

The `tugboat` package*

The *TUGboat* team

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1 Document preambles

```

1 <ltugboatcls | ltugproccls | ltugcomm>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile                {tugboat.dtx}
4 </dtx>
5 <ltugboatcls>\ProvidesClass  {ltugboat}
6 <ltugproccls>\ProvidesClass  {ltugproc}
7 <ltugboatsty>\ProvidesPackage{ltugboat}
8 <ltugprocsty>\ProvidesPackage{ltugproc}
9 <ltugcomm>    \ProvidesPackage{ltugcomm}
10              [2019-11-09 v2.22
11 <ltugboatcls>                TUGboat journal class%
12 <ltugproccls>                TUG conference proceedings class%
13 <ltugboatsty | ltugprocsty>  TUG compatibility package%
14 <ltugcomm>                    TUGboat 'common macros' package%
15 <*dtx>
16                               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>	(L)TeX
<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>	ConTeXt
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVD</code>	
<code>\DVI</code>	
<code>\DVIPDFMx</code>	DVIPDFMx
<code>\DVItOVDU</code>	DVItOVDU
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	ε -TeX
<code>\ExTeX</code>	ε_X TeX
<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 TeX
<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 TeX
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pcTeX</code>	

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

Macros for things that are slightly more significant.

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

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

<code>\meta</code>	meta-argument name <code>\meta{name}→⟨name⟩</code>
<code>\dash</code>	en-dash surrounded by thinspaces; only breakable AFTER
<code>\Dash</code>	em-dash, as above
<code>\hyph</code>	permit automatic hyphenation after an actual hyphen
<code>\slash</code>	‘breakable’ slash
<code>\nth</code>	for obtaining ‘1 st ’, ‘2 nd ’, 3 rd , etc.
<code>\tubissue</code>	gets <code>\TUB</code> followed by volume and issue numbers
<code>\xEdNote</code>	Editor’s Note:
<code>\Review:</code>	Review: (for title of book review article)
<code>\reviewitem</code>	begin data for item being reviewed
<code>\revauth</code>	with one argument, author(s) of item being reviewed
<code>\revtitle</code>	with one argument, title of ...
<code>\revpubinfo</code>	with one argument, other info pertaining to ...
<code>\endreviewitem</code>	end data for item being reviewed
<code>\booktitle</code>	with one argument, format book title in text
<code>\Input</code>	<code>\input</code> with some other bookkeeping for case where multiple articles are put together
<code>\TBremark</code>	reminder to <i>TUGboat</i> editorial staff
<code>\TBEnableRemarks</code>	enable <code>\TBremarks</code> (normally suppressed)
<code>\pagexref</code>	used to write out page numbers to screen and external files
<code>\pagexrefON</code>	
<code>\pagexrefOFF</code>	
<code>\xrefto</code>	used for symbolic cross-reference to other pages
<code>\xreftoON</code>	in <i>TUGboat</i>
<code>\xreftoOFF</code>	
<code>\TBdriver</code>	marks code which only takes effect when articles are run together in a driver file
<code>\signaturemark</code>	items for signatures
<code>\signaturewidth</code>	

3 L^AT_EX 2_ε *TUGboat* class file

3.1 Setup and options

Check for reloading. 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     % Insert draft date into the header even with [final], if we are not
58     % doing a production run. (tugboat.dates sets up page numbers
59     % above 900 in such pseudo-draft mode.) We use [final] in the first
60     % place for this case because draft can change page layout, wrt
61     % registration marks, etc.
62     \ifnum\value{page}>900 \PrelimDrafttrue \else \PrelimDraftfalse \fi
63     \@tubrunningfull
64   }%
65 }
```

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

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

Similarly, ignore one/two-side options.

```
71 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
72 \DeclareOption{twoside}{\ds@oneside}
```

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

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

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

```
77 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
78 \DeclareOption{harvardcite}{\let\if@Harvardcite\iftrue}
```

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

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

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

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

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

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

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

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


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

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

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

```
89 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
90 \ProcessOptions
91 \LoadClass[twoside]{article}
```

Various fonts used throughout. Some effort has been made to suppress these things with explicit sizes in the macro name (`\tensl` is an example below), but keeping in step with the documentation is one thing that restricts such a move.

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

This font selection command is used *only* for the ‘Editor’s Note’ introduction to notes; sadly it makes explicit reference to `CMR`, and Barbara Beeton has agreed that the reference may be constructed to use the current family such that, if no upright italic is defined, ordinary italics are used. A project for later...

```
96 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
97     \selectfont}
98 \ltugboatcls
```

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

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

```

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

```

3.2 Resetting at start of paper

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

```

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

```

3.3 Helpful shorthand (common code with Plain styles)

`\makeescape`, `\makecomment` allow users to change the category code of a single character a little more easily. These require that the character be addressed as a control sequence: e.g., `\makeescape\` will make `'/'` an escape character.

```

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

```

```

150 \def\makesup #1{\catcode'#1=7 }
151 \def\makesub #1{\catcode'#1=8 }
152 \def\makeignore#1{\catcode'#1=9 }
153 \def\makespace #1{\catcode'#1=10 }
154 \def\makeletter#1{\catcode'#1=11 }
155 \chardef\other=12
156 \let\makeother\@makeother
157 \def\makeactive#1{\catcode'#1=13 }
158 \def\makecomment#1{\catcode'#1=14 }

```

`\savecat#1` and `\restorecat#1` will save and restore the category of a given character. These are useful in cases where one doesn't wish to localize the settings and therefore be required to globally define or set things.

```

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

```

`\SaveCS#1` and `\RestoreCS#1` save and restore 'meanings' of control sequences. Again this is useful in cases where one doesn't want to localize or where global definitions clobber a control sequence which is needed later with its 'old' definition.

```

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

```

To distinguish between macro files loaded

```

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

```

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

```

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

```

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

3.4 Abbreviations and logos

Font used for the METAFONT logo, etc.

```

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

```

```

178 \def\AmSLaTeX{\AmS-\LaTeX}
179 \def\AmSTeX{\AmS-\TeX}
180 \def\ANSI{\acro{ANSI}}
181 \def\API{\acro{API}}
182 \def\ASCII{\acro{ASCII}}
183 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}
184 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
185 %
186 % make \BibTeX work in slanted contexts too; it's common in titles, and
187 % especially burdensome to hack in .bib files.
188 \def\Bib{%
189   \ifdim \fontdimen1\font>0pt
190     B{\SMC\SMC IB}%
191   \else
192     B\textsc{ib}%
193   \fi
194 }
195 \def\BibLaTeX{\Bib\kern.02em \LaTeX}
196 \def\BibTeX{\Bib\kern-.08em \TeX}
197 % no good way to determine bold font, and we want to lose the kern, too:
198 % (we \let BibTeX to this in maketitle)
199 \def\bfBibTeX{B{\SMC\SMC IB}\TeX}
200 %
201 \def\BSD{\acro{BSD}}
202 \def\CandT{\textsl{Computers \& Typesetting}}
203 % must not define \CJK, because the CJK package does.
204 %
205 % We place our \kern after \- so that it disappears if the hyphenation is taken:
206 \def\ConTeXt{C\kern-.0333em\-\kern-.0667em\TeX\kern-.0333em}
207 \def\CMkIV{\ConTeXt\ MkIV}
208 \def\Cplusplus{C\plusplus}
209 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
210 \def\CPU{\acro{CPU}}
211 \def\CSzabbr{\ensuremath{\cal C}\kern-.1667em\lower.5ex\hbox{\$cal S\$}}
212 \def\CSS{\acro{CSS}}
213 \def\CSTUG{\CSzabbr\acro{TUG}}
214 \def\CSV{\acro{CSV}}
215 \def\CTAN{\acro{CTAN}}
216 \def\DTD{\acro{DTD}}
217 \def\DTK{\acro{DTK}}
218 \def\DVD{\acro{DVD}}
219 \def\DVI{\acro{DVI}}
220 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
221 \def\DVItoVDU{DVIto\kern-.12em VDU}
222 \def\ECMA{\acro{ECMA}}
223 \def\EPS{\acro{EPS}}
224 % no line break at this hyphen please
225 \DeclareRobustCommand{\eTeX}{\ensuremath{\varepsilon}\mbox{-}\kern-.125em\TeX}
226 \DeclareRobustCommand{\ExTeX}{%
227   \ensuremath{\textstyle\varepsilon}_{\kern-0.15em\cal{X}}\kern-.2em\TeX}

```

```

226 \def\FAQ{\acro{FAQ}}
227 \def\FTP{\acro{FTP}}
228 \def\Ghostscript{Ghost\script}
229 \def\GNU{\acro{GNU}}
230 \def\GUI{\acro{GUI}}
231 \def\Hawaii{Hawai'i}
232 \def\HTML{\acro{HTML}}
233 \def\HTTP{\acro{HTTP}}
234 \def\iOS{i\acro{OS}}
235 \def\IDE{\acro{IDE}}
236 \def\IEEE{\acro{IEEE}}
237 \def\ISBN{\acro{ISBN}}
238 \def\ISO{\acro{ISO}}
239 \def\ISSN{\acro{ISSN}}
240 \def\JPEG{\acro{JPEG}}
241 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
242 \def\JoT{\textsl{The Joy of \TeX}}
243 \DeclareRobustCommand{\KOMAScript}{\textsf{K\kern.05em 0\kern.05em%
244     M\kern.05em A\kern.1em-\kern.1em Script}}
245 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
246     $\m@th$\fontsize\sf@size\z@\selectfont
247     $\m@th\mathcal{A}$}%
248     \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
249     {$\m@th\mathcal{S}$}-\TeX}
250 % This code
251 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
252 % example) to propagate into the raised (small) 'A':
253 % \begin{macrocode}
254 \DeclareRobustCommand{\La}%
255     {\L\kern-.36em
256     {\setbox0\hbox{T}%
257     \vbox to\ht0{\hbox{$\m@th$%
258         \csname S@\f@size\endcsname
259         \fontsize\sf@size\z@
260         \math@fontsfalse\selectfont
261         A}%
262         \vss}%
263     }}

```

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.

```

264 <!!latex> \def\LaTeX{\La\kern-.15em\TeX}
265 \def\LuaHBTeX{Lua\acro{HB}\-\TeX}%
266 \def\LuaHBLaTeX{Lua\acro{HB}\-\LaTeX}%
267 \def\LuaLaTeX{Lua\-\LaTeX}% dtk-logos defines it and people like to use it
268 \def\LuaTeX{Lua\-\TeX}% ditto
269 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}

```

```

270 \def\macOS{mac\acro{OS}}
271 \def\MacOSX{Mac\, \acro{OS},X}}
272 \def\MathML{Math\acro{ML}}
273 \def\Mc{\setbox\TestBox=\hbox{M}M\vbox
274   to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we're running under L^AT_EX 2_ε, we use 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`.

