

Jade DSSSL \TeX backend macros

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1 Introduction

1.1 Acknowledgements

Developed from the skeleton by David Megginson (dmeggins@microstar.com), who wrote the original Jade TeX_{FOTBuilder} module. This version incorporates support for important changes made by Paul Prescod and Kathleen Marszalek for tables; those changes and the corresponding work in JadeTeX were commissioned by Novare International, to whom considerable thanks are due.

Considerable benefit has been had from corrections, additions and discussions from David Carlisle, Matthias Clasen, Ulrich Drepper and Christian Leutloff.

1.2 Usage

The file `jadetex.ltx` can either be loaded before the Jade output or (better) made into a format file for fast loading; it sits on top of L^AT_EX, so do:

```
tex -ini \&hugelatex jadetex.ltx '\dump'
```

Be warned that because many elements can get labelled in JadeTeX, it is easy to run out of memory. You will very likely need to increase poolsize.

If you really want to gain speed and save memory, prepare an even more cut down L^AT_EX with unneeded chunks cut out. (such as the picture environment etc). Be careful and be legal, please.

We build on L^AT_EX, but do not need a lot of the paraphernalia of the document classes, so we just load the `minimal` class, designed for this purpose. We also need access to input and output font encoding, color, graphics inclusion, and headers and footers; so

we load some standard packages. The `inputenc` option is temporary, and needs more thought. Eventually we want Unicode input working, with Omega.

```

1 (*package)
2 \def\JadeTeXMajorVersion{3}
3 \def\JadeTeXMinorVersion{12}
4 \def\JadeTeXDate{2002/01/25}
5 \documentclass{minimal}
6 \RequirePackage{array}[1995/01/01]
7 \RequirePackage{longtable}[1995/01/01]
8 \RequirePackage{color}[1997/09/09]
9 \RequirePackage{colortbl}
10 \RequirePackage{marvosym}
11 \RequirePackage{graphicx}[1997/06/09]
12 \IfFileExists{multicol.sty}
13   {\RequirePackage{multicol}[1997/12/16]}
14   {\newenvironment{multicols}[1]%
15     {\typeout{Warning, at line \the\inputlineno, multicol package not available}}{}}
16 }
17 \RequirePackage[normalem]{ulem}
18 \RequirePackage{fancyhdr}
19 \makeatletter
20 \count@ \time
21 \divide \count@ 60
22 \count2=-\count@
23 \multiply \count2 60
24 \advance \count2 \time
25 \edef \today{%
26   \the\year/\two@digits{\the\month}/\two@digits{\the\day}:%
27   \two@digits{\the\count@}:\two@digits{\the\count2}}
28 \begingroup
29   \catcode `P=12
30   \catcode `T=12
31   \lowercase{\endgroup}
32   \gdef \rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
33 }
34 \def \strip@pt@and@otherjunk#1{\expandafter \rem@ptetc \the#1!}
35 \makeatother
36 \def \TeXFOTversion{0.0}
37 \makeatletter
38 \ifx \pushocplist \@undefined
39   \RequirePackage[implicit=true,colorlinks,linkcolor=black,bookmarks=true]{hyperref}
40 \def \PDFBorders{0 0 0}
41 \RequirePackage[dsssl]{inputenc}[1997/12/20]
42 \RequirePackage{mlnames}
43 \RequirePackage{unicode}
44 \def \DefineCharacter#1#2#3{\expandafter \def \csname !#1\endcsname {#3}}
45 \def \DefineEntity#1#2{\expandafter \def \csname Ent#1\endcsname {#2}}
46 \def \Entity#1{\csname Ent#1\endcsname}
47 \input ucharacters.sty
48 \input uentities.sty

Define the characters under 127, normally not provided by ucharacters.sty
49 \DefineCharacter{32}{20}{\space }
50 \DefineCharacter{33}{21}{!}

```

```

51 \DefineCharacter{34}{22}{"}
52 \DefineCharacter{35}{23}{\#}
53 \DefineCharacter{36}{24}{\ifmmode \$\else \textdollar \fi}%
54 \DefineCharacter{37}{25}{\%}
55 \DefineCharacter{38}{26}{\&}
56 \DefineCharacter{39}{27}{\textquotesingle }
57 \DefineCharacter{40}{28}{(}
58 \DefineCharacter{41}{29}{)}
59 \DefineCharacter{42}{2A}{\ensuremath{\ast }}
60 \DefineCharacter{43}{2B}{\ensuremath{+}}
61 \DefineCharacter{44}{2C}{,}
62 \DefineCharacter{45}{2D}{\ensuremath{-}}
63 \DefineCharacter{46}{2E}{.}
64 \DefineCharacter{47}{2F}{/}
65 \DefineCharacter{48}{30}{0}
66 \DefineCharacter{49}{31}{1}
67 \DefineCharacter{50}{32}{2}
68 \DefineCharacter{51}{33}{3}
69 \DefineCharacter{52}{34}{4}
70 \DefineCharacter{53}{35}{5}
71 \DefineCharacter{54}{36}{6}
72 \DefineCharacter{55}{37}{7}
73 \DefineCharacter{56}{38}{8}
74 \DefineCharacter{57}{39}{9}
75 \DefineCharacter{58}{3A}{:}
76 \DefineCharacter{59}{3B}{\ensuremath{;}}
77 \DefineCharacter{60}{3C}{\ensuremath{<}}
78 \DefineCharacter{61}{3D}{=}
79 \DefineCharacter{62}{3E}{\ensuremath{>}}
80 \DefineCharacter{63}{3F}{?}
81 \DefineCharacter{64}{40}{@}
82 \DefineCharacter{65}{41}{A}
83 \DefineCharacter{66}{42}{B}
84 \DefineCharacter{67}{43}{C}
85 \DefineCharacter{68}{44}{D}
86 \DefineCharacter{69}{45}{E}
87 \DefineCharacter{70}{46}{F}
88 \DefineCharacter{71}{47}{G}
89 \DefineCharacter{72}{48}{H}
90 \DefineCharacter{73}{49}{I}
91 \DefineCharacter{74}{4A}{J}
92 \DefineCharacter{75}{4B}{K}
93 \DefineCharacter{76}{4C}{L}
94 \DefineCharacter{77}{4D}{M}
95 \DefineCharacter{78}{4E}{N}
96 \DefineCharacter{79}{4F}{O}
97 \DefineCharacter{80}{50}{P}
98 \DefineCharacter{81}{51}{Q}
99 \DefineCharacter{82}{52}{R}
100 \DefineCharacter{83}{53}{S}
101 \DefineCharacter{84}{54}{T}
102 \DefineCharacter{85}{55}{U}
103 \DefineCharacter{86}{56}{V}
104 \DefineCharacter{87}{57}{W}

```

```

105 \DefineCharacter{88}{58}{X}
106 \DefineCharacter{89}{59}{Y}
107 \DefineCharacter{90}{5A}{Z}
108 \DefineCharacter{91}{5B}{[}
109 \DefineCharacter{92}{5C}{\ifmmode \backslashslash \else \textbackslash \fi}%
110 \DefineCharacter{93}{5D}{]}
111 \DefineCharacter{94}{5E}{\^{} }
112 \DefineCharacter{95}{5F}{\ensuremath{\_\_}}
113 \DefineCharacter{96}{60}{\textasciigrave }
114 \DefineCharacter{97}{61}{a}
115 \DefineCharacter{98}{62}{b}
116 \DefineCharacter{99}{63}{c}
117 \DefineCharacter{100}{64}{d}
118 \DefineCharacter{101}{65}{e}
119 \DefineCharacter{102}{66}{f}
120 \DefineCharacter{103}{67}{g}
121 \DefineCharacter{104}{68}{h}
122 \DefineCharacter{105}{69}{i}
123 \DefineCharacter{106}{6A}{j}
124 \DefineCharacter{107}{6B}{k}
125 \DefineCharacter{108}{6C}{l}
126 \DefineCharacter{109}{6D}{m}
127 \DefineCharacter{110}{6E}{n}
128 \DefineCharacter{111}{6F}{o}
129 \DefineCharacter{112}{70}{p}
130 \DefineCharacter{113}{71}{q}
131 \DefineCharacter{114}{72}{r}
132 \DefineCharacter{115}{73}{s}
133 \DefineCharacter{116}{74}{t}
134 \DefineCharacter{117}{75}{u}
135 \DefineCharacter{118}{76}{v}
136 \DefineCharacter{119}{77}{w}
137 \DefineCharacter{120}{78}{x}
138 \DefineCharacter{121}{79}{y}
139 \DefineCharacter{122}{7A}{z}
140 \DefineCharacter{123}{7B}{\ensuremath{\lbrace }}
141 \DefineCharacter{124}{7C}{\ensuremath{\vvert }}
142 \DefineCharacter{125}{7D}{\ensuremath{\rbrace }}
143 \DefineCharacter{126}{7E}{\textasciitilde }
144 \else

```

If we are Omega, do some things differently. From Apostolos Syropoulos <apostolo@ocean1.ee.duth.gr>

```

145 \RequirePackage{omega}[1999/06/01]
146 \background{greek}
147 \RequirePackage{nohyperref}
148 \RequirePackge{mlnames}
149 \fi

```

This was suggested by Matthias Clasen, checking that the macros come from the right version of the Jade TeX backend. The package will have a n.m version number, where the n changes when Jade changes, and the m changes when the JadeTeX package changes.

```

150 \def\checkFOTversion#1{%
151 \ifx\#1\def\TeXFOTmajor{2}
152 \else

```

```

153 \def\TeXFOTmajor{#1}%
154 \fi
155 \let\next\relax
156 \ifnum\TeXFOTmajor>\JadeTeXMajorVersion
157   \message{Your file was generated by Jade TeX backend version \TeXFOTmajor}
158   \message{- these macros are for version \JadeTeXMajorVersion and lower. }
159   \message{I'll stop here...}
160   \let\next\@@end
161 \fi
162 \next}

```

2 Inherited characteristics

Here we list the default values; non-inherited characteristics will always be specified.

```

163 \def\AlignLeader{}
164 \def\AsisWrapIndent{}
165 \def\BackgroundColor{}
166 \let\BackgroundColorRed\@empty
167 \def\BackgroundLayer{}
168 \def\BackgroundTile{}
169 \def\BorderAlignment{}
170 \def\BorderOmitAtBreak{}
171 \def\BorderPresent{0}
172 \def\BorderPriority{}
173 \def\BoxBorderAlignment{}
174 \def\BoxCornerRadius{}
175 \def\BoxOpenEnd{}
176 \def\BoxType{}
177 \def\CellBackground{}
178 \def\CellCrossed{}
179 \def\CellRowAlignment{start}
180 \def\CellBeforeRowMargin{\z@}
181 \def\CellAfterRowMargin{\z@}
182 \def\CellBeforeColumnMargin{\z@}
183 \def\CellAfterColumnMargin{\z@}
184 \def\Color{}
185 \def\Country{}
186 \def\DisplayAlignment{}
187 \def\EndIndent{\z@}
188 \def\EndMargin{}
189 \def\ExpandTabs{}
190 \def\FieldAlign{start}
191 \def\FieldWidth{0pt}
192 \def\FillingDirection{}
193 \def\FirstLineStartIndent{0pt}
194 \def\FloatOutLineNumbers{}
195 \def\FloatOutMarginalia{}
196 \def\FloatOutSidelines{}
197 \def\fFamName{Times-Roman} % Use Adobe Times Roman by default
198 \def\fPosture{normal}
199 \def\fProportionateWidth{medium}
200 \def\fSize{10pt}
201 \def\fStructure{}

```

```

202 \def\fWeight{medium}
203 \def\GlyphAlignmentMode{}
204 \def\GlyphReorderMethod{}
205 \def\GlyphSubstMethod{}
206 \def\HangingPunct{}
207 \def\HeadingLevel{0}
208 \def\Hyphenate{}
209 \def\HyphenationKeep{}
210 \def\HyphenationLadderCount{}
211 \def\HyphenationMethod{}
212 \def\HyphenationPushCharCount{}
213 \def\HyphenationRemainCharCount{}
214 \def\IgnoreRecordEnd{}
215 \def\ImplicitBidiMethod{}
216 \def\InhibitLineBreaks{}
217 \def\InputWhitespaceTreatment{}
218 \def\JustifyGlyphSpaceMaxAdd{}
219 \def\JustifyGlyphSpaceMaxRemove{}
220 \def\KernMode{}
221 \def\Kern{}
222 \def\Language{}
223 \def\LastLineEndIndent{}
224 \def\LastLineJustifyLimit{}
225 \def\LastLineQuadding{}
226 \def\Layer{0}
227 \def\Ligature{}
228 \def\LineBreakingMethod{}
229 \def\LineCap{}
230 \def\LineCompositionMethod{}
231 \def\LineJoin{}
232 \def\LineNumberSep{}
233 \def\LineNumberSide{}
234 \def\LineRepeat{}
235 \def\LineSpacing{12pt}
236 \def\Lines{}
237 \def\MarginaliaKeepWithPrevious{}
238 \def\MarginaliaSep{}
239 \def\MarginaliaSide{}
240 \def\MathDisplayMode{display}
241 \def\MinLeaderRepeat{}
242 \def\MinLeading{2\p@}
243 \def\NColumnsSpanned{1}
244 \def\NumberedLines{}
245 \def\OrphanCount{}
246 \def\PositionPreference{}
247 \def\PrincipalModeSimultaneous{}
248 \def\Quadding{start}
249 \def\ScoreSpaces{}
250 \def\SidelineSep{}
251 \def\SidelineSide{}
252 \def\SpanWeak{}
253 \def\Span{0}
254 \def\StartIndent{\z@}
255 \def\StartMargin{}

