

The `tugboat` package*

The *TUGboat* team

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1 Document preambles

```

1 <tugboatcls | ltugproccls | ltugcommn>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile           {tugboat.dtx}
4 </dtx>
5 <tugboatcls>\ProvidesClass {ltugboat}
6 <tugproccls>\ProvidesClass {ltugproc}
7 <tugboatsty>\ProvidesPackage{ltugboat}
8 <tugprocsty>\ProvidesPackage{ltugproc}
9 <tugcommn>  \ProvidesPackage{ltugcommn}
10           [2021-10-12 v2.26
11 <tugboatcls>           TUGboat journal class%
12 <tugproccls>          TUG conference proceedings class%
13 <tugboatsty | ltugprocsty> TUG compatibility package%
14 <tugcommn>            TUGboat 'common macros' package%
15 <*dtx>
16
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).

`\AllTeX` (L^A)T_EX

<code>\AMS</code>	American Mathematical Society
<code>\AmSTeX</code>	
<code>\aw</code>	A-W (abbreviation for Addison-Wesley)
<code>\API</code>	
<code>\AW</code>	Addison-Wesley
<code>\BibTeX</code>	
<code>\CandT</code>	Computers & Typesetting
<code>\ConTeXt</code>	ConTeXt
<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVD</code>	
<code>\DVI</code>	
<code>\DVIPDFMx</code>	DVIPDFMx
<code>\DVItoVDU</code>	DVItoVDU
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	ε -TeX
<code>\ExTeX</code>	ε_X TeX
<code>\Ghostscript</code>	
<code>\Hawaii</code>	Hawai'i
<code>\HTML</code>	
<code>\ISBN</code>	ISBN
<code>\ISO</code>	
<code>\ISSN</code>	ISSN
<code>\JTeX</code>	
<code>\JoT</code>	The Joy of TeX
<code>\LaTeX</code>	
<code>\LyX</code>	
<code>\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 TeX
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pcTeX</code>	

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

Macros for things that are slightly more significant.

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

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

<code>\meta</code>	meta-argument name <code>\meta{name}→⟨name⟩</code>
<code>\dash</code>	en-dash surrounded by thinspaces; only breakable AFTER
<code>\Dash</code>	em-dash, as above
<code>\hyph</code>	permit automatic hyphenation after an actual hyphen
<code>\slash</code>	‘breakable’ slash
<code>\nth</code>	for obtaining ‘1 st ’, ‘2 nd ’, 3 rd , etc.
<code>\tubissue</code>	gets <code>\TUB</code> followed by volume and issue numbers
<code>\xEdNote</code>	Editor’s Note:
<code>\Review:</code>	Review: (for title of book review article)
<code>\reviewitem</code>	begin data for item being reviewed
<code>\revauth</code>	with one argument, author(s) of item being reviewed
<code>\revtitle</code>	with one argument, title of ...
<code>\revpubinfo</code>	with one argument, other info pertaining to ...
<code>\endreviewitem</code>	end data for item being reviewed
<code>\booktitle</code>	with one argument, format book title 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>\TEnableRemarks</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. Hmmm... 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 ⟨*ltugboatcls⟩
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}{ltugboat}

    Warnings/error messages/information messages — if we're using LATEX 2ε 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       \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 if we have `hyperref`, commonly used in sections.

```

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 % lots more could be added.
76 }%
77 \fi
78 }

```

TUGboat uses only 10pt for the main text.

```

79 \DeclareOption{11pt}{%
80 \TBWarning{The \@tugclass\space class only supports 10pt fonts:
81 \MessageBreak option \CurrentOption\space ignored}%
82 }
83 \DeclareOption{12pt}{\csname ds@11pt\endcsname}

```

Similarly, ignore one/two-side options.

```

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

```

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

```

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.

```

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

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

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

```
94 \DeclareOption{numbersec}{\let\if@numbersec\iftrue}
95 \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.

```
96 \DeclareOption{runningoff}{\AtEndOfClass{\@tubrunningoff}}
97 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
98 \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.

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

`\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`.

```
103 \newif\if@tubtwocolumn \@tubtwocolumntrue
104 \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.

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

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

```
107 \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.

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

```

111 \def\sectitlefont{\fontfamily\sfdefault\fontseries{bx}\fontshape{n}%
112     \fontsize\@xvipt\stbaselineskip\selectfont}
113 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
114     \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...

```

115 \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}%
116     \selectfont}
117 </!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_ΕX 2_ε).

```

118 <*common>
119 \IfFileExists{mflogo.sty}%
120   {\RequirePackage{mflogo}}%
121 <!tugcomn> {\TBWarning
122 <tugcomn> {\PackageWarning{!tugcomn}
123     {Package mflogo.sty not available --\MessageBreak
124     Proceeding to emulate mflogo.sty}
125   \DeclareRobustCommand{\logofamily}{%
126     \not@math@alphabet\logofamily\relax
127     \fontencoding{U}\fontfamily{logo}\selectfont}
128   \DeclareTextFontCommand{\textlogo}{\logofamily}
129   \def\MF{\textlogo{META}}-\textlogo{FONT}\@}
130   \def\MP{\textlogo{META}}-\textlogo{POST}\@}
131   \DeclareFontFamily{U}{logo}{}
132   \DeclareFontShape{U}{logo}{m}{n}{%
133     <8><9>gen*logo%
134     <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
135   }{}
136   \DeclareFontShape{U}{logo}{m}{sl}{%
137     <8><9>gen*logosl%
138     <10><10.95><12><14.4><17.28><20.74><24.88>logosl10%
139   }{}
140   \DeclareFontShape{U}{logo}{m}{it}{%
141     <->ssub*logo/m/sl%
142   }{}%
143 }

```

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

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

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.

```
154 <*/latex>
155 \def\makeescape#1{\catcode'#1=0 }
156 \def\makebgroup#1{\catcode'#1=1 }
157 \def\makeegroup#1{\catcode'#1=2 }
158 \def\makemath #1{\catcode'#1=3 }
159 </!latex>
160 <*/latex>
161 \def\makeescape#1{\catcode'#1=\z@}
162 \def\makebgroup#1{\catcode'#1=\@ne}
163 \def\makeegroup#1{\catcode'#1=\tw@}
164 \def\makemath #1{\catcode'#1=\thr@@}
165 </!latex>
166 \def\makealign #1{\catcode'#1=4 }
167 \def\makeeol #1{\catcode'#1=5 }
168 \def\makeparm #1{\catcode'#1=6 }
169 \def\makesup #1{\catcode'#1=7 }
170 \def\makesub #1{\catcode'#1=8 }
171 \def\makeignore#1{\catcode'#1=9 }
172 \def\makespace #1{\catcode'#1=10 }
173 \def\makeletter#1{\catcode'#1=11 }
174 \chardef\other=12
175 \let\makeother\@makeother
176 \def\makeactive#1{\catcode'#1=13 }
177 \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.

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

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

To distinguish between macro files loaded

```
187 \def\plaintubstyle{plain}
188 \def\largetubstyle{latex}
```

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

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

```
193 \DeclareRobustCommand{\AllTeX}{(\La\kern-.075em)\kern-.075em\TeX}
194 \def\AMS{American Mathematical Society}
195 \def\AmS{\mathcal{A}\kern-.1667em\lower.5ex\hbox
196   {\mathcal{M}}}\kern-.125em\mathcal{S}}
197 \def\AmSLaTeX{\AmS-\LaTeX}
198 \def\AmSTeX{\AmS-\TeX}
199 \def\ANSI{\acro{ANSI}}
200 \def\API{\acro{API}}
201 \def\ASCII{\acro{ASCII}}
202 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}
203 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
204 %
205 % make \BibTeX work in slanted contexts too; it's common in titles, and
```

```

206 % especially burdensome to hack in .bib files.
207 \def\Bib{%
208   \ifdim \fontdimen1\font>0pt
209     B{\SMC\SMC IB}%
210   \else
211     B\textsc{ib}%
212   \fi
213 }
214 \def\BibLaTeX{\Bib\kern.02em \LaTeX}
215 \def\BibTeX{\Bib\kern-.08em \TeX}
216 % no good way to determine bold font, and we want to lose the kern, too:
217 % (we \let BibTeX to this in maketitle)
218 \def\bfBibTeX{B{\SMC\SMC IB}\TeX}
219 %
220 \def\BSD{\acro{BSD}}
221 \def\CandT{\textsl{Computers \& Typesetting}}
222 % must not define \CJK, because the CJK package does.

We place our \kern after \- so that it disappears if the hyphenation is taken:
223 \def\ConTeXt{C\kern-.0333emon\-\kern-.0667em\TeX\kern-.0333emt}
224 \def\CMkIV{\ConTeXt\ \MkIV}
225 \def\Cplusplus{Cplusplus}
226 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
227 \def\CPU{\acro{CPU}}
228 \def\CSzabbr{\ensuremath{\cal C}\kern-.1667em\lower.5ex\hbox{\cal S}}
229 \def\CSS{\acro{CSS}}
230 \def\CSTUG{\CSzabbr\kern.05em\acro{TUG}}
231 \def\CSV{\acro{CSV}}
232 \def\CTAN{\acro{CTAN}}
233 \def\DTD{\acro{DTD}}
234 \def\DTK{\acro{DTK}}
235 \def\DVD{\acro{DVD}}
236 \def\DVI{\acro{DVI}}
237 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
238 \def\DVIttoVDU{DVItto\kern-.12em VDU}
239 \def\ECMA{\acro{ECMA}}
240 \def\EPS{\acro{EPS}}
241 % no line break at this hyphen please
242 \DeclareRobustCommand{\eTeX}{\ensuremath{\varepsilon}\mbox{-}\kern-.125em\TeX}
243 \DeclareRobustCommand{\ExTeX}{%
244   \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}
245 \def\FAQ{\acro{FAQ}}
246 \def\FTP{\acro{FTP}}
247 \def\Ghostscript{Ghost\script}
248 \def\GNU{\acro{GNU}}
249 \def\GUI{\acro{GUI}}
250 \DeclareRobustCommand{\HarfBuzz}{Harf\discretionary{-}{-}{\kern.077em}Buzz}
251 \def\Hawaii{Hawai'i}
252 \def\HTML{\acro{HTML}}
253 \def\HTTP{\acro{HTTP}}

```

```

254 \def\iOS{i\acro{OS}}
255 \def\IDE{\acro{IDE}}
256 \def\IEEE{\acro{IEEE}}
257 \def\ISBN{\acro{ISBN}}
258 \def\ISO{\acro{ISO}}
259 \def\ISSN{\acro{ISSN}}
260 \def\JPEG{\acro{JPEG}}
261 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}\kern-.18em\TeX}}
262 \def\JoT{\textsl{The Joy of \TeX}}
263 \DeclareRobustCommand{\KOMAScript}{\textsf{K\kern.05em O\kern.05em%
264     M\kern.05em A\kern.1em-\kern.1em Script}}
265 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
266     $\m@th$\fontsize\sf@size\z@\selectfont
267     $\m@th\mathcal{A}$}%
268     \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
269     {$\m@th\mathcal{S}$}-\TeX}
270 % This code
271 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
272 % example) to propagate into the raised (small) 'A':
273 % \begin{macrocode}
274 \DeclareRobustCommand{\La}%
275   {L\kern-.36em
276     {\setbox0\hbox{T}%
277     \vbox to\ht0{\hbox{$\m@th$%
278         \csname S@f@size\endcsname
279         \fontsize\sf@size\z@
280         \math@fontsfalse\selectfont
281         A}%
282         \vss}%
283     }}

```

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.

```

284 <!latex> \def\LaTeX{La\kern-.15em\TeX}
285 \def\LuaHBTeX{Lua\acro{HB}\-\TeX}%
286 \def\LuaHBLaTeX{Lua\acro{HB}\-\LaTeX}%
287 \def\LuaLaTeX{Lua\-\LaTeX}% dtk-logos defines it and people like to use it
288 \def\LuaTeX{Lua\-\TeX}% ditto
289 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
290 \def\macOS{mac\acro{OS}}
291 \def\MacOSX{Mac\, \acro{OS},X}
292 \def\MathML{Math\acro{ML}}
293 \def\Mc{\setbox\TestBox=\hbox{M}\vbox
294   to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we're running under L^AT_EX 2_ε, we use Ulrik Vieth's `mflogo.sty` if it's present. Otherwise, we're using a short extract of Vieth's stuff. Either way, we don't need to specify `\MF` or `\MP`.

