

The `tugboat` package*

The *TUGboat* team

2023-03-08

Contents

1 Document preambles	2
2 Introduction	2
2.1 Summary of control sequences	2
3 L^AT_EX 2_ε TUGboat class file	6
3.1 Setup and options	6
3.2 Resetting at start of paper	10
3.3 Helpful shorthands (common code with Plain styles)	11
3.4 Abbreviations and logos	12
3.5 General typesetting rules	17
3.6 Utility registers and definitions	18
3.7 Ragged right and friends	19
3.8 Assorted user-level markup	20
3.9 Reviews	24
3.10 Dates, volume and issue numbers, etc.	24
3.11 Page dimensions, glue, penalties, etc.	28
3.12 Messing about with the L ^A T _E X logo	29
3.13 Authors, contributors, addresses, signatures	30
3.14 Article title	36
3.15 Section titles	37
3.16 Section headings	41
3.17 Appendices	43
3.18 References	44
3.19 Title references	44
3.20 Float captions	45
3.21 Size changing commands	46
3.22 Lists and other text inclusions	47
3.23 Some fun with <code>verbatim</code>	48
3.24 Bibliography	50
3.25 Registration marks	53
3.26 Running headers and footers	53
3.27 Output routine	55
3.28 Font-related definitions and machinery	56

*This file has version number v2.29, last revised 2023-03-08

3.29 Editor's notes and other footnotes	57
3.30 Initialization	58
4 L^AT_EX 2_ε Proceedings class	58
4.1 Proceedings titles	60
4.2 Section divisions	64
5 Plain T_EX styles	65
6 The L^AT_EX 2_ε compatibility-mode style files	65

1 Document preambles

```

1 <ltugboatcls | ltugproccls | ltugcomm>\NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 <*dtx>
3 \ProvidesFile           {tugboat.dtx}
4 </dtx>
5 <ltugboatcls>\ProvidesClass {ltugboat}
6 <ltugproccls>\ProvidesClass {ltugproc}
7 <ltugboatsty>\ProvidesPackage{ltugboat}
8 <ltugprocsty>\ProvidesPackage{ltugproc}
9 <ltugcomm>  \ProvidesPackage{ltugcomm}
10           [2023-03-08 v2.29]
11 <ltugboatcls>           TUGboat journal class%
12 <ltugproccls>          TUG conference proceedings class%
13 <ltugboatsty | ltugprocsty> TUG compatibility package%
14 <ltugcomm>             TUGboat 'common macros' package%
15 <*dtx>
16                       TUG macros source file%
17 </dtx>
18 ]

```

2 Introduction

This file contains all the macros for typesetting *TUGboat* with both plain T_EX and L^AT_EX 2_ε.

2.1 Summary of control sequences

Abbreviations. Just a listing with indications of expansion where that may not be obvious. For full definitions, see real code below (Section 3.4).

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

<code>\Cplusplus</code>	C++
<code>\DTD</code>	
<code>\DVD</code>	
<code>\DVI</code>	
<code>\DVIPDFMx</code>	DVIPDFM <i>x</i>
<code>\DVItοVDU</code>	DVItοVDU
<code>\ECMA</code>	
<code>\EPS</code>	
<code>\eTeX</code>	ε -T _E X
<code>\ExTeX</code>	ε_X T _E X
<code>\Ghostscript</code>	
<code>\Hawaii</code>	Hawai'i
<code>\HTML</code>	
<code>\ISBN</code>	ISBN
<code>\ISO</code>	
<code>\ISSN</code>	ISSN
<code>\JTeX</code>	
<code>\JoT</code>	The Joy of T _E X
<code>\LaTeX</code>	
<code>\LyX</code>	
<code>\macOS</code>	mac OS
<code>\MacOSX</code>	Mac OS X
<code>\MathML</code>	
<code>\Mc</code>	M with raised c
<code>\MF</code>	METAFONT
<code>\mf</code>	METAFONT
<code>\MFB</code>	The Metafontbook
<code>\MP</code>	METAPOST
<code>\mp</code>	MetaPost (in text only: still ‘ \mp ’ in math)
<code>\OMEGA</code>	Omega ‘logo’ (Ω)
<code>\OCP</code>	Omega compiled process
<code>\OOXML</code>	
<code>\OTP</code>	Omega translation process
<code>\mtex</code>	multilingual T _E X
<code>\NTS</code>	New Typesetting System
<code>\pcMF</code>	pcMF
<code>\PCTeX</code>	
<code>\pcTeX</code>	
<code>\Pas</code>	Pascal
<code>\PiCTeX</code>	
<code>\plain</code>	plain (in typewriter font)
<code>\POBox</code>	P. O. Box
<code>\PS</code>	PostScript (with hyphenation)
<code>\SC</code>	Steering Committee
<code>\SGML</code>	SGML
<code>\SliTeX</code>	
<code>\slMF</code>	Metafont, slanted: deprecated: use <code>\textsl</code> instead
<code>\stTeX</code>	T _E X for the Atari ST
<code>\SVG</code>	

<code>\TANGLE</code>	
<code>\TB</code>	The \TeX book
<code>\TeX</code>	(Although nearly every package defines this, most, including plain, are missing the spacefactor adjustment)
<code>\TeXhax</code>	
<code>\TeXMaG</code>	(defunct)
<code>\TeXtures</code>	
<code>\TeXXeT</code>	
<code>\Thanh</code>	
<code>\TFM</code>	TFM
<code>\TUB</code>	<i>TUGboat</i>
<code>\TUG</code>	\TeX Users Group
<code>\UNIX</code>	
<code>\VAX</code>	
<code>\VnTeX</code>	
<code>\VorTeX</code>	
<code>\XeT</code>	
<code>\XeTeX</code>	reflected and lowered first ‘E’
<code>\XeLaTeX</code>	with extra space before ‘L’
<code>\XML</code>	
<code>\WEB</code>	
<code>\WEAVE</code>	
<code>\WYSIWYG</code>	

Macros for things that are slightly more significant.

<code>\NoBlackBoxes</code>	turns off marginal rules marking overfull boxes
<code>\BlackBoxes</code>	turns them back on
<code>\newline</code>	horizontal glue plus a break
<code>\ifundefined#1</code>	checks argument with <code>\csname</code> against <code>\relax</code>
<code>\topsmash</code>	smashes above baseline (from AMSTeX)
<code>\botsmash</code>	smashes below baseline (from AMSTeX)
<code>\smash</code>	smashes both (from plain)
<code>\ulap</code>	lap upwards
<code>\dlap</code>	lap downwards
<code>\xlap</code>	reference point at center horizontally; 0 width
<code>\ylap</code>	reference point at center vertically; 0 height, depth
<code>\zlap</code>	combination <code>\xlap</code> and <code>\ylap</code>
<code>\basezero</code>	to avoid insertion of baselineskip and lineskip glue
<code>\nullhrule</code>	empty <code>\hrule</code>
<code>\nullvrule</code>	empty <code>\vrule</code>
<code>\makestrut[#1;#2]</code>	ad hoc struts; #1=height, #2=depth
<code>\today</code>	today’s date
<code>\SetTime</code>	converts <code>\time</code> to hours, minutes
<code>\now</code>	displays time in hours and minutes
<code>\Now</code>	shows current date and time
<code>\ifPrelimDraft</code>	flag to indicate status as preliminary draft

<code>\rtitlex</code>	<i>TUGboat</i> volume and number info for running head
<code>\midrtitlex</code>	information for center of running head
<code>\rtitlexnexttopage</code>	next to page number in running head
<code>\HorzR@gisterRule</code>	pieces of registration marks ('trimmarks')
<code>\DownShortR@gisterRule</code>	
<code>\UpShortR@gisterRule</code>	
<code>\ttopregister</code>	top registration line with 'T' in center
<code>\tbotregister</code>	bottom registration line with inverted 'T' in center
<code>\topregister</code>	register actually used
<code>\botregister</code>	
<code>\raggedskip</code>	parameters used for ragged settings
<code>\raggedstretch</code>	
<code>\raggedparfill</code>	
<code>\raggedspaces</code>	
<code>\raggedright</code>	
<code>\raggedleft</code>	
<code>\raggedcenter</code>	
<code>\normalspaces</code>	
<code>\raggedbottom</code>	
<code>\bull</code>	square bullet
<code>\cents</code>	'cents' sign
<code>\Dag</code>	superscripted dagger
<code>\careof</code>	c/o
<code>\sfrac</code>	slashed fraction (arguments optionally separated by a slash)
<code>\cs</code>	control sequence name <code>\cs{name}→\name</code>
<code>\env</code>	environment name <code>\env{name}→\begin{name}</code>
<code>\meta</code>	meta-argument name <code>\meta{name}→{name}</code>
<code>\dash</code>	en-dash surrounded by thinspaces; only breakable AFTER
<code>\Dash</code>	em-dash, as above
<code>\hyph</code>	permit automatic hyphenation after an actual hyphen
<code>\slash</code>	'breakable' slash
<code>\nth</code>	for obtaining '1 st ', '2 nd ', '3 rd ', etc.
<code>\tubissue</code>	gets \TUB followed by volume and issue numbers
<code>\xEdNote</code>	Editor's Note:
<code>\Review:</code>	Review: (for title of book review article)
<code>\reviewitem</code>	begin data for item being reviewed
<code>\revauth</code>	with one argument, author(s) of item being reviewed
<code>\revtitle</code>	with one argument, title of ...
<code>\revpubinfo</code>	with one argument, other info pertaining to ...
<code>\endreviewitem</code>	end data for item being reviewed

<code>\titleref</code>	with one argument, format title as straight text (slanted, frenchspacing)
<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>\TBEenableRemarks</code>	enable <code>\TBremarks</code> (normally suppressed)
<code>\pagexref</code>	used to write out page numbers to screen and external files
<code>\pagexrefON</code>	
<code>\pagexrefOFF</code>	
<code>\xref</code>	used for symbolic cross-reference to other pages in <i>TUGboat</i>
<code>\xrefON</code>	
<code>\xrefOFF</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

Occasionally we need to do different things when running under traditional (pdf)latex or a native Unicode engine. Since we don't need any fancier distinctions, instead of reading the `iftex` or another package, do the test directly.

```

19 <*common>
20 \newif\ifTBunicodeengine
21 \ifx\Umathchardef\@thisisundefined % not (xetex|luatex)
22   \TBunicodeenginefalse
23 \else
24   \TBunicodeengine>true
25 \fi
26 </common>

```

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

```

27 <*ltugboatcls>
28 \csname tugstyloaded@&endcsname
29 \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.

```

30 \providecommand{\@tugclass}{ltugboat}

```

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

```

31 \def\TBInfo{\ClassInfo{\@tugclass}}
32 \def\TBError{\ClassError{\@tugclass}}
33 \def\TBWarning{\ClassWarning{\@tugclass}}

```

```

34 \def\TBWarningNL{\ClassWarningNoLine{\@tugclass}}
    Class options: draft vs. preprint vs. final.
35 \DeclareOption{draft}{%
36   \AtEndOfClass{%
37     \setcounter{page}{901}%
38     %
39     % Put a question mark into the page number in draft mode.
40     \let\tuborigthepage = \thepage
41     \def\thepage{%
42       \ifnum\value{page}>900
43         \textsl{?\texorpdfstring{\,}\}\@arabic{\numexpr\the\c@page-900\relax}}%
44       \else
45         \arabic{page}%
46       \fi}%
47     %
48     \BlackBoxes
49     \def\MakeRegistrationMarks{}%
50     \PrelimDrafttrue
51   }%
52 }
53
54 \newif\ifpreprint
55 \def\preprint{\preprinttrue}
56 \DeclareOption{preprint}{%
57   \preprinttrue
58 }
59
60 \newif\iftubfinaloption % [final]
61 \DeclareOption{final}{%
62   \tubfinaloptiontrue
63   \AtEndOfClass{%
64     \let\thepage=\tuborigthepage
65     \NoBlackBoxes
66     % Insert draft date into the header even with [final], if we are not
67     % doing a production run. (tugboat.dates sets up page numbers
68     % above 900 in such pseudo-draft mode.) We use [final] in the first
69     % place for this case because draft mode can change page layout, wrt
70     % registration marks, etc.
71     \ifnum\value{page}>900 \PrelimDrafttrue \else \PrelimDraftfalse \fi
72     \@tubrunningfull
73   }%
74 }

```

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

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

```

75 \AtBeginDocument{%
76   \ifx\undefined\texorpdfstring
77     \DeclareRobustCommand{\texorpdfstring}[2]{#1}%
78   \fi
79   %

```

```

80 \ifx\undefined\pdfstringdefDisableCommands\else
81   \pdfstringdefDisableCommands{%
82     \let\acro\relax
83     \let\origDash=\Dash \def\Dash{\texorpdfstring{\origDash}{--}}%
84     % lots more could be added.
85   }%
86 \fi
87 }

```

TUGboat uses only 10pt for the main text.

```

88 \DeclareOption{11pt}{%
89   \TBWarning{The \@tugclass\space class only supports 10pt fonts:
90     \MessageBreak option \CurrentOption\space ignored}%
91 }
92 \DeclareOption{12pt}{\csname ds@11pt\endcsname}

```

Similarly, ignore one/two-side options.

```

93 \DeclareOption{oneside}{\TBWarning{Option \CurrentOption\space ignored}}
94 \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`.)

```

95 \DeclareOption{tugproc}{%
96   \TBWarning{Option \CurrentOption\space ignored: use class ltugproc
97     instead of \@tugclass}%
98 }

```

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.

```

99 \DeclareOption{rawcite}{\let\if@Harvardcite\iffalse}
100 \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...

```

101 \DeclareOption{extralabel}{\let\UseExtraLabel\@firstofone}
102 \DeclareOption{noextralabel}{\let\UseExtraLabel\@gobble}

```

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

```

103 \DeclareOption{numbersec}{\let\if@numbersec\iftrue}
104 \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.

```

105 \DeclareOption{runningoff}{\AtEndOfClass{\@tubrunningoff}}
106 \DeclareOption{runningminimal}{\AtEndOfClass{\@tubrunningminimal}}
107 \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.

```
108 \newif\iftubomitdoioption
109 \DeclareOption{omitdoi}{%
110   \tubomitdoioptiontrue
111 }
```

`\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.

```
112 \newif\if@tubtwocolumn \@tubtwocolumntrue
113 \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.

```
114 \newif\iftubsecondcolstart
115 \DeclareOption{secondcolstart}{\tubsecondcolstarttrue}
```

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

```
116 \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.

```
117 \ExecuteOptions{draft,extralabel,numbersec,rawcite,runningminimal}
118 \ProcessOptions
119 \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.

```
120 \def\sectitlefont{\fontfamily\sfddefault\fontseries{bx}\fontshape{n}%
121   \fontsize\@xviipt\stbaselineskip\selectfont}
122 \def\tensl{\fontseries{m}\fontshape{sl}\fontsize\@xpt\@xipt
123   \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...

