

# The `setouterhbox` package

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## Abstract

If math stuff is set in an `\hbox`, then TeX performs some optimization and omits the implicate penalties `\binoppenalty` and `\relpenalty`. This packages tries to put stuff into an `\hbox` without getting lost of those penalties.

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# 1 Documentation

## 1.1 Introduction

There is a situation in `hyperref`'s driver for `dvips` where the user wants to have links that can be broken across lines. However `dvips` doesn't support the feature. With option `breaklinks` `hyperref` sets the links as usual, put them in a box and write the link data with box dimensions into the appropriate `\specials`. Then, however, it does not set the complete unbreakable box, but it unwrappes the material inside to allow line breaks. Of course line breaking and glue setting will falsify the link dimensions, but line breaking was more important for the user.

## 1.2 Acknowledgement

Jonathan Fine, Donald Arsenau and me discussed the problem in the newsgroup `comp.text.tex` where Damian Menscher has started the thread, see [1].

The discussion was productive and generated many ideas and code examples. In order to have a more permanent result I wrote this package and tried to implement most of the ideas, a kind of summary of the discussion. Thus I want and have to thank Jonathan Fine and Donald Arsenau very much.

Two weeks later David Kastrup (posting in `comp.text.tex`, [2]) remembered an old article of Michael Downes ([3]) in TUGboat, where Michael Downes already presented the method we discuss here. Nowadays we have  $\varepsilon$ -TeX that extends the tool set of a TeX macro programmer. Especially useful  $\varepsilon$ -TeX was in this package for detecting and dealing with errorneous situations.

However also nowadays a perfect solution for the problem is still missing at macro level. Probably someone has to go deep in the internals of the TeX compiler to implement a switch that let penalties stay where otherwise TeX would remove them for optimization reasons.

## 1.3 Usage

**Package loading.** L<sup>A</sup>TeX: as usually:

```
\usepackage{setouterhbox}
```

The package can also be included directly, thus plain-TeX users write:

```
\input setouterhbox.sty
```

**Register allocation.** The material will be put into a box, thus we need to know these box number. If you need to allocate a new box register:

**L<sup>A</sup>TeX:** `\newsavebox{\langle name \rangle}`

**plain-TeX:** `\newbox\langle name \rangle`

Then `\langle name \rangle` is a command that held the box number.

**Box wrapping.** L<sup>A</sup>TeX users put the material in the box with an environment similar to `lrbox`. The environment `setouterhbox` uses the same syntax and offers the same features, such as verbatim stuff inside:

```
\begin{setouterhbox}\langle box number \rangle...\end{setouterhbox}
```

Users with plain-TeX do not have environments, they use instead:

```
\setouterhbox\langle box number \rangle...\endsetouterhbox
```

In both cases the material is put into an `\hbox` and assigned to the given box, denoted by `\langle box number \rangle`. Note the assignment is local, the same way `lrbox` behaves.

**Unwrapping.** The box material is ready for unwrapping:

```
\unhbox<box number>
```

## 1.4 Option hyperref

Package `url` uses math mode for typesetting urls. Break points are inserted by `\binoppenalty` and `\relpenalty`. Unhappily these break points are removed, if `hyperref` is used with option `breaklinks` and drivers that depend on `pdfmark`: `dvips`, `vtexpdfmark`, `textures`, and `dvipsone`. Thus the option `hyperref` enables the method of this package to avoid the removal of `\relpenalty` and `\binoppenalty`. Thus you get more break points. However, the link areas are still wrong for these drivers, because they are not supporting broken links.

Note, you need version 2006/08/16 v6.75c of package `hyperref`, because starting with this version the necessary hook is provided that package `setouterhbox` uses.

```
\usepackage[...]{hyperref}[2006/08/16]
\usepackage[hyperref]{setouterhbox}
```

Package order does not matter.