```

295 \def\mf{\textsc{Metafont}}
296 \def\MFB{\textsl{The \MF\kern.1em\~book}}
297 \def\MkIV{Mk\acro{IV}}
298 \let\TB@mp\mp
299 \DeclareRobustCommand{\mp}{\ifmode\TB@mp\else MetaPost\fi}
300 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}
301 %
302 % In order that the \cs{OMEGA} command will switch to using the TS1
303 % variant of the capital Omega character if \texttt{textcomp.sty} is
304 % loaded, we define it in terms of the \cs{textohm} command. Note
305 % that this requires us to interpose a level of indirection, rather
306 % than to use \cs{let}\dots
307 % Revised definition of \cs{NTS} based on that used by Phil Taylor.
308 %
309 % \begin{macrocode}
310 \DeclareRobustCommand{\NTG}{\acro{NTG}}
311 \DeclareRobustCommand{\NTS}{\ensuremath{\mathcal{N}}\mkern-4mu
312 \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}
313 \DeclareTextSymbol{\textohm}{OT1}{'012}
314 \DeclareTextSymbolDefault{\textohm}{OT1}
315 \newcommand{\OMEGA}{\textohm}
316 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
317 \DeclareRobustCommand{\OOXML}{\acro{OOXML}}
318 \DeclareRobustCommand{\OTF}{\acro{OTF}}
319 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
320 \DeclareRobustCommand{\OpTeX}{Op\kern-.05emTeX}

321 \def\Pas{Pascal}
322 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}MF\@}
323 \def\PCTeX{PC\thinspaceTeX}
324 \def\pcTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@ c}TeX}
325 \def\pdflatex{pdf\~LaTeX}% dtk-logos
326 \def\pdftex{pdf\~TeX}% dtk-logos
327 \def\PDF{\acro{PDF}}
328 \def\PGF{\acro{PGF}}
329 \def\PHP{\acro{PHP}}
330 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
331 \def\PiCTeX{\PiC\kern-.11emTeX}
332 \def\plain{\texttt{plain}}
333 \def\PNG{\acro{PNG}}
334 \def\POBox{P.\thinspace O.~Box }
335 \def\PS{{Post\~Script}}
336 \def\PSTricks{\acro{PST}ricks}
337 \def\RIT{\acro{RIT}}
338 \def\RTF{\acro{RTF}}
339 \def\SC{Steering Committee}
340 \def\SGML{\acro{SGML}}

```

```

341 \def\SliTeX{\textrm{S\kern-.06em\textsc{l\kern-.035emi}%
342           \kern-.06em\TeX}}
343 \def\sLMF{\textsl{MF}} % should never be used
344 \def\SQL{\acro{SQL}}
345 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
346 \def\STIX{\acro{STIX}}
347 \def\SVG{\acro{SVG}}
348 \def\TANGLE{\texttt{TANGLE}\@}
349 \def\TB{\textsl{The \TeX\book}}
350 \def\TIFF{\acro{TIFF}}
351 \def\TP{\textsl{\TeX}:\ \textsl{The Program}}
352 \DeclareRobustCommand{\TeX}{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
353 \def\TeXhax{\TeX hax}
354 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
355   \kern-.2267emG\@}
356 \def\TeXtures{\textit{Textures}}
357 \let\Textures=\TeXtures
358 \def\TeXworks{\TeX\kern-.07em works}
359 \def\TeXXeT{\TeX-{}-\XeT}
360 \def\TFM{\acro{TFM}}
361 \ifx\Umathchardef\@thisisundefined % not (xetex|luatex)
362 \def\Thanh{H\`an\~Th\`e\llap{\raise 0.5ex\hbox{\`{}}}\~Th\`anh}% non-XeTeX
363 \else
364 \def\Thanh{H\`an\~Th\textcircumacute{e}\~Th\`anh}% else xunicode drops the acute
365 \fi
366 \def\TikZ{Ti{\em k}Z}
367 \def\TTN{\textsl{TTN}\@}
368 \def\TTN{\textsl{\TeX} and TUG News}}
369 \def\TUB{\texttub{TUGboat}}\def\texttub{\textsl} % redefined in some situations
370 \def\TUG{\TeX\ UG}
371 \def\tug{\acro{TUG}}
372 \def\UG{Users Group}
373 \def\UNIX{\acro{UNIX}}
374 % Don't define \UTF, since other packages use it for Unicode character access.
375 % On the other hand, we want a macro for UTF-8 that doesn't break at the -.
376 \def\tbUTF{\acro{UTF}\futurelet\@nextchar\tbUTFcheck}
377 \def\@tbUTFcheck{\ifx\@nextchar-%
378   \mbox{-}\let\next=\tbgobbedash
379   \else
380   \let\next=\empty
381   \fi\next}
382 \def\tbgobbedash-{}
383 \def\VAX{V\kern-.12em A\kern-.1em X\@}
384 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
385 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{0\kern-1.4\p@ R}\kern-2.6\p@\TeX}
386 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT\@}
387 \def\XML{\acro{XML}}
388 \def\WEB{\texttt{WEB}\@}
389 \def\WEAVE{\texttt{WEAVE}\@}
390 \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`.)

```

391 \def\tubreflect#1{%
392   \@ifundefined{reflectbox}{%
393     \TError{A graphics package must be loaded to use \string\XeTeX}
394     {Load graphicx or graphics.}%
395   }{%
396     \ifdim \fontdimen1\font>0pt
397       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
398     \else
399       \reflectbox{#1}%
400     \fi
401   }%
402 }
403 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
404 \def\XekernbeforeE{-.125em}
405 \def\XekernafterE{-.1667em}
406 \DeclareRobustCommand{\Xe}{\leavevmode
407   \tubhideheight{\hbox{X%
408     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}%
409     \ifdim \fontdimen1\font>0pt
410       % XeTeX logo needs tinkering when slanted/italic font.
411       \def\XekernbeforeE{-.11em}%
412       \def\XekernafterE{-.16em}%
413       \dp1=-.17ex
414     \fi
415     \lower\dp0\hbox{\raise\dp1\hbox{\kern\XekernbeforeE\tubreflect{E}}}%
416     \kern\XekernafterE}}}
417 \def\XeTeX{\Xe\TeX}
418 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
419 %
420 \def\XHTML{\acro{XHTML}}
421 \def\XSL{\acro{XSL}}
422 \def\XSLFO{\acro{XSL}\raise.08ex\hbox{-}\acro{FO}}
423 \def\XSLT{\acro{XSLT}}

```

3.5 General typesetting rules

```

424 \newlinechar='^^J
425 \normallineskiplimit=\p@
426 \clubpenalty=10000
427 \widowpenalty=10000
428 \def\NoParIndent{\parindent=\z@}
429 \newdimen\normalparindent
430 \normalparindent=20\p@
431 \def\NormalParIndent{\global\parindent=\normalparindent}

```

```

432 \NormalParIndent
433 \def\BlackBoxes{\overfullrule=5\p@}
434 \def\NoBlackBoxes{\overfullrule=\z@}
435 \def\newline{\hskip\z@\@plus\pagewd\break}

```

Hyphen control: first, we save the hyphenpenalties in `\allowhyphens`. This allows us to permit hyphens temporarily in things like `\netaddresses`, which typically occur when `\raggedright` is set, but which need to be allowed to break at their artificial discretionaries.

```

436 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
437 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
438 \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`.

```

439 \newbox\T@stBox           \newbox\TestBox
440 \newcount\T@stCount     \newcount\TestCount
441 \newdimen\T@stDimen     \newdimen\TestDimen
442 \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).

```

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

```

L^AT_EX conventions which are also useful here.

```

444 {*\latex}
445 \let\@@input\input
446 \def\iinput#1{\@@input#1 }
447 \def\@inputcheck{\if\@nextchar\bgroup
448 \expandafter\iinput\else\expandafter\@@input\fi}
449 \def\input{\futurelet\@nextchar\@inputcheck}
450 {/\!latex}

```

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

```

451 \newif\iftop@           \newif\ifbot@
452 \def\topsmash{\top@true\bot@false\smash@}
453 \def\botsmash{\top@false\bot@true\smash@}
454 \def\smash@{\relax\ifmode\def\next{\mathpalette\mathsm@sh}%
455 \else\let\next\makesm@sh\fi \next }
456 \def\finism@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}

```

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

```
458 \long\def\ulap#1{\vbox to \z@{\vss#1}}
459 \long\def\dlap#1{\vbox to \z@{#1\vss}}
```

And centered horizontal and vertical ‘laps’

```
460 \def\xlap#1{\hb@xt@\z@{\hss#1\hss}}
461 \long\def\ylap#1{\vbox to \z@{\vss#1\vss}}
462 \long\def\zlap#1{\ylap{\xlap{#1}}}
```

Avoid unwanted vertical glue when making up pages.

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

Empty rules for special occasions

```
464 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
465 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

```
467 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
468     \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
469         \vss\hb@xt@#2{\vrule \@width\T@stDimen
470             \hfil\makestrut[#1;\z@]%
471             \vrule \@width\T@stDimen}\vss
472         \hrule \@height\T@stDimen \@depth\z@}}
```

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

```
473 <!!latex>
474 \def\today{\number\day\space \ifcase\month\or
475     Jan \or Feb \or Mar \or Apr \or May \or Jun \or
476     Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
477     \number\year}
478 </!!latex>
```

Current time; this may be system dependent!

