The bag of tricks

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Hello all,

One of the things that TEX is commonly said not to be able to do, is l e t t e r s p a c i n g. I do not want to get involved here in the debate over whether letterspacing is defendable or not. There are places where it's bad, and others where it can safely be used. Karl Berry gave me a particularly neat macro for letterspacing, and I'll leave its application to the reader's discretion[1].

The text to be spaced is passed as an argument:

```
\spreadout{The text} is spread.
```

T h e t e x t is spread.

and expandable material in the text is treated correctly:

```
\def\MoreText{more text}
\spreadout{Here is \MoreText}
than above.
```

H e r e i s m o r e t e x t than above.

The amount of spacing is controlled by a macro with the following default definition:

```
\def\spreadoutfactor{.15}
```

The basic idea behind the macro \spreadout is the following. First get rid of all expandable material

```
\def\spreadout#1{%
    \edef\temp{#1}
```

then start processing the result

```
\dimen0 = \spreadoutfactor em
\expandafter\dospreadout\temp\endmark
```

where

```
\def\dospreadout{%
  \afterassignment\findospreadout
  \let\next= }
```

This assigns the first token to \next, then calls \findospreadout. The latter macro basically amounts to

```
\next \kern\dimen0
```

except that it has to test for \endmark.

Actually, there are a few more gadgets in this macro: the control sequence \uppercase is respected by replacing \uppercase{text} by \uppercase{\spreadout{text}}. Furthermore, a control sequence \ellipsis is replaced by three spaced dots.

Here are the actual definitions

```
\def\spreadout#1{%
  \begingroup
    % prevent expansion of \ellipsis
    \def\ellipsis{\noexpand\ellipsis}%
    \xdef\temp{#1}%
  \endgroup
  \dimen0 = \spreadoutfactor em
  \expandafter\dospreadout\temp\endmark
}
\def\dospreadout{%
  \afterassignment\findospreadout
  \let\next= }
\def\findospreadout{%
  \ifx\next\endmark
    \let\nextaction = \relax
  \else
    \ifx\next\uppercase
      \let\nextaction = \douppercase
    \else
      \ifx\next\ellipsis
        \let\nextaction = \doellipsis
      \else
        \let\nextaction = \dospreadout
        \next
        \kern\dimen0
      \fi
    \fi
  \fi
  \nextaction
}
\def\douppercase#1{%
  \uppercase{\spreadout{#1}}\dospreadout}
\def\doellipsis{%
  \spreadout{...}\dospreadout}
\def\ellipsis{ellipsis}
\def\endmark{endmark}
```

(The last two definitions are an addition of mine to Karl's macros, since mucking with undefined macros is somewhat dangerous.)

This macro works well, and, although letterspaced words cannot be broken across lines, texts with spaces will be treated as normal paragraphs.

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[1] Philip Taylor gives macros for letterspacing in *TUGboat* vol. 14, no. 2. Their aim is to letterspace exactly a single line of text in a box.