```

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

```

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

```

299 \def\Pas{Pascal}
300 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
301 \def\PCTeX{PC\thinspace\TeX}
302 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
303 \def\pdflatex{pdf\-\LaTeX}% dtk-logos
304 \def\pdfTEX{pdf\-\TeX}% dtk-logos
305 \def\PDF{\acro{PDF}}
306 \def\PGF{\acro{PGF}}
307 \def\PHP{\acro{PHP}}
308 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
309 \def\PiCTeX{\PiC\kern-.11em\TeX}
310 \def\plain{\texttt{plain}}
311 \def\PNG{\acro{PNG}}
312 \def\POBox{P.\thinspace 0.~Box }
313 \def\PS{{Post\-\Script}}

```

```

314 \def\PSTricks{\acro{PST}ricks}
315 \def\RTF{\acro{RTF}}
316 \def\SC{Steering Committee}
317 \def\SGML{\acro{SGML}}
318 \def\SliTeX{\textrm{S\kern-.06em\textsc{l\kern-.035emi}%
319             \kern-.06em\TeX}}
320 \def\slMF{\textsl{MF}} % should never be used
321 \def\SQL{\acro{SQL}}
322 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
323 \def\STIX{\acro{STIX}}
324 \def\SVG{\acro{SVG}}
325 \def\TANGLE{\texttt{TANGLE}\@}
326 \def\TB{\textsl{The \TeX book}}
327 \def\TIFF{\acro{TIFF}}
328 \def\TP{\textsl{\TeX}: \textsl{The Program}}
329 \DeclareRobustCommand{\TeX}{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
330 \def\TeXhax{\TeX hax}
331 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
332     \kern-.2267emG\@}
333 \def\TeXtures{\textit{Textures}}
334 \let\Textures=\TeXtures
335 \def\TeXworks{\TeX\kern-.07em works}
336 \def\TeXXeT{\TeX-{}-\XeT}
337 \def\TFM{\acro{TFM}}
338 \ifx\Umathchardef\@thisisundefined % xetex|luatex
339 \def\Thanh{H\`an\~Th\^e\llap{\raise 0.5ex\hbox{\`{}}}\~Th\`anh}% non-XeTeX
340 \else
341 \def\Thanh{H\`an\~Th\textcirc{e}\~Th\`anh}% else xunicode drops the acute
342 \fi
343 \def\TikZ{Ti{\em k}Z}
344 \def\TTN{\textsl{TTN}\@}
345 \def\TTN{\textsl{\TeX} and TUG News}}
346 \let\texttub\textsl % redefined in other situations
347 \def\TUB{\texttub{TUGboat}}
348 \def\TUG{\TeX\ \UG}
349 \def\tug{\acro{TUG}}
350 \def\UG{Users Group}
351 \def\UNIX{\acro{UNIX}}
352 % omit \UTF, since other packages use it for Unicode character access.
353 \def\VAX{V\kern-.12em A\kern-.1em X\@}
354 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
355 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{0\kern-1.4\p@ R}\kern-2.6\p@\TeX}
356 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
357 \def\XML{\acro{XML}}
358 \def\WEB{\texttt{WEB}\@}
359 \def\WEAVE{\texttt{WEAVE}\@}
360 \def\WYSIWYG{\acro{WYSIWYG}}

```

XeTeX requires reflecting the first E, hence we complain if the graphics pack-
age 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`.)

```

361 \def\tubreflect#1{%
362   \@ifundefined{reflectbox}{%
363     \TBerror{A graphics package must be loaded for \string\XeTeX}%
364   }{%
365     \ifdim \fontdimen1\font>0pt
366       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
367     \else
368       \reflectbox{#1}%
369     \fi
370   }%
371 }
372 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
373 \def\XekernbeforeE{-.125em}
374 \def\XekernafterE{-.1667em}
375 \DeclareRobustCommand{\Xe}{\leavevmode
376   \tubhideheight{\hbox{X%
377     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
378     \ifdim \fontdimen1\font>0pt
379       % XeTeX logo needs tinkering when slanted/italic font.
380       \def\XekernbeforeE{-.11em}%
381       \def\XekernafterE{-.11em}%
382       \dp1=-.17ex
383     \fi
384     \lower\dp0\hbox{\raise\dp1\hbox{\kern\XekernbeforeE\tubreflect{E}}}%
385     \kern\XekernafterE}}}
386 \def\XeTeX{\Xe\TeX}
387 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
388 %
389 \def\XHTML{\acro{XHTML}}
390 \def\XSL{\acro{XSL}}
391 \def\XSLFO{\acro{XSL}\raise.08ex\hbox{-}\acro{FO}}
392 \def\XSLT{\acro{XSLT}}

```

3.5 General typesetting rules

```

393 \newlinechar='^^J
394 \normallineskiplimit=\p@
395 \clubpenalty=10000
396 \widowpenalty=10000
397 \def\NoParIndent{\parindent=\z@}
398 \newdimen\normalparindent
399 \normalparindent=20\p@
400 \def\NormalParIndent{\global\parindent=\normalparindent}
401 \NormalParIndent
402 \def\BlackBoxes{\overfullrule=5\p@}
403 \def\NoBlackBoxes{\overfullrule=\z@}

```



```
404 \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.

```
405 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
406 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
407 \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`.

```
408 \newbox\T@stBox           \newbox\TestBox
409 \newcount\T@stCount      \newcount\TestCount
410 \newdimen\T@stDimen      \newdimen\TestDimen
411 \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).

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

L^AT_EX conventions which are also useful here.

```
413 <!*latex>
414 \let\@@input\input
415 \def\iinput#1{\@@input#1 }
416 \def\@inputcheck{\if\nextchar\bgroup
417 \expandafter\iinput\else\expandafter\@@input\fi}
418 \def\input{\futurelet\nextchar\@inputcheck}
419 </!latex>
```

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

```
420 \newif\iftop@           \newif\ifbot@
421 \def\topsmash{\top@true\bot@false\smash@}
422 \def\botsmash{\top@false\bot@true\smash@}
423 \def\smash{\top@true\bot@true\smash@}
424 \def\smash@{\relax\ifmode\def\next{\mathpalette\mathsm@sh}%
425 \else\let\next\makesm@sh\fi \next }
426 \def\fin@m@sh{\iftop@ht\z@\z@\fi\ifbot@dp\z@\z@\fi\box\z@}
```

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

```
427 \long\def\ulap#1{\vbox to \z@{\vss#1}}
428 \long\def\dlap#1{\vbox to \z@{\#1\vss}}
```

And centered horizontal and vertical ‘laps’

```
429 \def\xlap#1{\hb@xt@\z@\hss#1\hss}}
430 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
431 \long\def\zlap#1{\ylap{\xlap{#1}}}
```

Avoid unwanted vertical glue when making up pages.

```
432 \def\basezero{\baselineskip\z@skip \lineskip\z@skip}
```

Empty rules for special occasions

```
433 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
434 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

```
436 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
437     \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
438         \vss\hb@xt@#2{\vrule \@width\T@stDimen
439             \hfil\makestrut[#1;\z@]}%
440         \vrule \@width\T@stDimen}\vss
441         \hrule \@height\T@stDimen \@depth\z@}}
```

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

```
442 <*\latex>
443 \def\today{\number\day\space \ifcase\month\or
444     Jan \or Feb \or Mar \or Apr \or May \or Jun \or
445     Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
446     \number\year}
447 </!\latex>
```

Current time; this may be system dependent!

```
448 \newcount\hours
449 \newcount\minutes
450 \def\SetTime{\hours=\time
451     \global\divide\hours by 60
452     \minutes=\hours
453     \multiply\minutes by 60
454     \advance\minutes by-\time
455     \global\multiply\minutes by-1 }
456 \SetTime
457 \def\now{\number\hours:\ifnum\minutes<10 0\fi\number\minutes}
458 \def\Now{\today\ \now}
459 \newif\ifPrelimDraft
460 \def\midrttitle{} % center of running heads
461 \def\rtitlenexttopage{\ifPrelimDraft \textsl{\small draft: \Now}\fi}
```

3.7 Ragged right and friends

```

\raggedskip Plain TEX's definition of \raggedright doesn't permit any stretch, and results in
\raggedstretch too many overfull boxes. We also turn off hyphenation. This code lies somewhere
\raggedparfill between that of Plain TEX and of LATEX.
\raggedspaces 462 \newdimen\raggedskip \raggedskip=\z@
463 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
464 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil
465 \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 466 \def\raggedright{%
\normalspaces 467 \nohyphens
468 \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
469 \parfillskip=\raggedparfill
470 }
471 \def\raggedleft{%
472 \nohyphens
473 \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
474 \parfillskip=\z@skip
475 }
476 \def\raggedcenter{%
477 \nohyphens
478 \leftskip=\raggedskip\@plus\raggedstretch
479 \rightskip=\leftskip \raggedspaces
480 \parindent=\z@ \parfillskip=\z@skip
481 }
482 \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 `\` (`\DeclareRobustCommand` doesn't mind redefinition, fortunately). This is based on the version in AMS-T_EX—the L^AT_EX 2_ε version (`ltspace.dtx`) has `\leavevmode` and does not do anything with the surrounding space(s). Our version messes up with the `\pfill` used in doc-generated indexes (github.com/latex3/latex2e/issues/75), but later (2018++) versions of doc should be protected against our redefinition.

```

483 \let\latexpnobreakspace=\nobreakspace
484 \DeclareRobustCommand{\nobreakspace}{\unskip\nobreak\ \ignorespaces}