```
479 \newcount\hours
480 \newcount\minutes
481 \def\SetTime{\hours=\time
482     \global\divide\hours by 60
483     \minutes=\hours
484     \multiply\minutes by 60
485     \advance\minutes by-\time
486     \global\multiply\minutes by-1 }
487 \SetTime
488 \def\now{\ifnum\hours<10 0\fi\number\hours:%
489     \ifnum\minutes<10 0\fi\number\minutes}
490 \def\Now{\today\ \now}
491 \newif\ifPrelimDraft % [draft] or [preprint] or pageno>900
492 \def\midrttitle{} % center of running heads
493 \def\rtitlenexttopage{\ifPrelimDraft \textsl{\small draft: \Now}\fi}
```

3.7 Ragged right and friends

```
\raggedskip Plain TeX's definition of \raggedright doesn't permit any stretch, and results in
\raggedstretch too many overfull boxes. We also turn off hyphenation. This code lies somewhere
\raggedparfill between that of Plain TeX and of LATEX.
\raggedspaces 494 \newdimen\raggedskip \raggedskip=\z@
495 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
496 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil
497 \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 498 \def\raggedright{%
\normalspaces 499 \nohyphens
500 \rightskip=\raggedskip\@plus\raggedstretch \raggedspaces
501 \parfillskip=\raggedparfill
502 }
503 \def\raggedleft{%
504 \nohyphens
505 \leftskip=\raggedskip\@plus\raggedstretch \raggedspaces
506 \parfillskip=\z@skip
507 }
508 \def\raggedcenter{%
509 \nohyphens
510 \leftskip=\raggedskip\@plus\raggedstretch
511 \rightskip=\leftskip \raggedspaces
512 \parindent=\z@ \parfillskip=\z@skip
513 }
514 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}
```

3.8 Assorted user-level markup

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

```
515 \let\latexnobreakspace=\nobreakspace
516 \DeclareRobustCommand{\nobreakspace}{\unskip\nobreak\ \ignorespaces}
```

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

prevents is rather a poor one. This is perhaps not the place to conduct a serious debate...)

```

517 \def\boxcs#1{\box\csname#1\endcsname}
518 \def\setboxcs#1{\setbox\csname#1\endcsname}
519 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
520 \let\gobble@\gobble
521 \def\vellipsis{%
522   \leavevmode\kern0.5em
523   \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
524 }
525 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
526 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
527 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
528   /\kern-.125em\smash{\lower.3ex\hbox{o}}}\ignorespaces}
529 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
530 %
531 \DeclareRobustCommand{\sfrac}[1]{\ifnextchar/{\@sfrac{#1}}%
532   {\@sfrac{#1}/}}
533 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
534   \hbox{$\m@th\mbox{\fontsize\sf@size\z@
535     \selectfont#1}$}\kern-.1em
536   /\kern-.15em\lower.25ex
537   \hbox{$\m@th\mbox{\fontsize\sf@size\z@
538     \selectfont#2}$}}
539 %
540 % don't stay bold in description items, bold italic is too weird.
541 \DeclareRobustCommand\meta[1]{%
542   \ensuremath{\langle#1\rangle}%
543   \ifmmode \expandafter\mbox \fi % if in math
544   {\it #1\}/}% no typewriter italics, please
545   \ensuremath{\langle#1\rangle}%
546 }
547 %
548 % Use \tt rather than \texttt because italic typewriter is just too ugly,
549 % and upright works well enough in both italic and bold contexts.
550 \DeclareRobustCommand{\cs}[1]{\tt \char'\#1}
551 %
552 % This command was defined much later than the others around here, so
553 % let's not conflict with any existing definitions that might be out there.
554 % Don't allow hyphenations or other line breaks.
555 \DeclareRobustCommand{\tubbraced}[1]{\mbox{\texttt{\char'\#1\char'\}}}
556 %
557 % Well, just the \begin part. Never seen it used.
558 \DeclareRobustCommand{\env}[1]{\cs{begin}\tubbraced{#1}}
559 %
560 % Not sure why we ever want this instead of LaTeX's \, (using \kern),
561 % but fine, just keeping it.
562 \DeclareRobustCommand{\thinskip}{\hskip 0.16667em\relax}
563 %

```

```

564 % Ah, urls. Nowadays, we like the visible url to not have any protocol,
565 % if it is \texttt{http://} or \texttt{https://}. But we need to include
566 % the protocol if we are making live links, since a string like
567 % \texttt{tug.org/whatever} will be taken as a local filename by
568 % browsers and PDF readers. Since we need to check for
569 % \texttt{hyperref}, make the definition \cs{AtBeginDocument}. In the
570 % end, \cs{tbsurl}\tubbraced{foo} produces \texttt{https://foo} and
571 % \cs{tbhurl}\tubbraced{foo} produces \texttt{http://foo}.
572 \AtBeginDocument{%
573 \ifx\hyper@normalise\undefined
574 \def\tbsurl{\url}% no hyperref, so just \url is fine.
575 \def\tbhurl{\url}%
576 \ifx\url\undefined \let\url\texttt \fi % er, make sure \url is defined
577 \else
578 % This hyperref hook-in is due to Ulrike Fischer.
579 % \url{https://github.com/latex3/hyperref/issues/125}.
580 % \tb[sh]url@ are defined next.
581 \DeclareRobustCommand*{\tbsurl}{\hyper@normalise\tbsurl@}%
582 \DeclareRobustCommand*{\tbhurl}{\hyper@normalise\tbhurl@}
583 \fi
584 }
585 %
586 % Outside \AtBeginDocument, back at the top level of the dtx,
587 % turn on expl syntax for the main definitions of \tb[sh]url. We want
588 % to auto-remove an explicit protocol in case it
589 % was given. Only the correct protocol is removed, the incorrect
590 % protocol (\tbsurl{http://}) generates an invalid link. That's ok
591 % because the link wouldn't be correct anyway.
592 \ExplSyntaxOn
593 \def\tbsurl@#1 % https
594 {
595 \str_set:Nn\l_tmpa_str{#1}
596 \str_remove_once:Nn\l_tmpa_str{https://}
597 \expandafter\hyper@linkurl\expandafter{\expandafter\Hurl\expandafter
598 \l_tmpa_str}{https://\l_tmpa_str}
599 }
600
601 \def\tbhurl@#1 % http
602 {
603 \str_set:Nn\l_tmpa_str{#1}
604 \str_remove_once:Nn\l_tmpa_str{http://}
605 \expandafter\hyper@linkurl\expandafter{\expandafter\Hurl\expandafter
606 \l_tmpa_str}{http://\l_tmpa_str}
607 }
608 \ExplSyntaxOff
609 %
610 % Make \! work in text mode.
611 \DeclareRobustCommand{\!}{\ifmmode\mskip-\thinmuskip \else\kern-0.16667em \fi}
612 %
613 % Half a thinspace, positive and negative.

```

```

614 \DeclareRobustCommand{\tubthinnerospace}
615   {\ifmmode\mskip.5\thinmuskip \else\kern0.08333em \fi}
616 \DeclareRobustCommand{\tubthinner spaceneg}
617   {\ifmmode\mskip-.5\thinmuskip \else\kern-0.08333em \fi}
618 %
619 % Half a smallskip.
620 \DeclareRobustCommand{\tubsmallerskip}
621   {\vskip 1.5pt plus .75pt minus .75pt\relax}
622 %

```

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

```

623 \def\endash{--}
624 \def\emdash{\endash-}
625 \def\d@sh#1#2{\unskip#1\thinspace#2\thinspace\ignorespaces}
626 \def\dash{\d@sh\nobreak\endash}
627 \def\Dash{\d@sh\nobreak\emdash}
628 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
629 \def\rdash{\d@sh\nobreak\endash}
630 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
631 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

632 \def\hyph{-\penalty\z@\hskip\z@skip }
633 \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.

```

634 \def\nth#1{%
635   \def\reserved@a##1##2\@nil{\ifcat##1n%
636     0%
637     \let\reserved@b\ensuremath
638     \else##1##2%
639     \let\reserved@b\relax
640     \fi}%
641   \TestCount=\reserved@a#1\@nil\relax
642   \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
643   \T@stCount=\TestCount
644   \divide\T@stCount by 100 \multiply\T@stCount by 100
645   \advance\TestCount by-\T@stCount % n mod 100
646   \ifnum\TestCount >20 \T@stCount=\TestCount
647     \divide\T@stCount by 10 \multiply\T@stCount by 10
648     \advance\TestCount by-\T@stCount % n mod 10
649   \fi
650   \reserved@b{#1}%
651     \textsuperscript{\ifcase\TestCount th%      0th
652                       \or st%                  1st
653                       \or nd%                  2nd
654                       \or rd%                  3rd

```

```

655             \else th%                nth
656             \fi}%
657 }

```

3.9 Reviews

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

```

658 \def\Review{\@ifnextchar{\@Review}{\@Review:}}
659 \def\@Review:{\@ifnextchar[%]
660   {\@Rev}%
661   {\@Rev[Book review]}}
662 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
663                \slshape\mdseries#2}}
664 \def\reviewitem{\advvspace{\BelowTitleSkip}}%
665   \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
666   \def\revtitle##1{\def\therevtitle{{\slshape##1. }\ignorespaces}}%
667   \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}}%
668 }
669 \def\endreviewitem{{\noindent\interlinepenalty=10000
670   \therevauth\therevtitle\therevpubinfo\endgraf}}%
671   \vskip\medskipamount
672 }
673 \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.

```

674 \newcount\issueseqno \issueseqno=-1
675 \def\volx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
676 \def\volyr{}
677 \def\volno{}
678 \def\vol#1, #2.{%
679     \gdef\volno{#1}%
680     \gdef\issno{#2}}%
681     \setbox\TestBox=\hbox{\volyr}}%
682     \ifdim \wd\TestBox > .2em \volx \fi }

```



```

683 \def\issyear#1.{%
684     \gdef\issdt{#1}\gdef\volyr{#1}%
685     \gdef\bigissdt{#1}%
686     \setbox\TestBox=\hbox{\volno}%
687     \ifdim \wd\TestBox > .2em \v@l{x} \fi }
688 \def\issdate#1#2 #3.{%
689     \gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
690     \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
691     \setbox\TestBox=\hbox{\volno}%
692     \ifdim \wd\TestBox > .2em \v@l{x} \fi }
693 % The \vol command must be invoked precisely like this, including spaces.
694 % Since we are the only ones who write it, we can be strict.
695 \vol 0, 0.
696 \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

```

697 <!latex>\def\tubissue#1(#2)%
698 <*latex>
699 \def\tubissue#1{\@ifnextchar(%)
700   {\@tubissue@b{#1}}
701   {\@tubissue@a{#1}}}}
702 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
703 \def\@tubissue@a#1#2%
704 </latex>
705   {\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`

```

706 \def\infil@{\jobname}
707 \def\Input #1 {\ifnum\issueseqno<0
708   \def\infil@{#1}%
709   \else
710     \def\infil@{tb\number\issueseqno#1}
711   \fi
712   \edef\jobname{\infil@}\@readFLN
713   \@@input \infil@\relax
714   \if@RMKopen
715     \immediate\closeout\@TBremarkfile\@RMKopenfalse
716   \fi
717 }

```

`\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).

