

# The pdfcolmk package

Heiko Oberdiek  
<oberdiek@uni-freiburg.de>

2007/04/11 v1.1

## Abstract

This package tries a solution for the missing color stack of pdfTeX.

## Contents

|          |   |           |
|----------|---|-----------|
| <b>1</b> | <b>Documentation</b>                    | <b>2</b>  |
| 1.1      | Introduction                            | 2         |
| 1.2      | Background                              | 2         |
| 1.3      | Limitations                             | 2         |
| 1.4      | Recommendation                          | 2         |
| 1.5      | Usage                                   | 2         |
| 1.6      | Compatibility                           | 2         |
| <b>2</b> | <b>Implementation</b>                   | <b>3</b>  |
| 2.1      | \marginpar fix                          | 4         |
| 2.1.1    | latex/base/latex.ltx                    | 4         |
| 2.1.2    | memoir.cls                              | 5         |
| 2.1.3    | poemscol/marn.sty, poemscol/newmarn.sty | 6         |
| 2.1.4    | refman/refart.cls, refnam/refrep.cls    | 7         |
| 2.2      | Color fix                               | 9         |
| <b>3</b> | <b>Installation</b>                     | <b>10</b> |
| 3.1      | Download                                | 10        |
| 3.2      | Bundle installation                     | 10        |
| 3.3      | Package installation                    | 11        |
| 3.4      | Refresh file name databases             | 11        |
| 3.5      | Some details for the interested         | 11        |
| <b>4</b> | <b>History</b>                          | <b>12</b> |
|          | [2000/08/27 v0.1]                       | 12        |
|          | [2000/09/02 v0.2]                       | 12        |
|          | [2000/09/02 v0.3]                       | 12        |
|          | [2000/09/06 v0.4]                       | 12        |
|          | [2000/09/06 v0.5]                       | 12        |
|          | [2005/06/15 v0.6]                       | 12        |
|          | [2005/07/09 v0.7]                       | 12        |
|          | [2006/02/20 v0.8]                       | 12        |
|          | [2007/01/01 v1.0]                       | 12        |
|          | [2007/04/11 v1.1]                       | 12        |
| <b>5</b> | <b>Index</b>                            | <b>12</b> |

# 1 Documentation

## 1.1 Introduction

This package uses a mark register in order to solve the problem of a missing color stack of pdfTeX prior 1.40.0. Since this version of pdfTeX a color stack is available and supported by `pdftex.def` 2007/01/01 v0.04a. In this case this package is obsolete and the package stops its loading.

## 1.2 Background

After the Dante meeting (Clausthal 2000) I have started to experiment with the eTeX method of a *colour* mark. One of the major problems is the understanding of the output routine and the need to rewrite it because of missing hooks. Currently I have made some tests in in onecolumn and twocolumn mode, but the state is experimental.

## 1.3 Limitations

- Mark limitations: page breaks in math.
- L<sup>A</sup>T<sub>E</sub>X's output routine is redefined.
  - Changes in the output routine of newer versions of LaTeX are not detected.
  - Packages that change the output routine are not supported.
- It does not support several independent text streams like footnotes.
- Limitations in float and marginpar support.

## 1.4 Recommendation

$\varepsilon$ -T<sub>E</sub>X (for additional mark register) Without  $\varepsilon$ -T<sub>E</sub>X L<sup>A</sup>T<sub>E</sub>X's mark commands are redefined to store an additional color value.

## 1.5 Usage

Load after package color:

```
\usepackage[pdftex]{color}  
\usepackage{pdfcolmk}
```

## 1.6 Compatibility

- Load the following packages after pdfcolmk:

```
mparhack.sty
```

- Load the following packages before pdfcolmk:

```
marn.sty  
newmarn.sty
```

- Supported \@addmarginpar patch:

```
latex/base/latex.ltx  
memoir.cls  
poemscol/marn.sty, poemscol/newmarn.sty  
mparhack.sty
```

- Unsupported \@addmarginpar patch:

lineno.sty  
sttools/marginal.sty  
revtex4.cls

## 2 Implementation

```

1 (*package)
Package identification.
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{pdfcolmk}%
4   [2007/04/11 v1.1 PDFtex COLor MarK (HO)]
5 \@ifundefined{ver@pdftex.def}{%
6   \PackageWarningNoLine{pdfcolmk}{%
7     Nothing to fix, because \string'pdftex.def\string' not loaded%
8   }%
9   \endinput
10 }{}
11 \@ifpackageloaded{color}{%{}%
12   \PackageWarningNoLine{pdfcolmk}{%
13     Nothing to fix, because \string'color.sty\string' not loaded%
14   }%
15   \endinput
16 }
17 \begingroup\expandafter\expandafter\expandafter\endgroup
18 \expandafter\ifx\csname main@pdfcolorstack\endcsname\relax
19 \else
20   % pdftex.def >= 2007/01/01 0.04a and pdfTeX >= 1.40.0
21   \begingroup
22     \let\on@line\@empty
23     \PackageInfo{pdfcolmk}{%
24       The color stack of pdfTeX \string>\string= 1.40 is used. %
25       Therefore\MessageBreak
26       this package is not necessary and not loaded%
27     }%
28   \endgroup
29   \expandafter\endinput
30 \fi
31
32 \PackageInfo{pdfcolmk}{%
33   This package tries to simulate dvips's color stack\MessageBreak
34   for pdfTeX based on a mark register of e-TeX.\MessageBreak
35   It redefines LaTeX's output routine. Therefore\MessageBreak
36   use with care, no warranties%
37 }
38
39 \ifx\marks\@undefined
40
41   \let\pec@mark\mark
42   \let\pec@value\empty
43   \long\def\mark#1{%
44     \protected@xdef\pec@value{#1}%
45     \pec@setmark
46   }%
47   \def\pec@setmark{%
48     \begingroup
49       \@temptokena\expandafter{\pec@value}%
50       \pec@mark{{\current@color}\the\@temptokena}%
51     \endgroup
52   }%
53   \def\pec@getmark{%
54     \xdef\pec@botcolor{%

```

```

55     \expandafter\@firstofthree\botmark\@empty\@empty\@empty
56   }%
57 }%
58 \long\def\@firstofthree#1#2#3{#1}%
59 \CheckCommand{\@leftmark}[2]{#1}%
60 \CheckCommand{\@rightmark}[2]{#2}%
61 \CheckCommand*{\leftmark}{%
62   \expandafter\@leftmark\botmark\@empty\@empty
63 }%
64 \CheckCommand*{\rightmark}{%
65   \expandafter\@rightmark\firstmark\@empty\@empty
66 }%
67 \long\def\@leftmark#1#2#3{#2}%
68 \long\def\@rightmark#1#2#3{#3}%
69 \g@addto@macro\leftmark\@empty
70 \g@addto@macro\rightmark\@empty
71
72 \else
73
74   \RequirePackage{etex}[1998/03/26]%
75   \newmarks\pec@marks
76   \def\pec@setmark{\marks\pec@marks{\current@color}}%
77   \def\pec@getmark{\xdef\pec@botcolor{\botmarks\pec@marks}}%
78
79 \fi

```

## 2.1 \marginpar fix

```

80 \chardef\pec@result\z@
81 \def\pec@temp#1{%
82   \chardef\pec@result\@ne
83   \begingroup
84     \let\on@line\@empty
85     \PackageInfo{pdfcolmk}{%
86       Patch for \string\@addmarginpar\space applied (#1)%
87     }%
88   \endgroup
89 }

```

### 2.1.1 latex/base/latex.ltx

```

90 \def\pec@addmarginpar{%
91   \@next\@marbox\@currlist{%
92     \@cons\@freelist\@marbox
93     \@cons\@freelist\@currbox
94   }\@latexbug
95   \@tempcnta\@ne
96   \if@twocolumn
97     \if@firstcolumn
98       \@tempcnta\m@ne
99     \fi
100  \else
101    \if@mparswitch
102      \ifodd\c@page
103        \else
104          \@tempcnta\m@ne
105        \fi
106      \fi
107    \if@reversemargin \@tempcnta -\@tempcnta \fi
108    \fi
109    \ifnum\@tempcnta <\z@ \global\setbox\@marbox\box\@currbox \fi
110    \@tempdima\@mparbottom
111    \advance\@tempdima -\@pageht
112    \advance\@tempdima\ht\@marbox

```

```

113 \ifdim\@tempdima >\z@
114   \@latex@warning@no@line{Marginpar on page \thepage\space moved}%
115 \else
116   \@tempdima\z@
117 \fi
118 \global\@mparbottom\@pageht
119 \global\advance\@mparbottom\@tempdima
120 \global\advance\@mparbottom\dp\@marbox
121 \global\advance\@mparbottom\marginparpush
122 \advance\@tempdima -\ht\@marbox
123 \global\setbox\@marbox\vbox{%
124   \vskip \@tempdima
125   \box \@marbox
126 }%
127 \global \ht\@marbox \z@
128 \global \dp\@marbox \z@
129 \kern -\@pagedp
130 \nointerlineskip
131 \hb@xt@\columnwidth{%
132   \ifnum \@tempcnta >\z@
133     \hskip\columnwidth
134     \hskip\marginparsep
135   \else
136     \hskip -\marginparsep
137     \hskip -\marginparwidth
138   \fi
139   \box\@marbox \hss
140 }%
141 \nointerlineskip
142 \hbox{\vrule \@height\z@ \@width\z@ \@depth\@pagedp}%
143 }
144 \ifx\pec@addmarginpar\@addmarginpar
145   \pec@temp{latex/base}%
146 \fi

