

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          [2022-05-19 v2.27]
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                               ]

```

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 ^A)T _E X
<code>\AMS</code>	American Mathematical Society
<code>\AmSTeX</code>	
<code>\aw</code>	A-W (abbreviation for Addison-Wesley)
<code>\API</code>	
<code>\AW</code>	Addison-Wesley
<code>\BibTeX</code>	
<code>\CandT</code>	Computers & Typesetting
<code>\ConTeXt</code>	ConT _E Xt

<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVD</code>	
<code>\DVI</code>	
<code>\DVIPDFMx</code>	DVIPDFM <i>x</i>
<code>\DVItoVDU</code>	DVItoVDU
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	ε -T _E X
<code>\ExTeX</code>	$\varepsilon\chi$ T _E X
<code>\Ghostscript</code>	
<code>\Hawaii</code>	Hawai'i
<code>\HTML</code>	
<code>\ISBN</code>	ISBN
<code>\ISO</code>	
<code>\ISSN</code>	ISSN
<code>\JTeX</code>	
<code>\JoT</code>	The Joy of T _E X
<code>\LaTeX</code>	
<code>\LyX</code>	
<code>\macOS</code>	mac OS
<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 T _E X
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pcTeX</code>	
<code>\Pas</code>	Pascal
<code>\PiCTeX</code>	
<code>\plain</code>	plain (in typewriter font)
<code>\POBox</code>	P. O. Box
<code>\PS</code>	PostScript (with hyphenation)
<code>\SC</code>	Steering Committee
<code>\SGML</code>	SGML
<code>\SliTeX</code>	
<code>\slMF</code>	Metafont, slanted: deprecated: use <code>\textsl</code> instead
<code>\stTeX</code>	T _E X 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>\midrtitlex</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 \TUB followed by volume and issue numbers
<code>\xEdNote</code>	Editor's Note:
<code>\Review:</code>	Review: (for title of book review article)
<code>\reviewitem</code>	begin data for item being reviewed
<code>\revauth</code>	with one argument, author(s) of item being reviewed
<code>\revtitle</code>	with one argument, title of ...
<code>\revpubinfo</code>	with one argument, other info pertaining to ...
<code>\endreviewitem</code>	end data for item being reviewed

<code>\booktitle</code>	with one argument, format book title as straight 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>\TBCenableRemarks</code>	enable <code>\TBremarks</code> (normally suppressed)
<code>\pagexref</code>	used to write out page numbers to screen and external files
<code>\pagexrefON</code>	
<code>\pagexrefOFF</code>	
<code>\xrefTO</code>	used for symbolic cross-reference to other pages in <i>TUGboat</i>
<code>\xrefTOON</code>	
<code>\xrefTOOFF</code>	
<code>\TBdriver</code>	marks code which only takes effect when articles are run together in a driver file
<code>\signaturemark</code>	items for signatures
<code>\signaturewidth</code>	

3 L^AT_EX 2_ε TUGboat class file

3.1 Setup and options

Check for reloading. Hmmmm... 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.

```
19 (*!tugboatcls)
20 \csname tugstyloaded@ \endcsname
21 \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.

```
22 \providecommand{\@tugclass}{!tugboat}
```

Warnings/error messages/information messages — if we're using L^AT_EX 2_ε we can use the `\Class*` commands:

```
23 \def\TBInfo{\ClassInfo{\@tugclass}}
24 \def\TBError{\ClassError{\@tugclass}}
25 \def\TBWarning{\ClassWarning{\@tugclass}}
26 \def\TBWarningNL{\ClassWarningNoLine{\@tugclass}}
```

draft vs. preprint vs. final.

```
27 \DeclareOption{draft}{%
28   \AtEndOfClass{%
29     \setcounter{page}{901}%
30     %
31     % Put a question mark into the page number in draft mode.
32     \let\tuborigthepage = \thepage
33     \def\thepage{%
34       \ifnum\value{page}>900
35         \textsl{? \texorpdfstring{\,}{\@arabic{\numexpr\the\c@page-900\relax}}}%
36     }
```

```

36     \else
37       \arabic{page}%
38     \fi}%
39   %
40   \BlackBoxes
41   \def\MakeRegistrationMarks{%
42     \PrelimDrafttrue
43   }%
44 }
45
46 \newif\ifpreprint
47 \def\preprint{\preprinttrue}
48 \DeclareOption{preprint}{%
49   \preprinttrue
50 }
51
52 \newif\iftubfinaloption % [final]
53 \DeclareOption{final}{%
54   \tubfinaloptiontrue
55   \AtEndOfClass{%
56     \let\thepage=\tuborigthepage
57     \NoBlackBoxes
58     % Insert draft date into the header even with [final], if we are not
59     % doing a production run. (tugboat.dates sets up page numbers
60     % above 900 in such pseudo-draft mode.) We use [final] in the first
61     % place for this case because draft can change page layout, wrt
62     % registration marks, etc.
63     \ifnum\value{page}>900 \PrelimDrafttrue \else \PrelimDraftfalse \fi
64     \@tubrunningfull
65   }%
66 }

```

We want to use `hyperref`'s `\texorpdfstring`, e.g., in the `draft` option above. If `hyperref` is not loaded, define our own trivial fallback to expand to the `TeX` (first) argument.

Similarly, disable and more if we have `hyperref`, so section titles using them don't cause useless warnings.

```

67 \AtBeginDocument{%
68   \ifx\undefined\texorpdfstring
69     \DeclareRobustCommand{\texorpdfstring}[2]{#1}%
70   \fi
71   %
72   \ifx\undefined\pdfstringdefDisableCommands\else
73     \pdfstringdefDisableCommands{%
74       \let\acro\relax
75       \let\origDash=\Dash \def\Dash{\texorpdfstring{\origDash}{--}}%
76       % lots more could be added.
77     }%
78   \fi
79 }

```

TUGboat uses only 10pt for the main text.

```

80 \DeclareOption{11pt}{%
81   \TBWarning{The \@tugclass\space class only supports 10pt fonts:

```

```

82 \MessageBreak option \CurrentOption\space ignored}%
83 }
84 \DeclareOption{12pt}{\csname ds@11pt\endcsname}

```

Similarly, ignore one/two-side options.

```

85 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
86 \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`.)

```

87 \DeclareOption{tugproc}{%
88 \TBWarning{Option \CurrentOption\space ignored: use class ltugproc
89 instead of \@tugclass}%
90 }

```

Option `rawcite` (the default) specifies the default citation mechanism (as built-in to \LaTeX); option `harvardcite` specifies the author-date citation mechanism defined in section 3.24 below.

```

91 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
92 \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...

```

93 \DeclareOption{extralabel}{\let\UseExtraLabel\@firstofone}
94 \DeclareOption{noextralabel}{\let\UseExtraLabel@gobble}

```

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

```

95 \DeclareOption{numbersec}{\let\if@numbersec\iftrue}
96 \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.

```

97 \DeclareOption{runningoff}{\AtEndOfClass{\@tubrunningoff}}
98 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
99 \DeclareOption{runningfull}{\AtEndOfClass{\@tubrunningfull}}

```

Usually we want to print the doi if [final], else not. But sometimes we want to omit it even if [final], namely when we're posting a review or other item early.

```

100 \newif\iftubomitdoioption
101 \DeclareOption{omitdoi}{%
102 \tubomitdoioptiontrue
103 }

```

`\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`.

```

104 \newif\if@tubtwocolumn \@tubtwocolumntrue
105 \DeclareOption{onecolumn}{\@tubtwocolumnfalse}

```


`\ifsecondcolstart` Occasionally, we need to start an article in the second column of a page, due to splicing with a previous article. Let's try declaring that. Then, before `\maketitle`, we'll force the move to the second column.

```
106 \newif\iftubsecondcolstart
107 \DeclareOption{secondcolstart}{\tubsecondcolstarttrue}
```

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

```
108 \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.

```
109 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
110 \ProcessOptions
111 \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.

```
112 \def\sectitlefont{\fontfamily\sfddefault\fontseries{bx}\fontshape{n}%
113     \fontsize\@xviipt\stbaselineskip\selectfont}
114 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
115     \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...

```
116 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
117     \selectfont}
118 </!tugboatcls>
```

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

```
119 <*common>
120 \IfFileExists{mflogo.sty}%
121   {\RequirePackage{mflogo}}%
122 <!tugcomn> {\TBWarning
123 <ltugcomn>   {\PackageWarning{ltugcomn}
124     {Package mflogo.sty not available --\MessageBreak
125     Proceeding to emulate mflogo.sty}
126   \DeclareRobustCommand{\logofamily}{%
127     \not@math@alphabet\logofamily\relax
128     \fontencoding{U}\fontfamily{logo}\selectfont}
129   \DeclareTextFontCommand{\textlogo}{\logofamily}
130   \def\MF{\textlogo{META}}-\textlogo{FONT}\@}
131   \def\MP{\textlogo{META}}-\textlogo{POST}\@}
132   \DeclareFontFamily{U}{logo}{}
133   \DeclareFontShape{U}{logo}{m}{n}{%
134     <8><9>gen*logo%
135     <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
```

```

136   }{}
137   \DeclareFontShape{U}{logo}{m}{s1}{%
138     <8><9>gen*logos1%
139     <10><10.95><12><14.4><17.28><20.74><24.88>logos110%
140   }{}
141   \DeclareFontShape{U}{logo}{m}{it}{%
142     <->ssub*logo/m/s1%
143   }{}%
144 }

```

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

```

145 \newtoks\ResetCommands
146 \ResetCommands{%
147   \setcounter{part}{0}%
148   \setcounter{section}{0}%
149   \setcounter{footnote}{0}%
150   \authornumber\z@
151 }
152 \newcommand{\AddToResetCommands}[1]{%
153   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
154 }

```

3.3 Helpful shorthands (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.

```

155 <!*latex>
156 \def\makeescape#1{\catcode'#1=0 }
157 \def\makebgroup#1{\catcode'#1=1 }
158 \def\makeegroup#1{\catcode'#1=2 }
159 \def\makemath #1{\catcode'#1=3 }
160 </!latex>
161 <!*latex>
162 \def\makeescape#1{\catcode'#1=\z@}
163 \def\makebgroup#1{\catcode'#1=\@ne}
164 \def\makeegroup#1{\catcode'#1=\tw@}
165 \def\makemath #1{\catcode'#1=\thr@@}
166 </!latex>
167 \def\makealign #1{\catcode'#1=4 }
168 \def\makeeol #1{\catcode'#1=5 }
169 \def\makeparm #1{\catcode'#1=6 }
170 \def\makesup #1{\catcode'#1=7 }
171 \def\makesub #1{\catcode'#1=8 }

```

```

172 \def\makeignore#1{\catcode'#1=9 }
173 \def\makespace #1{\catcode'#1=10 }
174 \def\makeletter#1{\catcode'#1=11 }
175 \chardef\other=12
176 \let\makeother\@makeother
177 \def\makeactive#1{\catcode'#1=13 }
178 \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.

