

The **tugboat** package*

The *TUGboat* team

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1 Document preambles

```

1 <tugboatcls | ltugproccls | ltugcomn>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile                {tugboat.dtx}
4 </dtx>
5 <tugboatcls>\ProvidesClass  {ltugboat}
6 <tugproccls>\ProvidesClass  {ltugproc}
7 <tugboatsty>\ProvidesPackage{ltugboat}
8 <tugprocsty>\ProvidesPackage{ltugproc}
9 <tugcomn>   \ProvidesPackage{ltugcomn}
10           [2017/11/06 v2.19
11 <tugboatcls>                TUGboat journal class%
12 <tugproccls>                TUG conference proceedings class%
13 <tugboatsty | ltugprocsty>   TUG compatibility package%
14 <tugcomn>                   TUGboat 'common macros' package%
15 <*dtx>
16                             TUG macros source file%
17 </dtx>
18 ]
19 <*dtx>
20 \newif\ifoldlongtable
21 </dtx>

```

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>	$(\mathbb{A})\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<code>\AMS</code>	American Mathematical Society
<code>\AmSTeX</code>	
<code>\aw</code>	A-W (abbreviation for Addison-Wesley)
<code>\API</code>	
<code>\AW</code>	Addison-Wesley
<code>\BibTeX</code>	
<code>\CandT</code>	Computers & Typesetting
<code>\ConTeXt</code>	Con $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ t
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVD</code>	
<code>\DVI</code>	
<code>\DVIPDFMx</code>	DVIPDFM x
<code>\DVItOVDU</code>	DVItOVDU
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	$\varepsilon\text{-}\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<code>\ExTeX</code>	$\varepsilon_{\chi}\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<code>\Ghostscript</code>	
<code>\Hawaii</code>	Hawai'i
<code>\HTML</code>	
<code>\ISBN</code>	ISBN
<code>\ISO</code>	
<code>\ISSN</code>	ISSN
<code>\JTeX</code>	
<code>\JoT</code>	The Joy of $\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<code>\LaTeX</code>	
<code>\LyX</code>	
<code>\MacOSX</code>	Mac OS X
<code>\MathML</code>	
<code>\Mc</code>	M with raised c
<code>\MF</code>	METAFONT
<code>\mf</code>	METAFONT
<code>\MFB</code>	The 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 $\mathrm{T}_{\mathrm{E}}\mathrm{X}$
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pcTeX</code>	

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

Macros for things that are slightly more significant.

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

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

	<code>\meta{name}→⟨name⟩</code>
<code>\dash</code>	en-dash surrounded by thinspaces; only breakable AFTER
<code>\Dash</code>	em-dash, as above
<code>\hyph</code>	permit automatic hyphenation after an actual hyphen
<code>\slash</code>	‘breakable’ slash
<code>\nth</code>	for obtaining ‘1 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>\xref to</code>	used for symbolic cross-reference to other pages
<code>\xref toON</code>	in <i>TUGboat</i>
<code>\xref toOFF</code>	
<code>\TBdriver</code>	marks code which only takes effect when articles are run together in a driver file
<code>\signaturemark</code>	items for signatures
<code>\signaturewidth</code>	

3 L^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_EX 2_ε we can use the `\Class*` commands:

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

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     \PrelimDraftfalse
58     \@tubrunningfull
59   }%
60 }
```

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

```
61 \DeclareOption{11pt}{%
62   \TBWarning{The \@tugclass\space class only supports 10pt fonts:
63     \MessageBreak option \CurrentOption\space ignored}%
64 }
```

```

64 }
65 \DeclareOption{12pt}{\csname ds@11pt\endcsname}

```

Similarly, ignore one/two-side options.

```

66 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
67 \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`.)

```

68 \DeclareOption{tugproc}{%
69   \TBWarning{Option \CurrentOption\space ignored: use class ltugproc
70     instead of \@tugclass}%
71 }

```

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

```

72 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
73 \DeclareOption{harvardcite}{\let\if@Harvardcite\iftrue}

```

Option `extralabel` (the default) specifies that the publication years of two successive references with otherwise identical labels will be tagged with distinguishing letters; option `noextralabel` causes those letters to be suppressed. Note that (a) no two references will in any case have the same labels in the default (plain) `rawcite` setup, and that (b) the distinguishing letters appear in the labels themselves — the even remotely intelligent reader should be able to work out the correspondence one with the other...

```

74 \DeclareOption{extralabel}{\let\UseExtraLabel\@firstofone}
75 \DeclareOption{noextralabel}{\let\UseExtraLabel\@gobble}

```

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

```

76 \DeclareOption{numbersec}{\let\if@numbersec\iftrue}
77 \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.

```

78 \DeclareOption{runningoff}{\AtEndOfClass{\@tubrunningoff}}
79 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
80 \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`.

```

81 \newif\if@tubtwocolumn \@tubtwocolumntrue
82 \DeclareOption{onecolumn}{\@tubtwocolumnfalse}

```


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

```
83 \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.

```
84 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
85 \ProcessOptions
86 \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.

```
87 \def\sectitlefont{\fontfamily\sfddefault\fontseries{bx}\fontshape{n}%
88     \fontsize\@xvipt\stbaselineskip\selectfont}
89 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
90     \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...

```
91 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
92     \selectfont}
93 \ltugboatcls
```

If Ulrik Vieth’s `mflogo.sty` is around, we’ll use it. Otherwise (pro tem, at least) we’ll warn the user and define the absolute minimum of machinery that *TUGboat* requires (that which was used prior to the invention of L^AT_EX 2_ε).

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

```

113     <8><9>gen*logosl%
114     <10><10.95><12><14.4><17.28><20.74><24.88>logosl10%
115   }{}
116   \DeclareFontShape{U}{logo}{m}{it}{%
117     <->ssub*logo/m/sl%
118   }{}%
119 }

```

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

```

120 \newtoks\ResetCommands
121 \ResetCommands{%
122   \setcounter{part}{0}%
123   \setcounter{section}{0}%
124   \setcounter{footnote}{0}%
125   \authornumber\z@
126 }
127 \newcommand{\AddToResetCommands}[1]{%
128   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
129 }

```

3.3 Helpful shorthand (common code with Plain styles)

`\makescape`, ..., `\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., `\makescape\` will make `'/'` an escape character.

```

130 <!*latex>
131 \def\makescape#1{\catcode'#1=0 }
132 \def\makebgroup#1{\catcode'#1=1 }
133 \def\makeegroup#1{\catcode'#1=2 }
134 \def\makemath #1{\catcode'#1=3 }
135 </!latex>
136 <!*latex>
137 \def\makescape#1{\catcode'#1=\z@}
138 \def\makebgroup#1{\catcode'#1=\@ne}
139 \def\makeegroup#1{\catcode'#1=\tw@}
140 \def\makemath #1{\catcode'#1=\thr@@}
141 </!latex>
142 \def\makealign #1{\catcode'#1=4 }
143 \def\makeeol #1{\catcode'#1=5 }
144 \def\makeparm #1{\catcode'#1=6 }

```

```

145 \def\makesup    #1{\catcode'#1=7 }
146 \def\makesub    #1{\catcode'#1=8 }
147 \def\makeignore#1{\catcode'#1=9 }
148 \def\makespace  #1{\catcode'#1=10 }
149 \def\makeletter#1{\catcode'#1=11 }
150 \chardef\other=12
151 \let\makeother\@makeother
152 \def\makeactive#1{\catcode'#1=13 }
153 \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.

```

154 \def\savecat#1{%
155   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}}
156 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
157 \<!!latex>\savecat\@
158 \<!!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.

```

159 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
160   \csname#1\endcsname}
161 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
162   \csname saved@@#1\endcsname}

```

To distinguish between macro files loaded

```

163 \def\plaintubstyle{plain}
164 \def\largetubstyle{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:

```

165 \providecommand\hb@xt@{\hbox to}
166 \providecommand\textsuperscript[1]{\ensuremath{\m@th
167   ~{\mbox{\fontsize\sf@size\z@
168     \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.

```

169 \DeclareRobustCommand{\AllTeX}{(\La\kern-.075em)\kern-.075em\TeX}
170 \def\AMS{American Mathematical Society}
171 \def\AmS{$\mathcal{A}$\kern-.1667em\lower.5ex\hbox
172   {$\mathcal{M}$}\kern-.125em$\mathcal{S}$}

```

```

173 \def\AmSLaTeX{\AmS-\LaTeX}
174 \def\AmSTeX{\AmS-\TeX}
175 \def\ANSI{\acro{ANSI}}
176 \def\API{\acro{API}}
177 \def\ASCII{\acro{ASCII}}
178 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}
179 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
180 %
181 % make \BibTeX work in slanted contexts too; it's common in titles, and
182 % especially burdensome to hack in .bib files.
183 \def\Bib{%
184   \ifdim \fontdimen1\font>0pt
185     B{\SMC\SMC IB}%
186   \else
187     B\textsc{ib}%
188   \fi
189 }
190 \def\BibLaTeX{\Bib\kern.02em \LaTeX}
191 \def\BibTeX{\Bib\kern-.08em \TeX}
192 %
193 \def\BSD{\acro{BSD}}
194 \def\CandT{\textsl{Computers \& Typesetting}}

We place our \kern after \- so that it disappears if the hyphenation is taken:
195 \def\ConTeXt{C\kern-.0333emon\-\kern-.0667em\TeX\kern-.0333emt}
196 \def\CMkIV{\ConTeXt\ \MkIV}
197 \def\Cplusplus{Cplusplus}
198 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
199 \def\CPU{\acro{CPU}}
200 \def\CSzabbr{\ensuremath{\cal C}\kern-.1667em\lower.5ex\hbox{$\cal S$}}
201 \def\CSS{\acro{CSS}}
202 \def\CSTUG{\CSzabbr\acro{TUG}}
203 \def\CSV{\acro{CSV}}
204 \def\CTAN{\acro{CTAN}}
205 \def\DTD{\acro{DTD}}
206 \def\DTK{\acro{DTK}}
207 \def\DVD{\acro{DVD}}
208 \def\DVI{\acro{DVI}}
209 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
210 \def\DVItOVDU{DVItO\kern-.12em VDU}
211 \def\ECMA{\acro{ECMA}}
212 \def\EPS{\acro{EPS}}
213 \DeclareRobustCommand{\eTeX}{\ensuremath{\varepsilon}\kern-.125em\TeX}
214 \DeclareRobustCommand{\ExTeX}{%
215   \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal X}}\kern-.2em\TeX}
216 \def\FAQ{\acro{FAQ}}
217 \def\FTP{\acro{FTP}}
218 \def\Ghostscript{Ghost\script}
219 \def\GNU{\acro{GNU}}
220 \def\GUI{\acro{GUI}}

```

```

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

```

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.