```

718 \newif\if@RMKopen      \@RMKopenfalse
719 \newwrite\@TBremarkfile
720 \def\@TBremark#1{%
721   \if@RMKopen
722   \else
723     \@RMKopenttrue\immediate\openout\@TBremarkfile=\infil@.rmk
724   \fi
725   \toks@=#1}%
726 \immediate\write\@TBremarkfile{^^J\the\toks@}%
727 \immediate\write16{^^JTBremark:: \the\toks@^^J}%
728 }

```

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

```
729 \let\TBremark=\gobble
```

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

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

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

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

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

```

732 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
733 \newread\@altfilenames
734 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
735   \ifeof\@altfilenames\let\@result\relax\else
736   \def\@result{\@input\jobname.fln }\fi
737   \immediate\closein\@altfilenames
738   \@result}
739 \@readFLN
740 \everyjob=\expandafter{\the\everyjob\@readFLN}
741 \InputIfFileExists{\jobname.fln}%
742   {\TBInfo{Reading alternative file file \jobname.fln}}{ }

```

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

```

743 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
744   #1\else\csname file@@#1\endcsname\fi}
745 \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.

```

746 <*\latex>
747 \def\pagexrefON#1{%
748   \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%

```

```

749     \write\ppoutfile{%
750         \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
751     }
752 \def\PageXrefON#1{%
753     \immediate\write-1{\def\expandafter
754         \noexpand\csname#1\endcsname{\number\pageno}}%
755     \immediate\write\ppoutfile{\def\expandafter
756         \noexpand\csname#1\endcsname{\number\pageno}}}
757 </!latex>
758 <*latex>
759 \def\pagexrefON#1{%
760     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
761     \write\ppoutfile{%
762         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
763     }
764 \def\PageXrefON#1{%
765     \immediate\write-1{\def\expandafter
766         \noexpand\csname#1\endcsname{\number\c@page}}%
767     \immediate\write\ppoutfile{\def\expandafter
768         \noexpand\csname#1\endcsname{\number\c@page}}}
769 </!latex>
770 \def\pagexrefOFF#1{}
771 \let\pagexref=\pagexrefOFF
772 \def\PageXrefOFF#1{}
773 \let\PageXref=\PageXrefOFF
774 \def\xrefTOON#1{%
775     \ifundefined{#1}%
776         ???\TBremark{Need cross reference for #1.}%
777     \else\csname#1\endcsname\fi
778 \def\xrefTOFF#1{???}
779 \let\xrefTO=\xrefTOFF

```

\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.

```
780 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```

781 \ifx\tubomithyphenations\@thisisundefined
782 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
783 Flor-i-da Free-BSD Ghost-script Ghost-view
784 Hara-lam-bous Jac-kow-ski Ja-pa-nese Karls-ruhe
785 Mac-OS Ma-la-ya-lam Math-Sci-Net
786 Net-BSD Open-BSD Open-Office
787 Pak-i-stan Pfa-Edit Post-Script Rich-ard Skoup South-all
788 Vieth VM-ware Win-Edt
789 acro-nym acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
790 bib-lio-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean
791 col-umns com-put-able com-put-abil-ity cus-tom-iz-able

```

```

792 data-base data-bases
793 de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
794 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able
795 es-sence
796 fall-ing
797 half-way
798 in-fra-struc-ture
799 key-note
800 long-est
801 ma-gyar man-u-script man-u-scripts meta-table meta-tables
802 mne-mon-ic mne-mon-ics mono-space mono-spaced
803 name-space name-spaces
804 off-line over-view
805 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
806 pipe-line pipe-lines
807 plug-in plug-ins pres-ent-ly pro-gram-mable
808 re-allo-cate re-allo-cates re-allo-cated re-printed
809 set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
810 sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
811 text-height text-length text-width
812 time-stamp time-stamped time-stamps
813 vis-ual vis-ual-ly
814 which-ever white-space white-spaces wide-spread wrap-around
815 }
816 \fi
817 \!latex\restorecat\@
818 \!common\@
819 \!classtail\@
820 \PrelimDrafttrue

```

3.11 Page dimensions, glue, penalties, etc.

```

821 \textheight 54pc
822 \textwidth 39pc
823 \columnsep 1.5pc
824 \columnwidth 18.75pc
825 \hfuzz 1pt
826 \parindent \normalparindent
827 \parskip \z@ % \@plus\p@
828 \leftmargini 2em
829 \leftmarginv .5em
830 \leftmarginvi .5em
831 \oddsidemargin \z@
832 \evensidemargin \z@
833 \topmargin -2.5pc
834 \headheight 12\p@
835 \headsep 20\p@
836 \marginparwidth 48\p@
837 \marginparsep 10\p@
838 \partopsep=\z@

```

```

839 \topsep=3\p@\@plus\p@\@minus\p@
840 \parsep=3\p@\@plus\p@\@minus\p@
841 \itemsep=\parsep
842 %
843 % The width of one column plus gutter (=243pt) is useful sometimes.
844 \newdimen\tubcolwidthandgutter
845 \tubcolwidthandgutter=\columnwidth
846 \advance\tubcolwidthandgutter by \columnsep
847 %
848 % Ordinarily we typeset in two columns, but the onecolumn option
849 % goes to one. In which case we want to center the text block on an
850 % 8.5in width, given the default 72.27pt offset with margins of zero.
851 % We are always in LaTeX's twoside mode because of how we load article,
852 % and this is a good thing, since we want different headings.
853 \if@tubtwocolumn \twocolumn \else
854 \onecolumn
855 \textwidth=34pc
856 \oddsidemargin=30.8775pt
857 \evensidemargin=\oddsidemargin
858 \fi
859 %
860 \newdimen\pagewd \pagewd=\textwidth
861 \newdimen\trimwd \trimwd=\pagewd
862 \newdimen\trimlgt \trimlgt=11in
863 \newdimen\headmargin \headmargin=3.5pc

```

In L^AT_εX, twoside option is forced on when `article.cls` is loaded.

3.12 Messing about with the L^AT_εX logo

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

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

```

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

```

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

```

866 \def\@LaTeX@default{.36}{.15}

```

More are defined in the initial version, for bold CM sans (which is used as `\SecTitleFont`), and CM italic medium and bold, and Bitstream Charter (which Nelson Beebe likes to use). Duplicate for Latin Modern.

```

867 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
868 \DeclareLaTeXLogo{lmss}{bx}{n}{.3}{.15}
869 %
870 \DeclareLaTeXLogo{cmr}{m}{it}{.29}{.2}
871 \DeclareLaTeXLogo{lmr}{m}{it}{.29}{.2}
872 %

```

```

873 \DeclareLaTeXLogo{cmr}{m}{sl}{.29}{.15}
874 \DeclareLaTeXLogo{lmr}{m}{sl}{.29}{.15}
875 %
876 \DeclareLaTeXLogo{cmr}{bx}{it}{.29}{.2}
877 \DeclareLaTeXLogo{lmr}{bx}{it}{.29}{.2}
878 %
879 \DeclareLaTeXLogo{cmr}{bx}{sl}{.29}{.2}
880 \DeclareLaTeXLogo{lmr}{bx}{sl}{.29}{.2}
881 %
882 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
883 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}

```

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

```

884 \DeclareRobustCommand{\LaTeX}{\expandafter\let\expandafter\reserved@a
885 \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
886 \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
887 \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.

```

888 \newcommand{\@LaTeX}[2]{%
889 %\wlog{latex logo family=\f@family/\f@series/\f@shape -> #1, #2.}%
890 L\kern-#1em
891 {\sbox\z@ T%
892 \vbox to\ht0{\hbox{\$m@th$%
893 \csname S@\f@size\endcsname
894 \fontsize\sf@size\z@
895 \math@fontfalse\selectfont
896 A}%
897 \vss}%
898 }%
899 \kern-#2em%
900 \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.

```

901 \def\theauthor#1{\csname theauthor#1\endcsname}
902 \def\theaddress#1{\csname theaddress#1\endcsname}
903 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
904 \def\thePersonalURL#1{\csname thePersonalURL#1\endcsname}
905 \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.

```

906 \!latex\newcount\@tempcnta
907 \def\@defaultauthorlist{%
908   \@getauthorlist\@firstofone
909 }

```

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

```

910 \def\@getauthorlist#1{%
911   \count@\authornumber
912   \advance\count@ by -2
913   \@tempcnta0

```

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

```

914   \loop
915     \ifnum\count@>0
916       \advance\@tempcnta by \@ne
917       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
918       \advance\count@ by \m@ne
919   \repeat
920   \count@\authornumber
921   \advance\count@ by -\@tempcnta
922   \ifnum\authornumber>0

```

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

```

923     \ifnum\count@>1
924       \count@\authornumber
925       \advance\count@ by \m@ne
926       #1{\ignorespaces\theauthor{\number\count@}\unskip\@tubauthorlastsep}%
927     \fi

```

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

```

928     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
929     \fi
930 }
931 %
932 \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...)

```

933 \def\signature#1{\def\@signature{#1}}
934 \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

935 \def\@defaultsignature{%
936     \let\thanks\@gobble
937     \frenchspacing
938     %
939     \ifnum\authornumber<0

    if \authornumber < 0, we are in a contributor's section

940         \medskip
941         \signaturemark
942         \theauthor{\number\authornumber}\\
943         \theaddress{\number\authornumber}\\
944         \allowhyphens
945         \thenetaddress{\number\authornumber}\\
946         \thePersonalURL{\number\authornumber}\\
947         \theORCID{\number\authornumber}\\
948     \else

    \authornumber ≥ 0, so we are in the body of an ordinary article

949         \count@=0
950         \loop
951             \ifnum\count@<\authornumber
952                 \medskip
953                 \advance\count@ by \@ne
954                 \signaturemark
955                 \theauthor{\number\count@}\\
956                 \theaddress{\number\count@}\\
957                 {%
958                     \allowhyphens
959                     \thenetaddress{\number\count@}\\
960                     \thePersonalURL{\number\count@}\\
961                     \theORCID{\number\count@}\\
962                 }%
963             \repeat
964         \fi
965     }%
966 }

967 \newdimen\signaturewidth \signaturewidth=12pc

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

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

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

```



```

969 \@tempdima\signaturewidth
970 \advance\@tempdima 1.5pc
971 \ifdim \@tempdima>\columnwidth
972   \signaturewidth \columnwidth
973   \advance\signaturewidth -1.5pc
974 \fi
975 \par
976 \penalty9000
977 \vspace{#1}%
978 \rightline{%
979   \vbox{\hsize\signaturewidth \ninepoint \raggedright
980     \parindent \z@ \everypar={\hangindent 1pc }%
981     \parskip \z@skip
982     \def\|{\unskip\hfil\break}%
983     \def\\{\endgraf}%
984     \def\phone{\rm Phone: }%
985     \def\tubmultipleaffilauthor{\unskip,\\ \hspace*{1em}}%
986     \rm\@signature}%
987 }%
988 \ifnum\authornumber<0 \endgroup\fi
989 }

```

```

990 \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.