```

179 \def\savecat#1{%
180   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}}
181 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
182 (!latex)\savecat\@
183 (!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.

```

184 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
185   \csname#1\endcsname}
186 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
187   \csname saved@@#1\endcsname}

```

To distinguish between macro files loaded

```

188 \def\plaintubstyle{plain}
189 \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:

```

190 \providecommand\hb@xt@{\hbox to}
191 \providecommand\textsuperscript[1]{\ensuremath{\m@th
192   ^{\mbox{\fontsize\sf@size\z@
193     \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.

```

194 \DeclareRobustCommand{\AllTeX}{(\La\kern-.075em)\kern-.075em\TeX}
195 \def\AMS{American Mathematical Society}
196 \def\AmS{ $\mathcal{A}$ \kern-.1667em\lower.5ex\hbox
197   { $\mathcal{M}$ \kern-.125em $\mathcal{S}$ \kern-.125em}}
198 \def\AmSLaTeX{\AmS-\LaTeX}
199 \def\AmSTeX{\AmS-\TeX}
200 \def\ANSI{\acro{ANSI}}
201 \def\API{\acro{API}}
202 \def\ASCII{\acro{ASCII}}
203 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}

```

```

204 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
205 %
206 % make \BibTeX work in slanted contexts too; it's common in titles, and
207 % especially burdensome to hack in .bib files.
208 \def\Bib{%
209   \ifdim \fontdimen1\font>0pt
210     B{\SMC\SMC IB}%
211   \else
212     B\textsc{ib}%
213   \fi
214 }
215 \def\BibLaTeX{\Bib\kern.02em \LaTeX}
216 \def\BibTeX{\Bib\kern-.08em \TeX}
217 % no good way to determine bold font, and we want to lose the kern, too:
218 % (we \let BibTeX to this in maketitle)
219 \def\bfBibTeX{B{\SMC\SMC IB}\TeX}
220 %
221 \def\BSD{\acro{BSD}}
222 \def\CandT{\textsl{Computers \& Typesetting}}
223 % must not define \CJK, because the CJK package does.
224 We place our \kern after \- so that it disappears if the hyphenation is taken:
225 \def\ConTeXt{C\kern-.0333em\-\kern-.0667em\TeX\kern-.0333emt}
226 \def\CMkIV{ConTeXt\ \MkIV}
227 \def\Cplusplus{C\plusplus}
228 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
229 \def\CPU{\acro{CPU}}
230 \def\CSzabbr{\ensuremath{\cal C}\kern-.1667em\lower.5ex\hbox{\cal S}}
231 \def\CSS{\acro{CSS}}
232 \def\CSTUG{CSzabbr\kern.05em\acro{TUG}}
233 \def\CSV{\acro{CSV}}
234 \def\CTAN{\acro{CTAN}}
235 \def\DTD{\acro{DTD}}
236 \def\DTK{\acro{DTK}}
237 \def\DVD{\acro{DVD}}
238 \def\DVI{\acro{DVI}}
239 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
240 \def\DVItOVDU{DVItO\kern-.12em VDU}
241 \def\ECMA{\acro{ECMA}}
242 \def\EPS{\acro{EPS}}
243 % no line break at this hyphen please, and try to get a bold \varepsilon.
244 \def\TUBdefaultTeX{\ensuremath{\varepsilon}\mbox{-}\kern-.125em\TeX}%
245 \DeclareRobustCommand{\eTeX}{%
246   \ifx\@series\bfseries@rm
247     \ifx\boldsymbol\undefined % \boldsymbol is from amsmath; also support bm?
248       \TUBdefaultTeX
249     \else
250       \ensuremath{\boldsymbol{\varepsilon}}\mbox{-}\kern-.125em\TeX
251     \fi
252   \else
253     \TUBdefaultTeX
254   \fi
255 }
256 \DeclareRobustCommand{\ExTeX}{%
257   \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}

```

```

257 \def\FAQ{\acro{FAQ}}
258 \def\FTP{\acro{FTP}}
259 \def\Ghostscript{Ghost\script}
260 \def\GNU{\acro{GNU}}
261 \def\GUI{\acro{GUI}}
262 \DeclareRobustCommand{\HarfBuzz}{Harf\discretionary{-}{-}{\kern.077em}Buzz}
263 \def\Hawaii{Hawai‘i}
264 \def\HTML{\acro{HTML}}
265 \def\HTTP{\acro{HTTP}}
266 \def\iOS{i\acro{OS}}
267 \def\IDE{\acro{IDE}}
268 \def\IEEE{\acro{IEEE}}
269 \def\ISBN{\acro{ISBN}}
270 \def\ISO{\acro{ISO}}
271 \def\ISSN{\acro{ISSN}}
272 \def\JPEG{\acro{JPEG}}
273 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
274 \def\JoT{\textsl{The Joy of \TeX}}
275 \DeclareRobustCommand{\KOMAScript}{\textsf{K\kern.05em O\kern.05em%
276   M\kern.05em A\kern.1em\hyph\kern.1em Script}}
277 \def\LAMSTeX{\L\raise.42ex\hbox{\kern-.3em
278   $\m@th$\fontsize\sf@size\z@\selectfont
279   $\m@th\mathcal{A}$}%
280   \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
281   {$\m@th\mathcal{S}$}-\TeX}
282 % This code
283 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
284 % example) to propagate into the raised (small) ‘A’:
285 %   \begin{macrocode}
286 \DeclareRobustCommand{\La}%
287   {L\kern-.36em
288   {\setbox0\hbox{T}%
289     \vbox to\ht0{\hbox{$\m@th$%
290       \csname S@\fontsize\endcsname
291       \fontsize\sf@size\z@
292       \math@fontsfalse\selectfont
293       A}%
294     \vss}%
295   }}

```

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 3.12.

```

296 (!latex)\def\LaTeX{\La\kern-.15em\TeX}
297 \def\LuaHBTeX{Lua\acro{HB}\-\TeX}%
298 \def\LuaHBLaTeX{Lua\acro{HB}\-\LaTeX}%
299 \def\LuaLaTeX{Lua\-\TeX}% dtk-logos defines it and people like to use it
300 \def\LuaTeX{Lua\-\TeX}% ditto
301 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
302 \def\macOS{mac\acro{OS}}
303 \def\MacOSX{Mac\,\acro{OS},X}
304 \def\MathML{Math\acro{ML}}

```

```

305 \def\Mc{\setbox\TextBox=\hbox{M}M\ vbox
306   to\ht\TextBox{\hbox{c}\vfil}} % for Robert McGaffey

    If we're running under LATEX 2ε, 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.

307 \def\mf{\textsc{Metafont}}
308 \def\MFB{\textsl{The \MF\kern.1em\ -book}}
309 \def\MkIV{Mk\acro{IV}}
310 \let\TB@mp\mp
311 \DeclareRobustCommand{\mp}{\ifmode\TB@mp\else MetaPost\fi}
312 \def\mtx{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}
313 %
314 % In order that the \cs{OMEGA} command will switch to using the TS1
315 % variant of the capital Omega character if \texttt{textcomp.sty} is
316 % loaded, we define it in terms of the \cs{textohm} command. Note
317 % that this requires us to interpose a level of indirection, rather
318 % than to use \cs{let}\dots
319 % Revised definition of \cs{NTS} based on that used by Phil Taylor.
320 %
321 %   \begin{macrocode}
322 \DeclareRobustCommand{\NTG}{\acro{NTG}}
323 \DeclareRobustCommand{\NTS}{\ensuremath{\mathcal{N}}\mkern-4mu
324   \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
325 \DeclareTextSymbol{\textohm}{OT1}{'012}
326 \DeclareTextSymbolDefault{\textohm}{OT1}
327 \newcommand{\OMEGA}{\textohm}
328 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
329 \DeclareRobustCommand{\OOXML}{\acro{OOXML}}
330 \DeclareRobustCommand{\OTF}{\acro{OTF}}
331 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
332 \DeclareRobustCommand{\OpTeX}{Op\kern-.05em\TeX}

333 \def\Pas{Pascal}
334 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
335 \def\PCTeX{PC\thinspace\TeX}
336 \def\pCTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}\TeX}
337 \def\pdflatex{pdf\ -\LaTeX}% dtk-logos
338 \def\pdftex{pdf\ -\TeX}% dtk-logos
339 \def\PDF{\acro{PDF}}
340 \def\PGF{\acro{PGF}}
341 \def\PHP{\acro{PHP}}
342 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
343 \def\PiCTeX{\PiC\kern-.11em\TeX}
344 \def\plain{\texttt{plain}}
345 \def\PNG{\acro{PNG}}
346 \def\POBox{P.\thinspace 0.~Box }
347 \def\PS{{Post\ -Script}}
348 \def\PSTricks{\acro{PST}ricks}
349 \def\RIT{\acro{RIT}}
350 \def\RTF{\acro{RTF}}
351 \def\SC{Steering Committee}
352 \def\SGML{\acro{SGML}}
353 \def\SliTeX{\textrm{S\kern-.06em\textsc{1}\kern-.035emi}%
354   \kern-.06em\TeX}}

```

```

355 \def\sLMF{\textsl{\MF}} % should never be used
356 \def\SQL{\acro{SQL}}
357 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
358 \def\STIX{\acro{STIX}}
359 \def\SVG{\acro{SVG}}
360 \def\TANGLE{\texttt{TANGLE}\@}
361 \def\TB{\textsl{The \TeX\ -book}}
362 \def\TIFF{\acro{TIFF}}
363 \def\TP{\textsl{\TeX}:\ \textsl{The Program}}
364 \DeclareRobustCommand{\TeX}{\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
365 \def\TeXhax{\TeX hax}
366 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}}%
367   \kern-.2267emG\@}
368 \def\TeXtures{\textit{Textures}}
369 \let\Textures=\TeXtures
370 \def\TeXworks{\TeX\kern-.07em works}
371 \def\TeXXeT{\TeX-{}-\XeT}
372 \def\TFM{\acro{TFM}}
373 \ifx\Umathchardef\@thisisundefined % not (xetex|luatex)
374 \def\Thanh{H\`an\~Th\`e\llap{\raise 0.5ex\hbox{\`{}}}\~Th\`anh}% non-XeTeX
375 \else
376 \def\Thanh{H\`an\~Th\textcircumacute{e}\~Th\`anh}% else xunicode drops the acute
377 \fi
378 \def\TikZ{Ti{\em k}Z}
379 \def\TTN{\textsl{TTN}\@}
380 \def\TTN{\textsl{\TeX} and TUG News}
381 \def\TUB{\textttub{TUGboat}}\def\textttub{\textsl} % redefined in some situations
382 \def\TUG{\TeX\ \UG}
383 \def\tug{\acro{TUG}}
384 \def\UG{Users Group}
385 \def\UNIX{\acro{UNIX}}
386 % Don't define \UTF, since other packages use it for Unicode character access.
387 % On the other hand, we want a macro for UTF-8 that doesn't break at the -.
388 \def\tbUTF{\acro{UTF}\futurelet\@nextchar\@tbUTFcheck}
389   \def\@tbUTFcheck{\ifx\@nextchar-%
390     \mbox{-}\let\next=\tbgobbedash
391   \else
392     \let\next=\empty
393   \fi\next}
394 \def\tbgobbedash-{}
395 \def\VAX{V\kern-.12em A\kern-.1em X\@}
396 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
397 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{O\kern-1.4\p@ R}\kern-2.6\p@\TeX}
398 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
399 \def\XML{\acro{XML}}
400 \def\WEB{\texttt{WEB}\@}
401 \def\WEAVE{\texttt{WEAVE}\@}
402 \def\WYSIWYG{\acro{WYSIWYG}}

```

XeTeX requires reflecting the first E, hence we complain if the graphics package is not present. (For plain documents, this can be loaded via `miniltx` or `Eplain`.) Also, at Barbara's suggestion, if the current font is slanted, we rotate by 180 instead of reflecting so there is a better chance to look ok. (The magic values here seem more or less ok for `cmsl` and `cmti`.)

```

403 \def\tubreflect#1{%
404   \@ifundefined{reflectbox}{%
405     \TBError{A graphics package must be loaded to use \string\XeTeX}
406     {Load graphicx or graphics.}%
407   }{%
408     \ifdim \fontdimen1\font>0pt
409       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
410     \else
411       \reflectbox{#1}%
412     \fi
413   }%
414 }
415 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
416 \def\XekernbeforeE{-.125em}
417 \def\XekernafterE{-.1667em}
418 \DeclareRobustCommand{\Xe}{\leavevmode
419   \tubhideheight{\hbox{X%
420     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}}%
421   \ifdim \fontdimen1\font>0pt
422     % XeTeX logo needs tinkering when slanted/italic font.
423     \def\XekernbeforeE{-.11em}%
424     \def\XekernafterE{-.16em}%
425     \dp1=-.17ex
426     \fi
427     \lower\dp0\hbox{\raise\dp1\hbox{\kern\XekernbeforeE\tubreflect{E}}}%
428     \kern\XekernafterE}}
429 \def\XeTeX{\Xe\TeX}
430 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
431 %
432 \def\XHTML{\acro{XHTML}}
433 \def\XSL{\acro{XSL}}
434 \def\XSLFO{\acro{XSL}\raise.08ex\hbox{-}\acro{FO}}
435 \def\XSLT{\acro{XSLT}}

```

3.5 General typesetting rules

```

436 \newlinechar='^^J
437 \normallineskiplimit=\p@
438 \clubpenalty=10000
439 \widowpenalty=10000
440 \def\NoParIndent{\parindent=\z@}
441 \newdimen\normalparindent
442 \normalparindent=20\p@
443 \def\NormalParIndent{\global\parindent=\normalparindent}
444 \NormalParIndent
445 \def\BlackBoxes{\overfullrule=5\p@}
446 \def\NoBlackBoxes{\overfullrule=\z@}
447 \def\newline{\hskip\z@\@plus\pagewd\break}

```

`\tubsentencespace` Occasionally, notably after citations that need to come after a sentence-ending period, we want to tell T_EX that it's still at the end of a sentence. As in: `... whatever. \cite{foo}\tubsentencespace` This happens when, e.g., the reference applies to more than the final sentence. Also can be needed when `\@ can-`

not be used because the sentence-ending punctuation itself occurs inside a control sequence that prevents it.

```
448 \def\tubsentencespace{\spacefactor=3000}\space\ignorespaces}
```

`\allowhyphens` Hyphen control: first, we save (via `\edef`) 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.

```
449 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
450 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
451 \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`.