```

253 \<latex>\def\LaTeX{L\kern-.15em\TeX}
254 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
255 \def\MacOSX{Mac\,\acro{OS\,X}}
256 \def\MathML{Math\acro{ML}}
257 \def\Mc{\setbox\TestBox=\hbox{M}\vbox
258     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`

```

259 \def\mf{\textsc{Metafont}}
260 \def\MFB{\textsl{The \MF\kern1pt book}}

```

```

261 \def\MkIV{\Mk\acro{IV}}
262 \let\TB@@mp\mp
263 \DeclareRobustCommand{\mp}{\ifmode\TB@@mp\else MetaPost\fi}
264 %
265 % In order that the \cs{OMEGA} command will switch to using the TS1
266 % variant of the capital Omega character if \texttt{textcomp.sty} is
267 % loaded, we define it in terms of the \cs{textohm} command. Note
268 % that this requires us to interpose a level of indirection, rather
269 % than to use \cs{let}\dots
270 %
271 % \begin{macrocode}
272 \DeclareRobustCommand{\NTG}{\acro{NTG}}
273 \DeclareRobustCommand{\NTS}{\ensuremath{\mathcal{N}}\mkern-4mu
274 \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
275 \DeclareTextSymbol{\textohm}{OT1}{'012}
276 \DeclareTextSymbolDefault{\textohm}{OT1}
277 \newcommand{\OMEGA}{\textohm}
278 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
279 \DeclareRobustCommand{\OOXML}{\acro{OOXML}}
280 \DeclareRobustCommand{\OTF}{\acro{OTF}}
281 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
282 \def\mtex{T\kern-.1667em\lower.424ex\hbox{^E}\kern-.125emX\@}

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

283 \def\Pas{Pascal}
284 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3p@c}MF\@}
285 \def\PCTeX{PC\thinspace\TeX}
286 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3p@c}\TeX}
287 \def\PDF{\acro{PDF}}
288 \def\PGF{\acro{PGF}}
289 \def\PHP{\acro{PHP}}
290 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
291 \def\PiCTeX{\PiC\kern-.11em\TeX}
292 \def\plain{\texttt{plain}}
293 \def\PNG{\acro{PNG}}
294 \def\POBox{P.\thinspace O.\thinspace Box }
295 \def\PS{{Post}-Script}}
296 \def\PSTricks{\acro{PST}ricks}
297 \def\RTF{\acro{RTF}}
298 \def\SC{Steering Committee}
299 \def\SGML{\acro{SGML}}
300 \def\SliTeX{\textrm{S\kern-.06em\textsc{l}\kern-.035em}\%
301 \kern-.06em\TeX}}
302 \def\sLMF{\textsl{MF}} % should never be used
303 \def\SQL{\acro{SQL}}
304 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
305 \def\STIX{\acro{STIX}}
306 \def\SVG{\acro{SVG}}
307 \def\TANGLE{\texttt{TANGLE}\@}
308 \def\TB{\textsl{The \TeX book}}

```

```

309 \def\TIFF{\acro{TIFF}}
310 \def\TP{\textsl{\TeX}: \textsl{The Program}}
311 \DeclareRobustCommand{\TeX}{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
312 \def\TeXhax{\TeX hax}
313 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}}%
314 \kern-.2267emG\@}
315 \def\TeXtures{\textit{Textures}}
316 \let\Textures=\TeXtures
317 \def\TeXworks{\TeX\kern-.07em works}
318 \def\TeXXeT{\TeX-}\XeT}
319 \def\TFM{\acro{TFM}}
320 \expandafter\ifx\csname XeTeXrevision\endcsname\relax
321 \def\Thanh{H\`an~Th\`e\llap{\raise 0.5ex\hbox{\`{}}}\`Th\`anh}% non-XeTeX
322 \else
323 \def\Thanh{H\`an~Th\textcirc{e}\`Th\`anh}% xunicode drops the acute else
324 \fi
325 \def\TikZ{Ti{\em k}Z}
326 \def\TTN{\textsl{TTN}\@}
327 \def\TTN{\textsl{\TeX} and TUG News}}
328 \let\texttub\textsl % redefined in other situations
329 \def\TUB{\texttub{TUGboat}}
330 \def\TUG{\TeX\ \UG}
331 \def\tug{\acro{TUG}}
332 \def\UG{Users Group}
333 \def\UNIX{\acro{UNIX}}
334 % omit \UTF, since other packages use it for Unicode character access.
335 \def\VAX{V\kern-.12em A\kern-.1em X\@}
336 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
337 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{0\kern-1.4\p@ R}\kern-2.6\p@\TeX}
338 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
339 \def\XML{\acro{XML}}
340 \def\WEB{\texttt{WEB}\@}
341 \def\WEAVE{\texttt{WEAVE}\@}
342 \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.)

```

343 \def\tubreflect#1{%
344 \ifundefined{reflectbox}{%
345 \TError{A graphics package must be loaded for \string\XeTeX}%
346 }{%
347 \ifdim \fontdimen1\font>0pt
348 \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
349 \else
350 \reflectbox{#1}%
351 \fi
352 }%

```

```

353 }
354 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
355 \def\XekernbeforeE{-.125em}
356 \def\XekernafterE{-.1667em}
357 \DeclareRobustCommand{\Xe}{\leavevmode
358   \tubhideheight{\hbox{X%
359     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
360     \lower\dp0\hbox{\raise\dp1\hbox{\kern\XekernbeforeE\tubreflect{E}}}%
361     \kern\XekernafterE}}}
362 \def\XeTeX{\Xe\TeX}
363 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
364 %
365 \def\XHTML{\acro{XHTML}}
366 \def\XSL{\acro{XSL}}
367 \def\XSLF0{\acro{XSL}\raise.08ex\hbox{-}\acro{F0}}
368 \def\XSLT{\acro{XSLT}}

```

3.5 General typesetting rules

```

369 \newlinechar='^^J
370 \normallineskiplimit=\p@
371 \clubpenalty=10000
372 \widowpenalty=10000
373 \def\NoParIndent{\parindent=\z@}
374 \newdimen\normalparindent
375 \normalparindent=20\p@
376 \def\NormalParIndent{\global\parindent=\normalparindent}
377 \NormalParIndent
378 \def\BlackBoxes{\overfullrule=5\p@}
379 \def\NoBlackBoxes{\overfullrule=\z@}
380 \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.

```

381 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
382   \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
383 \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`.


```

384 \newbox\T@stBox          \newbox\TestBox
385 \newcount\T@stCount      \newcount\TestCount
386 \newdimen\T@stDimen      \newdimen\TestDimen
387 \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).

```

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

```

L^AT_EX conventions which are also useful here.

```

389 <!*latex>
390 \let@@input\input
391 \def\iinput#1{\@@input#1 }
392 \def\inputcheck{\if@nextchar\bgroup
393   \expandafter\iinput\else\expandafter\@@input\fi}
394 \def\input{\futurelet\@nextchar\inputcheck}
395 </!latex>

```

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

```

396 \newif\iftop@             \newif\ifbot@
397 \def\topsmash{\top@true\bot@false\smash@}
398 \def\botsmash{\top@false\bot@true\smash@}
399 \def\smash{\top@true\bot@true\smash@}
400 \def\smash@{\relax\ifmmode\def\next{\mathpalette\mathsm@sh}%
401   \else\let\next\makesm@sh\fi \next }
402 \def\fin@m@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}

```

Vertical ‘laps’; cf. \llap and \rlap

```

403 \long\def\ulap#1{\vbox to \z@{\vss#1}}
404 \long\def\dlap#1{\vbox to \z@{\#1\vss}}

```

And centered horizontal and vertical ‘laps’

```

405 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
406 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
407 \long\def\zlap#1{\ylap{\xlap{\#1}}}

```

Avoid unwanted vertical glue when making up pages.

```

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

```

Empty rules for special occasions

```

409 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
410 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }

```

Support ad-hoc strut construction.

```

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

```

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

```

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

```

```

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

`\raggedstretch`

`\raggedparfill`

`\raggedspaces`

```

437 \newdimen\raggedskip \raggedskip=\z@
438 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
439 \newskip\raggedparfill \raggedparfill=\z@ plus 1fil
440 \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`

`\normalspaces`

```

441 \def\raggedright{%
442     \nohyphens
443     \rightskip=\raggedskip plus \raggedstretch \raggedspaces
444     \parfillskip=\raggedparfill
445 }
446 \def\raggedleft{%
447     \nohyphens
448     \leftskip=\raggedskip plus \raggedstretch \raggedspaces
449     \parfillskip=\z@skip
450 }
451 \def\raggedcenter{%

```

```

452 \nohyphens
453 \leftskip=\raggedskip\@plus\raggedstretch
454 \rightskip=\leftskip \raggedspaces
455 \parindent=\z@ \parfillskip=\z@skip
456 }
457 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}

```

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

```

458 \DeclareRobustCommand{\nobreakspace}{%
459 \unskip\nobreak\ \ignorespaces}