```

```

256 \def\TableAutoWidthMethod{}
257 \def\TableCornerRadius{}
258 \def\TablePartOmitMiddleFooter{0}
259 \def\TablePartOmitMiddleHeader{0}
260 \def\TruncateLeader{}
261 \def\WidowCount{}
262 \def\WritingMode{}
263 \def\AlignLeader{1}% true
264 \def\BreakAfter{0}% false
265 \def\BreakAfterPriority{0}%
266 \def\BreakBefore{0}% false
267 \def\BreakBeforePriority{0}%
268 \def\CoalesceId{0}% false
269 \def\EntitySystemId{}% [required]
270 \def\EscapementDirection{}% [=writing-mode]
271 \def\EscapementSpaceAfterNom{\z@}%
272 \def\EscapementSpaceAfterMin{\z@}%
273 \def\EscapementSpaceAfterMax{\z@}%
274 \def\IdrefAddress{}%
275 \def\IsDisplay{0}% false
276 \def\Keep{0}% false
277 \def\KeepWithNext{0}% false
278 \def\KeepWithPrevious{0}% false
279 \def\MayViolateKeepAfter{0}% false
280 \def\MayViolateKeepBefore{0}% false
281 \def\MaxWidth{!}
282 \def\MaxHeight{!}
283 \def\NotationSystemId{}% [required]
284 \def\Orientation{}% [required]
285 \def\PageNColumns{1}
286 \def\PageNumberRestart{0}
287 \def\PageNumberFormat{1}
288 \expandafter\def\csname PageNumbering@1\endcsname#1{%
289     \expandafter\@arabic#1}
290 \expandafter\def\csname PageNumbering@i\endcsname#1{%
291     \expandafter\@roman#1}
292 \expandafter\def\csname PageNumbering@I\endcsname#1{%
293     \expandafter\@Roman#1}
294 \expandafter\def\csname PageNumbering@a\endcsname#1{%
295     \expandafter\@alph#1}
296 \expandafter\def\csname PageNumbering@A\endcsname#1{%
297     \expandafter\@Alph#1}
298 \expandafter\def\csname PageNumbering@0\endcsname#1{% this shouldn't happen
299     \expandafter\@arabic#1}
300 \expandafter\def\csname PageNumbering@\endcsname#1{%
301     \expandafter\@arabic#1}
302 \def\PageBalanceColumns{0}
303 \def\PageTwoSide{0}
304 \def\TwoSideStartOnRight{0}
305 \def\PageColumnSep{\z@}
306 \def\GridColumnSep{\z@}
307 \def\PositionPointShift{\z@}
308 \def\PositionPointShiftFactor{}
309 \def\PositionPointX{\z@}% ??

```



```

310 \def\PositionPointY{\z@}% ??
311 \def\PositionPreference{0}% false
312 \def\ScaleType{max-uniform}%
313 \def\ScaleX{}% [n/a] =scale
314 \def\ScaleY{}% [n/a] =scale
315 \def\ScoreLength{}% ??
316 \def\ScoreType{}% [required] =type
317 \def\sConditional{0}% false =space-after
318 \def\sForce{0}% false =space-after
319 \def\sMax{Opt}% =space-after
320 \def\sMaxFactor{0}% =space-after
321 \def\sMin{Opt}% =space-after
322 \def\sMinFactor{0}% =space-after
323 \def\sNom{Opt}% =space-after
324 \def\sNomFactor{0}% =space-after
325 \def\sPriority{0}% =space-after
326 \let@sAfterMin\sMin
327 \let@sAfterMax\sMax
328 \let@sAfterNom\sNom
329 \let@sAfterPriority\sPriority
330 \def\sbConditional{0}% false
331 \def\sbForce{0}% false
332 \def\sbMax{Opt}%
333 \def\sbMaxFactor{0}%
334 \def\sbMin{Opt}%
335 \def\sbMinFactor{0}%
336 \def\sbNom{Opt}%
337 \def\sbNomFactor{0}%
338 \def\sbPriority{0}%
339 \newdimen\CurrentSpaceNom
340 \newdimen\CurrentSpaceMin
341 \newdimen\CurrentSpaceMax
342 \newdimen\LastSpaceNom
343 \newdimen\LastSpaceMin
344 \newdimen\LastSpaceMax
345 \CurrentSpaceNom\z@
346 \CurrentSpaceMax\z@
347 \CurrentSpaceMin\z@
348 \LastSpaceNom\z@
349 \LastSpaceMax\z@
350 \LastSpaceMin\z@
351 \def\LastSpaceConditional{0}% false
352 \def\LastSpaceForce{0}% false
353 \def\LastSpaceMaxFactor{0}%
354 \def\LastSpaceMinFactor{0}%
355 \def\LastSpaceNomFactor{0}%
356 \def\LastSpacePriority{0}%
357 \def\TruncateLeader{0}% false
358 \def\Width{}% [required] *
359 \def\Length{}% [context]
360 \def\TableWidth{\hsize}%
361 \def\ColumnIndex{}% [contextual] =column-number?
362 \def\HeaderMargin{\z@}
363 \def\FooterMargin{\z@}

```

```

364 \def\LeftMargin{\z@}
365 \def\RightMargin{\z@}
366 \def\TopMargin{\z@}
367 \def\BottomMargin{\z@}
368 \def\PageWidth{211mm}
369 \def\PageHeight{297mm}
370 \def\placement{htbp}
371 \edef\OldFontSize{\fSize}
372 \edef\OldLineSpacing{\LineSpacing}
373 \edef\OldFontPosture{\fPosture}
374 \edef\OldFontProportionateWidth{\fProportionateWidth}
375 \edef\OldFontWeight{\fWeight}
376 \edef\OldfFamName{\fFamName}
377 \let\pageFontSize\fSize
378 \let\pageLineSpacing\LineSpacing
379 \let\pageFontPosture\fPosture
380 \let\pageFontProportionateWidth\fProportionateWidth
381 \let\pageFontWeight\fWeight
382 \let\pagefFamName\fFamName
383 \let\ColorRed@empty
384 \def\listitem@content@mode{listitem-content-mode}
385 \newtoks\JadeTeXtoks
386 \def\@displaylevel{0}
387 \def\NoLig#1{#1\ifmmode\else\fi}
388 \def\DEBUG#1{\typeout{DBG: #1 at \the\inputlineno}}

```

3 Nodes and labels

A node in mode ‘listitem-content-mode’ is allowed to be labeled, but normally only elements in empty mode get labels.

```

389 \let\Label\@empty
390 \let\Element\@empty
391 \def\Node#1{%
392 \ifnum\Mathcount>1\relax
393 \else
394 \ifx\#1\\\else
395 \let\ProcessingMode\@empty
396 #1%
397 \ifx\ProcessingMode\@empty\else
398 \ifx\ProcessingMode\listitem@content@mode\else
399 \let\Label\@empty\let\Element\@empty
400 \fi
401 \fi
402 % \typeout{Node <\Label> or <\Element> -- pending at \the\inputlineno}%
403 \fi
404 \fi
405 }
406 \def\endNode#1{%
407 \let\Label\@empty\let\Element\@empty%\noindent
408 }
409 \def\PageLabel#1{%
410 \@bsphack
411 \expandafter\ifx\csname p@#1\endcsname\relax

```

```

412 \else
413 \protected@write\@auxout{}%
414     {\string\pagelabel{#1}{\thepage}}%
415 \fi
416 \@esphack}
417\def\OriginalPageLabel#1{%
418 \@bsphack\protected@write\@auxout{}%
419     {\string\pagelabel{#1}{\thepage}}\@esphack}
420\def\pagelabel#1#2{\global\@namedef{p@#1}{#2}}
421\def\Pageref#1{\expandafter\@Setref\csname p@#1\endcsname{#1}}
422\def\@qqq{qqq}
423\def\@Setref#1#2{%
424 \ifx#1\relax
425 \immediate\write\@mainaux{\string\pagelabel{#2}{qqq}}%
426 \protect\G@refundefinedtrue
427 \nfss@text{\reset@font\bfseries ??}%
428 \@latex@warning{Reference `#2' on page \thepage \space
429     undefined}%
430 \else
431 \ifx#1\@qqq
432 \protect\G@refundefinedtrue
433 \nfss@text{\reset@font\bfseries ??}%
434 \@latex@warning{Reference `#2' on page \thepage \space undefined}%
435 \else
436 \ifNestedLink{#1}%
437 \else
438 \hyper@@link[Page]{}{page.#1}{#1}%
439 % \typeout{Made a Link at \the\inputlineno, to page.#1}%
440 \fi
441 \fi
442 \fi
443 }
444 %
445\def\insertCurrentNodePageNumber#1{%
446 \bgroup
447 \SetupICs{#1}%
448 \InlineNIC
449 \ifx\Label\@empty
450 \Pageref{\Element}%
451 \else
452 \Pageref{\Label}%
453 \fi
454 \endInlineNIC
455 \endSetupICs
456 \egroup
457 }

```

4 Atomic flow objects

```

458\def\insertAlignmentPoint#1{}

```

4.1 Maths

4.1.1 General math sequences

```
459 \def\@display{display}
```

We are likely to meet nested math sequences, so maintain a counter to determine if we are at the outer level, and should turn math (display or inline) off or on.

```
460 \newcount\Mathcount
461 \def\MathSeq#1{%
462   \bgroup
463   \SetupICs{#1}%
464   \FlowObjectSetup{0}%
465   \global\advance\Mathcount by 1%
466   \let\Action\relax
467   \ifnum\Mathcount=1
468     \ifx\MathDisplayMode\@display
469       \let\Action\Dmath
470     \else
471       \let\Action\Imath
472     \fi
473   \fi
474   \Action
475 }
476 \def\endMathSeq{%
477   \global\advance\Mathcount by -1%
478   \let\Action\relax
479   \ifnum\Mathcount=0
480     \ifx\MathDisplayMode\@display\let\Action\endDmath\else\let\Action\Imath\fi
481   \fi
482   \Action
483   \endSetupICs
484   \egroup
485 }
486 \def\Dmath{\begingroup\abovedisplayskip\Jadeskip\global\Jadeskip\z@\[}
487 \def\endDmath{\}\endgroup}
488 \def\Imath{$}
489 \def\Cleanmath{\def\Node##1{}\def\endNode##1{}}%
490 \def\MathSeq##1{}\def\endMathSeq##1{}
491 }
```

4.1.2 Fences

```
492 \def\FenceSerial#1#2#3#4{#1\FlowObjectSetup{0}%
493 {\Cleanmath
494 %
495 % #1: fence characteristics
496 % #2: fence contents
497 % #3 open character
498 % #4 close character
499 %
500 \ifx\#3\\\left.\else
501 \let\plainCharacter\Character
502 \let\Character\LeftDelimiterCharacter #3%
503 \let\Character\plainCharacter\fi
504 {#2}%
```

```

505 \ifx\#4\right.\else
506 \let\plainCharacter\Character
507 \let\Character\RightDelimiterCharacter #4%
508 \let\Character\plainCharacter\fi
509 }%
510 }

```

Simon Pepping added this, to really make sure the open and close characters of the fence are proper left and right.

```

511 \let\plainCharacter\Character
512 \def\LeftDelimiterCharacter#1{\DelimiterCharacter\left{#1}}%
513 \def\RightDelimiterCharacter#1{\DelimiterCharacter\right{#1}}%
514 \def\DelimiterCharacter#1#2{%
515   \SetupICs{ }%
516   \expandafter\ifx\csname !#2\endcsname\relax
517     <#2>\typeout{Warning: Unknown character #2, at \the\inputlineno}%
518   \else\expandafter#1\csname !#2\endcsname\fi % #1 is \left or \right
519   \ifdim\EscapementSpaceAfterNom=\z@
520   \else
521     \@tempdima\EscapementSpaceAfterNom
522     \advance\@tempdima by -\EscapementSpaceAfterMin
523     \@tempdimb\EscapementSpaceAfterNom
524     \advance\@tempdimb by -\EscapementSpaceAfterMax
525     \hskip\EscapementSpaceAfterNom plus \@tempdimb minus \@tempdima%
526   \fi
527   \endSetupICs{ }%
528 }

```

4.1.3 Fractions

These simply translate into {Numerator \over Denominator}

```

529 \def\FractionSerial#1{#1\FlowObjectSetup{0}\bgroup}
530 \def\endFractionSerial{\egroup}
531 \def\FractionDenominator{}
532 \def\endFractionDenominator{}
533 \def\FractionNumerator{}
534 \def\endFractionNumerator{\over }
535 \def\insertFractionBar{}

```

4.1.4 Marks

Waiting to be implemented.

```

536 \def\MarkOver#1#2\endMarkOver{}
537 \def\MarkUnder#1#2\endMarkUnder{}
538 \def\MarkSerial#1{}
539 \def\endMarkSerial{}

```

4.1.5 Operators/limits

```

540 \def\MathOperatorSerial#1{#1\FlowObjectSetup{0}\begingroup\Cleanmath}
541 \def\endMathOperatorSerial{\endgroup}
542 \def\MathOperatorOperator#1#2\endMathOperatorOperator#3{#1%
543   \mathop{#2}}
544 \def\MathOperatorLowerLimit#1{#1_\bgroup}
545 \def\endMathOperatorLowerLimit#1{\egroup}