```
124 \ifTBunicodeengine
125   % there is no "LM unslanted" in OpenType, so use the standard cmu
126   % scaled for the current text size. Not worth more effort.
127   \def\EdNoteFont{\font\ednotefont = cmu10 at 1em }
128 \else % traditional engine:
129   \def\EdNoteFont{\fontfamily{cmr}\fontseries{m}\fontshape{ui}\selectfont}
130 \fi
131 \ltugboatcls
```

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

```

132 <*common>
133 \IfFileExists{mflogo.sty}%
134   {\RequirePackage{mflogo}}%
135 <!tugcomn> {\TBWarning
136 <tugcomn>   {\PackageWarning{!tugcomn}
137             {Package mflogo.sty not available --\MessageBreak
138             Proceeding to emulate mflogo.sty}
139   \DeclareRobustCommand{\logofamily}{%
140     \not@math@alphabet\logofamily\relax
141     \fontencoding{U}\fontfamily{logo}\selectfont}
142   \DeclareTextFontCommand{\textlogo}{\logofamily}
143   \def\MF{\textlogo{META}\-\textlogo{FONT}\@}
144   \def\MP{\textlogo{META}\-\textlogo{POST}\@}
145   \DeclareFontFamily{U}{logo}{}
146   \DeclareFontShape{U}{logo}{m}{n}{%
147     <8><9>gen*logo%
148     <10><10.95><12><14.4><17.28><20.74><24.88>logo10%
149   }{}
150   \DeclareFontShape{U}{logo}{m}{sl}{%
151     <8><9>gen*logosl%
152     <10><10.95><12><14.4><17.28><20.74><24.88>logosl10%
153   }{}
154   \DeclareFontShape{U}{logo}{m}{it}{%
155     <->ssub*logo/m/sl%
156   }{}%
157 }

```

3.2 Resetting at start of paper

`\ResetCommands` We store a set of commands that should be executed at the start of each paper, `\AddToResetCommands` 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

```

158 \newtoks\ResetCommands
159 \ResetCommands{%
160   \setcounter{part}{0}%
161   \setcounter{section}{0}%
162   \setcounter{footnote}{0}%
163   \authornumber\z@
164 }
165 \newcommand{\AddToResetCommands}[1]{%
166   \AddToResetCommands\expandafter{\AddToResetCommands#1}%
167 }

```

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.

```
168 <!!latex>
169 \def\makeescape#1{\catcode'#1=0 }
170 \def\makebgroup#1{\catcode'#1=1 }
171 \def\makeegroup#1{\catcode'#1=2 }
172 \def\makemath #1{\catcode'#1=3 }
173 </!!latex>
174 <*latex>
175 \def\makeescape#1{\catcode'#1=\z@}
176 \def\makebgroup#1{\catcode'#1=\@ne}
177 \def\makeegroup#1{\catcode'#1=\tw@}
178 \def\makemath #1{\catcode'#1=\thr@@}
179 </latex>
180 \def\makealign #1{\catcode'#1=4 }
181 \def\makeeol #1{\catcode'#1=5 }
182 \def\makeparm #1{\catcode'#1=6 }
183 \def\makesup #1{\catcode'#1=7 }
184 \def\makesub #1{\catcode'#1=8 }
185 \def\makeignore#1{\catcode'#1=9 }
186 \def\makespace #1{\catcode'#1=10 }
187 \def\makeletter#1{\catcode'#1=11 }
188 \chardef\other=12
189 \let\makeother\@makeother
190 \def\makeactive#1{\catcode'#1=13 }
191 \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.

```
192 \def\savecat#1{%
193   \expandafter\xdef\csname\string#1savedcat\endcsname{\the\catcode'#1}}
194 \def\restorecat#1{\catcode'#1=\csname\string#1savedcat\endcsname}
195 <!!latex>\savecat \@
196 <!!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.

```
197 \def\SaveCS#1{\expandafter\let\csname saved@@#1\expandafter\endcsname
198   \csname#1\endcsname}
199 \def\RestoreCS#1{\expandafter\let\csname#1\expandafter\endcsname
200   \csname saved@@#1\endcsname}
```

To distinguish between macro files loaded

```
201 \def\plaintubstyle{plain}
202 \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:

```

203 \providecommand\hb@xt@\hbox to
204 \providecommand\textsuperscript[1]{\ensuremath{\m@th
205             ^{\mbox{\fontsize\sf@size\z@
206             \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.)

We end up wanting this fairly often, and L^AT_EX removed `\line`.

```

207 \def\tubline{\hbox to \hsize}

```

3.4 Abbreviations and logos

Font used for the METAFONT logo, etc.

```

208 \DeclareRobustCommand{\AllTeX}{(\La\kern-.075em)\kern-.075em\TeX}
209 \def\AMS{American Mathematical Society}
210 \def\AmS{\mathcal{A}}\kern-.1667em\lower.5ex\hbox
211     {\mathcal{M}}\kern-.125em\mathcal{S}}
212 \def\AmSLaTeX{\AmS-\LaTeX}
213 \def\AmSTeX{\AmS-\TeX}
214 \def\ANSI{\acro{ANSI}}
215 \def\API{\acro{API}}
216 \def\ASCII{\acro{ASCII}}
217 \def\aw{\acro{A\kern.04em\raise.115ex\hbox{-}W}}
218 \def\AW{Addison\kern.1em-\penalty\z@\hskip\z@skip Wesley}
219 %
220 % make \BibTeX work in slanted contexts too; it's common in titles, and
221 % especially burdensome to hack in .bib files.
222 \def\Bib{%
223     \ifdim \fontdimen1\font>0pt
224         B{\SMC\SMC IB}%
225     \else
226         B\textsc{ib}%
227     \fi
228 }
229 \def\BibLaTeX{\Bib\kern.02em \LaTeX}
230 \def\BibTeX{\Bib\kern-.08em \TeX}
231 % no good way to determine bold font, and we want to lose the kern, too:
232 % (we \let BibTeX to this in maketitle)
233 \def\bfBibTeX{B{\SMC\SMC IB}\TeX}
234 %
235 \def\BSD{\acro{BSD}}
236 \def\CandT{\textsl{Computers \& Typesetting}}
237 % must not define \CJK, because the CJK package does.

```

We place our `\kern` after `\-` so that it disappears if the hyphenation is taken:

```

238 \def\ConTeXt{C\kern-.0333em\-\kern-.0667em\TeX\kern-.0333em}
239 \def\CMkIV{\ConTeXt\ \MkIV}
240 \def\Cplusplus{C\plusplus}
241 \def\plusplus{\raisebox{.7ex}{$_{++}$}}
242 \def\CPU{\acro{CPU}}
243 \def\CSzabbr{\ensuremath{\cal C}}\kern-.1667em\lower.5ex\hbox{\cal S}}
244 \def\CSS{\acro{CSS}}
245 \def\CSTUG{\CSzabbr\kern.05em\acro{TUG}}

```

```

246 \def\CSV{\acro{CSV}}
247 \def\CTAN{\acro{CTAN}}
248 \def\DTD{\acro{DTD}}
249 \def\DTK{\acro{DTK}}
250 \def\DVD{\acro{DVD}}
251 \def\DVI{\acro{DVI}}
252 \def\DVIPDFMx{\acro{DVIPDFM}$x$}
253 \def\DVIttoVDU{DVItto\kern-.12em VDU}
254 \def\ECMA{\acro{ECMA}}
255 \def\EPS{\acro{EPS}}
256 % no line break at this hyphen please, and try to get a bold \varepsilon.
257 \def\TUBdefaultTeX{\ensuremath{\varepsilon}\mbox{-}\kern-.125em\TeX}%
258 \DeclareRobustCommand{\eTeX}{%
259   \ifx\series\bfseries@rm
260     \ifx\boldsymbol\undefined % \boldsymbol is from amsmath; also support bm?
261       \TUBdefaultTeX
262     \else
263       \ensuremath{\boldsymbol{\varepsilon}}\mbox{-}\kern-.125em\TeX
264     \fi
265   \else
266     \TUBdefaultTeX
267   \fi
268 }
269 \DeclareRobustCommand{\ExTeX}{%
270   \ensuremath{\textstyle\varepsilon_{\kern-0.15em\cal{X}}}\kern-.2em\TeX}
271 \def\FAQ{\acro{FAQ}}
272 \def\FTP{\acro{FTP}}
273 \def\Ghostscript{Ghost\script}
274 \def\GNU{\acro{GNU}}
275 \def\GUI{\acro{GUI}}
276 \DeclareRobustCommand{\HarfBuzz}{Harf\discretionary{-}{-}{\kern.077em}Buzz}
277 \def\Hawaii{Hawai'i}
278 \def\HTML{\acro{HTML}}
279 \def\HTTP{\acro{HTTP}}
280 \def\iOS{i\acro{OS}}
281 \def\IDE{\acro{IDE}}
282 \def\IEEE{\acro{IEEE}}
283 \def\ISBN{\acro{ISBN}}
284 \def\ISO{\acro{ISO}}
285 \def\ISSN{\acro{ISSN}}
286 \def\JPEG{\acro{JPEG}}
287 \def\JTeX{\leavevmode\hbox{\lower.5ex\hbox{J}}\kern-.18em\TeX}
288 \def\JoT{\textsl{The Joy of \TeX}}
289 \DeclareRobustCommand{\KOMAScript}{\textsf{K\kern.05em O\kern.05em%
290   M\kern.05em A\kern.1em\hyph\kern.1em Script}}
291 \def\LAMSTeX{L\raise.42ex\hbox{\kern-.3em
292   $\m@th$\fontsize\sf@size\z@\selectfont
293   $\m@th\mathcal{A}$}%
294   \kern-.2em\lower.376ex\hbox{$\m@th\mathcal{M}$}\kern-.125em
295   {\m@th\mathcal{S}$}-\TeX}
296 % This code
297 % is hacked from its definition of \cs{LaTeX}; it allows slants (for
298 % example) to propagate into the raised (small) 'A':
299 % \begin{macrocode}

```

```

300 \DeclareRobustCommand{\La}%
301   {L\kern-.36em
302     {\setbox0\hbox{T}%
303       \vbox to\ht0{\hbox{\$m@th$%
304         \csname S@\f@size\endcsname
305         \fontsize\sf@size\z@
306         \math@fontsfalse\selectfont
307         A}%
308         \vss}%
309     }}

```

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.

```

310 <!!latex>\def\LaTeX{L\kern-.15em\TeX}
311 \def\LuaHBTeX{Lua\acro{HB}\-\TeX}%
312 \def\LuaHBLaTeX{Lua\acro{HB}\-\LaTeX}%
313 \def\LuaLaTeX{Lua\-\TeX}% dtk-logos defines it and people like to use it
314 \def\LuaTeX{Lua\-\TeX}% ditto
315 \def\LyX{L\kern-.1667em\lower.25em\hbox{Y}\kern-.125emX}
316 \def\macOS{mac\acro{OS}}
317 \def\MacOSX{Mac\,\acro{OS},X}
318 \def\MathML{Math\acro{ML}}
319 \def\Mc{\setbox\TestBox=\hbox{M}\vbox
320   to\ht\TestBox{\hbox{c}\vfil}} % for Robert McGaffey

```

If we're running under $\text{\LaTeX}_{2\epsilon}$, 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`.

```

321 \def\mf{\textsc{Metafont}}
322 \def\MFB{\textsl{The \MF\kern.1em\-\book}}
323 \def\MkIV{Mk\acro{IV}}
324 \let\TB@omp\mp
325 \DeclareRobustCommand{\mp}{\ifmmode\TB@omp\else MetaPost\fi}
326 \def\mtex{T\kern-.1667em\lower.424ex\hbox{\^E}\kern-.125emX\@}
327 %
328 % In order that the \cs{OMEGA} command will switch to using the TS1
329 % variant of the capital Omega character if \texttt{textcomp.sty} is
330 % loaded, we define it in terms of the \cs{textohm} command. Note
331 % that this requires us to interpose a level of indirection, rather
332 % than to use \cs{let}\dots
333 % Revised definition of \cs{NTS} based on that used by Phil Taylor.
334 %
335 %   \begin{macrocode}
336 \DeclareRobustCommand{\NTG}{\acro{NTG}}
337 \DeclareRobustCommand{\NTS}{\ensuremath{\mathcal{N}\mkern-4mu
338   \raisebox{-0.5ex}{\mathcal{T}}\mkern-2mu \mathcal{S}}}
339 \DeclareTextSymbol{\textohm}{OT1}{'012}
340 \DeclareTextSymbolDefault{\textohm}{OT1}
341 \newcommand{\OMEGA}{\textohm}
342 \DeclareRobustCommand{\OCP}{\OMEGA\acro{CP}}
343 \DeclareRobustCommand{\OOXML}{\acro{OOXML}}

```

```

344 \DeclareRobustCommand{\OTF}{\acro{OTF}}
345 \DeclareRobustCommand{\OTP}{\OMEGA\acro{TP}}
346 \DeclareRobustCommand{\OpTeX}{Op\kern-.05em\TeX}

347 \def\Pas{Pascal}
348 \def\pcMF{\leavevmode\raise.5ex\hbox{p\kern-.3\p@c}MF\@}
349 \def\PCTeX{PC\thinspace\TeX}
350 \def\pCTeX{\leavevmode\raise.5ex\hbox{p\kern-.3\p@c}\TeX}
351 \def\pdflatex{pdf\-\LaTeX}% dtk-logos
352 \def\pdftex{pdf\-\TeX}% dtk-logos
353 \def\pdfTeX{\pdftex}
354 \def\PDF{\acro{PDF}}
355 \def\PGF{\acro{PGF}}
356 \def\PHP{\acro{PHP}}
357 \def\PiC{P\kern-.12em\lower.5ex\hbox{I}\kern-.075emC\@}
358 \def\PiCTeX{\PiC\kern-.11em\TeX}
359 \def\plain{\texttt{plain}}
360 \def\PNG{\acro{PNG}}
361 \def\POBox{P.\thinspace 0.\~Box }
362 \def\PS{\{Post\-\Script}}
363 \def\PSTricks{\acro{PST}ricks}
364 \def\RIT{\acro{RIT}}
365 \def\RTF{\acro{RTF}}
366 \def\SC{Steering Committee}
367 \def\SGML{\acro{SGML}}
368 \def\SliTeX{\textrm{S\kern-.06em\textsc{l}\kern-.035emi}%
369           \kern-.06em\TeX}}
370 \def\sLMF{\textsl{MF}} % should never be used
371 \def\SQL{\acro{SQL}}
372 \def\stTeX{\textsc{st}\kern-0.13em\TeX}
373 \def\STIX{\acro{STIX}}
374 \def\SVG{\acro{SVG}}
375 \def\TANGLE{\texttt{TANGLE}\@}
376 \def\TB{\textsl{The \TeX\-\book}}
377 \def\TIFF{\acro{TIFF}}
378 \def\TP{\textsl{\TeX}:\ \textsl{The Program}}
379 \DeclareRobustCommand{\TeX}{T\kern-.1667em\lower.424ex\hbox{E}\kern-.125emX\@}
380 \def\TeXhax{\TeX hax}
381 \def\TeXMaG{\TeX M\kern-.1667em\lower.5ex\hbox{A}%
382           \kern-.2267emG\@}
383 \def\TeXtures{\textit{Textures}}
384 \let\Textures=\TeXtures
385 \def\TeXworks{\TeX\kern-.07em works}
386 \def\TeXXeT{\TeX\{-}\-\XeT}
387 \def\TFM{\acro{TFM}}
388 \ifTBunicodeengine
389   \AtBeginDocument{% in case a different font is loaded
390     % \iffontchar is from e-TeX; safe to use under Unicode engines.
391     \iffontchar\font"1EBF
392       \def\TBecircacute{\char"1EBF }%
393     \else
394       \def\TBecircacute{\^e\llap{\raise 0.5ex\hbox{'{}}}}%
395     \fi
396     \def\Thanh{H\'an\~Th\TBecircacute\~Th\'anh}%
397   }%

```