```

Plain T_EX defines `\newbox` as `\outer`. We solemnly preserve the following, which removes the `\outer`ness; of course, we carefully exclude it from what we generate... (`\outer`ness is a spawn of the devil, is it not? Barbara Beeton responded to the previous sentence “`\outer`ness 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...)

```

460 \def\boxcs#1{\box\cscname#1\endcscname}
461 \def\setboxcs#1{\setbox\cscname#1\endcscname}
462 \def\newboxcs#1{\expandafter\newbox\cscname#1\endcscname}
463 \let\gobble\@gobble
464 \def\vellipsis{%
465 \leavevmode\kern0.5em
466 \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
467 }
468 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
469 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
470 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
471 /\kern-.125em\smash{\lower.3ex\hbox{o}}}\ \ignorespaces}
472 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
473 %
474 \DeclareRobustCommand{\sfrac}[1]{\@ifnextchar/{\@sfrac{#1}}%
475 {\@sfrac{#1}/}}
476 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
477 \hbox{$\m@th\mbox{\fontsize\sf@size\z@
478 \selectfont#1}$}\kern-.1em
479 /\kern-.15em\lower.25ex
480 \hbox{$\m@th\mbox{\fontsize\sf@size\z@
481 \selectfont#2}$}}
482 %
483 % don't stay bold in description items, bold italic is too weird.
484 \DeclareRobustCommand\meta[1]{%

```

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

```

485 \ensuremath{\langle\rangle}%
486 \ifmmode \expandafter\mbox \fi % if in math
487 {\it #1\}% no typewriter italics, please
488 \ensuremath{\langle\rangle}%
489 }
490 %
491 % Use \tt rather than \texttt because italic typewriter is just too ugly,
492 % and upright works well enough in both italic and bold contexts.
493 \DeclareRobustCommand{\cs}[1]{\tt \char'\#1}
494 %
495 % This command was defined much later than the other, so let's not
496 % conflict with any existing definitions that might be out there.
497 % Don't allow hyphenations or other line breaks.
498 \DeclareRobustCommand{\tubbraced}[1]{\mbox{\texttt{\char'\#1\char'\}}}
499 %
500 % Well, just the \begin part. Never seen it used.
501 \DeclareRobustCommand{\env}[1]{\cs{begin}\tubbraced{#1}}
502 %
503 % Not sure why we ever want this instead of LaTeX's \, (using \kern),
504 % but fine, just keeping it.
505 \DeclareRobustCommand{\thinskip}{\hskip 0.16667em\relax}
506 %

```

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

```

507 \def\endash{--}
508 \def\emdash{\endash-}
509 \def\d@sh#1#2{\unskip#1\thinskip#2\thinskip\ignorespaces}
510 \def\dash{\d@sh\nobreak\endash}
511 \def\Dash{\d@sh\nobreak\emdash}
512 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
513 \def\rdash{\d@sh\nobreak\endash}
514 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
515 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

516 \def\hyph{-\penalty\z@\hskip\z@skip }
517 \def\slash{/\penalty\z@\hskip\z@skip }

```

Adapted from `comp.text.tex` posting by Donald Arseneau, 26 May 93.

L^AT_EX 2_ε-isation added by Robin Fairbairns. Destroys both the `TestCounts`.

```

518 \def\nth#1{%
519   \def\reserved@a##1##2\@nil{\ifcat##1n%
520     0%
521     \let\reserved@b\ensuremath
522     \else##1##2%
523     \let\reserved@b\relax
524     \fi}%
525   \TestCount=\reserved@a#1\@nil\relax

```

```

526 \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
527 \TestCount=\TestCount
528 \divide\TestCount by 100 \multiply\TestCount by 100
529 \advance\TestCount by-\TestCount % n mod 100
530 \ifnum\TestCount >20 \TestCount=\TestCount
531 \divide\TestCount by 10 \multiply\TestCount by 10
532 \advance\TestCount by-\TestCount % n mod 10
533 \fi
534 \reserved@a{#1}%
535 \textsuperscript{\ifcase\TestCount th% 0th
536 \or st% 1st
537 \or nd% 2nd
538 \or rd% 3rd
539 \else th% nth
540 \fi}%
541 }

```

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...

```

542 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
543 \def\@Review:{\@ifnextchar[%
544 {\@Rev}%
545 {\@Rev[Book review]}}
546 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
547 \slshape\mdseries#2}}
548 \def\reviewitem{\addvspace{\BelowTitleSkip}}%
549 \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
550 \def\revtitle##1{\def\therevtitle{\slshape##1. }\ignorespaces}%
551 \def\revpubinfo##1{\def\therevpubinfo{##1. }\ignorespaces}%
552 }
553 \def\endreviewitem{{\noindent\interlinepenalty=10000
554 \therevauth\therevtitle\therevpubinfo\endgraf}%
555 \vskip\medskipamount
556 }
557 \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.

```

558 \newcount\issueseqno          \issueseqno=-1
559 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
560 \def\volyr{}
561 \def\volno{}
562 \def\vol #1,#2.{\gdef\volno{#1\unskip}%
563     \gdef\issno{\ignorespaces#2\unskip}%
564     \setbox\TextBox=\hbox{\volyr}%
565     \ifdim \wd\TextBox > .2em \v@lx \fi }
566 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
567     \gdef\bigissdt{#1}%
568     \setbox\TextBox=\hbox{\volno}%
569     \ifdim \wd\TextBox > .2em \v@lx \fi }
570 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
571     \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
572     \setbox\TextBox=\hbox{\volno}%
573     \ifdim \wd\TextBox > .2em \v@lx \fi }
574 \vol 0, 0.
575 \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

```

576 <!!latex>\def\tubissue#1(#2)%
577 <*latex>
578 \def\tubissue#1{\@ifnextchar(%)
579     {\@tubissue@b{#1}}
580     {\@tubissue@a{#1}}}}
581 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
582 \def\@tubissue@a#1#2%
583 </latex>
584     {\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`

```

585 \def\infil@{\jobname}
586 \def\Input #1 {\ifnum\issueseqno<0
587     \def\infil@{#1}%

```

```

588 \else
589   \def\infil@{tb\number\issueseqno#1}
590 \fi
591 \edef\jobname{\infil@}\@readFLN
592 \@@input \infil@relax
593 \if@RMKopen
594   \immediate\closeout\@TBremarkfile\@RMKopenfalse
595 \fi
596 }

```

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

```

597 \newif\if@RMKopen           \@RMKopenfalse
598 \newwrite\@TBremarkfile
599 \def\@TBremark#1{%
600   \if@RMKopen
601   \else
602     \@RMKopentruetrue\immediate\openout\@TBremarkfile=\infil@.rmk
603   \fi
604   \toks@={#1}%
605   \immediate\write\@TBremarkfile{^^J\the\toks@}%
606   \immediate\write16{^^JTremark:: \the\toks@^^J}%
607 }

```

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

```
608 \let\TBremark=\gobble
```

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

```
609 \def\TBAenableRemarks{\let\TBremark\@TBremark}
```

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

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

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

```

611 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
612 \newread\@altfilenames
613 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
614   \ifeof\@altfilenames\let\@result\relax\else
615   \def\@result{\@@input\jobname.fln }\fi
616   \immediate\closein\@altfilenames
617   \@result}
618 \@readFLN

```

```

619 \everyjob=\expandafter{\the\everyjob\@readFLN}
620 \InputIfFileExists{\jobname.fln}%
621     {\TBInfo{Reading alternative file file \jobname.fln}}{}

```

The following needs to work entirely in T_EX's mouth

```

622 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
623     #1\else\csname file@@#1\endcsname\fi}
624 \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.

```

625 <!*latex>
626 \def\pagexrefON#1{%
627     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
628     \write\ppoutfile{%
629         \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}}%
630     }
631 \def\PageXrefON#1{%
632     \immediate\write-1{\def\expandafter
633         \noexpand\csname#1\endcsname{\number\pageno}}}%
634     \immediate\write\ppoutfile{\def\expandafter
635         \noexpand\csname#1\endcsname{\number\pageno}}}%
636 </!latex>
637 <!*latex>
638 \def\pagexrefON#1{%
639     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
640     \write\ppoutfile{%
641         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
642     }
643 \def\PageXrefON#1{%
644     \immediate\write-1{\def\expandafter
645         \noexpand\csname#1\endcsname{\number\c@page}}}%
646     \immediate\write\ppoutfile{\def\expandafter
647         \noexpand\csname#1\endcsname{\number\c@page}}}%
648 </latex>
649 \def\pagexrefOFF#1{}
650 \let\pagexref=\pagexrefOFF
651 \def\PageXrefOFF#1{}
652 \let\PageXref=\PageXrefOFF
653 \def\xreftoON#1{%
654     \ifundefined{#1}%
655         ???\TBremark{Need cross reference for #1.}%
656     \else\csname#1\endcsname\fi}
657 \def\xreftoOFF#1{???}
658 \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.

```
659 \let\TBdriver\gobble
```

Some hyphenation exceptions:

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

3.10 Page dimensions, glue, penalties etc

```
700 \textheight 54pc
```

```

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

```

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

```

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

```
740 \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.

