

# The atbegshi package

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2008/07/31 v1.9

## Abstract

This package is a modern reimplementaion of package `everyshi` without the burden of compatibility. It makes use of  $\varepsilon$ -TeX's if available. Both L<sup>A</sup>T<sub>E</sub>X and plain-TeX are supported.

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## 1 Documentation

Package `atbegshi` redefines `\shipout` to insert hooks for user code that is executed before the page is shipped out. The code may modify or even discard the output page. Three hooks are implemented:

1. A hook that is executed for every page, see `\AtBeginShipout`
2. A hook that is executed for the next page only, see `\AtBeginShipoutNext`
3. A hook that is only executed for the first page, see `\AtBeginShipoutFirst`

The hooks are executed in this order. The following three macros provide the user interface for adding code to these hooks:

`\AtBeginShipout {⟨code⟩}`

Execute the `⟨code⟩` for every page. The page contents is held in box register `\AtBeginShipoutBox` and may be modified. Use `\AtBeginShipoutDiscard` if you want to discard the page.

*Note:* Package `everyshi` uses box register 255. With package `atbegshi` you must use `\AtBeginShipoutBox` instead.

If  $\text{\LaTeX}$  calls `\shipout` in `\@outputpage` (part of its output routine), the meaning of `\protect` is `\noexpand`.  $\text{\LaTeX}$  sets `\protect` to the appropriate `\@typeset@protect` in the box that is shipped out. This is too late for the hooks, they are called earlier in the redefined `\shipout`. Therefore package `atbegshi` sets `\protect` to `\@typeset@protect` before it calls the hooks. (In `\EveryShipout` of package `everyshi` the user is responsible for the correct setting of `\protect`.)

`\AtBeginShipoutNext {⟨code⟩}`

This reimplements package `everyshi`'s `\AtNextShipout`. The `⟨code⟩` is executed at shipout time of the next page only. It is just a convenience macro, it can be easily replaced by something like:

```

\newcommand{\MyShipoutHook}{}%
\AtBeginShipout{\MyShipoutHook}
\gdef\MyShipoutHook{%
  ... do something with next page ...
  \gdef\MyShipoutHook{}%
}
```

(This can be necessary, if hook order does matter).

`\AtBeginShipoutFirst {<code>}`

This reimplements L<sup>A</sup>T<sub>E</sub>X's `\AtBeginDvi`. This hook is usually used for `\special` commands that include PostScript header files. The `<code>` is directly executed in a `\vbox` that is put at the beginning of the output page. Dealing with the output box `\AtBeginShipoutBox` is not necessary and not permitted here.

`\AtBeginShipoutDiscard`

This macro notifies package `atbegshi` that the output page is discarded. The remaining hook code and the remaining hooks are not executed and the page is thrown away. Also `\deadcycles` is cleared to zero like an ordinary `\shipout` would do.

`\AtBeginShipoutInit`

Usually the redefinition of `\shipout` is delayed by `\AtBeginDocument` (if this macro exists). This can be too late, if other packages also redefines `\shipout` and the order does matter. `\AtBeginShipoutInit` forces the immediate redefinition of `\shipout`.

`\AtBeginShipoutUpperLeft {<background material>}`

This is a macro that puts material in the background of box `\AtBeginShipoutBox`. The *<background material>* is set in an `\hbox`, the reference point is the upper left corner of the output page. In case of pdf<sub>T</sub>E<sub>X</sub> in PDF mode, the settings of `\pdfhorigin` and `\pdfvorigin` are respected.

The macro `\AtBeginShipoutUpperLeft` is intended to be used in one of the hook setting macros, such as `\AtBeginShipout`, `\AtBeginShipoutFirst`, or `\AtBeginShipoutNext`.

For L<sup>A</sup>T<sub>E</sub>X users the *<background material>* is set inside a `picture` environment:

```
\begin{picture}(0,0)
  \setlength{\unitlength}{1pt}%
  <background material>
\end{picture}
```

`\AtBeginShipoutUpperLeftForeground {<foreground material>}`

See `\AtBeginShipoutUpperLeft`. The difference is that the material is put in the foreground.

## 1.1 Examples

### 1.1.1 Example: circle in background

In this example we put a circle in the background in the middle of the paper.

```
1 (*example1)
2 \documentclass[a4paper]{article}
3 \usepackage{color}
4 \usepackage{atbegshi}
```

Package `picture` makes life a little easier, because we can now also use length specifications in `picture`'s commands.

```
5 \usepackage{picture}
```

Now we draw the circle in the middle of the paper. `\put` moves downwards, because the origin is at the top of the page, not at its bottom.

```

6 \AtBeginShipout{%
7   \AtBeginShipoutUpperLeft{%
8     \put(0.5\paperwidth,-0.5\paperheight){\circle{10}}%
9   }%
10 }
11 \begin{document}
12 \section{Hello World}
13 \newpage
14 \AtBeginShipoutNext{%
15   \AtBeginShipoutUpperLeft{%
16     \color{red}%
17     \put(0,-0.5\paperheight){\line(1,0){\paperwidth}}%
18     \put(0.5\paperwidth, 0){\line(0,-1){\paperheight}}%
19   }%
20 }
21 Only on this page we add a red cross.
22 \newpage
23 This page has the circle only.
24 \par
25 \vspace{\fill}
26 The next page will be discarded.
27 \newpage
28 \AtBeginShipoutNext{%
29   \AtBeginShipoutDiscard
30 }
31 This page is discarded.
32 \newpage
33 The last page.
34 \end{document}
35 \end{example1}

```

### 1.1.2 Example: adding TrimBox for dvipdfmx

Now an example from “real life” follows. Someone from the mailing list for dvipdfmx wants to put a TrimBox on every page. If we use `\AtBeginShipout`, we have to put the `\special` inside the box `\AtBeginShipoutBox` that gets shipped out.

```

36 \begin{example2}
37 \documentclass{minimal}
38 \usepackage{atbegshi}
39 \usepackage[
40   dvipdfm,
41   paperwidth=630bp,
42   paperheight=810bp
43 ]{geometry}
44 \AtBeginShipout{%
45   \setbox\AtBeginShipoutBox=\hbox{%
46     \special{pdf: put @thispage <</TrimBox[9 9 621 801]>>}}%
47   \box\AtBeginShipoutBox
48 }%
49 }
50 \begin{document}
51   First page
52   \newpage
53   Second page
54 \end{document}
55 \end{example2}

```

Remember, in `\AtBeginShipoutBoxFirst` the `\setbox` wrapper code is implicitly given and the `\special` is used directly.

