The \texttt{ltabptch} package\footnote{This manual corresponds to \texttt{ltabptch} v1.74d, dated 2005/01/10.}

patch for \texttt{Longtable}

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For David Carlisle’s \texttt{Longtable.sty}, version 4.11
Fixes \texttt{tools/3180} (Sebastian Rahtz) and \texttt{tools/3485}: missing/wrong interline glues above/below table.

Usage, no warranty, distribution as in \texttt{lppl.txt} on CTAN \url{macros/latex/base/lppl.txt}.

The problem(s):

Sebastian Rahtz (\texttt{tools/3180}) observed 2000/03/05 that there be a “spurios blank line” below the \texttt{longtable}. This impression may have been due to two spacing problems:

(1) There is $\backslash\text{parskip}$ and some interline glue below \texttt{longtable}, while there is no $\backslash\text{parskip}$ and no interline glue above (without head as specified by \texttt{\endhead} or \texttt{\firstendhead}) or just $\backslash\text{lineskip}$ 0.0 pt (with head—\texttt{\endhead}, \texttt{\endfirsthead}).

(2) After \texttt{longtable}, $\backslash\text{prevdepth}$ is the depth of the last line before the \texttt{longtable} (if there is no head) or the depth of the head (otherwise). So $\backslash\text{prevdepth}$ may be 0 pt. By contrast, the last table row has depth of at least $\backslash\text{dp}\@arstrutbox$—which should rather matter, and this is 3.6 pt or more.

—I have reported something like this as \texttt{tools/3485}, not entirely correctly. Details are presented below.
Solution presented:

(1) I think there should be \parskip and usual interline glue above, since the same would happen with a table in a center environment (e.g.). \noindent seems to work fatally; moreover, \LT@start’s decision whether to enter a new page would ignore \parskip and interline glue still needed. So emulate interline glue calculation according to \TeXbook p. 80 and add it by \vskip, along with \parskip. (This is rather a hack—a proper correction should perhaps not “emulate” but place the interlineglue changes of \LT@array inside the \vbox \LT@bchunk starts and treat glue between chunks in a new way.)

(2) Set \prevdepth to depth of box 0 before the latter is \unvbox’ed (which leaves \prevdepth untouched, \TeXbook p. 282) in \endlongtable.

I thought David Carlisle would change \Longtable according to my suggestions. By e-mail from 2003/04/07 however, he finds it better not to change \Longtable, in order not to change layouts of works that have been made using \Longtable so far (e-Mail 2003/04/08).

By the way:

1.) There are two successive lines in the \Longtable code (v4.11) together saying:

\prevdepth\z@\global
\global\let\LT@setprevdepth\relax

Isn’t the first \global just a typo? –Yes–this is David Carlisle’s answer in his e-mail dating from 2004/05/14.

2.) Couldn’t the one-column restriction easily be removed by using \columnwidth instead of \hsize?

Detailed diagnosis:
Concerning the question of “bugs” vs. “features”, you might reason what features should be aimed at.

(A) If there is \parskip below a \longtable, there should be \parskip above as well—shouldn’t it?

(B) Interline glue above should (in general) depend on the same values of \baselineskip and \lineskip as below—OK?

(C) Interline glue below a \longtable should depend on the depth of the last row, not on the depth of the head or of the last line above the \longtable—OK?
The recent versions of `longtable.sty` have not satisfied any of these three demands. Concerning (A), `\parskip` appears below the `longtable`, but not above. Concerning (B) (i) no interline glue appears above if there is no head, (ii) otherwise, only zero interline glue appears. Concerning (C) the interline glue below the `longtable` is calculated using the depth of (i) the last line above the `longtable` as `\prevdepth` when there is no head or of (ii) the head otherwise. (Thus I was wrong earlier when I claimed that `\prevdepth` were 0 pt after `longtable`. This only holds in the previous case (i) when the last line above the `longtable` has zero depth.)

You can observe this by playing with the demonstration file `ltabptch.tex` in CTAN folder `macros/latex/contrib/ltabptch`.

Reasons: For contributing a head to the main vertical list, `longtable` uses `\copy` or `\box`, which yields a `\box` according to TeXbook p. 278. Rows are contributed by `\unvbox`. Now, violation of (A) is due to the fact that neither `\copy` or `\box` of the head nor the `\unvbox` for table rows leads to execution of an `\indent` or `\noindent` (TeXbook pp. 282f., see also `horizontal command`). Violation of (B) is due either to (i) the fact that `\unvbox` is no `\box` (TeXbook p. 282/278) or to (ii) the fact that at `\copy` or `\box` `\baselineskip` and `\lineskip` are 0 pt. Violation of (C) is due to the fact that `\unvbox` does not change `\prevdepth` (TeXbook p. 282).

As to recognizable effects:

- Violation of (A) of course, has very little effect in general since `\parskip` is 0 pt plus 1 pt usually. This is hardly recognizable in the presence of the `\bigskipamount` above and below a `longtable`.

- Violation of (B) results in missing appropriate interline glue above, which often should be 3.6 pt more. This may rather be recognizable and may contribute to the impression that there even is a spurious blank line below the `longtable` (this is what Sebastian Rahtz reported in `tools/3180`).

- For the previous as well as for the details and the effects of violation of (C), consider the algorithm for calculating interline glue on p. 80 of the TeXbook. If there is no head, and the depth of the last line before the `longtable` is 0 pt, the interline glue below the `longtable` is `\baselineskip` minus the height of the first line after the `longtable`. The interline glue should be `\baselineskip` minus height of following line minus depth of last table row—if this depth is not too large (depending on `\lineskiplimit`). This depth is at least 3.6 pt. So the interline glue is often by 3.6 pt or more greater than is appropriate. Considering the missing interline glue above the `longtable` and the `\parskip` below, the glue after the `longtable` is by 6.2 pt (or more) plus 1 pt larger than the glue before. Due to the shrink component of the surrounding `\bigskipamount`, the glue following the `longtable` may be nearly twice as large as the glue before. — Usually, violation of (C) has no effect at all. Namely, there is a head
usually, and its depth is usually the same as the depth of the last row, namely \dp@arstrutbox.

Version history:

v1.7 2003/01/07  Sent around 2003/01/13 with first release of ednotes.sty.
          Sent to David Carlisle. Earlier versions were sent to
          Frank Mittelbach and the team.
v1.71 2003/01/22  Added version history.
v1.72 2003/01/27  Changed copyright notice.
v1.73 2004/05/13  Adapted to Longtable v4.11; new copyright; longtable →
                   Longtable (selectively). Added ‘I have ... 3485’.
v1.74 2004/08/05  Added ‘—Yes—...’.
                   2004/08/23  Corrected and extended diagnosis, sent to CTAN.
v1.74b .../08/23   ‘—’ → ‘–’; added that [C] usually doesn’t matter.
v1.74c .../08/31   ‘author-maintained’.
v1.74d 2005/01/10  Contact via HTTP.