## 1.5 Example

```
1 (*example)
2 \documentclass[a5paper]{article}
3 \usepackage{url}[2005/06/27]
4 \usepackage{setouterhbox}
5
6 \newsavebox{\testbox}
7
8 \setlength{\parindent}{0pt}
9 \setlength{\parskip}{2em}
10
11 \begin{document}
12 \raggedright
13
14 \url{http://this.is.a.very.long.host.name/followed/%
15 by/a/very_long_long_long_path.html}%
16
17 \sbox\testbox{%
18   \url{http://this.is.a.very.long.host.name/followed/%
19   by/a/very_long_long_long_path.html}%
20 }%
21 \unhbox\testbox
22
23 \begin{setouterhbox}{\testbox}%
24   \url{http://this.is.a.very.long.host.name/followed/%
25   by/a/very_long_long_long_path.html}%
26 \end{setouterhbox}
27 \unhbox\testbox
28
29 \end{document}
30 </example>
```

## 2 Implementation

Internal macros are prefixed by `\setouterhbox`, `@` is not used inside names, thus we do not need to care of its catcode if we are not using it as  $\text{\LaTeX}$  package.

### 2.1 Package start stuff

```
31 (*package)
```

Prevent reloading more than one, necessary for plain- $\text{\TeX}$ : Reload check, especially if the package is not used with  $\text{\LaTeX}$ .

```

32 \begingroup
33   \catcode44 12 % ,
34   \catcode45 12 % -
35   \catcode46 12 % .
36   \catcode58 12 % :
37   \catcode64 11 % @
38   \expandafter\let\expandafter\x\csname ver@setouterhbox.sty\endcsname
39   \ifcase 0%
40     \ifx\x\relax % plain
41     \else
42       \ifx\x\empty % LaTeX
43       \else
44         1%
45       \fi
46     \fi
47   \else
48     \catcode35 6 % #
49     \catcode123 1 % {
50     \catcode125 2 % }
51     \expandafter\ifx\csname PackageInfo\endcsname\relax
52     \def\x#1#2{%
53       \immediate\write-1{Package #1 Info: #2.}%
54     }%
55   \else
56     \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
57   \fi
58   \x{setouterhbox}{The package is already loaded}%
59   \endgroup
60   \expandafter\endinput
61   \fi
62 \endgroup

```

Package identification:

```

63 \begingroup
64   \catcode35 6 % #
65   \catcode40 12 % (
66   \catcode41 12 % )
67   \catcode44 12 % ,
68   \catcode45 12 % -
69   \catcode46 12 % .
70   \catcode47 12 % /
71   \catcode58 12 % :
72   \catcode64 11 % @
73   \catcode123 1 % {
74   \catcode125 2 % }
75   \expandafter\ifx\csname ProvidesPackage\endcsname\relax
76     \def\x#1#2#3[#4]{\endgroup
77       \immediate\write-1{Package: #3 #4}%
78       \xdef#1{#4}%
79     }%
80   \else
81     \def\x#1#2[#3]{\endgroup
82       #2[#{#3}]%
83       \ifx#1@undefined
84         \xdef#1{#3}%
85       \fi
86       \ifx#1\relax
87         \xdef#1{#3}%
88       \fi
89     }%
90   \fi

```

```

91 \expandafter\x\csname ver@setouterhbox.sty\endcsname
92 \ProvidesPackage{setouterhbox}%
93 [2007/09/09 v1.7 Set hbox in outer horizontal mode (H0)]
94 \begingroup
95   \catcode123 1 % {
96   \catcode125 2 % }
97   \def\x{\endgroup
98     \expandafter\edef\csname setouterhboxAtEnd\endcsname{%
99       \catcode35 \the\catcode35\relax
100       \catcode64 \the\catcode64\relax
101       \catcode123 \the\catcode123\relax
102       \catcode125 \the\catcode125\relax
103     }%
104   }%
105 \x
106 \catcode35 6 % #
107 \catcode64 11 % @
108 \catcode123 1 % {
109 \catcode125 2 % }
110 \def\TMP@EnsureCode#1#2{%
111   \edef\setouterhboxAtEnd{%
112     \setouterhboxAtEnd
113     \catcode#1 \the\catcode#1\relax
114   }%
115   \catcode#1 #2\relax
116 }
117 \TMP@EnsureCode{40}{12}% (
118 \TMP@EnsureCode{41}{12}% )
119 \TMP@EnsureCode{44}{12}% ,
120 \TMP@EnsureCode{45}{12}% -
121 \TMP@EnsureCode{46}{12}% .
122 \TMP@EnsureCode{47}{12}% /
123 \TMP@EnsureCode{58}{12}% :
124 \TMP@EnsureCode{60}{12}% <
125 \TMP@EnsureCode{61}{12}% =
126 \TMP@EnsureCode{62}{12}% >
127 \TMP@EnsureCode{96}{12}% ‘