## 2 Method of `\shipout` overloading

### 2.1 `\shipout`

The TeX primitive command `\shipout` takes a box specification and puts the box as a new page in the output file. There are two kinds of box specifications:

**Direct boxes:** They are given by `\hbox`, `\vbox`, or `\vtop`,  
e.g. `\shipout\hbox{Hello World}`.

**Indirect boxes:** `\box` or `\copy` references a box register by number. The box register contains the contents of the box.

*Note:* `\box` also clears the box register globally.

Then we have to differentiate between void and empty boxes:

**Void:** Initially or after `\box` there is no box in the box register. In this cases the box register is not empty, but *void*.

**Empty:** A box with empty contents, such as `\hbox{}` ( $= \text{\null}$ ) or `\vbox{}` is an *empty hbox* or *empty vbox*. If a box register holds such a box, the box still exists, therefore the box register is *not void*.

### 2.2 `\afterassignment`

We want to overload `\shipout` to do something with the box. It is quite impossible to do this reliable by catching the box using macro arguments. The variety of box specifications is too large, Examples:

```
\shipout\null
\shipout\vbox{...}
\shipout\vtop\bgroup ... \egroup
\shipout\box255
```

Even worse, the braces don't need to be balanced:

```
\shipout\hbox\bgroup}
\shipout\vbox{\egroup
```

Happily TeX provides a reliable way via `\afterassignment`. It takes a macro name and executes it just after the assignment.

Now we can redefine `\shipout`. The box specification that follows `\shipout` is caught by `\setbox`. This is an assignment to a box register. `\afterassignment` notifies TeX, that we want to call `\@test` right after the assignment:

```
\shipout :=
  \afterassignment\@test
  \setbox\mybox=
```

We have seen different box specifications. Indirect boxes are easy to understand:

```
\shipout\box0  $\Rightarrow$  \setbox\mybox=\box0 \@test
```

However direct boxes can have arbitrary contents with lots of other assignments. It would be quite unpredictable if TeX would put `\@test` after the first of such an assignment or after the box specification if the box lacks of assignments. Therefore TeX puts `\@test` right at the beginning of the box specification, e.g:

```
\shipout\hbox{Hello World}
 $\Rightarrow$  \setbox\mybox=\hbox{\@test Hello World}
```

## 2.3 Test for direct or indirect boxes

Now we want to execute `\@test`, but where are we? We can be after the completed box assignment, if `\shipout` was called with an indirect box. Or we are right at the beginning of a direct box.

### 2.3.1 With $\varepsilon$ -TeX

With the  $\varepsilon$ -TeX's extensions the answer is very easy: Being inside the direct box means that we are inside a new group. The new primitive command `\currentgrouplevel` tells how deeply the groups are currently nested. Macro `\@test` just compares the previously stored group level with the current one:

```
\shipout :=
  \edef\saved@grouplevel{\number\currentgrouplevel}
  \afterassignment\@test
  \setbox\mybox=

\@test :=
  \ifnum\saved@grouplevel=\currentgrouplevel
    % case: indirect box, the assignment is completed
    \@output
  \else
    % case: direct box, we are inside the box
    \aftergroup\@outbox
  \fi
```

### 2.3.2 Without $\varepsilon$ -TeX

Life becomes complicate without  $\varepsilon$ -TeX. We cannot ask the group level. However, if we are inside a direct box, the box register `\mybox` is not yet changed by `\setbox`. Thus we need a special initial value and compare it in `\@test` with the current value of the box.

What can be used as initial value? Arbitrary box contents cannot be compared. TeX only tells us a few properties:

- Box type: `\ifhbox`, `\ifvbox`
- Dimensions: `\wd`, `\ht`, `\dp`
- Voidness: `\ifvoid`

Unhappily all these qualities even combined are not sufficient for constructing an initial box value, because `\shipout` can be called with a box that is accidentally just the same as the choosen initial value.

Nevertheless we have two alternatives for an initial value:

- A box of some type with some funny settings that are unlikely to occur in real life, e.g a height of `4911sp-\maxdimen`.
- A void box.

A collision between this initial value and an indirect `\shipout` box with just the same value is possible. Then `\@test` will make a wrong decision that it is executed inside a direct box and delays `\@output` by `\aftergroup`. Thus `\@output` is not called at the place we want. In contrary, the result is an uncertainty about the place:

- `\shipout` is used in a group that perhaps closes some pages later. A bad place for `\@output`.
- Without a surrounding group `\aftergroup` effectively kills its argument.

In the first case of a box with special dimensions we can even loose the page. However in the case of the void box, this effect is even desired, because the original `\shipout` does not output void boxes. All we have to do is to ensure that our box `\mybox` is always void except for the phase when the overloaded `\shipout` is executed. And secondly we must keep this semantics of `\shipout` for the void case in our macros, namely `\@output`.

```
\shipout :=
% trick to get a void box \mybox
\begingroup
\setbox\mybox=\box\mybox
\endgroup
\afterassignment\@test
\setbox\mybox=

\@test :=
\ifvoid\mybox
\aftergroup\@output
\else
\@output
\fi
```

The nasty case is `\shipout\box\voidb@x` where the indirect box is void and that must not generate an output page. If a surrounding group is missing the output is ignored because of `\aftergroup`. Otherwise output is called some time later when the surrounding group closes. But `\mybox` is void outside the execution phase of the redefined `\shipout`. Also `\@output` checks for a void box and cancels the page output. The disadvantage remains that the hook in `\@output` is called for a page that will not be output.

### 2.3.3 `\lastkern` method

At the beginning of a new box, there is no `\kern`, the contents of the box is still empty and `\lastkern` returns 0 pt. This can be used to distinguish between direct and indirect boxes: We execute `\setbox` in a box with a preceding non-zero kern. After an indirect box, `\lastkern` sees this kern, otherwise it returns 0 pt.

```
\shipout :=
\begingroup
\setbox\mybox=\hbox\bgroup
\kern1pt
\afterassignment\shipout@test
\global\setbox\mybox=
\@test :=
\ifdim\lastkern=0pt
% direct box
\aftergroup\egroup
\aftergroup\endgroup
\aftergroup\@output
\else
\egroup
\endgroup
\@output
\fi
```

We have two `\setbox` commands. The first creates a controlled context box where we can safely insert a `\kern`. We get rid of this temporarily used context box by putting the local `\setbox` in a group.

After the group we want to have our shipout box in `\mybox`. Therefore we use a global assignment here.

## 2.4 Output

With or without  $\varepsilon$ -TeX we ensure the original behaviour of `\shipout` that void boxes do not generate output pages.