```

## 2.1.2 memoir.cls

```

147 \def\pec@addmarginpar{%
148   \checkoddpage
149   \@next\@marbox\@currlist{%
150     \@cons\@freelist\@marbox
151     \@cons\@freelist\@currbox
152   } \@latexbug
153   \@tempcnta\@ne
154   \if@twocolumn
155     \if@firstcolumn
156       \@tempcnta\m@ne
157     \fi
158   \else
159     \if@mparswitch
160       \ifoddpage
161       \else
162         \@tempcnta\m@ne
163       \fi
164     \fi
165     \if@reversemargin
166       \@tempcnta -\@tempcnta
167     \fi
168   \fi
169   \ifnum\@tempcnta <\z@
170     \global\setbox\@marbox\box\@currbox
171   \fi
172   \@tempdima\@mparbottom
173   \advance\@tempdima -\@pageht

```

```

174 \advance\@tempdima\ht\@marbox
175 \ifdim\@tempdima >\z@
176   \@latexwarning@no@line{%
177     Marginpar on page \thepage\space moved by \the\@tempdima
178   }%
179 \else
180   \@tempdima\z@
181 \fi
182 \global\@mparbottom\@pageht
183 \global\advance\@mparbottom\@tempdima
184 \global\advance\@mparbottom\dp\@marbox
185 \global\advance\@mparbottom\marginparpush
186 \advance\@tempdima -\ht\@marbox
187 \global\setbox\@marbox\vbox{%
188   \vskip \@tempdima
189   \box \@marbox
190 }%
191 \global \ht\@marbox \z@
192 \global \dp\@marbox \z@
193 \kern -\@pagedp
194 \nointerlineskip
195 \hb@xt@\columnwidth{%
196   \ifnum \@tempcnta >\z@
197     \hskip\columnwidth
198     \hskip\marginparsep
199   \else
200     \hskip -\marginparsep
201     \hskip -\marginparwidth
202   \fi
203   \box\@marbox
204   \hss
205 }%
206 \nointerlineskip
207 \hbox{\vrule \@height\z@ \@width\z@ \@depth\@pagedp}%
208 }%
209 \ifx\pec@addmarginpar\@addmarginpar
210   \pec@temp{memoir.cls}%
211 \fi

```

### 2.1.3 poemscol/marn.sty, poemscol/newmarn.sty

```

212 \def\pec@addmarginpar{%
213   \@next \@marbox\@currlist{%
214     \@cons\@freelist\@marbox
215     \@cons\@freelist\@currbox
216   } \@latexbug
217   \global\advance\@mpar@count\m@ne
218   \@ifundefined{marn@the\@mpar@count @}{% was location logged last time?
219     \@tempcnta\@ne % NO: use original LaTeX logic
220     \if@twocolumn
221       \if@firstcolumn
222         \@tempcnta\m@ne
223       \fi
224     \else
225       \if@mparswitch
226         \ifodd\c@page
227         \else
228           \@tempcnta\m@ne
229         \fi
230       \fi
231       \if@reversemargin
232         \@tempcnta -\@tempcnta
233       \fi
234     \fi

```

```

235 }{%
236   \@tempcnta %    YES: use record from last time to decide side.
237   \@nameuse{@marn@the\@mpar@count @}%
238   \if@reversemargin -\fi \@ne
239 }%
240 \ifnum \@tempcnta <\z@
241   \global\setbox\@marbox\box\@currbox
242   \global\let\@marnbottom\@mparbottoml
243 \else
244   \global\let\@marnbottom\@mparbottom
245 \fi
246 \@tempdima\@marnbottom \advance\@tempdima -\@pageht
247 \advance\@tempdima\ht\@marbox
248 \ifdim \@tempdima >\z@
249   @@warning{Marginpar on page \thepage\space moved}%
250 \else
251   \@tempdima\z@
252 \fi
253 \global\@marnbottom\@pageht
254 \global\advance\@marnbottom\@tempdima
255 \global\advance\@marnbottom\dp\@marbox
256 \global\advance\@marnbottom\marginparpush
257 \advance\@tempdima -\ht\@marbox
258 \global\ht\@marbox\z@
259 \global\dp\@marbox\z@
260 \vskip -\@pagedp
261 \vskip \@tempdima\nointerlineskip
262 \hbox to\columnwidth{%
263   \ifnum \@tempcnta >\z@
264     \hskip\columnwidth
265     \hskip\marginparsep
266   \else
267     \hskip -\marginparsep
268     \hskip -\marginparwidth
269   \fi
270   \if@filesw % record where this is for use next time:
271     \@marn@log\@mpar@count
272   \fi
273   \box\@marbox
274   \hss
275 }%
276 \nobreak   %% RmS 91/06/21 \nobreak added
277 \vskip -\@tempdima
278 \nointerlineskip
279 \hbox{\vrule \@height\z@ \@width\z@ \@depth\@pagedp}%
280 }
281 \ifx\pec@addmarginpar\@addmarginpar
282   \pec@temp{poemscol/(new)marn.sty}%
283 \fi