```

## 2.2 Interface macros

`\setouterhboxBox` The method requires a global box assignment. To be on the safe side, a new box register is allocated for this global box assignment.

```
128 \newbox\setouterhboxBox
```

`\setouterhboxFailure` Error message for both plain-TeX and L<sup>A</sup>T<sub>E</sub>X

```

129 \begingroup\expandafter\expandafter\expandafter\endgroup
130 \expandafter\ifx\csname RequirePackage\endcsname\relax
131   \input infwarerr.sty\relax
132 \else
133   \RequirePackage{infwarerr}[2007/09/09]%
134 \fi
135 \edef\setouterhboxFailure#1#2{%
136   \expandafter\noexpand\csname @PackageError\endcsname
137     {setouterhbox}{#1}{#2}%
138 }

```

## 2.3 Main part

eTeX provides much better means for checking error conditions. Thus lines marked by "E" are executed if eTeX is available, otherwise the lines marked by "T" are used.

```
139 \begingroup\expandafter\expandafter\expandafter\endgroup
```

```

140 \expandafter\ifx\csname lastnodetype\endcsname\relax
141   \catcode'T=9 % ignore
142   \catcode'E=14 % comment
143 \else
144   \catcode'T=14 % comment
145   \catcode'E=9 % ignore
146 \fi

```

`\setouterhboxRemove` Remove all kern, glue, and penalty nodes; poor man's version, if  $\varepsilon$ -TeX is not available

```

147 \def\setouterhboxRemove{%
148 E \ifnum\lastnodetype<11 %
149 E   \else
150 E   \ifnum\lastnodetype>13 %
151 E   \else
152     \unskip\unkern\unpenalty
153 E   \expandafter\expandafter\expandafter\setouterhboxRemove
154 E   \fi
155 E \fi
156 }%

```

`\setouterhbox` Passing the box contents by macro parameter would prevent catcode changes in the box contents like by `\verb`. Also `\bgroup` and `\egroup` does not work, because stuff has to be added at the begin and end of the box, thus the syntax `\setouterhbox{(box number)}...\endsetouterhbox` is used. Also we automatically get an environment `setouterhbox` if L<sup>A</sup>T<sub>E</sub>X is used.

```

157 \def\setouterhbox#1{%
158   \begingroup
159   \def\setouterhboxNum{#1}%
160   \setbox0\vbox\bgroup
161 T     \kern.123pt\relax % marker
162 T     \kern0pt\relax % removed by \setouterhboxRemove
163     \begingroup
164     \everypar{}%
165     \noindent
166 }

```

`\endsetouterhbox` Most of the work is done in the end part, thus the heart of the method follows:

```

167 \def\endsetouterhbox{%
168   \endgroup

```

Omit the first pass to get the penalties of the second pass.

```

169   \pretolerance-1 %

```

We don't want a third pass with `\emergencystretch`.

```

170   \tolerance10000 %
171   \hsize\maxdimen

```

Line is not underfull:

```

172   \parfillskip 0pt plus 1filll\relax
173   \leftskip0pt\relax

```

Suppress underful `\hbox` warnings, is explicit line breaks are used.

```

174   \rightskip0pt plus 1fil\relax
175   \everypar{}%