```

```

546 \def\MathOperatorUpperLimit#1{#1^\bgroup}
547 \def\endMathOperatorUpperLimit#1{\egroup}

```

4.1.6 Radicals

```

548 \def\RadicalSerial#1\insertRadicalRadicalDefaulted#2#3\RadicalDegree#4#5\endRadical
549 \ifx\#5\ensuremath{\sqrt{#3}}\else\ensuremath{\root #5 \of {#3}}\fi}

```

4.1.7 Grids

```

550 \newcount\GridCells
551 \newcount\GridRows
552 \newif\ifExplicitGrid
553 \def\Grid#1{#1%
554 \begingroup
555 \FlowObjectSetup{0}%
556 \Cleanmath
557 \global\GridCells\@ne\global\GridRows0
558 \ifnum\NColumns=0 \ExplicitGridtrue\def\NColumns{25}%
559 \else\ExplicitGridfalse\fi
560 \begin{array}{*{\NColumns}{c}}%
561 }
562 \def\endGrid{\end{array}\endgroup}
563 \def\GridCell#1{#1\FlowObjectSetup{0}}
564 \def\endGridCell#1{%
565 \ifnum\NColumns=\GridCells
566 \global\GridCells\@ne
567 \def\@tempa{\cr}%
568 \else
569 \global\advance\GridCells\@ne
570 \def\@tempa{&}%
571 \fi
572 \@tempa}
573 \def\NewColumn{&}
574 \def\NewRow{\}

```

4.1.8 Superscript, subscript

```

575 \def\Subscript#1#2{_{#2}}
576 \def\Superscript#1#2{^{#2}}

```

4.1.9 Unmath

```

577 \def\Unmath#1#2{%
578 {\SetupICs{#1}\mbox{#2}\endSetupICs}%
579 }

```

4.1.10 ScriptSerial

```

580 \def\ScriptSerial#1#2#3#4#5#6#7#8{%
581 \ifx$#3#4$%
582 \else
583 \vphantom{#2}_{#4}^{#3}%
584 \fi
585 \ifx$#7#8$%
586 {#2}%
587 \else
588 {\mathop{#2}\limits_{#8}^{#7}}\vphantom{#2}%

```

```

589 \fi
590 _{#6}^{#5}}

```

4.2 External Graphic flow object class (clause 12.6.15)

How we include graphics depends on the NotationSystemId. Ulrich Drepper <drepper@ipd.info.uni-karlsruhe.de> worked this out, and he also made the alignment and indentation work correctly. If any other notation needs special handling it can be implemented by adding a macro `insertExternalGraphicNotationXXX` where XXX is the notation name.

```

591 \def\insertExternalGraphic#1{%
592   \begingroup
593   \SetupICs{#1}%
594   \expandafter\ifx\csname insertExternalGraphicNotation\NotationSystemId\endcsname
595   \insertExternalGraphicNotation%
596   \else
597   \csname insertExternalGraphicNotation\NotationSystemId\endcsname
598   \fi
599   \endgroup
600 }
601 \newbox\jadeGraphic
602 \newdimen\jadeGraphicHeight
603 \newdimen\jadeGraphicWidth
604 \def\insertExternalGraphicNotation{%
605   \ifnum\@TableNest>0\def\IsDisplay{0}\fi
606   \ExternalGraphicNIC
607   \ifcase\IsDisplay
608 % 0, its inline
609   \setbox\jadeGraphic=\hbox{\expandafter\IncludeGraphic\EntitySystemId\\}%
610   \noindent%Enter hmode
611   \ifdim\PositionPointX>\z@
612     \kern -\PositionPointX
613   \fi
614   \ifnum\Layer>0%
615 % Graphic drawn at layer > 0 overwrites surrounding text
616     \jadeGraphicWidth=\wd\jadeGraphic
617     \raisebox{-\PositionPointY}{\z@}{\z@}{\box\jadeGraphic}
618     \kern\PositionPointX\kern-\jadeGraphicWidth
619   \else
620     \jadeGraphicHeight=\ht\jadeGraphic
621     \advance\jadeGraphicHeight by \dp\jadeGraphic
622     \advance\jadeGraphicHeight by -\PositionPointY
623     \raisebox{-\PositionPointY}{\jadeGraphicHeight}{\PositionPointY}{%
624 \box\jadeGraphic
625   }%
626   \fi
627 % 1 its display
628   \or%
629     \DisplayNIC
630     \@@par%
631     \@tempdima\columnwidth
632     \nointerlineskip
633     \ifdim\EndIndent>\z@
634       \advance\@tempdima by-\EndIndent
635     \fi

```

```

636 \ifdim\StartIndent>\z@
637 \advance\@tempdima by-\StartIndent
638 \moveright\StartIndent
639 \fi
640 \hbox to\@tempdima{%
641 \ifx\DisplayAlignment\A@center\hfill\fi%
642 \ifx\DisplayAlignment\A@end\hfill\fi%
643 \expandafter\IncludeGraphic\EntitySystemId\\%
644 \ifx\DisplayAlignment\A@center\hfill\fi%
645 \ifx\DisplayAlignment\A@start\hfill\fi%
646 }%
647 \@@par%
648 \else%
649 \expandafter\IncludeGraphic\EntitySystemId\\%
650 \fi
651 \endExternalGraphicNIC
652 \ifcase\IsDisplay
653 \or
654 \endDisplayNIC
655 \fi
656 }
657 \def\insertExternalGraphicNotationTEX{%
658 \input\EntitySystemId
659 }
660 \def\IncludeGraphic{\@ifnextchar<\@IncludeGraphic\{\@IncludeGraphic<>}}
661 \def\scale@max{max}
662 \def\scale@false{false}
663 \def\scale@maxuniform{max-uniform}

```

There are three situations: ScaleX and ScaleY are supplied (possibly identical), in which case ScaleType is 'false', or ScaleType is 'max' or 'max-uniform' (the default); in the latter cases, use MaxWidth and MaxHeight, with and without preserved aspect ratio. The width and height default to L^AT_EX graphics package '!', ie their natural size. I *think* this is the right interpretation of the standard.

```

664 \def\Exclams{!!}
665 \def\@IncludeGraphic<#1>#2\\{%
666 \ifx\ScaleType\scale@false
667 \ifx\ScaleX\ScaleY
668 \scalebox{\ScaleX}{\includegraphics{#2}}%
669 \else
670 \scalebox{\ScaleX}[\ScaleY]{\includegraphics{#2}}%
671 \fi
672 \else
673 \ifx\ScaleType\scale@maxuniform
674 \edef\MaxBoth{\MaxHeight\MaxWidth}%
675 \ifx\MaxBoth\Exclams
676 \includegraphics{#2}%
677 \else
678 \includegraphics[width=\MaxWidth,keepaspectratio=true,
679 height=\MaxHeight]{#2}%
680 \fi
681 \else
682 \ifx\ScaleType\scale@max
683 \includegraphics[width=\MaxWidth,height=\MaxHeight,

```



```

684             keepaspectratio=false]#2}%
685         \else
686             \typeout{ERROR: invalid scale type of \ScaleType}%
687         \fi
688     \fi
689 \fi
690 }
691 \def\insertPageNumber#1{#1%
692   \csname PageNumbering@\PageNumberFormat\endcsname\c@page}
693 \def\insertParagraphBreak#1{\@@par}
694 %
695 \def\horizontal{horizontal}
696 \def\vertical{vertical}
697 \def\escapement{escapement}
698 \def\LineThickness{1pt}
699 \def\A@center{center}
700 \def\A@end{end}
701 \def\A@start{start}
702 \def\insertRule#1{%
703   \bgroup
704   \SetupICs{#1}%
705   \def\IsDisplay{0}
706   \ifx\Orientation\horizontal\def\IsDisplay{1}\fi
707   \ifx\Orientation\vertical\def\IsDisplay{1}\fi
708   \RuleNIC
709   \ifcase\IsDisplay
710 % 0, its inline
711   \ifx\Orientation\escapement
712     \ifx\Length@empty
713 % Length isn't specified, so it depends of the context.
714 % No rule is a good context ;- )
715     \else
716         \noindent\raisebox{\PositionPointShift}[\z@][\z@]{\vrule width \Length height
717         \ifnum\Layer>0
718 \kern-\Length%
719 \fi
720     \fi
721   \else
722 % Line-progression orientation doesn't affect placement of subsequent
723 % flow object. [Note 104]
724     \ifx\Length@empty
725 % Length isn't specified, so it depends of the context.
726 % No rule is a good context ;- )
727     \else
728         \raisebox{\PositionPointShift}[\z@][\z@]{\vrule width \LineThickness height
729         \fi
730     \kern-\LineThickness%
731   \fi
732 % 1 its display
733 \or%
734   \DisplayNIC
735   \@@par%
736   \@tempdima\linewidth
737   \nointerlineskip

```

```

738 \ifdim\EndIndent>\z@
739 \advance\@tempdima by-\EndIndent
740 \fi
741 \ifdim\StartIndent>\z@
742 \advance\@tempdima by-\StartIndent
743 \moveright\StartIndent
744 \fi
745 \hbox to\@tempdima{%
746 \ifx\DisplayAlignment\A@center\hfill\fi
747 \ifx\DisplayAlignment\A@end\hfill\fi
748 \ifx\Orientation\horizontal
749 \ifx\Length\@empty\else \hbox to \Length\fi
750 {\leaders\hrule height \LineThickness \hfill}%
751 \else
752 \hbox to \LineThickness {\leaders\hrule
753 \ifx\Length\@empty\else height \Length \fi \relax
754 \hfill}%
755 \fi
756 \ifx\DisplayAlignment\A@center\hfill\fi
757 \ifx\DisplayAlignment\A@start\hfill\fi
758 }%
759 \nointerlineskip
760 \@@par%
761 \else%
762 % Unknown IsDisplay
763 \typeout{ERROR: invalid IsDisplay value of \IsDisplay}%
764 \fi
765 \endRuleNIC
766 \ifcase\IsDisplay
767 \or
768 \endDisplayNIC
769 \fi
770 \endSetupICs
771 \egroup
772 }

```

4.3 Tables

```

773 \setlength\arraycolsep\z@
774 \setlength\tabcolsep\z@
775 %\extrarowheight3\p@
776 \setlength\arrayrulewidth{.4\p@}
777 \setlength\doublerulesep{2\p@}
778 \def\arraybackslash{\let\=\@arraycr}
779 \renewcommand{\arraystretch}{0}
780 % Those are for backward compatibility
781 \newcolumnntype{L}[1]{>\raggedright\arraybackslash}p{#1}}
782 \newcolumnntype{C}[1]{>\centering\arraybackslash}p{#1}}
783 \newcolumnntype{R}[1]{>\raggedleft\arraybackslash}p{#1}}
784 % Those columns defs follows the direction of the corresponding
785 % keys on a QWERTY keyboard.
786 \newcolumnntype{T}[3]{@{\hspace{#1}}>\raggedright\arraybackslash}p{#2}@{\hspace{#3}}
787 \newcolumnntype{Y}[3]{@{\hspace{#1}}>\centering\arraybackslash}p{#2}@{\hspace{#3}}
788 \newcolumnntype{U}[3]{@{\hspace{#1}}>\raggedleft\arraybackslash}p{#2}@{\hspace{#3}}

```

```

789 \newcolumntype{G}[3]{@{\hspace{#1}}>{\raggedright\arraybackslash}m{#2}@{\hspace{#3}}
790 \newcolumntype{H}[3]{@{\hspace{#1}}>{\centering\arraybackslash}m{#2}@{\hspace{#3}}
791 \newcolumntype{J}[3]{@{\hspace{#1}}>{\raggedleft\arraybackslash}m{#2}@{\hspace{#3}}
792 \newcolumntype{B}[3]{@{\hspace{#1}}>{\raggedright\arraybackslash}b{#2}@{\hspace{#3}}
793 \newcolumntype{N}[3]{@{\hspace{#1}}>{\centering\arraybackslash}b{#2}@{\hspace{#3}}
794 \newcolumntype{M}[3]{@{\hspace{#1}}>{\raggedleft\arraybackslash}b{#2}@{\hspace{#3}}
795 % The numeric column types follows the numeric keypad direction
796 % and support colour
797 \newcolumntype{7}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\raggedright\arraybackslash}m{#2}@{\hspace{#3}}
798 \newcolumntype{8}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\centering\arraybackslash}m{#2}@{\hspace{#3}}
799 \newcolumntype{9}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\raggedleft\arraybackslash}m{#2}@{\hspace{#3}}
800 \newcolumntype{4}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\raggedright\arraybackslash}m{#2}@{\hspace{#3}}
801 \newcolumntype{5}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\centering\arraybackslash}m{#2}@{\hspace{#3}}
802 \newcolumntype{6}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\raggedleft\arraybackslash}m{#2}@{\hspace{#3}}
803 \newcolumntype{1}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\raggedright\arraybackslash}m{#2}@{\hspace{#3}}
804 \newcolumntype{2}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\centering\arraybackslash}m{#2}@{\hspace{#3}}
805 \newcolumntype{3}[4]{@{\hspace{#1}}>{\columncolor[rgb]{#4}\raggedleft\arraybackslash}m{#2}@{\hspace{#3}}
806 \newcount\@tmpcounta
807 \def\JadeRowSpanBox#1{\csname jadeRowSpanBox#1\endcsname}
808 \def\JadeRowSpanSpace#1{\csname jadeRowSpanSpace#1\endcsname}
809 \def\JadeRowSpan{%
810 \expandafter\ifx\csname jadeRowSpanBox\ColumnIndex\endcsname\relax
811 \expandafter\newbox\csname jadeRowSpanBox\ColumnIndex\endcsname
812 \expandafter\newdimen\csname jadeRowSpanSpace\ColumnIndex\endcsname
813 \fi
814 \setbox\JadeRowSpanBox{\ColumnIndex}\vtop\bgroup\noindent%
815 }
816 \def\endJadeRowSpan{%
817 \egroup%
818 \global\JadeRowSpanSpace{\ColumnIndex}\ht\JadeRowSpanBox{\ColumnIndex}%
819 \global\advance\JadeRowSpanSpace{\ColumnIndex} by \dp\JadeRowSpanBox{\ColumnIndex}%
820 \@tempdima\ht\JadeRowSpanBox{\ColumnIndex}%
821 \@tempdimb\dp\JadeRowSpanBox{\ColumnIndex}%
822 \@tmpcounta\NRowsSpanned%
823 \advance\@tmpcounta by -1%
824 \@tempdima\CellBeforeRowMargin%
825 \@tempdimb\CellAfterRowMargin%
826 \multiply\@tempdima by \@tmpcounta%
827 \multiply\@tempdimb by \@tmpcounta%
828 \global\advance\JadeRowSpanSpace{\ColumnIndex} by -\@tempdima%
829 \global\advance\JadeRowSpanSpace{\ColumnIndex} by -\@tempdimb%
830 \global\divide\JadeRowSpanSpace{\ColumnIndex} by \NRowsSpanned%
831 \vtop to \JadeRowSpanSpace{\ColumnIndex}{\unvbox\JadeRowSpanBox{\ColumnIndex}}
832 }
833 \def\JadeRowSpanFiller{%
834 \expandafter\ifx\csname jadeRowSpanBox\ColumnIndex\endcsname\relax
835 \errmessage{Invalid row span identifier}
836 \fi
837 \vtop to \JadeRowSpanSpace{\ColumnIndex}{}%
838 }
839 \def\insertTableAfterColumnBorder#1{}
840 \def\insertTableAfterRowBorder#1{}
841 \def\insertTableBeforeColumnBorder#1{}
842 \def\insertTableBeforeRowBorder#1{}