```

#### 2.1.4 refman/refart.cls, refnam/refrep.cls

```

284 \def\pec@addmarginpar{%
285   \@next\@marbox\@currlist{%
286     \@cons\@freelist\@marbox
287     \@cons\@freelist\@currbox
288   }\@latexbug
289   \@tempcnta\@ne
290   \if@twocolumn
291     \if@firstcolumn
292       \@tempcnta\m@ne
293     \fi
294   \else
295     \@tempcnta\m@ne

```

```

296 \fi
297 \ifnum \@tempcnta < \z@
298   \global\setbox\@marbox\box\@currbox
299 \fi
300 \@tempdima\@mparbottom
301 \advance\@tempdima -\@pageht
302 \advance\@tempdima\ht\@marbox
303 \ifdim\@tempdima > \z@
304   \@@warning{Marginpar on page \thepage\space moved}%
305 \else
306   \@tempdima\z@
307 \fi
308 \global\@mparbottom\@pageht
309 \global\advance\@mparbottom\@tempdima
310 \global\advance\@mparbottom\dp\@marbox
311 \global\advance\@mparbottom\marginparpush
312 \advance\@tempdima -\ht\@marbox
313 \global\setbox\@marbox\vbox{%
314   \vskip \@tempdima \box \@marbox
315 }%
316 \global \ht\@marbox \z@
317 \global \dp\@marbox \z@
318 \kern -\@pagedp
319 \nointerlineskip
320 \hb@xt@\columnwidth{%
321   \ifnum \@tempcnta > \z@
322     \hskip\columnwidth
323     \hskip\marginparsep
324   \else
325     \hskip -\marginparsep
326     \hskip -\marginparwidth
327   \fi
328   \box\@marbox
329   \hss
330 }%
331 \nointerlineskip
332 \hbox{\vrule \@height\z@ \@width\z@ \@depth\@pagedp}%
333 }
334 \ifx\pec@addmarginpar\@addmarginpar
335   \pec@temp{ref(art|rep).cls}%
336 \fi
337
338 \ifcase\pec@result
339   \PackageInfo{pdfcolmk}{%
340     Fix for \string\@addmarginpar\space is omitted, %
341     because this variant\MessageBreak
342     of \string\@addmarginpar\space
343     is not recognized%
344   }%
345 \else
346   % apply patch for \@addmarginpar
347   \def\pec@PatchAddMarginpar#1\columnwidth#2#3\@nil{%
348     \pec@PatchAddMarginparI#2\@nil{#1}{#3}%
349   }%
350   \def\pec@PatchAddMarginparI#1\box\@marbox\hss#2\@nil#3#4{%
351     \def\@addmarginpar{%
352       #3%
353       \columnwidth{%
354         #1%
355         \pdfliteral{q}%
356         \rlap{%
357           \box\@marbox

```



```

358     }%
359     \pdfliteral{Q}%
360     \hss
361     #2%
362     }%
363     #4%
364     }%
365   }%
366   \expandafter\pec@PatchAddMarginpar\@addmarginpar\@nil
367 \fi

```

## 2.2 Color fix

```

368 \def\set@color{%
369   \pdfliteral{\current@color}%
370   \ifinner
371   \else
372     \pec@setmark
373   \fi
374   \aftergroup\reset@color
375 }
376 \def\reset@color{%
377   \pdfliteral{\current@color}%
378   \ifinner
379   \else
380     \pec@setmark
381   \fi
382 }
383
384 \let\pec@botcolor\current@color
385
386 \def\pec@PatchVBoxCCLV{%
387   \ifx\pec@botcolor\@empty
388   \else
389     \setbox\@cclv\vbox{%
390       \pdfliteral{\pec@botcolor}%
391       \unvbox\@cclv
392     }%
393   \fi
394   \pec@getmark
395 }
396
397 \def\pec@PatchAlreadyInBox{%
398   \ifx\pec@botcolor\@empty
399   \else
400     \pdfliteral{\pec@botcolor}%
401   \fi
402   \pec@getmark
403 }
404
405 \@ifclassloaded{memoir}{%
406   \expandafter\def\expandafter\mem@makecol\expandafter{%
407     \expandafter\pec@PatchVBoxCCLV
408     \mem@makecol
409   }%
410   \endinput
411 }{}
412
413 \@ifclassloaded{seminar}{%
414   \newcommand\pec@org@makeslide{}%
415   \let\pec@org@makeslide\@makeslide
416   \def\@makeslide{%
417     \pec@PatchVBoxCCLV

