

# The atbegshi package

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2009/12/02 v1.10

## 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><sub>E</sub>X 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.

`\AtBeginShipoutOriginalShipout {<box>}`

It stores the meaning of `\shipout` at the time this package is loaded.

## 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 (*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 \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}
⇒ \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 $\varepsilon$ - $\text{\TeX}$ , traditional way

And for  $\text{\TeX}$  without  $\varepsilon$ - $\text{\TeX}$ :

```

\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 $\backslash\text{lastkern}$ method

And for  $\text{\TeX}$  without  $\varepsilon$ - $\text{\TeX}$  using the  $\backslash\text{lastkern}$  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 [2009/12/02 v1.10 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 \AtBeginShipoutOriginalShipout\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\z@}%
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\AtBeginShipoutOriginalShipout
316   \global\let\AtBeginShipoutOriginalShipout\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 Opt{%
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 Opt{%
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\csname#1\endcsname\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\AtBeginShipoutOriginalShipout\AtBegShi@Crop@shipout
457             \def\AtBegShi@found{\AtBeginShipoutOriginalShipout}%
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\AtBeginShipoutOriginalShipout\AtBegShi@Everyshi@shipout
532     \def\AtBegShi@found{\AtBeginShipoutOriginalShipout}%
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\AtBeginShipoutOriginalShipout\AtBegShi@Memoir@shipout
625       \def\AtBegShi@found{\AtBeginShipoutOriginalShipout}%
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 2009/12/02 v1.10 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\beginngroup}
825 \beginngroup
826   \testmsg{void}{}%
827   \shipout\void
828 \msg{*** \string\endgroup}
829 \endgroup
830
831 \msg{*** \string\beginngroup}
832 \beginngroup
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}[2009/12/02 v1.10 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 0pt{%
864       \kern-1.5in %
865       \hbox to 0pt{%
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 \@@ifundefined{EveryShipout@Init}{%
881   \typeout{Test skipped}%
882   \@@end
883 }{}
884 \EveryShipout@Init

```



```

885 \let\@EveryShipout@Init\relax
886 \makeatother
887 \AddToShipoutPicture{%
888   \hspace{.52\paperwidth}%
889   \colorbox{cyan}{%
890     \rule{0mm}{\paperheight}%
891     \hspace{.48\paperwidth}%
892   }%
893 }

Newer versions of class memoir emulate package crop and prevents its loading.
This is undone in next line for this test file.
894 \expandafter\let\csname ver@crop.sty\endcsname\relax
895 \usepackage[color=red,cross,a4,center]{crop}
896 \begin{document}
897 \shipout\null
898 \shipout\box\csname voidb@x\endcsname
899 \section{Hello World}
900 \end{document}
901 </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 T<sub>E</sub>X 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-T<sub>E</sub>X:

```
tex atbegshi.dtx
```

---

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

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

```

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.

### [2009/12/02 v1.10]

- `\AtBeginShipoutOriginalShipout` added.
- Test file fixed.

## 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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