Now we can place the hook `\@hook` for the user code that wants to manipulate the output box.

```
\@output :=
\ifvoid\mybox
% cancel output of void box
\else
\@hook
\ifvoid\mybox
% user code in \@hook could has voided the box
\else
\original@shipout\box\mybox
\fi
\fi
```

## 2.5 Separate box register

So far we have said nothing about the box number of `\mybox`. The following case that outputs the same page twice shows that we are not free in the use of the box register:

```
\shipout\copy<num> \shipout\box<num>
```

We manipulate the box by the hook and without  $\varepsilon$ -TeX the box must even be voided. However, the use case above requires that the box contents does not change at all. Therefore we must reserve a separate box register to avoid collisions with user box registers.

*Note:* Box register number 255 is special for the output routine, because TeX complains if this box is not voided by the output routine. However, this requirement does not apply to `\shipout` at all. In fact `\shipout` does not change any box register. This is usually done by a call of `\box`, but the output routine can do it later *after* invoking of `\shipout`.

## 2.6 Summary

### 2.6.1 With $\varepsilon$ -TeX

Putting the pieces together we get for  $\varepsilon$ -TeX:

```
\newbox\mybox
\let\original@shipout\shipout

\shipout :=
\edef\saved@grouplevel{\number\currentgrouplevel}
\afterassignment\@test
\setbox\mybox=

\@test :=
\ifnum\saved@grouplevel<\currentgrouplevel
\expandafter\aftergroup
\fi
\@output

\@output :=
\ifvoid\mybox
% cancel output of void box
\else
\@hook
\ifvoid\mybox
```



```

        % user code in \@hook could have voided the box
    \else
        \original@shipout\box\mybox
    \fi
\fi

```

## 2.6.2 Without $\varepsilon$ -TeX, traditional way

And for TeX without  $\varepsilon$ -TeX:

```

\newbox\mybox
\begingroup
    \setbox\mybox=\box\mybox % ensure \mybox is void
\endgroup
\let\original@shipout\shipout

\shipout :=
    % trick to get a void box \mybox
    \begingroup
        \setbox\mybox=\box\mybox
    \endgroup
    \afterassignment\@test
    \setbox\mybox=

\@test :=
    \ifvoid\mybox
        \expandafter\aftergroup
    \fi
    \@output

\@output :=
    \ifvoid\mybox
        % cancel output of void box
    \else
        \@hook
        \ifvoid\mybox
            % user code in \@hook could have voided the box
        \else
            \original@shipout\box\mybox
        \fi
    \fi

```

## 2.6.3 \lastkern method

And for TeX without  $\varepsilon$ -TeX using the \lastkern method:

```

\newbox\mybox
\let\original@shipout\shipout

\shipout :=
    \begingroup
        \setbox\mybox=\hbox\bgroup
        \kern1pt
        \afterassignment\@test
        \setbox\mybox=

\@test :=
    \ifdim\lastkern=0pt
        \expandafter\aftergroup
    \fi
    \@output

\@output :=

```

```

\egroup
\endgroup
\ifvoid\mybox
% cancel output of void box
\else
\@hook
\ifvoid\mybox
% user code in \@hook could have voided the box
\else
\original@shipout\box\mybox
\fi
\fi

```

### 3 Implementation

Package atbegshi uses  $\varepsilon$ -TeX's `\currentgrouplevel`, if it is available. Otherwise the `\lastkern` method is used.

```
56 <*package>
```

#### 3.1 Reload check and package identification

Reload check, especially if the package is not used with L<sup>A</sup>T<sub>E</sub>X.

```

57 \begingroup
58 \catcode44 12 % ,
59 \catcode45 12 % -
60 \catcode46 12 % .
61 \catcode58 12 % :
62 \catcode64 11 % @
63 \catcode123 1 % {
64 \catcode125 2 % }
65 \expandafter\let\expandafter\x\csname ver@atbegshi.sty\endcsname
66 \ifx\x\relax % plain-TeX, first loading
67 \else
68 \def\empty{}%
69 \ifx\x\empty % LaTeX, first loading,
70 % variable is initialized, but \ProvidesPackage not yet seen
71 \else
72 \catcode35 6 % #
73 \expandafter\ifx\csname PackageInfo\endcsname\relax
74 \def\x#1#2{%
75 \immediate\write-1{Package #1 Info: #2.}%
76 }%
77 \else
78 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
79 \fi
80 \x{atbegshi}{The package is already loaded}%
81 \aftergroup\endinput
82 \fi
83 \fi
84 \endgroup

```

Package identification:

```

85 \begingroup
86 \catcode35 6 % #
87 \catcode40 12 % (
88 \catcode41 12 % )
89 \catcode44 12 % ,
90 \catcode45 12 % -
91 \catcode46 12 % .
92 \catcode47 12 % /
93 \catcode58 12 % :

```

```

94 \catcode64 11 % @
95 \catcode91 12 % [
96 \catcode93 12 % ]
97 \catcode123 1 % {
98 \catcode125 2 % }
99 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
100 \def\x#1#2#3[#4]{\endgroup
101 \immediate\write-1{Package: #3 #4}%
102 \xdef#1{#4}%
103 }%
104 \else
105 \def\x#1#2[#3]{\endgroup
106 #2[{#3}]%
107 \ifx#1\@undefined
108 \xdef#1{#3}%
109 \fi
110 \ifx#1\relax
111 \xdef#1{#3}%
112 \fi
113 }%
114 \fi
115 \expandafter\x\csname ver@atbegshi.sty\endcsname
116 \ProvidesPackage{atbegshi}%
117 [2008/07/31 v1.9 At begin shipout hook (H0)]

```

## 3.2 Catcodes

```

118 \begingroup
119 \catcode123 1 % {
120 \catcode125 2 % }
121 \def\x{\endgroup
122 \expandafter\edef\csname AtBegShi@AtEnd\endcsname{%
123 \catcode35 \the\catcode35\relax
124 \catcode64 \the\catcode64\relax
125 \catcode123 \the\catcode123\relax
126 \catcode125 \the\catcode125\relax
127 }%
128 }%
129 \x
130 \catcode35 6 % #
131 \catcode64 11 % @
132 \catcode123 1 % {
133 \catcode125 2 % }
134 \def\TMP@EnsureCode#1#2{%
135 \edef\AtBegShi@AtEnd{%
136 \AtBegShi@AtEnd
137 \catcode#1 \the\catcode#1\relax
138 }%
139 \catcode#1 #2\relax
140 }
141 \TMP@EnsureCode{40}{12}% (
142 \TMP@EnsureCode{41}{12}% )
143 \TMP@EnsureCode{44}{12}% ,
144 \TMP@EnsureCode{45}{12}% -
145 \TMP@EnsureCode{47}{12}% /
146 \TMP@EnsureCode{46}{12}% .
147 \TMP@EnsureCode{58}{12}% :
148 \TMP@EnsureCode{61}{12}% =
149 \TMP@EnsureCode{94}{7}% ^ (superscript)
150 \TMP@EnsureCode{96}{12}% '