```
741 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
742 \DeclareLaTeXLogo{lmss}{bx}{n}{.3}{.15}
743 %
744 \DeclareLaTeXLogo{cmr}{m}{it}{.29}{.2}
745 \DeclareLaTeXLogo{lmr}{m}{it}{.29}{.2}
746 %
747 \DeclareLaTeXLogo{cmr}{m}{sl}{.29}{.15}
748 \DeclareLaTeXLogo{lmr}{m}{sl}{.29}{.15}
749 %
750 \DeclareLaTeXLogo{cmr}{bx}{it}{.29}{.2}
751 \DeclareLaTeXLogo{lmr}{bx}{it}{.29}{.2}
752 %
753 \DeclareLaTeXLogo{cmr}{bx}{sl}{.29}{.2}
754 \DeclareLaTeXLogo{lmr}{bx}{sl}{.29}{.2}
755 %
756 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
757 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
758 \DeclareRobustCommand{\LaTeX}{\expandafter\let\expandafter\reserved@a
759 \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
760 \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
761 \expandafter\@LaTeX\reserved@a}
```

Here's the body of what was originally `\LaTeX`, pulled out with its roots dripping onto the smoking ruin of original `LATEX`, and then bits stuck in on the side.

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

```
762 \newcommand{\@LaTeX}[2]{%
763   %\wlog{latex logo family=\f@family/\f@series/\f@shape -> #1, #2.}%
764   L\kern-#1em
765   {\sbox\z@ T%
766     \vbox to\ht0{\hbox{$\m@th$%
767       \csname S@\f@size\endcsname
768       \fontsize\sf@size\z@
769       \math@fontsfalse\selectfont
770       A}%
771     \vss}%
772   }%
773   \kern-#2em%
774   \TeX}
```

3.12 Authors, contributors, addresses, signatures

An article may have several authors (of course), so we permit an `\author` command for each of them. The names are then stored in a set of `\csnames` called `\author1`, `\author2`, ... Similarly, there are several `\address<n>` and `\netaddress<n>` and `\PersonalURL<n>` commands set up for each article.

Comment: I would like to make provision for several authors at the same address, but (short of preempting the `*` marker, which it would be nice to retain so as to preserve compatibility with the `plain` style) I'm not sure how one would signal it.

```
775 \def\theauthor#1{\csname theauthor#1\endcsname}
776 \def\theaddress#1{\csname theaddress#1\endcsname}
777 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
778 \def\thePersonalURL#1{\csname thePersonalURL#1\endcsname}
```

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

```
779 <!!latex>\newcount\@tempcnta
780 \def\@defaultauthorlist{%
781   \@getauthorlist\@firstofone
782 }
```

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

```
783 \def\@getauthorlist#1{%
784   \count@\authornumber
785   \advance\count@ by -2
786   \@tempcnta0
```

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

```
787   \loop
788     \ifnum\count@>0
789       \advance\@tempcnta by \@ne
790       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
791       \advance\count@ by \m@ne
792   \repeat
793   \count@\authornumber
794   \advance\count@ by -\@tempcnta
795   \ifnum\authornumber>0
```

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

```
796     \ifnum\count@>1
797       \count@\authornumber
798       \advance\count@ by \m@ne
799       #1{\ignorespaces\theauthor{\number\count@}\unskip\ and }%
800     \fi
```

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

```
801   #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
802   \fi
803 }
```

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...)

```
804 \def\signature#1{\def\@signature{#1}}
805 \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`

```
806 \def\@defaultsignature{%
807   \let\thanks\@gobble
808   \frenchspacing
809   %
810   \ifnum\authornumber<0
      if \authornumber < 0, we are in a contributor's section
811     \medskip
812     \signaturemark
813     \theauthor{\number\authornumber}\\
814     \theaddress{\number\authornumber}\\
815     \allowhyphens
816     \thenetaddress{\number\authornumber}\\
817     \thePersonalURL{\number\authornumber}\\
818   \else
      \authornumber ≥ 0, so we are in the body of an ordinary article
819     \count@=0
820     \loop
821       \ifnum\count@<\authornumber
822         \medskip
823         \advance\count@ by \@ne
824         \signaturemark
825         \theauthor{\number\count@}\\
826         \theaddress{\number\count@}\\
827         {%
828           \allowhyphens
829           \thenetaddress{\number\count@}\\
830           \thePersonalURL{\number\count@}\\
831         }%
832       \repeat
833     \fi
834   }%
835 }
836 \newdimen\signaturewidth \signaturewidth=12pc
```

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

```

837 \newcommand{\makesignature}[1][\medskipamount]{%
      check the value the user has put in \signaturewidth: it may be at most
      1.5pc short of \columnwidth
838 \@tempdima\signaturewidth
839 \advance\@tempdima 1.5pc
840 \ifdim \@tempdima>\columnwidth
841 \signaturewidth \columnwidth
842 \advance\signaturewidth -1.5pc
843 \fi
844 \par
845 \penalty9000
846 \vspace{#1}%
847 \rightline{%
848 \vbox{\hsize\signaturewidth \ninepoint \raggedright
849 \parindent \z@ \everypar={\hangindent 1pc }
850 \parskip \z@skip
851 \def\|{\unskip\hfil\break}%
852 \def\\{\endgraf}%
853 \def\phone{\rm Phone: }
854 \rm\@signature}%
855 }%
856 \ifnum\authornumber<0 \endgroup\fi
857 }
858 \def\signaturemark{\leavevmode\llap{$\diamond$\enspace}}
```

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

```

859 \newcount\authornumber
860 \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`).

```

861 \def\author{%
862 \global\advance\authornumber\@ne
863 \TB@author
864 }
```

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

```

865 \def\contributor{%
866 \begingroup
867 \authornumber\m@ne
868 \TB@author
```

869 }

Both ‘types’ of author fall through here to set up the author name and to initialise author-related things. \EDITORno* commands allow the editor to record that there’s good reason for an *address* or *netaddress* not to be there (the *personalURL* is optional anyway).

```

870 \def\TB@author#1{%
871   \expandafter\def\csname theauthor\number\authornumber\endcsname
872     {\ignorespaces#1\unskip}%
873   \expandafter\def\csname theaddress\number\authornumber\endcsname
874     {\TBWarningNL{Address for #1\space missing}\@gobble}%
875   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
876     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
877   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
878     \@gobble
879 }
880 \def\EDITORnoaddress{%
881   \expandafter\let\csname theaddress\number\authornumber\endcsname
882     \@gobble
883 }
884 \def\EDITORnonetaddress{%
885   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
886     \@gobble
887 }

```

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

```

888 \def\address#1{%
889   \expandafter\def\csname theaddress\number\authornumber\endcsname
890     {\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*!

```

891 \def\network#1{\def\@network{#1: }}

```

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

```

892 \newcommand{\netaddress}[1][\relax]{%
893   \begingroup
894   \def\@network{}%

```

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

```
895 #1\@sanitize\makespace\ \makeactive\@
896 \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?!*)

```
897 \def\@relay@netaddress#1{%
898   \ProtectNetChars
899   \expandafter\protected@xdef
900     \csname thenetaddress\number\authornumber\endcsname
901     {\protect\leavevmode\textrm{\@network}%
902     {\protect\NetAddrChars\net
903       \ignorespaces#1\unskip}}%
904   \endgroup
905 }
```

\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.

```
906 \def\personalURL{\begingroup
907   \@sanitize\makespace\ \makeactive\@
908   \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
909 \def\@personalURL#1{%
910   \ProtectNetChars
911   \expandafter\protected@xdef
912     \csname thePersonalURL\number\authornumber\endcsname{%
913     \protect\leavevmode
914     {%
915       \protect\URLchars\net
916       \ignorespaces#1\unskip
917     }%
918   }%
919   \endgroup
920 }
```

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...

```
921 {%
922   \makecomment\*
923   \makeactive\@
924   \gdef\netaddrat{\makeactive\@*
925     \def@{\discretionary{\char"40}{\char"40}}
926     \makeactive\%
927     \gdef\netaddrpercent{\makeactive\%*
```



```

928 \def%\discretionary{\char"25}{\char"25}}
929 \makeactive\
930 \gdef\netaddrdot{\makeactive\.*
931 \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`.

```

932 \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
933 \makeactive\
934 \gdef\URLchars{*
935 \NetAddrChars
936 \makeactive\/*
937 \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.

```

938 \gdef\ProtectNetChars{*
939 \def%\protect@*
940 \def%\protect%*
941 \def%\protect.*
942 \def%\protect/*
943 }
944 }

```

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

```

945 \ifcompatibility
946 \DeclareRobustCommand{\net}{\normalfont\ttfamily\mathgroup\syntypewriter}
947 \else
948 \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
949 \fi
950 \def\authorlist#1{\def\@author{#1}}
951 \def\@author{\@defaultauthorlist}

```

For the online re-publication (as of 2009) by Mathematical Sciences Publishers <http://mathscipub.org>, lots and lots of metadata is needed, much of it redundant with things we already do. They are flexible enough to allow us to specify it in any reasonable way, so let's make one command `\mspmetavar` which takes two arguments. Example: `\mspmetavar{volumenumber}{30}`. For our purposes, it is just a no-op. And this initiative never came to anything, so it is not used at all.

`\mspmetavar`

```

952 \def\mspmetavar#1#2{}

```

3.13 Article title

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

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

```

953 \newif\if@articletitle
954 \def\maketitle{\@ifstar
955   {\@articletitlefalse\@r@maketitle}%
956   {\@articletitletrue\@r@maketitle}%
957 }
958 \def\@r@maketitle{\par
959   \ifdim\PreTitleDrop > \z@
960     \loop
961       \ifdim \PreTitleDrop > \textheight
962         \vbox{}\vfil\eject
963         \advance\PreTitleDrop by -\textheight
964       \repeat
965       \vbox to \PreTitleDrop{}
966       \global\PreTitleDrop=\z@
967   \fi
968   \begingroup
969   \setcounter{footnote}{0}
970   \global\@topnum\z@ % disallow floats above the title
971   \def\thefootnote{\fnsymbol{footnote}}
972   \@maketitle
973   \@thanks
974   \endgroup
975   \setcounter{footnote}{0}
976   \gdef\@thanks{}
977 }
```

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

```

978 \def\rhTitle{}% avoid error if no author or title
979 \renewcommand{\title}{\@dblarg\TB@title}
980 \def\TB@title[#1]#2{\gdef\@title{#2}%
981   \bgroup
982     \let\thanks\@gobble
983     \def\{\{\unskip\space\ignorespaces}%
984     \protected@xdef\rhTitle{#1}%
985   \egroup
986 }
```

`\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.