```

398 \else % non-Unicode engine, use our traditional definition.
399   \def\Thanh{H\`an\`Th\`e\llap{\raise 0.5ex\hbox{\`{}}}\`Th\`anh}
400   % We could also go the other direction, and always use the Unicode
401   % character, after:
402   % \ifdefined\DeclareUnicodeCharacter
403   %   \DeclareUnicodeCharacter{1EBF}{\`e\llap{\raise 0.5ex\hbox{\`{}}}}
404   % \fi
405   % but let's make the smaller change.
406 \fi
407 \def\TikZ{Ti{\em k}Z}
408 \def\textsl{\textsl{TTN}}\@}
409 \def\TTN{\textsl{\TeX} and TUG News}}
410 \def\TUB{\texttub{TUGboat}}\def\texttub{\textsl} % redefined in some situations
411 \def\TUG{\TeX\ \UG}
412 \def\tug{\acro{TUG}}
413 \def\UG{Users Group}
414 \def\UNIX{\acro{UNIX}}
415 % Don't define \UTF, since other packages use it for Unicode character access.
416 % On the other hand, we want a macro for UTF-8 that doesn't break at the -.
417 \def\tbUTF{\acro{UTF}}\futurelet\@nextchar\@tbUTFcheck}
418   \def\@tbUTFcheck{\ifx\@nextchar-%
419     \mbox{-}\let\next=\tbgobbedash
420   \else
421     \let\next=\empty
422   \fi\next}
423 \def\tbgobbedash-{}
424 \def\VAX{V\kern-.12em A\kern-.1em X}\@}
425 \def\VnTeX{V\kern-.03em n\kern-.02em \TeX}
426 \def\VorTeX{V\kern-2.7\p@\lower.5ex\hbox{0\kern-1.4\p@ R}\kern-2.6\p@\TeX}
427 \def\XeT{X\kern-.125em\lower.424ex\hbox{E}\kern-.1667emT}\@}
428 \def\XML{\acro{XML}}
429 \def\WEB{\texttt{WEB}}\@}
430 \def\WEAVE{\texttt{WEAVE}}\@}
431 \def\WYSIWYG{\acro{WYSIWYG}}

XeTeX requires reflecting the first E, hence we complain if the graphics pack-
age is not present. (For plain documents, this can be loaded via 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.)

432 \def\tubreflect#1{%
433   \@ifundefined{reflectbox}{%
434     \TBEError{A graphics package must be loaded to use \string\XeTeX}
435     {Load graphicx or graphics.}%
436   }{%
437     \ifdim \fontdimen1\font>Opt
438       \raise 1.75ex \hbox{\kern.1em\rotatebox{180}{#1}}\kern-.1em
439     \else
440       \reflectbox{#1}%
441     \fi
442   }%
443 }
444 \def\tubhideheight#1{\setbox0=\hbox{#1}\ht0=0pt \dp0=0pt \box0 }
445 \def\XekernbeforeE{-.125em}

```



```

446 \def\XekernafterE{-.1667em}
447 \DeclareRobustCommand{\Xe}{\leavevmode
448   \tubhideheight{\hbox{X%
449     \setbox0=\hbox{\TeX}\setbox1=\hbox{E}}%
450     \ifdim \fontdimen1\font>Opt
451       % XeTeX logo needs tinkering when slanted/italic font.
452       \def\XekernbeforeE{-.11em}%
453       \def\XekernafterE{-.16em}%
454       \dp1=-.17ex
455     \fi
456     \lower\dp0\hbox{\raise\dp1\hbox{\kern\XekernbeforeE\tubreflect{E}}}%
457     \kern\XekernafterE}}
458 \def\XeTeX{\XeTeX}
459 \def\XeLaTeX{\Xe{\kern.11em \LaTeX}}
460 %
461 \def\XHTML{\acro{XHTML}}
462 \def\XSL{\acro{XSL}}
463 \def\XSLF0{\acro{XSL}\raise.08ex\hbox{-}\acro{F0}}
464 \def\XSLT{\acro{XSLT}}

```

3.5 General typesetting rules

```

465 \newlinechar='^^J
466 \normallineskiplimit=\p@
467 \clubpenalty=10000
468 \widowpenalty=10000
469 \def\NoParIndent{\parindent=\z@}
470 \newdimen\normalparindent
471 \normalparindent=20\p@
472 \def\NormalParIndent{\global\parindent=\normalparindent}
473 \NormalParIndent
474 \def\BlackBoxes{\overfullrule=5\p@}
475 \def\NoBlackBoxes{\overfullrule=\z@}
476 \def\newline{\hskip\z@\@plus\pagewd\break}

```

`\tubsentencespace` Occasionally, notably after citations that need to come after a sentence-ending period, we want to tell T_EX that it's still at the end of a sentence. As in: ... whatever. \cite{foo}\tubsentencespace This happens when, e.g., the reference applies to more than the final sentence. Also can be needed when \@ cannot be used because the sentence-ending punctuation itself occurs inside a control sequence that prevents it.

```

477 \def\tubsentencespace{\spacefactor=3000}\space\ignorespaces}

```

Latin Modern and many other fonts irritatingly make the Unicode ellipsis character (U+2026) a single character's width, typically more squashed together than three period characters. This just looks wrong. It is too painful to try to redefine in general, but provide the normal definition for \let in individual papers.

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

```

478 \edef\allowhyphens{\noexpand\hyphenpenalty\the\hyphenpenalty\relax
479 \noexpand\exhyphenpenalty\the\exhyphenpenalty\relax}
480 \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`.

```

481 \newbox\T@stBox           \newbox\TestBox
482 \newcount\T@stCount     \newcount\TestCount
483 \newdimen\T@stDimen     \newdimen\TestDimen
484 \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).

```

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

```

L^AT_EX conventions which are also useful here.

```

486 <!!latex>
487 \let\@@input\input
488 \def\iinput#1{\@@input#1 }
489 \def\@inputcheck{\if\@nextchar\bgroup
490 \expandafter\iinput\else\expandafter\@@input\fi}
491 \def\input{\futurelet\@nextchar\@inputcheck}
492 </!!latex>

```

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

```

493 \newif\iftop@           \newif\ifbot@
494 \def\topsmash{\top@true\bot@false\smash@}
495 \def\botsmash{\top@false\bot@true\smash@}
496 \def\smash{\top@true\bot@true\smash@}
497 \def\smash@{\relax\ifmode\def\next{\mathpalette\mathsm@sh}%
498 \else\let\next\makesm@sh\fi \next }
499 \def\finsm@sh{\iftop@\ht\z@\z@\fi\ifbot@\dp\z@\z@\fi\box\z@}

```

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

```

500 \long\def\ulap#1{\vbox to \z@\{vss#1}}
501 \long\def\dlap#1{\vbox to \z@\{#1vss}}

```

And centered horizontal and vertical ‘laps’

```

502 \def\xlap#1{\hb@xt@\z@\{hss#1\hss}}
503 \long\def\ylap#1{\vbox to \z@\{vss#1vss}}
504 \long\def\zlap#1{\ylap{xlap{#1}}}

```

Avoid unwanted vertical glue when making up pages.

```

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

```

Empty rules for special occasions

```
506 \def\nullhrule{\hrule \@height\z@ \@depth\z@ \@width\z@ }
507 \def\nullvrule{\vrule \@height\z@ \@depth\z@ \@width\z@ }
```

Support ad-hoc strut construction.

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

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

```
509 \def\drawoutlinebox[#1;#2;#3]{\T@stDimen=#3
510     \vbox to#1{\hrule \@height\T@stDimen \@depth\z@
511         \vss\hb@xt@#2{\vrule \@width\T@stDimen
512             \hfil\makestrut[#1;\z@]}%
513         \vrule \@width\T@stDimen}\vss
514         \hrule \@height\T@stDimen \@depth\z@}}
```

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

```
515 <!*latex>
516 \def\today{number\day\space \ifcase\month\or
517     Jan \or Feb \or Mar \or Apr \or May \or Jun \or
518     Jul \or Aug \or Sep \or Oct \or Nov \or Dec \fi
519     \number\year}
520 </!*latex>
```

Current time; this may be system dependent!

```
521 \newcount\hours
522 \newcount\minutes
523 \def\SetTime{\hours=\time
524     \global\divide\hours by 60
525     \minutes=\hours
526     \multiply\minutes by 60
527     \advance\minutes by-\time
528     \global\multiply\minutes by-1 }
529 \SetTime
530 \def\now{\ifnum\hours<10 0\fi\number\hours:%
531     \ifnum\minutes<10 0\fi\number\minutes}
532 \def\Now{\today\ \now}
533 \newif\ifPrelimDraft % [draft] or [preprint] or pageno>900
534 \def\midrttitle{} % center of running heads
535 \def\rtitlenexttopage{\ifPrelimDraft \textsl{\small draft: \Now}\fi}
```

3.7 Ragged right and friends

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

```
\raggedspaces 536 \newdimen\raggedskip \raggedskip=\z@
537 \newdimen\raggedstretch \raggedstretch=5em % ems of font set now (10pt)
538 \newskip\raggedparfill \raggedparfill=\z@\@plus 1fil
539 \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 540 \def\raggedright{%
\normalspaces
```

```

541 \nohyphens \raggedspaces
542 \rightskip=\raggedskip\@plus\raggedstretch
543 \parfillskip=\raggedparfill
544 }
545 \def\raggedleft{%
546 \nohyphens \raggedspaces
547 \leftskip=\raggedskip\@plus\raggedstretch
548 \parfillskip=\z@skip
549 \let\ \@centercr % else tabulararray fails,
550 % https://github.com/lvjlr/tabularray/issues/348
551 }
552 \def\raggedcenter{%
553 \nohyphens \raggedspaces
554 \leftskip=\raggedskip\@plus\raggedstretch
555 \rightskip=\leftskip
556 \parindent=\z@
557 \parfillskip=\z@skip
558 }
559 %
560 % Undo |\raggedspaces|.
561 \def\normalspaces{\spaceskip\z@skip \xspaceskip\z@skip}

```

`\tubjustifiedpar` Undo the `\raggedright` (or other such) settings, restoring normality.

```

562 \def\tubjustifiedpar{\rightskip=0pt \parfillskip=0pt plus1fil
563 \allowhyphens \normalspaces}

```

3.8 Assorted user-level markup

L^AT_εEX 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_εEX 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.

```

564 \let\latexpnobreakspace=\nobreakspace
565 \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...)

```

566 \def\boxcs#1{\box\csname#1\endcsname}
567 \def\setboxcs#1{\setbox\csname#1\endcsname}
568 \def\newboxcs#1{\expandafter\newbox\csname#1\endcsname}
569 \let\gobble@\gobble
570 \def\vellipsis{%
571 \leavevmode\kern0.5em

```

```

572 \raise\p@\vbox{\baselineskip6\p@\vskip7\p@\hbox{.}\hbox{.}\hbox{.}}
573 }
574 \def\bull{\vrule \@height 1ex \@width .8ex \@depth -.2ex }
575 \def\cents{{\rm\raise.2ex\rlap{\kern.05em$\scriptstyle/$}c}}
576 \def\careof{\leavevmode\hbox{\raise.75ex\hbox{c}\kern-.15em
577 \kern-.125em\smash{\lower.3ex\hbox{o}}}\ignorespaces}
578 \def\Dag{\raise .6ex\hbox{$\scriptstyle\dagger$}}
579 %
580 \DeclareRobustCommand{\sfrac}[1]{\@ifnextchar/{\@sfrac{#1}}%
581 {\@sfrac{#1}/}}
582 \def\@sfrac#1/#2{\leavevmode\kern.1em\raise.5ex
583 \hbox{$\m@th\mbox{\fontsize\sf@size\z@
584 \selectfont#1}$}\kern-.1em
585 \kern-.15em\lower.25ex
586 \hbox{$\m@th\mbox{\fontsize\sf@size\z@
587 \selectfont#2}$}}
588 %
589 % don't stay bold in description items, bold italic is too weird.
590 \DeclareRobustCommand\meta[1]{%
591 \ensuremath{\langle}%
592 \ifmmode \expandafter\mbox \fi % if in math
593 {\it #1\}/}% no typewriter italics, please
594 \ensuremath{\rangle}%
595 }
596 %
597 % Use \tt rather than \texttt because italic typewriter is just too ugly,
598 % and upright works well enough in both italic and bold contexts.
599 % Would be nice to change catcode of _ for LaTeX3.
600 \DeclareRobustCommand{\cs}[1]{\texorpdfstring
601 {\tt \char'\#1}}%
602 {\textbackslash #1}%
603 }
604 %
605 % This command was defined much later than the others around here, so
606 % let's not conflict with any existing definitions that might be out there.
607 % Don't allow hyphenations or other line breaks.
608 \DeclareRobustCommand{\tubbraced}[1]{\texorpdfstring
609 {\mbox{\texttt{\char'\#1\char'\}}}%
610 {\textbraceleft #1\textbraceright}}%
611 }
612 %
613 % Well, just the \begin part. Never seen it used.
614 \DeclareRobustCommand{\env}[1]{\cs{begin}\tubbraced{#1}}
615 %
616 % Not sure why we ever want this instead of LaTeX's \, (using \kern),
617 % but fine, just keeping it.
618 \DeclareRobustCommand{\thinskip}{\hskip 0.16667em\relax}
619 %
620 % Ah, urls. Nowadays, we like the visible url to not have any protocol,
621 % if it is \texttt{http://} or \texttt{https://}. But we need to include
622 % the protocol if we are making live links, since a string like
623 % \texttt{tug.org/whatever} will be taken as a local filename by
624 % browsers and PDF readers. Since we need to check for
625 % \texttt{hyperref}, make the definition \cs{AtBeginDocument}. In the