```

```

843 %
844 \def\insertTableCellAfterColumnBorder#1{\edef\AfterCol{\BorderPresent}}
845 \def\insertTableCellAfterRowBorder#1{\edef\AfterRow{\BorderPresent}}
846 \def\insertTableCellBeforeColumnBorder#1{\edef\BeforeCol{\BorderPresent}}
847 \def\insertTableCellBeforeRowBorder#1{\edef\BeforeRow{\BorderPresent}}
848 \def\insertTableColumn#1{#1}

```

5 Non-atomic flow objects

5.1 Box flow object class

```

849 \def\BOX#1{%
850   \SetupICs{#1}%
851   \fboxrule\LineThickness
852   \@tempdima\columnwidth
853   \ifdim\EndIndent>\z@
854     \advance\@tempdima by-\EndIndent
855   \fi
856   \ifdim\StartIndent>\z@
857     \advance\@tempdima by-\StartIndent
858     \hspace*{\StartIndent}%
859   \fi
860   \advance\@tempdima by-\StartIndent
861   \setbox0\vbox\bgroup\def\StartIndent{\z@}\hsize\@tempdima\ignorespaces
862 \def\endBOX{%
863   \ifhmode\unskip\fi
864   \egroup%
865   % FIXME: we aren't handling box-type: 'both
866   \ifx\BackgroundColorRed\@empty
867     \ifdim\ht0>\ht\strutbox
868       \noindent\fbox{\box0}%
869     \else
870       \setbox0\vbox{\unvbox0\global\setbox1\lastbox}%
871       \noindent\fbox{\kern-\parindent\unhbox1\unskip\unskip}%
872     \fi
873   \else
874     \color@RGB@rgb{\BackgroundColorRed}\@tempa
875     \color@RGB@rgb{\BackgroundColorGreen}\@tempb
876     \color@RGB@rgb{\BackgroundColorBlue}\@tempc
877     \ifdim\ht0>\ht\strutbox
878       \noindent\colorbox[rgb]{\@tempa, \@tempb, \@tempc}{\box0}%
879     \else
880       \setbox0\vbox{\unvbox0\global\setbox1\lastbox}%
881       \noindent\colorbox[rgb]{\@tempa, \@tempb, \@tempc}{\kern-\parindent\unhbox1\unskip\unskip}%
882     \fi
883 \fi%
884 }

```

5.2 Multicolumn management macros

Contributed by Simon Pepping.

```

885 \def\closeOrOpenMulticols#1{%
886   % juggling with nesting levels
887   {#1\global\edef\SavedSpan{\Span}}%
888   \ifnum\@displaylevel=0\relax\ifnum\PageNColumns>1\relax

```

```

889 % close
890 \ifnum\SavedSpan>1\relax
891   \ifnum\col@number>1\relax % in multicol
892     \ifnum\PageBalanceColumns>0
893       \end{multicol}
894     \else
895       % \endmulticol*
896       \vfill\end{multicol}
897     \fi
898   \fi
899 % or delayed open
900 \else % not \ifnum\SavedSpan>1\relax
901   \ifnum\col@number=1 % not in multicol
902     \columnsep\PageColumnSep
903     \ifnum\PageBalanceColumns>0
904       \begin{multicol}{\PageNColumns}
905     \else
906       % \begin{multicol*}{\PageNColumns}
907       \let\balance@columns@out
908       \multi@column@out
909       \begin{multicol}{\PageNColumns}
910     \fi
911   \fi
912 \fi
913 \fi\fi
914 }
915
916 \def\openMulticol{%
917 \ifnum\@displaylevel=0\relax
918   \def\@displaylevel{1}%
919   % local to this nesting level, for use by endDisplayGroup
920   \edef\@SavedSpan{\SavedSpan}
921   \ifnum\PageNColumns>1\relax
922     \ifnum\@SavedSpan>1\relax
923 \ifnum\@SavedSpan=\PageNColumns\else
924   \columnsep\PageColumnSep
925   \ifnum\PageBalanceColumns>0
926     \begin{multicol}{\PageNColumns}
927   \else
928     % \begin{multicol*}{\PageNColumns}
929     \let\balance@columns@out
930     \multi@column@out
931     \begin{multicol}{\PageNColumns}
932   \fi
933 \fi
934 \fi
935 \fi
936 \else
937   \def\@displaylevel{2}%
938 \fi
939 }
940
941 \def\closeMulticol{%
942 \ifnum\@displaylevel=1\ifnum\PageNColumns>1\relax

```

```

943 \ifnum\@SavedSpan>1\relax
944 \ifnum\@SavedSpan=\PageNColumns\else
945 \ifnum\PageBalanceColumns>0
946 \end{multicols}
947 \else
948 % \endmulticols*
949 \vfill\end{multicols}
950 \fi
951 \fi
952 \fi
953 \fi\fi
954 }

```

5.3 Display group flow object class (clause 12.6.2)

```

955 \def\Keep@Page{page}
956 \def\Keep@Column{column}
957 \newif\ifKeepPage
958 \KeepPagefalse
959 \def\DisplayGroup#1{\ifnum\@TableNest>0\SetupICs{#1}\else\@DisplayGroup{#1}\fi}
960 \def\@DisplayGroup#1{%
961 \closeOrOpenMulticols{#1}
962 \begingroup
963 \SetupICs{#1}%
964 \FlowObjectSetup{1}%
965 \ifx\Keep\Keep@Page\KeepPagetrue
966 \else
967 \ifx\Keep\Keep@Column\KeepPagetrue
968 \else
969 \KeepPagefalse
970 \fi
971 \fi
972 \ifKeepPage
973 \vbox\bgroup
974 \fi
975 \DisplayGroupNIC
976 \ifnum\Mathcount>0\relax
977 \else\everypar{\UseJadevskip{everypar}}\@@par
978 \fi
979 \FlowObjectSetup{1}%
980 \openMulticols
981 }
982 \def\endDisplayGroup#1{\ifnum\@TableNest>0\else\@endDisplayGroup{#1}\fi}
983 \def\@endDisplayGroup#1{%
984 \closeMulticols
985 \ifnum\Mathcount>0\relax\else
986 \@@par
987 \fi
988 \endDisplayGroupNIC
989 \ifKeepPage
990 \egroup
991 \fi
992 \endgroup
993 \gdef\SavedSpan{0}%

```

This eats the parindent, and then restores an empty everypar; it is called by an implicit start of hmode. Contributed by Simon Pepping.

```

994 \everypar{{\leavevmode\setbox\z@\lastbox \UseJadevskip{everypar}}}%
995 \everypar{\UseJadevskip {everypar}}}%
996 }
997 }

```

5.4 Leader flow object class

```

998 \newsavebox{\leaderbox}
999 \def\Leader#1{#1\begin{LRbox}{\leaderbox}}
1000 \def\endLeader{\end{LRbox}\noindent\leaders\box\leaderbox\hfill}

```

5.5 Line Field flow object class

Field align can be *start*, *end*, or *center*.

```

1001 \newsavebox\dssslbox
1002 \def\LRbox#1{%
1003 \edef\reserved@a{%
1004 \endgroup
1005 \setbox#1\hbox{%
1006 \begingroup\aftergroup}%
1007 \def\noexpand\@currentvir{\@currentvir}}%
1008 \reserved@a
1009 \@endpefalse
1010 \color@setgroup\ignorespaces
1011 }
1012 \def\LRboxW#1#2{%
1013 \edef\reserved@a{%
1014 \endgroup
1015 \setbox#1\hbox to #2{%
1016 \begingroup\aftergroup}%
1017 \def\noexpand\@currentvir{\@currentvir}}%
1018 \reserved@a
1019 \@endpefalse
1020 \color@setgroup\ignorespaces
1021 }
1022 \def\endLRbox{\color@endgroup}
1023 \let\endLRboxW\endLRbox
1024 \def\LineField#1{\bgroup
1025 \SetupICs{#1}%
1026 \LineFieldNIC
1027 \FlowObjectSetup{0}%
1028 \begin{LRbox}{\dssslbox}%
1029 }
1030 \def\endLineField{%
1031 \end{LRbox}%
1032 \ifdim\wd\dssslbox>\FieldWidth\def\FieldWidth{\wd\dssslbox}\fi
1033 \makebox[\FieldWidth][\csname Fld@\FieldAlign\endcsname]{%
1034 \ifdim\PositionPointShift=\z@
1035 \usebox{\dssslbox}%
1036 \else
1037 \raisebox{\PositionPointShift}{\usebox{\dssslbox}}}%
1038 \fi
1039 \EndSetFont}%

```

```

1040 \endLineFieldNIC
1041 \endSetupICs
1042 \egroup
1043 }
1044 %

```

5.6 Link flow object class (clause 12.6.28.3)

```

1045 \newif\ifLabelElements
1046 \LabelElementstrue
1047 \newif\ifNestedLink
1048 \NestedLinkfalse
1049 \def\LinkType{link}
1050 \def\Link#1{%
1051   \begingroup
1052   \SetupICs{#1}%
1053   \ifx\Label\@empty\let\Label\Element\fi
1054 %   \typeout{Made a Link at \the\inputlineno, to \Label}%
1055   \hyper@linkstart{\LinkType}{\Label}%
1056   \NestedLinktrue
1057 }
1058 \def\endLink{%
1059   \hyper@linkend
1060   \NestedLinkfalse
1061   \endSetupICs
1062   \endgroup
1063 }

```

5.7 Marginalia flow object class (clause 12.6.28.4)

```

1064 \def\Marginalia#1{#1\FlowObjectSetup{0}}
1065 \def\endMarginalia{}

```

5.8 Paragraph flow object class (clause 12.6.6)

<i>Characteristic</i>	<i>Inh.</i>	<i>Values</i>	<i>Default</i>	<i>Dsssl-o</i>
lines	I	wrap, asis, asis-wrap*, asis-truncate*, none	wrap	Partial
asis-truncate- char	I	#f, <i>char object</i>		Ignore
asis-wrap-char	I	#f, <i>char object</i>		Ignore
asis-wrap-indent	I	<i>length-spec</i>		Ignore
first-line-align	I	#f, <i>char object</i>		Ignore
alignment-point- offset	I	#f, <i>number between 0 and 100</i>		Ignore
ignore-record- end?	I	#f, #t	#f	Standard
expand-tabs?	I	#f, <i>integer greater than zero</i>	8	Standard
line-spacing	I	<i>length-spec</i>	12pt	Standard
line-spacing- priority	I	force, <i>integer</i>	0	Default

