

# Scanning PPI Decision Tree

*George Soules – November 2018*

This document describes a simple process for choosing the right ppi (pixels per inch) setting to use when scanning prints and photographs such as photographic prints, graphic-arts prints (intaglio, lithographs, etc.), drawings, paintings, maps and other two-dimensional items that will fit on a flatbed scanner.

The PPI Decision Tree shown on Page 2 lets you determine the right ppi by answering just a few Yes or No questions regarding a) the intended use of the image produced by the scanner and b) the quality of the item being scanned. The size of the original does not matter – the PPI Decision Tree works equally well for a small item like a postage stamp as for a large item such as an 8x10 photograph.

## **The “Right” ppi**

The right ppi is the one that produces an image file that is adequate for its intended use given the quality of the original item. The file has sufficient resolution without containing more pixels than necessary. Consequently, the file is only as large as it needs to be and no larger. The time to scan at the right ppi is only as long as necessary and no longer.

## **Intended use of a scanned image**

The two primary uses of files produced by a scanner are printing the image on paper and viewing the image on a computer monitor. It may also be necessary to make print enlargements or to zoom-in on the monitor to see more detail. The PPI Decision Tree accounts for the fact that a) more pixels (higher resolution) are needed for printing than for viewing on a monitor and b) even more pixels are needed to enlarge a print or zoom-in on a monitor to see details without pixilation.

## **Quality of the original item**

Archivists typically scan the best originals available such as photographic prints that are sharp and clear, but sometimes the only option is to scan a low-quality original such as a blurry snapshot, a picture from a newspaper, or a photocopy of an original. The PPI Decision Tree accounts for the fact that a low-quality item will never look any better than the original and that a very high-quality original such as an engraving, when enlarged or zoomed-in, can reveal more detail than is visible with the naked eye.