```

## 3.3 Preparations

```

151 \begingroup\expandafter\expandafter\expandafter\endgroup
152 \expandafter\ifx\csname RequirePackage\endcsname\relax
153   \input infwarerr.sty\relax
154 \else
155   \RequirePackage{infwarerr}[2007/09/09]%
156 \fi

```

\AtBegShi@CheckDefinable

```

157 \begingroup\expandafter\expandafter\expandafter\endgroup
158 \expandafter\ifx\csname @ifdefinable\endcsname\relax
159   \def\AtBegShi@CheckDefinable#1{%
160     \ifcase\ifx#1\relax
161       \@ne
162     \else
163       \ifx#1\@undefined
164         \@ne
165       \else
166         \z@
167       \fi
168     \fi
169     \errmessage{%
170       Package atbegshi: \string#1\space
171       is already defined%
172     }%
173   \endgroup
174 \fi
175 }%
176 \else
177   \def\AtBegShi@CheckDefinable#1{%
178     \@ifdefinable{#1}{}%
179   }%
180 \fi

181 \newif\ifAtBegShi@Discarded

```

\AtBeginShipoutDiscard

```

182 \AtBegShi@CheckDefinable\AtBeginShipoutDiscard
183 \def\AtBeginShipoutDiscard{%
184   \deadcycles=\z@
185   \global\AtBegShi@Discardedtrue
186 }

187 \begingroup\expandafter\expandafter\expandafter\endgroup
188 \expandafter\ifx\csname currentgrouplevel\endcsname\relax
189   \catcode'X=9 % ignore
190   \catcode'E=14 % comment
191 \else
192   \catcode'X=14 % comment
193   \catcode'E=9 % ignore
194 \fi

```

\AtBegShi@Shipout

```

195 \def\AtBegShi@Shipout{%
196 X \begingroup
197 X \setbox\AtBeginShipoutBox=\hbox\bgroup
198 X \kern\p@
199 E \edef\AtBegShi@GroupLevel{\number\currentgrouplevel}%
200 \afterassignment\AtBegShi@Test
201 X \global
202 \setbox\AtBeginShipoutBox=%
203 }

```

\AtBegShi@Test

```
204 \def\AtBegShi@Test{%
205 X \ifdim\lastkern=\z@
206 E \ifnum\AtBegShi@GroupLevel<\currentgrouplevel
207 \expandafter\aftergroup
208 \fi
209 \AtBegShi@Output
210 }
```

\AtBegShi@Output

```
211 \def\AtBegShi@Output{%
212 X \egroup
213 X \endgroup
214 \ifvoid\AtBeginShipoutBox
215 \@PackageWarning{atbegshi}{Ignoring void shipout box}%
216 \else
217 \let\AtBegShi@OrgProtect\protect
218 \csname set@typeset@protect\endcsname
219 \global\AtBegShi@Discardedfalse
220 \AtBegShi@Hook
221 \AtBegShi@HookNext
222 \gdef\AtBegShi@HookNext{}%
223 \ifAtBegShi@Discarded
224 \@PackageInfoNoLine{atbegshi}{Shipout page discarded}%
225 \global\AtBegShi@Discardedfalse
226 \begingroup
227 \setbox\AtBeginShipoutBox\box\AtBeginShipoutBox
228 \endgroup
229 \let\protect\AtBegShi@OrgProtect
230 \else
231 \AtBegShi@First
232 \let\protect\AtBegShi@OrgProtect
233 \AtBegShi@OrgShipout\box\AtBeginShipoutBox
234 \fi
235 \fi
236 }

237 \catcode'\X=11 %
238 \catcode'\E=11 %
```

\AtBegShi@First

```
239 \def\AtBegShi@First{%
240 \begingroup
241 \def\@empty{}%
242 \ifx\AtBegShi@HookFirst\@empty
243 \else
244 \setbox\z@=\vbox{%
245 \begingroup
246 \AtBegShi@HookFirst
247 \endgroup
248 }%
249 \wd\z@=\z@
250 \ht\z@=\z@
251 \dp\z@=\z@
252 \global\setbox\AtBeginShipoutBox=\vbox{%
253 \baselineskip\z@skip
254 \lineskip\z@skip
255 \lineskiplimit\z@
256 \copy\z@
257 \copy\AtBeginShipoutBox
258 }%
259 \fi
```

```

260     \global\let\AtBegShi@First\@empty
261     \global\let\AtBeginShipoutFirst\AtBegShi@FirstDisabled
262 \endgroup
263 }

\AtBegShi@Hook
264 \gdef\AtBegShi@Hook{}

\AtBegShi@HookNext
265 \gdef\AtBegShi@HookNext{}

\AtBegShi@HookFirst
266 \gdef\AtBegShi@HookFirst{}

\AtBeginShipout
267 \AtBegShi@CheckDefinable\AtBeginShipout
268 \def\AtBeginShipout{%
269     \AtBegShi@AddHook\AtBegShi@Hook
270 }

\AtBeginShipoutNext
271 \AtBegShi@CheckDefinable\AtBeginShipoutNext
272 \def\AtBeginShipoutNext{%
273     \AtBegShi@AddHook\AtBegShi@HookNext
274 }

\AtBeginShipoutFirst
275 \AtBegShi@CheckDefinable\AtBeginShipoutFirst
276 \def\AtBeginShipoutFirst{%
277     \AtBegShi@AddTo\AtBegShi@HookFirst
278 }

\AtBegShi@FirstDisabled
279 \long\def\AtBegShi@FirstDisabled#1{%
280     \@PackageWarning{atbegshi}{%
281         First page is already shipped out, ignoring\MessageBreak
282         \string\AtBeginShipoutFirst
283     }%
284 }

\AtBegShi@AddTo
285 \begingroup\expandafter\expandafter\expandafter\endgroup
286 \expandafter\ifx\csname g@addto@macro\endcsname\relax
287     \long\def\AtBegShi@AddTo#1#2{%
288         \begingroup
289             \toks\z@\expandafter{#1#2}%
290             \xdef#1{\the\toks\z0}%
291         \endgroup
292     }%
293 \else
294     \let\AtBegShi@AddTo\g@addto@macro
295 \fi

\AtBegShi@AddHook
296 \long\def\AtBegShi@AddHook#1#2{%
297     \AtBegShi@AddTo#1{\AtBegShi@Item{#2}}%
298 }