```

Ensure that there is a paragraph and prevents `\endgraph` from eating terminal glue:

```

176   \kern0pt%
177   \endgraf
178   \setouterhboxRemove
179 E   \ifnum\lastnodetype=1 %
180 E   \global\setbox\setouterhboxBox\lastbox

```

```

181 E      \loop
182 E      \setouterhboxRemove
183 E      \ifnum\lastnodetype=1 %
184 E      \setbox0=\lastbox
185 E      \global\setbox\setouterhboxBox=\hbox{%
186 E      \unhbox0 %

```

Remove \rightskip, a penalty with -10000 is part of the previous line.

```

187 E      \unskip
188 E      \unhbox\setouterhboxBox
189 E      }%
190 E      \repeat
191 E      \else
192 E      \setouterhboxFailure{%
193 E      Something is wrong%
194 E      }{%
195 E      Could not find expected line.%
196 E      \MessageBreak
197 E      (\string\lastnodetype: \number\lastnodetype, expected: 1)%
198 E      }%
199 E      \fi
200 E      \setouterhboxRemove
201 T      \global\setbox\setouterhboxBox\lastbox
202 T      \loop
203 T      \setouterhboxRemove
204 T      \setbox0=\lastbox
205 T      \ifcase\ifvoid0 1\else0\fi
206 T      \global\setbox\setouterhboxBox=\hbox{%
207 T      \unhbox0 %

```

Remove \rightskip, a penalty with -10000 is part of the previous line.

```

208 T      \unskip
209 T      \unhbox\setouterhboxBox
210 T      }%
211 T      \repeat
212 T      \ifdim.123pt=\lastkern
213 T      \else
214 T      \setouterhboxFailure{%
215 T      Something is wrong%
216 T      }{%
217 T      Unexpected stuff was detected before the line.%
218 T      }%
219 T      \fi
220 T      \egroup
221 T      \ifcase \ifnum\wd0=0 \else 1\fi
222 T      \ifdim\ht0=.123pt \else 1\fi
223 T      \ifnum\dp0=0 \else 1\fi
224 T      0 %
225 E      \ifnum\lastnodetype=-1 %

```

There was just one line that we have caught.

```

226      \else
227      \setouterhboxFailure{%
228      Something is wrong%
229      }{%
230      After fetching the line there is more unexpected stuff.%
231 E      \MessageBreak
232 E      (\string\lastnodetype: \number\lastnodetype, expected: -1)%
233      }%
234      \fi
235 E      \egroup
236 \expandafter\endgroup
237 \expandafter\setouterhboxFinish\expandafter{%
238 \number\setouterhboxNum

```

```

239 }%
240 }

```

## 2.4 Environment support

Check `\@currentenv` for the case that `\setouterhbox` was called as environment. Then the box assignment must be put after the `\endgroup` of `\end{...}`.

```

241 \def\setouterhboxCurr{\setouterhbox}
242 \def\setouterhboxLast#1{%
243   \setbox#1\hbox{%
244     \unhbox\setouterhboxBox
245     \unskip % remove \rightskip glue
246     \unskip % remove \parfillskip glue
247     \unpenalty % remove paragraph ending \penalty 10000
248     \unkern % remove explicit kern inserted above
249   }%
250 }

```

`\setouterhboxFinish` #1 is an explicit number.

```

251 \def\setouterhboxFinish#1{%
252   \begingroup\expandafter\expandafter\expandafter\endgroup
253   \expandafter\ifx\csname @currentenv\endcsname\setouterhboxCurr
254     \aftergroup\setouterhboxLast
255     \aftergroup{%
256       \setouterhboxAfter #1\NIL
257     }%
258   \else
259     \setouterhboxLast{#1}%
260   \fi
261 }

```

`\setouterhboxAfter` #1 is an explicit number.

```

262 \def\setouterhboxAfter#1#2\NIL{%
263   \aftergroup#1%
264   \ifx\#2\%
265     \else
266       \setouterhboxReturnAfterFi{%
267         \setouterhboxAfter#2\NIL
268       }%
269   \fi
270 }

