

1012 \newdimen\stbaselineskip \stbaselineskip=18\p@
1013 \newdimen\stfontheight
1014 \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.

```

1015 \newif\ifWideSecTitle
1016 \newif\iftubtitlerulefullwidth
1017 \newif\ifSecTitle \SecTitlefalse
1018 \newcommand{\sectitle}{%
1019   \SecTiteltrue
1020   \@ifstar
1021   {\WideSecTiteltrue\def\s@ctitle}%
1022   {\WideSecTitlefalse\def\s@ctitle}%
1023 }

```

`\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.

```

1024 \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, and for the rule above titles when there is no box.

```

1025 \newskip\AboveTitleSkip \AboveTitleSkip=12\p@
1026 \newskip\BelowTitleSkip \BelowTitleSkip=8\p@
1027 \newdimen\strulethickness \strulethickness=.6\p@

```

`\@sectitle` actually generates the section title (in a rather generous box). It gets called from `\maketitle` under conditional `\ifSecTitle`; by the time `\@sectitle` takes control, we already have `\SecTitlefalse`. This implementation uses L^AT_EX's `\framebox` command, on the grounds that one doesn't keep a dog and bark for oneself...

```

1028 \def\@sectitle #1{%
1029   \par
1030   \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.

```

1031   \ifWideSecTitle\else\secsep\fi
1032   {%
1033     \fboxrule\strulethickness
1034     \fboxsep\z@
1035     \noindent\framebox[\hsize]{%
1036       \vbox{%
1037         \raggedcenter
1038         \let\\\@sectitle@newline
1039         \sectitlefont
1040         \makestrut[2\stfontheight;\z@]%
1041         #1%

```

```

1042     \makestrut[\z@;\stfontheight]\endgraf
1043     }%
1044   }%
1045 }%
1046 \nobreak
1047 \vskip\baselineskip
1048 }

```

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

```

1049 \newcommand{\sectitle@newline}[1][\z@]{%
1050   \ifdim#1>\z@
1051     \makestrut[\z@;#1]%
1052   \fi
1053   \unskip\break
1054 }

```

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).

```

1055 \def\@makesectitle{\ifSecTitle
1056   \global\SecTitlefalse
1057   \ifWideSecTitle
1058     \twocolumn[\sectitle{\s@ctitle}]%
1059     \global\WideSecTitlefalse
1060   \else
1061     \sectitle{\s@ctitle}%
1062   \fi
1063 \else
1064   \vskip\AboveTitleSkip
1065   \kern\topskip
1066   \hrule \@height\z@ \@depth\z@ \@width 10\p@
1067   \kern-\topskip
1068   \kern-\strulethickness
1069   \iftubtitlerulefullwidth
1070     \hrule \@height\strulethickness \@depth\z@ width\textwidth
1071   \else
1072     \hrule \@height\strulethickness \@depth\z@
1073   \fi
1074   \kern\medskipamount
1075   \nobreak
1076 \fi
1077 }

```

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

```

1078 \def\@maketitle{%
1079   \@makesectitle
1080   \if@articletitle{%
1081     \nohyphens \interlinepenalty\@M
1082     \setbox0=\hbox{%

```

```

1083     \let\thanks\@gobble
1084     \let\=\quad
1085     \let\and=\quad
1086     \ignorespaces\@author}%
1087   {%
1088     \noindent\bf\raggedright\ignorespaces\frenchspacing\@title\endgraf
1089   }%
1090   \ifdim \wd0 < 5\p@           % omit if author is null
1091   \else

```

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

```

1092     \nobreak \vskip 4\p@
1093   {%
1094     \leftskip=\normalparindent
1095     \raggedright
1096     \def\and{\unskip\}%
1097     \noindent\@author\endgraf
1098   }%
1099   \fi
1100   \nobreak
1101   \vskip\BelowTitleSkip
1102 } \fi%
1103 \global\@afterindentfalse
1104 \aftergroup\@afterheading
1105 }

```

Dedications are ragged right, in italics.

```

1106 \newenvironment{dedication}%
1107   {\raggedright\noindent\itshape\ignorespaces}%
1108   {\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^AT_EX way, by treating it as a one-item list with an empty item marker.

```

1109 \def\@tubonecolumnabstractstart{%
1110     \list{}{\listparindent\normalparindent
1111         \itemindent\z@ \leftmargin\@tubfullpageindent
1112         \rightmargin\leftmargin \parsep \z@\item[]\ignorespaces
1113 }
1114 \def\@tubonecolumnabstractfinish{%
1115     \endlist
1116 }
1117 \renewenvironment{abstract}%
1118   {\begin{SafeSection}%
1119     \section*{%
1120         \if@tubtwocolumn\else \hspace*{\@tubfullpageindent}\fi
1121         Abstract}%
1122     \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1123   }%

```