```

\AtBegShi@Item

```

299 \long\def\AtBegShi@Item#1{%
300   \ifAtBegShi@Discarded
301   \else
302     #1%
303     \ifvoid\AtBeginShipoutBox
304       \@PackageWarning{atbegshi}{%
305         Shipout box was voided by hook,\MessageBreak
306         ignoring shipout box%
307       }%
308       \AtBeginShipoutDiscard
309     \fi
310   \fi
311 }

```

\AtBeginShipoutInit

```

312 \AtBegShi@CheckDefinable\AtBeginShipoutInit
313 \def\AtBeginShipoutInit{%
314   \csname newbox\endcsname\AtBeginShipoutBox
315   \AtBegShi@CheckDefinable\AtBegShi@OrgShipout
316   \global\let\AtBegShi@OrgShipout\shipout
317   \global\let\shipout\AtBegShi@Shipout
318   \gdef\AtBeginShipoutInit{}%
319 }

320 \begingroup\expandafter\expandafter\expandafter\endgroup
321 \expandafter\ifx\csname AtBeginDocument\endcsname\relax
322   \AtBeginShipoutInit
323 \else
324   \AtBeginDocument{\AtBeginShipoutInit}%
325 \fi

```

### 3.4 Positioning

```

326 \begingroup\expandafter\expandafter\expandafter\endgroup
327 \expandafter\ifx\csname RequirePackage\endcsname\relax
328   \input ifpdf.sty\relax
329 \else
330   \RequirePackage{ifpdf}\relax
331 \fi

332 \ifpdf
333   \def\AtBegShi@horigin{\pdfhorigin}%
334   \def\AtBegShi@vorigin{\pdfvorigin}%
335 \else
336   \def\AtBegShi@horigin{72.27pt}%
337   \def\AtBegShi@vorigin{72.27pt}%
338 \fi

339 \begingroup
340 \ifcase
341   \expandafter\ifx\csname picture\endcsname\relax
342     1%
343   \else
344     \expandafter\ifx\csname endpicture\endcsname\relax
345       1%
346     \else
347       0%
348     \fi
349   \fi
350 \endgroup
351 \def\AtBegShi@BeginPicture{%
352   \begingroup

```

```

353     \picture(0,0)\relax
354     \begingroup\expandafter\expandafter\expandafter\endgroup
355     \expandafter\ifx\csname unitlength\endcsname\relax
356     \else
357         \unitlength=1pt\relax
358     \fi
359     \ignorespaces
360 }%
361 \def\AtBegShi@EndPicture{%
362     \endpicture
363     \endgroup
364 }%
365 \else
366     \endgroup
367     \def\AtBegShi@BeginPicture{%
368         \setbox0=\hbox\bgroup
369         \begingroup
370         \ignorespaces
371     }%
372     \def\AtBegShi@EndPicture{%
373         \endgroup
374         \egroup
375         \ht0=0pt\relax
376         \dp0=0pt\relax
377         \copy0 %
378     }%
379 \fi

380 \def\AtBeginShipoutUpperLeft#1{%
381     \global\setbox\AtBeginShipoutBox=\hbox{%
382         \rlap{%
383             \kern-\AtBegShi@horigin\relax
384             \vbox to 0pt{%
385                 \kern-\AtBegShi@vorigin\relax
386                 \kern-\ht\AtBeginShipoutBox
387                 \AtBegShi@BeginPicture
388                 #1%
389                 \AtBegShi@EndPicture
390                 \vss
391             }%
392         }%
393         \box\AtBeginShipoutBox
394     }%
395 }

396 \def\AtBeginShipoutUpperLeftForeground#1{%
397     \global\setbox\AtBeginShipoutBox=\hbox to \wd\AtBeginShipoutBox{%
398         \rlap{%
399             \copy\AtBeginShipoutBox
400         }%
401         \rlap{%
402             \kern-\AtBegShi@horigin\relax
403             \vbox to 0pt{%
404                 \kern-\AtBegShi@vorigin\relax
405                 \kern-\ht\AtBeginShipoutBox
406                 \AtBegShi@BeginPicture
407                 #1%
408                 \AtBegShi@EndPicture
409                 \vss
410             }%
411         }%
412         \hss
413     }%
414 }

```



### 3.5 Patches

Patches for L<sup>A</sup>T<sub>E</sub>X packages that redefine `\shipout`. L<sup>A</sup>T<sub>E</sub>X is now supposed to use  $\varepsilon$ -T<sub>E</sub>X. Thus we do not patch, without L<sup>A</sup>T<sub>E</sub>X and  $\varepsilon$ -T<sub>E</sub>X.

```

415 \def\AtBegShi@AbortIfUndefined#1{%
416   \begingroup\expandafter\expandafter\expandafter\endgroup
417   \expandafter\ifx\curname#1\endcurname\relax
418   \AtBegShi@AtEnd
419   \expandafter\endinput
420   \fi
421 }
422 \AtBegShi@AbortIfUndefined{currentgrouplevel}
423 \AtBegShi@AbortIfUndefined{AtBeginDocument}
424 \AtBegShi@AbortIfUndefined{@ifpackageloaded}
425 \AtBegShi@AbortIfUndefined{@ifclassloaded}