<i>Characteristic</i>	<i>Inh.</i>	<i>Values</i>	<i>Default</i>	<i>Dsssl-o</i>
min-pre-line-spacing	I	#f, <i>length-spec</i>	#f	Default
min-post-line-spacing	I	#f, <i>length-spec</i>	#f	Default
min-leading	I	#f, <i>length-spec</i>	#f	Standard
first-line-start-indent	I	<i>length-spec</i>	0m	Standard
last-line-end-indent	I	<i>length-spec</i>	0m	Default
hyphenation-char	I	<i>character</i>		Ignore
hyphenation-method	I	#f, <i>public identifier</i>	#f	Default
hyphenation-ladder-count	I	#f, <i>integer greater than zero</i>	#f	Default
hyphenation-remain-char-count	I	<i>positive integer</i>	2	Ignore
hyphenation-push-char-count	I	<i>positive integer</i>	2	Ignore
hyphenation-keep	I	#f, spread, page, column	#f	Default
hyphenation-exceptions	I	<i>list of strings</i>	empty list	Default
line-breaking-method	I	#f, <i>public identifier</i>	#f	Default
line-composition-method	I	#f, <i>public identifier</i>	#f	Default
implicit-bidi-method	I	#f, <i>public identifier</i>		Default
glyph-alignment-mode	I	base, center, top, bottom, font	font	Default
font-family-name	I	#f, <i>string</i>	iso-serif	Standard
font-weight	I	#f, not-applicable*, ultra-light*, extra-light*, light, semi-light*, medium, semi-bold*, bold, extra-bold*, ultra-bold*	medium	Partial
font-posture	I	#f, not-applicable*, upright, oblique, back-slanted-oblique*, italic, back-slanted-italic*	upright	Partial
font-structure	I	#f, not-applicable, solid, outline	solid	Default

<i>Characteristic</i>	<i>Inh.</i>	<i>Values</i>	<i>Default</i>	<i>Dsssl-o</i>
font-proportionate-width	I	#f, not-applicable*, ultra-condensed*, extra-condensed*, condensed, semi-condensed*, medium, semi-expanded*, expanded, extra-expanded*, ultra-expanded*	medium	Partial
font-name	I	#f, <i>public identifier</i>		Standard
font-size	I	<i>length</i>	10pt	Standard
numbered-lines?	I	#f, #t	#t	Ignore
line-number	I	#f, <i>unlabeled sosof</i>		Ignore
line-number-side	I	start, end, spread-inside, spread-outside, page-inside, page-outside		Ignore
line-number-sep	I	<i>length-spec</i>		Ignore
quadding	I	start, end, spread-inside*, spread-outside*, page-inside*, page-outside*, center, justify*	start	Partial
last-line-quadding	I	relative, start, end, spread-inside, spread-outside, page-inside, page-outside, center, justify	relative	Default
last-line-justify-limit	I	<i>length-spec</i>	0	Ignore
justify-glyph-space-max-add	I	<i>length-spec</i>	0m	Ignore
justify-glyph-space-max-remove	I	<i>length-spec</i>	0m	Ignore
hanging-punct?	I	#f, #t	#f	Default
widow-count	I	<i>positive integer</i>	2	Default
orphan-count	I	<i>positive integer</i>	2	Default
language	I	#f, <i>ISO 639 language code</i>	#f	Standard
country	I	#f, <i>ISO 3166 country code</i>	#f	Standard
position-preference	N	#f, top, bottom	#f	Ignore

<i>Characteristic</i>	<i>Inh.</i>	<i>Values</i>	<i>Default</i>	<i>Dsssl-o</i>
writing-mode	I	left-to-right, right-to-left, top-to-bottom	left-to-right	Default
start-indent	I	<i>length-spec</i>	0m	Standard
end-indent	I	<i>length-spec</i>	0m	Standard
span	I	<i>integer greater than zero</i>	1	Default
span-weak?	I	#f, #t	#f	Default
space-before	N	<i>display space</i>	no space before	Standard
space-after	N	<i>display space</i>	no space after	Standard
keep-with-previous?	N	#f, #t	#f	Standard
keep-with-next?	N	#f, #t	#f	Standard
break-before	N	#f, page, page-region*, column*, column-set*	#f	Partial
break-after	N	#f, page, page-region*, column*, column-set*	#f	Partial
keep	N	#f, page, column-set*, column*, #t*	#f	Partial
may-violate-keep-before?	N	#f, #t	#f	Default
may-violate-keep-after?	N	#f, #t	#f	Default

```

1066 \newcount\@TablePars
1067 \newcount\@ParNest
1068 \newcount\@TableNest
1069 \def\Par#1{%

```

We need to end the current paragraph, with its current line spacing, hyphenation, what have you, before anything is done. This could have horrible repercussions, but something like it is necessary.

```

1070 \everypar{\UseJadevskip{everypar}}\@@par
1071 \closeOrOpenMulticols{#1}
1072 \begingroup
1073 \SetupICs{#1}%
1074 \ParagraphNIC
1075 \FlowObjectSetup{1}%
1076 \openMulticols
1077 \paraSetup%
1078 }
1079 \def\TablePar#1{%
1080 \begingroup
1081 \let\@action\relax
1082 \global\advance\@ParNest by 1
1083 \ifnum\@ParNest=1

```

```

1084     \ifnum \@TablePars>0%
1085         \def \@action{\@@par}%\@arraycr}%
1086     \fi
1087 \else
1088     \ifnum \@ParNest>1
1089         \ifnum \@TablePars>0\def \@action{\par}\fi
1090     \fi
1091 \fi
1092 \@action
1093 \SetupICs{#1}%
1094 \csname startQ@\Quadding\endcsname
1095 \FlowObjectSetup{1}%
1096 \paraSetup%
1097 }
1098 \def \FootnotePar#1{%
1099 \begingroup
1100 \let \@action\relax
1101 \global\advance \@ParNest by 1
1102 \ifnum \@ParNest=1
1103     \ifnum \@FootnotePars>0%
1104         \def \@action{\@@par}%
1105     \fi
1106 \else
1107     \ifnum \@ParNest>1
1108         \ifnum \@FootnotePars>0\def \@action{\par}\fi
1109     \fi
1110 \fi
1111 \@action
1112 \SetupICs{#1}%
1113 \csname startQ@\Quadding\endcsname
1114 \FlowObjectSetup{1}%
1115 \paraSetup%
1116 }
1117 \def \HeadPar#1{\Par{#1}}
1118 \setcounter{tocdepth}{99}
1119 \def \@mysect#1#2#3{%
1120 \edef \@thislabel{\csname theH#1\endcsname}%
1121 \pdfbookmark[#2]{#3}{\@thislabel}%
1122 }

From J.-M. Kubek, for PDF bookmarks
1123 \newcounter {headingOne}
1124 \newcounter {headingTwo}[headingOne]
1125 \newcounter {headingThree}[headingTwo]
1126 \newcounter {headingFour}[headingThree]
1127 \newcounter {headingFive}[headingFour]
1128 \def \theHheadingOne{\arabic{headingOne}}
1129 \def \theHheadingTwo{\theHheadingOne.\arabic{headingTwo}}
1130 \def \theHheadingThree{\theHheadingTwo.\arabic{headingThree}}
1131 \def \theHheadingFour{\theHheadingThree.\arabic{headingFour}}
1132 \def \theHheadingFive{\theHheadingFour.\arabic{headingFive}}
1133 \def \endHeadPar#1{%
1134 \ifnum \@TableNest>0
1135     \ifnum \@ParNest>1
1136         \ifnum \@TablePars>0\box\@@par\fi

```

```

1137 \fi
1138 \csname endQ@\Quadding\endcsname\null
1139 \global\advance\@TablePars by 1
1140 \global\advance\@ParNest by -1
1141 \else
1142 \ifnum\HeadingLevel>0%
1143 \ifnum\HeadingLevel=1%
1144 \addtocounter{headingOne}{1}%
1145 \@mysect{headingOne}{0}{\HeadingText}%
1146 \else\ifnum\HeadingLevel=2%
1147 \addtocounter{headingTwo}{1}%
1148 \@mysect{headingTwo}{1}{\HeadingText}%
1149 \else\ifnum\HeadingLevel=3%
1150 \addtocounter{headingThree}{1}%
1151 \@mysect{headingThree}{2}{\HeadingText}%
1152 \else\ifnum\HeadingLevel=4%
1153 \addtocounter{headingFour}{1}%
1154 \@mysect{headingFour}{3}{\HeadingText}%
1155 \else\ifnum\HeadingLevel=5%
1156 \addtocounter{headingFive}{1}%
1157 \@mysect{headingFive}{4}{\HeadingText}%
1158 \fi
1159 \fi
1160 \fi
1161 \fi
1162 \fi
1163 \fi
1164 % SP
1165 \closeMulticols
1166 \@@par
1167 \endParagraphNIC
1168 \fi
1169 \endSetupICs
1170 \endgroup

```

This eats the parindent, and then restores an empty everypar; it is called by an implicit start of hmode. Contributed by Simon Pepping.

```

1171 \everypar{\leavevmode\setbox\z@\lastbox \UseJadevskip{everypar}}%
1172 \everypar{\UseJadevskip {everypar}}%
1173 }
1174 }
1175 \def\endPar#1{%
1176 \ifnum\@TableNest>0
1177 \let\@action\relax
1178 \ifnum\@ParNest>1
1179 \ifnum\@TablePars>0\def\@action{\@@par}\fi
1180 \fi
1181 \@action
1182 \csname endQ@\Quadding\endcsname\null
1183 \global\advance\@TablePars by 1
1184 \global\advance\@ParNest by -1
1185 \else
1186 % SP
1187 \closeMulticols
1188 \@@par

```

```

1189 \endParagraphNIC
1190 \fi
1191 \endSetupICs
1192 \endgroup

This eats the parindent, and then restores an empty everypar; it is called by an implicit
start of hmode. Contributed by Simon Pepping.
1193 \everypar{{\leavevmode\setbox\z@\lastbox \UseJadevskip{everypar}}}%
1194 \everypar{\UseJadevskip {everypar}}%
1195 }
1196 }
1197 \def\endFootnotePar#1{%
1198 \let\@action\relax
1199 \ifnum\@ParNest>1
1200 \ifnum\@FootnotePars>0\def\@action{\@@par}\fi
1201 \fi
1202 \@action
1203 \csname endQ@\Quadding\endcsname\null
1204 \global\advance\@FootnotePars by 1
1205 \global\advance\@ParNest by -1
1206 \endSetupICs
1207 \endgroup
1208 \everypar{{\leavevmode\setbox\z@\lastbox \UseJadevskip{everypar}}}%
1209 \everypar{\UseJadevskip {everypar}}%
1210 }
1211 }

```

5.9 Score flow object class (clause 12.6.17)

No support for: score-spaces, color or line-thickness yet.

```

1212 \def\Scoreafter{\uline}
1213 \def\Scorethrough{\sout}
1214 \def\Scorebefore{}
1215 \def\Score#1#2\endScore{#1
1216 \csname Score\ScoreType\endcsname{#2}}%
1217 }

```

5.10 Scroll flow object class (clause 12.6.28.1)

```

1218 \def\Scroll{\SpS}
1219 \def\endScroll{\endSpS}

```

5.11 Sequence flow object class (clause 12.6.1)

We have to allow for the document starting with a sequence, not a simple page sequence, so we check if the ‘begin document’ work has been done.

```

1220 \newdimen\CurPosShift\CurPosShift\z@
1221 \newif\if@Raised
1222 \def\Seq#1{%
1223 \ifInSpS\beginngroup\fi
1224 \SetupICs{#1}%
1225 \ifx \@nodocument\relax
1226 \else
1227 \typeout{Jade begin document sequence at \the\inputlineno}%
1228 \JadeSetPage

```

```

1229 \JadeBeginDocument
1230 \ifnum\PageNColumns>1
1231   \columnsep\PageColumnSep
1232   \ifnum\PageBalanceColumns>0
1233     \begin{multicols}{\PageNColumns}
1234   \else
1235     % begin\{multicols*\}{\PageNColumns}
1236     \let\balance@columns@out
1237     \multi@column@out
1238     \begin{multicols}{\PageNColumns}
1239   \fi
1240 \fi
1241 \fi
1242 \FlowObjectSetup{0}%
1243 \@Raisedfalse
1244 \ifdim\PositionPointShift=\CurPosShift
1245 \else
1246   \@tempdima\PositionPointShift
1247   \ifdim\PositionPointShift>\CurPosShift
1248     \advance\@tempdima by -\CurPosShift
1249   \else
1250     \advance\@tempdima by \CurPosShift
1251   \fi
1252   \CurPosShift\PositionPointShift
1253   \@Raisedtrue
1254 \fi
1255 \ifnum\@TableNest>0\else\if@Raised\leavevmode\raise\@tempdima\hbox\bgroup\fi\fi
1256 }
1257 \def\endSeq{%
1258 \ifnum\@TableNest>0\else\if@Raised\egroup\fi\fi
1259 \EndSetFont
1260 \endSetupICs
1261 \@Raisedfalse
1262 \ifInSpS\endgroup\fi
1263 }

```

5.12 Side Line flow object class

```

1264 \def\SideLine#1{#1}
1265 \def\endSideLine{}

```

5.13 Simple Page Sequence flow object class (clause 12.6.3)

Look out for the canonical `lin` margins in TeX systems!

```

1266 \def\JadeSetPage{%
1267 \ifnum\PageNumberRestart=1
1268   \global\c@page \@ne
1269 \fi
1270 \ifnum\PageTwoSide=0
1271   \global\@twosidefalse
1272 \else
1273   \global\@twosidetrue
1274 \fi
1275 \oddsidemargin\LeftMargin