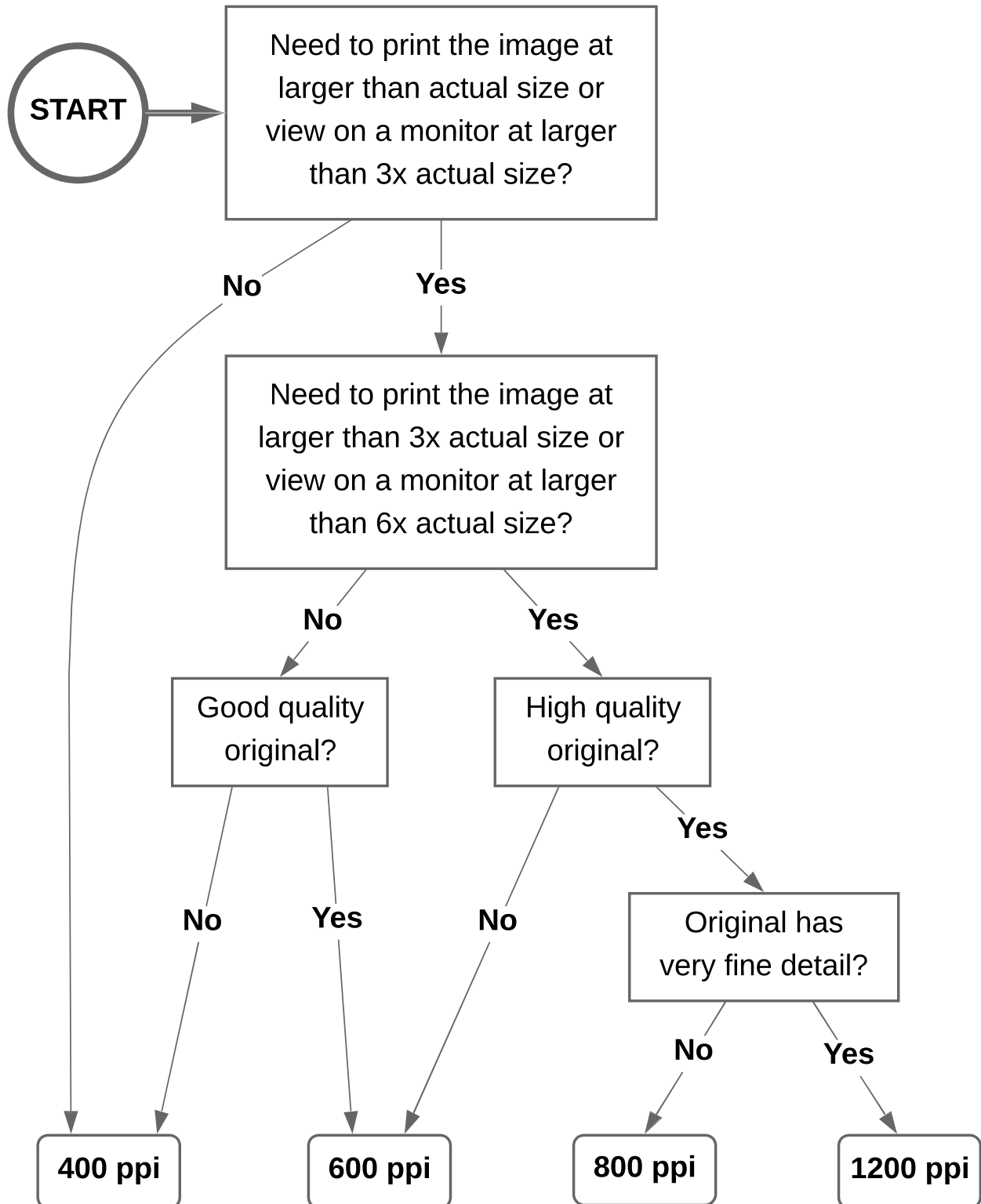
## **Samples images**

Page 3 shows three items that were placed together on an Epson V600 flatbed scanner and scanned at resolutions from 50 ppi to 2400 ppi. The four red squares outline areas that are enlarged on Page 4 to show the effect of scanning at the various resolutions. View Page 4 at 200% to see the details.

The wedding portrait measures 5” x 6” and is typical of a good quality image. The snapshot of the sailor is low quality. The dollar bill represents a high-quality original containing a lot of detail. Note the red square at the bride’s toes. It contains a portion of see-through fabric having texture visible as horizontal lines that only become recognizable at 600 ppi and are very clear at 800 ppi. The dollar bill contains a tiny pink thread below the eye which is soft at 400 PPP, but very clear at 1200 ppi. The square containing the sailor looks better at 400 ppi than at 240 ppi, but does not improve much at higher resolutions. There is no visible improvement in quality increasing the ppi from 1200 to 2400.

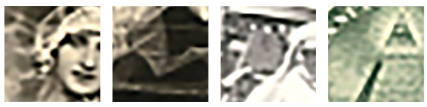
Please send feedback on this document to [gsoules@avantlogic.com](mailto:gsoules@avantlogic.com).

## Choose the Right PPI when Scanning Prints and Photographs

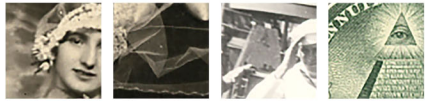
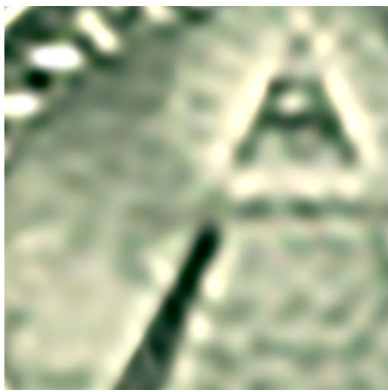
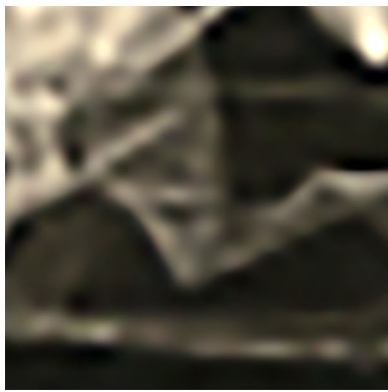




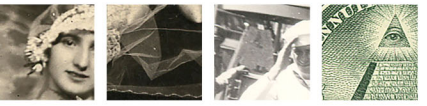
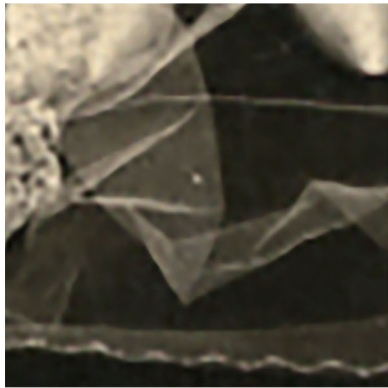