```

```

626 % end, \cs{tbsurl}\tubbraced{foo} produces \texttt{https://foo} and
627 % \cs{tbhurl}\tubbraced{foo} produces \texttt{http://foo}.
628 \AtBeginDocument{%
629 \ifx\hyper@normalise\undefined
630 \def\tburl{\url}%
631 \def\tbsurl{\url}% no hyperref, so just \url is fine.
632 \def\tbhurl{\url}%
633 \ifx\url\undefined % make sure \url is defined
634 \def\url{\begingroup % might as well catch common special chars
635 \catcode'\#=12 \catcode'\$=12 \catcode'\%=12 \catcode'\^=12
636 \catcode'\&=12 \catcode'\_ =12 \catcode'\~=12
637 \finish@tub@url}
638 \def\finish@tub@url#1{\tt #1\endgroup}
639 \fi
640 \else
641 % This hyperref hook-in is due to Ulrike Fischer.
642 % \url{https://github.com/latex3/hyperref/issues/125}.
643 % \tb[sh]url@ are defined next.
644 \DeclareRobustCommand*\turl{\tbsurl}%
645 \DeclareRobustCommand*\tbsurl{\hyper@normalise\tbsurl}%
646 \DeclareRobustCommand*\tbhurl{\hyper@normalise\tbhurl}
647 \fi
648 }
649 %
650 % Outside \AtBeginDocument, back at the top level of the dtx, we
651 % turn on expl syntax for the main definitions of \tb[sh]url. We want
652 % to auto-remove an explicit protocol in case it
653 % was given.
654 %
655 % Only the correct protocol is removed; if \verb|http://| is
656 % given to \cs{tbsurl}, it is used (and printed) as-is. This is useful
657 % so we can do \verb|\let\url\tbsurl| when printing bibliographies.
658 %
659 % Giving \verb|https://| to \cs{tbhurl}, on the other hand, generates an
660 % invalid link; in practice there's no use for that so we don't bother
661 % to check for it.
662 %
663 \ExplSyntaxOn
664 \def\tbsurl@#1 % https
665 {
666 \str_set:Nn\l_tmpa_str{#1}
667 \str_if_in:NnTF \l_tmpa_str {http://}
668 {
669 \expandafter\hyper@linkurl
670 \expandafter{\expandafter\Hurl\expandafter{\l_tmpa_str}}{\l_tmpa_str}
671 }
672 {
673 \str_remove_once:Nn\l_tmpa_str{https://}
674 \expandafter\hyper@linkurl
675 \expandafter{\expandafter\Hurl\expandafter{\l_tmpa_str}}
676 {https://\l_tmpa_str}
677 }
678 }
679 \def\tbhurl@#1 % http

```

```

680 {
681   \str_set:Nn\l_tmpa_str{#1}
682   \str_remove_once:Nn\l_tmpa_str{http://}
683   \expandafter\hyper@linkurl\expandafter{\expandafter\Hurl\expandafter
684                                           {\l_tmpa_str}}{http://\l_tmpa_str}
685 }
686 \ExplSyntaxOff
687 %
688 % Now let's use those macros for putting a url into a simple
689 % ragged-right footnote.
690 \def\tburlfootnote{\tbsurlfootnote}
691 \def\tbsurlfootnote#1{\footnote{\raggedright\tbsurl{#1}}}
692 \def\tbhurlfootnote#1{\footnote{\raggedright\tbhurl{#1}}}
693 %
694 % Make \! work in text mode.
695 \DeclareRobustCommand{\!}{\ifmmode\mskip-\thinmuskip \else\kern-0.16667em \fi}
696 %
697 % Half a thinspace, positive and negative.
698 \DeclareRobustCommand{\tubthinspace}
699   {\ifmmode\mskip.5\thinmuskip \else\kern0.08333em \fi}
700 \DeclareRobustCommand{\tubthinspaceeneg}
701   {\ifmmode\mskip-.5\thinmuskip \else\kern-0.08333em \fi}
702 %
703 % Half a smallskip.
704 \DeclareRobustCommand{\tubsmallerskip}
705   {\vskip 1.5pt plus .75pt minus .75pt\relax}
706 %

```

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

```

707 \def\endash{--}
708 \def\emdash{\endash-}
709 \def\d@sh#1#2{\unskip#1\thinspace#2\thinspace\ignorespaces}
710 \def\dash{\d@sh\nobreak\endash}
711 \def\Dash{\d@sh\nobreak\emdash}
712 \def\ldash{\d@sh\empty{\hbox{\endash}\nobreak}}
713 \def\rdash{\d@sh\nobreak\endash}
714 \def\Ldash{\d@sh\empty{\hbox{\emdash}\nobreak}}
715 \def\Rdash{\d@sh\nobreak\emdash}

```

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

```

716 \def\hyph{-\penalty\z@\hskip\z@skip }
717 \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`.

```

718 \def\nth#1{%
719   \def\reserved@a##1##2\@nil{\ifcat##1n%
720     0%
721     \let\reserved@b\ensuremath
722     \else##1##2%
723     \let\reserved@b\relax
724     \fi}%

```

```

725 \TestCount=\reserved@a#1\@nil\relax
726 \ifnum\TestCount <0 \multiply\TestCount by\m@ne \fi % subdue negatives
727 \T@stCount=\TestCount
728 \divide\T@stCount by 100 \multiply\T@stCount by 100
729 \advance\TestCount by-\T@stCount % n mod 100
730 \ifnum\TestCount >20 \T@stCount=\TestCount
731 \divide\T@stCount by 10 \multiply\T@stCount by 10
732 \advance\TestCount by-\T@stCount % n mod 10
733 \fi
734 \reserved@b{#1}%
735 \textsuperscript{\ifcase\TestCount th% 0th
736 \or st% 1st
737 \or nd% 2nd
738 \or rd% 3rd
739 \else th% nth
740 \fi}%
741 }

```

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...

```

742 \def\Review{\@ifnextchar:{\@Review}{\@Review:}}
743 \def\@Review:{\@ifnextchar[%]
744 {\@Rev}%
745 {\@Rev[Book review]}}
746 \def\@Rev[#1]#2{{\ignorespaces#1\unskip:\enspace\ignorespaces
747 \slshape\mdseries#2}}
748 \def\reviewitem{\advvspace{\BelowTitleSkip}%
749 \def\revauth##1{\def\therevauth{##1, }\ignorespaces}%
750 \def\revtitle##1{\def\therevtitle{{\slshape##1}. }\ignorespaces}%
751 \def\revpubinfo##1{\def\therevpubinfo{##1.}\ignorespaces}%
752 }
753 \def\endreviewitem{{\noindent\interlinepenalty=10000
754 \therevauth\therevtitle\therevpubinfo\endgraf}%
755 \vskip\medskipamount
756 }
757 \def\titleref#1{{\slshape\frenchspacing#1/}}
758 \let\booktitle=\titleref % older name

```

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 `\issyyear` 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.

```

759 \newcount\issueseqno \issueseqno=-1
760 \def\v@lx{\gdef\volx{Volume~\volno~(\volyr), No.~\issno}}
761 \def\volyr{}
762 \def\volno{}
763 \def\vol#1, #2.{%
764     \gdef\volno{#1}%
765     \gdef\issno{#2}%
766     \setbox\TestBox=\hbox{\volyr}%
767     \ifdim \wd\TestBox > .2em \v@lx \fi }
768 \def\issyear#1.{%
769     \gdef\issdt{#1}\gdef\volyr{#1}%
770     \gdef\bigissdt{#1}%
771     \setbox\TestBox=\hbox{\volno}%
772     \ifdim \wd\TestBox > .2em \v@lx \fi }
773 \def\issdate#1#2 #3.{%
774     \gdef\issdt{#1#2 #3}\gdef\volyr{#3}%
775     \gdef\bigissdt{#1{\smc\uppercase{#2}} #3}%
776     \setbox\TestBox=\hbox{\volno}%
777     \ifdim \wd\TestBox > .2em \v@lx \fi }
778 % The \vol command must be invoked precisely like this, including spaces.
779 % Since we are the only ones who write it, we can be strict.
780 \vol 0, 0.
781 \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

```

782 <!\latex>\def\tubissue#1(#2)%
783 <*\latex>
784 \def\tubissue#1{\@ifnextchar(%
785   {\@tubissue@b{#1}}
786   {\@tubissue@a{#1}})}
787 \def\@tubissue@b#1(#2){\@tubissue@a{#1}{#2}}
788 \def\@tubissue@a#1#2%
789 </\latex>
790 {\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`

```

791 \def\infil@{\jobname}
792 \def\Input #1 {\ifnum\issueseqno<0
793   \def\infil@{#1}%
794   \else
795     \def\infil@{tb\number\issueseqno#1}
796   \fi
797   \edef\jobname{\infil@}\@readFLN
798   @@input \infil@\relax
799   \if@RMKopen
800     \immediate\closeout\@TBremarkfile\@RMKopenfalse

```

```
801 \fi
802 }
```

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

```
803 \newif\if@RMKopen          \@RMKopenfalse
804 \newwrite\@TBremarkfile
805 \def\@TBremark#1{%
806   \if@RMKopen
807   \else
808     \@RMKopenttrue\immediate\openout\@TBremarkfile=\infil@.rmk
809   \fi
810   \toks@={#1}%
811   \immediate\write\@TBremarkfile{^^J\the\toks@}%
812   \immediate\write16{^^JTBremark:: \the\toks@^^J}%
813 }
```

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

```
814 \let\TBremark=\gobble
```

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

```
815 \def\TBEEnableRemarks{\let\TBremark\@TBremark}
```

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

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

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

```
817 \def\TUBfilename#1#2{\expandafter\def\csname file@@#1\endcsname{#2}}
818 \newread\@altfilenames
819 \def\@readFLN{\immediate\openin\@altfilenames=\jobname.fln
820   \ifeof\@altfilenames\let\@result\relax\else
821   \def\@result{\@input\jobname.fln }\fi
822   \immediate\closein\@altfilenames
823   \@result}
824 \@readFLN
825 \everyjob=\expandafter{\the\everyjob\@readFLN}
826 \InputIfFileExists{\jobname.fln}%
827   {\TBInfo{Reading alternative file file \jobname.fln}}{}
```

The following needs to work entirely in T_EX's mouth

```
828 \def\@tubfilename#1{\expandafter\ifx\csname file@@#1\endcsname\relax
829   #1\else\csname file@@#1\endcsname\fi}
830 \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.

```

831 <!*latex>
832 \def\pagexrefON#1{%
833     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
834     \write\ppoutfile{%
835         \def\expandafter\noexpand\csname#1\endcsname{\number\pageno}}%
836     }
837 \def\PageXrefON#1{%
838     \immediate\write-1{\def\expandafter
839         \noexpand\csname#1\endcsname{\number\pageno}}%
840     \immediate\write\ppoutfile{\def\expandafter
841         \noexpand\csname#1\endcsname{\number\pageno}}%
842 </!*latex>
843 <!*latex>
844 \def\pagexrefON#1{%
845     \write-1{\def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
846     \write\ppoutfile{%
847         \def\expandafter\noexpand\csname#1\endcsname{\number\c@page}}%
848     }
849 \def\PageXrefON#1{%
850     \immediate\write-1{\def\expandafter
851         \noexpand\csname#1\endcsname{\number\c@page}}%
852     \immediate\write\ppoutfile{\def\expandafter
853         \noexpand\csname#1\endcsname{\number\c@page}}%
854 </!latex>
855 \def\pagexrefOFF#1{}
856 \let\pagexref=\pagexrefOFF
857 \def\PageXrefOFF#1{}
858 \let\PageXref=\PageXrefOFF
859 \def\xreftoON#1{%
860     \ifundefined{#1}%
861         ???\TBremark{Need cross reference for #1.}%
862     \else\csname#1\endcsname\fi}
863 \def\xreftoOFF#1{???}
864 \let\xrefto=\xreftoOFF

```

`\TBdriver` ‘marks code for use when articles are run together in a driver file’. Since we don’t yet have a definition of that arrangement, we don’t have a definition of `\TBdriver`. Its argument (which one presumes was intended as the code for this unusual state) is just gobbled.

```
865 \let\TBdriver\gobble
```

Some hyphenation exceptions:

```

866 \ifx\tubomithyphenations\@thisisundefined
867 \hyphenation{Del-a-ware Dijk-stra Duane Eijk-hout
868 Flor-i-da Free-BSD Ghost-script Ghost-view
869 Hara-lam-bous Jac-kow-ski Ja-pa-nese Karls-ruhe Lua-Meta
870 Mac-OS Ma-la-ya-lam Math-Sci-Net
871 Net-BSD Open-BSD Open-Office
872 Pak-i-stan Pfa-Edit Post-Script Rich-ard Skoup South-all
873 Vieth VM-ware Win-Edt
874 acro-nym acro-nyms analy-sis ap-pen-di-ces ap-pen-dix asyn-chro-nous
875 bib-li-o-graph-i-cal bit-map bit-mapped bit-maps buf-fer buf-fers bool-ean

```

```

876 col-umns com-put-able com-put-abil-ity cus-tom-iz-able
877 data-base data-bases
878 de-allo-cate de-allo-cates de-allo-cated de-allo-ca-tion
879 de-riv-a-tive de-riv-a-tives de-riv-a-ble der-i-va-tion dis-trib-ut-able
880 es-sence
881 fall-ing
882 half-way
883 in-fra-struc-ture
884 key-note
885 long-est
886 ma-gyar man-u-script man-u-scripts meta-table meta-tables
887 mne-mon-ic mne-mon-ics mono-space mono-spaced
888 name-space name-spaces
889 off-line over-view
890 pal-ettes par-a-digm par-a-dig-mat-ic par-a-digms
891 pipe-line pipe-lines
892 plug-in plug-ins pres-ent-ly pro-gram-mable
893 re-allo-cate re-allo-cates re-allo-cated re-printed
894 set-ups se-vere-ly spell-ing spell-ings stand-alone strong-est
895 sub-ex-pres-sion sub-tables sur-gery syn-chro-ni-city syn-chro-nous
896 text-height text-length text-width
897 time-stamp time-stamped time-stamps
898 vis-ual vis-ual-ly
899 which-ever white-space white-spaces wide-spread wrap-around
900 }
901 \fi
902 <!!latex>\restorecat\@
903 </common>
904 <*classtail>
905 \PrelimDrafttrue

```

3.11 Page dimensions, glue, penalties, etc.

```

906 \textheight 54pc % 648pt = 645.58bp = 8.97in
907 \textwidth 39pc % 468pt = 466.25bp = 6.48in
908 \columnsep 1.5pc % 18pt = 17.93bp = .249in
909 \columnwidth 18.75pc % 225pt = 224.16bp = 3.11in
910 \hfuzz 1pt
911 \parindent \normalparindent % 20pt
912 \parskip \z@ % \@plus\p@
913 \leftmargini 2em
914 \leftmarginv .5em
915 \leftmarginvi .5em
916 \oddsidemargin \z@
917 \evensidemargin \z@
918 \topmargin -2.5pc % 30pt = 29.89bp = .415in
919 \headheight 12\p@
920 \headsep 20\p@
921 \marginparwidth 48\p@
922 \marginparsep 10\p@
923 \partopsep=\z@
924 \topsep=3\p@\@plus\p@\@minus\p@
925 \parsep=3\p@\@plus\p@\@minus\p@
926 \itemsep=\parsep

```

```

927 %
928 % The width of one column plus gutter (=243pt =242.09bp) is useful sometimes.
929 \newdimen\tubcolwidthandgutter
930 \tubcolwidthandgutter=\columnwidth
931 \advance\tubcolwidthandgutter by \columnsep
932 %
933 % Ordinarily we typeset in two columns, but the onecolumn option
934 % goes to one. In which case we want to center the text block on an
935 % 8.5in width, given the default 72.27pt offset with margins of zero.
936 % We are always in LaTeX's twoside mode because of how we load article,
937 % and this is a good thing, since we want different headings.
938 \if@tubtwocolumn \twocolumn \else
939 \onecolumn
940 \textwidth=34pc
941 \oddsidemargin=30.8775pt
942 \evensidemargin=\oddsidemargin
943 \fi
944 %
945 \newdimen\pagewd \pagewd=\textwidth
946 \newdimen\trimwd \trimwd=\pagewd
947 \newdimen\trimlgt \trimlgt=11in
948 \newdimen\headmargin \headmargin=3.5pc

```

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

3.12 Messing about with the \LaTeX logo

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

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

```

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

```

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

```

951 \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.