```

987 \def\shortTitle #1{\def\rhTitle{#1}}
988 \newif\ifshortAuthor
989 \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:

```

990 \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).

```

991 \newdimen\stbaselineskip \stbaselineskip=18\p@
992 \newdimen\stfontheight
993 \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.

```

994 \newif\ifSecTitle
995 \SecTitlefalse
996 \newif\ifWideSecTitle
997 \newcommand{\sectitle}{%
998   \SecTitletrue
999   \@ifstar
1000     {\WideSecTitletrue\def\s@ctitle}%
1001     {\WideSecTitlefalse\def\s@ctitle}%
1002 }

```

`\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.

```

1003 \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.

```
1004 \newskip\AboveTitleSkip \AboveTitleSkip=12\p@
1005 \newskip\BelowTitleSkip \BelowTitleSkip=8\p@
1006 \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...

```
1007 \def\@sectitle #1{%
1008   \par
1009   \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.

```
1010   \ifWideSecTitle\else\secsep\fi
1011   {%
1012     \fboxrule\strulethickness
1013     \fboxsep\z@
1014     \noindent\framebox[\hsize]{%
1015       \vbox{%
1016         \raggedcenter
1017         \let\\ \@sectitle@newline
1018         \sectitlefont
1019         \makestrut[2\stfontheight;\z@]%
1020         #1%
1021         \makestrut[\z@;\stfontheight]\endgraf
1022       }%
1023     }%
1024   }%
1025   \nobreak
1026   \vskip\baselineskip
1027 }
```

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

```
1028 \newcommand{\@sectitle@newline}[1][\z@]{%
1029   \ifdim#1>\z@
1030     \makestrut[\z@;#1]%
1031   \fi
1032   \unskip\break
1033 }
```

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).

```

1034 \def\@makesectitle{\ifSecTitle
1035   \global\SecTitlefalse
1036   \ifWideSecTitle
1037     \twocolumn[\@sectitle{\s@ctitle}]\%
1038     \global\WideSecTitlefalse
1039   \else
1040     \@sectitle{\s@ctitle}%
1041   \fi
1042 \else
1043   \vskip\AboveTitleSkip
1044   \kern\topskip
1045   \hrule \@height\z@ \@depth\z@ \@width 10\p@
1046   \kern-\topskip
1047   \kern-\strulethickness
1048   \hrule \@height\strulethickness \@depth\z@
1049   \kern\medskipamount
1050   \nobreak
1051 \fi
1052 }

```

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

```

1053 \def\@maketitle{%
1054   \@makesectitle
1055   \if@articletitle{%
1056     \nohyphens \interlinepenalty\@M
1057     \setbox0=\hbox{%
1058       \let\thanks\@gobble
1059       \let\=\quad
1060       \let\and=\quad
1061       \ignorespaces\@author}%
1062     {%
1063       \noindent\bf\raggedright\ignorespaces\frenchspacing\@title\endgraf
1064     }%
1065     \ifdim \wd0 < 5\p@           % omit if author is null
1066     \else

```

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

```

1067   \nobreak \vskip 4\p@
1068   {%
1069     \leftskip=\normalparindent
1070     \raggedright
1071     \def\and{\unskip\}%
1072     \noindent\@author\endgraf
1073   }%
1074   \fi
1075   \nobreak
1076   \vskip\BelowTitleSkip
1077 } \fi%
1078 \global\@afterindentfalse
1079 \aftergroup\@afterheading

```

1080 }

Dedications are ragged right, in italics.

```
1081 \newenvironment{dedication}%
1082   {\raggedright\noindent\itshape\ignorespaces}%
1083   {\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.

```
1084 \def\@tubonecolumnabstractstart{%
1085   \list{}\{\listparindent\normalparindent
1086     \itemindent\z@ \leftmargin\@tubfullpageindent
1087     \rightmargin\leftmargin \parsep \z@\}\item[]\ignorespaces
1088 }
1089 \def\@tubonecolumnabstractfinish{%
1090   \endlist
1091 }
1092 \renewenvironment{abstract}%
1093   {\begin{SafeSection}%
1094     \section*{%
1095       \if@tubtwocolumn\else \hspace*\{\@tubfullpageindent\}\fi
1096       Abstract}%
1097   \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1098   }%
1099   {\if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1100   \end{SafeSection}}
1101 \newenvironment{longabstract}%
1102   {\begin{SafeSection}%
1103     \section*{Abstract}%
1104     \bgroup\small
1105   }%
1106   {\endgraf\egroup
1107     \end{SafeSection}%
1108   \vspace{.25\baselineskip}
1109   \begin{center}
1110     {\$--*--\$}
1111   \end{center}
1112   \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.

```

1113 \if@numbersec
1114   \def\section{\TB@startsection{section}%
1115                                   1%
1116                                   \z@
1117                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1118                                   {4\p@}%
1119                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1120   \def\subsection{\TB@startsection{subsection}%
1121                                   2%
1122                                   \z@
1123                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1124                                   {4\p@}%
1125                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1126   \def\subsubsection{\TB@startsection{subsubsection}%
1127                                   3%
1128                                   \z@
1129                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1130                                   {4\p@}%
1131                                   {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1132   \def\paragraph{\TB@startsection{paragraph}%
1133                                   4%
1134                                   \z@
1135                                   {4\p@ \@plus1\p@ \@minus1\p@}%
1136                                   {-1em}%
1137                                   {\normalsize\bf}}

```

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

```

1138 \else
1139   \setcounter{secnumdepth}{0}
1140   \def\section{\TB@nolimelabel
1141               \TB@startsection{section}%
1142                               1%
1143                               \z@
1144                               {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1145                               {4\p@}%
1146                               {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1147   \def\subsection{\TB@nolimelabel
1148               \TB@startsection{subsection}%
1149                               2%
1150                               \z@
1151                               {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1152                               {-0.5em\@plus-\fontdimen3\font}%
1153                               {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1154   \def\subsubsection{\TB@nolimelabel
1155               \TB@startsection{subsubsection}%
1156                               3%

```

```

1157             \parindent
1158             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1159             {-0.5em\@plus-\fontdimen3\font}%
1160     {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1161 \fi

```

`\TB@startsection` used to trap * versions of sectioning commands when numbering wasn't in effect. But that eventually seemed a useless complaint, since being able 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`.

```

1162 \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).

```

1163 \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.

```

1164 \newenvironment{SafeSection}%
1165   {\let\tb@startsection\tb@safe@startsection}%
1166   {}

```

And now for the exciting sectioning commands that L^AT_EX defines but we don't have a definition for (whatever else, we don't want Lamport's originals, which come out 'like the blare of a bugle'²).

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

```

1167 \if@numbersec
1168   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1169 \else
1170   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1171   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1172 \fi
1173 \def\chapter{\TB@nosection\chapter\section}
1174 \def\part{\TB@nosection\part\section}
1175 \def\tb@nosection#1#2{\TBWarning{class does not support \string#1,
1176   \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

²Thurber, *The Wonderful O*

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.

```

1177 \def\TBtocsectionfont{\normalfont}
1178 \newskip\TBtocsectionspace \TBtocsectionspace=1.0em\@plus\p@
1179 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1180 \addvspace{\TBtocsectionspace}%
1181 \@tempdima 1.5em
1182 \begingroup
1183 \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1184 \parfillskip\z@
1185 \TBtocsectionfont
1186 \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1187 \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1188 \endgroup}

```

3.16 Appendices

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

```

1189 \renewcommand{\appendix}{\par
1190 \renewcommand{\thesection}{\@Alph\c@section}%
1191 \setcounter{section}{0}%
1192 \if@numbersec
1193 \else
1194 \setcounter{secnumdepth}{1}%
1195 \fi

```

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

```

1196 \def\@tempa{appendix}
1197 \ifx\@tempa\@currenvir
1198 \expandafter\@appendix@env
1199 \fi
1200 }

```

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

```

1201 \newcommand{\app@prefix@section}{}
1202 \newcommand{\@appendix@env}[1][Appendix]{%
1203 \renewcommand{\@secntformat}[1]{\csname app@prefix@##1\endcsname

```

```

1204 \csname the##1\endcsname\quad}%
1205 \renewcommand{\app@prefix@section}{#1 }%
1206 }

```

Ending an appendix environment is pretty trivial...

```

1207 \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 for the editor. (Yes it can; believe me ... there's always one.)

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

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

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

```

1208 \def\TB@nolimelabel{%
1209 \def\@currentlabel{%
1210 \protect\TBWarning{%
1211 Invalid reference to numbered label on page \thepage
1212 \MessageBreak made%
1213 }%
1214 \textbf{?!?}%
1215 }%
1216 }

```

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.

```

1217 \let\TB@@sect\@sect
1218 \let\TB@@ssect\@ssect
1219 \def\@sect#1#2#3#4#5#6[#7]#8{%
1220 \def\@currentlabelname{#7}%
1221 \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1222 }

```

```

1223 \def\ssect#1#2#3#4#5{%
1224 \def\@currentlabelname{#5}%
1225 \TB@ssect{#1}{#2}{#3}{#4}{#5}%
1226 }

```

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>`.

```

1227 \let\@savelatexlabel=\label % so save original LaTeX command
1228 %
1229 \def\label#1{% de
1230 \@savelatexlabel{#1}%
1231 \@bsphack
1232 \if@filesw
1233 \protected@write\@auxout{}%
1234 {\string\newlabel{nr@#1}{\@currentlabel}{\@currentlabelname}}}%
1235 \fi
1236 \@esphack
1237 }

```

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

```

1238 \let\@currentlabelname\@empty

```

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

```

1239 \DeclareRobustCommand{\nameref}[1]{\expandafter\@setref
1240 \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
```

```

1241 \newdimen\@tubfullpageindent
1242 \@tubfullpageindent = \if@tubtwocolumn 4.875pc \else 3.875pc \fi
1243 \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
```

```

1244 \let\tubcaptionleftglue=\hfil

```

Ok, here is `\@makecaption`.