```

1124 {\if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1125   \end{SafeSection}}
1126 \newenvironment{longabstract}%
1127   {\begin{SafeSection}%
1128     \section*{Abstract}%
1129     \bgroup\small
1130   }%
1131   {\endgraf\egroup
1132     \end{SafeSection}%
1133   \vspace{.25\baselineskip}
1134   \begin{center}
1135     {\$--*--\$}
1136   \end{center}
1137   \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.

```

1138 \if@numbersec
1139   \def\section{\TB@startsection{section}%
1140     1%
1141     \z@
1142     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1143     {4\p@}%
1144     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1145   \def\subsection{\TB@startsection{subsection}%
1146     2%
1147     \z@
1148     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1149     {4\p@}%
1150     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1151   \def\subsubsection{\TB@startsection{subsubsection}%
1152     3%
1153     \z@
1154     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1155     {4\p@}%
1156     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1157   \def\paragraph{\TB@startsection{paragraph}%
1158     4%
1159     \z@
1160     {4\p@ \@plus1\p@ \@minus1\p@}%

```

```

1161             {-1em}%
1162             {\normalsize\bf}}

```

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

```

1163 \else
1164   \setcounter{secnumdepth}{0}
1165   \def\section{\TB@nolimlabel
1166             \TB@startsection{section}%
1167             1%
1168             \z@
1169             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1170             {4\p@}%
1171             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1172   \def\subsection{\TB@nolimlabel
1173             \TB@startsection{subsection}%
1174             2%
1175             \z@
1176             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1177             {-0.5em\@plus-\fontdimen3\font}%
1178             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1179   \def\subsubsection{\TB@nolimlabel
1180             \TB@startsection{subsubsection}%
1181             3%
1182             \parindent
1183             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1184             {-0.5em\@plus-\fontdimen3\font}%
1185             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1186 \fi

```

`\TB@startsection` used to warn about * versions of sectioning commands when numbering wasn't in effect. But that eventually seemed a useless complaint, since it can be useful to switch back and forth between numbered and unnumbered can be useful during article development. So now `\TB@startsection` is just a synonym for `\@startsection`.

```

1187 \def\TB@startsection#1{\@startsection#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).

```

1188 \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.

```

1189 \newenvironment{SafeSection}%
1190   {\let\TB@startsection\TB@safe@startsection}%
1191   {}

```


And now for the exciting sectioning commands that L^AT_EX defines but we don't have a definition for (whatever else, we don't want Lamport's originals, which come out 'like the blare of a bugle in a lullaby'¹).

The three inappropriate ones are subparagraph (indistinguishable from paragraph), and chapter and part. The last seemed almost to be defined in an early version of these macros, since there was a definition of `\l@part`. I've not got down to where that came from (or why). If class option `NONUMBER` is in effect, we also suppress `\paragraph`, since it has no parallel in the plain style.

```

1192 \if@numbersec
1193   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1194 \else
1195   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1196   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1197 \fi
1198 \def\chapter{\TB@nosection\chapter\section}
1199 \def\part{\TB@nosection\part\section}
1200 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1201   \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 and Frank Mittelbach's articles often have toc's (and few others). Also turn off microtype protrusion after

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or leaders get messed up.

```

1202 \def\TBtocsectionfont{\normalfont}
1203 \newskip\TBtocsectionspace \TBtocsectionspace=1.0em\@plus\p@
1204 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1205   \addvspace{\TBtocsectionspace}%
1206   \@tempdima 1.5em
1207   \begingroup
1208     \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1209     \parfillskip\z@
1210     \TBtocsectionfont
1211     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1212     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1213   \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,

¹Thurber, *The Wonderful O*

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:

```

1214 \renewcommand{\appendix}{\par
1215   \renewcommand{\thesection}{\@Alph\c@section}%
1216   \setcounter{section}{0}%
1217   \if@numbersec
1218   \else
1219     \setcounter{secnumdepth}{1}%
1220   \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.

```

1221 \def\@tempa{appendix}
1222 \ifx\@tempa\@currentenv
1223   \expandafter\@appendix@env
1224 \fi
1225 }

```

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

```

1226 \newcommand{\app@prefix@section}{\}
1227 \newcommand{\@appendix@env}[1][Appendix]{%
1228   \renewcommand{\@secntformat}[1]{\csname app@prefix@##1\endcsname
1229     \csname the##1\endcsname\quad}%
1230   \renewcommand{\app@prefix@section}{#1 }%
1231 }

```

Ending an appendix environment is pretty trivial...

```

1232 \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^AT_EX is for ever being advertised as being good at) can cause headaches.

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

```

1233 \def\TB@nolimelabel{%
1234 \def\@currentlabel{%

```

```

1235 \protect\TBWarning{%
1236     Invalid reference to numbered label on page \thepage
1237     \MessageBreak made%
1238 }%
1239 \textbf{?!?}%
1240 }%
1241 }

```

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.

```

1242 \let\TB@@sect\@sect
1243 \let\TB@@ssect\@ssect
1244 \def\@sect#1#2#3#4#5#6[#7]#8{%
1245   \def\@currentlabelname{#7}%
1246   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1247 }
1248 \def\@ssect#1#2#3#4#5{%
1249   \def\@currentlabelname{#5}%
1250   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1251 }

```

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^AT_EX `\label` and then write our named label as `nr<label>`.

```

1252 \let\@savelatexlabel=\label % so save original LaTeX command
1253 %
1254 \def\label#1{% de
1255   \@savelatexlabel{#1}%
1256   \@bspack
1257   \if@filesw
1258     \protected@write\@auxout{%
1259       {\string\newlabel{nr@#1}{\@currentlabel}{\@currentlabelname}}}%
1260   \fi
1261   \@espack
1262 }

