

# The atbegshi package

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## 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  $\LaTeX$  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.

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}
```

## 1.1 Example

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

```
1 <*example>
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{example}

```

## 2 Method of `\shipout` overloading

### 2.1 `\shipout`

The  $\text{\TeX}$  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 ⇒ \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 chosen 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 0pt. 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 0pt.

```
\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 $\varepsilon$ -T<sub>E</sub>X, traditional way

And for T<sub>E</sub>X without  $\varepsilon$ -T<sub>E</sub>X:

```

\newbox\mybox
\begin{group}
  \setbox\mybox=\box\mybox % ensure \mybox is void
\end{group}
\let\original@shipout\shipout

\shipout :=
  % trick to get a void box \mybox
  \begin{group}
    \setbox\mybox=\box\mybox
  \end{group}
  \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  $\text{\TeX}$  without  $\varepsilon\text{-TeX}$  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  $\varepsilon\text{-TeX}$ 's `\currentgrouplevel`, if it is available. Otherwise the `\lastkern` method is used.

```
36 <*package>
```

### 3.1 Reload check and package identification

Reload check, especially if the package is not used with  $\text{\LaTeX}$ .

```
37 \begingroup
38 \catcode44 12 % ,
39 \catcode45 12 % -
40 \catcode46 12 % .
41 \catcode58 12 % :
42 \catcode64 11 % @
43 \expandafter\let\expandafter\x\csname ver@atbegshi.sty\endcsname
44 \ifcase 0%
45   \ifx\x\relax % plain
46   \else
47     \ifx\x\empty % LaTeX
48     \else
49       1%
50     \fi
51   \fi
52 \else
53   \catcode35 6 % #
54   \catcode123 1 % {
```

```

55 \catcode125 2 % }
56 \expandafter\ifx\csname PackageInfo\endcsname\relax
57 \def\x#1#2{%
58 \immediate\write-1{Package #1 Info: #2.}%
59 }%
60 \else
61 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
62 \fi
63 \x{atbegshi}{The package is already loaded}%
64 \endgroup
65 \expandafter\endinput
66 \fi
67 \endgroup

```

Package identification:

```

68 \begingroup
69 \catcode35 6 % #
70 \catcode40 12 % (
71 \catcode41 12 % )
72 \catcode44 12 % ,
73 \catcode45 12 % -
74 \catcode46 12 % .
75 \catcode47 12 % /
76 \catcode58 12 % :
77 \catcode64 11 % @
78 \catcode123 1 % {
79 \catcode125 2 % }
80 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
81 \def\x#1#2#3[#4]{\endgroup
82 \immediate\write-1{Package: #3 #4}%
83 \xdef#1{#4}%
84 }%
85 \else
86 \def\x#1#2[#3]{\endgroup
87 #2[#{#3}]%
88 \ifx#1\relax
89 \xdef#1{#3}%
90 \fi
91 }%
92 \fi
93 \expandafter\x\csname ver@atbegshi.sty\endcsname
94 \ProvidesPackage{atbegshi}%
95 [2007/09/09 v1.6 At begin shipout hook (H0)]

```

## 3.2 Catcodes

```

96 \begingroup
97 \catcode123 1 % {
98 \catcode125 2 % }
99 \def\x{\endgroup
100 \expandafter\edef\csname AtBegShi@AtEnd\endcsname{%
101 \catcode35 \the\catcode35\relax
102 \catcode64 \the\catcode64\relax
103 \catcode123 \the\catcode123\relax
104 \catcode125 \the\catcode125\relax
105 }%
106 }%
107 \x
108 \catcode35 6 % #
109 \catcode64 11 % @
110 \catcode123 1 % {
111 \catcode125 2 % }
112 \def\TMP@EnsureCode#1#2{%

```

```

113 \edef\AtBegShi@AtEnd{%
114   \AtBegShi@AtEnd
115   \catcode#1 \the\catcode#1\relax
116 }%
117 \catcode#1 #2\relax
118 }
119 \TMP@EnsureCode{40}{12}% (
120 \TMP@EnsureCode{41}{12}% )
121 \TMP@EnsureCode{44}{12}% ,
122 \TMP@EnsureCode{45}{12}% -
123 \TMP@EnsureCode{47}{12}% /
124 \TMP@EnsureCode{46}{12}% .
125 \TMP@EnsureCode{58}{12}% :
126 \TMP@EnsureCode{61}{12}% =
127 \TMP@EnsureCode{94}{7}% ^ (superscript)
128 \TMP@EnsureCode{96}{12}% ‘

```

### 3.3 Preparations