```

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

```

485 \def\boxcs#1{\box\csname#1\endcsname}
486 \def\setboxcs#1{\setbox\csname#1\endcsname}
487 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
488 \let\gobble\@gobble
489 \def\vellipsis{%
490   \leavevmode\kern0.5em
491   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
492 }
493 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
494 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
495 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
496   /\kern-.125em\smash{\lower.3ex\hbox{o}}}\ignorespaces}
497 \def\Dag{\raise .6ex\hbox{\scriptstyle\dagger}}
498 %
499 \DeclareRobustCommand{\sfrac}[1]{\@ifnextchar/{\@sfrac{#1}}%
500   {\@sfrac{#1}/}}
501 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
502   \hbox{\m@th\mbox{\fontsize\sf@size\z@
503     \selectfont#1}}\kern-.1em
504   /\kern-.15em\lower.25ex
505   \hbox{\m@th\mbox{\fontsize\sf@size\z@
506     \selectfont#2}}}}
507 %
508 % don't stay bold in description items, bold italic is too weird.
509 \DeclareRobustCommand\meta[1]{%
510   \ensuremath{\langle}%
511   \ifmmode \expandafter\mbox \fi % if in math
512   {\it #1\}/}% no typewriter italics, please
513   \ensuremath{\rangle}%
514 }
515 %
516 % Use \tt rather than \texttt because italic typewriter is just too ugly,
517 % and upright works well enough in both italic and bold contexts.
518 \DeclareRobustCommand{\cs}[1]{\tt \char'\@#1}
519 %
520 % This command was defined much later than the other, so let's not
521 % conflict with any existing definitions that might be out there.
522 % Don't allow hyphenations or other line breaks.
523 \DeclareRobustCommand{\tubbraced}[1]{\mbox{\texttt{\char'\@#1\char'\@}}}
524 %
525 % Well, just the \begin part. Never seen it used.
526 \DeclareRobustCommand{\env}[1]{\cs{begin}\tubbraced{#1}}
527 %
528 % Not sure why we ever want this instead of LaTeX's \, (using \kern),
529 % but fine, just keeping it.
530 \DeclareRobustCommand{\thinspace}{\hskip 0.16667em\relax}
531 %
532 % Make \! work in text mode.
533 \DeclareRobustCommand{\!}{\ifmmode\mskip-\thinmuskip \else\kern-0.16667em \fi}
534 %

```

```

535 % Half a thinspace.
536 \DeclareRobustCommand{\tubthinnerospace}
537   {\ifmmode\mskip.5\thinmuskip \else\kern0.08333em \fi}
538 \DeclareRobustCommand{\tubthinnerospace}
539   {\ifmmode\mskip-.5\thinmuskip \else\kern-0.08333em \fi}
540 %

```

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

```

541 \def\endash{--}
542 \def\emdash{\endash-}
543 \def\d@sh#1#2{\unskip#1\thinspace#2\thinspace\ignorespaces}
544 \def\dash{\d@sh\nobreak\endash}
545 \def\Dash{\d@sh\nobreak\emdash}
546 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
547 \def\rdash{\d@sh\nobreak\endash}
548 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
549 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

550 \def\hyph{-\penalty\z@\hskip\z@skip }
551 \def\slash{/\penalty\z@\hskip\z@skip }

```

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

```

552 \def\_nth#1{%
553   \def\reserved@a##1##2\@nil{\ifcat##1n%
554     0%
555     \let\reserved@b\ensuremath
556     \else##1##2%
557     \let\reserved@b\relax
558     \fi}%
559   \TestCount=\reserved@a#1\@nil\relax
560   \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
561   \T@stCount=\TestCount
562   \divide\T@stCount by 100 \multiply\T@stCount by 100
563   \advance\TestCount by-\T@stCount % n mod 100
564   \ifnum\TestCount >20 \T@stCount=\TestCount
565     \divide\T@stCount by 10 \multiply\T@stCount by 10
566     \advance\TestCount by-\T@stCount % n mod 10
567   \fi
568   \reserved@b{#1}%
569   \textsuperscript{\ifcase\TestCount th%      0th
570                     \or st%                  1st
571                     \or nd%                  2nd
572                     \or rd%                  3rd
573                     \else th%                nth
574                     \fi}%
575 }

```

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...

```
576 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
577 \def\@Review:{\@ifnextchar[%]
578   {\@Rev}%
579   {\@Rev[Book review]}}
580 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
581                   \slshape\mdseries#2}}
582 \def\reviewitem{\addvspace{\BelowTitleSkip}}%
583   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
584   \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
585   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
586 }
587 \def\endreviewitem{{\noindent\interlinepenalty=10000
588   \therevauth\therevtitle\therevpubinfo\endgraf}%
589   \vskip\medskipamount
590 }
591 \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.

```
592 \newcount\issueseqno           \issueseqno=-1
593 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
594 \def\volyr{}
595 \def\volno{}
596 \def\vol #1,#2.{\gdef\volno{#1\unskip}}%
597   \gdef\issno{\ignorespaces#2\unskip}%
598   \setbox\TestBox=\hbox{\volyr}%
599   \ifdim \wd\TestBox > .2em \v@lx \fi }
```

```

600 \def\issyear #1.{\gdef\issdt{#1}\gdef\volyr{#1}%
601     \gdef\bigissdt{#1}%
602     \setbox\TestBox=\hbox{\volno}%
603     \ifdim \wd\TestBox > .2em \v@l{x \fi }
604 \def\issdate #1#2 #3.{\gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
605     \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
606     \setbox\TestBox=\hbox{\volno}%
607     \ifdim \wd\TestBox > .2em \v@l{x \fi }
608 \vol 0, 0.
609 \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

```

610 <!\latex>\def\tubissue#1(#2)%
611 <*\latex>
612 \def\tubissue#1{\@ifnextchar(%)
613   {\@tubissue@b{#1}}
614   {\@tubissue@a{#1}}}}
615 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
616 \def\@tubissue@a#1#2%
617 </\latex>
618 {\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`

```

619 \def\infil@{\jobname}
620 \def\Input #1 {\ifnum\issueseqno<0
621   \def\infil@{#1}%
622   \else
623     \def\infil@{tb\number\issueseqno#1}
624   \fi
625   \edef\jobname{\infil@}\@readFLN
626   \@input \infil@\relax
627   \if@RMKopen
628     \immediate\closeout\@TBremarkfile\@RMKopenfalse
629   \fi
630 }

```

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

```

631 \newif\if@RMKopen      \@RMKopenfalse
632 \newwrite\@TBremarkfile
633 \def\@TBremark#1{%

```

```

634 \if@RMKopen
635 \else
636   \@RMKopentruer\immediate\openout\@TBremarkfile=\infil@.rmk
637 \fi
638 \toks@={#1}%
639 \immediate\write\@TBremarkfile{^^J\the\toks@}%
640 \immediate\write16{^^JTBremark:: \the\toks@^^J}%
641 }

```

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

```
642 \let\TBremark=\gobble
```

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

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

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

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

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

```

645 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
646 \newread\@altfilenames
647 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
648 \ifeof\@altfilenames\let\@result\relax\else
649 \def\@result{\@input\jobname.fln }\fi
650 \immediate\closein\@altfilenames
651 \@result}
652 \@readFLN
653 \everyjob=\expandafter{\the\everyjob\@readFLN}
654 \InputIfFileExists{\jobname.fln}%
655 {\TBInfo{Reading alternative file file \jobname.fln}}{}

```

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

```

656 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
657 #1\else\csname file@@#1\endcsname\fi}
658 \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.

```

659 <*\latex>
660 \def\pagexrefON#1{%
661   \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
662   \write\ppoutfile{%
663     \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
664   }

```



```

665 \def\PageXrefON#1{%
666     \immediate\write-1{\def\expandafter
667         \noexpand\csname#1\endcsname{\number\pageno}}}%
668     \immediate\write\ppoutfile{\def\expandafter
669         \noexpand\csname#1\endcsname{\number\pageno}}}}
670 </!latex>
671 <*latex>
672 \def\pagexrefON#1{%
673     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
674     \write\ppoutfile{%
675         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}}%
676     }
677 \def\PageXrefON#1{%
678     \immediate\write-1{\def\expandafter
679         \noexpand\csname#1\endcsname{\number\c@page}}}%
680     \immediate\write\ppoutfile{\def\expandafter
681         \noexpand\csname#1\endcsname{\number\c@page}}}}
682 </latex>
683 \def\pagexrefOFF#1{}
684 \let\pagexref=\pagexrefOFF
685 \def\PageXrefOFF#1{}
686 \let\PageXref=\PageXrefOFF
687 \def\xreftoON#1{%
688     \ifundefined{#1}%
689         ???\TBremark{Need cross reference for #1.}%
690         \else\csname#1\endcsname\fi}
691 \def\xreftoOFF#1{???}
692 \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.

```
693 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```

694 \ifx\tubomithyphenations\@thisisundefined
695 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
696 Flor-i-da Free-BSD Ghost-script Ghost-view
697 Hara-lam-bous Jac-kow-ski Karls-ruhe
698 Mac-OS Ma-la-ya-lam Math-Sci-Net
699 Net-BSD Open-BSD Open-Office
700 Pfa-Edit Post-Script Rich-ard Skoup South-all
701 Vieth VM-ware Win-Edt
702 acro-nym acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
703 bib-lio-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
704 col-umns com-put-able com-put-abil-ity cus-tom-iz-able
705 data-base data-bases
706 de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
707 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able

```

```

708 es-sence
709 fall-ing
710 half-way
711 in-fra-struc-ture
712 key-note
713 long-est
714 ma-gyar man-u-script man-u-scripts meta-table meta-tables
715 mne-mon-ic mne-mon-ics mono-space mono-spaced
716 name-space name-spaces
717 off-line over-view
718 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
719 pipe-line pipe-lines
720 plug-in plug-ins pres-ent-ly pro-gram-mable
721 re-allo-cate re-allo-cates re-allo-cated re-printed
722 set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
723 sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
724 text-height text-length text-width
725 time-stamp time-stamped time-stamps
726 vis-ual vis-u-al-ly
727 which-ever white-space white-spaces wide-spread wrap-around
728 }
729 \fi
730 <!!latex>\restorecat\@
731 </common>
732 <*classtail>
733 \PrelimDraffttrue

```

3.10 Page dimensions, glue, penalties etc

```

734 \textheight 54pc
735 \textwidth 39pc
736 \columnsep 1.5pc
737 \columnwidth 18.75pc
738 \hfuzz 1pt
739 \parindent \normalparindent
740 \parskip \z@ % \@plus\p@
741 \leftmargini 2em
742 \leftmarginiv .5em
743 \leftmarginvi .5em
744 \oddsidemargin \z@
745 \evensidemargin \z@
746 \topmargin -2.5pc
747 \headheight 12\p@
748 \headsep 20\p@
749 \marginparwidth 48\p@
750 \marginparsep 10\p@
751 \partopsep=\z@
752 \topsep=3\p@\@plus\p@\@minus\p@
753 \parsep=3\p@\@plus\p@\@minus\p@
754 \itemsep=\parsep

```

```

755 %
756 % Ordinarily we typeset in two columns, but the onecolumn option
757 % goes to one. In which case we want to center the text block on an
758 % 8.5in width, given the default 72.27pt offset with margins of zero.
759 % We are always in LaTeX's twoside mode because of how we load article,
760 % and this is a good thing, since we want different headings.
761 \if@tubtwocolumn \twocolumn \else
762 \onecolumn
763 \textwidth=34pc
764 \oddsidemargin=30.8775pt
765 \evensidemargin=\oddsidemargin
766 \fi
767 %
768 \newdimen\pagewd \pagewd=\textwidth
769 \newdimen\trimwd \trimwd=\pagewd
770 \newdimen\trimlgt \trimlgt=11in
771 \newdimen\headmargin \headmargin=3.5pc

```

In $\text{\LaTeX} 2_{\epsilon}$, `twoside` option is forced on when `article.cls` is loaded.

3.11 Messing about with the \LaTeX logo

Barbara Beeton's pleas for \LaTeX logos that look right in any font shape provoked me to generate the following stuff that is configurable.

Here's the command for the user to define a new version. The arguments are font family, series and shape, and then the two kern values used in placing the raised 'A' of \LaTeX .