```

```

418     \pec@org@makeslide
419 }%
420 \endinput
421 }{}
422
423 \long\def\pec@output#1\@specialoutput\else#2\pec@end{%
424   \begingroup
425     \def\x{#2}%
426   \expandafter\endgroup
427   \ifx\x\@empty
428     \PackageWarningNoLine{pdfcolmk}{%
429       Unexpected \string\output\space routine detected,%
430       \MessageBreak
431       loading of package stopped%
432     }%
433   \expandafter\endinput
434   \fi
435 }
436 \expandafter\expandafter\expandafter\pec@output
437 \expandafter\@firstofone\the\output\@specialoutput\else\pec@end
438
439 \long\def\pec@output#1\@specialoutput\else#2\pec@end{%
440   \output{%
441     #1\@specialoutput\else
442     \pec@PatchVBoxCCLV
443     #2%
444   }%
445 }
446 \expandafter\expandafter\expandafter\pec@output
447 \expandafter\@firstofone\the\output\pec@end
448 \endpackage

```

## 3 Installation

### 3.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

[CTAN:macros/latex/contrib/oberdiek/pdfcolmk.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/pdfcolmk.pdf](#) Documentation.

**Bundle.** All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

[CTAN:macros/latex/contrib/oberdiek/oberdiek-tds.zip](#)

*TDS* refers to the standard “A Directory Structure for  $\TeX$  Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

### 3.2 Bundle installation

**Unpacking.** Unpack the `oberdiek-tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek-tds.zip -d ~/texmf
```

---

<sup>1</sup><http://ftp.ctan.org/tex-archive/>

**Script installation.** Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package `attachfile2` comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

### 3.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain- $\TeX$ :

```
tex pdfcolmk.dtx
```

**TDS.** Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
pdfcolmk.sty → tex/latex/oberdiek/pdfcolmk.sty
pdfcolmk.pdf → doc/latex/oberdiek/pdfcolmk.pdf
pdfcolmk.dtx → source/latex/oberdiek/pdfcolmk.dtx
```

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

### 3.4 Refresh file name databases

If your  $\TeX$  distribution (te $\TeX$ , mi $\TeX$ , ...) relies on file name databases, you must refresh these. For example, te $\TeX$  users run `texhash` or `mktexlsr`.

### 3.5 Some details for the interested

**Attached source.** The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk pdfcolmk.pdf unpack_files output .
```

**Unpacking with  $\LaTeX$ .** The `.dtx` chooses its action depending on the format:

**plain- $\TeX$ :** Run `docstrip` and extract the files.

**$\LaTeX$ :** Generate the documentation.

If you insist on using  $\LaTeX$  for `docstrip` (really, `docstrip` does not need  $\LaTeX$ ), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{pdfcolmk.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

**Generating the documentation.** You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdf $\LaTeX$ :