```

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

```

1263 \let\@currentlabelname\@empty

```

Getting named references is then just like getting page references in the L^AT_EX kernel (see `ltxref.dtx`).

```
1264 \DeclareRobustCommand{\nameref}[1]{\expandafter\@setref
1265 \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
```

```
1266 \newdimen\@tubfullpageindent
1267 \@tubfullpageindent = \if@tubtwocolumn 4.875pc \else 3.875pc \fi
1268 \let\tubcaptionleftglue=\hfil
```

One-line captions are normally centered, but sometimes we want to set them flush-left for consistency with other nearby figures.

```
\tubcaptionleftglue
```

```
1269 \let\tubcaptionleftglue=\hfil
```

Ok, here is `\@makecaption`.

```
1270 \def\tubcaptionfonts{\small}%
1271 \long\def\@makecaption#1#2{%
1272 \vskip\abovecaptionskip
1273 \sbox\@tempboxa{\tubcaptionfonts \frenchspacing \tubmakecaptionbox{#1}{#2}}% try in an hbox
1274 \ifdim \wd\@tempboxa > \hsize
1275   {% caption doesn’t fit on one line; set as a paragraph.
1276     \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1277     % indent full-width captions {figure*}, but not single-column {figure}.
1278     \ifdim\hsize = \textwidth
1279       \leftskip=\@tubfullpageindent \rightskip=\leftskip
1280       \advance\rightskip by 0pt plus2em % increase acceptable raggedness
1281     \fi
1282     \noindent \tubmakecaptionbox{#1}{#2}\par}%
1283 \else
1284   % fits on one line; use the hbox, centered. Do not reset its glue.
1285   \global\@minipagefalse
1286   \hb@xt@\hsize{\tubcaptionleftglue\box\@tempboxa\hfil}%
1287 \fi
1288 \vskip\belowcaptionskip}
1289 %
1290 \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.

```

1291 \def\fnnum@figure{{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}}
1292 \def\fnnum@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.

```

1293 \setlength\abovcaptionskip{6pt plus1pt minus1pt}

```

3.20 Size changing commands

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

```

1294 \renewcommand{\normalsize}{%
1295   \setfontsize\normalsize\@xpt\@xipt
1296   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1297   \belowdisplayskip=\abovedisplayskip
1298   \abovedisplayshortskip=\z@\@plus 3\p@
1299   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1300 }
1301
1302 \renewcommand{\small}{%
1303   \setfontsize\small\@ixpt{11}%
1304   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1305   \belowdisplayskip=\abovedisplayskip
1306   \abovedisplayshortskip=\z@\@plus 2\p@
1307   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1308 }
1309
1310 \renewcommand{\footnotesize}{%
1311   \setfontsize\footnotesize\@viiipt{9.5}%
1312   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1313   \belowdisplayskip=\abovedisplayskip
1314   \abovedisplayshortskip=\z@\@plus 3\p@
1315   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1316 }

```

3.21 Lists and other text inclusions

```

1317 \def\@listi{%
1318   \leftmargin\leftmargin\parsep=\p@\@plus\p@\@minus\p@
1319   \itemsep=\parsep
1320   \listparindent=1em
1321 }
1322
1323 \def\@listii{%
1324   \leftmargin\leftmarginii
1325   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1326   \topsep=2\p@\@plus\p@\@minus\p@
1327   \parsep=\p@\@plus\p@\@minus\p@
1328   \itemsep=\parsep

```

```

1329 \listparindent=1em
1330 }
1331
1332 \def\@listiii{%
1333 \leftmargin=\leftmarginiii
1334 \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1335 \topsep=\p@\@plus\p@\@minus\p@
1336 \parsep=\z@
1337 \itemsep=\topsep
1338 \listparindent=1em
1339 }
1340 \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.

```

1341 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1342 \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}

```

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

```

1343 \newenvironment{compactitemize}%
1344 {\begin{itemize}%
1345 \setlength{\itemsep}{0pt}%
1346 \setlength{\parskip}{0pt}%
1347 \setlength{\parsep}{0pt}%
1348 }%
1349 {\end{itemize}}
1350 %
1351 \newenvironment{compactenumerate}%
1352 {\begin{enumerate}%
1353 \setlength{\itemsep}{0pt}%
1354 \setlength{\parskip}{0pt}%
1355 \setlength{\parsep}{0pt}%
1356 }%
1357 {\end{enumerate}}
1358 %
1359 \newenvironment{compactdescription}%
1360 {\begin{description}%
1361 \setlength{\itemsep}{0pt}%
1362 \setlength{\parskip}{0pt}%
1363 \setlength{\parsep}{0pt}%
1364 }%
1365 {\end{description}}
1366 %

```

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.