```

1245 \def\tubcaptionfonts{\small}%
1246 \long\def\@makecaption#1#2{%
1247   \vskip\abovecaptionskip
1248   \sbox\@tempboxa{\tubcaptionfonts \tubmakecaptionbox{#1}{#2}}% try in an hbox
1249   \ifdim \wd\@tempboxa > \hsize
1250     {% caption doesn't fit on one line; set as a paragraph.
1251       \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1252       % indent full-width captions {figure*}, but not single-column {figure}.
1253       \ifdim\hsize = \textwidth
1254         \leftskip=\@tubfullpageindent \rightskip=\leftskip
1255         \advance\rightskip by 0pt plus2em % increase acceptable raggedness
1256       \fi
1257       \noindent \tubmakecaptionbox{#1}{#2}\par}%
1258   \else
1259     % fits on one line; use the hbox, centered. Do not reset its glue.
1260     \global\@minipagefalse
1261     \hb@xt@\hsize{\tubcaptionleftglue\box\@tempboxa\hfil}%
1262   \fi
1263   \vskip\belowcaptionskip}
1264 %
1265 \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.

```

1266 \def\fnun@figure{{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}}
1267 \def\fnun@table{{\tubcaptionfonts \bf \tablename\nobreakspace\thetable}}

```

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

```

1268 \setlength\abovecaptionskip{6pt plus1pt minus1pt}

```

3.20 Size changing commands

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

```

1269 \renewcommand{\normalsize}{%
1270   \@setfontsize\normalsize\@xpt\@xipt
1271   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1272   \belowdisplayskip=\abovedisplayskip
1273   \abovedisplayshortskip=\z@\@plus 3\p@
1274   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1275 }
1276
1277 \renewcommand{\small}{%
1278   \@setfontsize\small\@ixpt{11}%
1279   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1280   \belowdisplayskip=\abovedisplayskip
1281   \abovedisplayshortskip=\z@\@plus 2\p@

```

```

1282 \belowdisplayskip=\p@\@plus 2\p@\@minus\p@
1283 }
1284
1285 \renewcommand{\footnotesize}{%
1286 \setfontsize\footnotesize\@viipt{9.5}%
1287 \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1288 \belowdisplayskip=\abovedisplayskip
1289 \abovedisplayskip=\z@\@plus 3\p@
1290 \belowdisplayskip=\p@\@plus 3\p@\@minus\p@
1291 }

```

3.21 Lists and other text inclusions

```

1292 \def\@listi{%
1293 \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1294 \itemsep=\parsep
1295 \listparindent=1em
1296 }
1297
1298 \def\@listii{%
1299 \leftmargin\leftmarginii
1300 \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1301 \topsep=2\p@\@plus\p@\@minus\p@
1302 \parsep=\p@\@plus\p@\@minus\p@
1303 \itemsep=\parsep
1304 \listparindent=1em
1305 }
1306
1307 \def\@listiii{%
1308 \leftmargin=\leftmarginiii
1309 \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1310 \topsep=\p@\@plus\p@\@minus\p@
1311 \parsep=\z@
1312 \itemsep=\topsep
1313 \listparindent=1em
1314 }
1315 \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.

```

1316 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1317 \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}

```

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

```

1318 \newenvironment{compactitemize}%
1319 {\begin{itemize}%
1320 \setlength{\itemsep}{0pt}%
1321 \setlength{\parskip}{0pt}%
1322 \setlength{\parsep}{0pt}%
1323 }%

```

```

1324   {\end{itemize}}
1325 %
1326 \newenvironment{compactenumerate}%
1327   {\begin{enumerate}%
1328     \setlength{\itemsep}{0pt}%
1329     \setlength{\parskip}{0pt}%
1330     \setlength{\parsep}{0pt}%
1331   }%
1332   {\end{enumerate}}
1333 %
1334 \newenvironment{compactdescription}%
1335   {\begin{description}%
1336     \setlength{\itemsep}{0pt}%
1337     \setlength{\parskip}{0pt}%
1338     \setlength{\parsep}{0pt}%
1339   }%
1340   {\end{description}}
1341 %

```

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.

```

1342 %\let\@TB@verbatim\@verbatim
1343 \let\@TBverbatim\verbatim
1344 \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.)

```

1345 \def\verbatim{\par\obeylines
1346   \futurelet\reserved@a\@switch@sqbverbatim}
1347 %
1348 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1349   \expandafter\@sqbverbatim\else
1350   \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1351 %
1352 \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.

```
1353 \def\ruled{\let\if@ruled\iftrue}%
```

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

```
1354 \def\makevmeta{\makeescape\! \let<\tubverb@meta \tubverb@clearliglist}
```

```
1355 \def\tubverb@meta##1>{\meta{##1}}
```

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

```
1356 \def\tubverb@clearliglist{%
```

```
1357   \def\verbatim@nolig@list{\do\‘\do\,\do\’\do\~}%
```

```
1358 }
```

Then we execute the arguments we’ve got, and relay to a (hacked) copy of the \LaTeX verbatim environment.

```
1359 #1\@TBverbatim}
```

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

```
1360 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1361   \if@ruled\trivlist\item\hrule\kern5\p\@nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1362   \trivlist \item\relax
```

```
1363   \if@minipage\else\vskip\parskip\fi
```

```
1364   \leftskip\@totalleftmargin\rightskip\z@skip
```

```
1365   \parindent\z@\parfillskip\@flushglue\parskip\z@skip
```

```
1366   \@@par
```

```
1367   \@tempwafalse
```

```
1368   \def\par{%
```

```
1369     \if@tempswa
```

```
1370       \leavevmode \null \@@par\penalty\interlinepenalty
```

```
1371     \else
```

```
1372       \@tempwattrue
```

```
1373       \ifhmode\@@par\penalty\interlinepenalty\fi
```

```
1374     \fi}%
```

```
1375   \obeylines \verbatim@font \@noligs
```

```
1376   \let\do\@makeoother \dospecials
```

```
1377   \everypar \expandafter{\the\everypar \unpenalty}%
```

```
1378 }% 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).

```
1379 \def\endverbatim{\@TBendverbatim
1380 \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

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

```
1381 \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.

```
1382 \AtBeginDocument{%
1383   \@ifpackageloaded{microtype}
1384     {\g@addto@macro\verbatim{\microtypesetup{activate=false}}}{ }
1385 }
```

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:

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

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

```
1386 \if@Harvardcite
1387 \let\@internalcite\cite
```

Normal forms.

```
1388 \def\cite{\def\@citesep{-1000}%
1389   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1390   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1391 \def\citeNP{\def\@citesep{-1000}%
1392   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
```



```

1393 \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1394 \def\citeN{\def\@citesep{-1000}%
1395 \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1396 \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1397 \def\citeA{\def\@citesep{-1000}%
1398 \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1399 \def\citeauthoryear##1##2##3{##1}\@internalcite}
1400 \def\citeANP{\def\@citesep{-1000}%
1401 \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1402 \def\citeauthoryear##1##2##3{##1}\@internalcite}

```

Abbreviated forms (using *et al.*)

```

1403 \def\shortcite{\def\@citesep{-1000}%
1404 \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1405 \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1406 \def\shortciteNP{\def\@citesep{-1000}%
1407 \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1408 \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1409 \def\shortciteN{\def\@citesep{-1000}%
1410 \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1411 \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1412 \def\shortciteA{\def\@citesep{-1000}%
1413 \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1414 \def\citeauthoryear##1##2##3{##2}\@internalcite}
1415 \def\shortciteANP{\def\@citesep{-1000}%
1416 \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1417 \def\citeauthoryear##1##2##3{##2}\@internalcite}

```

When just the year is needed:

```

1418 \def\citeyear{\def\@citesep{-1000}%
1419 \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1420 \def\citeauthoryear##1##2##3{##3}\@citedata}
1421 \def\citeyearNP{\def\@citesep{-1000}%
1422 \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1423 \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.

```

1424 \def\@citedata{%
1425 \ifnextchar [{\@tempswattrue\@citedatax}%
1426 {\@tempswafalse\@citedatax[]}%
1427 }
1428
1429 \def\@citedatax[#1]#2{%
1430 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1431 \def\@citea{\@cite{\@for\@citeb:=#2\do%
1432 {\b@\@citeb}{\bf ?}}}%
1433 \warning{Citation '\@citeb' on page \thepage \space undefined}}%
1434 {\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.

```

1436 \def\@citex[#1]#2{%
1437 \if@files\immediate\write\@auxout{\string\citation{#2}}\fi%
1438 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1439   {\@citea\def\@citea{; }\@ifundefined% by Young
1440     {b@\@citeb}{\bf ?}%
1441     \@warning{Citation '\@citeb' on page \thepage \space undefined}}%
1442 {\csname b@\@citeb\endcsname}}{#1}}%

```

No labels in the bibliography.

```

1443 \def\@biblabel#1{}

```

Set length of hanging indentation for bibliography entries.

```

1444 \newlength{\bibhang}
1445 \setlength{\bibhang}{2em}

```

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

```

1446 \newdimen\bibindent
1447 \bibindent=1.5em
1448 \@ifundefined{refname}%
1449   {\newcommand{\refname}{References}}%
1450   {}%

```

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

```

1451 \def\thebibliography#1{% for harvardcite
1452   \let\TB@startsection\TB@safe@startsection
1453   \section*{\refname
1454     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1455   \list{[\arabic{enumi}]}{%
1456     \labelwidth\z@ \labelsep\z@
1457     \leftmargin\bibindent
1458     \itemindent -\bibindent
1459     \listparindent \itemindent
1460     \parsep \z@
1461     \usecounter{enumi}}}%
1462   \def\newblock{}%
1463   \BibJustification
1464   \frenchspacing % more than just period, see comments below
1465 }

```

etal Other bibliography odds and ends.

```

\bibentry 1466 \def\etal{et\,al.\@}
1467 \def\bibentry{%
1468   \smallskip
1469   \hangindent=\parindent
1470   \hangafter=1
1471   \noindent
1472   \sloppy
1473   \clubpenalty500 \widowpenalty500

```

```

1474 \frenchspacing
1475 }

```

```

\bibliography Changes made to accommodate TUB file naming conventions
\bibliographystyle 1476 \def\bibliography#1{%
1477 \if@filesw
1478 \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1479 \fi
1480 \input{\jobname.bbl}%
1481 }
1482 \def\bibliographystyle#1{%
1483 \if@filesw
1484 \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1485 \fi
1486 }

```

`\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, `amsen.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 `amsen's \@addpunct` ineffective. Don't know what that means in practice, if anything.