```

991 \def\tubmultipleaffilauthor{\unskip, \ignorespaces}%
992 \def\tubmultipleaffilnet{\unskip\textrm{\,, \ignorespaces}}

```

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

```

993 \newcount\authornumber
994 \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`).

```

995 \def\author{%
996   \global\advance\authornumber\@ne
997   \TB@author
998 }

```

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

```

999 \def\contributor{%
1000 \begingroup
1001 \authornumber\m@ne
1002 \TB@author
1003 }

```

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).

```

1004 \def\TB@author#1{%
1005 \expandafter\def\csname theauthor\number\authornumber\endcsname
1006     {\ignorespaces#1\unskip}%
1007 \expandafter\def\csname theaddress\number\authornumber\endcsname
1008     {\TBWarningNL{Address for #1\space missing}\@gobble}%
1009 \expandafter\def\csname thenetaddress\number\authornumber\endcsname
1010     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
1011 \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
1012     \@gobble
1013 \expandafter\let\csname theORCID\number\authornumber\endcsname
1014     \@gobble
1015 }
1016 \def\EDITORnoaddress{%
1017 \expandafter\let\csname theaddress\number\authornumber\endcsname
1018     \@gobble
1019 }
1020 \def\EDITORnonetaddress{%
1021 \expandafter\let\csname thenetaddress\number\authornumber\endcsname
1022     \@gobble
1023 }

```

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

```

1024 \def\address#1{%
1025 \expandafter\def\csname theaddress\number\authornumber\endcsname
1026     {\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!*

```

1027 \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 $\text{\LaTeX 2}_{\epsilon}$, we use the default-argument form of `\newcommand`; otherwise we write it out in all its horribleness.

```

1028 \newcommand{\netaddress}[1][\relax]{%
1029   \begingroup
1030   \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.

```

1031   #1\@sanitize\makespace\ \makeactive\@%
1032   \makeescape! \makebgroup[ \makeegroup]% seems more useful than literals
1033   \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?!*)

```

1034 \def\@relay@netaddress#1{%
1035   \ProtectNetChars
1036   \expandafter\protected@xdef
1037     \csname thenetaddress\number\authornumber\endcsname
1038     {\protect\leavevmode\textrm{\@network}%
1039     {\protect\NetAddrChars\net
1040     \ignorespaces#1\unskip}}%
1041   \endgroup
1042 }

```

\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.

```

1043 \def\personalURL{\begingroup
1044   \@sanitize\makespace\ \makeactive\@
1045   \makeactive\.\makeactive%\makeactive\/\@personalURL}%
1046 \def\@personalURL#1{%
1047   \ProtectNetChars
1048   \expandafter\protected@xdef
1049     \csname thePersonalURL\number\authornumber\endcsname{%
1050     \protect\leavevmode
1051     {%
1052       \protect\URLchars\net
1053       \ignorespaces#1\unskip
1054     }%
1055   }%
1056 \endgroup
1057 }

```

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...

```

1058 {%
1059   \makecomment\*

```

```

1060 \makeactive\@
1061 \gdef\netaddrat{\makeactive\@*
1062   \def@{\discretionary{\char"40}{\char"40}}
1063 \makeactive\%
1064 \gdef\netaddrpercent{\makeactive\%*
1065   \def%{\discretionary{\char"25}{\char"25}}
1066 \makeactive\.
1067 \gdef\netaddrdot{\makeactive\.*
1068   \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.

```

1069 \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
1070 \makeactive\/
1071 \gdef\URLchars{*
1072   \NetAddrChars
1073   \makeactive\/*
1074   \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.

```

1075 \gdef\ProtectNetChars{*
1076   \def@{\protect@}*
1077   \def%{\protect%}*
1078   \def.{\protect.}*
1079   \def/{\protect/}*
1080   }
1081 }

```

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).

```

1082 \if@compatibility
1083   \DeclareRobustCommand{\net}{\normalfont\ttfamily\mathgroup\symtypewriter}
1084 \else
1085   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathtt}
1086 \fi
1087 \def\authorlist#1{\def\@author{#1}}
1088 \def\@author{\@defaultauthorlist}

```

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

```

1089 \def\ORCID#1{%
1090   \expandafter\def\csname theORCID\number\authornumber\endcsname
1091     {\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
1092 \def\mspmetavar#1#2{}
```

3.14 Article title

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

Provide machinery (`\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.

```
1093 \newif\if@articletitle
1094 \def\maketitle{\@ifstar
1095   {\@articletitlefalse\@r@maketitle}%
1096   {\@articletitletrue\@r@maketitle}%
1097 }
1098 \def\@r@maketitle{\par
1099   \ifdim\PreTitleDrop > \z@
1100     \loop
1101       \ifdim \PreTitleDrop > \textheight
1102         \vbox{\vfil\@eject
1103           \advance\PreTitleDrop by -\textheight
1104         } \repeat
1105       \vbox to \PreTitleDrop{}
1106       \global\PreTitleDrop=\z@
1107   \fi
1108   \iftubsecondcolstart \null\newpage\fi
1109   \begingroup
1110   \setcounter{footnote}{0}
1111   \global\@topnum\z@ % disallow floats above the title
1112   \def\thefootnote{\fnsymbol{footnote}}
1113   \@maketitle
1114   \@thanks
1115   \endgroup
1116   \setcounter{footnote}{0}
1117   \gdef\@thanks{}
1118 }
```

`\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.

```

1119 \def\rhTitle{}% avoid error if no author or title
1120 \renewcommand{\title}{\@dblarg\TB@title}
1121 \def\TB@title[#1]#2{\gdef\@title{#2}%
1122   \bgroup
1123     \let\thanks\@gobble
1124     \def\{\unskip\space\ignorespaces}%
1125     \protected@xdef\rhTitle{#1}%
1126   \egroup
1127 }
```

`\shortTitle` The `\rh*` commands are versions to be used in the running head of the article. Normally, they are the same things as the author and title of the article, but in the case that there are confusions therein, the text should provide substitutes, using the `\short*` commands.

```

1128 \def\shortTitle #1{\def\rhTitle{#1}}
1129 \newif\ifshortAuthor
1130 \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:

```
1131 \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).

```

1132 \newdimen\stbaselineskip      \stbaselineskip=18\p@
1133 \newdimen\stfontheight
1134 \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.

```

1135 \newif\ifWideSecTitle
1136 \newif\iftubtitlerulefullwidth
1137 \newif\ifSecTitle \SecTitlefalse
1138 \newcommand{\sectitle}{%
1139   \SecTiteltrue
1140   \@ifstar
1141     {\WideSecTiteltrue\def\s@ctitle}%
```

```

1142   {\WideSecTitlefalse\def\s@ctitle}%
1143 }

```

`\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.

```

1144 \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.

```

1145 \newskip\AboveTitleSkip   \AboveTitleSkip=12\p@
1146 \newskip\BelowTitleSkip   \BelowTitleSkip=8\p@
1147 \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...

```

1148 \def\@sectitle #1{%
1149   \par
1150   \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.

```

1151   \ifWideSecTitle\else\secsep\fi
1152   {%
1153     \fboxrule\strulethickness
1154     \fboxsep\z@
1155     \noindent\framebox[\hsize]{%
1156       \vbox{%
1157         \raggedcenter
1158         \let\\ \@sectitle@newline
1159         \sectitlefont
1160         \makestrut[2\stfontheight;\z@]%
1161         #1%
1162         \makestrut[\z@;\stfontheight]\endgraf
1163       }%
1164     }%
1165   }%
1166   \nobreak
1167   \vskip\baselineskip
1168 }

```

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

```

1169 \newcommand{\@sectitle@newline}[1][\z@]{%
1170   \ifdim#1>\z@
1171     \makestrut[\z@;#1]%
1172   \fi
1173   \unskip\break
1174 }

```

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).

```

1175 \def\@makesectitle{\ifSecTitle
1176   \global\SecTitlefalse
1177   \ifWideSecTitle
1178     \twocolumn[\@sectitle{\s@ctitle}]%
1179   \global\WideSecTitlefalse
1180   \else
1181     \@sectitle{\s@ctitle}%
1182   \fi
1183 \else
1184   \vskip\AboveTitleSkip
1185   \kern\topskip
1186   \hrule \@height\z@ \@depth\z@ \@width 10\p@
1187   \kern-\topskip
1188   \kern-\strulethickness
1189   \iftubtitlerulefullwidth
1190     \hrule \@height\strulethickness \@depth\z@ width\textwidth
1191   \else
1192     \hrule \@height\strulethickness \@depth\z@
1193   \fi
1194   \kern\medskipamount
1195   \nobreak
1196 \fi
1197 }

```

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

```

1198 \def\@maketitle{%
1199   \@makesectitle
1200   \if@articletitle{%
1201     \nohyphens \interlinepenalty\@M
1202     \setbox0=\hbox{%
1203       \let\thanks\@gobble
1204       \let\=\quad
1205       \let\and=\quad
1206       \ignorespaces\@author}%
1207     {%
1208       \noindent\bf\raggedright\ignorespaces\frenchspacing
1209       \let\BibTeX=\bfBibTeX % else LaTeX Font Warning:
1210                               % Font shape ‘OT1/cmr/bx/sc’ undefined

```



```

1211     \@title\endgraf
1212   }%
1213   \ifdim \wd0 < 5\p@           % omit if author is null
1214   \else

```

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

```

1215     \nobreak \vskip 4\p@
1216   {%
1217     \leftskip=\normalparindent
1218     \raggedright
1219     \def\and{\unskip\}%
1220     \noindent\@author\endgraf
1221   }%
1222   \fi
1223   \nobreak
1224   \vskip\BelowTitleSkip
1225 } \fi%
1226 \global\@afterindentfalse
1227 \aftergroup\@afterheading
1228 }

```

Dedications are ragged right, in italics.

```

1229 \newenvironment{dedication}%
1230 {\raggedright\noindent\itshape\ignorespaces}%
1231 {\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.

```

1232 \def\@tubonecolumnabstractstart{%
1233   \list{}{\listparindent\normalparindent
1234     \itemindent\z@ \leftmargin\@tubfullpageindent
1235     \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1236 }
1237 \def\@tubonecolumnabstractfinish{%
1238   \endlist
1239 }
1240 \renewenvironment{abstract}%
1241 {\begin{SafeSection}%
1242   \section*{%
1243     \if@tubtwocolumn\else \hspace*\@tubfullpageindent}\fi
1244   Abstract}%
1245   \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1246 }%
1247 {\if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1248   \end{SafeSection}}
1249 \newenvironment{longabstract}%
1250 {\begin{SafeSection}%
1251   \section*{Abstract}%

```

```

1252   \bgroup\small
1253   }%
1254   {\endgraf\egroup
1255   \end{SafeSection}%
1256   \vspace{.25\baselineskip}
1257   \begin{center}
1258     {$--*--$}
1259   \end{center}
1260   \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.

```

1261 \def\tubsechook{}
1262 \if@numbersec
1263   \def\section{\TB@startsection{{section}%
1264                                 1%
1265                                 \z@
1266                                 {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1267                                 {4\p@}%
1268                                 {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}}
1269   \def\subsection{\TB@startsection{{subsection}%
1270                                   2%
1271                                   \z@
1272                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1273                                   {4\p@}%
1274                                   {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}}
1275   \def\subsubsection{\TB@startsection{{subsubsection}%
1276                                       3%
1277                                       \z@
1278                                       {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1279                                       {4\p@}%
1280                                       {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}}
1281   \def\paragraph{\TB@startsection{{paragraph}%
1282                                   4%
1283                                   \z@
1284                                   {4\p@ \@plus1\p@ \@minus1\p@}%
1285                                   {-1em}%
1286                                   {\normalsize\bf\tubsechook}}}

```

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

```

1287 \else
1288   \setcounter{secnumdepth}{0}
1289   \def\section{\TB@nolimelabel
1290             \TB@startsection{{section}}%
1291                               1%
1292                               \z@
1293                               {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1294                               {4\p@}%
1295                               {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1296   \def\subsection{\TB@nolimelabel
1297                 \TB@startsection{{subsection}}%
1298                                   2%
1299                                   \z@
1300                                   {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1301                                   {-0.5em\@plus-\fontdimen3\font}%
1302                                   {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1303   \def\subsubsection{\TB@nolimelabel
1304                     \TB@startsection{{subsubsection}}%
1305                                       3%
1306                                       \parindent
1307                                       {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1308                                       {-0.5em\@plus-\fontdimen3\font}%
1309                                       {\normalsize\bf\raggedright\hyphenpenalty\@M\tubsechook}}
1310 \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.