```
1367 %\let\@TB@verbatim\@verbatim
1368 \let\@TBverbatim\verbatim
1369 \let\@TBendverbatim\endverbatim
```

Impose an optional argument on the environment.

We start the macro with `\par` to avoid a common error: if the optional argument is `\small`, and the document has no blank line before the `verbatim` block, we don't want that preceding paragraph to be set with `\small`'s line spacing.

(`\obeylines` added to prevent the `\futurelet` from propagating into the body of the `verbatim`, thus causing lines that start with odd characters (like `#` or even `\`) to behave peculiarly.)

```
1370 \def\verbatim{\par\obeylines
1371 \futurelet\reserved@a\@switch@sqbverbatim}
1372 %
1373 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1374 \expandafter\@sqbverbatim\else
1375 \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1376 %
1377 \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.

```
1378 \def\ruled{\let\if@ruled\iftrue}%
```

The command `\makevmeta` says to make `!i...i` do `<...>`.

```
1379 \def\makevmeta{\makeescape\! \let\<\tubverb@meta \tubverb@clearliglist}
1380 \def\tubverb@meta##1>{\meta{##1}}
```

The default `verbatim` defines `'i`, `-` as active characters to do stop ligatures; remove `i` from the list so we get normal characters. Just hope that the CM `i` ligatures aren't used.

```
1381 \def\tubverb@clearliglist{%
1382   \def\verbatim@nolig@list{\do\'\do\,\do\'\do\'}%
1383 }
```

Then we execute the arguments we've got, and relay to a (hacked) copy of the `LATEX` `verbatim` environment.

```
1384 #1\@TBverbatim}
```

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

```
1385 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1386   \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
      Now, the code out of the original verbatim environment:
1387   \trivlist \item\relax
1388   \if@minipage\else\vskip\parskip\fi
1389   \leftskip\@totalleftmargin\rightskip\z@skip
1390   \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1391   \@@par
1392   \@tempwafalse
1393   \def\par{%
1394     \if@tempswa
1395       \leavevmode \null \@@par\penalty\interlinepenalty
1396     \else
1397       \@tempwatrue
1398       \ifhmode\@@par\penalty\interlinepenalty\fi
1399     \fi}%
1400   \obeylines \verbatim@font \@noligs
1401   \let\do\@makeother \dospecials
1402   \everypar \expandafter{\the\everypar \unpenalty}%
1403 }% end |\@sqbverbatim|
```

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).

```
1404 \def\endverbatim{\@TBendverbatim
1405   \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

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

```
1406 \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.

```
1407 \AtBeginDocument{%
1408   \@ifpackageloaded{microtype}
1409     {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{-}
1410 }
```

3.23 Bibliography

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

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


The available citation commands are:

```

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

```

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

```

1411 \if@Harvardcite
1412 \let\@internalcite\cite

```

Normal forms.

```

1413 \def\cite{\def\@citeseppen{-1000}%
1414   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1415   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1416 \def\citeNP{\def\@citeseppen{-1000}%
1417   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1418   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1419 \def\citeN{\def\@citeseppen{-1000}%
1420   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}}%
1421   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1422 \def\citeA{\def\@citeseppen{-1000}%
1423   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1424   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1425 \def\citeANP{\def\@citeseppen{-1000}%
1426   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1427   \def\citeauthoryear##1##2##3{##1}\@internalcite}

```

Abbreviated forms (using *et al.*)

```

1428 \def\shortcite{\def\@citeseppen{-1000}%
1429   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1430   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1431 \def\shortciteNP{\def\@citeseppen{-1000}%
1432   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1433   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1434 \def\shortciteN{\def\@citeseppen{-1000}%
1435   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}}%
1436   \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1437 \def\shortciteA{\def\@citeseppen{-1000}%
1438   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1439   \def\citeauthoryear##1##2##3{##2}\@internalcite}
1440 \def\shortciteANP{\def\@citeseppen{-1000}%
1441   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1442   \def\citeauthoryear##1##2##3{##2}\@internalcite}

```

When just the year is needed:

```

1443 \def\citeyear{\def\@citeseppen{-1000}%

```

```

1444 \def\cite##1##2{##1\if@tempswa , ##2\fi}%
1445 \def\citeauthoryear##1##2##3{##3}\@citedata}
1446 \def\citeyearNP{\def\@citesep{-1000}%
1447 \def\cite##1##2{##1\if@tempswa , ##2\fi}%
1448 \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.

```

1449 \def\@citedata{%
1450 \ifnextchar [{\@tempswatrue\@citedatax}%
1451 \else{\@tempswafalse\@citedatax[]}%
1452 }
1453
1454 \def\@citedatax[#1]#2{%
1455 \if@files\immediate\write\@auxout{\string\citation{#2}}\fi%
1456 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1457 {\@citea\def\@citea{, }\ifundefined% by Young
1458 {b@\@citeb}{\bf ?}%
1459 \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1460 {\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.

```

1461 \def\@citex[#1]#2{%
1462 \if@files\immediate\write\@auxout{\string\citation{#2}}\fi%
1463 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1464 {\@citea\def\@citea{; }\ifundefined% by Young
1465 {b@\@citeb}{\bf ?}%
1466 \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1467 {\csname b@\@citeb\endcsname}}{#1}}%

```

No labels in the bibliography.

```
1468 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```

1469 \newlength{\bibhang}
1470 \setlength{\bibhang}{2em}