```
452 \newbox\T@stBox          \newbox\TestBox
453 \newcount\T@stCount     \newcount\TestCount
454 \newdimen\T@stDimen     \newdimen\TestDimen
455 \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).

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

L^AT_EX conventions which are also useful here.

```
457  $\!$ latex)
458 \let\@@input\input
459 \def\iinput#1{\@@input#1 }
460 \def\@inputcheck{\if\@nextchar\bgroup
461 \expandafter\iinput\else\expandafter\@@input\fi}
462 \def\input{\futurelet\@nextchar\@inputcheck}
463  $\!$ latex)
```

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

```
464 \newif\iftop@          \newif\ifbot@
465 \def\topsmash{\top@true\bot@false\smash@}
466 \def\botsmash{\top@false\bot@true\smash@}
467 \def\smash{\top@true\bot@true\smash@}
468 \def\smash@{\relax\ifmode\def\next{\mathpalette\mathsm@sh}%
469 \else\let\next\makesm@sh\fi \next }
470 \def\finsm@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}
```

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

```
471 \long\def\ulap#1{\vbox to \z@{\vss#1}}
472 \long\def\dlap#1{\vbox to \z@{#1\vss}}
```

And centered horizontal and vertical ‘laps’

```

473 \def\xlap#1{\hb@xt@\z@\hss#1\hss}
474 \long\def\ylap#1{\vbox to \z@\vss#1\vss}
475 \long\def\zlap#1{\ylap{\xlap{#1}}}

Avoid unwanted vertical glue when making up pages.
476 \def\basezero{\baselineskip\z@skip \lineskip\z@skip}

Empty rules for special occasions
477 \def>nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
478 \def>nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }

Support ad-hoc strut construction.
479 \def\makestrut[#1;#2]{\vrule \@height#1 \@depth#2 \@width\z@ }

Construct box for figure pasteup, etc.; height = #1, width = #2, rule thickness
= #3
480 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
481     \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
482     \vss\hb@xt@#2{\vrule \@width\T@stDimen
483     \hfil\makestrut[#1;\z@]%
484     \vrule \@width\T@stDimen}\vss
485     \hrule \@height\T@stDimen \@depth\z@}}

Today’s date, to be printed on drafts. Based on TEXbook, p.406.
486 (*!latex)
487 \def\today{\number\day\space \ifcase\month\or
488     Jan \or Feb \or Mar \or Apr \or May \or Jun \or
489     Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
490     \number\year}
491 </!latex>

Current time; this may be system dependent!
492 \newcount\hours
493 \newcount\minutes
494 \def\SetTime{\hours=\time
495     \global\divide\hours by 60
496     \minutes=\hours
497     \multiply\minutes by 60
498     \advance\minutes by-\time
499     \global\multiply\minutes by-1 }
500 \SetTime
501 \def\now{\ifnum\hours<10 0\fi\number\hours:%
502     \ifnum\minutes<10 0\fi\number\minutes}
503 \def\Now{\today\ \now}
504 \newif\ifPrelimDraft % [draft] or [preprint] or pageno>900
505 \def\midrttitle{} % center of running heads
506 \def\rtitlenexttopage{\ifPrelimDraft \textsl{\small draft: \Now}\fi}

```

3.7 Ragged right and friends

`\raggedskip` Plain T_EX’s definition of `\raggedright` doesn’t permit any stretch, and results in
`\raggedstretch` too many overfull boxes. We also turn off hyphenation. This code lies somewhere
`\raggedparfill` between that of Plain T_EX and of L^AT_EX.
`\raggedspaces` 507 \newdimen\raggedskip \raggedskip=\z@

```

508 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
509 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil
510 \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 511 \def\raggedright{%
\normalspaces 512 \nohyphens
513 \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
514 \parfillskip=\raggedparfill
515 }
516 \def\raggedleft{%
517 \nohyphens
518 \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
519 \parfillskip=\z@skip
520 }
521 \def\raggedcenter{%
522 \nohyphens
523 \leftskip=\raggedskip\@plus\raggedstretch
524 \rightskip=\leftskip \raggedspaces
525 \parindent=\z@ \parfillskip=\z@skip
526 }
527 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}

\tubjustifiedpar Undo the \raggedright (or other such) settings, restoring normality.
528 \def\tubjustifiedpar{\rightskip=0pt \parfillskip=0pt plus1fil
529 \allowhyphens \normalspaces}

```

3.8 Assorted user-level markup

$\text{\LaTeX} 2_{\epsilon}$ 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-TeX`—the $\text{\LaTeX} 2_{\epsilon}$ 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.

```

530 \let\latexnobreakspace=\nobreakspace
531 \DeclareRobustCommand{\nobreakspace}{\unskip\nobreak\ \ignorespaces}

```

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

```

532 \def\boxcs#1{\box\csname#1\endcsname}
533 \def\setboxcs#1{\setbox\csname#1\endcsname}
534 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
535 \let\gobble\@gobble

```

```

536 \def\vellipsis{%
537   \leavevmode\kern0.5em
538   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
539 }
540 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
541 \def\cents{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}
542 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
543   /\kern-.125em\smash{\lower.3ex\hbox{o}}} \ignorespaces}
544 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
545 %
546 \DeclareRobustCommand{\sfrac}[1]{\@ifnextchar/{\@sfrac{#1}}%
547   {\@sfrac{#1}/}}
548 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
549   \hbox{$\m@th\mbox{\fontsize\sf@size\z@
550     \selectfont#1}$}\kern-.1em
551   /\kern-.15em\lower.25ex
552   \hbox{$\m@th\mbox{\fontsize\sf@size\z@
553     \selectfont#2}$}}
554 %
555 % don't stay bold in description items, bold italic is too weird.
556 \DeclareRobustCommand\meta[1]{%
557   \ensuremath{\langle}%
558   \ifmmode \expandafter\mbox \fi % if in math
559   {\it #1/}% no typewriter italics, please
560   \ensuremath{\rangle}%
561 }
562 %
563 % Use \tt rather than \texttt because italic typewriter is just too ugly,
564 % and upright works well enough in both italic and bold contexts.
565 \DeclareRobustCommand{\cs}[1]{\tt \char'\#1}
566 %
567 % This command was defined much later than the others around here, so
568 % let's not conflict with any existing definitions that might be out there.
569 % Don't allow hyphenations or other line breaks.
570 \DeclareRobustCommand{\tubbraced}[1]{\mbox{\texttt{\char'\#1\char'}}}
571 %
572 % Well, just the \begin part. Never seen it used.
573 \DeclareRobustCommand{\env}[1]{\cs{begin}\tubbraced{#1}}
574 %
575 % Not sure why we ever want this instead of LaTeX's \, (using \kern),
576 % but fine, just keeping it.
577 \DeclareRobustCommand{\thinskip}{\hskip 0.16667em\relax}
578 %
579 % Ah, urls. Nowadays, we like the visible url to not have any protocol,
580 % if it is \texttt{http://} or \texttt{https://}. But we need to include
581 % the protocol if we are making live links, since a string like
582 % \texttt{tug.org/whatever} will be taken as a local filename by
583 % browsers and PDF readers. Since we need to check for
584 % \texttt{hyperref}, make the definition \cs{AtBeginDocument}. In the
585 % end, \cs{tbsurl}\tubbraced{foo} produces \texttt{https://foo} and
586 % \cs{tbhurl}\tubbraced{foo} produces \texttt{http://foo}.
587 \AtBeginDocument{%
588 \ifx\hyper@normalise\undefined
589   \def\tbsurl{\url}% no hyperref, so just \url is fine.

```

```

590 \def\tbhurl{\url}%
591 \ifx\url\undefined \let\url\texttt \fi % er, make sure \url is defined
592 \else
593 % This hyperref hook-in is due to Ulrike Fischer.
594 % \url{https://github.com/latex3/hyperref/issues/125}.
595 % \tb[sh]url@ are defined next.
596 \DeclareRobustCommand*\tbsurl{\hyper@normalise\tbsurl@}%
597 \DeclareRobustCommand*\tbhurl{\hyper@normalise\tbhurl@}
598 \fi
599 }
600 %
601 % Outside \AtBeginDocument, back at the top level of the dtx,
602 % turn on expl syntax for the main definitions of \tb[sh]url. We want
603 % to auto-remove an explicit protocol in case it
604 % was given. Only the correct protocol is removed, the incorrect
605 % protocol (\verb|\tbsurl{http://}|) generates an invalid link. That's ok
606 % because the link wouldn't work anyway.
607 \ExplSyntaxOn
608 \def\tbsurl@#1 % https
609 {
610   \str_set:Nn\l_tmpa_str{#1}
611   \str_remove_once:Nn\l_tmpa_str{https://}
612   \expandafter\hyper@linkurl\expandafter{\expandafter\Hurl\expandafter
613     {\l_tmpa_str}}{https://\l_tmpa_str}
614 }
615 \def\tbhurl@#1 % http
616 {
617   \str_set:Nn\l_tmpa_str{#1}
618   \str_remove_once:Nn\l_tmpa_str{http://}
619   \expandafter\hyper@linkurl\expandafter{\expandafter\Hurl\expandafter
620     {\l_tmpa_str}}{http://\l_tmpa_str}
621 }
622 \ExplSyntaxOff
623 %
624 % Now let's use those macros for putting a url into a simple
625 % ragged-right footnote.
626 \def\tbsurlfootnote#1{\footnote{\raggedright\tbsurl{#1}}}
627 \def\tbhurlfootnote#1{\footnote{\raggedright\tbhurl{#1}}}
628 %
629 % Make \! work in text mode.
630 \DeclareRobustCommand{\!}{\ifmmode\mskip-\thinmuskip \else\kern-0.16667em \fi}
631 %
632 % Half a thinspace, positive and negative.
633 \DeclareRobustCommand{\tubthinner}
634 {\ifmmode\mskip.5\thinmuskip \else\kern0.08333em \fi}
635 \DeclareRobustCommand{\tubthinnerneg}
636 {\ifmmode\mskip-.5\thinmuskip \else\kern-0.08333em \fi}
637 %
638 % Half a smallskip.
639 \DeclareRobustCommand{\tubsmaller}
640 {\vskip 1.5pt plus .75pt minus .75pt\relax}
641 %

```

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

```

642 \def\endash{--}
643 \def\emdash{\endash-}
644 \def\d@sh#1#2{\unskip#1\thinspace#2\thinspace\ignorespaces}
645 \def\dash{\d@sh\nobreak\endash}
646 \def\Dash{\d@sh\nobreak\emdash}
647 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
648 \def\rdash{\d@sh\nobreak\endash}
649 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
650 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

651 \def\hyph{-\penalty\z@\hskip\z@skip }
652 \def\slash{/\penalty\z@\hskip\z@skip }