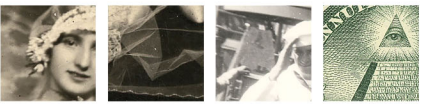
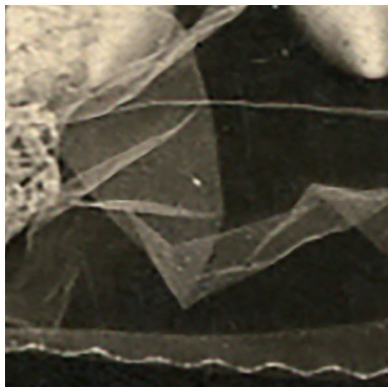
50 ppi - 48x



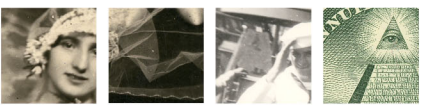
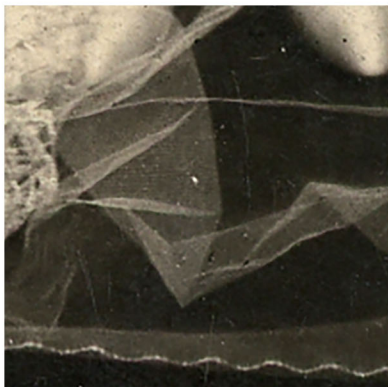
150 ppi - 16x



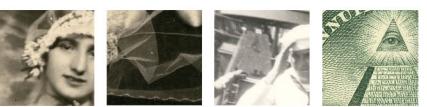
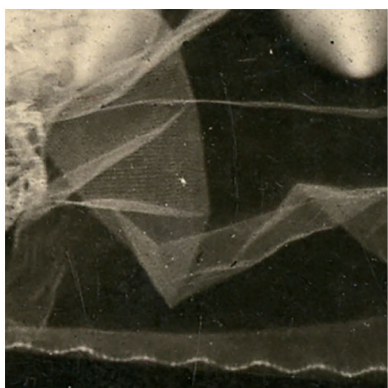
240 ppi - 10x



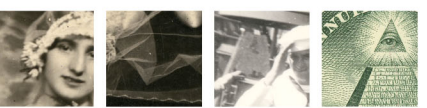
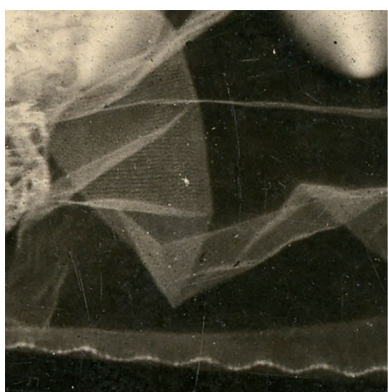
400 ppi - 6x



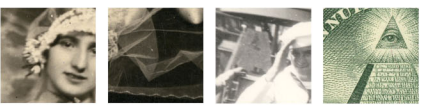
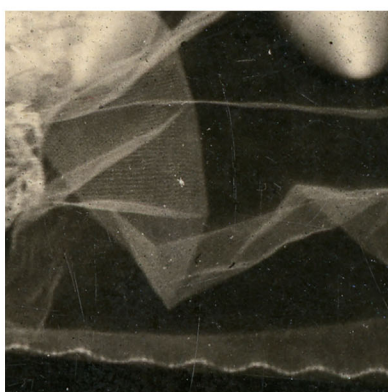
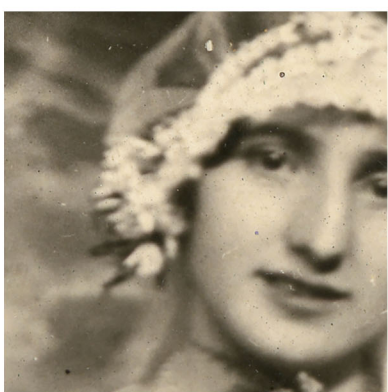
600 ppi - 4x



800 ppi - 3x



1200 ppi - 2x



2400 ppi - 1x