```

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

```

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

```

774 \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.

```

775 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
776 \DeclareLaTeXLogo{lmss}{bx}{n}{.3}{.15}
777 %
778 \DeclareLaTeXLogo{cmr}{m}{it}{.29}{.2}
779 \DeclareLaTeXLogo{lmr}{m}{it}{.29}{.2}
780 %
781 \DeclareLaTeXLogo{cmr}{m}{sl}{.29}{.15}
782 \DeclareLaTeXLogo{lmr}{m}{sl}{.29}{.15}
783 %
784 \DeclareLaTeXLogo{cmr}{bx}{it}{.29}{.2}
785 \DeclareLaTeXLogo{lmr}{bx}{it}{.29}{.2}
786 %
787 \DeclareLaTeXLogo{cmr}{bx}{sl}{.29}{.2}
788 \DeclareLaTeXLogo{lmr}{bx}{sl}{.29}{.2}

```

```

789 %
790 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
791 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}

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

792 \DeclareRobustCommand{\LaTeX}{\expandafter\let\expandafter\reserved@a
793 \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
794 \ifx\reserved@a\relax\let\reserved@a@LaTeX@default\fi
795 \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 ver-
      sions are added as needed.

796 \newcommand{\@LaTeX}[2]{%
797 %\wlog{latex logo family=\f@family/\f@series/\f@shape -> #1, #2.}%
798 L\kern-#1em
799 {\sbox\z@ T%
800 \vbox to\ht0{\hbox{\m@th$%
801 \csname S@\f@size\endcsname
802 \fontsize\sf@size\z@
803 \math@fontsfalse\selectfont
804 A}%
805 \vss}%
806 }%
807 \kern-#2em%
808 \TeX}

```

3.12 Authors, contributors, addresses, signatures

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

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

```

809 \def\theauthor#1{\csname theauthor#1\endcsname}
810 \def\theaddress#1{\csname theaddress#1\endcsname}
811 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
812 \def\thePersonalURL#1{\csname thePersonalURL#1\endcsname}
813 \def\theORCID#1{\csname theORCID#1\endcsname}

```

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

```
814 <!\latex>\newcount\@tempcnta
815 \def\@defaultauthorlist{%
816   \@getauthorlist\@firstofone
817 }
```

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

```
818 \def\@getauthorlist#1{%
819   \count@\authornumber
820   \advance\count@ by -2
821   \@tempcnta0
```

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

```
822 \loop
823   \ifnum\count@>0
824     \advance\@tempcnta by \@ne
825     #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
826     \advance\count@ by \m@ne
827 \repeat
828 \count@\authornumber
829 \advance\count@ by -\@tempcnta
830 \ifnum\authornumber>0
```

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

```
831   \ifnum\count@>1
832     \count@\authornumber
833     \advance\count@ by \m@ne
834     #1{\ignorespaces\theauthor{\number\count@}\unskip\@tubauthorlastsep}%
835   \fi
```

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

```
836   #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
837 \fi
838 }
839 %
840 \def\@tubauthorlastsep{, }% until 2018, was: "\ and "
```

Signature blocks. The author can (in principle) define a different sort of signature block using `\signature`, though this could well cause the editorial group to have collective kittens (unless it had been discussed in advance...)

```
841 \def\signature#1{\def\@signature{#1}}
842 \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`

```

843 \def\@defaultsignature{%
844     \let\thanks@gobble
845     \frenchspacing
846     %
847     \ifnum\authornumber<0

if \authornumber < 0, we are in a contributor's section
848     \medskip
849     \signaturemark
850     \theauthor{\number\authornumber}\\
851     \theaddress{\number\authornumber}\\
852     \allowhyphens
853     \thenetaddress{\number\authornumber}\\
854     \thePersonalURL{\number\authornumber}\\
855     \theORCID{\number\authornumber}\\
856     \else

\authornumber ≥ 0, so we are in the body of an ordinary article
857     \count@=0
858     \loop
859     \ifnum\count@<\authornumber
860         \medskip
861         \advance\count@ by \@ne
862         \signaturemark
863         \theauthor{\number\count@}\\
864         \theaddress{\number\count@}\\
865         {%
866             \allowhyphens
867             \thenetaddress{\number\count@}\\
868             \thePersonalURL{\number\count@}\\
869             \theORCID{\number\count@}\\
870         }%
871     \repeat
872     \fi
873 }%
874 }
875 \newdimen\signaturewidth \signaturewidth=12pc

```

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

```

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

```

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

```

877 \@tempdima\signaturewidth
878 \advance\@tempdima 1.5pc
879 \ifdim \@tempdima>\columnwidth
880     \signaturewidth \columnwidth

```

```

881 \advance\signaturewidth -1.5pc
882 \fi
883 \par
884 \penalty9000
885 \vspace{#1}%
886 \rightline{%
887 \vbox{\hsize\signaturewidth \ninepoint \raggedright
888 \parindent \z@ \everypar={\hangindent 1pc }%
889 \parskip \z@skip
890 \def\|{\unskip\hfil\break}%
891 \def\|\{\endgraf}%
892 \def\phone{\rm Phone: }%
893 \def\tubmultipleaffilauthor{\|\hspace*{1em}}%
894 \rm\@signature}%
895 }%
896 \ifnum\authornumber<0 \endgroup\fi
897 }

```

```

898 \def\signaturemark{\leavevmode\llap{${\diamond}$\enspace}}

```

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

```

899 \def\tubmultipleaffilauthor{\unskip, \ignorespaces}%
900 \def\tubmultipleaffilnet{\unskip\textrm{\,,\ \ignorespaces}}

```

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

```

901 \newcount\authornumber
902 \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`).

```

903 \def\author{%
904 \global\advance\authornumber\@ne
905 \TB@author
906 }

```

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

```

907 \def\contributor{%
908 \begingroup
909 \authornumber\m@ne
910 \TB@author
911 }

```

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

```

912 \def\TB@author#1{%
913   \expandafter\def\csname theauthor\number\authornumber\endcsname
914     {\ignorespaces#1\unskip}%
915   \expandafter\def\csname theaddress\number\authornumber\endcsname
916     {\TBwarningNL{Address for #1\space missing}\@gobble}%
917   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
918     {\TBwarningNL{Net address for #1\space missing}\@gobble}%
919   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
920     \@gobble
921   \expandafter\let\csname theORCID\number\authornumber\endcsname
922     \@gobble
923 }
924 \def\EDITORnoaddress{%
925   \expandafter\let\csname theaddress\number\authornumber\endcsname
926     \@gobble
927 }
928 \def\EDITORnonetaddress{%
929   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
930     \@gobble
931 }

```

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

```

932 \def\address#1{%
933   \expandafter\def\csname theaddress\number\authornumber\endcsname
934     {\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!*

```

935 \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.

```

936 \newcommand{\netaddress}[1][\relax]{%
937   \begingroup
938   \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.

```
939 #1\@sanitize\makespace\ \makeactive\@%
940 \makeescape! \makebgroup[ \makeegroup]% seems more useful than literals
941 \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?!*)

```
942 \def\@relay@netaddress#1{%
943   \ProtectNetChars
944   \expandafter\protected@xdef
945     \csname thenetaddress\number\authornumber\endcsname
946     {\protect\leavevmode\textrm{\@network}%
947     {\protect\NetAddrChars\net
948     \ignorespaces#1\unskip}}%
949   \endgroup
950 }
```

`\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.

```
951 \def\personalURL{\begingroup
952   \@sanitize\makespace\ \makeactive\@
953   \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
954 \def\@personalURL#1{%
955   \ProtectNetChars
956   \expandafter\protected@xdef
957     \csname thePersonalURL\number\authornumber\endcsname{%
958     \protect\leavevmode
959     {%
960       \protect\URLchars\net
961       \ignorespaces#1\unskip
962     }%
963   }%
964 \endgroup
965 }
```

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...

```
966 {%
967   \makecomment\*
968   \makeactive\@
969   \gdef\netaddrat{\makeactive\@*
970     \def@{\discretionary{\char"40}{\char"40}}
971   \makeactive\%
```

```

972 \gdef\netaddrpercent{\makeactive\%*
973   \def%{\discretionary{\char"25}{\char"25}}
974 \makeactive\
975 \gdef\netaddrdot{\makeactive\.*
976   \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`.

```

977 \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
978 \makeactive\
979 \gdef\URLchars{*
980   \NetAddrChars
981   \makeactive\/*
982   \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.

```

983 \gdef\ProtectNetChars{*
984   \def@{\protect@}*
985   \def%{\protect%}*
986   \def.{\protect.}*
987   \def/{\protect/}*
988   }
989 }

```

$\text{\LaTeX } 2_{\epsilon}$ (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 $\text{\LaTeX } 2_{\epsilon}$ defines for the job).

```

990 \if@compatibility
991   \DeclareRobustCommand{\net}{\normalfont\ttfamily\mathgroup\syntypewriter}
992 \else
993   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
994 \fi
995 \def\authorlist#1{\def\@author{#1}}
996 \def\@author{\@defaultauthorlist}

```

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

```

997 \def\ORCID#1{%
998   \expandafter\def\csname theORCID\number\authornumber\endcsname
999     {\leavevmode \ignorespaces {\SMC ORCID} #1\unskip}}

```

For the online re-publication (as of 2009) by Mathematical Sciences Publishers <http://mathscipub.org>, lots and lots of metadata is needed, much of it redundant with things we already do. They are flexible enough to allow us to specify it in any reasonable way, so let's make one command `\mspmetavar` which takes two

arguments. Example: `\mspmetavar{volumenumber}{30}`. For our purposes, it is just a no-op. And this initiative never came to anything, so it is not used at all.