```

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

```

653 \def\nth#1{%
654   \def\reserved@a##1##2\@nil{\ifcat##1n%
655     0%
656     \let\reserved@b\ensuremath
657   \else##1##2%
658     \let\reserved@b\relax
659   \fi}%
660   \TestCount=\reserved@a#1\@nil\relax
661   \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
662   \T@stCount=\TestCount
663   \divide\T@stCount by 100 \multiply\T@stCount by 100
664   \advance\TestCount by-\T@stCount % n mod 100
665   \ifnum\TestCount >20 \T@stCount=\TestCount
666     \divide\T@stCount by 10 \multiply\T@stCount by 10
667     \advance\TestCount by-\T@stCount % n mod 10
668   \fi
669   \reserved@b{#1}%
670   \textsuperscript{\ifcase\TestCount th%   0th
671     \or st%   1st
672     \or nd%   2nd
673     \or rd%   3rd
674     \else th% nth
675   \fi}%
676 }

```

3.9 Reviews

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

```

677 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
678 \def\@Review:{\@ifnextchar[%
679   {\@Rev}%
680   {\@Rev[Book review]}}

```

```

681 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
682 \slshape\mdseries#2}}
683 \def\reviewitem{\addvspace{\BelowTitleSkip}}%
684 \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
685 \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
686 \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
687 }
688 \def\endreviewitem{{\noindent\interlinepenalty=10000
689 \therevauth\therevtitle\therevpubinfo\endgraf}}%
690 \vskip\medskipamount
691 }
692 \def\booktitle#1{{\slshape\frenchspacing#1\}/}}

```

3.10 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.

```

693 \newcount\issueseqno \issueseqno=-1
694 \def\volx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
695 \def\volyr{}
696 \def\volno{}
697 \def\vol#1, #2.{%
698     \gdef\volno{#1}%
699     \gdef\issno{#2}%
700     \setbox\TestBox=\hbox{\volyr}%
701     \ifdim \wd\TestBox > .2em \volx \fi }
702 \def\issyear#1.{%
703     \gdef\issdt{#1}\gdef\volyr{#1}%
704     \gdef\bigissdt{#1}%
705     \setbox\TestBox=\hbox{\volno}%
706     \ifdim \wd\TestBox > .2em \volx \fi }
707 \def\issdate#1#2 #3.{%
708     \gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
709     \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
710     \setbox\TestBox=\hbox{\volno}%
711     \ifdim \wd\TestBox > .2em \volx \fi }
712 % The \vol command must be invoked precisely like this, including spaces.
713 % Since we are the only ones who write it, we can be strict.
714 \vol 0, 0.
715 \issdate Thermidor, 9999.

```

(The curious may like to 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

```

716 <!\latex>\def\tubissue#1(#2)%
717 (*latex)
718 \def\tubissue#1{\ifnextchar(%)
719   {\@tubissue@b{#1}}
720   {\@tubissue@a{#1}}}}
721 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
722 \def\@tubissue@a#1#2%
723 </\latex>
724   {\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`

```

725 \def\infil@{\jobname}
726 \def\Input #1 {\ifnum\issueseqno<0
727   \def\infil@{#1}%
728   \else
729     \def\infil@{tb\number\issueseqno#1}
730   \fi
731   \edef\jobname{\infil@}\@readFLN
732   \@input \infil@\relax
733   \if@RMKopen
734     \immediate\closeout\@TBremarkfile\@RMKopenfalse
735   \fi
736 }

```

`\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).

```

737 \newif\if@RMKopen      \@RMKopenfalse
738 \newwrite\@TBremarkfile
739 \def\@TBremark#1{%
740   \if@RMKopen
741   \else
742     \@RMKopentruetrue\immediate\openout\@TBremarkfile=\infil@.rmk
743   \fi
744   \toks@={#1}%
745   \immediate\write\@TBremarkfile{^^J\the\toks@}%
746   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
747 }

```

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

```
748 \let\TBremark=\gobble
```

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

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

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

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


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

```

751 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
752 \newread\@altfilenames
753 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
754 \ifeof\@altfilenames\let\@result\relax\else
755 \def\@result{\@input\jobname.fln }\fi
756 \immediate\closein\@altfilenames
757 \@result}
758 \@readFLN
759 \everyjob=\expandafter{\the\everyjob\@readFLN}
760 \InputIfFileExists{\jobname.fln}%
761 {\TBInfo{Reading alternative file file \jobname.fln}}{}

```

The following needs to work entirely in T_EX's mouth

```

762 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
763 #1\else\csname file@@#1\endcsname\fi}
764 \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.

```

765 (*!latex)
766 \def\pagexrefON#1{%
767     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
768     \write\ppoutfile{%
769         \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
770     }
771 \def\PageXrefON#1{%
772     \immediate\write-1{\def\expandafter
773         \noexpand\csname#1\endcsname{\number\pageno}}%
774     \immediate\write\ppoutfile{\def\expandafter
775         \noexpand\csname#1\endcsname{\number\pageno}}%
776 }
777 (*!latex)
778 \def\pagexrefOFF#1{%
779     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
780     \write\ppoutfile{%
781         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
782     }
783 \def\PageXrefOFF#1{%
784     \immediate\write-1{\def\expandafter
785         \noexpand\csname#1\endcsname{\number\c@page}}%
786     \immediate\write\ppoutfile{\def\expandafter
787         \noexpand\csname#1\endcsname{\number\c@page}}%
788 }
789 \def\pagexrefOFF#1{}
790 \let\pagexref=\pagexrefOFF
791 \def\PageXrefOFF#1{}
792 \let\PageXref=\PageXrefOFF
793 \def\xreftoON#1{%
794     \ifundefined{#1}%
795     ???\TBremark{Need cross reference for #1.}%

```

```

796 \else\csname#1\endcsname\fi}
797 \def\xreftoOFF#1{???}
798 \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.

```
799 \let\tBdriver\gobble
```

Some hyphenation exceptions:

```

800 \ifx\tubomithyphenations\@thisisundefined
801 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
802 Flor-i-da Free-BSD Ghost-script Ghost-view
803 Hara-lam-bous Jac-kow-ski Ja-pa-nese Karls-ruhe
804 Mac-OS Ma-la-ya-lam Math-Sci-Net
805 Net-BSD Open-BSD Open-Office
806 Pak-i-stan Pfa-Edit Post-Script Rich-ard Skoup South-all
807 Vieth VM-ware Win-Edt
808 acro-nyms acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
809 bib-lio-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
810 col-umns com-put-able com-put-abil-ity cus-tom-iz-able
811 data-base data-bases
812 de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
813 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able
814 es-sence
815 fall-ing
816 half-way
817 in-fra-struc-ture
818 key-note
819 long-est
820 ma-gyar man-u-script man-u-scripts meta-table meta-tables
821 mne-mon-ic mne-mon-ics mono-space mono-spaced
822 name-space name-spaces
823 off-line over-view
824 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
825 pipe-line pipe-lines
826 plug-in plug-ins pres-ent-ly pro-gram-mable
827 re-allo-cate re-allo-cates re-allo-cated re-printed
828 set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
829 sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
830 text-height text-length text-width
831 time-stamp time-stamped time-stamps
832 vis-ual vis-ual-ly
833 which-ever white-space white-spaces wide-spread wrap-around
834 }
835 \fi
836 \!latex\restorecat\@
837 \!common
838 \!classtail
839 \PrelimDrafttrue

```

3.11 Page dimensions, glue, penalties, etc.

```

840 \textheight 54pc
841 \textwidth 39pc
842 \columnsep 1.5pc
843 \columnwidth 18.75pc
844 \hfuzz 1pt
845 \parindent \normalparindent
846 \parskip \z@ % \@plus\p@
847 \leftmargini 2em
848 \leftmarginv .5em
849 \leftmarginvi .5em
850 \oddsidemargin \z@
851 \evensidemargin \z@
852 \topmargin -2.5pc
853 \headheight 12\p@
854 \headsep 20\p@
855 \marginparwidth 48\p@
856 \marginparsep 10\p@
857 \partopsep=\z@
858 \topsep=3\p@\@plus\p@\@minus\p@
859 \parsep=3\p@\@plus\p@\@minus\p@
860 \itemsep=\parsep
861 %
862 % The width of one column plus gutter (=243pt) is useful sometimes.
863 \newdimen\tubcolwidthandgutter
864 \tubcolwidthandgutter=\columnwidth
865 \advance\tubcolwidthandgutter by \columnsep
866 %
867 % Ordinarily we typeset in two columns, but the onecolumn option
868 % goes to one. In which case we want to center the text block on an
869 % 8.5in width, given the default 72.27pt offset with margins of zero.
870 % We are always in LaTeX's twoside mode because of how we load article,
871 % and this is a good thing, since we want different headings.
872 \if@tubtwocolumn \twocolumn \else
873 \onecolumn
874 \textwidth=34pc
875 \oddsidemargin=30.8775pt
876 \evensidemargin=\oddsidemargin
877 \fi
878 %
879 \newdimen\pagewd \pagewd=\textwidth
880 \newdimen\trimwd \trimwd=\pagewd
881 \newdimen\trimlgt \trimlgt=11in
882 \newdimen\headmargin \headmargin=3.5pc

```

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

3.12 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 .

```

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

```

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

```
885 \def\@LaTeX@default{.36}{.15}
886 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
887 \DeclareLaTeXLogo{lmss}{bx}{n}{.3}{.15}
888 %
889 \DeclareLaTeXLogo{cmr}{m}{it}{.29}{.2}
890 \DeclareLaTeXLogo{lmr}{m}{it}{.29}{.2}
891 %
892 \DeclareLaTeXLogo{cmr}{m}{sl}{.29}{.15}
893 \DeclareLaTeXLogo{lmr}{m}{sl}{.29}{.15}
894 %
895 \DeclareLaTeXLogo{cmr}{bx}{it}{.29}{.2}
896 \DeclareLaTeXLogo{lmr}{bx}{it}{.29}{.2}
897 %
898 \DeclareLaTeXLogo{cmr}{bx}{sl}{.29}{.2}
899 \DeclareLaTeXLogo{lmr}{bx}{sl}{.29}{.2}
900 %
901 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
902 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}
```

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

```
903 \DeclareRobustCommand{\LaTeX}{\expandafter\let\expandafter\reserved@a
904   \csname @LaTeX@\f@family/\f@series/\f@shape\endcsname
905   \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
906   \expandafter\@LaTeX\reserved@a}
```

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

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

```
907 \newcommand{\@LaTeX}[2]{%
908   %\wlog{latex logo family=\f@family/\f@series/\f@shape -> #1, #2.}%
909   L\kern-#1em
910   {\sbox\z@ T%
911     \vbox to\ht0{\hbox{\$m@th$%
912       \csname S@\f@size\endcsname
913       \fontsize\sf@size\z@
914       \math@fontsfalse\selectfont
915       A}%
916     \vss}%
917   }%
918   \kern-#2em%
919   \TeX}
```

3.13 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.

```
920 \def\theauthor#1{\csname theauthor#1\endcsname}
921 \def\theaddress#1{\csname theaddress#1\endcsname}
922 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
923 \def\thePersonalURL#1{\csname thePersonalURL#1\endcsname}
924 \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.

```
925 \!latex\newcount\@tempcnta
926 \def\@defaultauthorlist{%
927   \@getauthorlist\@firstofone
928 }
```

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

```
929 \def\@getauthorlist#1{%
930   \count@\authornumber
931   \advance\count@ by -2
932   \@tempcnta0
```

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

```
933   \loop
934     \ifnum\count@>0
935       \advance\@tempcnta by \@ne
936       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
937       \advance\count@ by \m@ne
938   \repeat
939   \count@\authornumber
940   \advance\count@ by -\@tempcnta
941   \ifnum\authornumber>0
```

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

```
942     \ifnum\count@>1
943       \count@\authornumber
944       \advance\count@ by \m@ne
945       #1{\ignorespaces\theauthor{\number\count@}\unskip\@tubauthorlastsep}%
946     \fi
```

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

```
947     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
948   \fi
949 }
950 %
951 \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...)

