# Computer drawings, experiments in scale, and the limits of computer plots

These drawings were conceived as an exploration about scale using computers, and to investigate the limits of the computer's abilities to plot very large and very small images.

The selected image was that of an outlined frontal view of a male figure derived from an architectural template. See below.
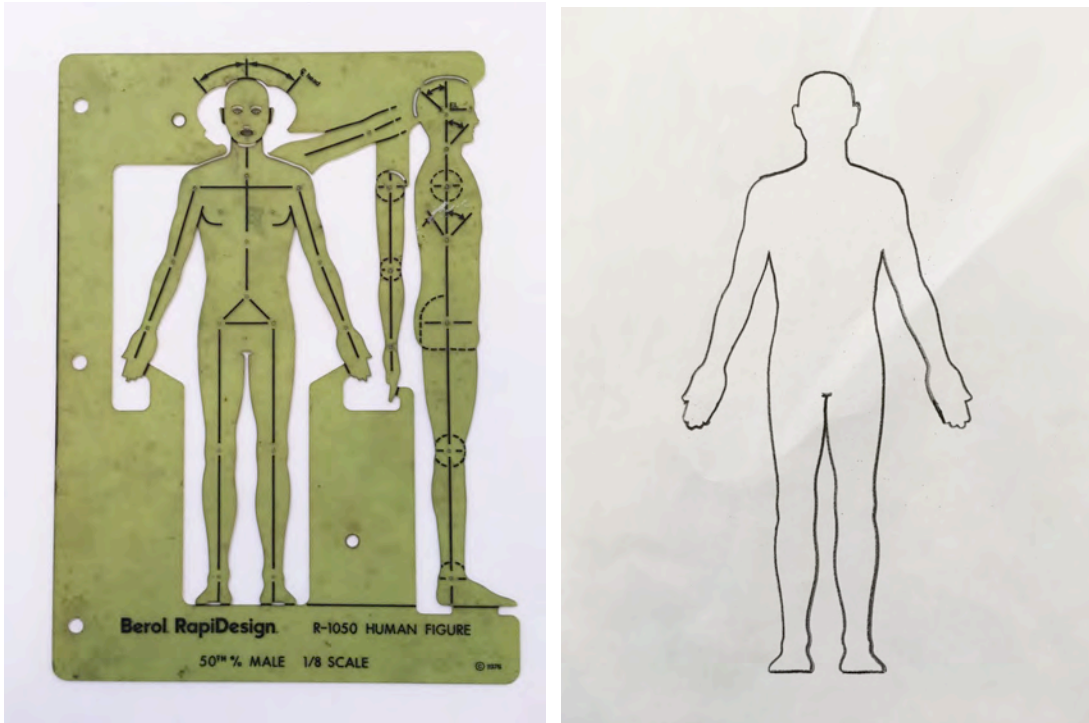
Experiments included reducing the image to fractions of its original size and enlarging it to gigantic proportions. The experiment was to see what the computer would do, if anything.

The plotters were small, flat bed types and used ink styluses. The largest size paper that would fit was tabloid size - 11 x 17 inches with an actual plotting area of 10 x 15 inches. Built-in air vacuum systems pulled the paper and held it in place during the printing. The styluses were driven by small servo-motors that connected to a small metal arm that moved back and forth across the surface (the X axis), with small metal wires that moved the stylus up and down the metal arm (the Y axis). The computer was able to calculate any size image, and while executing a print, these XY coordinates would be displayed on the terminal while the computer executed the plot. See below.
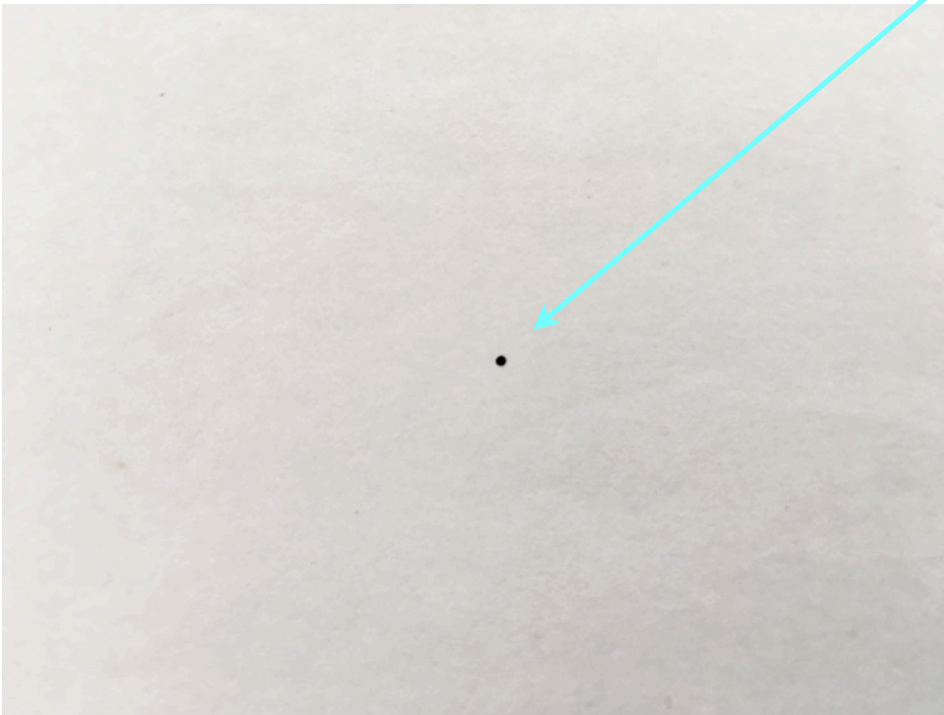
The first drawing of the human figure – identified/titled "GALBPX05-12" – was given a scale of .000001 (1/millionth) its original size. During the plot, the coordinates were displayed on the terminal. The plotter actually executed the drawing and displayed these coordinates, but because the drawing was so small, the diameter of the point of the stylus exceeded the tiny area of the scale. The stylus remained in a seemingly stationary location, and like the beak of a woodpecker, the stylus pecked out the drawing in a single spot. The resulting drawing was nothing more than a small dot, the size of a period, in the center of the page. See below.