```

952 \DeclareLaTeXLogo{cmss}{bx}{n}{.3}{.15}
953 \DeclareLaTeXLogo{lmss}{bx}{n}{.3}{.15}
954 %
955 \DeclareLaTeXLogo{cmr}{m}{it}{.29}{.2}
956 \DeclareLaTeXLogo{lmr}{m}{it}{.29}{.2}
957 %
958 \DeclareLaTeXLogo{cmr}{m}{sl}{.29}{.15}
959 \DeclareLaTeXLogo{lmr}{m}{sl}{.29}{.15}
960 %
961 \DeclareLaTeXLogo{cmr}{bx}{it}{.29}{.2}
962 \DeclareLaTeXLogo{lmr}{bx}{it}{.29}{.2}
963 %
964 \DeclareLaTeXLogo{cmr}{bx}{sl}{.29}{.2}
965 \DeclareLaTeXLogo{lmr}{bx}{sl}{.29}{.2}

```

```

966 %
967 \DeclareLaTeXLogo{bch}{m}{n}{.2}{.08}
968 \DeclareLaTeXLogo{bch}{m}{it}{.2}{.08}

```

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

```

969 \DeclareRobustCommand{\LaTeX}{\expandafter\let\expandafter\reserved@a
970 \csname @LaTeX@f@family/\f@series/\f@shape\endcsname
971 \ifx\reserved@a\relax\let\reserved@a\@LaTeX@default\fi
972 \expandafter\@LaTeX\reserved@a}

```

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

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

```

973 \newcommand{\@LaTeX}[2]{%
974 %\wlog{latex logo family=\f@family/\f@series/\f@shape -> #1, #2.}%
975 L\kern-#1em
976 {\sbox\z@ T%
977 \vbox to\ht0{\hbox{\$m@th$%
978 \csname S@\f@size\endcsname
979 \fontsize\sf@size\z@
980 \math@fontsfalse\selectfont
981 A}%
982 \vss}%
983 }%
984 \kern-#2em%
985 \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.

```

986 \def\theauthor#1{\csname theauthor#1\endcsname}
987 \def\theaddress#1{\csname theaddress#1\endcsname}
988 \def\thenetaddress#1{\csname thenetaddress#1\endcsname}
989 \def\thePersonalURL#1{\csname thePersonalURL#1\endcsname}
990 \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.

```

991 <!!latex>\newcount\@tempcnta
992 \def\@defaultauthorlist{%
993 \@getauthorlist\@firstofone
994 }

```

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

```

995 \def\@getauthorlist#1{%
996   \count@\authornumber
997   \advance\count@ by -2
998   \@tempcnta0

```

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

```

999   \loop
1000     \ifnum\count@>0
1001       \advance\@tempcnta by \@ne
1002       #1{\ignorespaces\theauthor{\number\@tempcnta}\unskip, }%
1003       \advance\count@ by \m@ne
1004   \repeat
1005   \count@\authornumber
1006   \advance\count@ by -\@tempcnta
1007   \ifnum\authornumber>0

```

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

```

1008     \ifnum\count@>1
1009       \count@\authornumber
1010       \advance\count@ by \m@ne
1011       #1{\ignorespaces\theauthor{\number\count@}\unskip\@tubauthorlastsep}%
1012     \fi

```

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

```

1013     #1{\ignorespaces\theauthor{\number\authornumber}\unskip}
1014   \fi
1015 }
1016 %
1017 \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...)

```

1018 \def\signature#1{\def\@signature{#1}}
1019 \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`

```

1020 \def\@defaultsignature{%
1021   \let\thanks\@gobble
1022   \frenchspacing
1023   %
1024   \ifnum\authornumber<0

```

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

```

1025     \medskip
1026     \signaturemark
1027     \theauthor{\number\authornumber}\

```

```

1028     \theaddress{\number\authornumber}\\
1029     \allowhyphens
1030     \thenetaddress{\number\authornumber}\\
1031     \thePersonalURL{\number\authornumber}\\
1032     \theORCID{\number\authornumber}\\
1033     \else
\authornumber ≥ 0, so we are in the body of an ordinary article

```

```

1034     \count@=0
1035     \loop
1036         \ifnum\count@<\authornumber
1037             \medskip
1038             \advance\count@ by \@ne
1039             \signaturemark
1040             \theauthor{\number\count@}\\
1041             \theaddress{\number\count@}\\
1042             {%
1043                 \allowhyphens
1044                 \thenetaddress{\number\count@}\\
1045                 \thePersonalURL{\number\count@}\\
1046                 \theORCID{\number\count@}\\
1047             }%
1048         \repeat
1049     \fi
1050 }%
1051 }

```

```

1052 \newdimen\signaturewidth \signaturewidth=12pc

```

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

```

1053 \newcommand{\makesignature}[1][\medskipamount]{%

```

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

```

1054 \@tempdima\signaturewidth
1055 \advance\@tempdima 1.5pc
1056 \ifdim \@tempdima>\columnwidth
1057     \signaturewidth \columnwidth
1058     \advance\signaturewidth -1.5pc
1059 \fi
1060 \par
1061 \penalty9000
1062 \vspace{#1}%
1063 \rightline{%
1064     \vbox{\hsize\signaturewidth \ninepoint \raggedright
1065         \parindent \z@ \everypar={\hangindent 1pc }%
1066         \parskip \z@skip
1067         \def\|{\unskip\hfil\break}%
1068         \def\|{\endgraf}%
1069         \def\phone{\rm Phone: }%
1070         \def\tubmultipleaffilauthor{\unskip,\\ \hspace*{1em}}%
1071         \rm\@signature}%
1072 }%
1073 \ifnum\authornumber<0 \endgroup\fi
1074 }

```



```
1075 \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.

```
1076 \def\tubmultipleaffilauthor{\unskip,\ \ignorespaces}%
1077 \def\tubmultipleaffilnet{\unskip\textrm{\,,\ \ignorespaces}}
```

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

```
1078 \newcount\authornumber
1079 \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`).

```
1080 \def\author{%
1081   \global\advance\authornumber\@ne
1082   \TB@author
1083 }
```

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

```
1084 \def\contributor{%
1085   \begingroup
1086   \authornumber\m@ne
1087   \TB@author
1088 }
```

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).

```
1089 \def\TB@author#1{%
1090   \expandafter\def\csname theauthor\number\authornumber\endcsname
1091     {\ignorespaces#1\unskip}%
1092   \expandafter\def\csname theaddress\number\authornumber\endcsname
1093     {\TBWarningNL{Address for #1\space missing}\@gobble}%
1094   \expandafter\def\csname thenetaddress\number\authornumber\endcsname
1095     {\TBWarningNL{Net address for #1\space missing}\@gobble}%
1096   \expandafter\let\csname thePersonalURL\number\authornumber\endcsname
1097     \@gobble
1098   \expandafter\let\csname theORCID\number\authornumber\endcsname
1099     \@gobble
1100 }
1101 \def\EDITORnoaddress{%
1102   \expandafter\let\csname theaddress\number\authornumber\endcsname
1103     \@gobble
```

```

1104 }
1105 \def\EDITORnonetaddress{%
1106   \expandafter\let\csname thenetaddress\number\authornumber\endcsname
1107     \@gobble
1108 }

```

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

```

1109 \def\address#1{%
1110   \expandafter\def\csname theaddress\number\authornumber\endcsname
1111     {\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!*

```

1112 \def\network#1{\def\@network{#1: }}

```

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

```

1113 \newcommand{\netaddress}[1][\relax]{%
1114   \begingroup
1115   \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.

```

1116   #1\@sanitize\makespace\ \makeactive\@%
1117   \makeescape! \makebgroup[ \makeegroup]% seems more useful than literals
1118   \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?!**)

```

1119 \def\@relay@netaddress#1{%
1120   \ProtectNetChars
1121   \expandafter\protected@xdef
1122     \csname thenetaddress\number\authornumber\endcsname
1123     {\protect\leavevmode\textrm{\@network}%
1124     {\protect\NetAddrChars\net
1125       \ignorespaces#1\unskip}}%
1126   \endgroup
1127 }

```

`\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.

```

1128 \def\personalURL{\begingroup
1129   \@sanitize\makespace\ \makeactive\@
1130   \makeactive\.\makeactive%\makeactive\/\@personalURL}%
1131 \def\@personalURL#1{%
1132   \ProtectNetChars
1133   \expandafter\protected@xdef
1134   \csname thePersonalURL\number\authornumber\endcsname{%
1135     \protect\leavevmode
1136     {%
1137       \protect\URLchars\net
1138       \ignorespaces#1\unskip
1139     }%
1140   }%
1141 \endgroup
1142 }

```

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...

```

1143 {%
1144   \makecomment\*
1145   \makeactive\@
1146   \gdef\netaddrat{\makeactive\@*
1147     \def{\discretionary{\char"40}{\char"40}}
1148   \makeactive\%
1149   \gdef\netaddrpercent{\makeactive%\%*
1150     \def{\discretionary{\char"25}{\char"25}}
1151   \makeactive\.
1152   \gdef\netaddrdot{\makeactive\.*
1153     \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`.

```

1154   \gdef\NetAddrChars{\netaddrat \netaddrpercent \netaddrdot}
1155   \makeactive\/
1156   \gdef\URLchars{*
1157     \NetAddrChars
1158   \makeactive\/*
1159   \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.

```

1160   \gdef\ProtectNetChars{*
1161     \def@\{\protect@}*
1162     \def%\{\protect%}*
1163     \def.\{\protect.}*
1164     \def/\{\protect/}*
1165   }
1166 }

```

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 `LATεEX 2ε` defines for the job).

```

1167 \if@compatibility
1168   \DeclareRobustCommand{\net}{\normalfont\ttfamily\mathgroup\symtypewriter}
1169 \else
1170   \DeclareOldFontCommand{\net}{\ttfamily\upshape\mdseries}{\mathhtt}
1171 \fi
1172 \def\authorlist#1{\def\@author{#1}}
1173 \def\@author{\@defaultauthorlist}

```

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

```

1174 \def\ORCID#1{%
1175   \expandafter\def\csname theORCID\number\authornumber\endcsname
1176     {\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`

```

1177 \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 a meeting) that has no credited author or other title. In this case, the command `\@r@maketitle` 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 `LATεEX 2ε`.

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

```

1178 \newif\if@articletitle
1179 \def\maketitle{\@ifstar
1180   {\@articletitlefalse\@r@maketitle}%
1181   {\@articletitletrue\@r@maketitle}%
1182 }
1183 \def\@r@maketitle{\par
1184   \ifdim\PreTitleDrop > \z@
1185     \loop
1186       \ifdim \PreTitleDrop > \textheight
1187         \vbox{\vfil\eject
1188           \advance\PreTitleDrop by -\textheight
1189         \repeat
1190     \vbox to \PreTitleDrop{}
1191   \global\PreTitleDrop=\z@

```

```

1192 \fi
1193 \iftubsecondcolstart \null\newpage\fi
1194 \begingroup
1195 \setcounter{footnote}{0}
1196 \global\@topnum\z@ % disallow floats above the title
1197 \def\thefootnote{\fnsymbol{footnote}}
1198 \@maketitle
1199 \@thanks
1200 \endgroup
1201 \setcounter{footnote}{0}
1202 \gdef\@thanks{}
1203 }

```

`\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.

```

1204 \def\rhTitle{}% avoid error if no author or title
1205 \renewcommand{\title}{\@dblarg\TB@title}
1206 \def\TB@title[#1]#2{\gdef\@title{#2}%
1207 \bgroup
1208 \let\thanks\@gobble
1209 \def\{\unskip\space\ignorespaces}%
1210 \protected@xdef\rhTitle{#1}%
1211 \egroup
1212 }

```

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

```

1213 \def\shortTitle #1{\def\rhTitle{#1}}
1214 \newif\ifshortAuthor
1215 \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:

```
1216 \def\secsep{\vskip 5\baselineskip}
```

Note that `\stbaselineskip` is used in the definition of `\sectitlefont`, in $\text{\LaTeX} 2_{\epsilon}$, so that it has (at least) to be defined before `\sectitlefont` is used (we do the whole job).

```

1217 \newdimen\stbaselineskip \stbaselineskip=18\p@
1218 \newdimen\stfontheight
1219 \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.

```

1220 \newif\ifWideSecTitle
1221 \newif\iftubtitlerulefullwidth
1222 \newif\ifSecTitle \SecTitlefalse
1223 \newcommand{\sectitle}{%
1224   \SecTiteltrue
1225   \@ifstar
1226     {\WideSecTiteltrue\def\s@ctitle}%
1227     {\WideSecTitlefalse\def\s@ctitle}%
1228 }

```

`\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.

```

1229 \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.

```

1230 \newskip\AboveTitleSkip \AboveTitleSkip=12\p@
1231 \newskip\BelowTitleSkip \BelowTitleSkip=8\p@
1232 \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...

```

1233 \def\@sectitle #1{%
1234   \par
1235   \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.

```

1236   \ifWideSecTitle\else\secsep\fi
1237   {%
1238     \fboxrule\strulethickness
1239     \fboxsep\z@
1240     \noindent\framebox[\hsize]{%
1241       \vbox{%
1242         \raggedcenter
1243         \let\\\@sectitle@newline
1244         \sectitlefont
1245         \makestrut[2\stfontheight;\z@]%
1246         #1%
1247         \makestrut[\z@;\stfontheight]\endgraf
1248       }%

```

```

1249   }%
1250 }%
1251 \nobreak
1252 \vskip\baselineskip
1253 }

```

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

```

1254 \newcommand{\@sectitle@newline}[1][\z@]{%
1255   \ifdim#1>\z@
1256     \makestrut[\z@;#1]%
1257   \fi
1258   \unskip\break
1259 }

```

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).