```

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

```

\AtBegShi@CheckDefinable

```

135 \begingroup\expandafter\expandafter\expandafter\endgroup
136 \expandafter\ifx\csname @ifdefinable\endcsname\relax
137   \def\AtBegShi@CheckDefinable#1{%
138     \ifcase\ifx#1\relax
139       \@ne
140     \else
141       \ifx#1\@undefined
142         \@ne
143       \else
144         \z@
145       \fi
146     \fi
147     \errmessage{%
148       Package atbegshi: \string#1\space
149       is already defined%
150     }%
151   \endgroup
152 \fi
153 }%
154 \else
155   \def\AtBegShi@CheckDefinable#1{%
156     \@ifdefinable{#1}{}%
157   }%
158 \fi

```

```

159 \newif\ifAtBegShi@Discarded

```

\AtBeginShipoutDiscard

```

160 \AtBegShi@CheckDefinable\AtBeginShipoutDiscard
161 \def\AtBeginShipoutDiscard{%
162   \deadcycles=\z@
163   \global\AtBegShi@Discardedtrue
164 }

165 \begingroup\expandafter\expandafter\expandafter\endgroup
166 \expandafter\ifx\csname currentgrouplevel\endcsname\relax
167   \catcode‘X=9 % ignore

```

```

168 \catcode'E=14 % comment
169 \else
170 \catcode'X=14 % comment
171 \catcode'E=9 % ignore
172 \fi

\AtBegShi@Shipout

173 \def\AtBegShi@Shipout{%
174 X \begingroup
175 X \setbox\AtBeginShipoutBox=\hbox\bgroup
176 X \kern\p@
177 E \edef\AtBegShi@GroupLevel{\number\currentgrouplevel}%
178 \afterassignment\AtBegShi@Test
179 X \global
180 \setbox\AtBeginShipoutBox=%
181 }

\AtBegShi@Test

182 \def\AtBegShi@Test{%
183 X \ifdim\lastkern=\z@
184 E \ifnum\AtBegShi@GroupLevel<\currentgrouplevel
185 \expandafter\aftergroup
186 \fi
187 \AtBegShi@Output
188 }

\AtBegShi@Output

189 \def\AtBegShi@Output{%
190 X \egroup
191 X \endgroup
192 \ifvoid\AtBeginShipoutBox
193 \@PackageWarning{atbegshi}{Ignoring void shipout box}%
194 \else
195 \let\AtBegShi@OrgProtect\protect
196 \csname set@typeset@protect\endcsname
197 \global\AtBegShi@Discardedfalse
198 \AtBegShi@Hook
199 \AtBegShi@HookNext
200 \gdef\AtBegShi@HookNext{%
201 \ifAtBegShi@Discarded
202 \@PackageInfoNoLine{atbegshi}{Shipout page discarded}%
203 \global\AtBegShi@Discardedfalse
204 \begingroup
205 \setbox\AtBeginShipoutBox\box\AtBeginShipoutBox
206 \endgroup
207 \let\protect\AtBegShi@OrgProtect
208 \else
209 \AtBegShi@First
210 \let\protect\AtBegShi@OrgProtect
211 \AtBegShi@OrgShipout\box\AtBeginShipoutBox
212 \fi
213 \fi
214 }

215 \catcode'\X=11 %
216 \catcode'\E=11 %

\AtBegShi@First

217 \def\AtBegShi@First{%
218 \begingroup
219 \def\@empty{%
220 \ifx\AtBegShi@HookFirst\@empty

```

```

221     \else
222         \setbox\z@=\vbox{%
223             \begingroup
224                 \AtBegShi@HookFirst
225             \endgroup
226         }%
227         \wd\z@=\z@
228         \ht\z@=\z@
229         \dp\z@=\z@
230         \global\setbox\AtBeginShipoutBox=\vbox{%
231             \baselineskip\z@skip
232             \lineskip\z@skip
233             \lineskiplimit\z@
234             \copy\z@
235             \copy\AtBeginShipoutBox
236         }%
237     \fi
238     \global\let\AtBegShi@First\@empty
239     \global\let\AtBeginShipoutFirst\AtBegShi@FirstDisabled
240 \endgroup
241 }