`\mspmetavar`

```
1000 \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.

```
1001 \newif\if@articletitle
1002 \def\maketitle{\@ifstar
1003   {\@articletitlefalse\@r@maketitle}%
1004   {\@articletitletrue\@r@maketitle}%
1005 }
1006 \def\@r@maketitle{\par
1007   \ifdim\PreTitleDrop > \z@
1008     \loop
1009     \ifdim \PreTitleDrop > \textheight
1010       \vbox{\vfil\@eject
1011         \advance\PreTitleDrop by -\textheight
1012       \repeat
1013     \vbox to \PreTitleDrop{}
1014     \global\PreTitleDrop=\z@
1015   \fi
1016   \begingroup
1017   \setcounter{footnote}{0}
1018   \global\@topnum\z@ % disallow floats above the title
1019   \def\thefootnote{\fnsymbol{footnote}}
1020   \@maketitle
1021   \@thanks
1022   \endgroup
1023   \setcounter{footnote}{0}
1024   \gdef\@thanks{}
1025 }
```

`\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.

```
1026 \def\rhTitle{}% avoid error if no author or title
1027 \renewcommand{\title}{\@dblarg\TB@title}
1028 \def\TB@title[#1]#2{\gdef\@title{#2}%
```

```

1029 \bgroup
1030   \let\thanks@gobble
1031   \def\{\unskip\space\ignorespaces}%
1032   \protected@xdef\rhTitle{#1}%
1033 \egroup
1034 }

```

`\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.

```

1035 \def\shortTitle #1{\def\rhTitle{#1}}
1036 \newif\ifshortAuthor
1037 \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:

```

1038 \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).

```

1039 \newdimen\stbaselineskip      \stbaselineskip=18\p@
1040 \newdimen\stfontheight
1041 \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.

```

1042 \newif\ifWideSecTitle
1043 \newif\iftubtitlerulefullwidth
1044 \newif\ifSecTitle \SecTitlefalse
1045 \newcommand{\sectitle}{%
1046   \SecTiteltrue
1047   \ifstar
1048     {\WideSecTiteltrue\def\s@ctitle}%
1049     {\WideSecTitelfalse\def\s@ctitle}%
1050 }

```

`\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.

```

1051 \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.

```
1052 \newskip\AboveTitleSkip \AboveTitleSkip=12\p@
1053 \newskip\BelowTitleSkip \BelowTitleSkip=8\p@
1054 \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...

```
1055 \def\@sectitle #1{%
1056   \par
1057   \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.

```
1058   \ifWideSecTitle\else\secsep\fi
1059   {%
1060     \fboxrule\strulethickness
1061     \fboxsep\z@
1062     \noindent\framebox[\hsize]{%
1063       \vbox{%
1064         \raggedcenter
1065         \let\\\@sectitle@newline
1066         \sectitlefont
1067         \makestrut[2\stfontheight;\z@]%
1068         #1%
1069         \makestrut[\z@;\stfontheight]\endgraf
1070       }%
1071     }%
1072   }%
1073   \nobreak
1074   \vskip\baselineskip
1075 }
```

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

```
1076 \newcommand{\@sectitle@newline}[1][\z@]{%
1077   \ifdim#1>\z@
1078     \makestrut[\z@;#1]%
```

```

1079 \fi
1080 \unskip\break
1081 }

```

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).

```

1082 \def\@makesectitle{\ifSecTitle
1083   \global\SecTitlefalse
1084   \ifWideSecTitle
1085     \twocolumn[\@sectitle{\s@ctitle}]%
1086     \global\WideSecTitlefalse
1087   \else
1088     \@sectitle{\s@ctitle}%
1089   \fi
1090 \else
1091   \vskip\AboveTitleSkip
1092   \kern\topskip
1093   \hrule \@height\z@ \@depth\z@ \@width 10\p@
1094   \kern-\topskip
1095   \kern-\strulethickness
1096   \iftubtitlerulefullwidth
1097     \hrule \@height\strulethickness \@depth\z@ width\textwidth
1098   \else
1099     \hrule \@height\strulethickness \@depth\z@
1100   \fi
1101   \kern\medskipamount
1102   \nobreak
1103 \fi
1104 }

```

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

```

1105 \def\@maketitle{%
1106   \@makesectitle
1107   \if@articletitle{%
1108     \nohyphens \interlinepenalty\@M
1109     \setbox0=\hbox{%
1110       \let\thanks\@gobble
1111       \let\=\quad
1112       \let\and=\quad
1113       \ignorespaces\@author}%
1114     {%
1115       \noindent\bf\raggedright\ignorespaces\frenchspacing
1116       \let\BibTeX=\bfBibTeX % else LaTeX Font Warning:
1117                             %      Font shape 'OT1/cmr/bx/sc' undefined
1118       \@title\endgraf
1119     }%
1120     \ifdim \wd0 < 5\p@           % omit if author is null
1121     \else

```

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

```

1122     \nobreak \vskip 4\p@
1123     {%
1124     \leftskip=\normalparindent
1125     \raggedright
1126     \def\and{\unskip\}%
1127     \noindent\@author\endgraf
1128     }%
1129     \fi
1130     \nobreak
1131     \vskip\BelowTitleSkip
1132 } \fi%
1133 \global\@afterindentfalse
1134 \aftergroup\@afterheading
1135 }

```

Dedications are ragged right, in italics.

```

1136 \newenvironment{dedication}%
1137   {\raggedright\noindent\itshape\ignorespaces}%
1138   {\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.

```

1139 \def\@tubonecolumnabstractstart{%
1140     \list{}{\listparindent\normalparindent
1141     \itemindent\z@ \leftmargin\@tubfullpageindent
1142     \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1143 }
1144 \def\@tubonecolumnabstractfinish{%
1145     \endlist
1146 }
1147 \renewenvironment{abstract}%
1148   {\begin{SafeSection}%
1149     \section*{%
1150       \if@tubtwocolumn\else \hspace*{\@tubfullpageindent}\fi
1151       Abstract}%
1152     \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1153   }%
1154   {\if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1155     \end{SafeSection}}
1156 \newenvironment{longabstract}%
1157   {\begin{SafeSection}%
1158     \section*{Abstract}%
1159     \bgroup\small
1160   }%
1161   {\endgraf\egroup
1162     \end{SafeSection}%
1163     \vspace{.25\baselineskip}

```

```

1164 \begin{center}
1165   {$--*--$}
1166 \end{center}
1167 \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.

```

1168 \if@numbersec
1169   \def\section{\TB@startsection{{section}}%
1170                               1%
1171                               \z@
1172                               {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1173                               {4\p@}%
1174                               {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1175   \def\subsection{\TB@startsection{{subsection}}%
1176                               2%
1177                               \z@
1178                               {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1179                               {4\p@}%
1180                               {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1181   \def\subsubsection{\TB@startsection{{subsubsection}}%
1182                               3%
1183                               \z@
1184                               {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1185                               {4\p@}%
1186                               {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1187   \def\paragraph{\TB@startsection{{paragraph}}%
1188                               4%
1189                               \z@
1190                               {4\p@ \@plus1\p@ \@minus1\p@}%
1191                               {-1em}%
1192                               {\normalsize\bf}}

```

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

```

1193 \else
1194   \setcounter{secnumdepth}{0}
1195   \def\section{\TB@nolimelabel
1196               \TB@startsection{{section}}%
1197               1%

```



```

1198             \z@
1199             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1200             {4\p@}%
1201             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1202 \def\subsection{\TB@nolimelabel
1203             \TB@startsection{{subsection}%
1204             2%
1205             \z@
1206             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1207             {-0.5em\@plus-\fontdimen3\font}%
1208             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1209 \def\subsubsection{\TB@nolimelabel
1210             \TB@startsection{{subsubsection}%
1211             3%
1212             \parindent
1213             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1214             {-0.5em\@plus-\fontdimen3\font}%
1215             {\normalsize\bf\raggedright\hyphenpenalty=\@M}}
1216 \fi

```

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

```
1217 \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).

```
1218 \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.

```

1219 \newenvironment{SafeSection}%
1220 {\let\TB@startsection\TB@safe@startsection}%
1221 {}

```

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

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

¹Thurber, *The Wonderful O*

```

1222 \if@numbersec
1223   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1224 \else
1225   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1226   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1227 \fi
1228 \def\chapter{\TB@nosection\chapter\section}
1229 \def\part{\TB@nosection\part\section}
1230 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1231   \string#2\space used instead}#2}

```

`\l@<sectioning-name>` is for table of contents (of an article). We define new macros to allow easily changing the font used for toc entries (for *TUGboat*, we usually want roman, not bold), and the space between entries. Nelson Beebe and Frank Mittelbach's articles often have toc's (and few others). Also turn off microtype protrusion after

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or leaders get messed up.

```

1232 \def\TBtocsectionfont{\normalfont}
1233 \newskip\TBtocsectionspace \TBtocsectionspace=1.0ex\@plus\p@
1234 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1235   \addvspace{\TBtocsectionspace}%
1236   \@tempdima 1.5em
1237   \begingroup
1238     \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1239     \parfillskip\z@
1240     \TBtocsectionfont
1241     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1242     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1243   \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 (`\TBnolime-label` happens before the `\refstepcounter`, so its effects get lost ... what a clever piece of design that was). So here we go:

```

1244 \renewcommand{\appendix}{\par
1245   \renewcommand{\thesection}{\@Alph\c@section}%
1246   \setcounter{section}{0}%
1247   \if@numbersec
1248   \else
1249     \setcounter{secnumdepth}{1}%
1250   \fi

```

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

```

1251 \def\@tempa{appendix}
1252 \ifx\@tempa\@currentvir
1253   \expandafter\@appendix@env
1254 \fi
1255 }

      Here we deal with \begin{appendix}[\langle app-name \rangle]
1256 \newcommand{\app@prefix@section}{}
1257 \newcommand{\@appendix@env}[1][Appendix]{%
1258   \renewcommand{\@secntformat}[1]{\csname app@prefix@##1\endcsname
1259     \csname the##1\endcsname\quad}%
1260   \renewcommand{\app@prefix@section}{#1 }%
1261 }

```

Ending an appendix environment is pretty trivial...

```

1262 \let\endappendix\relax

```

3.17 References

If the sections aren't numbered, the natural tendency of the author to cross-reference (which, after all, is one of the things L^AT_EX is for ever being advertised as being good at) can cause headaches.