```

1260 \def\@makesectitle{\ifSecTitle
1261   \global\SecTitlefalse
1262   \ifWideSecTitle
1263     \twocolumn[\@sectitle{\s@ctitle}]%
1264     \global\WideSecTitlefalse
1265   \else
1266     \@sectitle{\s@ctitle}%
1267   \fi
1268 \else
1269   \vskip\AboveTitleSkip
1270   \kern\topskip
1271   \hrule \@height\z@ \@depth\z@ \@width 10\p@
1272   \kern-\topskip
1273   \kern-\strulethickness
1274   \iftubtitlerulefullwidth
1275     \hrule \@height\strulethickness \@depth\z@ width\textwidth
1276   \else
1277     \hrule \@height\strulethickness \@depth\z@
1278   \fi
1279   \kern\medskipamount
1280   \nobreak
1281 \fi
1282 }

```

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

```

1283 \def\@maketitle{%
1284   \@makesectitle
1285   \if@articletitle{%
1286     \nohyphens \interlinepenalty\@M
1287     \setbox0=\hbox{%
1288       \let\thanks\@gobble
1289       \let\=\quad
1290       \let\and=\quad
1291       \ignorespaces\@author}%
1292     {%
1293       \noindent\bf\raggedright\ignorespaces\frenchspacing
1294       \let\BibTeX=\bfBibTeX % else LaTeX Font Warning:

```

```

1295          %      Font shape 'OT1/cmr/bx/sc' undefined
1296      \@title\endgraf
1297  }%
1298  \ifdim \wd0 < 5\p@          % omit if author is null
1299  \else

```

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

```

1300      \nobreak \vskip 4\p@
1301  {%
1302      \leftskip=\normalparindent
1303      \raggedright
1304      \def\and{\unskip\}%
1305      \noindent\@author\endgraf
1306  }%
1307  \fi
1308  \nobreak
1309  \vskip\BelowTitleSkip
1310  }\fi%
1311  \global\@afterindentfalse
1312  \aftergroup\@afterheading
1313  }

```

Dedications are ragged right, in italics.

```

1314 \newenvironment{dedication}%
1315   {\raggedright\noindent\itshape\ignorespaces}%
1316   {\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.

```

1317 \def\@tubonecolumnabstractstart{%
1318   \list{}{\listparindent\normalparindent
1319     \itemindent\z@ \leftmargin\@tubfullpageindent
1320     \rightmargin\leftmargin \parsep \z@}\item[]\ignorespaces
1321 }
1322 \def\@tubonecolumnabstractfinish{%
1323   \endlist
1324 }
1325 \renewenvironment{abstract}%
1326   {\begin{SafeSection}%
1327     \section*{%
1328       \if@tubtwocolumn\else \hspace*\@tubfullpageindent}\fi
1329     Abstract}%
1330   \if@tubtwocolumn\else \@tubonecolumnabstractstart \fi
1331   }%
1332   {\if@tubtwocolumn\else \@tubonecolumnabstractfinish \fi
1333   \end{SafeSection}}
1334 \newenvironment{longabstract}%
1335   {\begin{SafeSection}%
1336     \section*{Abstract}%
1337     \bgroup\small
1338   }%
1339   {\endgraf\egroup

```



```

1340   \end{SafeSection}%
1341   \vspace{.25\baselineskip}
1342   \begin{center}
1343     {$--*--$}
1344   \end{center}
1345   \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.

The `\tubsecfmt` macro defines our standard formatting for section titles: ragged right, french spacing, no hyphenation. The `\tubsechook` macro allows overriding the defaults.

```

1346 \def\tubsechook{}
1347 \def\tubsecfmt{\normalsize\bf\raggedright\frenchspacing\nohyphens\tubsechook}
1348 %
1349 \if@numbersec
1350   \def\section{\TB@startsection{section}%
1351     1%
1352     \z@
1353     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1354     {4\p@}%
1355     {\tubsecfmt}}
1356   \def\subsection{\TB@startsection{subsection}%
1357     2%
1358     \z@
1359     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1360     {4\p@}%
1361     {\tubsecfmt}}
1362   \def\subsubsection{\TB@startsection{subsubsection}%
1363     3%
1364     \z@
1365     {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1366     {4\p@}%
1367     {\tubsecfmt}}
1368   \def\paragraph{\TB@startsection{paragraph}%
1369     4%
1370     \z@
1371     {4\p@ \@plus1\p@ \@minus1\p@}%
1372     {-1em}%
1373     {\normalsize\bf\tubsechook}}

```

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

```

1374 \else
1375   \setcounter{secnumdepth}{0}

```

```

1376 \def\section{\TB@nolimelabel
1377         \TB@startsection{{section}%
1378             1%
1379             \z@
1380             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1381             {4\p@}%
1382             {\tubsecfmt}}}}
1383 \def\subsection{\TB@nolimelabel
1384         \TB@startsection{{subsection}%
1385             2%
1386             \z@
1387             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1388             {-0.5em\@plus-\fontdimen3\font}%
1389             {\tubsecfmt}}}}
1390 \def\subsubsection{\TB@nolimelabel
1391         \TB@startsection{{subsubsection}%
1392             3%
1393             \parindent
1394             {-8\p@ \@plus-2\p@ \@minus-2\p@}%
1395             {-0.5em\@plus-\fontdimen3\font}%
1396             {\tubsecfmt}}}}
1397 \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`.

```
1398 \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).

```
1399 \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.

```

1400 \newenvironment{SafeSection}%
1401   {\let\TB@startsection\TB@safe@startsection}%
1402   {}

```

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

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

```
1403 \if@numbersec
```

¹Thurber, *The Wonderful O*

```

1404 \def\subparagraph{\TB@nosection\subparagraph\paragraph}
1405 \else
1406 \def\paragraph{\TB@nosection\paragraph\subsubsection}
1407 \def\subparagraph{\TB@nosection\subparagraph\subsubsection}
1408 \fi
1409 \def\chapter{\TB@nosection\chapter\section}
1410 \def\part{\TB@nosection\part\section}
1411 \def\TB@nosection#1#2{\TBWarning{class does not support \string#1,
1412 \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

Contents

or leaders get messed up.

```

1413 \def\TBtocsectionfont{\normalfont}
1414 \newskip\TBtocsectionspace \TBtocsectionspace=1.0ex\@plus\p@
1415 \def\l@section#1#2{\addpenalty{\@secpenalty}%
1416 \addvspace{\TBtocsectionspace}%
1417 \@tempdima 1.5em
1418 \begingroup
1419 \parindent\z@ \rightskip\z@ % article style makes \rightskip > 0
1420 \parfillskip\z@
1421 \TBtocsectionfont
1422 \leavevmode\advance\leftskip\@tempdima\hskip-\leftskip#1\nobreak\hfil
1423 \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
1424 \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 (`\TBnolimelabel` happens before the `\refstepcounter`, so its effects get lost ... what a clever piece of design that was). So here we go:

```

1425 \renewcommand{\appendix}{\par
1426 \renewcommand{\thesection}{\@Alph\c@section}%
1427 \setcounter{section}{0}%
1428 \if@numbersec
1429 \else
1430 \setcounter{secnumdepth}{1}%
1431 \fi

```

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

```

1432 \def\@tempa{appendix}

```

```

1433 \ifx\@tempa\@currentenv
1434   \expandafter\@appendix@env
1435 \fi
1436 }

    Here we deal with \begin{appendix}[\langle app-name \rangle]
1437 \newcommand{\app@prefix@section}{}
1438 \newcommand{\@appendix@env}[1][Appendix]{%
1439   \renewcommand{\@secntformat}[1]{\csname app@prefix@##1\endcsname
1440     \csname the##1\endcsname\quad}%
1441   \renewcommand{\app@prefix@section}{#1 }%
1442 }

    Ending an appendix environment is pretty trivial...
1443 \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

```

1444 \def\TB@nolimelabel{%
1445   \def\@currentlabel{%
1446     \protect\TBWarning{%
1447       Invalid reference to numbered label on page \thepage
1448       \MessageBreak made%
1449     }%
1450     \textbf{?!?}%
1451   }%
1452 }

```

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.

```

1453 \let\TB@@sect\@sect
1454 \let\TB@@ssect\@ssect

```

```

1455 \def\@sect#1#2#3#4#5#6[#7]#8{%
1456   \def\@currentlabelname{#7}%
1457   \TB@@sect{#1}{#2}{#3}{#4}{#5}{#6} [{#7}] {#8}%
1458 }
1459 \def\@ssect#1#2#3#4#5{%
1460   \def\@currentlabelname{#5}%
1461   \TB@@ssect{#1}{#2}{#3}{#4}{#5}%
1462 }

```

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>`.

```

1463 \let\@savelatexlabel=\label % so save original LaTeX command
1464 %
1465 \def\label#1{% de
1466   \@savelatexlabel{#1}%
1467   \@bsphack
1468   \if@filesw
1469     \protected@write\@auxout{%
1470       {\string\newlabel{nr@#1}{\@currentlabel}{\@currentlabelname}}}%
1471   \fi
1472   \@esphack
1473 }

```

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

```
1474 \let\@currentlabelname\@empty
```

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

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

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

```

1475 \AtBeginDocument{%
1476   \providecommand\nameref[1]{%
1477     \expandafter\@setref
1478     \csname r@nr@#1\endcsname\@secondoftwo{#1}%
1479   }%
1480 }

```

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`

```
1481 \newdimen\@tubfullpageindent
1482 \@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`

```
1483 \let\tubcaptionleftglue=\hfil
```

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

```
1484 \def\tubcaptionfonts{\small}%
```

Ok, here is `\@makecaption`.

```
1485 \long\def\@makecaption#1#2{%
1486   \vskip\abovecaptionskip
1487   % try in an hbox:
1488   \sbox\@tempboxa{\tubcaptionfonts \frenchspacing \tubmakecaptionbox{#1}{#2}}%
1489   \ifdim \wd\@tempboxa > \hsize
1490     {% caption doesn't fit on one line; set as a paragraph.
1491       \tubcaptionfonts \raggedright \hyphenpenalty=\@M \parindent=1em
1492       % indent full-width captions {figure*}, but not single-column {figure}.
1493       \ifdim\hsize = \textwidth
1494         \leftskip=\@tubfullpageindent \rightskip=\leftskip
1495         \advance\rightskip by 0pt plus2em % increase acceptable raggedness
1496       \fi
1497       \noindent \tubmakecaptionbox{#1}{#2}\par}%
1498   \else
1499     % fits on one line; use the hbox, usually centered. Do not reset its glue.
1500     \global\@minipagefalse
1501     \hb@xt@\hsize{\tubcaptionleftglue\box\@tempboxa\hfil}%
1502   \fi
1503   \vskip\belowcaptionskip}
1504 %
1505 \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.

```
1506 \def\fnnum@figure{\tubcaptionfonts \bf \figurename\nobreakspace\thefigure}}
1507 \def\fnnum@table{\tubcaptionfonts \bf \tablename\nobreakspace\thetable}}
1508 \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.

```
1509 \setlength\abovecaptionskip{6pt plus1pt minus1pt}
```

3.21 Size changing commands

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

```
1510 \renewcommand{\normalsize}{%
1511   \@setfontsize\normalsize\@xpt\@xiipt
1512   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@}
```

```

1513 \belowdisplayskip=\abovedisplayskip
1514 \abovedisplayshortskip=\z@\@plus 3\p@
1515 \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1516 }
1517
1518 \renewcommand{\small}{%
1519   \@setfontsize\small\@ixpt{11}%
1520   \abovedisplayskip=2.5\p@\@plus 2.5\p@\@minus\p@
1521   \belowdisplayskip=\abovedisplayskip
1522   \abovedisplayshortskip=\z@\@plus 2\p@
1523   \belowdisplayshortskip=\p@\@plus 2\p@\@minus\p@
1524 }
1525
1526 \renewcommand{\footnotesize}{%
1527   \@setfontsize\footnotesize\@viipt{9.5}%
1528   \abovedisplayskip=3\p@\@plus 3\p@\@minus\p@
1529   \belowdisplayskip=\abovedisplayskip
1530   \abovedisplayshortskip=\z@\@plus 3\p@
1531   \belowdisplayshortskip=\p@\@plus 3\p@\@minus\p@
1532 }

```

3.22 Lists and other text inclusions

```

1533 \def\@listi{%
1534   \leftmargin\leftmargini\parsep=\p@\@plus\p@\@minus\p@
1535   \itemsep=\parsep
1536   \listparindent=1em
1537 }
1538
1539 \def\@listii{%
1540   \leftmargin\leftmarginii
1541   \labelwidth=\leftmarginii \advance\labelwidth-\labelsep
1542   \topsep=2\p@\@plus\p@\@minus\p@ % space between first item and preceding
1543   \parsep=\p@\@plus\p@\@minus\p@
1544   \itemsep=\parsep % space between successive items
1545   \listparindent=1em % indentation of subsequent paragraphs
1546 }
1547
1548 \def\@listiii{%
1549   \leftmargin=\leftmarginiii
1550   \labelwidth=\leftmarginiii \advance\labelwidth-\labelsep
1551   \topsep=\p@\@plus\p@\@minus\p@
1552   \parsep=\z@
1553   \itemsep=\topsep
1554   \listparindent=1em
1555 }
1556 \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.

```

1557 \renewcommand{\quotation}{\list{}{\listparindent 1.5em
1558   \rightmargin.5\leftmargin\parsep \z@\@plus\p@}\item[]}

```

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

```

1559 \newenvironment{compactitemize}%
1560   {\begin{itemize}%
1561     \setlength{\itemsep}{Opt}%
1562     \setlength{\parskip}{Opt}%
1563     \setlength{\parsep}{Opt}%
1564   }%
1565   {\end{itemize}}
1566 %
1567 \newenvironment{compactenumerate}%
1568   {\begin{enumerate}%
1569     \setlength{\itemsep}{Opt}%
1570     \setlength{\parskip}{Opt}%
1571     \setlength{\parsep}{Opt}%
1572   }%
1573   {\end{enumerate}}
1574 %
1575 \newenvironment{compactdescription}%
1576   {\begin{description}%
1577     \setlength{\itemsep}{Opt}%
1578     \setlength{\parskip}{Opt}%
1579     \setlength{\parsep}{Opt}%
1580   }%
1581   {\end{description}}
1582 %

```

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.

```

1583 %\let\@TB@verbatim\@verbatim
1584 \let\@TB@verbatim\verbatim
1585 \let\@TB@endverbatim\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.)

```

1586 \def\verbatim{\par\obeylines
1587   \futurelet\reserved@a\@switch@sqbverbatim}
1588 %
1589 \def\@switch@sqbverbatim{\ifx\reserved@a[%]
1590   \expandafter\@sqbverbatim\else
1591   \def\reserved@b{\@sqbverbatim[]}\expandafter\reserved@b\fi}
1592 %
1593 \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.