\AtBegShi@Hook
242 \gdef\AtBegShi@Hook{}

\AtBegShi@HookNext
243 \gdef\AtBegShi@HookNext{}

\AtBegShi@HookFirst
244 \gdef\AtBegShi@HookFirst{}

\AtBeginShipout
245 \AtBegShi@CheckDefinable\AtBeginShipout
246 \def\AtBeginShipout{%
247     \AtBegShi@AddHook\AtBegShi@Hook
248 }

\AtBeginShipoutNext
249 \AtBegShi@CheckDefinable\AtBeginShipoutNext
250 \def\AtBeginShipoutNext{%
251     \AtBegShi@AddHook\AtBegShi@HookNext
252 }

\AtBeginShipoutFirst
253 \AtBegShi@CheckDefinable\AtBeginShipoutFirst
254 \def\AtBeginShipoutFirst{%
255     \AtBegShi@AddTo\AtBegShi@HookFirst
256 }

\AtBegShi@FirstDisabled
257 \long\def\AtBegShi@FirstDisabled#1{%
258     \@PackageWarning{atbegshi}{%
259         First page is already shipped out, ignoring\MessageBreak
260         \string\AtBeginShipoutFirst
261     }%
262 }

\AtBegShi@AddTo
263 \begingroup\expandafter\expandafter\expandafter\endgroup
264 \expandafter\ifx\csname g@addto@macro\endcsname\relax
265     \long\def\AtBegShi@AddTo#1#2{%

```

```

266     \begingroup
267     \toks\z@\expandafter{#1#2}%
268     \xdef#1{\the\toks\z@}%
269     \endgroup
270 }%
271 \else
272   \let\AtBegShi@AddTo\g@addto@macro
273 \fi

```

\AtBegShi@AddHook

```

274 \long\def\AtBegShi@AddHook#1#2{%
275   \AtBegShi@AddTo#1{\AtBegShi@Item{#2}}%
276 }

```

\AtBegShi@Item

```

277 \long\def\AtBegShi@Item#1{%
278   \ifAtBegShi@Discarded
279   \else
280     #1%
281     \ifvoid\AtBeginShipoutBox
282       \@PackageWarning{atbegshi}{%
283         Shipout box was voided by hook,\MessageBreak
284         ignoring shipout box%
285       }%
286       \AtBeginShipoutDiscard
287     \fi
288   \fi
289 }

```

\AtBeginShipoutInit

```

290 \AtBegShi@CheckDefinable\AtBeginShipoutInit
291 \def\AtBeginShipoutInit{%
292   \csname newbox\endcsname\AtBeginShipoutBox
293   \AtBegShi@CheckDefinable\AtBegShi@OrgShipout
294   \global\let\AtBegShi@OrgShipout\shipout
295   \global\let\shipout\AtBegShi@Shipout
296   \gdef\AtBeginShipoutInit{}%
297 }

298 \begingroup\expandafter\expandafter\expandafter\endgroup
299 \expandafter\ifx\csname AtBeginDocument\endcsname\relax
300   \AtBeginShipoutInit
301 \else
302   \AtBeginDocument{\AtBeginShipoutInit}%
303 \fi

```

### 3.4 Positioning

```

304 \begingroup\expandafter\expandafter\expandafter\endgroup
305 \expandafter\ifx\csname RequirePackage\endcsname\relax
306   \input ifpdf.sty\relax
307 \else
308   \RequirePackage{ifpdf}\relax
309 \fi

310 \ifpdf
311   \def\AtBegShi@horigin{\pdfhorigin}%
312   \def\AtBegShi@vorigin{\pdfvorigin}%
313 \else
314   \def\AtBegShi@horigin{72.27pt}%
315   \def\AtBegShi@vorigin{72.27pt}%
316 \fi

```