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

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

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

```

1263 \def\TB@nolimelabel{%
1264   \def\@currentlabel{%
1265     \protect\TBwarning{%
1266       Invalid reference to numbered label on page \thepage
1267       \MessageBreak made%
1268     }%
1269   \textbf{?!?}%
1270 }%
1271 }

```

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.

```
1272 \let\TB@@sect\@sect
1273 \let\TB@@ssect\@ssect
1274 \def\@sect#1#2#3#4#5#6[#7]#8{%
1275   \def\@currentlabelname{#7}%
1276   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
1277 }
1278 \def\@ssect#1#2#3#4#5{%
1279   \def\@currentlabelname{#5}%
1280   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1281 }
```

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>`.

```
1282 \let\@savelatexlabel=\label % so save original LaTeX command
1283 %
1284 \def\label#1{% de
1285   \@savelatexlabel{#1}%
1286   \@bsphack
1287   \if@filesw
1288     \protected@write\@auxout{%
1289       {\string\newlabel{nr@#1}{\@currentlabel}{\@currentlabelname}}}%
1290   \fi
1291   \@esphack
1292 }
```

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

```
1293 \let\@currentlabelname\@empty
```

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

```
1294 \DeclareRobustCommand{\nameref}[1]{\expandafter\@setref
1295   \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`

```
1296 \newdimen\@tubfullpageindent
1297 \@tubfullpageindent = \if@tubtwocolumn 4.875pc \else 3.875pc \fi
1298 \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`

```
1299 \let\tubcaptionleftglue=\hfil
```

Ok, here is `\@makecaption`.

```
1300 \def\tubcaptionfonts{\small}%
1301 \long\def\@makecaption#1#2{%
1302   \vskip\abovecaptionskip
1303   \sbox\@tempboxa{\tubcaptionfonts \frenchspacing \tubmakecaptionbox{#1}{#2}}% try in an hbox
1304   \ifdim \wd\@tempboxa > \hsize
1305     {% caption doesn't fit on one line; set as a paragraph.
1306       \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1307       % indent full-width captions {figure*}, but not single-column {figure}.
1308       \ifdim\hsize = \textwidth
1309         \leftskip=\@tubfullpageindent \rightskip=\leftskip
1310         \advance\rightskip by 0pt plus2em % increase acceptable raggedness
1311       \fi
1312       \noindent \tubmakecaptionbox{#1}{#2}\par}%
1313   \else
1314     % fits on one line; use the hbox, centered. Do not reset its glue.
1315     \global\@minipagefalse
1316     \hb@xt@\hsize{\tubcaptionleftglue\box\@tempboxa\hfil}%
1317   \fi
1318   \vskip\belowcaptionskip}
1319 %
1320 \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.

```
1321 \def\fnun@figure{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}
1322 \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.

```
1323 \setlength\abovecaptionskip{6pt plus1pt minus1pt}
```

3.20 Size changing commands

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

```
1324 \renewcommand{\normalsize}{%
1325   \@setfontsize\normalsize\@xpt\@xiipt
```

```

1326 \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1327 \belowdisplayskip=\abovedisplayskip
1328 \abovedisplayshortskip=\z@\@plus 3\p@
1329 \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1330 }
1331
1332 \renewcommand{\small}{%
1333   \@setfontsize\small\@ixpt{11}%
1334   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1335   \belowdisplayskip=\abovedisplayskip
1336   \abovedisplayshortskip=\z@\@plus 2\p@
1337   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1338 }
1339
1340 \renewcommand{\footnotesize}{%
1341   \@setfontsize\footnotesize\@viiipt{9.5}%
1342   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1343   \belowdisplayskip=\abovedisplayskip
1344   \abovedisplayshortskip=\z@\@plus 3\p@
1345   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1346 }

```

3.21 Lists and other text inclusions

```

1347 \def\@listi{%
1348   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1349   \itemsep=\parsep
1350   \listparindent=1em
1351 }
1352
1353 \def\@listii{%
1354   \leftmargin\leftmarginii
1355   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1356   \topsep=2\p@\@plus\p@\@minus\p@
1357   \parsep=\p@\@plus\p@\@minus\p@
1358   \itemsep=\parsep
1359   \listparindent=1em
1360 }
1361
1362 \def\@listiii{%
1363   \leftmargin=\leftmarginiii
1364   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1365   \topsep=\p@\@plus\p@\@minus\p@
1366   \parsep=\z@
1367   \itemsep=\topsep
1368   \listparindent=1em
1369 }
1370 \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.

```

1371 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1372   \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}
```

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

```

1373 \newenvironment{compactitemize}%
1374   {\begin{itemize}%
1375     \setlength{\itemsep}{0pt}%
1376     \setlength{\parskip}{0pt}%
1377     \setlength{\parsep}{0pt}%
1378   }%
1379   {\end{itemize}}
1380 %
1381 \newenvironment{compactenumerate}%
1382   {\begin{enumerate}%
1383     \setlength{\itemsep}{0pt}%
1384     \setlength{\parskip}{0pt}%
1385     \setlength{\parsep}{0pt}%
1386   }%
1387   {\end{enumerate}}
1388 %
1389 \newenvironment{compactdescription}%
1390   {\begin{description}%
1391     \setlength{\itemsep}{0pt}%
1392     \setlength{\parskip}{0pt}%
1393     \setlength{\parsep}{0pt}%
1394   }%
1395   {\end{description}}
1396 %
```

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.

```

1397 %\let\@TB@verbatim\@verbatim
1398 \let\@TBverbatim\verbatim
1399 \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.)

```

1400 \def\verbatim{\par\obeylines
1401 \futurelet\reserved@a\@switch@sqbverbatim}
1402 %
1403 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1404 \expandafter\@sqbverbatim\else
1405 \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1406 %
1407 \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.

```

1408 \def\ruled{\let\if@ruled\iftrue}%

```

The command \makevmeta says to make !i...i do {...}.

```

1409 \def\makevmeta{\makeescape\! \let\<\tubverb@meta \tubverb@clearliglist}
1410 \def\tubverb@meta##1>{\meta{##1}}

```

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

```

1411 \def\tubverb@clearliglist{%
1412 \def\verbatim@nolig@list{\do\‘\do\,\do\’\do\-\}%
1413 }

```

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

```

1414 #1\@TBverbatim}

```

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

```

1415 \def\@verbatim{%

```

First, we deal with \ruled:

```

1416 \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi

```

Now, the code out of the original verbatim environment:

```

1417 \trivlist \item\relax
1418 \if@minipage\else\vskip\parskip\fi
1419 \leftskip\@totalleftmargin\rightskip\z@skip
1420 \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1421 \@@par
1422 \@tempwafalse
1423 \def\par{%

```



```

1424 \if@tempwa
1425 \leavevmode \null \@@par\penalty\interlinepenalty
1426 \else
1427 \@tempwatru
1428 \ifhmode\@@par\penalty\interlinepenalty\fi
1429 \fi}%
1430 \obeylines \verbatim@font \@noligs
1431 \let\do\@makeoother \dospecials
1432 \everypar \expandafter{\the\everypar \unpenalty}%
1433 }% 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).

```

1434 \def\endverbatim{\@TBendverbatim
1435 \if@ruled\kern5\p@\hrule\endtrivlist\fi}

```

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

```

1436 \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.

```

1437 \AtBeginDocument{%
1438 \@ifpackageloaded{microtype}
1439 {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{-}
1440 }

```

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 B_BT_EX style file based on that by Patrick Daly. It needs extra macros beyond those in standard L^AT_EX to function properly. The form of the bibitem entries is:

```

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

```

The available citation commands are:

```

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

```

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

```
1441 \if@Harvardcite
1442 \let\@internalcite\cite
```

Normal forms.

```
1443 \def\cite{\def\@citeseppen{-1000}%
1444   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1445   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1446 \def\citeNP{\def\@citeseppen{-1000}%
1447   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1448   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1449 \def\citeN{\def\@citeseppen{-1000}%
1450   \def\@cite##1##2{##1\if@tempswa , ##2}\else{}}\fi}%
1451   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1452 \def\citeA{\def\@citeseppen{-1000}%
1453   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1454   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1455 \def\citeANP{\def\@citeseppen{-1000}%
1456   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1457   \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1458 \def\shortcite{\def\@citeseppen{-1000}%
1459   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1460   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1461 \def\shortciteNP{\def\@citeseppen{-1000}%
1462   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1463   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1464 \def\shortciteN{\def\@citeseppen{-1000}%
1465   \def\@cite##1##2{##1\if@tempswa , ##2}\else{}}\fi}%
1466   \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1467 \def\shortciteA{\def\@citeseppen{-1000}%
1468   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1469   \def\citeauthoryear##1##2##3{##2}\@internalcite}
1470 \def\shortciteANP{\def\@citeseppen{-1000}%
1471   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1472   \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1473 \def\citeyear{\def\@citeseppen{-1000}%
1474   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1475   \def\citeauthoryear##1##2##3{##3}\@citedata}
1476 \def\citeyearNP{\def\@citeseppen{-1000}%
1477   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1478   \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.

```

1479 \def\@citedata{%
1480     \ifnextchar [{\@tempwatrue\@citedatax}%
1481                 {\@tempwafalse\@citedatax[]}%
1482 }
1483
1484 \def\@citedatax[#1]#2{%
1485 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1486 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1487     {\@citea\def\@citea{, }\@ifundefined% by Young
1488         {b@\@citeb}{\bf ?}%
1489         \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1490 {\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.

```

1491 \def\@citex[#1]#2{%
1492 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1493 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1494     {\@citea\def\@citea{; }\@ifundefined% by Young
1495         {b@\@citeb}{\bf ?}%
1496         \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1497 {\csname b@\@citeb\endcsname}}{#1}}%

```

No labels in the bibliography.