```
1311 \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).

```
1312 \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.

```

1313 \newenvironment{SafeSection}%
1314   {\let\TB@startsection\TB@safe@startsection}%
1315   {}

```

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).

¹Thurber, *The Wonderful O*

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.

```

1316 \if@numbersec
1317   \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1318 \else
1319   \def\paragraph{\TB@nosection\paragraph\subsubsection}
1320   \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1321 \fi
1322 \def\chapter{\TB@nosection\chapter\section}
1323 \def\part{\TB@nosection\part\section}
1324 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1325   \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.

```

1326 \def\TBtocsectionfont{\normalfont}
1327 \newskip\TBtocsectionspace \TBtocsectionspace=1.0ex\@plus\p@
1328 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1329   \advvspace{\TBtocsectionspace}%
1330   \@tempdima 1.5em
1331   \begingroup
1332     \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1333     \parfillskip\z@
1334     \TBtocsectionfont
1335     \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1336     \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1337   \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:

```

1338 \renewcommand{\appendix}{\par

```

```

1339 \renewcommand{\thesection}{\@Alph\c@section}%
1340 \setcounter{section}{0}%
1341 \if@numbersec
1342 \else
1343   \setcounter{secnumdepth}{1}%
1344 \fi

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

1345 \def\@tempa{appendix}
1346 \ifx\@tempa\@currentvir
1347   \expandafter\@appendix@env
1348 \fi
1349 }

Here we deal with \begin{appendix}[(app-name)]
1350 \newcommand{\app@prefix@section}{}
1351 \newcommand{\@appendix@env}[1][Appendix]{%
1352   \renewcommand{\@secntformat}[1]{\csname app@prefix@##1\endcsname
1353     \csname the##1\endcsname\quad}%
1354   \renewcommand{\app@prefix@section}{#1 }%
1355 }

Ending an appendix environment is pretty trivial...
1356 \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

```

1357 \def\TB@nolimelabel{%
1358   \def\@currentlabel{%
1359     \protect\TBWarning{%
1360       Invalid reference to numbered label on page \thepage
1361       \MessageBreak made%
1362     }%
1363     \textbf{?!?}%
1364   }%
1365 }

```

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.

```
1366 \let\TB@@sect\@sect
1367 \let\TB@@ssect\@ssect
1368 \def\@sect#1#2#3#4#5#6[#7]#8{%
1369   \def\@currentlabelname{#7}%
1370   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6}[[#7]][#8]%
1371 }
1372 \def\@ssect#1#2#3#4#5{%
1373   \def\@currentlabelname{#5}%
1374   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1375 }
```

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>`.

```
1376 \let\@savelatexlabel=\label % so save original LaTeX command
1377 %
1378 \def\label#1{% de
1379   \@savelatexlabel{#1}%
1380   \@bsphack
1381   \if@filesw
1382     \protected@write\@auxout{%
1383       {\string\newlabel{nr@#1}{\@currentlabel}{\@currentlabelname}}}%
1384   \fi
1385   \@esphack
1386 }
```

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

```
1387 \let\@currentlabelname\@empty
```

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

```
1388 \DeclareRobustCommand{\nameref}[1]{\expandafter\@setref
1389   \csname r@nr@#1\endcsname\@secondoftwo{#1}}
```

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`

```
1390 \newdimen\@tubfullpageindent
1391 \@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`

```
1392 \let\tubcaptionleftglue=\hfil
```

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

```
1393 \def\tubcaptionfonts{\small}%
```

Ok, here is `\@makecaption`.

```
1394 \long\def\@makecaption#1#2{%
1395   \vskip\abovecaptionskip
1396   % try in an hbox:
1397   \sbox\@tempboxa{\tubcaptionfonts \frenchspacing \tubmakecaptionbox{#1}{#2}}%
1398   \ifdim \wd\@tempboxa > \hsize
1399     {% caption doesn't fit on one line; set as a paragraph.
1400      \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1401      % indent full-width captions {figure*}, but not single-column {figure}.
1402      \ifdim\hsize = \textwidth
1403        \leftskip=\@tubfullpageindent \rightskip=\leftskip
1404        \advance\rightskip by 0pt plus2em % increase acceptable raggedness
1405      \fi
1406      \noindent \tubmakecaptionbox{#1}{#2}\par}%
1407   \else
1408     % fits on one line; use the hbox, usually centered. Do not reset its glue.
1409     \global\@minipagefalse
1410     \hb@xt@\hsize{\tubcaptionleftglue\box\@tempboxa\hfil}%
1411   \fi
1412   \vskip\belowcaptionskip}
1413 %
```

```
1414 \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.

```
1415 \def\fnnum@figure{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}
1416 \def\fnnum@table{\tubcaptionfonts \bf \tablename\nobreakspace\thetable}
1417 \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.

```
1418 \setlength\abovecaptionskip{6pt plus1pt minus1pt}
```

3.21 Size changing commands

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

```
1419 \renewcommand{\normalsize}{%
1420   \@setfontsize\normalsize\@xpt\@xipt
1421   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1422   \belowdisplayskip=\abovedisplayskip
1423   \abovedisplayshortskip=\z@\@plus 3\p@
1424   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1425 }
1426
1427 \renewcommand{\small}{%
1428   \@setfontsize\small\@ixpt{11}%
1429   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1430   \belowdisplayskip=\abovedisplayskip
1431   \abovedisplayshortskip=\z@\@plus 2\p@
1432   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1433 }
1434
1435 \renewcommand{\footnotesize}{%
1436   \@setfontsize\footnotesize\@viipt{9.5}%
1437   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1438   \belowdisplayskip=\abovedisplayskip
1439   \abovedisplayshortskip=\z@\@plus 3\p@
1440   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1441 }
```

3.22 Lists and other text inclusions

```
1442 \def\@listi{%
1443   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1444   \itemsep=\parsep
1445   \listparindent=1em
1446 }
1447
1448 \def\@listii{%
1449   \leftmargin\leftmarginii
1450   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1451   \topsep=2\p@\@plus\p@\@minus\p@
1452   \parsep=\p@\@plus\p@\@minus\p@
1453   \itemsep=\parsep
1454   \listparindent=1em
1455 }
1456
1457 \def\@listiii{%
1458   \leftmargin=\leftmarginiii
1459   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1460   \topsep=\p@\@plus\p@\@minus\p@
1461   \parsep=\z@
```



```

1462 \itemsep=\topsep
1463 \listparindent=1em
1464 }
1465 \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.
1466 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1467 \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}}

The compactitemize, compactenumerate, and compactdescription envi-
ronments, without space between the items.
1468 \newenvironment{compactitemize}%
1469 {\begin{itemize}%
1470 \setlength{\itemsep}{0pt}%
1471 \setlength{\parskip}{0pt}%
1472 \setlength{\parsep}{0pt}%
1473 }%
1474 {\end{itemize}}
1475 %
1476 \newenvironment{compactenumerate}%
1477 {\begin{enumerate}%
1478 \setlength{\itemsep}{0pt}%
1479 \setlength{\parskip}{0pt}%
1480 \setlength{\parsep}{0pt}%
1481 }%
1482 {\end{enumerate}}
1483 %
1484 \newenvironment{compactdescription}%
1485 {\begin{description}%
1486 \setlength{\itemsep}{0pt}%
1487 \setlength{\parskip}{0pt}%
1488 \setlength{\parsep}{0pt}%
1489 }%
1490 {\end{description}}
1491 %

```

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.

```

1492 %\let\@TB@verbatim\@verbatim
1493 \let\@TBverbatim\verbatim
1494 \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.)

```
1495 \def\verbatim{\par\obeylines
1496 \futurelet\reserved@a\@switch@sqbverbatim}
1497 %
1498 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1499 \expandafter\@sqbverbatim\else
1500 \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1501 %
1502 \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.

```
1503 \def\ruled{\let@if@ruled@iftrue}%
    The command \makevmeta says to make !j...i do {...}.
1504 \def\makevmeta{\makeescape! \let<\tubverb@meta \tubverb@clearliglist}
1505 \def\tubverb@meta##1>{\meta{##1}}
```

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

```
1506 \def\tubverb@clearliglist{%
1507 \def\verbatim@nolig@list{\do\‘\do\,\do\’\do\-%}
1508 }
```

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

```
1509 #1\@TBverbatim}
```

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

```
1510 \def\@verbatim{%
    First, we deal with \ruled:
1511 \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
    Now, the code out of the original verbatim environment:
1512 \trivlist \item\relax
1513 \if@minipage\else\vskip\parskip\fi
1514 \leftskip\@totalleftmargin\rightskip\z@skip
```

```

1515 \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1516 \@@par
1517 \@tempwafalse
1518 \def\par{%
1519   \if@tempswa
1520     \leavevmode \null \@@par\penalty\interlinepenalty
1521   \else
1522     \@tempwatrue
1523     \ifhmode\@@par\penalty\interlinepenalty\fi
1524   \fi}%
1525 \obeylines \verbatim@font \@noligs
1526 \let\do\@makeoother \dospecials
1527 \everypar \expandafter{\the\everypar \unpenalty}%
1528 }% 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).

```

1529 \def\endverbatim{\@TBendverbatim
1530   \if@ruled\kern5\p@\hrule\endtrivlist\fi}

```

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

```

1531 \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.

```

1532 \AtBeginDocument{%
1533   \@ifpackageloaded{microtype}
1534     {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{ }
1535 }

```

3.24 Bibliography

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

```

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

```

The available citation commands are:

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

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

```

1536 \if@Harvardcite
1537 \let\@internalcite\cite

```

Normal forms.

```

1538 \def\cite{\def\@citeseppen{-1000}%
1539   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1540   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1541 \def\citeNP{\def\@citeseppen{-1000}%
1542   \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1543   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1544 \def\citeN{\def\@citeseppen{-1000}%
1545   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1546   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1547 \def\citeA{\def\@citeseppen{-1000}%
1548   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1549   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1550 \def\citeANP{\def\@citeseppen{-1000}%
1551   \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1552   \def\citeauthoryear##1##2##3{##1}\@internalcite}

```

Abbreviated forms (using *et al.*)

```

1553 \def\shortcite{\def\@citeseppen{-1000}%
1554   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1555   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1556 \def\shortciteNP{\def\@citeseppen{-1000}%
1557   \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1558   \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1559 \def\shortciteN{\def\@citeseppen{-1000}%
1560   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}%
1561   \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1562 \def\shortciteA{\def\@citeseppen{-1000}%
1563   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1564   \def\citeauthoryear##1##2##3{##2}\@internalcite}
1565 \def\shortciteANP{\def\@citeseppen{-1000}%
1566   \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1567   \def\citeauthoryear##1##2##3{##2}\@internalcite}

```

When just the year is needed:

```

1568 \def\citeyear{\def\@citeseppen{-1000}%
1569   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%

```

```

1570 \def\citeauthoryear##1##2###3{##3}\@citedata}
1571 \def\citeyearNP{\def\@citeseppen{-1000}%
1572 \def\@cite##1##2{##1\if@tempswa , ##2\fi}%
1573 \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.