```

317 \begingroup
318 \ifcase
319   \expandafter\ifx\csname picture\endcsname\relax
320     1%
321   \else
322     \expandafter\ifx\csname endpicture\endcsname\relax
323       1%
324     \else
325       0%
326     \fi
327   \fi
328 \endgroup
329 \def\AtBegShi@BeginPicture{%
330   \begingroup
331   \picture(0,0)\relax
332   \begingroup\expandafter\expandafter\expandafter\endgroup
333   \expandafter\ifx\csname unitlength\endcsname\relax
334   \else
335     \unitlength=1pt\relax
336   \fi
337   \ignorespaces
338 }%
339 \def\AtBegShi@EndPicture{%
340   \endpicture
341   \endgroup
342 }%
343 \else
344   \endgroup
345   \def\AtBegShi@BeginPicture{%
346     \setbox0=\hbox\bgroup
347     \begingroup
348     \ignorespaces
349   }%
350   \def\AtBegShi@EndPicture{%
351     \endgroup
352     \egroup
353     \ht0=0pt\relax
354     \dp0=0pt\relax
355     \copy0 %
356   }%
357 \fi
358 \def\AtBeginShipoutUpperLeft#1{%
359   \global\setbox\AtBeginShipoutBox=\hbox{%
360     \rlap{%
361       \kern-\AtBegShi@horigin\relax
362       \vbox to 0pt{%
363         \kern-\AtBegShi@vorigin\relax
364         \kern-\ht\AtBeginShipoutBox
365         \AtBegShi@BeginPicture
366         #1%
367         \AtBegShi@EndPicture
368         \vss
369       }%
370     }%
371   \box\AtBeginShipoutBox
372 }%
373 }

```

### 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.

```

374 \def\AtBegShi@AbortIfUndefined#1{%

```

```

375 \begingroup\expandafter\expandafter\expandafter\endgroup
376 \expandafter\ifx\csname#1\endcsname\relax
377   \AtBegShi@AtEnd
378   \expandafter\endinput
379 \fi
380 }
381 \AtBegShi@AbortIfUndefined{currentgrouplevel}
382 \AtBegShi@AbortIfUndefined{AtBeginDocument}
383 \AtBegShi@AbortIfUndefined{@ifpackageloaded}
384 \AtBegShi@AbortIfUndefined{@ifclassloaded}

```

### 3.5.1 Package crop

Fix of method and box.

```

385 \def\AtBegShi@PatchCrop{%
386   \begingroup
387   \def\AtBegShi@Crop@shipout{%
388     \afterassignment\CROP@ship
389     \setbox\@cclv=%
390   }%
391   \def\AtBegShi@Crop@ship{%
392     \ifvoid\@cclv
393       \expandafter\aftergroup
394     \fi
395     \CROP@@ship
396   }%
397   \def\AtBegShi@Crop@shiplist{%
398     \lineskip\z@
399     \lineskiplimit\z@
400     \baselineskip\z@
401     \CROP@kernel
402     \box\@cclv
403   }%
404   \def\AtBegShi@Crop@@ship{%
405     \CROP@shipout\vbox{%
406       \CROP@shiplist
407     }%
408   }%
409   \ifx\AtBegShi@Crop@ship\CROP@ship
410     \ifx\AtBegShi@Crop@shiplist\CROP@shiplist
411       \ifx\AtBegShi@Crop@@ship\CROP@@ship
412         \let\AtBegShi@found\relax
413         \ifx\shipout\AtBegShi@Crop@shipout
414           \def\AtBegShi@found{\shipout}%
415         \else\ifx\AtBegShi@OrgShipout\AtBegShi@Crop@shipout
416           \def\AtBegShi@found{\AtBegShi@OrgShipout}%
417         \else\ifx\@EveryShipout@Org@Shipout\AtBegShi@Crop@shipout
418           \def\AtBegShi@found{\@EveryShipout@Org@Shipout}%
419         \else\ifx\GPTorg@shipout\AtBegShi@Crop@shipout
420           \def\AtBegShi@found{\GPTorg@shipout}%
421         \else\ifx\THBorg@shipout\AtBegShi@Crop@shipout
422           \def\AtBegShi@found{\THBorg@shipout}%
423         \else\ifx\mem@oldshipout\AtBegShi@Crop@shipout
424           \def\AtBegShi@found{\mem@oldshipout}%
425         \fi\fi\fi\fi\fi\fi
426         \ifx\AtBegShi@found\relax
427           \else
428             \expandafter\endgroup
429             \expandafter\def\AtBegShi@found{%
430               \edef\AtBegShi@GroupLevel{\number\currentgrouplevel}%
431               \afterassignment\CROP@ship
432               \setbox\AtBeginShipoutBox=%

```