```
1594 \def\ruled{\let\if@ruled\iftrue}%
```

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

```
1595 \def\makevmeta{\makeescape\! \let\<\tubverb@meta \tubverb@clearliglist}
1596 \def\tubverb@meta##1>{\meta{##1}}
```

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

```
1597 \def\tubverb@clearliglist{%
1598   \def\verbatim@nolig@list{\do\‘\do\,\do\’\do\~}%
1599 }
```

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

```
1600 #1\@TBverbatim}
```

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

```
1601 \def\@verbatim{%
```

First, we deal with `\ruled`:

```
1602   \if@ruled\trivlist\item\hrule\kern5\p@\nobreak\fi
```

Now, the code out of the original verbatim environment:

```
1603 \trivlist \item\relax
1604 \if@minipage\else\vskip\parskip\fi
1605 \leftskip\@totalleftmargin\rightskip\z@skip
1606 \parindent\z@\parfillskip\@flushglue\parskip\z@skip
1607 \@@par
1608 \@tempwafalse
1609 \def\par{%
1610   \if@tempswa
1611     \leavevmode \null \@@par\penalty\interlinepenalty
1612   \else
1613     \@tempwatrue
1614     \ifhmode\@@par\penalty\interlinepenalty\fi
1615   \fi}%
1616 \obeylines \verbatim@font \@noligs
1617 \let\do\@makeother \dospecials
1618 \everypar \expandafter{\the\everypar \unpenalty}%
1619 }% 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).

```
1620 \def\endverbatim{\@TBendverbatim
1621   \if@ruled\kern5\p@\hrule\endtrivlist\fi}
```

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

```
1622 \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.

```
1623 \AtBeginDocument{%
1624   \ifpackageloaded{microtype}
1625     {\g@addto@macro\@verbatim{\microtypesetup{activate=false}}}{ }
1626 }
```

3.24 Bibliography

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

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

The available citation commands are:

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

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

```
1627 \if@Harvardcite
1628 \let\@internalcite\cite
```

Normal forms.

```
1629 \def\cite{\def\@citeseppen{-1000}%
1630   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1631   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1632 \def\citeNP{\def\@citeseppen{-1000}%
1633   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1634   \def\citeauthoryear##1##2##3{##1, ##3}\@internalcite}
1635 \def\citeN{\def\@citeseppen{-1000}%
1636   \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}}%
1637   \def\citeauthoryear##1##2##3{##1 (##3)\@citedata}
1638 \def\citeA{\def\@citeseppen{-1000}%
1639   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1640   \def\citeauthoryear##1##2##3{##1}\@internalcite}
1641 \def\citeANP{\def\@citeseppen{-1000}%
1642   \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1643   \def\citeauthoryear##1##2##3{##1}\@internalcite}
```

Abbreviated forms (using *et al.*)

```
1644 \def\shortcite{\def\@citeseppen{-1000}%
1645     \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1646     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1647 \def\shortciteNP{\def\@citeseppen{-1000}%
1648     \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1649     \def\citeauthoryear##1##2##3{##2, ##3}\@internalcite}
1650 \def\shortciteN{\def\@citeseppen{-1000}%
1651     \def\@cite##1##2{##1\if@tempswa , ##2\else{}}\fi}}%
1652     \def\citeauthoryear##1##2##3{##2 (##3)\@citedata}
1653 \def\shortciteA{\def\@citeseppen{-1000}%
1654     \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1655     \def\citeauthoryear##1##2##3{##2}\@internalcite}
1656 \def\shortciteANP{\def\@citeseppen{-1000}%
1657     \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1658     \def\citeauthoryear##1##2##3{##2}\@internalcite}
```

When just the year is needed:

```
1659 \def\citeyear{\def\@citeseppen{-1000}%
1660     \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1661     \def\citeauthoryear##1##2##3{##3}\@citedata}
1662 \def\citeyearNP{\def\@citeseppen{-1000}%
1663     \def\@cite##1##2{##1\if@tempswa , ##2\fi}}%
1664     \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.

```
1665 \def\@citedata{%
1666     \ifnextchar [{\@tempwatrue\@citedatax}%
1667                 {\@tempwafalse\@citedatax[]}%
1668 }
1669
1670 \def\@citedatax[#1]#2{%
1671 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1672 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1673     {\@citea\def\@citea{ }\@ifundefined% by Young
1674         {b@\@citeb}{\bf ?}%
1675         \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1676 {\csname b@\@citeb\endcsname}}{#1}}%
```

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

```
1677 \def\@citex[#1]#2{%
1678 \if@filesw\immediate\write\@auxout{\string\citation{#2}}\fi%
1679 \def\@citea{}\@cite{\@for\@citeb:=#2\do%
1680     {\@citea\def\@citea{ }\@ifundefined% by Young
1681         {b@\@citeb}{\bf ?}%
1682         \@warning{Citation ‘\@citeb’ on page \thepage \space undefined}}%
1683 {\csname b@\@citeb\endcsname}}{#1}}%
```

No labels in the bibliography.

```
1684 \def\@biblabel#1{}
```

Set length of hanging indentation for bibliography entries.

```

1685 \newlength{\bibhang}
1686 \setlength{\bibhang}{2em}
Indent second and subsequent lines of bibliographic entries. Stolen from open-
bib.sty: \newblock is set to {}.
1687 \newdimen\bibindent
1688 \bibindent=1.5em
1689 \ifundefined{refname}%
1690   {\newcommand{\refname}{References}}%
1691   {}%

```

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

```

1692 \def\thebibliography#1{% for harvardcite
1693   \let\TB@startsection\TB@safe@startsection
1694   \section*{\refname
1695     \mkboth{\uppercase{\refname}}{\uppercase{\refname}}}%
1696   \list{[\arabic{enumi}]}{%
1697     \labelwidth\z@ \labelsep\z@
1698     \leftmargin\bibindent
1699     \itemindent -\bibindent
1700     \listparindent \itemindent
1701     \parsep \z@
1702     \usecounter{enumi}}%
1703   \def\newblock{}%
1704   \BibJustification
1705   \frenchspacing % more than just period, see comments below
1706 }

```

etal Other bibliography odds and ends.

```

\bibentry 1707 \def\etal{et\,al.\@}
1708 \def\bibentry{%
1709   \smallskip
1710   \hangindent=\parindent
1711   \hangafter=1
1712   \noindent
1713   \sloppy
1714   \clubpenalty500 \widowpenalty500
1715   \frenchspacing
1716 }

```

\bibliography Changes made to accommodate TUB file naming conventions

```

\bibliographystyle 1717 \def\bibliographystyle#1{%
1718   \if@filesw
1719     \immediate\write\@auxout{\string\bibdata{\@tubfilename{#1}}}%
1720   \fi
1721   \@input{\jobname.bbl}%
1722 }
1723 \def\bibliographystyle#1{%
1724   \if@filesw
1725     \immediate\write\@auxout{\string\bibstyle{\@tubfilename{#1}}}%
1726   \fi
1727 }

```

\thebibliography If the user's asked to use L^AT_EX's default citation mechanism (using the rawcite \TB@@thebibliography option), we still need to patch \sloppy to support justification of the body of

the bibliography. We kludge in a call to `\frenchspacing` too, since there is no reason to change only period’s `\sfcode`, as 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.

```
1728 \else % not harvardcite
1729 \let\TB@origthebibliography\thebibliography
1730 \def\thebibliography{%
1731   \let\TB@startsection\TB@safe@startsection
1732   \def\sloppy{\frenchspacing\BibJustification}%
1733   \TB@origthebibliography} % latex’s thebibliography now reads args.
1734 \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.)

```
1735 \let\TB@@sloppy\sloppy
1736 \let\BibJustification\TB@@sloppy
1737 \newcommand{\SetBibJustification}[1]{%
1738   \renewcommand{\BibJustification}{#1}%
1739 }
1740 \ResetCommands\expandafter{\the\ResetCommands
1741   \let\BibJustification\TB@@sloppy
1742 }
```

3.25 Registration marks

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

```
1743 \def\HorzR@gisterRule{\vrule \@height 0.2\p@ \@depth\z@ \@width 0.5in }
1744 \def\DownShortR@gisterRule{\vrule \@height 0.2\p@ \@depth 1pc \@width 0.2\p@ }
1745 \def\UpShortR@gisterRule{\vrule \@height 1pc \@depth\z@ \@width 0.2\p@ }
```

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

```
1746 \def\ttopregister{\dlap{%
1747   \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1748     \HorzR@gisterRule \hfil \HorzR@gisterRule}%
1749   \hb@xt@\trimwd{\hfil \DownShortR@gisterRule \hfil}}}
1750 \def\tbotregister{\ulap{%
1751   \hb@xt@\trimwd{\hfil \UpShortR@gisterRule \hfil}%
1752   \hb@xt@\trimwd{\HorzR@gisterRule \hfil \HorzR@gisterRule
1753     \HorzR@gisterRule \hfil \HorzR@gisterRule}}}
1754 \def\topregister{\ttopregister}
1755 \def\botregister{\tbotregister}
```

3.26 Running headers and footers

```

1756 \def\rtitlex{\def\texttub##1{\normalsize\textrm{##1}}\TUB, \volx}
registration marks; these are temporarily inserted in the running head
1757 \def\MakeRegistrationMarks{}
1758 \def\UseTrimMarks{%
1759   \def\MakeRegistrationMarks{%
1760     \ulap{\rlap{%
1761       \vbox{\dlap{\vbox to\trimlgt{\vfil\botregister}}}%
1762       \topregister\vskip \headmargin \vskip 10\p@}}}%
1763   }
1764 % put issue identification and page number in header.
1765 \def\@oddhead{\MakeRegistrationMarks
1766   \frenchspacing
1767   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1768   \rtitlex\quad \midrtitle\hfil \rtitlenexttopage\quad \thepage}
1769 \def\@evenhead{\MakeRegistrationMarks
1770   \frenchspacing
1771   \normalsize\csname normalshape\endcsname\rm \tubheadhook
1772   \thepage \quad\rtitlenexttopage \hfil\midrtitle \quad\rtitlex}
1773
1774 % can be used to reset the font, e.g., tb98kuester.
1775 \def\tubheadhook{}
1776
1777 % in case the official \author is too verbose for the footline.
1778 % (the \shortauthor / \rhAuthor stuff is only enabled for proceedings, fix!)
1779 \def\tubrunningauthor{\@author}
1780
1781 % put title and author in footer.
1782 \def\@tubrunningfull{%
1783   \def\@oddfoot{% make line break commands produce a normal space
1784     \def\{\unskip\ ignorespaces}%
1785     \let\newline=\%
1786     \tubtypesetdoi
1787     \frenchspacing\hfil\rhTitle}
1788   \def\@evenfoot{%
1789     \let\thanks\@gobble
1790     \tubtypesetdoi
1791     \frenchspacing\tubrunningauthor\hfil}
1792 }
1793
1794 % empty footer.
1795 \def\@tubrunningminimal{%
1796   \def\@oddfoot{\tubtypesetdoi\hfil}%
1797   \def\@evenfoot{\tubtypesetdoi\hfil}%
1798 }
1799
1800 % empty footer and header.
1801 \def\@tubrunningoff{%
1802   \@tubrunningminimal
1803   \def\@oddhead{\hfil}%
1804   \def\@evenhead{\hfil}%
1805 }
1806
1807 \def\ps@headings{}
1808 \pagestyle{headings}

```

Typeset the doi. The format we decided on looks like: <https://doi.org/10.47397/tb/41-3/tb129> 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.

```

1809 %
1810 \def\tubdoiprefix{10.47397/tb} % the number crossref assigned us
1811 \def\tubabovedoi{} % fudge spacing or whatever.
1812 %
1813 \def\tubtypesetdoi{%
1814   \iftubomitdoioption\else % do if not explicit omission ...
1815     \ifnum\volno>0 % and if being run for production ...
1816       \iftubfinaloption % and if [final], even if pageno>900
1817         \vbox to Opt{% don't impact normal layout
1818           \edef\thedoi{% but make url invalid if >900
1819             \ifnum\count0>900 example.org%
1820               \else doi.org\fi
1821             /\tubdoiprefix/\volno-\issno/\jobname}%
1822           \scriptsize
1823           \vskip\baselineskip
1824           \tubabovedoi
1825           \iftubsecondcolstart \moveright \tubcolwidthhandgutter \fi
1826           \rlap{\expandafter\tbsurl\expandafter{\thedoi}}}%
1827         \vss
1828       }%
1829     \fi % tubfinaloption
1830   \fi % volno>0
1831   \fi % !tubomitdoioption
1832   \global\let\tubtypesetdoi\empty % only do it once, no matter what.
1833 }
1834 %
1835 %

```

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...

```

1836 \def\@outputdblcol{\if@firstcolumn \global\@firstcolumnfalse
1837   \global\setbox\@leftcolumn\box\@outputbox
1838   \global\brokenpenalty10000
1839   \else \global\@firstcolumntrue
1840     \global\brokenpenalty100
1841     \setbox\@outputbox\vbox{\hb@xt@\textwidth{\hb@xt@\columnwidth
1842       {\box\@leftcolumn \hss}\hfil \vrule \width\columnseprule\hfil
1843       \hb@xt@\columnwidth{\box\@outputbox \hss}}}\@combinedblfloats
1844     \outputpage \begingroup \@dblfloatplacement \@startdblcolumn
1845     \@whilesw@if@fcolmade \fi{\@outputpage\startdblcolumn}\endgroup
1846   \fi}

```

3.28 Font-related definitions and machinery

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

```
1847 \newif\ifFirstPar      \FirstParfalse
1848 \def\smc{\sc}
1849 \def\ninepoint{\small}
1850 \</classtail>
```

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

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

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

```
1851 \<*common>
1852 \DeclareRobustCommand{\SMC}{%
1853   \ifx\@currsize\normalsize\small\else
1854   \ifx\@currsize\small\footnotesize\else
1855   \ifx\@currsize\footnotesize\scriptsize\else
1856   \ifx\@currsize\large\normalsize\else
1857   \ifx\@currsize\Large\large\else
1858   \ifx\@currsize\LARGE\Large\else
1859   \ifx\@currsize\scriptsize\tiny\else
1860   \ifx\@currsize\tiny\tiny\else
1861   \ifx\@currsize\huge\LARGE\else
1862   \ifx\@currsize\Huge\huge\else
1863   \small\SMC@unknown@warning
1864 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
1865 }
1866 \newcommand{\SMC@unknown@warning}{\TBWarning{\string\SMC: nonstandard
1867   text font size command -- using \string\small}}
1868 \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.

```
1869 \newcommand{\acro}[1]{\textSMC{#1}\@}
1870 \</common>
```