```

`\setouterhboxReturnAfterFi` A utility macro to get tail recursion.

```

271 \long\def\setouterhboxReturnAfterFi#1\fi{\fi#1}

```

Restore catcodes we have need to distinguish between the implementation with and without  $\varepsilon$ -TeX.

```

272 \catcode69=11\relax % E
273 \catcode84=11\relax % T

```

## 2.5 Option hyperref

```

274 \begingroup
275   \def\x{LaTeX2e}%
276 \expandafter\endgroup
277 \ifx\x\fmtname
278 \else
279   \setouterhboxAtEnd
280   \expandafter\endinput
281 \fi

```



`\Hy@setouterhbox` `\Hy@setouterhbox` is the internal hook that `hyperref` uses since 2006/02/12 v6.75a.

```
282 \DeclareOption{hyperref}{%
283   \long\def\Hy@setouterhbox#1#2{%
284     \setouterhbox{#1}#2\endsetouterhbox
285   }%
286 }

287 \ProcessOptions\relax

288 \setouterhboxAtEnd
289 \endpackage
```

## 3 Test

### 3.1 Catcode checks for loading

```
290 \test1

291 \catcode'\{=1 %
292 \catcode'\}=2 %
293 \catcode'\#=6 %
294 \catcode'\@=11 %
295 \expandafter\ifx\csname count@\endcsname\relax
296   \countdef\count@=255 %
297 \fi
298 \expandafter\ifx\csname @gobble\endcsname\relax
299   \long\def\@gobble#1{%
300 \fi
301 \expandafter\ifx\csname @firstofone\endcsname\relax
302   \long\def\@firstofone#1{#1}%
303 \fi
304 \expandafter\ifx\csname loop\endcsname\relax
305   \expandafter\@firstofone
306 \else
307   \expandafter\@gobble
308 \fi
309 {%
310   \def\loop#1\repeat{%
311     \def\body{#1}%
312     \iterate
313   }%
314   \def\iterate{%
315     \body
316     \let\next\iterate
317   \else
318     \let\next\relax
319   \fi
320   \next
321 }%
322 \let\repeat=\fi
323 }%
324 \def\RestoreCatcodes{
325 \count@=0 %
326 \loop
327 \edef\RestoreCatcodes{%
328   \RestoreCatcodes
329   \catcode\the\count@=\the\catcode\count@\relax
330 }%
331 \ifnum\count@<255 %
332   \advance\count@ 1 %
333 \repeat
334
335 \def\RangeCatcodeInvalid#1#2{%
```

```

336 \count@=#1\relax
337 \loop
338 \catcode\count@=15 %
339 \ifnum\count@<#2\relax
340 \advance\count@ 1 %
341 \repeat
342 }
343 \expandafter\ifx\csname LoadCommand\endcsname\relax
344 \def\LoadCommand{\input setouterhbox.sty\relax}%
345 \fi
346 \def\Test{%
347 \RangeCatcodeInvalid{0}{47}%
348 \RangeCatcodeInvalid{58}{64}%
349 \RangeCatcodeInvalid{91}{96}%
350 \RangeCatcodeInvalid{123}{255}%
351 \catcode'\@=12 %
352 \catcode'\=0 %
353 \catcode'\{=1 %
354 \catcode'\}=2 %
355 \catcode'\#=6 %
356 \catcode'\ [=12 %
357 \catcode'\]=12 %
358 \catcode'\%=14 %
359 \catcode'\ =10 %
360 \catcode13=5 %
361 \LoadCommand
362 \RestoreCatcodes
363 }
364 \Test
365 \csname @@end\endcsname
366 \end
367 </test1>