```

```

1276 \ifnum\PageTwoSide=0
1277     \evensidemargin\LeftMargin
1278 \else
1279     \evensidemargin\RightMargin
1280 \fi
1281 \topmargin\HeaderMargin
1282 \headheight\LineSpacing
1283 \headsep\TopMargin
1284 \advance\headsep by -\HeaderMargin
1285 \advance\headsep by -\LineSpacing
1286 \footskip\BottomMargin
1287 \advance\footskip by -\FooterMargin
1288 \paperwidth\PageWidth
1289 \paperheight\PageHeight
1290 \textheight\paperheight
1291 \textwidth\paperwidth
1292 \advance\textheight by -\TopMargin
1293 \advance\textheight by -\BottomMargin
1294 \advance\textwidth by -\LeftMargin
1295 \advance\textwidth by -\RightMargin
1296 \ifx\pdfimage\undefined
1297     \else
1298     \global\pdfpagewidth\paperwidth
1299     \global\pdfpageheight\paperheight
1300 \fi
1301 \@colht\textheight
1302 \@colroom\textheight
1303 \vsize\textheight
1304 \headwidth\textwidth
1305 \linewidth\textwidth
1306 \columnwidth\textwidth
1307 \hsize\columnwidth \linewidth\hsize
1308 \headheight12pt
1309 \let\pageFontSize\fSize
1310 \let\pageLineSpacing\LineSpacing
1311 \let\pageFontPosture\fPosture
1312 \let\pageFontProportionateWidth\fProportionateWidth
1313 \let\pageFontWeight\fWeight
1314 \let\pageFamName\fFamName
1315 \arraycolsep\GridColumnSep
1316 }
1317 % initialize it
1318 \JadeSetPage
1319 \def\JadeBeginDocument{%

    We borrow most of the code of \begin{document}; we do not want it all, as it inter-
    poses an unwanted group.

1320     \@clubpenalty\clubpenalty
1321     \begingroup\@floatplacement\@dblfloatplacement
1322         \makeatletter\let\@writefile\@gobbletwo
1323         \global \let \@multiplelabels \relax
1324         \@input{\jobname.aux}%
1325     \endgroup
1326     \immediate\openout\@mainaux\jobname.aux

```



```

1327 \immediate\write\@mainaux{\relax}%
1328 \process@table
1329 \let\glb@currsizel@empty %% Force math initialisation.
1330 \normalsize
1331 \everypar{\UseJadevskip{everypar}}%
1332 \@noskipsecfalse
1333 \let \@refundefined \relax
1334 \let \@AtBeginDocument \@firstofone
1335 \ifdim\topskip<1sp\global\topskip 1sp\relax\fi
1336 \global\@maxdepth\maxdepth
1337 \@begindocumenthook
1338 \global\let \@begindocumenthook \@undefined
1339 \global\let \@filelist \relax
1340 \global\let \@addtofilelist \@gobble
1341 \gdef\do##1{\global\let ##1\@notprerr}%
1342 \@preamblecmds
1343 \global\let \@nodocument \relax
1344 \global\let \do\noexpand
1345 \ignorespaces
1346 }
1347 \newif\ifInSpS
1348 \def\SpS#1{%
1349 \InSpStrue
1350 \DoFOBSettrue
1351 \SetupICs{#1}%
1352 \gdef\thepage{\csname PageNumbering@\PageNumberFormat\endcsname\c@page}%

```

The basic page setup needs to be delayed to this point, otherwise the first page will be ‘frozen’ in the format file. So check here whether we are at the start of the document, and if so trigger L^AT_EX’s `\begin{document}`. This is a pain, delaying the start of the document. It means that documents which don’t have a simple-page- sequence at the start will fail.

```

1353 \JadeSetPage
1354 \ifx \@nodocument\relax
1355 \else
1356 \JadeBeginDocument
1357 \fi

```

Grouping is turned on now we are inside a simple page sequence. but is itself inside a group of the page sequence. The problem is that if we start a Sequence, then start a PageSequence, the `\begin{document}` occurs inside a group, and so gets in a mess. If we turn off grouping outside simple page sequences, any changes become global! Does it make sense to have material not in a page sequence, in TeX? Sadly, yes. The document will still *start* in non-group mode.

```

1358 \closeOrOpenMulticols{#1}%
1359 \DisplayNIC
1360 \openMulticols
1361 \FlowObjectSetup{0}%
1362 }
1363 \def\endSpS{%
1364 \DoFOBSetfalse
1365 \ifnum\PageNColumns>1\relax
1366 \ifnum\col@number>1\relax % in multicols
1367 \ifnum\PageBalanceColumns>0

```

```

1368     \end{multicols}
1369     \else
1370         % \endmulticols*
1371         \vfill\end{multicols}
1372     \fi
1373 \fi
1374 \fi
1375 \if@twoside
1376     \ifnum\TwoSideStartOnRight=1
1377         \cleardoublepage
1378     \else
1379         \clearpage
1380     \fi
1381 \else
1382     \clearpage
1383 \fi
1384 \fancyhf{}%
1385 \endDisplayNIC
1386 \let\FancyHook\@empty
1387 \let\FancyFirstHook\@empty
1388 \global\let\@sAfterMin\saMin
1389 \global\let\@sAfterMax\saMax
1390 \global\let\@sAfterNom\saNom
1391 \global\let\@sAfterPriority\saPriority
1392 \InSpSfalse
1393 }

```

5.14 Headers and footers

```

1394 \def\SpSCenterFooter#1{\Setfoot[C]{#1}{CenterFooter}}
1395 \def\SpSCenterHeader#1{\Sethead[C]{#1}{CenterHeader}}
1396 \def\SpSLeftFooter#1{\Setfoot[L]{#1}{LeftFooter}}
1397 \def\SpSLeftHeader#1{\Sethead[L]{#1}{LeftHeader}}
1398 \def\SpSRightFooter#1{\Setfoot[R]{#1}{RightFooter}}
1399 \def\SpSRightHeader#1{\Sethead[R]{#1}{RightHeader}}
1400 %
1401 \def\SpSOtherBackCenterFooter#1{\Setfoot[CE]{#1}{OtherBackCenterFooter}}
1402 \def\SpSOtherBackLeftFooter#1{\Setfoot[LE]{#1}{OtherBackLeftFooter}}
1403 \def\SpSOtherBackRightFooter#1{\Setfoot[RE]{#1}{OtherBackRightFooter}}
1404 \def\SpSOtherBackRightHeader#1{\Sethead[RE]{#1}{OtherBackRightHeader}}
1405 \def\SpSOtherBackCenterHeader#1{\Sethead[CE]{#1}{OtherBackCenterHeader}}
1406 \def\SpSOtherBackLeftHeader#1{\Sethead[LE]{#1}{OtherBackLeftHeader}}
1407 %
1408 \def\SpSOtherFrontCenterFooter#1{\Setfoot[CO]{#1}{OtherFrontCenterFooter}}
1409 \def\SpSOtherFrontLeftFooter#1{\Setfoot[LO]{#1}{OtherFrontLeftFooter}}
1410 \def\SpSOtherFrontRightFooter#1{\Setfoot[RO]{#1}{OtherFrontRightFooter}}
1411 \def\SpSOtherFrontRightHeader#1{\Sethead[RO]{#1}{OtherFrontRightHeader}}
1412 \def\SpSOtherFrontCenterHeader#1{\Sethead[CO]{#1}{OtherFrontCenterHeader}}
1413 \def\SpSOtherFrontLeftHeader#1{\Sethead[LO]{#1}{OtherFrontLeftHeader}}
1414 %
1415 \def\SpSFirstBackCenterFooter#1{\SetFirstfoot[CE]{#1}{FirstBackCenterFooter}}
1416 \def\SpSFirstBackLeftFooter#1{\SetFirstfoot[LE]{#1}{FirstBackLeftFooter}}
1417 \def\SpSFirstBackRightFooter#1{\SetFirstfoot[RE]{#1}{FirstBackRightFooter}}
1418 \def\SpSFirstBackCenterHeader#1{\SetFirsthead[CE]{#1}{FirstBackCenterHeader}}

```

```

1419 \def\SpSFirstBackLeftHeader#1{\SetFirsthead[LE]{#1}{FirstBackLeftHeader}}
1420 \def\SpSFirstBackRightHeader#1{\SetFirsthead[RE]{#1}{FirstBackRightHeader}}
1421
1422 \def\SpSFirstFrontCenterFooter#1{\SetFirstfoot[CO]{#1}{FirstFrontCenterFooter}}
1423 \def\SpSFirstFrontLeftFooter#1{\SetFirstfoot[LO]{#1}{FirstFrontLeftFooter}}
1424 \def\SpSFirstFrontRightFooter#1{\SetFirstfoot[RO]{#1}{FirstFrontRightFooter}}
1425 \def\SpSFirstFrontCenterHeader#1{\SetFirsthead[CO]{#1}{FirstFrontCenterHeader}}
1426 \def\SpSFirstFrontLeftHeader#1{\SetFirsthead[LO]{#1}{FirstFrontLeftHeader}}
1427 \def\SpSFirstFrontRightHeader#1{%
1428 \SetFirsthead[RO]{#1}{FirstFrontRightHeader}}%

```

This one comes last, so now set up page styles. YUCK!

```

1429 \pagestyle{jadeother}%
1430 \thispagestyle{jadefirst}%
1431 }
1432 \fancypagestyle{jadeother}{\fancyhf{ }\FancyHook}%
1433 \fancypagestyle{jadefirst}{\fancyhf{ }\FancyFirstHook}%
1434 %
1435 \def\Sethead[#1]#2#3{%
1436 \ifx\#2\\\relax\else
1437 \g@addto@macro\FancyHook{\fancyhead[#1]{\setnormal#2}}%
1438 \fi
1439 }
1440 \def\Setfoot[#1]#2#3{%
1441 \ifx\#2\\\relax\else
1442 \g@addto@macro\FancyHook{\fancyfoot[#1]{\setnormal#2}}%
1443 \fi
1444 }
1445 \def\SetFirsthead[#1]#2#3{%
1446 \ifx\#2\\\relax\else
1447 \g@addto@macro\FancyFirstHook{\fancyhead[#1]{\setnormal#2}}%
1448 \fi
1449 }
1450 \def\SetFirstfoot[#1]#2#3{%
1451 \ifx\#2\\\relax\else
1452 \g@addto@macro\FancyFirstHook{\fancyfoot[#1]{\setnormal#2}}%
1453 \fi
1454 }
1455 \def\FancyHook{}
1456 \def\FancyFirstHook{}
1457 \pagestyle{jadeother}

```

5.15 Table flow object class

```

1458 \def\Table#1{\TableNIC\UseJadevskip{table}\SetupICs{#1}}
1459 \def\endTable{\endSetupICs\endTableNIC}
1460 \def@full{full}
1461 \LTpre=\z@
1462 \LTpost=\z@
1463 \newenvironment{TeXTable}[3]{% width, ncolumns, template
1464 \global\advance@TableNest by 1
1465 \ifx\TableWidth@full\def\TableWidth{\hsize}\fi
1466 \FlowObjectSetup{0}%
1467 \let\node@gobble
1468 \let\endnode@gobble
1469 \let\Par\TablePar

```

```

1470 \setlength\LTleft\StartIndent
1471 \setlength\LTRight\fill
1472 \ifnum\PageNColumns>1
1473   \tabular{#3}%
1474 \else
1475   \ifnum\@TableNest>1
1476     \tabular{#3}%
1477   \else
1478     \longtable{#3}%
1479   \fi
1480 \fi
1481 }{%
1482 \ifnum\PageNColumns>1
1483   \endtabular
1484 \else
1485   \ifnum\@TableNest>1
1486     \endtabular
1487   \else
1488     \endlongtable
1489   \fi
1490 \fi
1491 \ifvoid\@mpfootins\else
1492   \vskip\skip\@mpfootins
1493   \normalcolor
1494   \unvbox\@mpfootins
1495 \fi
1496 \global\advance\@TableNest by -1
1497 }

```

5.16 Table Cell flow object class

```

1498 \def\Hline{\hline}
1499 \def\Cline{\cline}
1500 \let\TeXTableCell=\multicolumn
1501 \def\TableCell#1{%
1502   \TableCellNIC%
1503   \SetupICs{#1}%
1504   \FlowObjectSetup{0}%
1505   \rule[2ex]{0pt}{\CellBeforeRowMargin}%
1506   \global\@TablePars0%
1507   \ifnum\NRowsSpanned>1% Row spanning
1508     \JadeRowSpan%
1509   \else
1510     \ifnum\TeXRowSpanFiller>0%
1511       \JadeRowSpanFiller
1512     \fi
1513   \fi%
1514 }
1515 \def\endTableCell#1{%
1516   \ifnum\NRowsSpanned>1%
1517     \endJadeRowSpan%
1518   \fi
1519   \rule[-\CellAfterRowMargin]{0pt}{0pt}%
1520   \endSetupICs
1521   \endTableCellNIC

```

1522 }

5.17 Table Part flow object class

```
1523 \def\TablePart#1{#1\FlowObjectSetup{0}}
1524 \def\TablePartHeader#1{}
1525 \def\TablePartFooter#1{}
1526 \def\endTablePartFooter#1{}
1527 \def\endTablePartHeader#1{%
1528   \ifnum\TablePartOmitMiddleHeader=1
1529     \endfirsthead
1530   \else
1531     \endhead
1532   \fi}
1533 \def\endTablePart{}
```

5.18 Table Row flow object class

```
1534 \def\TableRow#1{#1}
1535 \def\endTableRow#1{\}
```

5.19 Character mapping

```
1536 \def\Character#1{%
1537   \SetupICs{}%
1538   \ifnum#1<255\char#1\else
1539     \expandafter\ifx\csname !#1\endcsname\relax
1540       <#1>\typeout{Warning: Unknown character #1, at \the\inputlineno}%
1541     \else\csname !#1\endcsname\fi
1542   \fi
1543   \ifdim\EscapementSpaceAfterNom=\z@
1544     \else
1545       \@tempdima\EscapementSpaceAfterNom
1546       \advance\@tempdima by -\EscapementSpaceAfterMin
1547       \@tempdimb\EscapementSpaceAfterNom
1548       \advance\@tempdimb by -\EscapementSpaceAfterMax
1549       \hskip\EscapementSpaceAfterNom plus \@tempdimb minus \@tempdima%
1550     \fi
1551   \endSetupICs{}%
1552 }
```

