

Placing a full-width insert at the bottom of two columns

Barbara Beeton

There's one location on a two-column page where a full-width `\begin{figure*}` can't be placed under ordinary circumstances—the bottom. The package `stfloats` lifts that restriction—except for the first page. The purpose of the present exercise is to demonstrate that this can in fact be done, using only basic L^AT_EX tools.

Why might one want (or need) to do this? Consider a project for which an interim report is best expressed as a table or diagram, with very little prose, but the required report format specifies two columns. The impact of the data is lost if the illustration must be deferred to another page, while the first page is nearly empty. In fact, the meat of the report could even be lost, when the impatient recipient fails to turn the page over.

At the 2010 TUG annual meeting, Frank Mittelbach presented a talk entitled “Exhuming coffins from the last century” that dealt with the problems of positioning boxes on a page. The talk didn't make it into print in *TUGboat*, but Kaveh Bazargan was there with his recording equipment, and produced a video that can be viewed at river-valley.zeeba.tv/exhuming-coffins-from-the-last-century/. The techniques proposed there won't solve this problem any time soon, but they show promise for the future.

At TUG 2014 in Portland, Boris Veysman gave a talk¹ on composing a book in which the illustrations were more important—and occupied more space—than the text, and indeed, there were pages with

two columns of text at the top and a single wide illustration at the bottom. However, the nature of the material allowed all pages to be divided into four quadrants which could be managed individually or as horizontal or vertical pairs. That doesn't help in solving the more general problem.

So what can be done today? A L^AT_EX-flavored kludge that will produce a one-page document with two columns at the top and a full-width insertion at the bottom is shown in fig. 1.² Of course, this also works for a longer document, but for this demonstration, one *TUGboat* page is sufficient. It is also evident that the method works with footnotes (and other such insertions), and that cross-references work normally.

The figure is given as an override single-column [b] figure, in the first column. The page must contain enough text to continue into the second column. Once there is enough text, the trick is to issue a *negative* `\enlargethispage` command that will leave the bottom part of the second column blank, allowing the full-width figure to overflow into the empty area. (On a two-column page, `\enlargethispage` is equivalent to the (nonexistent) `\enlargethiscolumn`.)

Of course, this is entirely manual, and requires intervention and iteration, preferably after the text is final. Tweaking of L^AT_EX's float parameters, such as `\bottomfraction`, is likely. Captions may require still more effort. Nevertheless, there are situations in which it makes possible a desirable effect that cannot otherwise be accomplished. Enjoy!

◇ Barbara Beeton
<http://tug.org/TUGboat>
 tugboat (at) tug dot org

¹ “An output routine for an illustrated book: Making the *FAO Statistical Yearbook*”, *TUGboat* 35:2, pages 202–204.

² This technique was presented in [TeX.stackexchange.com/q/107270](http://tex.stackexchange.com/q/107270).

```
\documentclass{ltugboat}
\title{Placing a full-width insert at the bottom of two columns} \author{Barbara Beeton}
\begin{document}
\maketitle
There's one location on a two-column page where a full-width ...
\begin{figure}[b]\setlength{\hfuzz}{1.1\columnwidth}
\begin{minipage}{\textwidth}
\ttfamily ... code for the insertion ...
\end{minipage}
\end{figure}
At the 2010 \tug\ annual meeting, Frank Mittelbach presented ...
\enlargethispage{-16.5\baselineskip}
Of course, this is entirely manual, and requires intervention ...
\end{document}
```

Figure 1: A full-width figure at the bottom of the first page!