

The Other Printing Processes: 3

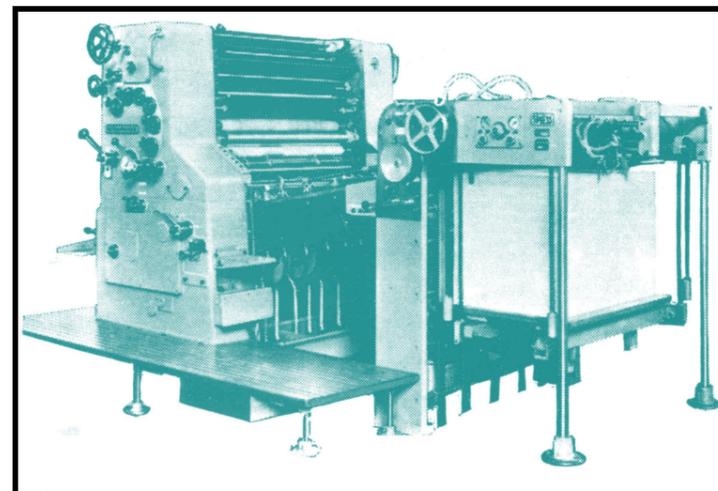
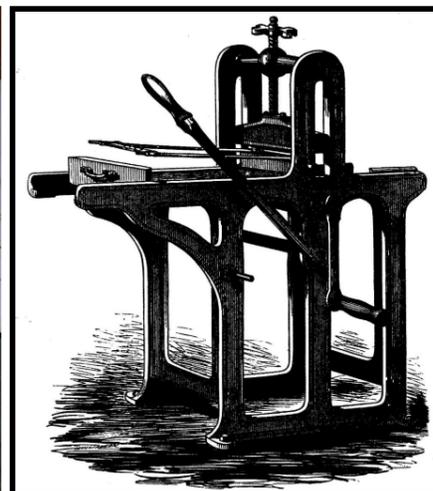
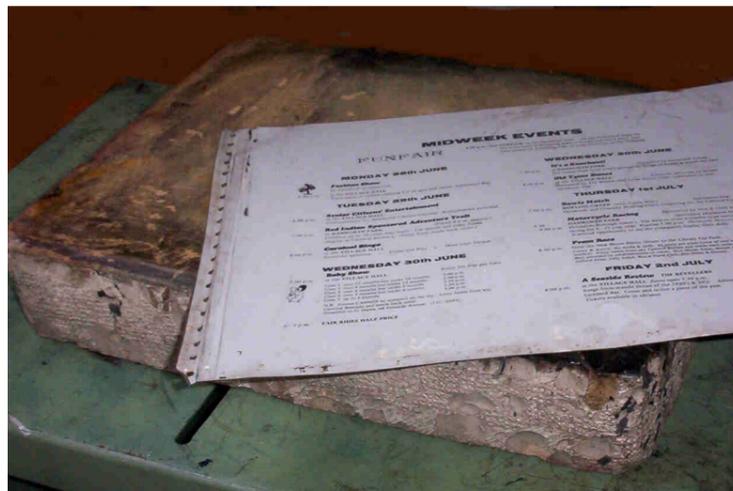
Lithography

Lithography is hardly new—Senefelder discovered the process in 1794—but illustrates how it is not just the process, but the materials available, and the resultant economics, that determine widespread adoption. Senefelder found that if you made a greasy mark on a suitable surface, then wet the rest of the surface, you could ink the mark with an oil-based ink which would not adhere to the rest of the surface, and then lift off a print onto paper or other materials. The advantage of this was that it offered great adaptability in how the original image was made on the printing surface. It could be drawn directly by artists, or “transferred” by pressing on a wet print from another printing process, or produced photographically by coating the surface with photographic chemicals. By printing onto a rubber blanket, and then onto the final sheet (known as *offset* printing) it could print on difficult materials such as metal sheets. Each of these offered new opportunities that the major process of the time, letterpress, could not easily compete with.

As a result, lithography became quite widely established, but limited to certain types of work. The limitation was the printing surface. Senefelder had found the most suitable material was fine-grained limestone from Bavaria, and since it had to be several inches thick (to be strong enough to print), it was extremely heavy and awkward

to handle, and limiting in press operation. Different alternatives were tried, but the problem with most metal sheets (the obvious choice) was the inability of the smooth surface to hold moisture. Eventually it was found that by *graining* the surface, roughening it by rolling sand and marbles over it, the surface could be made to hold moisture & capable of practical lithographic use. Now presses could be free from the constraint of a heavy flat printing surface, and lithography began to compete with letterpress significantly from the 1940s. The main limitation now was the process of setting the text: photographic typesetting was still being perfected (until the 1960s), and the commonest method used was to set and print text letterpress, then copy it by transfer or photographically for litho. This meant that lithography involved an extra stage and cost for text unless it was a reprint. Various “cold-print” methods were developed: effectively sophisticated variations on typing, but none really competed with the well-established quality of lettering available in letterpress. Only the success of photo-setting finally solved the problem, followed soon after by even more flexible and economic computer-generated setting. With the arrival of these, lithography, essentially a picture-based printing method, became far more adaptable and economic than letterpress, and the latter was doomed.

Today lithography is the dominant process in the printing industry.



*From far left:
A litho stone with a modern
metal litho plate on top.
An early hand litho press—the
paper was laid on the inked
stone, then dragged under a
blade to make the print.
A twentieth-century industrial
litho press unit: this could work
on its own to print one colour, or
run in tandem with more units
to print several colours in one
pass.*