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

```

1487 \else % not harvardcite
1488 \let\TB@origthebibliography\thebibliography
1489 \def\thebibliography{%
1490 \let\TB@startsection\TB@safe@startsection
1491 \def\sloppy{\frenchspacing\BibJustification}%
1492 \TB@origthebibliography} % latex's thebibliography now reads args.
1493 \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 is appropriate. (`\BibJustification` is nevertheless reset to its default value at the start of a paper.)

```

1494 \let\TB@@sloppy\sloppy
1495 \let\BibJustification\TB@@sloppy
1496 \newcommand{\SetBibJustification}[1]{%
1497 \renewcommand{\BibJustification}{#1}%
1498 }
1499 \ResetCommands\expandafter{\the\ResetCommands}
1500 \let\BibJustification\TB@@sloppy
1501 }

```

3.24 Registration marks

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

```
1502 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1503 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1504 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
```

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

```
1505 \def\ttopregister{\dlap{%
1506     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1507         \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1508     \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1509 \def\tbotregister{\ulap{%
1510     \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1511     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1512         \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1513 \def\topregister{\ttopregister}
1514 \def\botregister{\tbotregister}
```

3.25 Running heads

```
1515 \def \rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx }
1516 \def\PrelimDraftfooter{%
1517     \dlap{\kern\textheight\kern3pc
1518         \rlap{\hb@xt@\pagewd{\midrtitle\hfil\midrtitle}}}
1519 }
```

registration marks; these are temporarily inserted in the running head

```
1520 \def\MakeRegistrationMarks{}
1521 \def\UseTrimMarks{%
1522     \def\MakeRegistrationMarks{%
1523         \ulap{\rlap{%
1524             \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1525             \topregister\vskip \headmargin \vskip 10\p@}}}%
1526 }
1527 % put issue identification and page number in header.
1528 \def\@oddhead{\MakeRegistrationMarks\PrelimDraftfooter
1529     \normalsize\csname normalshape\endcsname\rm \tubheadhook
1530     \rtitlex\quad\midrtitle \hfil \thepage}
1531 \def\@evenhead{\MakeRegistrationMarks\PrelimDraftfooter
1532     \normalsize\csname normalshape\endcsname\rm \tubheadhook
1533     \thepage\hfil\midrtitle\quad\rtitlex}
1534
1535 % can be used to reset the font, e.g., tb98kuester.
1536 \def\tubheadhook{}
1537
1538 % in case the official \author is too verbose for the footline.
1539 \def\tubrunningauthor{\@author}
1540
1541 % put title and author in footer.
```

```

1542 \def\tubrunningfull{%
1543   \def\@oddfoot{% make line break commands produce a normal space
1544     \def\{\{\unskip\ \ignorespaces}%
1545     \let\newline=\%
1546     \frenchspacing
1547     \hfil\rhTitle}
1548   \def\@evenfoot{\tubrunningauthor\hfil}
1549 }
1550
1551 % empty footer.
1552 \def\tubrunningminimal{%
1553   \def\@oddfoot{\hfil}%
1554   \def\@evenfoot{\hfil}%
1555 }
1556
1557 % empty footer and header.
1558 \def\tubrunningoff{%
1559   \def\@oddfoot{\hfil}%
1560   \def\@evenfoot{\hfil}%
1561   \def\@oddhead{\hfil}%
1562   \def\@evenhead{\hfil}%
1563 }
1564
1565 \def\ps@headings{}
1566 \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_EX 2_ε for 1995/06/01 (with the use of `\hb@xt@`). *This* time there's no semantic change, but...

```

1567 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1568   \global\setbox\@leftcolumn\box\@outputbox
1569   \global\brokenpenalty10000
1570 } \else \global\@firstcolumntrue
1571   \global\brokenpenalty100
1572   \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1573     {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1574     \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1575   \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1576   \@whiles\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1577   \fi}

```

3.27 Font-related definitions and machinery

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

```

1578 \newif\ifFirstPar \FirstParfalse

```

```

1579 \def\smc{\sc}
1580 \def\ninepoint{\small}
1581 </classtail>

```

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

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

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

```

1582 <*common>
1583 \DeclareRobustCommand{\SMC}{%
1584   \ifx\@currsize\normalsize\small\else
1585   \ifx\@currsize\small\footnotesize\else
1586   \ifx\@currsize\footnotesize\scriptsize\else
1587   \ifx\@currsize\large\normalsize\else
1588   \ifx\@currsize\Large\large\else
1589   \ifx\@currsize\LARGE\Large\else
1590   \ifx\@currsize\scriptsize\tiny\else
1591   \ifx\@currsize\tiny\tiny\else
1592   \ifx\@currsize\huge\LARGE\else
1593   \ifx\@currsize\Huge\huge\else
1594   \small\SMC@unknown@warning
1595 \fi\fi\fi\fi\fi\fi\fi\fi\fi
1596 }
1597 \newcommand{\SMC@unknown@warning}{\TBWarning{\string\SMC: nonstandard
1598   text font size command -- using \string\small}}
1599 \newcommand{\textSMC}[1]{\textSMC{#1}\@}
1600 \newcommand{\acro}[1]{\textSMC{#1}\@}
1601 </common>

```

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.

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!)

```

1602 <*classtail>
1603 \def\xEdNote{\EdNoteFont Editor's note:\enspace }
1604 \def \EdNote{\@ifnextchar [%]
1605   {%
1606     \ifvmode
1607       \smallskip\noindent\let\@EdNote@\@EdNote@v
1608     \else
1609       \unskip\quad\def\@EdNote@{\unskip\quad}%
1610     \fi
1611     \@EdNote
1612   }%
1613   \xEdNote
1614 }
1615 \long\def\@EdNote[#1]{%
1616   [\thinspace\xEdNote\ignorespaces
1617     #1%
1618     \unskip\thinspace]%
1619   \@EdNote@
1620 }
1621 \def\@EdNote@v{\par\smallskip}

```

Macros for Mittelbach's self-documenting style

```

1622 \def\SelfDocumenting{%
1623   \setlength\textwidth{31pc}
1624   \onecolumn
1625   \parindent \z@
1626   \parskip 2\p@\@plus\p@\@minus\p@
1627   \oddsidemargin 8pc
1628   \evensidemargin 8pc
1629   \marginparwidth 8pc
1630   \toks@{\expandafter{\@oddhead}}%
1631   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1632   \toks@{\expandafter{\@evenhead}}%
1633   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1634   \def\ps@titlepage{}%
1635 }
1636 \def\ps@titlepage{}
1637
1638 \long\def\@makefnmark#1{\parindent 1em\noindent\hb@xt@2em{}}%
1639 \llap{\@makefnmark}\null$\mskip5mu$#1}
1640
1641 %% \long\def\@makefnmark#1{\parindent 1em
1642 %%   \noindent
1643 %%   \hb@xt@2em{\hss\@makefnmark}%
1644 %%   \hskip0.27778\fontdimen6\textfont\z@\relax

```

```

1645 %%    #1%
1646 %% }

\tubraggedfoot To get a ragged-right footnote.
1647 \newcommand{\tubraggedfoot}{\rightskip=\raggedskip plus\raggedstretch\relax}

\creditfootnote Sometimes we want the label “Editor’s Note:”, sometimes not.
\supportfootnote 1648 \def\creditfootnote{\nomarkfootnote\xEdNote}
1649 \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.
1650 \gdef\nomarkfootnote#1#2{\begingroup
1651   \def\thefootnote{}%
1652   % no period, please, also no fnmark.
1653   \def\@makefntext##1{##1}%
1654   \footnotetext{\noindent #1#2}%
1655   \endgroup
1656 }

```

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.

```

1657 \if@Harvardcite
1658   \AtBeginDocument{%
1659     \bibliographystyle{ltugbib}%
1660   }
1661 \fi
1662 \authornumber\z@
1663 \let\@signature\@defaultsignature
1664 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1665                                           configuration information}}{}
1666 \</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:

```

1667 \<*ltugproccls>
1668 \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.

1669 \newif\if@proc@sober
1670 \newif\if@proc@numerable
1671 \DeclareOption{tug95}{%

```



```

1672 \@proc@soberfalse
1673 \@proc@numerablefalse
1674 }
1675 \DeclareOption{tug96}{%
1676 \@proc@sobertrue
1677 \@proc@numerablefalse
1678 }
1679 \DeclareOption{tug97}{%
1680 \@proc@sobertrue
1681 \@proc@numerabletrue
1682 }
1683 \DeclareOption{tug2002}{%
1684 \@proc@sobertrue
1685 \@proc@numerabletrue
1686 \let\if@proc@numbersec\iftrue
1687 \PassOptionsToClass{numbersec}{ltugboat}%
1688 }

```

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

```

1689 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1690 \PassOptionsToClass{numbersec}{ltugboat}%
1691 }
1692 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1693 \PassOptionsToClass{nonumber}{ltugboat}%
1694 }

```

`\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`.