```

#### 3.5.1 Package crop

Fix of method and box.

```

426 \def\AtBegShi@PatchCrop{%
427   \begingroup
428   \def\AtBegShi@Crop@shipout{%
429     \afterassignment\CROP@ship
430     \setbox\@cclv=%
431   }%
432   \def\AtBegShi@Crop@ship{%
433     \ifvoid\@cclv
434     \expandafter\aftergroup
435     \fi
436     \CROP@@ship
437   }%
438   \def\AtBegShi@Crop@shiplist{%
439     \lineskip\z@
440     \lineskiplimit\z@
441     \baselineskip\z@
442     \CROP@kernel
443     \box\@cclv
444   }%
445   \def\AtBegShi@Crop@@ship{%
446     \CROP@shipout\vbox{%
447       \CROP@shiplist
448     }%
449   }%
450   \ifx\AtBegShi@Crop@ship\CROP@ship
451     \ifx\AtBegShi@Crop@shiplist\CROP@shiplist
452     \ifx\AtBegShi@Crop@@ship\CROP@@ship
453       \let\AtBegShi@found\relax
454       \ifx\shipout\AtBegShi@Crop@shipout
455         \def\AtBegShi@found{\shipout}%
456       \else\ifx\AtBegShi@OrgShipout\AtBegShi@Crop@shipout
457         \def\AtBegShi@found{\AtBegShi@OrgShipout}%
458       \else\ifx\@EveryShipout@Org@Shipout\AtBegShi@Crop@shipout
459         \def\AtBegShi@found{\@EveryShipout@Org@Shipout}%
460       \else\ifx\GPTorg@shipout\AtBegShi@Crop@shipout
461         \def\AtBegShi@found{\GPTorg@shipout}%
462       \else\ifx\THBorg@shipout\AtBegShi@Crop@shipout
463         \def\AtBegShi@found{\THBorg@shipout}%
464       \else\ifx\mem@oldshipout\AtBegShi@Crop@shipout
465         \def\AtBegShi@found{\mem@oldshipout}%
466       \fi\fi\fi\fi\fi\fi
467       \ifx\AtBegShi@found\relax
468       \else

```

```

469         \expandafter\endgroup
470         \expandafter\def\AtBegShi@found{%
471             \edef\AtBegShi@GroupLevel{\number\currentgrouplevel}%
472             \afterassignment\CROP@ship
473             \setbox\AtBeginShipoutBox=
474         }%
475         \def\CROP@ship{%
476             \ifnum\AtBegShi@GroupLevel=\currentgrouplevel
477             \else
478                 \expandafter\aftergroup
479             \fi
480             \CROP@@ship
481         }%
482         \def\CROP@shiplist{%
483             \lineskip\z@
484             \lineskiplimit\z@
485             \baselineskip\z@
486             \CROP@kernel
487             \box\AtBeginShipoutBox
488         }%
489         \def\CROP@@ship{%
490             \ifvoid\AtBeginShipoutBox
491             \else
492                 \setbox\AtBeginShipoutBox=\vbox{%
493                     \CROP@shiplist
494                 }%
495                 \expandafter\CROP@shipout
496                 \expandafter\box
497                 \expandafter\AtBeginShipoutBox
498             \fi
499         }%
500         \@PackageInfoNoLine{atbegshi}{Package ‘crop’ patched}%
501         \begingroup
502     \fi
503 \fi
504 \fi
505 \fi
506 \endgroup
507 \let\AtBegShi@PatchCrop\relax
508 }
509 \ifpackageloaded{crop}{%
510     \AtBegShi@PatchCrop
511 }{%
512     \AtBeginDocument{\AtBegShi@PatchCrop}%
513 }

```

### 3.5.2 Package everyshi

Fix of method. Use of box 255 is not changed.

```

514 \def\AtBegShi@PatchEveryshi{%
515     \begingroup
516     \long\def\AtBegShi@Everyshi@shipout{%
517         \afterassignment\@EveryShipout@Test
518         \global\setbox\@cclv=
519     }%
520     \long\def\AtBegShi@Everyshi@Test{%
521         \ifvoid\@cclv\relax
522             \aftergroup\@EveryShipout@Output
523         \else
524             \@EveryShipout@Output
525         \fi
526     }%

```

```

527 \ifx\AtBegShi@Everyshi@Test\@EveryShipout@Test
528 \let\AtBegShi@found\relax
529 \ifx\shipout\AtBegShi@Everyshi@shipout
530 \def\AtBegShi@found{\shipout}%
531 \else\ifx\AtBegShi@OrgShipout\AtBegShi@Everyshi@shipout
532 \def\AtBegShi@found{\AtBegShi@OrgShipout}%
533 \else\ifx\CROP@shipout\AtBegShi@Everyshi@shipout
534 \def\AtBegShi@found{\CROP@shipout}%
535 \else\ifx\GPTorg@shipout\AtBegShi@Everyshi@shipout
536 \def\AtBegShi@found{\GPTorg@shipout}%
537 \else\ifx\THBorg@shipout\AtBegShi@Everyshi@shipout
538 \def\AtBegShi@found{\THBorg@shipout}%
539 \else\ifx\mem@oldshipout\AtBegShi@Everyshi@shipout
540 \def\AtBegShi@found{\mem@oldshipout}%
541 \else
542 \expandafter\ifx\csname @EveryShipout@Org@Shipout\endcsname
543 \relax
544 \ifx\@EveryShipout@Shipout\AtBegShi@Everyshi@shipout
545 \def\AtBegShi@found{\@EveryShipout@Shipout}%
546 \fi
547 \fi
548 \fi\fi\fi\fi\fi\fi
549 \ifx\AtBegShi@found\relax
550 \else
551 \expandafter\endgroup
552 \expandafter\def\AtBegShi@found{%
553 \edef\AtBegShi@GroupLevel{\number\currentgrouplevel}%
554 \afterassignment\@EveryShipout@Test
555 \setbox\AtBeginShipoutBox=%
556 }%
557 \def\@EveryShipout@Test{%
558 \ifnum\AtBegShi@GroupLevel=\currentgrouplevel
559 \else
560 \expandafter\aftergroup
561 \fi
562 \AtBegShi@Everyshi@Output
563 }%
564 \def\AtBegShi@Everyshi@Output{%
565 \ifvoid\AtBeginShipoutBox
566 \else
567 \global\setbox\@cclv\box\AtBeginShipoutBox
568 \expandafter\@EveryShipout@Output
569 \fi
570 }%
571 \@PackageInfoNoLine{atbegshi}{Package 'everyshi' patched}%
572 \begingroup
573 \fi
574 \fi
575 \endgroup
576 \let\AtBegShi@PatchEveryshi\relax
577 }
578 \ifpackageloaded{everyshi}{%
579 \AtBegShi@PatchEveryshi
580 }{%
581 \AtBeginDocument{\AtBegShi@PatchEveryshi}%
582 }