```
952 \def\signature#1{\def\@signature{#1}}
953 \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`

```
954 \def\@defaultsignature{%
955     \let\thanks\@gobble
956     \frenchspacing
957     %
958     \ifnum\authornumber<0

if \authornumber< 0, we are in a contributor's section
959     \medskip
960     \signaturemark
961     \theauthor{\number\authornumber}\\
962     \theaddress{\number\authornumber}\\
963     \allowhyphens
964     \thenetaddress{\number\authornumber}\\
965     \thePersonalURL{\number\authornumber}\\
966     \theORCID{\number\authornumber}\\
967     \else

\authornumber ≥ 0, so we are in the body of an ordinary article
968     \count@=0
969     \loop
970         \ifnum\count@<\authornumber
971             \medskip
972             \advance\count@ by \@ne
973             \signaturemark
974             \theauthor{\number\count@}\\
975             \theaddress{\number\count@}\\
976             {%
977                 \allowhyphens
978                 \thenetaddress{\number\count@}\\
979                 \thePersonalURL{\number\count@}\\
980                 \theORCID{\number\count@}\\
981             }%
982     \repeat
983 \fi
984 }%
985 }
986 \newdimen\signaturewidth \signaturewidth=12pc
```

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

```
987 \newcommand{\makesignature}[1][\medskipamount]{%
```

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

```

988 \@tempdima\signaturewidth
989 \advance\@tempdima 1.5pc
990 \ifdim \@tempdima>\columnwidth
991   \signaturewidth \columnwidth
992   \advance\signaturewidth -1.5pc
993 \fi
994 \par
995 \penalty9000
996 \vspace{#1}%
997 \rightline{%
998   \vbox{\hsize\signaturewidth \ninepoint \raggedright
999     \parindent \z@ \everypar={\hangindent 1pc }%
1000     \parskip \z@skip
1001     \def\|{\unskip\hfil\break}%
1002     \def\|{\endgraf}%
1003     \def\phone{\rm Phone: }%
1004     \def\tubmultipleaffilauthor{\unskip,\\ \hspace*{1em}}%
1005     \rm\@signature}%
1006 }%
1007 \ifnum\authornumber<0 \endgroup\fi
1008 }
1009 \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, also with commas, in the `\makesignature`.

Similarly, within `\netaddress`, `!tubmultipleaffilnet` separates with a space before and after the comma. (All this per bb.) See `tb122childs-trotter.ltx`, `tb131sojka-czech.ltx` for examples.

```

1010 \def\tubmultipleaffilauthor{\unskip,\ \ignorespaces}%
1011 \def\tubmultipleaffilnet{\unskip\textrm{\,,\ \ignorespaces}}

```

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

```

1012 \newcount\authornumber
1013 \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`).

```

1014 \def\author{%
1015   \global\advance\authornumber\@ne
1016   \TB@author
1017 }

```

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

```

1018 \def\contributor{%
1019   \begingroup
1020   \authornumber\m@ne
1021   \TB@author

```

1022 }

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).

```
1023 \def\TB@author#1{%
1024   \expandafter\def\csname theauthor\number\authornumber\endcsname
1025     {\ignorespaces#1\unskip}%
1026   \expandafter\def\csname theaddress\number\authornumber\endcsname
1027     {\TBWarningNL{Address for #1\space missing}\@gobble}%
1028   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
1029     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
1030   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
1031     \@gobble
1032   \expandafter\let\csname theORCID\number\authornumber\endcsname
1033     \@gobble
1034 }
1035 \def\EDITORnoaddress{%
1036   \expandafter\let\csname theaddress\number\authornumber\endcsname
1037     \@gobble
1038 }
1039 \def\EDITORnonetaddress{%
1040   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
1041     \@gobble
1042 }
```

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

```
1043 \def\address#1{%
1044   \expandafter\def\csname theaddress\number\authornumber\endcsname
1045     {\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!*

```
1046 \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.

```
1047 \newcommand{\netaddress}[1][\relax]{%
1048   \begingroup
1049   \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.

```
1050 #1\@sanitize\makespace\ \makeactive\@%
1051 \makeescape! \makebgroup[ \makeegroup]% seems more useful than literals
1052 \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?!*)

```

1053 \def\@relay@netaddress#1{%
1054   \ProtectNetChars
1055   \expandafter\protected@xdef
1056     \csname thenetaddress\number\authornumber\endcsname
1057     {\protect\leavevmode\textrm{\@network}}%
1058     {\protect\NetAddrChars\net
1059       \ignorespaces#1\unskip}}%
1060 \endgroup
1061 }

```

`\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.

```

1062 \def\personalURL{\begingroup
1063   \@sanitize\makespace\ \makeactive\@
1064   \makeactive\.\makeactive\%\makeactive\/\@personalURL}%
1065 \def\@personalURL#1{%
1066   \ProtectNetChars
1067   \expandafter\protected@xdef
1068     \csname thePersonalURL\number\authornumber\endcsname{%
1069     \protect\leavevmode
1070     {%
1071       \protect\URLchars\net
1072       \ignorespaces#1\unskip
1073     }%
1074   }%
1075 \endgroup
1076 }

```

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...

```

1077 {%
1078   \makecomment\*
1079   \makeactive\@
1080   \gdef\netaddrat{\makeactive\@*
1081     \def{\discretionary{\char"40}{\char"40}}
1082     \makeactive\%
1083     \gdef\netaddrpercent{\makeactive\%*
1084       \def{\discretionary{\char"25}{\char"25}}
1085     \makeactive\.\
1086     \gdef\netaddrdot{\makeactive\.*
1087       \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`.

```

1088 \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}

```

```

1089 \makeactive\
1090 \gdef\URLchars{*
1091   \NetAddrChars
1092   \makeactive\/*
1093   \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.

```

1094 \gdef\ProtectNetChars{*
1095   \def@{\protect@}*
1096   \def%{\protect%}*
1097   \def.{\protect.}*
1098   \def/{\protect/}*
1099   }
1100 }

```

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

```

1101 \if@compatibility
1102   \DeclareRobustCommand{\net}{\normalfont\ttfamily\mathgroup\symtypewriter}
1103 \else
1104   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
1105 \fi
1106 \def\authorlist#1{\def\@author{#1}}
1107 \def\@author{\@defaultauthorlist}

```

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

```

1108 \def\ORCID#1{%
1109   \expandafter\def\csname theORCID\number\authornumber\endcsname
1110     {\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
1111 \def\mspmetavar#1#2{}

```

3.14 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 (`\PreTitleDrop`) 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.

In addition, if the `secondcolstart` option was specified, do `\null\newpage` to move over. This is separate from `\PreTitleDrop`, for no particular reason.

```

1112 \newif\if@articletitle
1113 \def\maketitle{\@ifstar
1114   {\@articletitlefalse\@r@maketitle}%
1115   {\@articletitletrue\@r@maketitle}%
1116 }
1117 \def\@r@maketitle{\par
1118   \ifdim\PreTitleDrop > \z@
1119     \loop
1120     \ifdim \PreTitleDrop > \textheight
1121       \vbox{\vfil\eject
1122         \advance\PreTitleDrop by -\textheight
1123       \repeat
1124     \vbox to \PreTitleDrop{}
1125     \global\PreTitleDrop=\z@
1126   \fi
1127   \iftubsecondcolstart \null\newpage\fi
1128   \begingroup
1129   \setcounter{footnote}{0}
1130   \global\@topnum\z@ % disallow floats above the title
1131   \def\thefootnote{\fnsymbol{footnote}}
1132   \@maketitle
1133   \@thanks
1134   \endgroup
1135   \setcounter{footnote}{0}
1136   \gdef\@thanks{}
1137 }

```

`\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.

```

1138 \def\rhTitle{}% avoid error if no author or title
1139 \renewcommand{\title}{\@dblarg\TB@title}
1140 \def\TB@title[#1]#2{\gdef\@title{#2}%
1141   \bgroup
1142     \let\thanks\@gobble
1143     \def\{\unskip\space\ignorespaces}%
1144     \protected@xdef\rhTitle{#1}%
1145   \egroup
1146 }

```

`\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.

```

1147 \def\shortTitle #1{\def\rhTitle{#1}}
1148 \newif\ifshortAuthor
1149 \def\shortAuthor #1{\def\rhAuthor{#1}\shortAuthortrue}

```

3.15 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:

```
1150 \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).

```
1151 \newdimen\stbaselineskip      \stbaselineskip=18\p@
```

```
1152 \newdimen\stfontheight
```

```
1153 \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.

```
1154 \newif\ifWideSecTitle
```

```
1155 \newif\iftubtitlerulefullwidth
```

```
1156 \newif\ifSecTitle \SecTitlefalse
```

```
1157 \newcommand{\sectitle}{%
```

```
1158   \SecTiteltrue
```

```
1159   \@ifstar
```

```
1160     {\WideSecTiteltrue\def\s@ctitle}{%
```

```
1161     {\WideSecTitelfalse\def\s@ctitle}{%
```

```
1162 }
```

`\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.

```
1163 \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.

```
1164 \newskip\AboveTitleSkip   \AboveTitleSkip=12\p@
```

```
1165 \newskip\BelowTitleSkip   \BelowTitleSkip=8\p@
```

```
1166 \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...

```
1167 \def\@sectitle #1{%
```

```
1168   \par
```

```
1169   \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.

```

1170 \ifWideSecTitle\else\secsep\fi
1171 {%
1172   \fboxrule\strulethickness
1173   \fboxsep\z@
1174   \noindent\framebox[\hsize]{%
1175     \vbox{%
1176       \raggedcenter
1177       \let\\ \@sectitle@newline
1178       \sectitlefont
1179       \makestrut[2\stfontheight;\z@]%
1180       #1%
1181       \makestrut[\z@;\stfontheight]\endgraf
1182     }%
1183   }%
1184 }%
1185 \nobreak
1186 \vskip\baselineskip
1187 }

```

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

```

1188 \newcommand{\@sectitle@newline}[1][\z@]{%
1189   \ifdim#1>\z@
1190     \makestrut[\z@;#1]%
1191   \fi
1192   \unskip\break
1193 }

```

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).

```

1194 \def\@makesectitle{\ifSecTitle
1195   \global\SecTitlefalse
1196   \ifWideSecTitle
1197     \twocolumn[\@sectitle{\s@ctitle}]%
1198     \global\WideSecTitlefalse
1199   \else
1200     \@sectitle{\s@ctitle}%
1201   \fi
1202 \else
1203   \vskip\AboveTitleSkip
1204   \kern\topskip
1205   \hrule \@height\z@ \@depth\z@ \@width 10\p@
1206   \kern-\topskip
1207   \kern-\strulethickness
1208   \iftubtitlerulefullwidth
1209     \hrule \@height\strulethickness \@depth\z@ width\textwidth
1210   \else
1211     \hrule \@height\strulethickness \@depth\z@
1212   \fi
1213   \kern\medskipamount

```

```

1214 \nobreak
1215 \fi
1216 }

```

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

```

1217 \def\@maketitle{%
1218 \@makesectitle
1219 \if@articletitle{%
1220 \nohyphens \interlinepenalty\@M
1221 \setbox0=\hbox{%
1222 \let\thanks\@gobble
1223 \let\=\quad
1224 \let\and=\quad
1225 \ignorespaces\@author}%
1226 {%
1227 \noindent\bf\raggedright\ignorespaces\frenchspacing
1228 \let\BibTeX=\bfBibTeX % else LaTeX Font Warning:
1229 % Font shape 'OT1/cmr/bx/sc' undefined
1230 \@title\endgraf
1231 }%
1232 \ifdim \wd0 < 5\p@ % omit if author is null
1233 \else

```

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

```

1234 \nobreak \vskip 4\p@
1235 {%
1236 \leftskip=\normalparindent
1237 \raggedright
1238 \def\and{\unskip\}%
1239 \noindent\@author\endgraf
1240 }%
1241 \fi
1242 \nobreak
1243 \vskip\BelowTitleSkip
1244 }\fi%
1245 \global\@afterindentfalse
1246 \aftergroup\@afterheading
1247 }

```

Dedications are ragged right, in italics.