5.20 DisplayNIC

```
1553 \newcount\DisplayStack
1554 \newcount\LastDisplayStack
1555 \newif\ifBreakMe
1556 \newif\ifJadeskipready
1557 \Jadeskipreadyfalse
1558 \newskip\Jadeskip
1559 \newskip\Jadelastskip
1560 \newskip\jadetempskip
1561 \BreakMefalse
1562 \DisplayStack0
1563 \LastDisplayStack-1
1564 \let\@sBeforeMin\sbMin
1565 \let\@sBeforeMax\sbMax
1566 \let\@sBeforeNom\sbNom
```

```

1567 \let\@sBeforePriority\sbPriority
1568 \def\@force{force}
1569 \def\Jadevskip#1#2{\global\Jadeskipreadytrue\global\Jadeskip#1\relax}
1570 \def\UseJadevskip#1{%
1571   \global\Jadeskipreadyfalse
1572   \ifdim\Jadeskip=\z@\else
1573     \ifvmode
1574       \vskip\Jadeskip\global\Jadeskip\z@
1575     \else
1576       \setbox\z@\lastbox\par
1577       \vskip\Jadeskip\global\Jadeskip\z@
1578       {\everypar{} \noindent\box\z@}%
1579     \fi
1580   \fi
1581 }
1582 \def\QueryPageBreak{%
1583 \ifBreakMe
1584 \ifvmode
1585   \penalty \@M
1586 \else
1587   \@bsphack
1588   \vadjust{\penalty \@M}%
1589   \@esphack
1590 \fi
1591 \else
1592 \ifnum\KeepWithNext=1
1593   \penalty-600
1594 \else
1595   \penalty \z@
1596 \fi
1597 \fi
1598 }
1599 \def\DisplayNIC{%
1600 \advance\DisplayStack by 1
1601 \QueryPageBreak

```

What we are trying to identify is a display which starts inside another display.

```

1602 % \ifnum\DisplayStack>\LastDisplayStack
1603 %   \def\sbPriority{force}%
1604 %   \def\LastSpaceBeforePriority{0}%
1605 % \fi
1606 \let\@sAfterMin\saMin
1607 \let\@sAfterMax\saMax
1608 \let\@sAfterNom\saNom
1609 \let\@sAfterPriority\saPriority
1610 %
1611 \begingroup
1612 \ifx\BreakBefore\relax\else
1613   \csname Break@\BreakBefore\endcsname
1614 \fi
1615 \CurrentSpaceMin=\sbMin
1616 \CurrentSpaceNom=\sbNom
1617 \CurrentSpaceMax=\sbMax
1618 %
1619 \edef\CurrentSpacePriority{\sbPriority}%

```

See if either display space priority is set to ‘force’; if so, use that set of values; if both priorities are ‘force’, add values together

```

1620 \ifx\sbPriority\@force
1621   \ifx\LastSpacePriority\@force
1622     \advance\CurrentSpaceMin by \LastSpaceMin
1623     \advance\CurrentSpaceNom by \LastSpaceNom
1624     \advance\CurrentSpaceMax by \LastSpaceMax
1625   \fi
1626 \else
1627   \ifx\LastSpacePriority\@force
1628     \CurrentSpaceMin=\LastSpaceMin
1629     \CurrentSpaceNom=\LastSpaceNom
1630     \CurrentSpaceMax=\LastSpaceMax

```

See if the priority of either set is higher, if so use that

```

1631   \else
1632     \ifnum\CurrentSpacePriority>\LastSpacePriority
1633       \relax
1634     \else
1635       \ifnum\LastSpacePriority>\CurrentSpacePriority
1636         \CurrentSpaceMin=\LastSpaceMin
1637         \CurrentSpaceNom=\LastSpaceNom
1638         \CurrentSpaceMax=\LastSpaceMax
1639     \else

```

So the priorities are equal; take the one with the larger Nom

```

1640       \ifdim\CurrentSpaceNom>\LastSpaceNom
1641         \relax
1642       \else
1643         \ifdim\LastSpaceNom>\CurrentSpaceNom
1644           \CurrentSpaceMin=\LastSpaceMin
1645           \CurrentSpaceNom=\LastSpaceNom
1646           \CurrentSpaceMax=\LastSpaceMax
1647       \else

```

Dang, the Noms are equal. Take the larger minimum, and smaller maximum

```

1648         \ifdim\LastSpaceMax<\CurrentSpaceMax
1649           \CurrentSpaceMax\LastSpaceMax
1650         \fi
1651         \ifdim\LastSpaceMin>\CurrentSpaceMin
1652           \CurrentSpaceMin\LastSpaceMin
1653         \fi
1654       \fi
1655     \fi
1656   \fi
1657 \fi
1658 \fi
1659 \fi
1660 \@tempdima\CurrentSpaceNom
1661 \advance\@tempdima by -\CurrentSpaceMin
1662 \@tempdimb\CurrentSpaceNom
1663 \advance\@tempdimb by -\CurrentSpaceMax
1664 \QueryPageBreak
1665 \jadetempskip=\CurrentSpaceNom plus \@tempdimb minus \@tempdima
1666 \Jadevskip{\the\jadetempskip}{startDisplayNIC}%
1667 \let\Keep\relax

```

```

1668 \let\BreakBefore\relax
1669 \let\BreakAfter\relax
1670 \let\KeepWithPrevious\relax
1671 \let\MayViolateKeepBefore\relax
1672 \let\MayViolateKeepAfter\relax
1673 \def\sbMin{\z@}%
1674 \def\sbMax{\z@}%
1675 \def\sbNom{\z@}%
1676 \def\sbPriority{0}%
1677 \def\saMin{\z@}%
1678 \def\saMax{\z@}%
1679 \def\saNom{\z@}%
1680 \def\saPriority{0}%
1681 \ifdim\Jadeskip=\z@\else\the\everypar\fi
1682 }
1683 \def\endDisplayNIC{%
1684 \ifnum\KeepWithNext=1
1685 \penalty@\M\global\BreakMettrue\else\global\BreakMefalse
1686 \fi
1687 \ifdim\Jadeskip=\z@\else\the\everypar\fi
1688 \endgroup
1689 \global\LastSpaceNom=\sAfterNom
1690 \global\LastSpaceMax=\sAfterMax
1691 \global\LastSpaceMin=\sAfterMin
1692 \global\edef\LastSpacePriority{\sAfterPriority}%
1693 @tempdima\sAfterNom
1694 \advance@tempdima by -\sAfterMin
1695 @tempdimb\sAfterNom
1696 \advance@tempdimb by -\sAfterMax
1697 \jadetempskip=\sAfterNom plus @tempdimb minus @tempdima
1698 \Jadevskip{\the\jadetempskip}{endDisplayNIC}%
1699 \global\LastDisplayStack=\DisplayStack
1700 \advance\DisplayStack by -1
1701 }
1702 \def\paraSetup{%
1703 \rightskip\EndIndent
1704 \leftskip\StartIndent
1705 \csname JQ@\Quadding\endcsname
1706 \csname L@\Language\endcsname
1707 \ifx\FirstLineStartIndent@empty\relax
1708 \else\parindent\FirstLineStartIndent
1709 \fi
1710 \ifx\InputWhitespaceTreatment@empty\relax
1711 \else\csname White@\InputWhitespaceTreatment\endcsname
1712 \fi
1713 \ifx\Lines@empty\relax
1714 \else\csname Lines@\Lines\endcsname
1715 \fi
1716 }

```

6 Setup of non-inherited characteristics

6.1 Inline


```

1717 \def\InlineNIC{%
1718 \begingroup
1719 }
1720 \def\endInlineNIC{%
1721 \let\BreakBeforePriority\relax
1722 \let\BreakAfterPriority\relax
1723 \endgroup
1724 }

```

6.2 Display

```

1725 \def\DisplayGroupNIC{%
1726 \DisplayNIC
1727 }
1728 \def\endDisplayGroupNIC{%
1729 \endDisplayNIC
1730 }

```

6.3 Graphics, boxes, leaders

```

1731 \def\ExternalGraphicNIC{%
1732 \InlineNIC
1733 }
1734 \def\endExternalGraphicNIC{%
1735 \endInlineNIC
1736 }
1737 \def\BoxNIC{%
1738 \DisplayNIC
1739 \InlineNIC
1740 }
1741 \def\endBoxNIC{%
1742 \endInlineNIC
1743 \endDisplayNIC
1744 }
1745 \def\RuleNIC{%
1746 \DisplayNIC
1747 \InlineNIC
1748 }
1749 \def\endRuleNIC{%
1750 \endInlineNIC
1751 \endDisplayNIC
1752 }
1753 \def\LeaderNIC{%
1754 \InlineNIC
1755 }
1756 \def\LeaderNIC{%
1757 \InlineNIC
1758 }

```

6.4 Tables

```

1759 \let\TableNIC\DisplayNIC
1760 \let\endTableNIC\endDisplayNIC
1761 \def\TableColumnNIC{}
1762 \def\endTableColumnNIC{}
1763 \def\TableCellNIC{%

```

```

1764 \begingroup%
1765 \def\NColumnsSpanned{1}%
1766 \def\NRowsSpanned{1}%
1767 \def\ColumnIndex{0}%
1768 \def\TeXRowSpanFiller{0}%
1769 }
1770 \def\endTableCellNIC{\endgroup}
1771 \def\GridNIC{}
1772 \def\endGridNIC{}
1773 \def\GridCellNIC{}
1774 \def\endGridCellNIC{}
1775 \let\ParagraphNIC\DisplayNIC
1776 \let\LineFieldNIC\InlineNIC
1777 \let\endParagraphNIC\endDisplayNIC
1778 \let\endLineFieldNIC\endInlineNIC

```

7 Setup of inherited characteristics

A problem arises here is ‘whitespace treatment’ is set to ‘preserve’, as this makes spaces active. If then a font name like ‘Times Roman’ is processed, the space in the middle is processed! We replace spaces in font family names with ‘-’ in TeXFOTBuilder.cxx

```

1779 \newif\ifNeedsSelect
1780 \chardef\nonactive=10
1781 \def\SetupICs#1{#1%
1782 \let\current@f@series\f@series
1783 \let\current@f@shape\f@shape
1784 \let\current@f@family\f@family
1785 \let\current@f@size\f@size
1786 \edef\LaTeXshape{\csname Width@\fProportionateWidth\endcsname
1787 \csname Weight@\fWeight\endcsname}%
1788 \ifx\LaTeXshape\@empty\def\LaTeXshape{m}\fi
1789 \edef\f@series{\LaTeXshape}%
1790 \edef\f@shape{\csname Posture@\fPosture\endcsname}%
1791 \IfFileExists{t1\FamName.fd}
1792 {\def\f@family{\fFamName}}
1793 {\edef\f@family{%
1794 \expandafter\ifx\csname Family@\fFamName\endcsname\relax
1795 \csname Family@\DefaultfFamName\endcsname
1796 \else
1797 \csname Family@\fFamName\endcsname
1798 \fi}}%
1799 \set@fontsize\baselinestretch{\fSize}{\LineSpacing}%
1800 %\NeedsSelecttrue
1801 %\ifx\f@size\current@f@size\relax\NeedsSelectfalse\fi
1802 %\ifx\f@family\current@f@family\relax\NeedsSelectfalse\fi
1803 %\ifx\f@shape\current@f@shape\relax\NeedsSelectfalse\fi
1804 %\ifx\f@series\current@f@series\relax\NeedsSelectfalse\fi
1805 %\ifNeedsSelect
1806 \selectfont
1807 %\fi
1808 \ifx\ColorRed\@empty\relax\else
1809 \RGBColor{\ColorRed}{\ColorGreen}{\ColorBlue}%
1810 \fi
1811 }

```

```

1812 \def\endSetupICs{ }
\FlowObjectSetup should be called at the beginning of every object that can be
meaningfully labelled. It is this that creates an anchor, not the \Node, to avoid duplicates
and wastage.
Because labelling writes to an external file, or does a \special, it adds a whatsit to
the main vertical list. This wrecks the \vskip-\lastskip which every paragraph or
display does. Bad news! Labelling when we are in a Link element is not a good thing. It
messes up the references.
1813 \def\@madelink{ }
1814 \newif\ifDoFOBSet
1815 \DoFOBSettrue
1816 \def\FlowObjectSetup#1{%
1817 \ifDoFOBSet
1818   \ifLabelElements
1819     \ifx\Label\@empty\let\Label\Element\fi
1820   \fi
1821   \ifx\Label\@empty\else
1822     \expandafter\ifx\csname x@\Label\endcsname\@madelink
1823   \else
1824     \bgroup
1825     \ifNestedLink
1826     \else
1827       \hyper@anchorstart{\Label}\hyper@anchorend
1828       \PageLabel{\Label}%
1829       \expandafter\gdef\csname x@\Label\endcsname{ }%
1830     \fi
1831   \egroup
1832   \let\Label\@empty
1833   \let\Element\@empty
1834 \fi
1835 \fi
1836 \fi
1837 }