```

433 }%
434 \def\CROP@ship{%
435   \ifnum\AtBegShi@GroupLevel=\currentgrouplevel
436   \else
437     \expandafter\aftergroup
438     \fi
439   \CROP@@ship
440 }%
441 \def\CROP@shiplist{%
442   \lineskip\z@
443   \lineskiplimit\z@
444   \baselineskip\z@
445   \CROP@kernel
446   \box\AtBeginShipoutBox
447 }%
448 \def\CROP@@ship{%
449   \ifvoid\AtBeginShipoutBox
450   \else
451     \setbox\AtBeginShipoutBox=\vbox{%
452       \CROP@shiplist
453     }%
454     \expandafter\CROP@shipout
455     \expandafter\box
456     \expandafter\AtBeginShipoutBox
457   \fi
458 }%
459 \@PackageInfoNoLine{atbegshi}{Package 'crop' patched}%
460 \begingroup
461 \fi
462 \fi
463 \fi
464 \fi
465 \endgroup
466 \let\AtBegShi@PatchCrop\relax
467 }
468 \ifpackageloaded{crop}{%
469   \AtBegShi@PatchCrop
470 }{%
471   \AtBeginDocument{\AtBegShi@PatchCrop}%
472 }

```

### 3.5.2 Package everyshi

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

```

473 \def\AtBegShi@PatchEveryshi{%
474   \begingroup
475     \long\def\AtBegShi@Everyshi@shipout{%
476       \afterassignment\@EveryShipout@Test
477       \global\setbox\@cclv= %
478     }%
479     \long\def\AtBegShi@Everyshi@Test{%
480       \ifvoid\@cclv\relax
481         \aftergroup\@EveryShipout@Output
482       \else
483         \@EveryShipout@Output
484       \fi
485     }%
486     \ifx\AtBegShi@Everyshi@Test\@EveryShipout@Test
487       \let\AtBegShi@found\relax
488       \ifx\shipout\AtBegShi@Everyshi@shipout
489         \def\AtBegShi@found{\shipout}%
490       \else\ifx\AtBegShi@OrgShipout\AtBegShi@Everyshi@shipout

```

```

491     \def\AtBegShi@found{\AtBegShi@OrgShipout}%
492 \else\ifx\CROP@shipout\AtBegShi@Everyshi@shipout
493     \def\AtBegShi@found{\CROP@shipout}%
494 \else\ifx\GPTorg@shipout\AtBegShi@Everyshi@shipout
495     \def\AtBegShi@found{\GPTorg@shipout}%
496 \else\ifx\THBorg@shipout\AtBegShi@Everyshi@shipout
497     \def\AtBegShi@found{\THBorg@shipout}%
498 \else\ifx\mem@oldshipout\AtBegShi@Everyshi@shipout
499     \def\AtBegShi@found{\mem@oldshipout}%
500 \else
501     \expandafter\ifx\csname @EveryShipout@Org@Shipout\endcsname
502         \relax
503         \ifx\@EveryShipout@Shipout\AtBegShi@Everyshi@shipout
504             \def\AtBegShi@found{\@EveryShipout@Shipout}%
505         \fi
506     \fi
507 \fi\fi\fi\fi\fi\fi
508 \ifx\AtBegShi@found\relax
509 \else
510     \expandafter\endgroup
511     \expandafter\def\AtBegShi@found{%
512         \edef\AtBegShi@GroupLevel{\number\currentgrouplevel}%
513         \afterassignment\@EveryShipout@Test
514         \setbox\AtBeginShipoutBox=%
515     }%
516     \def\@EveryShipout@Test{%
517         \ifnum\AtBegShi@GroupLevel=\currentgrouplevel
518         \else
519             \expandafter\aftergroup
520             \fi
521         \AtBegShi@Everyshi@Output
522     }%
523     \def\AtBegShi@Everyshi@Output{%
524         \ifvoid\AtBeginShipoutBox
525         \else
526             \global\setbox\@cclv\box\AtBeginShipoutBox
527             \expandafter\@EveryShipout@Output
528         \fi
529     }%
530     \@PackageInfoNoLine{atbegshi}{Package ‘everyshi’ patched}%
531     \begingroup
532     \fi
533 \fi
534 \endgroup
535 \let\AtBegShi@PatchEveryshi\relax
536 }
537 \ifpackageloaded{everyshi}{%
538     \AtBegShi@PatchEveryshi
539 }{%
540     \AtBeginDocument{\AtBegShi@PatchEveryshi}%
541 }

```

### 3.5.3 Class memoir

Fix of method and box.