```

1248 \newenvironment{dedication}%
1249 {\raggedright\noindent\itshape\ignorespaces}%
1250 {\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.

```

1251 \def\@tubonecolumnabstractstart{%
1252 \list{}{\listparindent\normalparindent
1253 \itemindent\z@ \leftmargin\@tubfullpageindent
1254 \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1255 }
1256 \def\@tubonecolumnabstractfinish{%

```

```

1257     \endlist
1258 }
1259 \renewenvironment{abstract}%
1260 {\begin{SafeSection}%
1261   \section*{%
1262     \if@tubtwocolumn\else \hspace*{\@tubfullpageindent}\fi
1263     Abstract}%
1264   \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1265   }%
1266   {\if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1267   \end{SafeSection}}
1268 \newenvironment{longabstract}%
1269 {\begin{SafeSection}%
1270   \section*{Abstract}%
1271   \bgroup\small
1272   }%
1273   {\endgraf\egroup
1274   \end{SafeSection}%
1275   \vspace{.25\baselineskip}
1276   \begin{center}
1277     {$---$}
1278   \end{center}
1279   \vspace{.5\baselineskip}}

```

3.16 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.

```

1280 \def\tubsechook{}
1281 \if@numbersec
1282   \def\section{\TB@startsection{{section}}%
1283     1%
1284     \z@
1285     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1286     {4\p@}%
1287     {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1288   \def\subsection{\TB@startsection{{subsection}}%
1289     2%
1290     \z@
1291     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1292     {4\p@}%
1293     {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1294   \def\subsubsection{\TB@startsection{{subsubsection}}%
1295     3%
1296     \z@
1297     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1298     {4\p@}%

```

```

1299         {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1300 \def\paragraph{\TB@startsection{paragraph}%
1301         4%
1302         \z@
1303         {4\p@ \@plus1\p@ \@minus1\p@}%
1304         {-1em}%
1305         {\normalsize\bf\tubsechook}}

```

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

```

1306 \else
1307   \setcounter{secnumdepth}{0}
1308   \def\section{\TB@nolimlabel
1309     \TB@startsection{section}%
1310     1%
1311     \z@
1312     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1313     {4\p@}%
1314     {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1315   \def\subsection{\TB@nolimlabel
1316     \TB@startsection{subsection}%
1317     2%
1318     \z@
1319     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1320     {-0.5em\@plus-\fontdimen3\font}%
1321     {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1322   \def\subsubsection{\TB@nolimlabel
1323     \TB@startsection{subsubsection}%
1324     3%
1325     \parindent
1326     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1327     {-0.5em\@plus-\fontdimen3\font}%
1328     {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1329 \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`.

```

1330 \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).

```

1331 \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.

```

1332 \newenvironment{SafeSection}%
1333   {\let\TB@startsection\TB@safe@startsection}%
1334   {}

```


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

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

```

1335 \if@numbersec
1336   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1337 \else
1338   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1339   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1340 \fi
1341 \def\chapter{\TB@nosection\chapter\section}
1342 \def\part{\TB@nosection\part\section}
1343 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1344   \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.

```

1345 \def\TBtocsectionfont{\normalfont}
1346 \newskip\TBtocsectionsapce \TBtocsectionsapce=1.0ex\@plus\p@
1347 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1348   \addvspace{\TBtocsectionsapce}%
1349   \@tempdima 1.5em
1350   \begingroup
1351     \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1352     \parfillskip\z@
1353     \TBtocsectionfont
1354     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1355     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1356   \endgroup}

```

3.17 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:

```

1357 \renewcommand{\appendix}{\par

```

¹Thurber, *The Wonderful O*

```

1358 \renewcommand{\thesection}{\@Alph@c@section}%
1359 \setcounter{section}{0}%
1360 \if@numbersec
1361 \else
1362   \setcounter{secnumdepth}{1}%
1363 \fi

```

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

```

1364 \def\@tempa{appendix}
1365 \ifx\@tempa\@currentenv
1366   \expandafter\@appendix@env
1367 \fi
1368 }

```

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

```

1369 \newcommand{\app@prefix@section}{}
1370 \newcommand{\@appendix@env}[1][Appendix]{%
1371   \renewcommand{\@secntformat}[1]{\csname app@prefix@##1\endcsname
1372     \csname the##1\endcsname\quad}%
1373   \renewcommand{\app@prefix@section}{#1 }%
1374 }

```

Ending an appendix environment is pretty trivial...

```

1375 \let\endappendix\relax

```

3.18 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

```

1376 \def\TB@nolimelabel{%
1377   \def\@currentlabel{%
1378     \protect\TBWarning{%
1379       Invalid reference to numbered label on page \thepage
1380       \MessageBreak made%
1381     }%
1382     \textbf{?!?}%
1383   }%
1384 }

```

3.19 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.

```
1385 \let\TB@ssect\@sect
1386 \let\TB@ssect\@ssect
1387 \def\@sect#1#2#3#4#5#6[#7]#8{%
1388   \def\@currentlabelname{#7}%
1389   \TB@ssect{#1}{#2}{#3}{#4}{#5}{#6}[[#7]][#8]%
1390 }
1391 \def\@ssect#1#2#3#4#5{%
1392   \def\@currentlabelname{#5}%
1393   \TB@ssect{#1}{#2}{#3}{#4}{#5}%
1394 }
```

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>`.

```
1395 \let\@savelatexlabel=\label % so save original LaTeX command
1396 %
1397 \def\label#1{% de
1398   \@savelatexlabel{#1}%
1399   \@bsphack
1400   \if@filesw
1401     \protected@write\@auxout{%
1402       {string\newlabel{nr@#1}{\@currentlabel}{\@currentlabelname}}}%
1403   \fi
1404   \@esphack
1405 }
```

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

```
1406 \let\@currentlabelname\@empty
```

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

The above was written by RobinF decades ago; the macros in *TUGboat* were never changed. Meanwhile, the `\nameref` in `hyperref` has changed many times, and we want to use its version if available. So we provide our `\nameref` `\AtBeginDocument`, so as not to overwrite any previous version. Until May 2022, `hyperref` silently overwrote an existing definition, that is, *TUGboat*'s. But now it is no longer silent.

It seems that all the internal definitions above do not cause problems, so just let them alone.

```
1407 \AtBeginDocument{%
1408   \providecommand\nameref[1]{%
1409     \expandafter\@setref
```

```

1410 \csname r@nr@#1\endcsname\@secondoftwo{#1}%
1411 }%
1412 }

```

3.20 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
```

```

1413 \newdimen\@tubfullpageindent
1414 \@tubfullpageindent = \if@tubtwocolumn 4.875pc \else 3.875pc \fi

```

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

```
\tubcaptionleftglue
```

```
1415 \let\tubcaptionleftglue=\hfil
```

For *TUGboat*, we like 9pt captions to help differentiate from the main text.

```

1416 \def\tubcaptionfonts{\small}%
    Ok, here is \@makecaption.
1417 \long\def\@makecaption#1#2{%
1418 \vskip\abovecaptionskip
1419 % try in an hbox:
1420 \sbox\@tempboxa{\tubcaptionfonts \frenchspacing \tubmakecaptionbox{#1}{#2}}%
1421 \ifdim \wd\@tempboxa > \hsize
1422   {% caption doesn't fit on one line; set as a paragraph.
1423     \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1424     % indent full-width captions {figure*}, but not single-column {figure}.
1425     \ifdim\hsize = \textwidth
1426       \leftskip=\@tubfullpageindent \rightskip=\leftskip
1427       \advance\rightskip by 0pt plus2em % increase acceptable raggedness
1428     \fi
1429     \noindent \tubmakecaptionbox{#1}{#2}\par}%
1430 \else
1431   % fits on one line; use the hbox, usually centered. Do not reset its glue.
1432   \global\@minipagefalse
1433   \hb@xt@\hsize{\tubcaptionleftglue\box\@tempboxa\hfil}%
1434   \fi
1435   \vskip\belowcaptionskip}
1436 %
1437 \def\tubmakecaptionbox#1#2{#1:\ #2}% allow overriding for a paper

```

Also use `\tubcaptionfonts` for the caption labels, and put the label (e.g., “Figure 1”) in bold. If the `listings` package is being used, bold for its label too; this `\def` is too early, but maybe `listings` will play nice later.

```

1438 \def\fnm@figure{{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}}
1439 \def\fnm@table{{\tubcaptionfonts \bf \tablename\nobreakspace\thetable}}
1440 \def\lstlistingnamestyle{\bfseries}

```

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

```
1441 \setlength\abovcaptionskip{6pt plus1pt minus1pt}
```

3.21 Size changing commands

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

```
1442 \renewcommand{\normalsize}{%
1443   \@setfontsize\normalsize\@xpt\@xipt
1444   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1445   \belowdisplayskip=\abovedisplayskip
1446   \abovedisplayshortskip=\z@\@plus 3\p@
1447   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1448 }
1449
1450 \renewcommand{\small}{%
1451   \@setfontsize\small\@ixpt{11}%
1452   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1453   \belowdisplayskip=\abovedisplayskip
1454   \abovedisplayshortskip=\z@\@plus 2\p@
1455   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1456 }
1457
1458 \renewcommand{\footnotesize}{%
1459   \@setfontsize\footnotesize\@viipt{9.5}%
1460   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1461   \belowdisplayskip=\abovedisplayskip
1462   \abovedisplayshortskip=\z@\@plus 3\p@
1463   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1464 }
```

3.22 Lists and other text inclusions

```
1465 \def\@listi{%
1466   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1467   \itemsep=\parsep
1468   \listparindent=1em
1469 }
1470
1471 \def\@listii{%
1472   \leftmargin\leftmarginii
1473   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1474   \topsep=2\p@\@plus\p@\@minus\p@
1475   \parsep=\p@\@plus\p@\@minus\p@
1476   \itemsep=\parsep
1477   \listparindent=1em
1478 }
1479
1480 \def\@listiii{%
1481   \leftmargin=\leftmarginiii
1482   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1483   \topsep=\p@\@plus\p@\@minus\p@
```

```

1484 \parsep=\z@
1485 \itemsep=\topsep
1486 \listparindent=1em
1487 }
1488 \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.

```

1489 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1490 \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}

```

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

```

1491 \newenvironment{compactitemize}%
1492 {\begin{itemize}%
1493 \setlength{\itemsep}{0pt}%
1494 \setlength{\parskip}{0pt}%
1495 \setlength{\parsep}{0pt}%
1496 }%
1497 {\end{itemize}}
1498 %
1499 \newenvironment{compactenumerate}%
1500 {\begin{enumerate}%
1501 \setlength{\itemsep}{0pt}%
1502 \setlength{\parskip}{0pt}%
1503 \setlength{\parsep}{0pt}%
1504 }%
1505 {\end{enumerate}}
1506 %
1507 \newenvironment{compactdescription}%
1508 {\begin{description}%
1509 \setlength{\itemsep}{0pt}%
1510 \setlength{\parskip}{0pt}%
1511 \setlength{\parsep}{0pt}%
1512 }%
1513 {\end{description}}
1514 %

```

3.23 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.

```

1515 %\let\@TB@verbatim\@verbatim
1516 \let\@TBverbatim\verbatim
1517 \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.)

```

1518 \def\verbatim{\par\obeylines
1519   \futurelet\reserved@a\@switch@sqbverbatim}
1520 %
1521 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1522   \expandafter\@sqbverbatim\else
1523   \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1524 %
1525 \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.

```

1526   \def\ruled{\let@if@ruled@iftrue}%
      The command \makevmeta says to make !j...i do \langle...\rangle.
1527   \def\makevmeta{\makeescape! \let<\tubverb@meta \tubverb@clearliglist}
1528   \def\tubverb@meta##1{\meta{##1}}

```

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

```

1529   \def\tubverb@clearliglist{%
1530     \def\verbatim@nolig@list{\do\‘\do\,\do\’\do\-\}%
1531   }

```

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

```

1532   #1\@TBverbatim}

```

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

```

1533 \def\@verbatim{%

```

First, we deal with `\ruled`:

```

1534   \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi

```

Now, the code out of the original verbatim environment:

```

1535   \trivlist \item\relax
1536   \if@minipage\else\vskip\parskip\fi
1537   \leftskip\@totalleftmargin\rightskip\z@skip
1538   \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1539   \@@par
1540   \@tempwafalse
1541   \def\par{%
1542     \if@tempwa

```

```

1543     \leavevmode \null \@@par\penalty\interlinepenalty
1544     \else
1545         \@tempwattrue
1546         \ifhmode\@@par\penalty\interlinepenalty\fi
1547     \fi}%
1548 \obeylines \verbatim@font \@noligs
1549 \let\do\@makeother \dospecials
1550 \everypar \expandafter{\the\everypar \unpenalty}%
1551 }% 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).