```

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

```

1471 \newdimen\bibindent
1472 \bibindent=1.5em
1473 \ifundefined{refname}%
1474 {\newcommand{\refname}{References}}%
1475 {}%

```

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

```

1476 \def\thebibliography#1{% for harvardcite
1477 \let\TB@startsection\TB@safe@startsection
1478 \section*{\refname

```

```

1479     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1480 \list{[\arabic{enumi}]}{%
1481     \labelwidth\z@ \labelsep\z@
1482     \leftmargin\bibindent
1483     \itemindent -\bibindent
1484     \listparindent \itemindent
1485     \parsep \z@
1486     \usecounter{enumi}}%
1487 \def\newblock{}%
1488 \BibJustification
1489 \frenchspacing % more than just period, see comments below
1490 }

```

etal Other bibliography odds and ends.

```

\bibentry 1491 \def\etal{et\,al.\@}
1492 \def\bibentry{%
1493     \smallskip
1494     \hangindent=\parindent
1495     \hangafter=1
1496     \noindent
1497     \sloppy
1498     \clubpenalty500 \widowpenalty500
1499     \frenchspacing
1500 }

```

\bibliography Changes made to accommodate TUB file naming conventions

```

\bibliographystyle 1501 \def\bibliographystyle#1{%
1502     \if@filesw
1503         \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1504     \fi
1505     \@input{\jobname.bbl}%
1506 }
1507 \def\bibliographystyle#1{%
1508     \if@filesw
1509         \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1510     \fi
1511 }

```

\thebibliography If the user's asked to use L^AT_EX's default citation mechanism (using the rawcite option), we still need to patch \sloppy to support justification of the body of the bibliography. We kludge in a call to \frenchspacing too, since there is no reason to change only period's \sfcode, as L^AT_EX's original thebibliography (in classes.dtx) does.

By the way, amsgen.sty changes \frenchspacing to set the \sfcode of punctuation character to successively decreasing integers ending at 1001 for comma. Thus its 1006 for period is overwritten to 1000 for thebibliography, making amsgen's \@addpunct ineffective. Don't know what that means in practice, if anything.

Back here, we also play with *The T_EXbook* since we always have, though that is no longer needed.

```

1512 \else % not harvardcite
1513 \let\TB@origthebibliography\thebibliography
1514 \def\thebibliography{%
1515   \let\TB@startsection\TB@safe@startsection
1516   \def\sloppy{\frenchspacing\BibJustification}%
1517   \TB@origthebibliography} % latex's thebibliography now reads args.
1518 \fi % not harvardcite

```

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

```

1519 \let\TB@@sloppy\sloppy
1520 \let\BibJustification\TB@@sloppy
1521 \newcommand{\SetBibJustification}[1]{%
1522   \renewcommand{\BibJustification}{#1}%
1523 }
1524 \ResetCommands\expandafter{\the\ResetCommands
1525   \let\BibJustification\TB@@sloppy
1526 }

```

3.24 Registration marks

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

```

1527 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1528 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1529 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }

```

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

```

1530 \def\ttopregister{\dlap{%
1531   \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1532     \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1533   \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1534 \def\tbotregister{\ulap{%
1535   \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1536   \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1537     \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1538 \def\ttopregister{\ttopregister}
1539 \def\tbotregister{\tbotregister}

```

3.25 Running heads

```

1540 \def\rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}\TUB, \volx}

```

registration marks; these are temporarily inserted in the running head

```

1541 \def\MakeRegistrationMarks{}
1542 \def\UseTrimMarks{%

```

```

1543 \def\MakeRegistrationMarks{%
1544   \ulap{\rlap{%
1545     \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1546     \topregister\vskip \headmargin \vskip 10\p@}}}%
1547 }
1548 % put issue identification and page number in header.
1549 \def\@oddhead{\MakeRegistrationMarks
1550 \normalsize\csname normalshape\endcsname\rm \tubheadhook
1551 \rtitex\quad \midrtitex\hfil \rtitlenexttopage\quad \thepage}
1552 \def\@evenhead{\MakeRegistrationMarks
1553 \normalsize\csname normalshape\endcsname\rm \tubheadhook
1554 \thepage \quad\rtitlenexttopage \hfil\midrtitex \quad\rtitex}
1555
1556 % can be used to reset the font, e.g., tb98kuester.
1557 \def\tubheadhook{}
1558
1559 % in case the official \author is too verbose for the footline.
1560 \def\tubrunningauthor{\@author}
1561
1562 % put title and author in footer.
1563 \def\@tubrunningfull{%
1564   \def\@oddfoot{% make line break commands produce a normal space
1565     \def\{\unskip \ignorespaces}%
1566     \let\newline=\%
1567     \frenchspacing
1568     \hfil\rhTitle}
1569   \def\@evenfoot{\tubrunningauthor\hfil}
1570 }
1571
1572 % empty footer.
1573 \def\@tubrunningminimal{%
1574   \def\@oddfoot{\hfil}%
1575   \def\@evenfoot{\hfil}%
1576 }
1577
1578 % empty footer and header.
1579 \def\@tubrunningoff{%
1580   \def\@oddfoot{\hfil}%
1581   \def\@evenfoot{\hfil}%
1582   \def\@oddhead{\hfil}%
1583   \def\@evenhead{\hfil}%
1584 }
1585
1586 \def\ps@headings{}
1587 \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^AT_εX 2_ε for 1995/06/01 (with the use of `\hb@xt@`). *This* time there’s no semantic change, but...