```

### 3.5.3 Class memoir

Fix of method and box.

```

583 \def\AtBegShi@PatchMemoir{%
584 \begingroup

```

```

585 \def\AtBegShi@Memoir@shipout{%
586 \afterassignment\mem@shipi
587 \setbox\@cclv=%
588 }%
589 \def\AtBegShi@Memoir@shipi{%
590 \ifvoid\@cclv
591 \expandafter\aftergroup
592 \fi
593 \mem@shipii
594 }%
595 \def\AtBegShi@Memoir@shipiiA{%
596 \mem@oldshipout\ vbox{%
597 \trimmarks
598 \unvbox\@cclv
599 }%
600 }%
601 \def\AtBegShi@Memoir@shipiiB{%
602 \ifvoid\@cclv
603 \mem@oldshipout\ box\@cclv
604 \else
605 \mem@oldshipout\ vbox{%
606 \trimmarks
607 \unvbox\@cclv
608 }%
609 \fi
610 }%
611 \ifx\AtBegShi@Memoir@shipi\mem@shipi
612 \ifcase\ifx\AtBegShi@Memoir@shipiiA\mem@shipii
613 \z@
614 \else
615 \ifx\AtBegShi@Memoir@shipiiB\mem@shipii
616 \z@
617 \else
618 \@ne
619 \fi
620 \fi
621 \let\AtBegShi@found\relax
622 \ifx\shipout\AtBegShi@Memoir@shipout
623 \def\AtBegShi@found{\shipout}%
624 \else\ifx\AtBegShi@OrgShipout\AtBegShi@Memoir@shipout
625 \def\AtBegShi@found{\AtBegShi@OrgShipout}%
626 \else\ifx\CROP@shipout\AtBegShi@Memoir@shipout
627 \def\AtBegShi@found{\CROP@shipout}%
628 \else\ifx\GPTorg@shipout\AtBegShi@Memoir@shipout
629 \def\AtBegShi@found{\GPTorg@shipout}%
630 \else\ifx\THBorg@shipout\AtBegShi@Memoir@shipout
631 \def\AtBegShi@found{\THBorg@shipout}%
632 \else\ifx\@EveryShipout@Org@Shipout\AtBegShi@Memoir@shipout
633 \def\AtBegShi@found{\@EveryShipout@Org@Shipout}%
634 \fi\fi\fi\fi\fi\fi
635 \ifx\AtBegShi@found\relax
636 \else
637 \expandafter\endgroup
638 \expandafter\def\AtBegShi@found{%
639 \edef\AtBegShi@GroupLevel{\number\currentgrouplevel}%
640 \afterassignment\mem@shipi
641 \setbox\AtBeginShipoutBox=%
642 }%
643 \def\mem@shipi{%
644 \ifnum\AtBegShi@GroupLevel=\currentgrouplevel
645 \else
646 \expandafter\aftergroup

```

```

647         \fi
648         \mem@shipii
649     }%
650     \def\mem@shipii{%
651         \ifvoid\AtBeginShipoutBox
652         \else
653             \setbox\AtBeginShipoutBox=\vbox{%
654                 \trimmarks
655                 \ifvbox\AtBeginShipoutBox
656                     \unvbox\AtBeginShipoutBox
657                 \else
658                     \box\AtBeginShipoutBox
659                 \fi
660             }%
661             \expandafter\mem@oldshipout
662             \expandafter\box
663             \expandafter\AtBeginShipoutBox
664         \fi
665     }%
666     \@PackageInfoNoLine{atbegshi}{Class 'memoir' patched}%
667     \begingroup
668     \fi
669     \fi
670     \fi
671 \endgroup
672 \let\AtBegShi@PatchMemoir\relax
673 }
674 \@ifclassloaded{memoir}{%
675     \AtBegShi@PatchMemoir
676 }{%
677     \AtBeginDocument{\AtBegShi@PatchMemoir}%
678 }
679 \AtBegShi@AtEnd
680 </package>

```

## 4 Test

### 4.1 Catcode checks for loading

```

681 <{*test1}>
682 \catcode'\{=1 %
683 \catcode'\}=2 %
684 \catcode'\#=6 %
685 \catcode'\@=11 %
686 \expandafter\ifx\csname count@\endcsname\relax
687     \countdef\count@=255 %
688 \fi
689 \expandafter\ifx\csname @gobble\endcsname\relax
690     \long\def\@gobble#1{}%
691 \fi
692 \expandafter\ifx\csname @firstofone\endcsname\relax
693     \long\def\@firstofone#1{#1}%
694 \fi
695 \expandafter\ifx\csname loop\endcsname\relax
696     \expandafter\@firstofone
697 \else
698     \expandafter\@gobble
699 \fi
700 {%
701     \def\loop#1\repeat{%
702         \def\body{#1}%

```

```

703     \iterate
704 }%
705 \def\iterate{%
706     \body
707     \let\next\iterate
708     \else
709     \let\next\relax
710     \fi
711     \next
712 }%
713 \let\repeat=\fi
714 }%
715 \def\RestoreCatcodes{}
716 \count@=0 %
717 \loop
718     \edef\RestoreCatcodes{%
719         \RestoreCatcodes
720         \catcode\the\count@=\the\catcode\count@\relax
721     }%
722 \ifnum\count@<255 %
723     \advance\count@ 1 %
724 \repeat
725
726 \def\RangeCatcodeInvalid#1#2{%
727     \count@=#1\relax
728     \loop
729         \catcode\count@=15 %
730     \ifnum\count@<#2\relax
731         \advance\count@ 1 %
732     \repeat
733 }
734 \expandafter\ifx\csname LoadCommand\endcsname\relax
735     \def\LoadCommand{\input atbegshi.sty\relax}%
736 \fi
737 \def\Test{%
738     \RangeCatcodeInvalid{0}{47}%
739     \RangeCatcodeInvalid{58}{64}%
740     \RangeCatcodeInvalid{91}{96}%
741     \RangeCatcodeInvalid{123}{255}%
742     \catcode'\@=12 %
743     \catcode'\=0 %
744     \catcode'\{=1 %
745     \catcode'\}=2 %
746     \catcode'\#=6 %
747     \catcode'\[=12 %
748     \catcode'\]=12 %
749     \catcode'\%=14 %
750     \catcode'\ =10 %
751     \catcode13=5 %
752     \LoadCommand
753     \RestoreCatcodes
754 }
755 \Test
756 \csname @@end\endcsname
757 \end
758 </test1>
759 <*test2>
760 \input atbegshi.sty\relax
761 \def\msg#{\immediate\write16}
762 \msg{File: atbegshi-test2.tex 2008/07/31 v1.9 Test file for plain-TeX}
763 \def\testmsg#1#2{%
764     \msg{}%

