The footnotenosplit package

Suppress orphan footnote rules when footnotes are not allowed to split

Munehiro Yamamoto
https://github.com/munepi/footnotenosplit

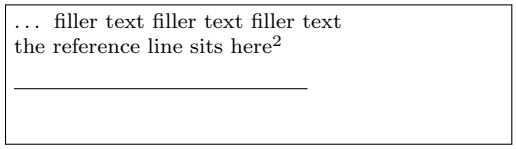
v1.1 (2026/11/17)

1 The problem

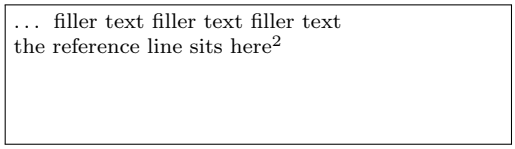
Setting `\interfootnotelinepenalty=10000` keeps footnote text from being split across pages: a footnote that does not fit on the current page is moved to the next page as a whole. This policy is common in book production, but it has two side effects.

1. The original page may end with a *lone* `\footnoterule` (plus the `\skip\footins` space) with *no footnote text below it*.
2. The footnote moved to the next page gets only `\splittopskip` (= `\footnotesep`) above its first line, so it sits closer to the rule than a normal footnote does.

Schematically, the bottom of the page where the footnote call sits:



(without footnotenosplit: a lone rule)



(with footnotenosplit: no rule)

Why it happens. When the footnote insertion begins with vertical material—a leading `\kern` at the top of `\@makefntext`, as in many book-production classes—and the page bottom has stretch (`\raggedbottom`), TEX's page builder "splits" the unsplittable insertion at its very top. The page then keeps an *empty* `\box\footins` that contains only that leading kern, and the LATEX output routine, which only tests `\ifvoid\footins`, duly typesets `\footnoterule` above the empty box. The phenomenon is a property of TEX's page builder and the LATEX output routine: it occurs with any engine (pdfLATEX, LuaLATEX, XeLATEX, (u)pLATEX) and any language.

2 What the package does

1. At the start of the output routine, if `\ht\footins` < `\footnotesep` (i.e. the footnote box holds no actual footnote line), `\box\footins` is discarded, so neither `\footnoterule` nor `\skip\footins` is emitted. The footnote itself is typeset normally on the next page.
2. `\splittopskip` inside `\@footnotetext` (`\H@@footnotetext` when hyperref is loaded) is patched to `\footnotesep` + `\footnotetopkern`, so that the moved footnote gets the same visual space below the rule as a normal footnote.

Tagged PDF. The package also works with `\DocumentMetadata{tagging=on}` (pdfLaTeX and LuaLaTeX). There, the LaTeX kernel's tagging code replaces `\@footnotetext`, so the package sets the adjusted `\splittopskip` in the `fntext/para` hook instead of patching `\@footnotetext`. The box discarded in item 1 is empty in tagged documents as well, so the structure tree is not affected.

3 Usage

```
\usepackage{footnotenosplit}

% If your class's \@makefntext starts with "\kern <dimen>",
% set \footnotetopkern to that dimension and replace the \kern:
\footnotetopkern=2pt
\makeatletter
\renewcommand\@makefntext[1]{\kern\footnotetopkern ... #1}
\makeatother
```

The dimen register `\footnotetopkern` (default: `0pt`) tells the package how much vertical material `\@makefntext` puts above the first footnote line; it is added to `\splittopskip` for footnotes moved to the next page.

Option `nopenalty`. By default the package sets `\interfootnotelinepenalty=\@M`. If your class already sets it, or you want to manage it yourself, load the package with `\usepackage[nopenalty]{footnotenosplit}`.

4 Implementation notes

The empty-box test is engine-independent, but where to hook it is not, so footnotenosplit.sty dispatches to one of two engine-specific files (do not load them directly):

footnotenosplit-latex.sty for LaTeX with the socket-based `\@makecol` (LaTeX2e 2025-06-01 or later; pdfLaTeX, LuaLaTeX, XeLaTeX, ...). It adds the test to the `build/column/before` hook, executed at the very beginning of `\@makecol`; the subsequent `\@outputbox@appendfootnotes` then sees a void `\footins` and emits neither `\footnoterule` nor `\skip\footins`.

footnotenosplit-ptex.sty for (u)pLaTeX, whose `plcore.ltx` overrides `\@makecol` with a pre-socket definition. It patches that `\@makecol` with etoolbox's `\patchcmd`.

On an older LaTeX kernel (before 2025-06-01) without the socket mechanism, the package issues a warning and only applies the `\splittopskip` patch.

5 Tests

The repository ships `test-latex.tex` (pdfLaTeX/LuaLaTeX/XeLaTeX) and `test-ptex.tex` ((u)pLaTeX + `dvipdfmx`), which reproduce the lone rule and verify its suppression, plus `test-latex-show.tex` and `test-ptex-show.tex`, which dump the patched macros to the log. The pdfLaTeX/LuaLaTeX tests also have tagged PDF variants (`\def\TAGGING{1}`, optionally with `\def\HYPERREF{1}`). See the comments in each file.

6 License

This package is licensed under the conditions of the LaTeX Project Public License, either version 1.3c of this license or any later version.

Copyright © 2026 Munehiro Yamamoto