

Halftone Process Encyclopedia Article

Halftone Process

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The halftone reproduction process is responsible for the now-familiar sets of large and small dots that comprise illustrations in today's newspapers and comic books. Invented by American printer Frederic Eugene Ives in 1880, halftone had a tremendous effect on newspaper's and other print media's ability to quickly and effectively reproduce illustrations, especially photographs. The invention of the halftone process arose from the need for a means of translating finely- shaded pictures onto printing plates (engraved sheets of metal which are covered with ink and pressed to paper to reproduce an image). Ives devised a system for expressing the shading with large and small dots.

In halftone reproduction, the original illustration is placed behind a screen of dark, crossed lines and photographed. The effect of the grid of lines is to divide the illustration into thousands of tiny, component parts, which translate in the photograph as dots of varying size. The image thus created is projected onto a light-sensitive metal plate, creating a "photoengraved" pattern of large and small dots. After the plate has been developed, it is submerged in acid before being inked and printed onto paper. Prior to the invention of halftone, newspapers relied largely on woodcuts for illustrations. Unlike woodcutting, which results in an illustration composed solely of black lines on a white surface, halftone's varied dot sizes allow the reproduction of the range of shades, or "halftones," in a picture, hence its name. Though the process was soon improved and refined, through, for example, the invention of a color halftone process using multiple, overlaid screens of primary colors, the technique of photographing through a grid remained essentially unchanged until the advent of the computers, scanners, and desktop publishing when the process became digitalized. Halftones now can be created on a computer using such software as PhotoShop.