1574 \def\@citedata{%
1575 \ifnextchar [{\@tempswatrue\@citedatax}%
1576 \else{\@tempswafalse\@citedatax[]}%
1577 }
1578
1579 \def\@citedatax[#1]#2{%
1580 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1581 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1582 {\@citea\def\@citea{, }\@ifundefined% by Young
1583 {b@\@citeb}{\bf ?}%
1584 \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1585 {\csname b@\@citeb\endcsname}}{#1}}%

Don't box citations, separate with ; and a space; Make the penalty between cita-
tions negative: a good place to break.

1586 \def\@citex[#1]#2{%
1587 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1588 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1589 {\@citea\def\@citea{; }\@ifundefined% by Young
1590 {b@\@citeb}{\bf ?}%
1591 \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1592 {\csname b@\@citeb\endcsname}}{#1}}%

No labels in the bibliography.

1593 \def\@biblabel#1{}

Set length of hanging indentation for bibliography entries.

1594 \newlength{\bibhang}
1595 \setlength{\bibhang}{2em}

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

1596 \newdimen\bibindent
1597 \bibindent=1.5em
1598 \@ifundefined{refname}%
1599 {\newcommand{\refname}{References}}%
1600 {}%

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

1601 \def\thebibliography#1{% for harvardcite
1602 \let\TB@startsection\TB@safe@startsection
1603 \section*{\refname
1604 \@mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%

```

```

1605 \list{[\arabic{enumi}]}{%
1606   \labelwidth\z@ \labelsep\z@
1607   \leftmargin\bibindent
1608   \itemindent -\bibindent
1609   \listparindent \itemindent
1610   \parsep \z@
1611   \usecounter{enumi}}}%
1612 \def\newblock{}%
1613 \BibJustification
1614 \frenchspacing % more than just period, see comments below
1615 }

```

`etal` Other bibliography odds and ends.

```

\bibentry 1616 \def\etal{et\,al.\@}
1617 \def\bibentry{%
1618   \smallskip
1619   \hangindent=\parindent
1620   \hangafter=1
1621   \noindent
1622   \sloppy
1623   \clubpenalty500 \widowpenalty500
1624   \frenchspacing
1625 }

```

`\bibliography` Changes made to accommodate TUB file naming conventions

```

\bibliographystyle 1626 \def\bibliography#1{%
1627   \if@filesw
1628     \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1629   \fi
1630   \@input{\jobname.bbl}%
1631 }
1632 \def\bibliographystyle#1{%
1633   \if@filesw
1634     \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1635   \fi
1636 }

```

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

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

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

```

1637 \else % not harvardcite
1638 \let\TB@origthebibliography\thebibliography
1639 \def\thebibliography{%
1640   \let\TB@startsection\TB@safe@startsection
1641   \def\sloppy{\frenchspacing\BibJustification}%
1642   \TB@origthebibliography} % latex's thebibliography now reads args.
1643 \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.)

```

1644 \let\TB@@sloppy\sloppy
1645 \let\BibJustification\TB@@sloppy
1646 \newcommand{\SetBibJustification}[1]{%
1647   \renewcommand{\BibJustification}{#1}%
1648 }
1649 \ResetCommands\expandafter{\the\ResetCommands
1650   \let\BibJustification\TB@@sloppy
1651 }

```

3.25 Registration marks

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

```

1652 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1653 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1654 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }

```

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

```

1655 \def\ttopregister{\dlap{%
1656   \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1657     \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1658   \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1659 \def\tbotregister{\ulap{%
1660   \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1661   \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1662     \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1663 \def\topregister{\ttopregister}
1664 \def\botregister{\tbotregister}

```

3.26 Running headers and footers

```

1665 \def\rtitlex{\def\texttub##1{{\normalsize\textrm{##1}}}\TUB, \volx}

```

registration marks; these are temporarily inserted in the running head

```

1666 \def\MakeRegistrationMarks{}
1667 \def\UseTrimMarks{%
1668   \def\MakeRegistrationMarks{%
1669     \ulap{\rlap{%

```

```

1670     \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}%
1671           \topregister\vskip \headmargin \vskip 10\p@}}}%
1672   }
1673 % put issue identification and page number in header.
1674 \def\@oddhead{\MakeRegistrationMarks
1675   \frenchspacing
1676   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1677   \rtitlex\quad \midrtitlex\hfil \rtitlenexttopage\quad \thepage}
1678 \def\@evenhead{\MakeRegistrationMarks
1679   \frenchspacing
1680   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1681   \thepage \quad\rtitlenexttopage \hfil\midrtitlex \quad\rtitlex}
1682
1683 % can be used to reset the font, e.g., tb98kuester.
1684 \def\tubheadhook{}
1685
1686 % in case the official \author is too verbose for the footline.
1687 % (the \shortauthor / \rhAuthor stuff is only enabled for proceedings, fix!)
1688 \def\tubrunningauthor{\@author}
1689
1690 % put title and author in footer.
1691 \def\@tubrunningfull{%
1692   \def\@oddfoot{% make line break commands produce a normal space
1693     \def\{\unskip\ \ignorespaces}%
1694     \let\newline=\%
1695     \tubtypesetdoi
1696     \frenchspacing\hfil\rhTitle}
1697   \def\@evenfoot{%
1698     \let\thanks\@gobble
1699     \tubtypesetdoi
1700     \frenchspacing\tubrunningauthor\hfil}
1701 }
1702
1703 % empty footer.
1704 \def\@tubrunningminimal{%
1705   \def\@oddfoot{\tubtypesetdoi\hfil}%
1706   \def\@evenfoot{\tubtypesetdoi\hfil}%
1707 }
1708
1709 % empty footer and header.
1710 \def\@tubrunningoff{%
1711   \@tubrunningminimal
1712   \def\@oddhead{\hfil}%
1713   \def\@evenhead{\hfil}%
1714 }
1715
1716 \def\ps@headings{}
1717 \pagestyle{headings}

```


Typeset the doi. The format we decided on looks like: <https://doi.org/10.47397/tb/41-3/tb12> 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 manually 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.

```

1718 %
1719 \def\tubdoiprefix{10.47397/tb} % the number crossref assigned us
1720 \def\tubabovedoi{} % fudge spacing or whatever.
1721 %
1722 \def\tubtypesetdoi{\iftubomitdoioption\else % if not explicit omission ...
1723 \iftubfinaloption % do this if [final], even if pageno>900
1724 \vbox to Opt{% don't impact normal layout
1725 \edef\thedoi{\ifnum\count0>900 xnot\fi % but make url invalid if >900
1726 doi.org/\tubdoiprefix/\volno-\issno/\jobname}%
1727 \scriptsize
1728 \vskip\baselineskip
1729 \tubabovedoi
1730 \iftubsecondcolstart \moveright \tubcolwidthhandgutter \fi
1731 \rlap{\expandafter\tbsurl\expandafter{\thedoi}}%
1732 \vss
1733 }%
1734 \global\let\tubtypesetdoi\empty % only do it once, no matter what.
1735 \fi
1736 \fi}
1737 %
1738 %

```

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...

```

1739 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1740 \global\setbox\@leftcolumn\box\@outputbox
1741 \global\brokenpenalty10000
1742 \else \global\@firstcolumntrue
1743 \global\brokenpenalty100
1744 \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1745 {\box\@leftcolumn \hss}\hfil \vrule \width\columnseprule\hfil
1746 \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1747 \@outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1748 \@whilesw@if@fcolmade \fi{\@outputpage\@startdblcolumn}\endgroup
1749 \fi}

```

3.28 Font-related definitions and machinery

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

```
1750 \newif\ifFirstPar      \FirstParfalse
1751 \def\smc{\sc}
1752 \def\ninepoint{\small}
1753 \end{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 `reysize.sty` by Donald Arseneau and Matt Swift. (The order of examination of `\@currsize` is to get the commonest cases out of the way first.)

```
1754 \common
1755 \DeclareRobustCommand{\SMC}{%
1756   \ifx\@currsize\normalsize\small\else
1757   \ifx\@currsize\small\footnotesize\else
1758   \ifx\@currsize\footnotesize\scriptsize\else
1759   \ifx\@currsize\large\normalsize\else
1760   \ifx\@currsize\Large\large\else
1761   \ifx\@currsize\LARGE\Large\else
1762   \ifx\@currsize\scriptsize\tiny\else
1763   \ifx\@currsize\tiny\tiny\else
1764   \ifx\@currsize\huge\LARGE\else
1765   \ifx\@currsize\Huge\huge\else
1766   \small\SMC@unknown@warning
1767 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1768 }
1769 \newcommand{\SMC@unknown@warning}{\TBWarning{\string\SMC: nonstandard
1770   text font size command -- using \string\small}}
1771 \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.

```

1772 \newcommand{\acro}[1]{\textSMC{#1}\@}
1773 \/\common)

```

3.29 Miscellaneous definitions

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

```

1774 \*classtail)
1775 \def\xEdNote{{\EdNoteFont Editor's note:\enspace }}
1776 \def\EdNote{\@ifnextchar[%]
1777   {%
1778     \ifvmode
1779       \smallskip\noindent\let\@EdNote@\@EdNote@v
1780     \else
1781       \unskip\quad\def\@EdNote@{\unskip\quad}%
1782     \fi
1783     \@EdNote
1784   }%
1785 \xEdNote
1786 }
1787 \long\def\@EdNote[#1]{%
1788   [\thinspace\xEdNote\ignorespaces
1789   #1%
1790   \unskip\thinspace]%
1791   \@EdNote@
1792 }
1793 \def\@EdNote@v{\par\smallskip}

  Macros for Mittelbach's self-documenting style
1794 \def\SelfDocumenting{%
1795   \setlength\textwidth{31pc}
1796   \onecolumn
1797   \parindent \z@
1798   \parskip 2\p@\@plus\p@\@minus\p@
1799   \oddsidemargin 8pc
1800   \evensidemargin 8pc
1801   \marginparwidth 8pc
1802   \toks@\expandafter{\@oddhead}%
1803   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1804   \toks@\expandafter{\@evenhead}%
1805   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1806   \def\ps@titlepage{%
1807 }
1808 \def\ps@titlepage{}
1809
1810 \long\def\@makefntext#1{\parindent 1em\noindent\hb@xt@2em{}%
1811   \llap{\@makefnmark}\null$\mskip5mu$#1}
1812

```

```

1813 %% \long\def\@makefnmark#1{\parindent 1em
1814 %% \noindent
1815 %% \hb@xt@2em{\hss\@makefnmark}%
1816 %% \hskip0.27778\fontdimen6\textfont\z@\relax
1817 %% #1%
1818 %% }

```

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

```

1819 \newcommand{\tubraggedfoot}{\rightskip=\raggedskip plus\raggedstretch\relax}

```

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

```

\supportfootnote 1820 \def\creditfootnote{\nomarkfootnote\xEdNote}
1821 \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.