```

```

765 \msg{*** Test with box (#1), expected page output [#2]}% hash-ok
766 }
767
768 \newbox\voidbox
769 \def\void{\box\voidbox}
770 \begingroup
771 \setbox\voidbox=\void
772 \endgroup
773
774 \count0=0\relax
775 \AtBeginShipout{%
776 \global\advance\count0 by 1\relax
777 \msg{* Inside \string\AtBeginShipout: [\the\count0]}%
778 }
779
780 \AtBeginShipoutFirst{%
781 \msg{* Inside \string\AtBeginShipoutFirst}%
782 Hello World%
783 }
784
785 \testmsg{\string\null}{1}
786 \shipout\null
787
788 \AtBeginShipoutFirst{%
789 This is too late%
790 }
791
792 \testmsg{void}{}
793 \shipout\void
794
795 \testmsg{\string\copy255 (not void)}{2}
796 \setbox255\hbox{\vrule height 10bp width 10bp}
797 \shipout\copy255 %
798
799 \testmsg{\string\copy255 (again)}{3}
800 \shipout\copy255 %
801
802 \testmsg{\string\box255}{4}
803 \shipout\box255 %
804
805 \testmsg{\string\box255 (again)}{}
806 \shipout\box255 %
807
808 \testmsg{\string\hbox}{5}
809 \shipout\hbox{\vrule height 5bp width 20bp}
810
811 \testmsg{\string\vbox}{6}
812 \shipout\vbox{\hrule height 20bp width 5bp}
813
814 \testmsg{\string\null, voided by hook}{}
815 \def\VoidBox{%
816 \begingroup
817 \setbox\AtBeginShipoutBox=\box\AtBeginShipoutBox
818 \endgroup
819 }
820 \AtBeginShipout{\VoidBox}
821 \shipout\null
822 \def\VoidBox{}
823
824 \msg{*** \string\begingroup}
825 \begingroup
826 \testmsg{void}{}%

```

```

827 \shipout\void
828 \msg{*** \string\endgroup}
829 \endgroup
830
831 \msg{*** \string\begingroup}
832 \begingroup
833 \testmsg{void}{}%
834 \shipout\void
835 \testmsg{\string\null}{8}%
836 \shipout\null
837 \msg{*** \string\endgroup}
838 \endgroup
839
840 \testmsg{output routine}{9}
841 Hello World
842 \vfill
843 \eject
844
845 \testmsg{\string\null\space(discarded)}{}
846 \AtBeginShipout{%
847 \msg{* Inside \string\AtBeginShipout: DISCARD}%
848 \AtBeginShipoutDiscard
849 }
850 \shipout\null
851
852 \end
853 \test2)

854 (*test3)
855 \NeedsTeXFormat{LaTeX2e}
856 \ProvidesFile{atbegshi-test3.tex}[2008/07/31 v1.9 Test file for LaTeX]
857 \RequirePackage{color}
858 \pagecolor{yellow}
859 \documentclass[a5paper,showtrims]{memoir}
860 \usepackage{atbegshi}
861 \AtBeginShipout{%
862 \setbox\AtBeginShipoutBox=\vbox{%
863 \vbox to Opt{%
864 \kern-1.5in %
865 \hbox to Opt{%
866 \kern-1.5in %
867 \color{blue}%
868 \rule{1in}{1in}%
869 \hss
870 }%
871 \vss
872 }%
873 \hrule
874 \hbox{\vrule\box\AtBeginShipoutBox\vrule}%
875 \hrule
876 }%
877 }
878 \usepackage{eso-pic}
879 \makeatletter
880 \@EveryShipout@Init
881 \let\@EveryShipout@Init\relax
882 \makeatother
883 \AddToShipoutPicture{%
884 \hspace{.52\paperwidth}%
885 \colorbox{cyan}{%
886 \rule{0mm}{\paperheight}%
887 \hspace{.48\paperwidth}%
888 }%

```



889 }

Newer versions of class `memoir` emulate package `crop` and prevents its loading. This is undone in next line for this test file.

```
890 \expandafter\let\csname ver@crop.sty\endcsname\relax
891 \usepackage[color=red,cross,a4,center]{crop}
892 \begin{document}
893 \shipout\null
894 \shipout\box\csname voidb@x\endcsname
895 \section{Hello World}
896 \end{document}
897 \end{test3}
```

## 5 Installation

### 5.1 Download

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

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

[CTAN:macros/latex/contrib/oberdiek/atbegshi.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  $\text{\TeX}$  Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

### 5.2 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/
```

### 5.3 Package installation

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

```
tex atbegshi.dtx
```

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

---

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

atbegshi.sty	→ tex/generic/oberdiek/atbegshi.sty
atbegshi.pdf	→ doc/latex/oberdiek/atbegshi.pdf
atbegshi-example1.tex	→ doc/latex/oberdiek/atbegshi-example1.tex
atbegshi-example2.tex	→ doc/latex/oberdiek/atbegshi-example2.tex
test/atbegshi-test1.tex	→ doc/latex/oberdiek/test/atbegshi-test1.tex
test/atbegshi-test2.tex	→ doc/latex/oberdiek/test/atbegshi-test2.tex
test/atbegshi-test3.tex	→ doc/latex/oberdiek/test/atbegshi-test3.tex
atbegshi.dtx	→ source/latex/oberdiek/atbegshi.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`.

## 5.4 Refresh file name databases

If your  $\text{\TeX}$  distribution (`te $\text{\TeX}$` , `mik $\text{\TeX}$` , ...) relies on file name databases, you must refresh these. For example, `te $\text{\TeX}$`  users run `texhash` or `mktextlsr`.

## 5.5 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 atbegshi.pdf unpack_files output .
```

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

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

**$\text{\LaTeX}$ :** Generate the documentation.

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

```
latex \let\install=y\input{atbegshi.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 $\text{\LaTeX}$` :

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

# 6 History

[2007/04/17 v1.0]

- First version.

## [2007/04/18 v1.1]

- New method based on `\lastkern` is used if  $\varepsilon$ -TeX is missing.
- `\AtBeginShipoutDiscard` also resets `\deadcycles`.

## [2007/04/19 v1.2]

- `\AtBeginShipoutEarly` removed for simplification reasons.
- Forgotten definition of `\AtBegShi@Info` added.
- Patches for packages `crop` and `everyshi` and class `memoir` added.

## [2007/04/26 v1.3]

- Use of package `infwarerr`.
- Catcode section after generic header.

## [2007/04/27 v1.4]

- Small optimizations.

## [2007/06/06 v1.5]

- `\AtBeginShipoutUpperLeft` added.
- Example added.
- Fix in second test file for newer version of `memoir`.

## [2007/09/09 v1.6]

- Catcode section rewritten.

## [2008/07/18 v1.7]

- Documentation of `\AtBeginShipoutUpperLeft` fixed and extended.

## [2008/07/19 v1.8]

- `\AtBeginShipoutUpperLeftForeground` added.

## [2008/07/31 v1.9]

- Second example (`TrimBox` for `dvipdfmx`) added.
- No changes in package code.

## 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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