```
pdflatex pdfcolmk.dtx
makeindex -s gind.ist pdfcolmk.idx
pdflatex pdfcolmk.dtx
makeindex -s gind.ist pdfcolmk.idx
pdflatex pdfcolmk.dtx
```

## 4 History

[2000/08/27 v0.1]

- First published version (`comp.text.tex`, `pdftex@tug.org`).

[2000/09/02 v0.2]

- Next try.

[2000/09/02 v0.3]

- Solution without  $\varepsilon$ -TeX added.

[2000/09/06 v0.4]

- Patch commands added.
- Patch for `seminar.cls` added.

[2000/09/06 v0.5]

- Bug fix: initialization of `\pec@value` added.

[2005/06/15 v0.6]

- Support for `dded`. See thread in `comp.text.tex` (Message-ID: `d86d3r$kpvs1@news.BelWue.DE`).

[2005/07/09 v0.7]

- Output support added for `memoir`, provided by Lars Madsen.

[2006/02/20 v0.8]

- Code is not changed.
- DTX framework.

[2007/01/01 v1.0]

- If `pdftex.def`  $\geq$  2007/01/01 v0.04a is used with pdfTeX 1.40.0, then package `pdfcolmk` is obsolete.

[2007/04/11 v1.1]

- Line ends sanitized.

## 5 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

| Symbols                     |   | 109, 151, 170, 215, 241, 287, 298                              |
|-----------------------------|---|--|
| <code>\@@warning</code>     | 249, 304  | <code>\@currlist</code> 91, 149, 213, 285                      |
| <code>\@addmarginpar</code> | 86, 144, 209, 281, 334, 340, 342, 346, 351, 366 | <code>\@depth</code> 142, 207, 279, 332                        |
| <code>\@ccclv</code>        | 389, 391  | <code>\@empty</code> 22, 55, 62, 65, 69, 70, 84, 387, 398, 427 |
| <code>\@cons</code>         | 92, 93, 150, 151, 214, 215, 286, 287            | <code>\@firstofone</code> 437, 447                             |
| <code>\@currbox</code>      | 93,   | <code>\@firstofthree</code> 55, 58                             |

|   |                                       |  |  |
|---|---------------------------------------|--|--|
| <code>\@freelist</code> . . . . .                       | 92,                                   |  |  |
|   | 93, 150, 151, 214, 215, 286, 287      |  |  |
| <code>\@height</code> . . . . .                         | 142, 207, 279, 332                    |  |  |
| <code>\@ifclassloaded</code> . . . . .                  | 405, 413                              |  |  |
| <code>\@ifpackageloaded</code> . . . . .                | 11                                    |  |  |
| <code>\@ifundefined</code> . . . . .                    | 5, 218                                |  |  |
| <code>\@latex@warning@no@line</code> . . .              | 114, 176                              |  |  |
| <code>\@latexbug</code> . . . . .                       | 94, 152, 216, 288                     |  |  |
| <code>\@leftmark</code> . . . . .                       | 59, 62, 67                            |  |  |
| <code>\@makeslide</code> . . . . .                      | 415, 416                              |  |  |
| <code>\@marbox</code> . . . . .                         |                                       |  |  |
|   | 91, 92, 109, 112, 120, 122, 123,      |  |  |
|   | 125, 127, 128, 139, 149, 150,         |  |  |
|   | 170, 174, 184, 186, 187, 189,         |  |  |
|   | 191, 192, 203, 213, 214, 241,         |  |  |
|   | 247, 255, 257, 258, 259, 273,         |  |  |
|   | 285, 286, 298, 302, 310, 312,         |  |  |
|   | 313, 314, 316, 317, 328, 350, 357     |  |  |
| <code>\@marn@log</code> . . . . .                       | 271                                   |  |  |
| <code>\@marnbottom</code> . . . . .                     |                                       |  |  |
|   | 242, 244, 246, 253, 254, 255, 256     |  |  |
| <code>\@mpar@count</code> . . . . .                     | 217, 218, 237, 271                    |  |  |
| <code>\@mparbottom</code> . . . . .                     | 110, 118, 119,                        |  |  |
|   | 120, 121, 172, 182, 183, 184,         |  |  |
|   | 185, 244, 300, 308, 309, 310, 311     |  |  |
| <code>\@mparbottoml</code> . . . . .                    | 242                                   |  |  |
| <code>\@nameuse</code> . . . . .                        | 237                                   |  |  |
| <code>\@ne</code> . . . . .                             | 82, 95, 153, 219, 238, 289            |  |  |
| <code>\@next</code> . . . . .                           | 91, 149, 213, 285                     |  |  |
| <code>\@nil</code> . . . . .                            | 347, 348, 350, 366                    |  |  |
| <code>\@pagedp</code> . . . . .                         | 129,                                  |  |  |
|   | 142, 193, 207, 260, 279, 318, 332     |  |  |
| <code>\@pageht</code> . . . . .                         | 111,                                  |  |  |
|   | 118, 173, 182, 246, 253, 301, 308     |  |  |
| <code>\@rightmark</code> . . . . .                      | 60, 65, 68                            |  |  |
| <code>\@specialoutput</code> . . . . .                  | 423, 437, 439, 441                    |  |  |
| <code>\@tempcnta</code> . . . . .                       | 95, 98, 104, 107, 109,                |  |  |
|   | 132, 153, 156, 162, 166, 169,         |  |  |
|   | 196, 219, 222, 228, 232, 236,         |  |  |
|   | 240, 263, 289, 292, 295, 297, 321     |  |  |
| <code>\@tempdima</code> . . . . .                       | 110, 111,                             |  |  |
|   | 112, 113, 116, 119, 122, 124,         |  |  |
|   | 172, 173, 174, 175, 177, 180,         |  |  |
|   | 183, 186, 188, 246, 247, 248,         |  |  |
|   | 251, 254, 257, 261, 277, 300,         |  |  |
|   | 301, 302, 303, 306, 309, 312, 314     |  |  |
| <code>\@temptokena</code> . . . . .                     | 49, 50                                |  |  |
| <code>\@undefined</code> . . . . .                      | 39                                    |  |  |
| <code>\@width</code> . . . . .                          | 142, 207, 279, 332                    |  |  |
| <b>A</b>  |                                       |  |  |
| <code>\advance</code> 111, 112, 119, 120, 121, 122,     |                                       |  |  |
|   | 173, 174, 183, 184, 185, 186,         |  |  |
|   | 217, 246, 247, 254, 255, 256,         |  |  |
|   | 257, 301, 302, 309, 310, 311, 312     |  |  |
| <code>\aftergroup</code> . . . . .                      | 374                                   |  |  |