```

542 \def\AtBegShi@PatchMemoir{%
543     \begingroup
544     \def\AtBegShi@Memoir@shipout{%
545         \afterassignment\mem@shipi
546         \setbox\@cclv=%
547     }%
548     \def\AtBegShi@Memoir@shipi{%

```

```

549     \ifvoid\@cclv
550     \expandafter\aftergroup
551     \fi
552     \mem@shipii
553 }%
554 \def\AtBegShi@Memoir@shipiiA{%
555     \mem@oldshipout\ vbox{%
556         \trimmarks
557         \unvbox\@cclv
558     }%
559 }%
560 \def\AtBegShi@Memoir@shipiiB{%
561     \ifvoid\@cclv
562     \mem@oldshipout\ box\@cclv
563     \else
564     \mem@oldshipout\ vbox{%
565         \trimmarks
566         \unvbox\@cclv
567     }%
568     \fi
569 }%
570 \ifx\AtBegShi@Memoir@shipi\mem@shipi
571     \ifcase\ifx\AtBegShi@Memoir@shipiiA\mem@shipii
572         \z@
573     \else
574         \ifx\AtBegShi@Memoir@shipiiB\mem@shipii
575             \z@
576         \else
577             \@ne
578         \fi
579     \fi
580 \let\AtBegShi@found\relax
581 \ifx\shipout\AtBegShi@Memoir@shipout
582     \def\AtBegShi@found{\shipout}%
583 \else\ifx\AtBegShi@OrgShipout\AtBegShi@Memoir@shipout
584     \def\AtBegShi@found{\AtBegShi@OrgShipout}%
585 \else\ifx\CROP@shipout\AtBegShi@Memoir@shipout
586     \def\AtBegShi@found{\CROP@shipout}%
587 \else\ifx\GPTorg@shipout\AtBegShi@Memoir@shipout
588     \def\AtBegShi@found{\GPTorg@shipout}%
589 \else\ifx\THBorg@shipout\AtBegShi@Memoir@shipout
590     \def\AtBegShi@found{\THBorg@shipout}%
591 \else\ifx\@EveryShipout@Org@Shipout\AtBegShi@Memoir@shipout
592     \def\AtBegShi@found{\@EveryShipout@Org@Shipout}%
593 \fi\fi\fi\fi\fi\fi
594 \ifx\AtBegShi@found\relax
595 \else
596     \expandafter\endgroup
597     \expandafter\def\AtBegShi@found{%
598         \edef\AtBegShi@GroupLevel{\number\currentgrouplevel}%
599         \afterassignment\mem@shipi
600         \setbox\AtBeginShipoutBox=%
601     }%
602     \def\mem@shipi{%
603         \ifnum\AtBegShi@GroupLevel=\currentgrouplevel
604         \else
605             \expandafter\aftergroup
606         \fi
607         \mem@shipii
608     }%
609     \def\mem@shipii{%
610         \ifvoid\AtBeginShipoutBox

```

```

611         \else
612         \setbox\AtBeginShipoutBox=\vbox{%
613         \trimmarks
614         \ifvbox\AtBeginShipoutBox
615         \unvbox\AtBeginShipoutBox
616         \else
617         \box\AtBeginShipoutBox
618         \fi
619         }%
620         \expandafter\mem@oldshipout
621         \expandafter\box
622         \expandafter\AtBeginShipoutBox
623         \fi
624     }%
625     \@PackageInfoNoLine{atbegshi}{Class 'memoir' patched}%
626     \begingroup
627     \fi
628     \fi
629     \fi
630 \endgroup
631 \let\AtBegShi@PatchMmemoir\relax
632 }
633 \ifclassloaded{memoir}{%
634     \AtBegShi@PatchMmemoir
635 }{%
636     \AtBeginDocument{\AtBegShi@PatchMmemoir}%
637 }
638 \AtBegShi@AtEnd
639 </package>

```

## 4 Test

### 4.1 Catcode checks for loading