```

1695 \newif\ifTB@title
1696 \DeclareOption{title}{\TB@titletrue}
1697 \DeclareOption{notitle}{\TB@titlefalse}
1698 \AtBeginDocument{\stepcounter{page}}

```

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

```

1699 \DeclareOption{tugproc}{%
1700 \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1701 }

```

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

```

1702 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{ltugboat}}

```

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

```

1703 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1704 \Loading ltugproc configuration information}}{}

```

```

1705 \@ifundefined{TUGprocExtraOptions}%
1706   {\let\TUGprocExtraOptions\@empty}%
1707   {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}

\tugProcYear Now work out what year it is
1708 \@tempcnta\year
1709 \ifnum\@tempcnta<2000
1710   \divide\@tempcnta by100
1711   \multiply\@tempcnta by100
1712   \advance\@tempcnta-\year
1713   \@tempcnta-\@tempcnta
1714 \fi

And use that for calculating a year for us to use.
1715 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1716               {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1717 \@tempa
1718 \ClassInfo{ltugproc}{Class believes year is
1719   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1720   \@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.

```

1721 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1722   \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.

```

1723 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1724 \ProcessOptions
1725 \if@proc@numbersec
1726   \if@proc@numerable
1727   \else
1728     \ClassWarning{\@tugclass}{This year’s proceedings may not have
1729       numbered sections}%
1730   \fi
1731 \fi

```

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

```

1732 \LoadClass[\if@proc@numbersec numbersec\else nonumber\fi]{ltugboat}

```

4.1 Proceedings titles

`\maketitle` There’s no provision for ‘section titles’ in proceedings issues, as there are in *TUGboat* proper. Note the tedious L^AT_EX bug-avoidance in the `\@TB@test@document` macro.

```

1733 \def\maketitle{%
1734   \begingroup

```

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

```

1735 \ifshortAuthor\else
1736 \global\let\rhAuthor\empty
1737 \def\g@addto@rhAuthor##1{%
1738 \begingroup
1739 \toks@{\expandafter{\rhAuthor}}%
1740 \let\thanks\@gobble
1741 \protected@xdef\rhAuthor{\the\toks@##1}%
1742 \endgroup
1743 }%
1744 \@getauthorlist\g@addto@rhAuthor
1745 \fi

now, the real business of setting the title

1746 \ifTB@title
1747 \setcounter{footnote}{0}%
1748 \renewcommand{\thefootnote}{\@fnsymbol\c@footnote}%
1749 \if@tubtwocolumn
1750 \twocolumn[\@maketitle]%
1751 \else
1752 \onecolumn
1753 \global\@topnum\z@
1754 \@maketitle
1755 \fi
1756 \@thanks
1757 \thispagestyle{TBproctitle}
1758 \fi
1759 \endgroup
1760 \TB@madetitletrue
1761 }
1762 \newif\ifTB@madetitle \TB@madetitlefalse

```

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

```

1763 \def\@TB@test@document{%
1764 \edef\@tempa{\the\everypar}
1765 \def \@tempb{\@nodocument}
1766 \ifx \@tempa\@tempb
1767 \@nodocument
1768 \fi
1769 }

```

`\AUTHORfont` Define the fonts for titles and things

```

\TITLEfont 1770 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1771 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1772 \def\addressfont{\small\rmfamily\mdseries\upshape}
1773 \def\netaddrfont{\small\ttfamily\mdseries\upshape}

```

`\aboveauthorskip` Some changeable skips to permit variability in page layout depending on the particular paper's page breaks.

`\belowauthorskip`

`\belowabstractskip` 1774 `\newskip\aboveauthorskip` `\aboveauthorskip=18\p@ \@plus4\p@`
1775 `\newskip\belowauthorskip` `\belowauthorskip=\aboveauthorskip`
1776 `\newskip\belowabstractskip` `\belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@`

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

```

1777 \def\@maketitle{%
1778   {\parskip\z@
1779     \frenchspacing
1780     \TITLEfont\raggedright\noindent\@title\par
1781     \count@=0
1782     \loop
1783     \ifnum\count@<\authornumber
1784       \vskip\aboveauthorskip
1785       \advance\count@\@ne
1786       {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1787       \addressfont\theaddress{\number\count@}\endgraf
1788       {%
1789         \allowhyphens
1790         \hangindent1.5pc
1791         \netaddrfont\thenetaddress{\number\count@}\endgraf
1792         \hangindent1.5pc
1793         \thePersonalURL{\number\count@}\endgraf
1794       }%
1795     \repeat
1796   \vskip\belowauthorskip}%
1797 \if@abstract
1798   \centerline{\bfseries Abstract}%
1799   \vskip.5\baselineskip\rmfamily
1800   \@tubonecolumnabstractstart
1801   \the\abstract@toks
1802   \@tubonecolumnabstractfinish
1803   \global\@ignoretrue
1804 \fi
1805 \vskip\belowabstractskip
1806 \global\@afterindentfalse\aftergroup\@afterheading
1807 }

```

`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 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@`

```

1808 \newtoks\abstract@toks \abstract@toks{}
1809 \let\if@abstract\iffalse
1810 \def\abstract{%

```

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

```

1811 \ifTB@madetitle
1812   \TBWarning{abstract environment after \string\maketitle}
1813 \fi
1814 \def\@abstract@{abstract}%
1815 \ifx\@currenvir\@abstract@
1816 \else
1817   \TBEError{\string\abstract\space is illegal:%
1818     \MessageBreak
1819     use \string\begin{\@abstract@} instead}%
1820   {\@abstract@\space may only be used as an environment}
1821 \fi
1822 \global\let\if@abstract\iftrue
1823 {\ifnum0='}\fi
1824 \@abstract@getbody}
1825 \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}`

```

1826 \long\def\@abstract@getbody#1\end{%
1827   \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1828   \@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.

```

1829 \def\@abstract@findend#1{%
1830   \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.

```

1831   \ifx\@tempa\@abstract@
1832     \expandafter\@abstract@end
1833   \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)

```

1834     \def\@tempb{document}%
1835     \ifx\@tempa\@tempb
1836       \TBEError{\string\begin{\@abstract@}
1837         ended by \string\end{\@tempb}}%
1838       {You've forgotten \string\end{\@abstract@}}
1839     \else
1840       \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1841       \expandafter\expandafter\expandafter\@abstract@getbody
1842     \fi
1843   \fi}

```

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

```

1844 \def\@abstract@end{\ifnum0='{ \fi}%
1845 \expandafter\end\expandafter{\@abstract@}}

\makesignature \makesignature is improper in proceedings, so we replace it with a warning (and
a no-op otherwise)
1846 \renewcommand{\makesignature}{\TBWarning
1847 {string\makesignature\space is invalid in proceedings issues}}

\ps@TBproctitle Now we define the running heads in terms of the \rh* commands.
\ps@TBproc 1848 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1849 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1850 \TB@definefeet
\TB@definefeet 1851 }
\pfoottext 1852 \def\ps@TBproc{%
\rfoottext 1853 \def\@oddhead{\MakeRegistrationMarks
1854 {%
1855 \hfil
1856 \def\{\unskip\ \ignorespaces}%
1857 \rmfamily\rhTitle
1858 }%
1859 }%
1860 \def\@evenhead{\MakeRegistrationMarks
1861 {%
1862 \def\{\unskip\ \ignorespaces}%
1863 \rmfamily\rhAuthor
1864 \hfil
1865 }%
1866 }%
1867 \TB@definefeet
1868 }
1869
1870 \advance\footskip8\p@ % for deeper running feet
1871
1872 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
1873 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
1874 {#2}}
1875 \def\TB@definefeet{%
1876 \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1877 \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1878 \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1879 \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1880 }
1881
1882 \def\pfoottext{\smc Preprint}:
1883 Proceedings of the \volyr{} Annual Meeting}
1884 \def\rfoottext{\normalfont\TUB, \volx\Dash
1885 {Proceedings of the \volyr{} Annual Meeting}}
```

```

1886
1887 \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).

```

1888 \if@proc@numbersec
1889 \else
1890   \setcounter{secnumdepth}{0}
1891 \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.

```

1892 \if@proc@numbersec
1893 \else
1894   \if@proc@sober
1895     \def\section
1896       {\TB@nolimelabel
1897        \TB@startsection{section}%
1898                          1%
1899                          \z@%
1900                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1901                          {6\p@}%
1902                          {\normalsize\bfseries\raggedright}}}
1903   \else
1904     \def\section
1905       {\TB@nolimelabel
1906        \TB@startsection{section}%
1907                          1%
1908                          \z@%
1909                          {-8\p@\@plus-2\p@\@minus-2\p@}%
1910                          {6\p@}%
1911                          {\large\bfseries\raggedright}}}
1912   \fi
1913   \def\subsection
1914     {\TB@nolimelabel
1915      \TB@startsection{subsection}%
1916                        2%
1917                        \z@%
1918                        {6\p@\@plus 2\p@\@minus2\p@}%
1919                        {-5\p@\@plus -\fontdimen3\the\font}%
1920                        {\normalsize\bfseries}}}
1921   \def\subsubsection

```

```

1922      {\TB@nolimelabel
1923       \TB@startsection{{subsubsection}%
1924                        3%
1925                        \parindent%
1926                        \z@%
1927                        {-5\p@\@plus -\fontdimen3\the\font}%
1928                        {\normalsize\bfseries}}}
1929 \fi
1930 </ltugproccls>

```

5 Plain T_EX styles

```

1931 <*tugboatsty>
1932 % err...
1933 </tugboatsty>
1934 <*tugprocsty>
1935 % err...
1936 </tugprocsty>

```

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

```

1937 <*tugboatsty>
1938 \@obsoletefile{ltugboat.cls}{ltugboat.sty}
1939 \LoadClass{ltugboat}
1940 </ltugboatsty>
1941 <*ltugprocsty>
1942 \@obsoletefile{ltugproc.cls}{ltugproc.sty}
1943 \LoadClass{ltugproc}
1944 </ltugprocsty>

```