| <b>B</b>  |                                       |  |  |
| <code>\botmark</code> . . . . .                         | 55, 62                                |  |  |
| <code>\botmarks</code> . . . . .                        | 77                                    |  |  |
| <code>\box</code> . . . . .                             | 109, 125, 139, 170, 189, 203,         |  |  |
|   | 241, 273, 298, 314, 328, 350, 357     |  |  |
| <b>C</b>  |                                       |  |  |
| <code>\c@page</code> . . . . .                          | 102, 226                              |  |  |
| <code>\chardef</code> . . . . .                         | 80, 82                                |  |  |
| <code>\CheckCommand</code> . . . . .                    | 59, 60, 61, 64                        |  |  |
| <code>\checkoddpages</code> . . . . .                   | 148                                   |  |  |
| <code>\columnwidth</code> . . . . .                     | 131, 133, 195,                        |  |  |
|   | 197, 262, 264, 320, 322, 347, 353     |  |  |
| <code>\csname</code> . . . . .                          | 18                                    |  |  |
| <code>\current@color</code> . . . . .                   | 50, 76, 369, 377, 384                 |  |  |
| <b>D</b>  |                                       |  |  |
| <code>\dp</code> 120, 128, 184, 192, 255, 259, 310, 317 |                                       |  |  |
| <b>E</b>  |                                       |  |  |
| <code>\empty</code> . . . . .                           | 42                                    |  |  |
| <code>\endcsname</code> . . . . .                       | 18                                    |  |  |
| <code>\endinput</code> . . . . .                        | 9, 15, 29, 410, 420, 433              |  |  |
| <b>F</b>  |                                       |  |  |
| <code>\firstmark</code> . . . . .                       | 65                                    |  |  |
| <b>G</b>  |                                       |  |  |
| <code>\g@addto@macro</code> . . . . .                   | 69, 70                                |  |  |
| <b>H</b>  |                                       |  |  |
| <code>\hb@xt@</code> . . . . .                          | 131, 195, 320                         |  |  |
| <code>\hbox</code> . . . . .                            | 142, 207, 262, 279, 332               |  |  |
| <code>\hskip</code> . . . . .                           | 133, 134, 136,                        |  |  |
|   | 137, 197, 198, 200, 201, 264,         |  |  |
|   | 265, 267, 268, 322, 323, 325, 326     |  |  |
| <code>\hss</code> . . . . .                             | 139, 204, 274, 329, 350, 360          |  |  |
| <code>\ht</code> . . . . .                              | 112, 122, 127, 174, 186,              |  |  |
|   | 191, 247, 257, 258, 302, 312, 316     |  |  |
| <b>I</b>  |                                       |  |  |
| <code>\if@filesw</code> . . . . .                       | 270                                   |  |  |
| <code>\if@firstcolumn</code> . . . . .                  | 97, 155, 221, 291                     |  |  |
| <code>\if@mparswitch</code> . . . . .                   | 101, 159, 225                         |  |  |
| <code>\if@reversemargin</code> . . . . .                | 107, 165, 231, 238                    |  |  |
| <code>\if@twocolumn</code> . . . . .                    | 96, 154, 220, 290                     |  |  |
| <code>\ifcase</code> . . . . .                          | 338                                   |  |  |
| <code>\ifdim</code> . . . . .                           | 113, 175, 248, 303                    |  |  |
| <code>\ifinner</code> . . . . .                         | 370, 378                              |  |  |
| <code>\ifnum</code> . . . . .                           | 109,                                  |  |  |
|   | 132, 169, 196, 240, 263, 297, 321     |  |  |
| <code>\ifodd</code> . . . . .                           | 102, 226                              |  |  |
| <code>\ifoddpages</code> . . . . .                      | 160                                   |  |  |
| <code>\ifx</code> . . . . .                             | 18,                                   |  |  |
|   | 39, 144, 209, 281, 334, 387, 398, 427 |  |  |
| <b>K</b>  |                                       |  |  |
| <code>\kern</code> . . . . .                            | 129, 193, 318                         |  |  |
| <b>L</b>  |                                       |  |  |
| <code>\leftmark</code> . . . . .                        | 61, 69                                |  |  |
| <b>M</b>  |                                       |  |  |
| <code>\m@ne</code> . . . . .                            | 98, 104,                              |  |  |
|   | 156, 162, 217, 222, 228, 292, 295     |  |  |
| <code>\marginparpush</code> . . . . .                   | 121, 185, 256, 311                    |  |  |
| <code>\marginparsep</code> . . . . .                    | 134,                                  |  |  |
|   | 136, 198, 200, 265, 267, 323, 325     |  |  |
| <code>\marginparwidth</code> . . . . .                  | 137, 201, 268, 326                    |  |  |
| <code>\mark</code> . . . . .                            | 41, 43                                |  |  |
| <code>\marks</code> . . . . .                           | 39, 76                                |  |  |
| <code>\mem@makecol</code> . . . . .                     | 406, 408                              |  |  |

|                                      |                                   |                               |          |
|--------------------------------------|-----------------------------------|-------------------------------|----------|
| <code>\MessageBreak</code>           | 25, 33, 34, 35, 341, 430          | <code>\protected@xdef</code>  | 44       |
|                                      |                                   | <code>\ProvidesPackage</code> | 3        |
| <b>N</b>                             |                                   |                               |          |
| <code>\NeedsTeXFormat</code>         | 2                                 | <b>R</b>                      |          |