```

640 <*test1>
641 \catcode'\{=1 %
642 \catcode'\}=2 %
643 \catcode'\#=6 %
644 \catcode'\@=11 %
645 \expandafter\ifx\csname count@\endcsname\relax
646     \countdef\count@=255 %
647 \fi
648 \expandafter\ifx\csname @gobble\endcsname\relax
649     \long\def\@gobble#1{%
650 \fi
651 \expandafter\ifx\csname @firstofone\endcsname\relax
652     \long\def\@firstofone#1{#1}%
653 \fi
654 \expandafter\ifx\csname loop\endcsname\relax
655     \expandafter\@firstofone
656 \else
657     \expandafter\@gobble
658 \fi
659 {%
660     \def\loop#1\repeat{%
661         \def\body{#1}%
662         \iterate
663     }%
664     \def\iterate{%
665         \body
666         \let\next\iterate

```

```

667     \else
668         \let\next\relax
669     \fi
670     \next
671 }%
672 \let\repeat=\fi
673 }%
674 \def\RestoreCatcodes{}
675 \count@=0 %
676 \loop
677   \edef\RestoreCatcodes{%
678     \RestoreCatcodes
679     \catcode\the\count@=\the\catcode\count@\relax
680   }%
681   \ifnum\count@<255 %
682     \advance\count@ 1 %
683   \repeat
684
685 \def\RangeCatcodeInvalid#1#2{%
686   \count@=#1\relax
687   \loop
688     \catcode\count@=15 %
689     \ifnum\count@<#2\relax
690       \advance\count@ 1 %
691     \repeat
692 }
693 \expandafter\ifx\csname LoadCommand\endcsname\relax
694   \def\LoadCommand{\input atbegshi.sty\relax}%
695 \fi
696 \def\Test{%
697   \RangeCatcodeInvalid{0}{47}%
698   \RangeCatcodeInvalid{58}{64}%
699   \RangeCatcodeInvalid{91}{96}%
700   \RangeCatcodeInvalid{123}{255}%
701   \catcode'\@=12 %
702   \catcode'\=0 %
703   \catcode'\{=1 %
704   \catcode'\}=2 %
705   \catcode'\#=6 %
706   \catcode'\[=12 %
707   \catcode'\]=12 %
708   \catcode'\%=14 %
709   \catcode'\ =10 %
710   \catcode13=5 %
711   \LoadCommand
712   \RestoreCatcodes
713 }
714 \Test
715 \csname @@end\endcsname
716 \end
717 </test1>
718 <*test2>
719 \input atbegshi.sty\relax
720 \def\msg#{\immediate\write16}
721 \msg{File: atbegshi-test2.tex 2007/09/09 v1.6 Test file for plain-TeX}
722 \def\testmsg#1#2{%
723   \msg{}%
724   \msg{*** Test with box (#1), expected page output [#2]}% hash-ok
725 }
726
727 \newbox\voidbox
728 \def\void{\box\voidbox}

```