```

1588 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1589   \global\setbox\@leftcolumn\box\@outputbox
1590   \global\brokenpenalty10000
1591 \else \global\@firstcolumntrue
1592   \global\brokenpenalty100
1593   \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1594     {\box\@leftcolumn \hss}\hfil \vrule \width\columnseprule\hfil
1595     \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1596   \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1597   \@whilesw\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1598   \fi}

```

3.27 Font-related definitions and machinery

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

```

1599 \newif\ifFirstPar      \FirstParfalse
1600 \def\smc{\sc}
1601 \def\ninepoint{\small}
1602 </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.)

```

1603 <*common>
1604 \DeclareRobustCommand{\SMC}{%
1605   \ifx\@currsize\normalsize\small\else
1606   \ifx\@currsize\small\footnotesize\else
1607   \ifx\@currsize\footnotesize\scriptsize\else

```

```

1608     \ifx\@currsize\large\normalsize\else
1609     \ifx\@currsize\Large\large\else
1610     \ifx\@currsize\LARGE\Large\else
1611     \ifx\@currsize\scriptsize\tiny\else
1612     \ifx\@currsize\tiny\tiny\else
1613     \ifx\@currsize\huge\LARGE\else
1614     \ifx\@currsize\Huge\huge\else
1615     \small\SMC@unknown@warning
1616 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1617 }
1618 \newcommand{\SMC@unknown@warning}{\TBWarning{\string\SMC: nonstandard
1619     text font size command -- using \string\small}}
1620 \newcommand{\textSMC}[1]{\SMC #1}

    The \acro command uses \SMC as it was originally intended. Since these
    things are uppercase-only, it fiddles with the spacefactor after inserting its text.
1621 \newcommand{\acro}[1]{\textSMC{#1}\@}
1622 </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!)

```

1623 <*classtail>
1624 \def\xEdNote{\EdNoteFont Editor's note:\enspace }
1625 \def\EdNote{\@ifnextchar [%]
1626   {%
1627     \ifvmode
1628       \smallskip\noindent\let\@EdNote@\@EdNote@v
1629     \else
1630       \unskip\quad\def\@EdNote@{\unskip\quad}%
1631     \fi
1632     \@EdNote
1633   }%
1634 \xEdNote
1635 }
1636 \long\def\@EdNote[#1]{%
1637   [\thinspace\xEdNote\ignorespaces
1638   #1%
1639   \unskip\thinspace]%
1640 \@EdNote@
1641 }
1642 \def\@EdNote@v{\par\smallskip}

```

Macros for Mittelbach's self-documenting style

```

1643 \def\SelfDocumenting{%
1644   \setlength\textwidth{31pc}
1645   \onecolumn

```

```

1646 \parindent \z@
1647 \parskip 2\p@\@plus\p@\@minus\p@
1648 \oddsidemargin 8pc
1649 \evensidemargin 8pc
1650 \marginparwidth 8pc
1651 \toks@\expandafter{\@oddhead}%
1652 \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1653 \toks@\expandafter{\@evenhead}%
1654 \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1655 \def\ps@titlepage{}%
1656 }
1657 \def\ps@titlepage{}
1658
1659 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}}%
1660 \llap{\@makefnmark}\null$\mskip5mu$#1}
1661
1662 %% \long\def\@makefntext#1{\parindent 1em
1663 %% \noindent
1664 %% \hb@xt@2em{\hss\@makefnmark}%
1665 %% \hskip0.27778\fontdimen6\textfont\z@\relax
1666 %% #1%
1667 %% }

```

`\tubraggedfoot` To get a ragged-right footnote.

```
1668 \newcommand{\tubraggedfoot}{\rightskip=\raggedskip plus\raggedstretch\relax}
```

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

```

\supportfootnote 1669 \def\creditfootnote{\nomarkfootnote\xEdNote}
1670 \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.

```

1671 \gdef\nomarkfootnote#1#2{\begingroup
1672 \def\thefootnote{}%
1673 % no period, please, also no fnmark.
1674 \def\@makefntext##1{##1}%
1675 \footnotetext{\noindent #1#2}%
1676 \endgroup
1677 }

```

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.

```

1678 \if@Harvardcite
1679 \AtBeginDocument{%
1680 \bibliographystyle{ltugbib}%
1681 }
1682 \fi

```



```

1683 \authornumber\z@
1684 \let\@signature\@defaultsignature
1685 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1686                                     configuration information}}{}
1687 </classtail>

```

4 L^AT_EX 2_ε Proceedings class

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

```

1688 <*ltugproccls>
1689 \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.

