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bophook, a beginning-of-page hook*

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1 Introduction

This program adds two L^AT_EX hooks to set up the page layout and output material in the background of every page. In order to use the package with `hyperref`, you have to load `hyperref` first.

`\AtBeginPage` Using the `\AtBeginPage` hook, you can add material in the background of a page. Think of it as a construct that does: For every page, create a picture environment with its origin at the top left corner¹ of the paper (resp., output device). So for example, you can put an image that is three centimeters from the left border and five from the top border by saying²

```
\AtBeginPage{%  
  \setlength{\unitlength}{1cm}  
  \put(3, -5){\makebox(0,0)[t1]{\includegraphics{image}}}
```

Of course, reusing `\AtBeginPage` during the document changes the page background of the next page that is going to start. No spurious spaces are generated whatsoever. `\AtBeginPage` eats up every white space after its closing brace to allow its use in horizontal mode. This hook uses normal T_EX boxes and is therefore not bound with respect to a certain output driver.

`\PageLayout` In normal L^AT_EX page makeup, there is few if any room for a user to redefine page width and length and/or margin settings. These should be set in the `\ps@...` commands, but are sometimes interfering with current pages that have not yet been shipped out. The idea is that a page style command should give these makeup commands wrapped in `\PageLayout{}`, which is guaranteed to be executed on every page where that page style is in effect.

2 Realization

We straightforwardly modify the output routine where the `\AtBeginDvi` code takes place. This could clash with any other routine that does the same thing.

*This file has version number v0.02, last revised on 2001/03/29, documentation dated 2001/03/29.

¹When I mean the top left corner of the paper, I do *not* mean some 25.4mm down and to the right of it.

²This page has a box created according to these parameters.

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Caveat emptor.

Start by ignoring all options.

```
1 \ProcessOptions \relax
```

`\PageLayout` The `\PageLayout` command just stores its argument in a global variable, which is initialized with the empty value.

```
2 \newcommand*\PageLayout}[1]{\gdef\BH@pagelayout{#1}\ignorespaces }
3 \let \BH@pagelayout \relax
```

`\AtBeginPage` Likewise does `\AtBeginPage`.

```
4 \newcommand*\AtBeginPage}[1]{\gdef\BH@originpic{#1}\ignorespaces }
5 \let \BH@originpic \relax
```

The `hyperref` package does a lot of modification to the L^AT_EX kernel. Prepare for the case that it is loaded. Note that it has to be loaded prior to `bophook`!

We check the original definition of the internal `begin-dvi` hook. In case this has been modified, either by a new kernel or another style file, a warning will be issued.

```
6 \ifpackageloaded{hyperref}{%
7   \CheckCommand*\@begindvi{%
8     \unvbox \@begindvibox
9     \ifHy@pageanchor
10      \@hyperfixhead
11      \global\let \@begindvi \@hyperfixhead
12    \else
13      \global\let \@begindvi \HyPL@EveryPage
14    \fi } }{%
15  \CheckCommand*\@begindvi{%
16    \unvbox \@begindvibox
17    \global\let \@begindvi \@empty}}
```

`\@begindvi` Having verified, that it is like it should have been, we insert our own code. `\AtBeginDvi`-code is still executed on the first page before the `\AtBeginPage`-code of page 1. No provision is taken (as it was) that `\AtBeginDvi`-code might create typeset output.

`hyperref` performs different actions according to a switch. This behaviour is initiated at the start of the first page. We record it for reference in `\@BH@originpic`.

```
18 \let \BH@hyperpageaction \@empty
19 \ifpackageloaded{hyperref}{%
20   \renewcommand*\@begindvi{%
21     \unvbox \@begindvibox
22     \ifHy@pageanchor
23       \@hyperfixhead
24       \BH@originprint
25     \global\let \BH@hyperpageaction \@hyperfixhead
26   \else
27     \BH@originprint
28   \global\let \BH@hyperpageaction \HyPL@EveryPage
29 \fi
30 \global\let \@begindvi \BH@originprint
31 } }{% no hyperref
```

image

```
32 \renewcommand*\@beginndvi{%
33 \unvbox \@beginndvibox
34 \BH@originprint
35 \global\let \@beginndvi \BH@originprint}}
```

`\BH@originprint` We create a box that will be inserted at the “page origin” in the arcane Knuthian sense, that is, one inch down and to the right of the output medium start. It consists of the move to the real origin and the formatting of the `\AtBeginPage`-code flush top left and taking no horizontal nor vertical space. As one can easily see from the documentation of the `picture`-environment, there is no magic about a `picture`—a `\put`-command can simply be issued everywhere. It is however well sensible to *interpret* the typeset material as a `picture`.

```
36 \newcommand*\BH@originprint{%
37 \setbox\@tempboxa\vbox to\z@{%
38 \vskip-1in \moveleft1in \vbox{%
39 \hb@xt@\z@{%
40 \BH@originpic\hss}}\vss}
41 \dp\@tempboxa\z@
42 \box\@tempboxa \BH@pagelayout
43 \BH@hyperpageaction }
```