

# Do you need some stretch?

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$\TeX$ 's `\leaders` primitive can be used to fill arbitrary space with a stretchable line (cf. `\hrulefill`). It is also possible to have an expandable triple line:

 The St. Anford Orchestra 

 Variations on a Theme by Tchaikovsky 

```
\def\triplefil{%
  \leaders\hrule height4pt depth-3.2pt\hfil
  \hskip0pt plus-1fil
  \leaders\vrule height1.6pt depth0pt\hfil
  \hskip0pt plus-1fil
  \leaders\vrule height-.6pt depth1pt\hfil
}
\def\triplefilledline#1{%
  \hbox to\hsize{%
    \vrule height4ptdepth3ptwidth.8pt
    \triplefil
    \vrule height10ptdepth1ptwidth.4pt
    \enspace\strut#1\enspace
    \vrule height10ptdepth1ptwidth.4pt
    \triplefil
    \vrule height4ptdepth3ptwidth.8pt
  } }
\triplefilledline{The St.\ Anford Orchestra}
\triplefilledline{Variations on a Theme by Tchaikovsky}
```

To understand what happens here one needs to count stretchability of leaders and glue in `\triplefil`. It is: `1fil` (from `\hfil`) + `-1fil` (from `\hskip`) + `1fil` + `-1fil` + `1fil`, which sums up to `1fil`. So when  $\TeX$  needs to set `\triplefil` to, say, `37pt` it stretches each `fil` of glue to that length. The first `\leaders` become `37pt` wide, then comes `\hskip` to `-37pt` (`-1fil`), and so  $\TeX$  overprints the second `\leaders` on the first, and the same repeats with the next glue and leaders.

This trick opens space for countless variations:

 The St. Anford Orchestra 

 Variations on a Theme by Tchaikovsky 