```

1822 \gdef\nomarkfootnote#1#2{\begingroup
1823 \def\thefootnote{}%
1824 % no period, please, also no fnmark.
1825 \def\@makefnmark#1{##1}%
1826 \footnotetext{\noindent #1#2}%
1827 \endgroup
1828 }

```

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.)

```

1829 \if@Harvardcite
1830 \AtBeginDocument{%
1831 \bibliographystyle{ltugbib}%
1832 }
1833 \fi
1834 \authornumber\z@
1835 \let\@signature\@defaultsignature
1836 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1837 configuration information}}{}
1838 </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:

```

1839 < *ltugproccls>
1840 \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.

```

1841 \newif\if@proc@sober
1842 \newif\if@proc@numerable
1843 \DeclareOption{tug95}{%
1844   \@proc@soberfalse
1845   \@proc@numerablefalse
1846 }
1847 \DeclareOption{tug96}{%
1848   \@proc@sobertrue
1849   \@proc@numerablefalse
1850 }
1851 \DeclareOption{tug97}{%
1852   \@proc@sobertrue
1853   \@proc@numerabletrue
1854 }
1855 \DeclareOption{tug2002}{%
1856   \@proc@sobertrue
1857   \@proc@numerabletrue
1858   \let\if@proc@numbersec\iftrue
1859   \PassOptionsToClass{numbersec}{ltugboat}%
1860 }

```

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

```

1861 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1862   \PassOptionsToClass{numbersec}{ltugboat}%
1863 }
1864 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1865   \PassOptionsToClass{nonumber}{ltugboat}%
1866 }

```

`\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`.

```

1867 \newif\ifTB@title
1868 \DeclareOption{title}{\TB@titletrue}
1869 \DeclareOption{notitle}{\TB@titlefalse}
1870 \AtBeginDocument{\stepcounter{page}}

```

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

```

1871 \DeclareOption{tugproc}{%
1872   \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1873 }

```

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

```

1874 \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 T_EXie...)

```
1875 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1876         {Loading ltugproc configuration information}}{}
1877 \@ifundefined{TUGprocExtraOptions}%
1878     {\let\TUGprocExtraOptions\empty}%
1879     {\edef\TUGprocExtraOptions{,\TUGprocExtraOptions}}
```

`\tugProcYear` Now work out what year it is

```
1880 \@tempcnta\year
1881 \ifnum\@tempcnta<2000
1882     \divide\@tempcnta by100
1883     \multiply\@tempcnta by100
1884     \advance\@tempcnta-\year
1885     \@tempcnta-\@tempcnta
1886 \fi
```

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

```
1887 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1888             {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1889 \@tempa
1890 \ClassInfo{ltugproc}{Class believes year is
1891     \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1892     \@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.

```
1893 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1894     \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.

```
1895 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1896 \ProcessOptions
1897 \if@proc@numbersec
1898     \if@proc@numerable
1899     \else
1900         \ClassWarning{\@tugclass}{This year's proceedings may not have
1901             numbered sections}%
1902     \fi
1903 \fi
```

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

```
1904 \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.

```
1905 \def\maketitle{%
1906   \begingroup
      first, a bit of flim-flam to generate an initial value for \rhAuthor (unless the
      user's already given one with a \shortAuthor comand).
1907   \ifshortAuthor\else
1908     \global\let\rhAuthor\@empty
1909     \def\g@addto@rhAuthor##1{%
1910       \begingroup
1911         \toks@\expandafter{\rhAuthor}%
1912         \let\thanks\@gobble
1913         \protected@xdef\rhAuthor{\the\toks##1}%
1914       \endgroup
1915     }%
1916     \@getauthorlist\g@addto@rhAuthor
1917   \fi
      now, the real business of setting the title
1918   \ifTB@title
1919     \setcounter{footnote}{0}%
1920     \renewcommand{\thefootnote}{\fnsymbol\c@footnote}%
1921     \if@tubtwocolumn
1922       \twocolumn[\@maketitle]%
1923     \else
1924       \onecolumn
1925       \global\@topnum\z@
1926       \@maketitle
1927     \fi
1928     \@thanks
1929     \thispagestyle{TBproctitle}
1930   \fi
1931 \endgroup
1932 \TB@madetitletrue
1933 }
1934 \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.

```
1935 \def\@TB@test@document{%
1936   \edef\@tempa{\the\everypar}
1937   \def \@tempb{\@nodocument}
1938   \ifx \@tempa\@tempb
1939     \@nodocument
1940   \fi
```

1941 }

\AUTHORfont Define the fonts for titles and things

```
\TITLEfont 1942 \def\AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 1943 \def\TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 1944 \def\addressfont{\small\rmfamily\mdseries\upshape}
1945 \def\netaddrfont{\small\ttfamily\mdseries\upshape}
```

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

```
\belowauthorskip
\belowabstractskip 1946 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
1947 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
1948 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@
```

\@maketitle The body of **\maketitle**

```
1949 \def\@maketitle{%
1950   {\parskip\z@
1951     \frenchspacing
1952     \TITLEfont\raggedright\noindent\@title\par
1953     \count@=0
1954     \loop
1955       \ifnum\count@<\authornumber
1956         \vskip\aboveauthorskip
1957         \advance\count@\@ne
1958         {\AUTHORfont\theauthor{\number\count@}\endgraf}%
1959         \addressfont\theaddress{\number\count@}\endgraf
1960         {%
1961           \allowhyphens
1962           \hangindent1.5pc
1963           \netaddrfont\thenetaddress{\number\count@}\endgraf
1964           \hangindent1.5pc
1965           \thePersonalURL{\number\count@}\endgraf
1966         }%
1967     \repeat
1968   \vskip\belowauthorskip}%
1969 \if@abstract
1970   \centerline{\bfseries Abstract}%
1971   \vskip.5\baselineskip\rmfamily
1972   \@tubonecolumnabstractstart
1973     \the\abstract@toks
1974   \@tubonecolumnabstractfinish
1975   \global\@ignoretrue
1976 \fi
1977 \vskip\belowabstractskip
1978 \global\@afterindentfalse\aftergroup\@afterheading
1979 }
```

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@`

```

1980 \newtoks\abstract@toks \abstract@toks{}
1981 \let\if@abstract\iffalse
1982 \def\abstract{%

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

1983 \ifTB@madetitle
1984 \TBWarning{abstract environment after \string\maketitle}
1985 \fi
1986 \def\@abstract@{abstract}%
1987 \ifx\@currenvir\@abstract@
1988 \else
1989 \TBEError{\string\abstract\space is illegal:%
1990 \MessageBreak
1991 use \string\begin{\@abstract@} instead}%
1992 {\@abstract@\space may only be used as an environment}
1993 \fi
1994 \global\let\if@abstract\iftrue
1995 {\ifnum0='}\fi
1996 \@abstract@getbody}
1997 \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}

1998 \long\def\@abstract@getbody#1\end{%
1999 \global\abstract@toks\expandafter{\the\abstract@toks#1}%
2000 \@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.

```

2001 \def\@abstract@findend#1{%
2002 \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.

2003 \ifx\@tempa\@abstract@
2004 \expandafter\@abstract@end
2005 \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)

```

2006 \def\@tempb{document}%

```

```

2007 \ifx\@tempa\@tempb
2008 \TBEror{\string\begin{\@abstract@}
2009 ended by \string\end{\@tempb}}%
2010 {You've forgotten \string\end{\@abstract@}}
2011 \else
2012 \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
2013 \expandafter\expandafter\expandafter\@abstract@getbody
2014 \fi
2015 \fi}

```

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

```

2016 \def\@abstract@end{\ifnum0='{ \fi}%
2017 \expandafter\end\expandafter{\@abstract@}}

```

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

```

2018 \renewcommand{\makesignature}{\TBWarning
2019 {\string\makesignature\space is invalid in proceedings issues}}

```

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

```

\ps@TBproc 2020 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
\ps@TBproc 2021 \let\@evenhead\MakeRegistrationMarks
\dopagecommands 2022 \TB@definefeet
\setpagecommands 2023 }
\TB@definefeet 2024 }
\pfoottext 2024 \def\ps@TBproc{%
\pfoottext 2025 \def\@oddhead{\MakeRegistrationMarks
2026 {%
2027 \hfil
2028 \def\{\unskip\ \ignorespaces}%
2029 \rmfamily\rhTitle
2030 }%
2031 }%
2032 \def\@evenhead{\MakeRegistrationMarks
2033 {%
2034 \def\{\unskip\ \ignorespaces}%
2035 \rmfamily\rhAuthor
2036 \hfil
2037 }%
2038 }%
2039 \TB@definefeet
2040 }
2041
2042 \advance\footskip8\p@ % for deeper running feet
2043
2044 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
2045 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
2046 {#2}}
2047 \def\TB@definefeet{%
2048 \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage

```

```

2049 \else\rfoottext\hfil\thepage\fi\dopagecommands}%
2050 \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
2051 \else\thepage\hfil\rfoottext\fi\dopagecommands}%
2052 }
2053
2054 \def\pfoottext{\smc Preprint:
2055 Proceedings of the \volyr{} Annual Meeting}
2056 \def\rfoottext{\normalfont\TUB, \volx\Dash
2057 {Proceedings of the \volyr{} Annual Meeting}}
2058
2059 \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).

```

2060 \if@proc@numbersec
2061 \else
2062 \setcounter{secnumdepth}{0}
2063 \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.

```

2064 \if@proc@numbersec
2065 \else
2066 \if@proc@sober
2067 \def\section
2068     {\TB@nolimelabel
2069     \TB@startsection{section}%
2070     1%
2071     \z@%
2072     {-8\p@\@plus-2\p@\@minus-2\p@}%
2073     {6\p@}%
2074     {\normalsize\bfseries\raggedright}}
2075 \else
2076 \def\section
2077     {\TB@nolimelabel
2078     \TB@startsection{section}%
2079     1%
2080     \z@%
2081     {-8\p@\@plus-2\p@\@minus-2\p@}%
2082     {6\p@}%
2083     {\large\bfseries\raggedright}}
2084 \fi

```

```

2085 \def\subsection
2086     {\TB@nolimelabel
2087     \TB@startsection{{subsection}%
2088     2%
2089     \z@%
2090     {6\p@\@plus 2\p@\@minus2\p@}%
2091     {-5\p@\@plus -\fontdimen3\the\font}%
2092     {\normalsize\bfseries}}}
2093 \def\subsubsection
2094     {\TB@nolimelabel
2095     \TB@startsection{{subsubsection}%
2096     3%
2097     \parindent%
2098     \z@%
2099     {-5\p@\@plus -\fontdimen3\the\font}%
2100     {\normalsize\bfseries}}}
2101 \fi
2102 </ltugproccls>

```

5 Plain T_EX styles

```

2103 <*tugboatsty>
2104 % err...
2105 </tugboatsty>
2106 <*tugprocsty>
2107 % err...
2108 </tugprocsty>

```

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

```

2109 <*tugboatsty>
2110 \@obsoletefile{ltugboat.cls}{ltugboat.sty}
2111 \LoadClass{ltugboat}
2112 </tugboatsty>
2113 <*tugprocsty>
2114 \@obsoletefile{ltugproc.cls}{ltugproc.sty}
2115 \LoadClass{ltugproc}
2116 </tugprocsty>

```