```

1552 \def\endverbatim{\@TBendverbatim
1553   \if@ruled\kern5\p@\hrule\endtrivlist\fi}

```

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

```

1554 \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, thus messing with the visible fixed-width alignment.

```

1555 \AtBeginDocument{%
1556   \ifpackageloaded{microtype}
1557     {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{ }
1558 }

```

3.24 Bibliography

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

```

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

```

The available citation commands are:

```

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

```

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

```

1559 \if@Harvardcite
1560 \let\@internalcite\cite

```


Normal forms.

```
1561 \def\cite{\def\@citeseppen{-1000}%
1562   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1563   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1564 \def\citeNP{\def\@citeseppen{-1000}%
1565   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1566   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1567 \def\citeN{\def\@citeseppen{-1000}%
1568   \def\@cite##1##2{##1\if@tempswa , ##2}\else{}}\fi}%
1569   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1570 \def\citeA{\def\@citeseppen{-1000}%
1571   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1572   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1573 \def\citeANP{\def\@citeseppen{-1000}%
1574   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1575   \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1576 \def\shortcite{\def\@citeseppen{-1000}%
1577   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1578   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1579 \def\shortciteNP{\def\@citeseppen{-1000}%
1580   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1581   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1582 \def\shortciteN{\def\@citeseppen{-1000}%
1583   \def\@cite##1##2{##1\if@tempswa , ##2}\else{}}\fi}%
1584   \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1585 \def\shortciteA{\def\@citeseppen{-1000}%
1586   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1587   \def\citeauthoryear##1##2##3{##2}\@internalcite}
1588 \def\shortciteANP{\def\@citeseppen{-1000}%
1589   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1590   \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1591 \def\citeyear{\def\@citeseppen{-1000}%
1592   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1593   \def\citeauthoryear##1##2##3{##3}\@citedata}
1594 \def\citeyearNP{\def\@citeseppen{-1000}%
1595   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1596   \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.

```
1597 \def\@citedata{%
1598   \ifnextchar [{\@tempwatrue\@citedatax}%
1599   {\@tempwafalse\@citedatax[]}%
1600 }
1601
1602 \def\@citedatax[#1]#2{%
1603 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi}
1604 \def\@citea{\@cite{\@for\@citeb:=#2\do%
1605   {\@citea\def\@citea{ , }\@ifundefined% by Young
1606     {b\@citeb}{\bf ?}}%
```

```

1607     \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1608 {\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.

```

1609 \def\@citex[#1]#2{%
1610 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1611 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1612   {\@citea\def\@citea{; }\@ifundefined% by Young
1613     {b@\@citeb}{\bf ?}}%
1614   \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1615 {\csname b@\@citeb\endcsname}}{#1}}%

```

No labels in the bibliography.

```
1616 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```

1617 \newlength{\bibhang}
1618 \setlength{\bibhang}{2em}

```

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

```

1619 \newdimen\bibindent
1620 \bibindent=1.5em
1621 \@ifundefined{refname}%
1622   {\newcommand{\refname}{References}}%
1623   {}%

```

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

```

1624 \def\thebibliography#1{% for harvardcite
1625   \let\TB@startsection\TB@safe@startsection
1626   \section*{\refname
1627     \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1628   \list{[\arabic{enumi}]}{%
1629     \labelwidth\z@ \labelsep\z@
1630     \leftmargin\bibindent
1631     \itemindent -\bibindent
1632     \listparindent \itemindent
1633     \parsep \z@
1634     \usecounter{enumi}}%
1635   \def\newblock{}%
1636   \BibJustification
1637   \frenchspacing % more than just period, see comments below
1638 }

```

etal Other bibliography odds and ends.

```

\bibentry 1639 \def\etal{et\,al.\@}
1640 \def\bibentry{%
1641   \smallskip
1642   \hangindent=\parindent
1643   \hangafter=1
1644   \noindent
1645   \sloppy
1646   \clubpenalty500 \widowpenalty500
1647   \frenchspacing
1648 }

```

```

\ bibliography Changes made to accommodate TUB file naming conventions
\bibliographystyle 1649 \def\bibliography#1{%
1650 \if@filesw
1651 \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1652 \fi
1653 \@input{\jobname.bbl}%
1654 }
1655 \def\bibliographystyle#1{%
1656 \if@filesw
1657 \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1658 \fi
1659 }

\thebibliography If the user's asked to use LATEX's default citation mechanism (using the rawcite
\TB@@thebibliography 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 LATEX's original thebibliography (in
classes.dtx) does.
By the way, amsgen.sty changes \frenchspacing to set the \sfcode of punc-
tuation 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.
1660 \else % not harvardcite
1661 \let\TB@origthebibliography\thebibliography
1662 \def\thebibliography{%
1663 \let\TB@startsection\TB@safe@startsection
1664 \def\sloppy{\frenchspacing\BibJustification}%
1665 \TB@origthebibliography} % latex's thebibliography now reads args.
1666 \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.)
1667 \let\TB@@sloppy\sloppy
1668 \let\BibJustification\TB@@sloppy
1669 \newcommand{\SetBibJustification}[1]{%
1670 \renewcommand{\BibJustification}{#1}%
1671 }
1672 \ResetCommands\expandafter{\the\ResetCommands
1673 \let\BibJustification\TB@@sloppy
1674 }

```

3.25 Registration marks

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

```

1675 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1676 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1677 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }

```

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

```
1678 \def\ttopregister{\dlap{%
1679     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1680         \HorzR@gisterRule \hfil \HorzR@gisterRule}}%
1681     \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}
1682 \def\tbotregister{\ulap{%
1683     \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}}%
1684     \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1685         \HorzR@gisterRule \hfil \HorzR@gisterRule}}
1686 \def\topregister{\ttopregister}
1687 \def\botregister{\tbotregister}
```

3.26 Running headers and footers

```
1688 \def\rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}\TUB, \volx}
    registration marks; these are temporarily inserted in the running head
1689 \def\MakeRegistrationMarks{}
1690 \def\UseTrimMarks{%
1691     \def\MakeRegistrationMarks{%
1692         \ulap{\rlap{%
1693             \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1694             \topregister\vskip \headmargin \vskip 10\p@}}}%
1695     }
1696 % put issue identification and page number in header.
1697 \def\@oddhead{\MakeRegistrationMarks
1698     \frenchspacing
1699     \normalsize\csname normalshape\endcsname\rm \tubheadhook
1700     \rtitlex\quad \midrtitle\hfil \rtitlenexttopage\quad \thepage}
1701 \def\@evenhead{\MakeRegistrationMarks
1702     \frenchspacing
1703     \normalsize\csname normalshape\endcsname\rm \tubheadhook
1704     \thepage \quad\rtitlenexttopage \hfil\midrtitle \quad\rtitlex}
1705
1706 % can be used to reset the font, e.g., tb98kuester.
1707 \def\tubheadhook{}
1708
1709 % in case the official \author is too verbose for the footline.
1710 % (the \shortauthor / \rhAuthor stuff is only enabled for proceedings, fix!)
1711 \def\tubrunningauthor{\@author}
1712
1713 % put title and author in footer.
1714 \def\@tubrunningfull{%
1715     \def\@oddfoot{% make line break commands produce a normal space
1716         \def\{\unskip\ignorespaces}%
1717         \let\newline=\%
1718         \tubtypesetdoi
1719         \frenchspacing\hfil\rhTitle}
1720     \def\@evenfoot{%
1721         \let\thanks@gobble
1722         \tubtypesetdoi
1723         \frenchspacing\tubrunningauthor\hfil}
1724 }
1725
```

```

1726 % empty footer.
1727 \def\tubrunningminimal{%
1728   \def\@oddfoot{\tubtypesetdoi\hfil}%
1729   \def\@evenfoot{\tubtypesetdoi\hfil}%
1730 }
1731
1732 % empty footer and header.
1733 \def\tubrunningoff{%
1734   \@tubrunningminimal
1735   \def\@oddhead{\hfil}%
1736   \def\@evenhead{\hfil}%
1737 }
1738
1739 \def\ps@headings{}
1740 \pagestyle{headings}

Typeset the doi. The format we decided on looks like: https://doi.org/10.47397/tb/41-3/tb129man
where the last element is the \jobname.

We put this below the footline. The footer definitions above specify that it is
always called, even if the regular footer is empty.

If the article started in the second column (option [secondcolstart]), we man-
ually move the doi over.

We do not check for validity of \volno, \issno, \jobname. For testing, etc.,
seems simpler to just typeset what we've got. Other scripts will verify consistency.
1741 %
1742 \def\tubdoiprefix{10.47397/tb} % the number crossref assigned us
1743 \def\tubabovedoi{} % fudge spacing or whatever.
1744 %
1745 \def\tubtypesetdoi{\iftubomitdoioption\else % if not explicit omission ...
1746   \iftubfinaloption % do this if [final], even if pageno>900
1747   \vbox to 0pt{% don't impact normal layout
1748     \edef\thedoi{\ifnum\count0>900 xnot\fi % but make url invalid if >900
1749       doi.org/\tubdoiprefix/\volno-\issno/\jobname}%
1750     \scriptsize
1751     \vskip\baselineskip
1752     \tubabovedoi
1753     \iftubsecondcolstart \moveright \tubcolwidthandgutter \fi
1754     \rlap{\expandafter\tbsurl\expandafter{\thedoi}}%
1755     \vss
1756   }%
1757   \global\let\tubtypesetdoi\@empty % only do it once, no matter what.
1758   \fi
1759 \fi}
1760 %
1761 %

```

3.27 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...

```

1762 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse

```

```

1763 \global\setbox\@leftcolumn\box\@outputbox
1764 \global\brokenpenalty10000
1765 \else \global\@firstcolumntrue
1766 \global\brokenpenalty100
1767 \setbox\@outputbox\vbox{\hbxt@\textwidth{\hbxt@\columnwidth
1768   {\box\@leftcolumn \hss}\hfil \vrule \@width\columnseprule\hfil
1769   \hbxt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1770 \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1771 \@whilesw\if@colmade \fi{\@outputpage\@startdblcolumn}\endgroup
1772 \fi}

```

3.28 Font-related definitions and machinery

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

```

1773 \newif\ifFirstPar \FirstParfalse
1774 \def\smc{\sc}
1775 \def\ninepoint{\small}
1776 \</classtail>

```

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

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

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

```

1777 (*common)
1778 \DeclareRobustCommand{\SMC}{%
1779   \ifx\@currsize\normalsize\small\else
1780   \ifx\@currsize\small\footnotesize\else
1781   \ifx\@currsize\footnotesize\scriptsize\else
1782   \ifx\@currsize\large\normalsize\else
1783   \ifx\@currsize\Large\large\else
1784   \ifx\@currsize\LARGE\Large\else
1785   \ifx\@currsize\scriptsize\tiny\else
1786   \ifx\@currsize\tiny\tiny\else
1787   \ifx\@currsize\huge\LARGE\else
1788   \ifx\@currsize\Huge\huge\else
1789   \small\SMC@unknown@warning
1790 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi

```

```

1791 }
1792 \newcommand{\SMC@unknown@warning}{\TBWarning{\string\SMC: nonstandard
1793   text font size command -- using \string\small}}
1794 \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.
1795 \newcommand{\acro}[1]{\textSMC{#1}\@}
1796 \end{common}

```

3.29 Editor's notes and other footnotes

\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!)

```

1797 (*classtail)
1798 \def\xEdNote{\EdNoteFont Editor's note:\enspace }
1799 \def\EdNote{\@ifnextchar[%
1800   {%
1801     \ifvmode
1802       \smallskip\noindent\let\@EdNote@\@EdNote@v
1803     \else
1804       \unskip\quad\def\@EdNote@\{\unskip\quad}%
1805     \fi
1806     \@EdNote
1807   }%
1808   \xEdNote
1809 }
1810 \long\def\@EdNote[#1]{%
1811   [\thinspace\xEdNote\ignorespaces
1812     #1%
1813     \unskip\thinspace]%
1814   \@EdNote@
1815 }
1816 \def\@EdNote@v{\par\smallskip}

    Macros for Mittelbach's self-documenting style
1817 \def\SelfDocumenting{%
1818   \setlength\textwidth{31pc}
1819   \onecolumn
1820   \parindent \z@
1821   \parskip 2\p@\@plus\p@\@minus\p@
1822   \oddsidemargin 8pc
1823   \evensidemargin 8pc
1824   \marginparwidth 8pc
1825   \toks@\expandafter{\@oddhead}%
1826   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1827   \toks@\expandafter{\@evenhead}%
1828   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1829   \def\ps@titlepage{}
1830 }
1831 \def\ps@titlepage{}
1832
1833 \long\def\@makefnintext#1{\parindent 1em\noindent\hb@xt@2em{}}

```

```

1834 \llap{\@makefnmark}\null$\mskip5mu$#1}
1835
1836 %% \long\def\@makefntext#1{\parindent 1em
1837 %% \noindent
1838 %% \hb@xt@2em{\hss\@makefnmark}}%
1839 %% \hskip0.27778\fontdimen6\textfont\z@\relax
1840 %% #1%
1841 %% }

```

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

```

1842 \newcommand{\tubraggedfoot}{\rightskip=\raggedskip plus\raggedstretch\relax}

```

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

```

\supportfootnote
1843 \def\creditfootnote{\nomarkfootnote\xEdNote}
1844 \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.