```
1498 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```

1499 \newlength{\bibhang}
1500 \setlength{\bibhang}{2em}

```

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

```

1501 \newdimen\bibindent
1502 \bibindent=1.5em
1503 \@ifundefined{refname}%
1504     {\newcommand{\refname}{References}}%
1505     {}%

```

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

```

1506 \def\thebibliography#1{% for harvardcite
1507     \let\TB@startsection\TB@safe@startsection
1508     \section*{\refname
1509         \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1510     \list{[\arabic{enumi}]}{%
1511         \labelwidth\z@ \labelsep\z@
1512         \leftmargin\bibindent
1513         \itemindent -\bibindent
1514         \listparindent \itemindent
1515         \parsep \z@
1516         \usecounter{enumi}}%
1517     \def\newblock{}%

```

```

1518 \BibJustification
1519 \frenchspacing % more than just period, see comments below
1520 }

```

etal Other bibliography odds and ends.

```

\bibentry 1521 \def\etal{et\,al.\@}
1522 \def\bibentry{%
1523 \smallskip
1524 \hangindent=\parindent
1525 \hangafter=1
1526 \noindent
1527 \sloppy
1528 \clubpenalty500 \widowpenalty500
1529 \frenchspacing
1530 }

```

\bibliography Changes made to accommodate TUB file naming conventions

```

\bibliographystyle 1531 \def\bibliography#1{%
1532 \if@filesw
1533 \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1534 \fi
1535 \@input{\jobname.bbl}%
1536 }
1537 \def\bibliographystyle#1{%
1538 \if@filesw
1539 \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1540 \fi
1541 }

```

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

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

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

```

1542 \else % not harvardcite
1543 \let\TB@origthebibliography\thebibliography
1544 \def\thebibliography{%
1545 \let\TB@startsection\TB@safe@startsection
1546 \def\sloppy{\frenchspacing\BibJustification}%
1547 \TB@origthebibliography} % latex's thebibliography now reads args.
1548 \fi % not harvardcite

```

```

\BibJustification \BibJustification defines how the bibliography is to be justified. The Lamport
\SetBibJustification default is simply “\sloppy”, but we regularly find some sort of ragged right setting
\TB@sloppy is appropriate. (\BibJustification is nevertheless reset to its default value at
the start of a paper.)
1549 \let\TB@sloppy\sloppy
1550 \let\BibJustification\TB@sloppy
1551 \newcommand{\SetBibJustification}[1]{%
1552 \renewcommand{\BibJustification}{#1}%
1553 }
1554 \ResetCommands\expandafter{\the\ResetCommands
1555 \let\BibJustification\TB@sloppy
1556 }

```

3.24 Registration marks

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

```

1557 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1558 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1559 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
“T” marks centered on top and bottom edges of paper
1560 \def\ttopregister{\dlap{%
1561 \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1562 \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1563 \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1564 \def\tbotregister{\ulap{%
1565 \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1566 \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1567 \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1568 \def\topregister{\ttopregister}
1569 \def\botregister{\tbotregister}

```

3.25 Running heads

```

1570 \def\rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx}
registration marks; these are temporarily inserted in the running head
1571 \def\MakeRegistrationMarks{}
1572 \def\UseTrimMarks{%
1573 \def\MakeRegistrationMarks{%
1574 \ulap{\rlap{%
1575 \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1576 \topregister\vskip \headmargin \vskip 10\p@}}}}%
1577 }
1578 % put issue identification and page number in header.
1579 \def\@oddhead{\MakeRegistrationMarks}
1580 \frenchspacing
1581 \normalsize\csname normalshape\endcsname\rm \tubheadhook
1582 \rtitlex\quad \midrtitlex\hfil \rtitlenexttopage\quad \thepage}

```

```

1583 \def\@evenhead{\MakeRegistrationMarks
1584   \frenchspacing
1585   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1586   \thepage \quad\rtitlenexttopage \hfil\midrttitle \quad\rtitlex}
1587
1588 % can be used to reset the font, e.g., tb98kuester.
1589 \def\tubheadhook{}
1590
1591 % in case the official \author is too verbose for the footline.
1592 % (the \shortauthor / \rhAuthor stuff is only enabled for proceedings, fix!)
1593 \def\tubrunningauthor{\@author}
1594
1595 % put title and author in footer.
1596 \def\@tubrunningfull{%
1597   \def\@oddfoot{% make line break commands produce a normal space
1598     \def\{\unskip\ \ignorespaces}%
1599     \let\newline=\%
1600     \frenchspacing
1601     \hfil\rhTitle}
1602   \def\@evenfoot{\frenchspacing \let\thanks\@gobble \tubrunningauthor\hfil}
1603 }
1604
1605 % empty footer.
1606 \def\@tubrunningminimal{%
1607   \def\@oddfoot{\hfil}%
1608   \def\@evenfoot{\hfil}%
1609 }
1610
1611 % empty footer and header.
1612 \def\@tubrunningoff{%
1613   \def\@oddfoot{\hfil}%
1614   \def\@evenfoot{\hfil}%
1615   \def\@oddhead{\hfil}%
1616   \def\@evenhead{\hfil}%
1617 }
1618
1619 \def\ps@headings{}
1620 \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...

```

1621 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1622   \global\setbox\@leftcolumn\box\@outputbox
1623   \global\brokenpenalty10000
1624   \else \global\@firstcolumntrue

```

```

1625 \global\brokenpenalty100
1626 \setbox\outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1627 {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1628 \hb@xt@\columnwidth{\box\outputbox \hss}}}\@combinedblfloats
1629 \outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1630 \whiles\if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1631 \fi}

```

3.27 Font-related definitions and machinery

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

```

1632 \newif\ifFirstPar \FirstParfalse
1633 \def\smc{\sc}
1634 \def\ninepoint{\small}
1635 \</classtail>

```

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

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

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

```

1636 \<*common>
1637 \DeclareRobustCommand{\SMC}{%
1638 \ifx\@currsize\normalsize\small\else
1639 \ifx\@currsize\small\footnotesize\else
1640 \ifx\@currsize\footnotesize\scriptsize\else
1641 \ifx\@currsize\large\normalsize\else
1642 \ifx\@currsize\Large\large\else
1643 \ifx\@currsize\LARGE\Large\else
1644 \ifx\@currsize\scriptsize\tiny\else
1645 \ifx\@currsize\tiny\tiny\else
1646 \ifx\@currsize\huge\LARGE\else
1647 \ifx\@currsize\Huge\huge\else
1648 \small\SMC@unknown@warning

```

```

1649 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1650 }
1651 \newcommand{\SMC@unknown@warning}{\TBWarning{\string\SMC: nonstandard
1652   text font size command -- using \string\small}}
1653 \newcommand{\textSMC}[1]{\SMC #1}}

```

The `\acro` command uses `\SMC` as it was originally intended. Since these things are uppercase-only, it fiddles with the spacefactor after inserting its text.

```

1654 \newcommand{\acro}[1]{\textSMC{#1}\@}
1655 </common>

```

3.28 Miscellaneous definitions

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

```

1656 <*classtail>
1657 \def\xEdNote{\EdNoteFont Editor's note:\enspace }}
1658 \def\EdNote{\@ifnextchar [%]
1659   {%
1660     \ifvmode
1661       \smallskip\noindent\let\@EdNote@\@EdNote@v
1662     \else
1663       \unskip\quad\def\@EdNote@\{\unskip\quad}%
1664     \fi
1665     \@EdNote
1666   }%
1667   \xEdNote
1668 }
1669 \long\def\@EdNote[#1]{%
1670   [\thinspace\xEdNote\ignorespaces
1671     #1%
1672     \unskip\thinspace]%
1673   \@EdNote@
1674 }
1675 \def\@EdNote@v{\par\smallskip}

```

Macros for Mittelbach's self-documenting style

```

1676 \def\SelfDocumenting{%
1677   \setlength\textwidth{31pc}
1678   \onecolumn
1679   \parindent \z@
1680   \parskip 2\p@\@plus\p@\@minus\p@
1681   \oddsidemargin 8pc
1682   \evensidemargin 8pc
1683   \marginparwidth 8pc
1684   \toks@\expandafter{\@oddhead}%
1685   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1686   \toks@\expandafter{\@evenhead}%

```



```

1687 \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1688 \def\ps@titlepage{}%
1689 }
1690 \def\ps@titlepage{}
1691
1692 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}%
1693 \llap{\@makefnmark}\null$\mskip5mu$#1}
1694
1695 %% \long\def\@makefntext#1{\parindent 1em
1696 %% \noindent
1697 %% \hb@xt@2em{\hss\@makefnmark}%
1698 %% \hskip0.27778\fontdimen6\textfont\z@\relax
1699 %% #1%
1700 %% }

```

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

```

1701 \newcommand{\tubraggedfoot}{\rightskip=\raggedskip plus\raggedstretch\relax}

```

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

```

\supportfootnote 1702 \def\creditfootnote{\nomarkfootnote\xEdNote}
1703 \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.

```

1704 \gdef\nomarkfootnote#1#2{\begingroup
1705 \def\thefootnote{}%
1706 % no period, please, also no fnmark.
1707 \def\@makefntext##1{##1}%
1708 \footnotetext{\noindent #1#2}%
1709 \endgroup
1710 }

```

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.

```

1711 \if@Harvardcite
1712 \AtBeginDocument{%
1713 \bibliographystyle{ltugbib}%
1714 }
1715 \fi
1716 \authornumber\z@
1717 \let\@signature\@defaultsignature
1718 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1719 configuration information}}{}
1720 </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:

```
1721 < *tugproccls >
1722 \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.

```
1723 \newif \if@proc@sober
1724 \newif \if@proc@numerable
1725 \DeclareOption {tug95} {%
1726   \@proc@soberfalse
1727   \@proc@numerablefalse
1728 }
1729 \DeclareOption {tug96} {%
1730   \@proc@sobertrue
1731   \@proc@numerablefalse
1732 }
1733 \DeclareOption {tug97} {%
1734   \@proc@sobertrue
1735   \@proc@numerabletrue
1736 }
1737 \DeclareOption {tug2002} {%
1738   \@proc@sobertrue
1739   \@proc@numerabletrue
1740   \let \if@proc@numbersec \iftrue
1741   \PassOptionsToClass {numbersec} {ltugboat}%
1742 }
```

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

```
1743 \DeclareOption {numbersec} {\let \if@proc@numbersec \iftrue
1744   \PassOptionsToClass {numbersec} {ltugboat}%
1745 }
1746 \DeclareOption {nonumber} {\let \if@proc@numbersec \iffalse
1747   \PassOptionsToClass {nonumber} {ltugboat}%
1748 }
```

`\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`.