```

1690 \newif\if@proc@sober
1691 \newif\if@proc@numerable
1692 \DeclareOption{tug95}{%
1693   \@proc@soberfalse
1694   \@proc@numerablefalse
1695 }
1696 \DeclareOption{tug96}{%
1697   \@proc@sobertrue
1698   \@proc@numerablefalse
1699 }
1700 \DeclareOption{tug97}{%
1701   \@proc@sobertrue
1702   \@proc@numerabletrue
1703 }
1704 \DeclareOption{tug2002}{%
1705   \@proc@sobertrue
1706   \@proc@numerabletrue
1707   \let\if@proc@numbersec\iftrue
1708   \PassOptionsToClass{numbersec}{ltugboat}%
1709 }

```

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

```

1710 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1711   \PassOptionsToClass{numbersec}{ltugboat}%
1712 }
1713 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1714   \PassOptionsToClass{nonumber}{ltugboat}%
1715 }

```

`\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`.

```

1716 \newif\ifTB@title
1717 \DeclareOption{title}{\TB@titletrue}
1718 \DeclareOption{notitle}{\TB@titlefalse}
1719 \AtBeginDocument{\stepcounter{page}}

```

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

```

1720 \DeclareOption{tugproc}{%
1721 \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1722 }

```

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

```

1723 \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...)

```

1724 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1725 \Loading ltugproc configuration information}}{}
1726 \@ifundefined{TUGprocExtraOptions}{%
1727 \let\TUGprocExtraOptions\empty}%
1728 {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}

```

`\tugProcYear` Now work out what year it is

```

1729 \@tempcnta\year
1730 \ifnum\@tempcnta<2000
1731 \divide\@tempcnta by100
1732 \multiply\@tempcnta by100
1733 \advance\@tempcnta-\year
1734 \@tempcnta-\@tempcnta
1735 \fi

```

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

```

1736 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1737 \ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1738 \@tempa
1739 \ClassInfo{ltugproc}{Class believes year is
1740 \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1741 \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.

```

1742 \expandafter\ifx\curname ds@tug\tugProcYear\endcsname\relax
1743 \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.

```

1744 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1745 \ProcessOptions
1746 \if@proc@numbersec
1747   \if@proc@numerable
1748   \else
1749     \ClassWarning{\@tugclass}{This year's proceedings may not have
1750       numbered sections}%
1751   \fi
1752 \fi

```

Call `!tugboat`, adding whichever section numbering option is appropriate

```

1753 \LoadClass[\if@proc@numbersec numbersec\else nonumber\fi]{!tugboat}

```

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^AT_EX bug-avoidance in the `\@TB@test@document` macro.

```

1754 \def\maketitle{%
1755   \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).
1756   \ifshortAuthor\else
1757     \global\let\rhAuthor\@empty
1758     \def\g@addto@rhAuthor##1{%
1759       \begingroup
1760         \toks@\expandafter{\rhAuthor}%
1761         \let\thanks\@gobble
1762         \protected@xdef\rhAuthor{\the\toks@##1}%
1763       \endgroup
1764     }%
1765     \@getauthorlist\g@addto@rhAuthor
1766   \fi
      now, the real business of setting the title
1767   \ifTB@title
1768     \setcounter{footnote}{0}%
1769     \renewcommand{\thefootnote}{\@fnsymbol\c@footnote}%
1770     \if@twtwocolumn
1771       \twocolumn[\@maketitle]%
1772     \else
1773       \onecolumn
1774       \global\@topnum\z@
1775       \@maketitle
1776     \fi
1777     \@thanks
1778     \thispagestyle{TBproctitle}
1779   \fi
1780 \endgroup

```

```

1781 \TB@madetitletrue
1782 }
1783 \newif\ifTB@madetitle \TB@madetitlefalse

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

1784 \def\@TB@test@document{%
1785 \edef\@tempa{\the\everypar}
1786 \def \@tempb{\@nodocument}
1787 \ifx \@tempa\@tempb
1788 \@nodocument
1789 \fi
1790 }

\AUTHORfont Define the fonts for titles and things
\TITLEfont 1791 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1792 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1793 \def\addressfont{\small\rmfamily\mdseries\upshape}
1794 \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 1795 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
1796 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1797 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

\@maketitle The body of \maketitle

1798 \def\@maketitle{%
1799 {\parskip\z@
1800 \frenchspacing
1801 \TITLEfont\raggedright\noindent\@title\par
1802 \count@=0
1803 \loop
1804 \ifnum\count@<\authornumber
1805 \vskip\aboveauthorskip
1806 \advance\count@\@ne
1807 {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1808 \addressfont\theaddress{\number\count@}\endgraf
1809 }%
1810 \allowhyphens
1811 \hangindent1.5pc
1812 \netaddrfont\thenetaddress{\number\count@}\endgraf
1813 \hangindent1.5pc
1814 \thePersonalURL{\number\count@}\endgraf
1815 }%
1816 \repeat
1817 \vskip\belowauthorskip}%
1818 \if@abstract

```

```

1819     \centerline{\bfseries Abstract}%
1820     \vskip.5\baselineskip\rmfamily
1821     \@tubonecolumnabstractstart
1822         \the\abstract@toks
1823     \@tubonecolumnabstractfinish
1824     \global\@ignoretrue
1825     \fi
1826     \vskip\belowabstractskip
1827     \global\@afterindentfalse\aftergroup\@afterheading
1828 }