```

1845 \gdef\nomarkfootnote#1#2{\begingroup
1846 \def\thefootnote{}}%
1847 % no period, please, also no fnmark.
1848 \def\@makefntext##1{##1}%
1849 \footnotetext{\noindent #1#2}%
1850 \endgroup
1851 }

```

3.30 Initialization

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

```

1852 \if@Harvardcite
1853 \AtBeginDocument{%
1854 \bibliographystyle{ltugbib}%
1855 }
1856 \fi
1857 \authornumber\z@
1858 \let\@signature\@defaultsignature
1859 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1860 configuration information}}{}
1861 </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:

```

1862 (*ltugproccls)
1863 \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.

```

1864 \newif\if@proc@sober

```



```

1865 \newif\if@proc@numerable
1866 \DeclareOption{tug95}{%
1867   \@proc@soberfalse
1868   \@proc@numerablefalse
1869 }
1870 \DeclareOption{tug96}{%
1871   \@proc@sobertrue
1872   \@proc@numerablefalse
1873 }
1874 \DeclareOption{tug97}{%
1875   \@proc@sobertrue
1876   \@proc@numerabletrue
1877 }
1878 \DeclareOption{tug2002}{%
1879   \@proc@sobertrue
1880   \@proc@numerabletrue
1881   \let\if@proc@numbersec\iftrue
1882   \PassOptionsToClass{numbersec}{ltugboat}%
1883 }

```

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

```

1884 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1885   \PassOptionsToClass{numbersec}{ltugboat}%
1886 }
1887 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1888   \PassOptionsToClass{nonumber}{ltugboat}%
1889 }

```

`\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`.

```

1890 \newif\ifTB@title
1891 \DeclareOption{title}{\TB@titletrue}
1892 \DeclareOption{notitle}{\TB@titlefalse}
1893 \AtBeginDocument{\stepcounter{page}}

```

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

```

1894 \DeclareOption{tugproc}{%
1895   \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1896 }

```

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

```

1897 \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...)

```

1898 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1899   {Loading ltugproc configuration information}}{}
1900 \@ifundefined{TUGprocExtraOptions}%
1901   {\let\TUGprocExtraOptions\@empty}%
1902   {\edef\TUGprocExtraOptions{\TUGprocExtraOptions}}

```

`\tugProcYear` Now work out what year it is

```
1903 \@tempcnta\year
1904 \ifnum\@tempcnta<2000
1905   \divide\@tempcnta by100
1906   \multiply\@tempcnta by100
1907   \advance\@tempcnta-\year
1908   \@tempcnta-\@tempcnta
1909 \fi
```

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

```
1910 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1911             {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1912 \@tempa
1913 \ClassInfo{ltugproc}{Class believes year is
1914   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1915   \@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.

```
1916 \expandafter\ifx\curname ds@tug\tugProcYear\endcsname\relax
1917   \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.

```
1918 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1919 \ProcessOptions
1920 \if@proc@numbersec
1921   \if@proc@numerable
1922   \else
1923     \ClassWarning{\@tugclass}{This year’s proceedings may not have
1924       numbered sections}%
1925   \fi
1926 \fi
```

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

```
1927 \LoadClass[\if@proc@numbersec numbersec\else nonumber\fi]{ltugboat}
```

4.1 Proceedings titles

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

```
1928 \def\maketitle{%
1929   \begingroup
1930     \ifshortAuthor\else
1931       \global\let\rhAuthor\@empty
1932       \def\g@addto@rhAuthor##1{%
1933         \begingroup
1934           \toks@\expandafter{\rhAuthor}%
```

```

1935     \let\thanks\@gobble
1936     \protected@xdef\rhAuthor{\the\toks@##1}%
1937     \endgroup
1938   }%
1939   \@getauthorlist\g@addto@rhAuthor
1940 \fi

now, the real business of setting the title

1941 \ifTB@title
1942   \setcounter{footnote}{0}%
1943   \renewcommand{\thefootnote}{\@fnsymbol\c@footnote}%
1944   \if@tubtwocolumn
1945     \twocolumn[\@maketitle]%
1946   \else
1947     \onecolumn
1948     \global\@topnum\z@
1949     \@maketitle
1950   \fi
1951   \@thanks
1952   \thispagestyle{TBproctitle}
1953 \fi
1954 \endgroup
1955 \TB@madetitletrue
1956 }
1957 \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.

```

1958 \def\@TB@test@document{%
1959   \edef\@tempa{\the\everypar}
1960   \def \@tempb{\@nodocument}
1961   \ifx \@tempa\@tempb
1962     \@nodocument
1963   \fi
1964 }

```

`\AUTHORfont` Define the fonts for titles and things

```

\TITLEfont 1965 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1966 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1967 \def\addressfont {\small\rmfamily\mdseries\upshape}
1968 \def\netaddrfont {\small\ttfamily\mdseries\upshape}

```

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

```

\belowabstractskip 1969 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
1970 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1971 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

```

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

```

1972 \def\@maketitle{%
1973   {\parskip\z@
1974     \frenchspacing
1975     \TITLEfont\raggedright\noindent\@title\par

```

```

1976     \count@=0
1977     \loop
1978     \ifnum\count@<\authornumber
1979         \vskip\aboveauthorskip
1980         \advance\count@\@ne
1981         {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1982         \addressfont\theaddress{\number\count@}\endgraf
1983         {%
1984             \allowhyphens
1985             \hangindent1.5pc
1986             \netaddrfont\thenetaddress{\number\count@}\endgraf
1987             \hangindent1.5pc
1988             \thePersonalURL{\number\count@}\endgraf
1989         }%
1990     \repeat
1991 \vskip\belowauthorskip}%
1992 \if@abstract
1993     \centerline{\bfseries Abstract}%
1994     \vskip.5\baselineskip\rmfamily
1995     \@tubonecolumnabstractstart
1996         \the\abstract@toks
1997     \@tubonecolumnabstractfinish
1998     \global\@ignoretrue
1999 \fi
2000 \vskip\belowabstractskip
2001 \global\@afterindentfalse\aftergroup\@afterheading
2002 }

```

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@`

```

2003 \newtoks\abstract@toks \abstract@toks{}
2004 \let\if@abstract\iffalse
2005 \def\abstract{%
    we now warn unsuspecting users who provide an abstract environment after
    the \maketitle that would typeset it...
2006 \ifTB@madetitle
2007     \TBWarning{abstract environment after \string\maketitle}
2008 \fi
2009 \def\@abstract@{abstract}%
2010 \ifx\@currenvir\@abstract@
2011 \else
2012     \TBError{\string\abstract\space is illegal:%
2013         \MessageBreak
2014         use \string\begin{\@abstract@} instead}%
2015     {\@abstract@\space may only be used as an environment}
2016 \fi
2017 \global\let\if@abstract\iftrue
2018 {\ifnum0='}\fi

```

```

2019 \@abstract@getbody}
2020 \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}

2021 \long\def\@abstract@getbody#1\end{%
2022 \global\abstract@toks\expandafter{\the\abstract@toks#1}%
2023 \@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.

```

2024 \def\@abstract@findend#1{%
2025 \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.

```

2026 \ifx\@tempa\@abstract@
2027 \expandafter\@abstract@end
2028 \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)

```

2029 \def\@tempb{document}%
2030 \ifx\@tempa\@tempb
2031 \TBError{\string\begin{\@abstract@}
2032 ended by \string\end{\@tempb}}%
2033 {You've forgotten \string\end{\@abstract@}}
2034 \else
2035 \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
2036 \expandafter\expandafter\expandafter\@abstract@getbody
2037 \fi
2038 \fi}

```

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

```

2039 \def\@abstract@end{\ifnum0={\fi}%
2040 \expandafter\end\expandafter{\@abstract@}}

```

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

```

2041 \renewcommand{\makesignature}{\TBWarning
2042 {\string\makesignature\space is invalid in proceedings issues}}

```

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

```

\ps@TBproc 2043 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\dopagecommands 2044 \let\@evenhead\MakeRegistrationMarks
\setpagecommands 2045 \TB@definefeet
\TB@definefeet 2046 }
\pfoottext 2047 \def\ps@TBproc{%
\rfoottext 2048 \def\@oddhead{\MakeRegistrationMarks
2049 {%
2050 \hfil

```

```

2051     \def\{\unskip\ \ignorespaces}%
2052     \rmfamily\rhTitle
2053   }%
2054 }%
2055 \def\@evenhead{\MakeRegistrationMarks
2056   {%
2057     \def\{\unskip\ \ignorespaces}%
2058     \rmfamily\rhAuthor
2059     \hfil
2060   }%
2061 }%
2062 \TB@definefeet
2063 }
2064
2065 \advance\footskip8\p@    % for deeper running feet
2066
2067 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
2068 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
2069   {#2}}
2070 \def\TB@definefeet{%
2071   \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
2072     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
2073   \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
2074     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
2075 }
2076
2077 \def\pfoottext{\smc Preprint}:
2078   Proceedings of the \volyr{} Annual Meeting}
2079 \def\rfoottext{\normalfont\TUB, \volx\Dash
2080   {Proceedings of the \volyr{} Annual Meeting}}
2081
2082 \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).

```

2083 \if@proc@numbersec
2084 \else
2085   \setcounter{secnumdepth}{0}
2086 \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.

```

2087 \if@proc@numbersec
2088 \else
2089   \if@proc@sober
2090     \def\section

```

```

2091         {\TB@nolimelabel
2092         \TB@startsection{section}%
2093             1%
2094             \z@%
2095             {-8\p@\@plus-2\p@\@minus-2\p@}%
2096             {6\p@}%
2097             {\normalsize\bfseries\raggedright}}
2098 \else
2099 \def\section
2100     {\TB@nolimelabel
2101     \TB@startsection{section}%
2102         1%
2103         \z@%
2104         {-8\p@\@plus-2\p@\@minus-2\p@}%
2105         {6\p@}%
2106         {\large\bfseries\raggedright}}
2107 \fi
2108 \def\subsection
2109     {\TB@nolimelabel
2110     \TB@startsection{subsection}%
2111         2%
2112         \z@%
2113         {6\p@\@plus 2\p@\@minus2\p@}%
2114         {-5\p@\@plus -\fontdimen3\the\font}%
2115         {\normalsize\bfseries}}
2116 \def\subsubsection
2117     {\TB@nolimelabel
2118     \TB@startsection{subsubsection}%
2119         3%
2120         \parindent%
2121         \z@%
2122         {-5\p@\@plus -\fontdimen3\the\font}%
2123         {\normalsize\bfseries}}
2124 \fi
2125 </ltugproccls>

```

5 Plain T_EX styles

```

2126 (*tugboatsty)
2127 % err...
2128 </tugboatsty)
2129 (*tugprocsty)
2130 % err...
2131 </tugprocsty)

```

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

```

2132 (*ltugboatsty)
2133 \obsoletedefile{ltugboat.cls}{ltugboat.sty}
2134 \LoadClass{ltugboat}
2135 </ltugboatsty)
2136 (*ltugprocsty)
2137 \obsoletedefile{ltugproc.cls}{ltugproc.sty}

```

```
2138 \LoadClass{ltugproc}  
2139 </ltugprocsty>
```