```

## 3.2 Test with package url

```

368 <*test2>
369 \nofiles
370 \documentclass[a5paper]{article}
371 \usepackage[url]{2005/06/27}
372 \usepackage{setouterhbox}
373
374 \newsavebox{\testbox}
375
376 \setlength{\parindent}{0pt}
377 \setlength{\parskip}{2em}
378
379 \begin{document}
380 \raggedright
381
382 \url{http://this.is.a.very.long.host.name/followed/%
383 by/a/very_long_long_long_path.html}%
384
385 \sbox\testbox{%
386 \url{http://this.is.a.very.long.host.name/followed/%
387 by/a/very_long_long_long_path.html}%
388 }%
389 \unhbox\testbox
390
391 \begin{setouterhbox}{\testbox}%
392 \url{http://this.is.a.very.long.host.name/followed/%
393 by/a/very_long_long_long_path.html}%
394 \end{setouterhbox}
395 \unhbox\testbox

```

```

396
397 \end{document}
398 </test2>

```

## 4 Installation

### 4.1 Download

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

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

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

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

### 4.2 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
```

**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/
```

### 4.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain-T<sub>E</sub>X:

```
tex setouterhbox.dtx
```

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

<code>setouterhbox.sty</code>	→ <code>tex/generic/oberdiek/setouterhbox.sty</code>
<code>setouterhbox.pdf</code>	→ <code>doc/latex/oberdiek/setouterhbox.pdf</code>
<code>setouterhbox-example.tex</code>	→ <code>doc/latex/oberdiek/setouterhbox-example.tex</code>
<code>test/setouterhbox-test1.tex</code>	→ <code>doc/latex/oberdiek/test/setouterhbox-test1.tex</code>
<code>test/setouterhbox-test2.tex</code>	→ <code>doc/latex/oberdiek/test/setouterhbox-test2.tex</code>
<code>setouterhbox.dtx</code>	→ <code>source/latex/oberdiek/setouterhbox.dtx</code>

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`.

### 4.4 Refresh file name databases

If your T<sub>E</sub>X distribution (teT<sub>E</sub>X, mikT<sub>E</sub>X, ...) relies on file name databases, you must refresh these. For example, teT<sub>E</sub>X users run `texhash` or `mktextlsr`.

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

## 4.5 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 setouterhbox.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{setouterhbox.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 setouterhbox.dtx
makeindex -s gind.ist setouterhbox.idx
pdflatex setouterhbox.dtx
makeindex -s gind.ist setouterhbox.idx
pdflatex setouterhbox.dtx
```

## 5 References

- [1] Damian Menscher, [news:comp.text.tex](http://groups.google.com/group/comp.text.tex/msg/79648d4cf1f8bc13), *overlong lines in List of Figures*, <dh058t\$qbd\$1@news.ks.uiuc.edu>, 23rd September 2005. <http://groups.google.com/group/comp.text.tex/msg/79648d4cf1f8bc13>
- [2] David Kastrup, [news:comp.text.tex](http://groups.google.com/group/comp.text.tex/msg/7cf0a345ef932e52), *Re: ANN: outerhbox.sty – collect horizontal material, for unboxing into a paragraph*, <85y8551rx3.fsf@lola.goethe.zz>, 7th October 2005. <http://groups.google.com/group/comp.text.tex/msg/7cf0a345ef932e52>
- [3] Michael Downes, *Line breaking in `\unboxed` Text*, TUGboat 11 (1990), pp. 605–612.
- [4] Sebastian Rahtz, Heiko Oberdiek: *The hyperref package*; 2006/08/16 v6.75c; [CTAN:macros/latex/contrib/hyperref/](http://ctan.org/ctan/latex/contrib/hyperref/).

## 6 History

[2005/10/05 v1.0]

- First version.

[2005/10/07 v1.1]

- Option `hyperref` added.

[2005/10/18 v1.2]

- Support for explicit line breaks added.

[2006/02/12 v1.3]

- DTX format.
- Documentation extended.

[2006/08/26 v1.4]

- Date of hyperref updated.

[2007/04/26 v1.5]

- Use of package infwarerr.

[2007/05/17 v1.6]

- Standard header part for generic files.

[2007/09/09 v1.7]

- Catcode section added.

## 7 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.

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