```

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@`

```

1829 \newtoks\abstract@toks \abstract@toks{}
1830 \let\if@abstract\iffalse
1831 \def\abstract{%

```

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

```

1832 \ifTB@madetitle
1833   \TBWarning{abstract environment after \string\maketitle}
1834 \fi
1835 \def\@abstract@{abstract}%
1836 \ifx\@currenvir\@abstract@
1837 \else
1838   \TBEError{\string\abstract\space is illegal:%
1839     \MessageBreak
1840     use \string\begin{\@abstract@} instead}%
1841   {\@abstract@\space may only be used as an environment}
1842 \fi
1843 \global\let\if@abstract\iftrue
1844 {\ifnum0='}\fi
1845 \@abstract@getbody}
1846 \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}`

```

1847 \long\def\@abstract@getbody#1\end{%
1848   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1849   \@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.

```
1850 \def\@abstract@findend#1{%
1851   \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.

```
1852   \ifx\@tempa\@abstract@
1853     \expandafter\@abstract@end
1854   \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)

```
1855     \def\@tempb{document}%
1856     \ifx\@tempa\@tempb
1857       \TBError{\string\begin{\@abstract@}
1858         ended by \string\end{\@tempb}}%
1859       {You've forgotten \string\end{\@abstract@}}
1860     \else
1861       \global\abstract@toks\expandafter{the\abstract@toks\end{#1}}%
1862       \expandafter\expandafter\expandafter\@abstract@getbody
1863     \fi
1864   \fi}
```

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

```
1865 \def\@abstract@end{\ifnum0='{\fi}%
1866   \expandafter\end\expandafter{\@abstract@}}
```

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

```
1867 \renewcommand{\makesignature}{\TBWarning
1868   {\string\makesignature\space is invalid in proceedings issues}}
```

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

```
\ps@TBproc 1869 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1870 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1871 \TB@definefeet
\TB@definefeet 1872 }
\pfoottext 1873 \def\ps@TBproc{%
\rfoottext 1874   \def\@oddhead{\MakeRegistrationMarks
1875     {%
1876       \hfil
1877       \def\{\unskip\ \ignorespaces}%
1878       \rmfamily\rhTitle
1879     }%
1880   }%
1881   \def\@evenhead{\MakeRegistrationMarks
1882     {%
1883       \def\{\unskip\ \ignorespaces}%
1884       \rmfamily\rhAuthor
```

```

1885     \hfil
1886   }%
1887 }%
1888 \TB@definefeet
1889 }
1890
1891 \advance\footskip8\p@    % for deeper running feet
1892
1893 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1894 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1895   {#2}}
1896 \def\TB@definefeet{%
1897   \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1898     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1899   \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1900     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1901 }
1902
1903 \def\pfoottext{{\smc Preprint}:
1904   Proceedings of the \volyr{} Annual Meeting}
1905 \def\rfoottext{\normalfont\TUB, \volx\Dash
1906   {Proceedings of the \volyr{} Annual Meeting}}
1907
1908 \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).

```

1909 \if@proc@numbersec
1910 \else
1911   \setcounter{secnumdepth}{0}
1912 \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.

```

1913 \if@proc@numbersec
1914 \else
1915   \if@proc@sober
1916     \def\section
1917       {\TB@nolimelabel
1918         \TB@startsection{{section}%
1919           1%
1920           \z@%

```

```

1921             {-8\p@\@plus-2\p@\@minus-2\p@}%
1922             {6\p@}%
1923             {\normalsize\bfseries\raggedright}}}}
1924 \else
1925   \def\section
1926     {\TB@nolimelabel
1927     \TB@startsection{{section}%
1928                       1%
1929                       \z@%
1930                       {-8\p@\@plus-2\p@\@minus-2\p@}%
1931                       {6\p@}%
1932                       {\large\bfseries\raggedright}}}}
1933 \fi
1934 \def\subsection
1935     {\TB@nolimelabel
1936     \TB@startsection{{subsection}%
1937                       2%
1938                       \z@%
1939                       {6\p@\@plus 2\p@\@minus2\p@}%
1940                       {-5\p@\@plus -\fontdimen3\the\font}%
1941                       {\normalsize\bfseries}}}}
1942 \def\subsubsection
1943     {\TB@nolimelabel
1944     \TB@startsection{{subsubsection}%
1945                       3%
1946                       \parindent%
1947                       \z@%
1948                       {-5\p@\@plus -\fontdimen3\the\font}%
1949                       {\normalsize\bfseries}}}}
1950 \fi
1951 </tugproccls>

```

5 Plain T_EX styles

```

1952 <*tugboatsty>
1953 % err...
1954 </tugboatsty>
1955 <*tugprocsty>
1956 % err...
1957 </tugprocsty>

```

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

```

1958 <*tugboatsty>
1959 \obsoletefile{ltugboat.cls}{ltugboat.sty}
1960 \LoadClass{ltugboat}
1961 </tugboatsty>
1962 <*tugprocsty>
1963 \obsoletefile{ltugproc.cls}{ltugproc.sty}

```



```
1964 \LoadClass{ltugproc}
1965 </ltugprocsty>
```