3.29 Editor's notes and other footnotes

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

```
1871 <*classtail>
1872 \def\xEdNote{\EdNoteFont Editor's note:\enspace }
1873 \def\EdNote{\@ifnextchar[%]
1874   {%
1875     \ifvmode
1876       \smallskip\noindent\let\@EdNote@\@EdNote@v
1877     \else
1878       \unskip\quad\def\@EdNote@\@EdNote@{\unskip\quad}%
1879     \fi
1880     \@EdNote
1881   }%
1882   \xEdNote
1883 }
1884 \long\def\@EdNote[#1]{%
1885   [\thinspace\xEdNote\ignorespaces
1886     #1%
1887     \unskip\thinspace]%
1888   \@EdNote@
1889 }
1890 \def\@EdNote@v{\par\smallskip}
```

Macros for Mittelbach's self-documenting style

```
1891 \def\SelfDocumenting{%
1892   \setlength\textwidth{31pc}
1893   \onecolumn
1894   \parindent \z@
1895   \parskip 2\p@\@plus\p@\@minus\p@
1896   \oddsidemargin 8pc
1897   \evensidemargin 8pc
1898   \marginparwidth 8pc
1899   \toks@\expandafter{\@oddhead}%
1900   \xdef\@oddhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1901   \toks@\expandafter{\@evenhead}%
1902   \xdef\@evenhead{\hss\hb@xt@\pagewd{\the\toks@}}%
1903   \def\ps@titlepage{}%
1904 }
1905 \def\ps@titlepage{}
1906
1907 \long\def\@makefnmark#1{\parindent 1em\noindent\hb@xt@2em{}}%
1908   \llap{\@makefnmark}\null$\mskip5mu$#1}
1909
1910 %% \long\def\@makefnmark#1{\parindent 1em
1911 %%   \noindent
1912 %%   \hb@xt@2em{\hss\@makefnmark}%
1913 %%   \hskip0.27778\fontdimen6\textfont\z@\relax
1914 %%   #1%
1915 %% }
```

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

```

1916 \newcommand{\tubraggedfoot}{\rightskip=\raggedskip plus\raggedstretch\relax}

\creditfootnote Sometimes we want the label “Editor’s Note:”, sometimes not.
\supportfootnote 1917 \def\creditfootnote{\nomarkfootnote\xEdNote}
1918 \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.

1919 \gdef\nomarkfootnote#1#2{\begingroup
1920 \def\thefootnote{}%
1921 % no period, please, also no fnmark.
1922 \def\@makefntext##1{##1}%
1923 \footnotetext{\noindent #1#2}%
1924 \endgroup
1925 }

```

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.)

```

1926 \if@Harvardcite
1927 \AtBeginDocument{%
1928 \bibliographystyle{ltugbib}%
1929 }
1930 \fi
1931 \authornumber\z@
1932 \let\@signature\@defaultsignature
1933 \InputIfFileExists{ltugboat.cfg}{\TBInfo{Loading ltugboat
1934 configuration information}}{}
1935 </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:

```

1936 <*ltugproccls>
1937 \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.

```

1938 \newif\if@proc@sober
1939 \newif\if@proc@numerable
1940 \DeclareOption{tug95}{%
1941 \@proc@soberfalse
1942 \@proc@numerablefalse
1943 }
1944 \DeclareOption{tug96}{%
1945 \@proc@sobertrue
1946 \@proc@numerablefalse
1947 }
1948 \DeclareOption{tug97}{%

```

```

1949 \@proc@sobertrue
1950 \@proc@numerabletrue
1951 }
1952 \DeclareOption{tug2002}{%
1953 \@proc@sobertrue
1954 \@proc@numerabletrue
1955 \let\if@proc@numbersec\iftrue
1956 \PassOptionsToClass{numbersec}{ltugboat}%
1957 }

```

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

```

1958 \DeclareOption{numbersec}{\let\if@proc@numbersec\iftrue
1959 \PassOptionsToClass{numbersec}{ltugboat}%
1960 }
1961 \DeclareOption{nonumber}{\let\if@proc@numbersec\iffalse
1962 \PassOptionsToClass{nonumber}{ltugboat}%
1963 }

```

`\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`.

```

1964 \newif\ifTB@title
1965 \DeclareOption{title}{\TB@titletrue}
1966 \DeclareOption{notitle}{\TB@titlefalse}
1967 \AtBeginDocument{\stepcounter{page}}

```

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

```

1968 \DeclareOption{tugproc}{%
1969 \ClassWarning{\@tugclass}{Option \CurrentOption\space ignored}%
1970 }

```

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

```

1971 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{ltugboat}}

```

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

```

1972 \InputIfFileExists{\@tugclass.cfg}{\ClassInfo{ltugproc}%
1973 \Loading ltugproc configuration information}}{}
1974 \@ifundefined{TUGprocExtraOptions}{%
1975 \let\TUGprocExtraOptions\@empty}%
1976 {\edef\TUGprocExtraOptions{\TUGprocExtraOptions}}

```

`\tugProcYear` Now work out what year it is

```

1977 \@tempcnta\year
1978 \ifnum\@tempcnta<2000
1979 \divide\@tempcnta by100
1980 \multiply\@tempcnta by100
1981 \advance\@tempcnta-\year
1982 \@tempcnta-\@tempcnta
1983 \fi

```

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

```

1984 \edef\@tempa{\noexpand\providecommand\noexpand\tugProcYear
1985           {\ifnum10>\@tempcnta0\fi\the\@tempcnta}}
1986 \@tempa
1987 \ClassInfo{ltugproc}{Class believes year is
1988   \expandafter\ifnum\tugProcYear<2000 19\fi\tugProcYear
1989   \@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.

```

1990 \expandafter\ifx\csname ds@tug\tugProcYear\endcsname\relax
1991   \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.

```

1992 \ExecuteOptions{tug\tugProcYear,title\TUGprocExtraOptions}
1993 \ProcessOptions
1994 \if@proc@numbersec
1995   \if@proc@numerable
1996   \else
1997     \ClassWarning{\@tugclass}{This year’s proceedings may not have
1998       numbered sections}%
1999   \fi
2000 \fi

```

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

```

2001 \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.

```

2002 \def\maketitle{%
2003   \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).

```

2004   \ifshortAuthor\else
2005     \global\let\rhAuthor\@empty
2006     \def\g@addto@rhAuthor##1{%
2007       \begingroup
2008         \toks@expandafter{\rhAuthor}%
2009         \let\thanks\@gobble
2010         \protected@xdef\rhAuthor{\the\toks@##1}%
2011       \endgroup
2012     }%
2013     \getauthorlist\g@addto@rhAuthor
2014   \fi

```

now, the real business of setting the title

```

2015   \ifTB@title

```

```

2016     \setcounter{footnote}{0}%
2017     \renewcommand{\thefootnote}{\@fnsymbol\c@footnote}%
2018     \if@twtwocolumn
2019         \twocolumn[\@maketitle]%
2020     \else
2021         \onecolumn
2022         \global\@topnum\z@
2023         \@maketitle
2024     \fi
2025     \@thanks
2026     \thispagestyle{TBproctitle}
2027     \fi
2028 \endgroup
2029 \TB@madetitletrue
2030 }
2031 \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.

```

2032 \def\@TB@test@document{%
2033     \edef\@tempa{\the\everypar}
2034     \def \@tempb{\@nodocument}
2035     \ifx \@tempa\@tempb
2036         \@nodocument
2037     \fi
2038 }

```

`\AUTHORfont` Define the fonts for titles and things

```

\TITLEfont 2039 \def \AUTHORfont {\large\rmfamily\mdseries\upshape}
\addressfont 2040 \def \TITLEfont {\Large\rmfamily\mdseries\upshape}
\netaddrfont 2041 \def \addressfont {\small\rmfamily\mdseries\upshape}
2042 \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 2043 \newskip\aboveauthorskip \aboveauthorskip=18\p@ \@plus4\p@
2044 \newskip\belowauthorskip \belowauthorskip=\aboveauthorskip
2045 \newskip\belowabstractskip \belowabstractskip=14\p@ \@plus3\p@ \@minus2\p@

```

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

```

2046 \def\@maketitle{%
2047     {\parskip\z@
2048     \frenchspacing
2049     \TITLEfont\raggedright\noindent\@title\par
2050     \count@=0
2051     \loop
2052     \ifnum\count@<\authornumber
2053         \vskip\aboveauthorskip
2054         \advance\count@\@ne
2055         {\AUTHORfont\theauthor{\number\count@}\endgraf}%
2056         \addressfont\theaddress{\number\count@}\endgraf
2057     }%

```

```

2058         \allowhyphens
2059         \hangindent1.5pc
2060         \netaddrfont\thenetaddress{\number\count@}\endgraf
2061         \hangindent1.5pc
2062         \thePersonalURL{\number\count@}\endgraf
2063     }%
2064     \repeat
2065     \vskip\belowauthorskip}%
2066     \if@abstract
2067         \centerline{\bfseries Abstract}%
2068         \vskip.5\baselineskip\rmfamily
2069         \@tubonecolumnabstractstart
2070             \the\abstract@toks
2071         \@tubonecolumnabstractfinish
2072         \global\@ignoretrue
2073     \fi
2074     \vskip\belowabstractskip
2075     \global\@afterindentfalse\aftergroup\@afterheading
2076 }

```

`abstract` (*env.*) 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@`

```

2077 \newtoks\abstract@toks \abstract@toks{}
2078 \let\if@abstract\iffalse
2079 \def\abstract{%

```

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

```

2080 \ifTB@madetitle
2081     \TBWarning{abstract environment after \string\maketitle}
2082 \fi
2083 \def\@abstract@{abstract}%
2084 \ifx\@currenvir\@abstract@
2085 \else
2086     \TBEError{\string\abstract\space is illegal:%
2087         \MessageBreak
2088         use \string\begin{\@abstract@} instead}%
2089     {\@abstract@\space may only be used as an environment}
2090 \fi
2091 \global\let\if@abstract\iftrue
2092 {\ifnum0=} \fi
2093 \@abstract@getbody}
2094 \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}`

```

2095 \long\def\@abstract@getbody#1\end{%
2096     \global\abstract@toks\expandafter{\the\abstract@toks#1}%

```

```
2097 \end{abstract}
```

Here we've got to `\end` in the body of the abstract. `\end{abstract}` takes the 'argument' of the `\end` do its argument.

```
2098 \def\end{abstract}#1{%
```

```
2099 \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.

```
2100 \ifx\tempa\end{abstract}
```

```
2101 \expandafter\end{abstract}
```

```
2102 \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)

```
2103 \def\tempb{document}%
```

```
2104 \ifx\tempa\tempb
```

```
2105 \TBError{\string\begin{abstract}}
```

```
2106 ended by \string\end{\tempb}]}%
```

```
2107 {You've forgotten \string\end{abstract}}}
```

```
2108 \else
```

```
2109 \global\abstract@toks\expandafter{\the\abstract@toks\end{#1}}%
```

```
2110 \expandafter\expandafter\expandafter\end{abstract@getbody}
```

```
2111 \fi
```

```
2112 \fi}
```

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

```
2113 \def\end{abstract}\ifnum0='{\fi}%
```

```
2114 \expandafter\end\expandafter{\end{abstract}}
```

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

```
2115 \renewcommand{\makesignature}{\TBWarning
```

```
2116 {\string\makesignature\space is invalid in proceedings issues}}
```

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

```
\ps@TBproc 2117 \def\ps@TBproctitle{\let\@oddhead\MakeRegistrationMarks
```

```
\dopagecommands 2118 \let\@evenhead\MakeRegistrationMarks
```

```
\setpagecommands 2119 \TB@definefeet
```

```
\TB@definefeet 2120 }
```

```
\pfoottext 2121 \def\ps@TBproc{%
```

```
\rfoottext 2122 \def\@oddhead{\MakeRegistrationMarks
```

```
2123 {%
```

```
2124 \hfil
```

```
2125 \def\{\unskip\ignorespaces}%
```

```
2126 \rmfamily\rhTitle
```

```
2127 }%
```

```
2128 }%
```

```
2129 \def\@evenhead{\MakeRegistrationMarks
```

```
2130 {%
```

```
2131 \def\{\unskip\ignorespaces}%
```

```
2132 \rmfamily\rhAuthor
```

```

2133     \hfil
2134   }%
2135 }%
2136 \TB@definefeet
2137 }
2138
2139 \advance\footskip8\p@    % for deeper running feet
2140
2141 \def\dopagecommands{\csname @@pagecommands\number\c@page\endcsname}
2142 \def\setpagecommands#1#2{\expandafter\def\csname @@pagecommands#1\endcsname
2143   {#2}}
2144 \def\TB@definefeet{%
2145   \def\@oddfoot{\ifpreprint\pfoottext\hfil\Now\hfil\thepage
2146     \else\rfoottext\hfil\thepage\fi\dopagecommands}%
2147   \def\@evenfoot{\ifpreprint\thepage\hfil\Now\hfil\pfoottext
2148     \else\thepage\hfil\rfoottext\fi\dopagecommands}%
2149 }
2150
2151 \def\pfoottext{{\smc Preprint}:
2152   Proceedings of the \volyr{} Annual Meeting}
2153 \def\rfoottext{\normalfont\TUB, \volx\Dash
2154   {Proceedings of the \volyr{} Annual Meeting}}
2155
2156 \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).

```

2157 \if@proc@numbersec
2158 \else
2159   \setcounter{secnumdepth}{0}
2160 \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.

```

2161 \if@proc@numbersec
2162 \else
2163   \if@proc@sober
2164     \def\section
2165       {\TB@nolimelabel
2166         \TB@startsection{{section}%
2167           1%
2168           \z@%
2169           {-8\p@\@plus-2\p@\@minus-2\p@}%
2170           {6\p@}%
2171           {\normalsize\bfseries\raggedright}}}
2172   \else

```



```

2173 \def\section
2174     {\TB@nolimelabel
2175     \TB@startsection{section}%
2176     1%
2177     \z@%
2178     {-8\p@\@plus-2\p@\@minus-2\p@}%
2179     {6\p@}%
2180     {\large\bfseries\raggedright}}
2181 \fi
2182 \def\subsection
2183     {\TB@nolimelabel
2184     \TB@startsection{subsection}%
2185     2%
2186     \z@%
2187     {6\p@\@plus 2\p@\@minus2\p@}%
2188     {-5\p@\@plus -\fontdimen3\the\font}%
2189     {\normalsize\bfseries}}
2190 \def\subsubsection
2191     {\TB@nolimelabel
2192     \TB@startsection{subsubsection}%
2193     3%
2194     \parindent%
2195     \z@%
2196     {-5\p@\@plus -\fontdimen3\the\font}%
2197     {\normalsize\bfseries}}
2198 \fi
2199 </ltugproccls>

```

5 Plain T_EX styles

```

2200 <*tugboatsty>
2201 % err...
2202 </tugboatsty>
2203 <*tugprocsty>
2204 % err...
2205 </tugprocsty>

```

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

```

2206 <*tugboatsty>
2207 \@obsoletedefile{ltugboat.cls}{ltugboat.sty}
2208 \LoadClass{ltugboat}
2209 </ltugboatsty>
2210 <*tugprocsty>
2211 \@obsoletedefile{ltugproc.cls}{ltugproc.sty}
2212 \LoadClass{ltugproc}
2213 </tugprocsty>

```