| <code>\newcommand</code>             | 414                               | <code>\RequirePackage</code>  | 74       |
| <code>\newmarks</code>               | 75                                | <code>\reset@color</code>     | 374, 376 |
| <code>\nobreak</code>                | 276                               | <code>\rightmark</code>       | 64, 70   |
| <code>\nointerlineskip</code>        | 130,                              | <code>\rlap</code>            | 356      |
|                                      | 141, 194, 206, 261, 278, 319, 331 |                               |          |
| <b>O</b>                             |                                   |                               |          |
| <code>\on@line</code>                | 22, 84                            |                               |          |
| <code>\output</code>                 | 429, 437, 440, 447                |                               |          |
| <b>P</b>                             |                                   |                               |          |
| <code>\PackageInfo</code>            | 23, 32, 85, 339                   |                               |          |
| <code>\PackageWarningNoLine</code>   | 6, 12, 428                        |                               |          |
| <code>\pdfliteral</code>             | 355, 359, 369, 377, 390, 400      |                               |          |
| <code>\pec@addmarginpar</code>       | 90,                               |                               |          |
|                                      | 144, 147, 209, 212, 281, 284, 334 |                               |          |
| <code>\pec@botcolor</code>           |                                   |                               |          |
|                                      | 54, 77, 384, 387, 390, 398, 400   |                               |          |
| <code>\pec@end</code>                | 423, 437, 439, 447                |                               |          |
| <code>\pec@getmark</code>            | 53, 77, 394, 402                  |                               |          |
| <code>\pec@mark</code>               | 41, 50                            |                               |          |
| <code>\pec@marks</code>              | 75, 76, 77                        |                               |          |
| <code>\pec@org@makeslide</code>      | 414, 415, 418                     |                               |          |
| <code>\pec@output</code>             | 423, 436, 439, 446                |                               |          |
| <code>\pec@PatchAddMarginpar</code>  | 347, 366                          |                               |          |
| <code>\pec@PatchAddMarginparI</code> | 348, 350                          |                               |          |
| <code>\pec@PatchAlreadyInBox</code>  | 397                               |                               |          |
| <code>\pec@PatchVBoxCCLV</code>      | 386, 407, 417, 442                |                               |          |
| <code>\pec@result</code>             | 80, 82, 338                       |                               |          |
| <code>\pec@setmark</code>            | 45, 47, 76, 372, 380              |                               |          |
| <code>\pec@temp</code>               | 81, 145, 210, 282, 335            |                               |          |
| <code>\pec@value</code>              | 42, 44, 49                        |                               |          |
| <b>S</b>                             |                                   |                               |          |
| <code>\set@color</code>              | 368                               |                               |          |
| <code>\setbox</code>                 | 109,                              |                               |          |
|                                      | 123, 170, 187, 241, 298, 313, 389 |                               |          |
| <code>\space</code>                  | 86,                               |                               |          |
|                                      | 114, 177, 249, 304, 340, 342, 429 |                               |          |
| <b>T</b>                             |                                   |                               |          |
| <code>\the</code>                    | 50, 177, 218, 237, 437, 447       |                               |          |
| <code>\thepage</code>                | 114, 177, 249, 304                |                               |          |
| <b>U</b>                             |                                   |                               |          |
| <code>\unvbox</code>                 | 391                               |                               |          |
| <b>V</b>                             |                                   |                               |          |
| <code>\vbox</code>                   | 123, 187, 313, 389                |                               |          |
| <code>\vrule</code>                  | 142, 207, 279, 332                |                               |          |
| <code>\vskip</code>                  | 124, 188, 260, 261, 277, 314      |                               |          |
| <b>X</b>                             |                                   |                               |          |
| <code>\x</code>                      | 425, 427                          |                               |          |
| <b>Z</b>                             |                                   |                               |          |
| <code>\z@</code>                     | 80, 109, 113, 116,                |                               |          |
|                                      | 127, 128, 132, 142, 169, 175,     |                               |          |
|                                      | 180, 191, 192, 196, 207, 240,     |                               |          |
|                                      | 248, 251, 258, 259, 263, 279,     |                               |          |
|                                      | 297, 303, 306, 316, 317, 321, 332 |                               |          |