COMPUTER AIDED DRAWING
SEPT.21,1982
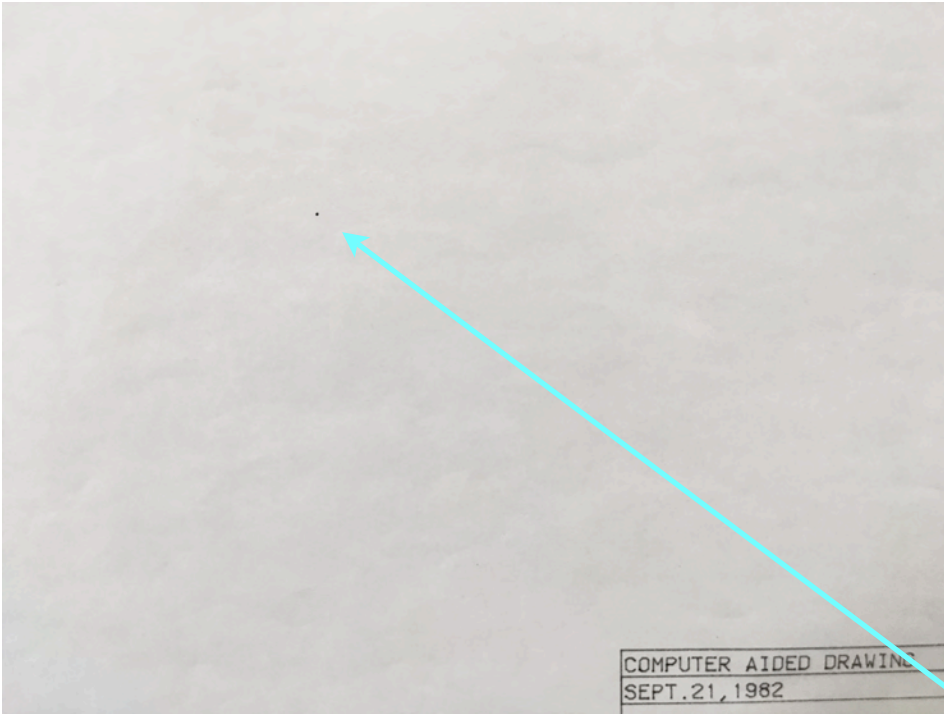
GALBPX05-12
1982
computer plot, ink on paper, 11x17 inches

detail view showing "dot" plot

The second drawing of the human figure – identified/titled "GALBP0X-14" – was given a scale of 1,000,000 scale. one million times its original size. During the plot, the coordinates were again displayed on the terminal. The plotter actually executed the drawing and displayed these coordinates, but because the drawing was so large, and the scale of the plot exceeded the paper size, the coordinates lay outside the boundaries of the paper, and the plotter remained still, at rest, during the time while the computer calculated the coordinate points of the drawing and "executed" the plot. Because of this, no marks were made on the paper. Although the computer was able to understand very large coordinates, it was unable to plot such a huge picture because of the small plotter. I called these "non-plots." Several of these "non-plots" were executed in 1982 including the drawing here – "GALBP0X-14."

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