```
1749 \newif \ifTB@title
1750 \DeclareOption {title} {\TB@titletrue}
1751 \DeclareOption {notitle} {\TB@titlefalse}
1752 \AtBeginDocument {\stepcounter {page}}
```

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

```

1753 \DeclareOption{tugproc}{%
1754 \ClassWarning{@tugclass}{Option \CurrentOption\space ignored}%
1755 }

```

All other options are simply passed to ltugboat...

```

1756 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{ltugboat}}

```

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

```

1757 \InputIfFileExists{@tugclass.cfg}{\ClassInfo{ltugproc}%
1758 \Loading ltugproc configuration information}}{}
1759 \@ifundefined{TUGprocExtraOptions}{%
1760 \let\TUGprocExtraOptions\empty}%
1761 {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}

```

`\tugProcYear` Now work out what year it is

```

1762 \@tempcnta\year
1763 \ifnum\@tempcnta<2000
1764 \divide\@tempcnta by100
1765 \multiply\@tempcnta by100
1766 \advance\@tempcnta-\year
1767 \@tempcnta-\@tempcnta
1768 \fi

```

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

```

1769 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1770 \ifnum10>\@tempcnta0\fi\the\@tempcnta}
1771 \@tempa
1772 \ClassInfo{ltugproc}{Class believes year is
1773 \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1774 \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.

```

1775 \expandafter\ifx\curname ds@tug\tugProcYear\endcurname\relax
1776 \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.

```

1777 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1778 \ProcessOptions
1779 \if@proc@numbersec
1780 \if@proc@numerable
1781 \else
1782 \ClassWarning{@tugclass}{This year's proceedings may not have
1783 numbered sections}%
1784 \fi
1785 \fi

```

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

```
1786 \LoadClass[\ifproc@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.

```
1787 \def\maketitle{%
1788   \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).
```

```
1789   \ifshortAuthor\else
1790     \global\let\rhAuthor\@empty
1791     \def\g@addto@rhAuthor##1{%
1792       \begingroup
1793         \toks@\expandafter{\rhAuthor}%
1794         \let\thanks\@gobble
1795         \protected@xdef\rhAuthor{\the\toks@##1}%
1796       \endgroup
1797     }%
1798     \@getauthorlist\g@addto@rhAuthor
1799   \fi

      now, the real business of setting the title

1800   \ifTB@title
1801     \setcounter{footnote}{0}%
1802     \renewcommand{\thefootnote}{\@fnsymbol\c@footnote}%
1803     \if@tubtwocolumn
1804       \twocolumn[\@maketitle]%
1805     \else
1806       \onecolumn
1807       \global\@topnum\z@
1808       \@maketitle
1809     \fi
1810     \@thanks
1811     \thispagestyle{TBproctitle}
1812   \fi
1813 \endgroup
1814 \@TB@madetitletrue
1815 }
1816 \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.

```
1817 \def\@TB@test@document{%
1818   \edef\@tempa{\the\everypar}
```

```

1819 \def \@tempb{\@nocument}
1820 \ifx \@tempa\@tempb
1821   \@nocument
1822 \fi
1823 }

\AUTHORfont Define the fonts for titles and things
\TITLEfont 1824 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1825 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1826 \def\addressfont{\small\rmfamily\mdseries\upshape}
1827 \def\netaddrfont{\small\ttfamily\mdseries\upshape}

\aboveauthorskip Some changeable skips to permit variability in page layout depending on the par-
\belowauthorskip ticular paper's page breaks.
\belowabstractskip 1828 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
1829 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1830 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

\@maketitle The body of \maketitle
1831 \def\@maketitle{%
1832   {\parskip\z@
1833     \frenchspacing
1834     \TITLEfont\raggedright\noindent\@title\par
1835     \count@=0
1836     \loop
1837     \ifnum\count@<\authornumber
1838       \vskip\aboveauthorskip
1839       \advance\count@\@ne
1840       {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1841       \addressfont\theaddress{\number\count@}\endgraf
1842       {%
1843         \allowhyphens
1844         \hangindent1.5pc
1845         \netaddrfont\thenetaddress{\number\count@}\endgraf
1846         \hangindent1.5pc
1847         \thePersonalURL{\number\count@}\endgraf
1848       }%
1849     \repeat
1850   \vskip\belowauthorskip}%
1851 \if@abstract
1852   \centerline{\bfseries Abstract}%
1853   \vskip.5\baselineskip\rmfamily
1854   \@tubonecolumnabstractstart
1855   \the\abstract@toks
1856   \@tubonecolumnabstractfinish
1857   \global\@ignoretrue
1858 \fi
1859 \vskip\belowabstractskip
1860 \global\@afterindentfalse\aftergroup\@afterheading
1861 }

```

`abstract` Save the contents of the abstract environment in the token register `\abstract@toks`.
`\if@abstract` We need to do this, as otherwise it may get ‘typeset’ (previously, it got put in a
`\abstract@toks` box) before `\begin{document}`, and experiments prove that this means our shiny
new `\SMC` doesn’t work in this situation.

If you need to understand the ins and outs of this code, look at the place I
lifted it from: `tabularx.dtx` (in the tools bundle). The whole thing pivots on
having stored the name of the ‘abstract’ environment in `\@abstract@`

```
1862 \newtoks\abstract@toks \abstract@toks{}
1863 \let\if@abstract\iffalse
1864 \def\abstract{%
```

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

```
1865 \ifTB@madetitle
1866 \TBWarning{abstract environment after \string\maketitle}
1867 \fi
1868 \def\@abstract@{abstract}%
1869 \ifx\@currenvir\@abstract@
1870 \else
1871 \TBError{\string\abstract\space is illegal:%
1872 \MessageBreak
1873 use \string\begin{\@abstract@} instead}%
1874 {\@abstract@\space may only be used as an environment}
1875 \fi
1876 \global\let\if@abstract\iftrue
1877 {\ifnum0='}\fi
1878 \@abstract@getbody}
1879 \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}`

```
1880 \long\def\@abstract@getbody#1\end{%
1881 \global\abstract@toks\expandafter{\the\abstract@toks#1}%
1882 \@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.

```
1883 \def\@abstract@findend#1{%
1884 \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.

```
1885 \ifx\@tempa\@abstract@
1886 \expandafter\@abstract@end
1887 \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)

```

1888 \def\@tempb{document}%
1889 \ifx\@tempa\@tempb
1890 \TBError{\string\begin{\@abstract@}
1891 ended by \string\end{\@tempb}}%
1892 {You've forgotten \string\end{\@abstract@}}
1893 \else
1894 \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
1895 \expandafter\expandafter\expandafter\@abstract@getbody
1896 \fi
1897 \fi}

```

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

```

1898 \def\@abstract@end{\ifnum0='{ \fi}%
1899 \expandafter\end\expandafter{\@abstract@}}

```

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

```

1900 \renewcommand{\makesignature}{\TBWarning
1901 {\string\makesignature\space is invalid in proceedings issues}}

```

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

```

\ps@TBproc 1902 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 1903 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 1904 \TB@definefeet
\TB@definefeet 1905 }
\pfoottext 1906 \def\ps@TBproc{%
\rfoottext 1907 \def\@oddhead{\MakeRegistrationMarks
1908 {%
1909 \hfil
1910 \def\{\unskip\ \ignorespaces}%
1911 \rmfamily\rhTitle
1912 }%
1913 }%
1914 \def\@evenhead{\MakeRegistrationMarks
1915 {%
1916 \def\{\unskip\ \ignorespaces}%
1917 \rmfamily\rhAuthor
1918 \hfil
1919 }%
1920 }%
1921 \TB@definefeet
1922 }
1923
1924 \advance\footskip8\p@ % for deeper running feet
1925
1926 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}

```

```

1927 \def\setpagecommands#1#2{\expandafter\def\csname @pagecommands#1\endcsname
1928   {#2}}
1929 \def\TB@definefeet{%
1930   \def@oddfont{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
1931     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
1932   \def@evenfont{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
1933     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
1934 }
1935
1936 \def\pfoottext{\smc Preprint}:
1937   Proceedings of the \volyr{} Annual Meeting}
1938 \def\rfoottext{\normalfont\TUB, \volx\Dash
1939   {Proceedings of the \volyr{} Annual Meeting}}
1940
1941 \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).

```

1942 \if@proc@numbersec
1943 \else
1944   \setcounter{secnumdepth}{0}
1945 \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.

```

1946 \if@proc@numbersec
1947 \else
1948   \if@proc@sober
1949     \def\section
1950       {\TB@nolimelabel
1951         \TB@startsection{section}%
1952           1%
1953           \z@%
1954           {-8\p@\@plus-2\p@\@minus-2\p@}%
1955           {6\p@}%
1956           {\normalsize\bfseries\raggedright}}
1957   \else
1958     \def\section
1959       {\TB@nolimelabel
1960         \TB@startsection{section}%
1961           1%
1962           \z@%

```



```

1963             {-8\p@\@plus-2\p@\@minus-2\p@}%
1964             {6\p@}%
1965             {\large\bfseries\raggedright}}
1966 \fi
1967 \def\subsection
1968     {\TB@nolimelabel
1969     \TB@startsection{{subsection}%
1970                     2%
1971                     \z@%
1972                     {6\p@\@plus 2\p@\@minus2\p@}%
1973                     {-5\p@\@plus -\fontdimen3\the\font}%
1974                     {\normalsize\bfseries}}}
1975 \def\subsubsection
1976     {\TB@nolimelabel
1977     \TB@startsection{{subsubsection}%
1978                     3%
1979                     \parindent%
1980                     \z@%
1981                     {-5\p@\@plus -\fontdimen3\the\font}%
1982                     {\normalsize\bfseries}}}
1983 \fi
1984 \ltugproccls

```

5 Plain T_EX styles

```

1985 \tugboatsty
1986 % err...
1987 \tugboatsty
1988 \tugprocsty
1989 % err...
1990 \tugprocsty

```

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

```

1991 \tugboatsty
1992 \obsoletefile{ltugboat.cls}{ltugboat.sty}
1993 \LoadClass{ltugboat}
1994 \tugboatsty
1995 \tugprocsty
1996 \obsoletefile{ltugproc.cls}{ltugproc.sty}
1997 \LoadClass{ltugproc}
1998 \tugprocsty

```