```

8 Non-standard flow objects

```

1838 \def\fps@figure{htbp} % prefer figures to be placed here
1839 \def\ftype@figure{1}
1840 \def\PageFloat#1{\SetupICs{#1}%
1841   \ifnum\Span>0
1842     \def\Span{0}%
1843     \typeout{JadeTeX WARNING: specifying column spans for floats not supported}%
1844   \fi
1845   \FlowObjectSetup{0}%
1846   \@dblfloat{figure}[\placement]%
1847 }
1848 \def\endPageFloat{\end@dblfloat}
1849 \def\Footnotesize{\@setfontsize\small\@ixpt{11}}
1850 \newcount\@FootnotePars
1851 \skip\@mpfootins = \skip\footins
1852 \long\def\PageFootnote#1#2{#1%
1853 \ifnum\@TableNest>0

```

```

1854 \global\setbox\@mpfootins\vbox{%
1855   \unvbox\@mpfootins
1856   \reset@font\Footnotesize
1857   \hsize\TableWidth
1858   \leftskip\StartIndent
1859   \@parboxrestore
1860   \color@begingroup
1861   \@makefntext{%
1862     \rule\z@\footnotesep\ignorespaces#2\@finalstrut\strutbox}%
1863   \color@endgroup}%
1864 \else
1865   \insert\footins{%
1866     \let\Par\FootnotePar
1867     \let\endPar\endFootnotePar
1868     \global\@FootnotePars0%
1869     \reset@font\Footnotesize
1870     \interlinepenalty\interfootnotelinepenalty
1871     \splittopskip\footnotesep
1872     \splitmaxdepth \dp\strutbox \floatingpenalty \@MM
1873     \hsize\columnwidth \@parboxrestore
1874     \color@begingroup
1875     \@makefntext{%
1876       \rule\z@\footnotesep\ignorespaces#2\@finalstrut\strutbox}
1877     \color@endgroup}%
1878 \fi
1879 }
1880 \def\@makefntext#1{%
1881   \parindent 1em%
1882   \noindent
1883   #1}

```

9 Color

Only RGB color working at present. Sorry.

```

1884 \def\RGBColor#1#2#3{%
1885   \color@RGB@rgb{#1}\@tempa
1886   \color@RGB@rgb{#2}\@tempb
1887   \color@RGB@rgb{#3}\@tempc
1888 % \typeout{Set Color \@tempa, \@tempb, \@tempc}%
1889   \color[rgb]{\@tempa, \@tempb, \@tempc}%
1890 }
1891 \def\color@RGB@rgb#1#2{%
1892   \dimen@#1\p@
1893   \divide\dimen@\@cclv
1894   \edef#2{\strip@pt\dimen@}}
1895 \def\EndSetFont{%
1896   \ifx\csname\font Posture Over\endcsname\relax
1897   \relax\else\csname\font Posture Over\endcsname\fi
1898 }

```

10 Startup

```

1899 %\let\DEBUG@gobble

```

```

1900 \def\endFOT{%\let\normalcolor\relax
1901 \def\Hy@colorlink##1{}%
1902 \def\Hy@endcolorlink{}%
1903 \ifnum\col@number>1
1904     \ifnum\PageBalanceColumns>0
1905         \end{multicols}
1906     \else
1907         % \endmulticols*
1908         \vfill\end{multicols}
1909     \fi
1910 \fi
1911 \enddocument}
1912 \def\FOT#1{%
1913 \checkFOTversion{#1}%
1914 \hoffset-1in\voffset-1in
1915 \def\setnormal{%
1916 \let\fSize\pageFontSize
1917 \let\LineSpacing\pageLineSpacing
1918 \let\fPosture\pageFontPosture
1919 \let\fProportionateWidth\pageFontProportionateWidth
1920 \let\fWeight\pageFontWeight
1921 \let\fFamName\pagefFamName
1922 }
1923 \def\headrulewidth{0\p@}%
1924 \def\footrulewidth{0\p@}%
1925 \abovedisplayskip=\z@
1926 \abovedisplayshortskip=\z@
1927 \belowdisplayskip=\z@
1928 \belowdisplayshortskip=\z@
1929 \raggedbottom
1930 \clubpenalty=4000
1931 \widowpenalty=2000
1932 \setlength\emergencystretch{2in}
1933 \frenchspacing
1934 \fancyhf{}%
1935 \def\familydefault{ptm}%
1936 \fontfamily{\familydefault}\selectfont
1937 \pagenumbering{arabic}%
1938 \nonstopmode
1939 \Mathcount0

```

We do not put out a `\begin{document}`, as that would fix the page size in advance; we delay that for the first page sequence.

```
1940 \let\default@color\current@color
```

Individual users or projects can override anything in this setup with a configuration file, loaded here, called `jadetex.cfg`.

```

1941 \InputIfFileExists{jadetex.cfg}{}{}%
1942 \ifLabelElements
1943 \typeout{Elements will be labelled}%
1944 \else
1945 \typeout{Elements will NOT be labelled}%
1946 \fi
1947 % wicked. dont redo \@begindocumenthook! cause color in pdftex to foul up.
1948 % \@begindocumenthook

```

```

1949 \makeatletter
1950 }
1951 \everyjob{%
1952   \typeout{JadeTeX \JadeTeXDate: \JadeTeXMajorVersion.\JadeTeXMinorVersion}%
1953 }
1954 \catcode'\^^M=10%
1955 \catcode0=9%
1956 </package>
1957 <#dsssldef>
1958 \NeedsTeXFormat{LaTeX2e}[1995/12/01]
1959 \ProvideTextCommandDefault{\textonequarter}{\ensuremath{\frac{1}{4}}}
1960 \ProvideTextCommandDefault{\textonehalf}{\ensuremath{\frac{1}{2}}}
1961 \ProvideTextCommandDefault{\textthreequarters}{\ensuremath{\frac{3}{4}}}
1962 \ProvideTextCommandDefault{\textcent}
1963   {\TextSymbolUnavailable\textcent}
1964 \ProvideTextCommandDefault{\textyen}
1965   {\TextSymbolUnavailable\textyen}
1966 \ProvideTextCommandDefault{\textcurrency}
1967   {\TextSymbolUnavailable\textcurrency}
1968 \ProvideTextCommandDefault{\textbrokenbar}
1969   {\TextSymbolUnavailable\textbrokenbar}
1970 \providecommand{\mathdegree}{\ensuremath{^\circ}}
1971 }
1972 \providecommand{\mathonesuperior}{\textsupscript{^1}}
1973 \providecommand{\mathtwosuperior}{\textsupscript{^2}}
1974 \providecommand{\maththreesuperior}{\textsupscript{^3}}
1975 \providecommand{\mathordmasculine}{\mathrm{^\underline{o}}}
1976 \providecommand{\mathordfeminine}{\mathrm{^\underline{a}}}
1977 \DeclareInputText{"0A0}{\nobreakspace}
1978 \DeclareInputMath{"0B0}{\mathdegree}
1979 \DeclareInputText{"0A1}{\textexclamdown}
1980 \DeclareInputMath{"0B1}{\ensuremath{\text{pm}}}
1981 \DeclareInputText{"0A2}{\textcent}
1982 \DeclareInputMath{"0B2}{\mathtwosuperior}
1983 \DeclareInputText{"0B2}{\ensuremath{\mathtwosuperior}}
1984 \DeclareInputText{"0A3}{\pounds}
1985 \DeclareInputMath{"0B3}{\maththreesuperior}
1986 \DeclareInputText{"0B3}{\ensuremath{\maththreesuperior}}
1987 \DeclareInputText{"0A4}{\textcurrency}
1988 \DeclareInputText{"0B4}{\@tabacckludge' {}}
1989 \DeclareInputText{"0A5}{\textyen}
1990 \DeclareInputMath{"0B5}{\mu}
1991 \DeclareInputText{"0B5}{\textmu}
1992 \DeclareInputText{"0A6}{\textbrokenbar}
1993 \DeclareInputText{"0B6}{\P}
1994 \DeclareInputText{"0A7}{\S}
1995 \DeclareInputText{"0B7}{\ifmmode\cdot\else\textperiodcentered\fi}
1996 \DeclareInputText{"0A8}{\ " {}}
1997 \DeclareInputText{"0B8}{\c {}}
1998 \DeclareInputText{"0A9}{\copyright}
1999 \DeclareInputMath{"0B9}{\mathonesuperior}
2000 \DeclareInputMath{"0AA}{\mathordfeminine}
2001 \DeclareInputMath{"0BA}{\mathordmasculine}
2002 \DeclareInputText{"0B9}{\ensuremath{\mathonesuperior}}

```

```

2003 \DeclareInputText{"0AA}{\ensuremath{\mathordfeminine}}
2004 \DeclareInputText{"0BA}{\ensuremath{\mathordmasculine}}
2005 \DeclareInputText{"0AB}{\guillemotleft}
2006 \DeclareInputText{"0BB}{\guillemotright}
2007 \DeclareInputMath{"0AC}{\lnot}
2008 \DeclareInputText{"0AC}{\ensuremath{\lnot}}
2009 \DeclareInputText{"0BC}{\textonequarter}
2010 \DeclareInputText{"0AD}{\textonehalf}
2011 \DeclareInputText{"0BD}{\textonehalf}
2012 \DeclareInputText{"0AE}{\textregistered}
2013 \DeclareInputText{"0BE}{\textthreequarters}
2014 \DeclareInputText{"0AF}{\ifmmode\else\@tabacckludge={}\fi}
2015 \DeclareInputText{"0BF}{\textquestiondown}
2016 \DeclareInputText{"0C0}{\@tabacckludge'A}
2017 \DeclareInputText{"0D0}{\DH}
2018 \DeclareInputText{"0C1}{\@tabacckludge'A}
2019 \DeclareInputText{"0D1}{\sim N}
2020 \DeclareInputText{"0C2}{\^A}
2021 \DeclareInputText{"0D2}{\@tabacckludge'O}
2022 \DeclareInputText{"0C3}{\sim A}
2023 \DeclareInputText{"0D3}{\@tabacckludge'O}
2024 \DeclareInputText{"0C4}{\"A}
2025 \DeclareInputText{"0D4}{\^O}
2026 \DeclareInputText{"0C5}{\AA}
2027 \DeclareInputText{"0D5}{\sim O}
2028 \DeclareInputText{"0C6}{\AE}
2029 \DeclareInputText{"0D6}{\"O}
2030 \DeclareInputText{"0C7}{\c C}
2031 \DeclareInputMath{"0D7}{\ensuremath{\times}}
2032 \DeclareInputText{"0C8}{\@tabacckludge'E}
2033 \DeclareInputText{"0D8}{\O}
2034 \DeclareInputText{"0C9}{\@tabacckludge'E}
2035 \DeclareInputText{"0D9}{\@tabacckludge'U}
2036 \DeclareInputText{"0CA}{\^E}
2037 \DeclareInputText{"0DA}{\@tabacckludge'U}
2038 \DeclareInputText{"0CB}{\"E}
2039 \DeclareInputText{"0DB}{\^U}
2040 \DeclareInputText{"0CC}{\@tabacckludge'I}
2041 \DeclareInputText{"0DC}{\"U}
2042 \DeclareInputText{"0CD}{\@tabacckludge'I}
2043 \DeclareInputText{"0DD}{\@tabacckludge'Y}
2044 \DeclareInputText{"0CE}{\^I}
2045 \DeclareInputText{"0DE}{\TH}
2046 \DeclareInputText{"0CF}{\"I}
2047 \DeclareInputText{"0DF}{\ss}
2048 \DeclareInputText{"0E0}{\@tabacckludge'a}
2049 \DeclareInputText{"0F0}{\dh}
2050 \DeclareInputText{"0E1}{\@tabacckludge'a}
2051 \DeclareInputText{"0F1}{\sim n}
2052 \DeclareInputText{"0E2}{\^a}
2053 \DeclareInputText{"0F2}{\@tabacckludge'o}
2054 \DeclareInputText{"0E3}{\sim a}
2055 \DeclareInputText{"0F3}{\@tabacckludge'o}
2056 \DeclareInputText{"0E4}{\"a}

```

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2057 \DeclareInputText{"0F4"}{\^o}
2058 \DeclareInputText{"0E5"}{\aa}
2059 \DeclareInputText{"0F5"}{\~o}
2060 \DeclareInputText{"0E6"}{\ae}
2061 \DeclareInputText{"0F6"}{\o}
2062 \DeclareInputText{"0E7"}{\c c}
2063 \DeclareInputMath{"0F7"}{\ensuremath{\div}}
2064 \DeclareInputText{"0E8"}{\@tabacckludge'e}
2065 \DeclareInputText{"0F8"}{\o}
2066 \DeclareInputText{"0E9"}{\@tabacckludge'e}
2067 \DeclareInputText{"0F9"}{\@tabacckludge'u}
2068 \DeclareInputText{"0EA"}{\^e}
2069 \DeclareInputText{"0FA"}{\@tabacckludge'u}
2070 \DeclareInputText{"0EB"}{\e}
2071 \DeclareInputText{"0FB"}{\^u}
2072 \DeclareInputText{"0EC"}{\@tabacckludge'i}
2073 \DeclareInputText{"0FC"}{\u}
2074 \DeclareInputText{"0ED"}{\@tabacckludge'i}
2075 \DeclareInputText{"0FD"}{\@tabacckludge'y}
2076 \DeclareInputText{"0EE"}{\^i}
2077 \DeclareInputText{"0FE"}{\th}
2078 \DeclareInputText{"0EF"}{\i}
2079 \DeclareInputText{"0FF"}{\y}
2080 </dsssldef>

```