Problem for a Saturday Morning — A Solution

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\newdimen\z \z=0pt
\font\big=cmbx10 scaled \magstep5
\newbox\query \setbox\query=\hbox{\big\raise6pt\hbox{\big\vphantom{thinspace}\vphantom{thinspace}}}\newdimen\leftedge \newdimen\rightedge
\leftedge=\hsize \divide\leftedge by 2 \rightedge=\leftedge \divide\rightedge by 2
\parshape 10 \z\hsize \z\hsize \z\hsize
\z\leftedge \rightedge \z\leftedge \rightedge \z\hsize
\newbox\partialpage \newcount\n \newdimen\savedvsize \savedvsize=\vsize
\newtoks\savedoutput \savedoutput=\output \newdimen\savedprevdepth \savedprevdepth=\prevdepth
\output={\global\setbox\partialpage=\vbox{\unvbox255}}
\topskip=\ht\strutbox \vsize=\topskip \n=245 \% we will store nine lines of text in boxes 246--254
\output={\global\advance\n by 1 \ifnum\n<255 \global\setbox\n=\box255 \else \unvbox\partialpage \prevdepth=\savedprevdepth \vskip\parskip \box246 \box247 \box248 \box249 \vskip\baselineskip \box250 \box251 \box252 \box253 \vskip\baselineskip \noveright\leftedge \hbox{\smash\query} \box255 \global\vsize=\maxdimen \fi}
\noindent

This puzzle was suggested to me by Sape Mullender, of the Centre for Mathematics and Computer Science in Amsterdam. He told me his belief that ‘‘the general design of \TeX\ is better than that of \{it troff\}, but the real guru can make \{it troff\} do things that you could never do in \TeX.’’ As an example, he showed me a page on which \{it troff\} had typeset a picture in the middle of a paragraph, with the text going around the picture. ‘‘It’s not pretty, but it can be done, and that’s what counts,’’ he said. Well, I have to admit that I didn’t think of a simple solution until the next Saturday morning; and I didn’t finish debugging it until that Saturday afternoon. Can you guess how I typeset the paragraph you’re now reading? (The answer will appear in the next issue. It doesn’t demonstrate the superiority of \TeX\ to \{it troff\}, but it does have some interesting and instructive features.)

\savedprevdepth=\prevdepth
\output={\global\setbox\partialpage=\vbox{\unvbox255}}\vfill\break \vsize=\savedvsize \output=\savedoutput \unvbox\partialpage \prevdepth=\savedprevdepth
% Improvements to this solution are welcome!