```

729 \begingroup
730   \setbox\voidbox=\void
731 \endgroup
732
733 \count0=0\relax
734 \AtBeginShipout{%
735   \global\advance\count0 by 1\relax
736   \msg{* Inside \string\AtBeginShipout: [\the\count0]}%
737 }
738
739 \AtBeginShipoutFirst{%
740   \msg{* Inside \string\AtBeginShipoutFirst}%
741   Hello World%
742 }
743
744 \testmsg{\string\null}{1}
745 \shipout\null
746
747 \AtBeginShipoutFirst{%
748   This is too late%
749 }
750
751 \testmsg{void}{}
752 \shipout\void
753
754 \testmsg{\string\copy255 (not void)}{2}
755 \setbox255\hbox{\vrule height 10bp width 10bp}
756 \shipout\copy255 %
757
758 \testmsg{\string\copy255 (again)}{3}
759 \shipout\copy255 %
760
761 \testmsg{\string\box255}{4}
762 \shipout\box255 %
763
764 \testmsg{\string\box255 (again)}{}
765 \shipout\box255 %
766
767 \testmsg{\string\hbox}{5}
768 \shipout\hbox{\vrule height 5bp width 20bp}
769
770 \testmsg{\string\vbox}{6}
771 \shipout\vbox{\hrule height 20bp width 5bp}
772
773 \testmsg{\string\null, voided by hook}{}
774 \def\VoidBox{%
775   \begingroup
776     \setbox\AtBeginShipoutBox=\box\AtBeginShipoutBox
777   \endgroup
778 }
779 \AtBeginShipout{\VoidBox}
780 \shipout\null
781 \def\VoidBox{}
782
783 \msg{*** \string\begingroup}
784 \begingroup
785   \testmsg{void}{}%
786   \shipout\void
787 \msg{*** \string\endgroup}
788 \endgroup
789
790 \msg{*** \string\begingroup}

```

```

791 \begingroup
792   \testmsg{void}{}%
793   \shipout\void
794   \testmsg{\string\null}{8}%
795   \shipout\null
796 \msg{*** \string\endgroup}
797 \endgroup
798
799 \testmsg{output routine}{9}
800 Hello World
801 \vfill
802 \eject
803
804 \testmsg{\string\null\space(discarded)}{}
805 \AtBeginShipout{%
806   \msg{* Inside \string\AtBeginShipout: DISCARD}%
807   \AtBeginShipoutDiscard
808 }
809 \shipout\null
810
811 \end
812 \test2)

813 (*test3)
814 \NeedsTeXFormat{LaTeX2e}
815 \ProvidesFile{atbegshi-test3.tex}[2007/09/09 v1.6 Test file for LaTeX]
816 \RequirePackage{color}
817 \pagecolor{yellow}
818 \documentclass[a5paper,showtrims]{memoir}
819 \usepackage{atbegshi}
820 \AtBeginShipout{%
821   \setbox\AtBeginShipoutBox=\vbox{%
822     \vbox to 0pt{%
823       \kern-1.5in %
824       \hbox to 0pt{%
825         \kern-1.5in %
826         \color{blue}%
827         \rule{1in}{1in}%
828         \hss
829       }%
830       \vss
831     }%
832     \hrule
833     \hbox{\vrule\box\AtBeginShipoutBox\vrule}%
834     \hrule
835   }%
836 }
837 \usepackage{eso-pic}
838 \makeatletter
839 \@EveryShipout@Init
840 \let\@EveryShipout@Init\relax
841 \makeatother
842 \AddToShipoutPicture{%
843   \hspace{.52\paperwidth}%
844   \colorbox{cyan}{%
845     \rule{0mm}{\paperheight}%
846     \hspace{.48\paperwidth}%
847   }%
848 }

```

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

```

849 \expandafter\let\csname ver@crop.sty\endcsname\relax
850 \usepackage[color=red,cross,a4,center]{crop}

```

```

851 \begin{document}
852 \shipout\null
853 \shipout\box\csname voidb@x\endcsname
854 \section{Hello World}
855 \end{document}
856 \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:macros/latex/contrib/oberdiek/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
```

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

<code>atbegshi.sty</code>	→ <code>tex/generic/oberdiek/atbegshi.sty</code>
<code>atbegshi.pdf</code>	→ <code>doc/latex/oberdiek/atbegshi.pdf</code>
<code>atbegshi-example.tex</code>	→ <code>doc/latex/oberdiek/atbegshi-example.tex</code>
<code>test/atbegshi-test1.tex</code>	→ <code>doc/latex/oberdiek/test/atbegshi-test1.tex</code>
<code>test/atbegshi-test2.tex</code>	→ <code>doc/latex/oberdiek/test/atbegshi-test2.tex</code>
<code>test/atbegshi-test3.tex</code>	→ <code>doc/latex/oberdiek/test/atbegshi-test3.tex</code>
<code>atbegshi.dtx</code>	→ <code>source/latex/oberdiek/atbegshi.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`.

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



## 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  $\epsilon$ - $\text{\TeX}$  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.

## 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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