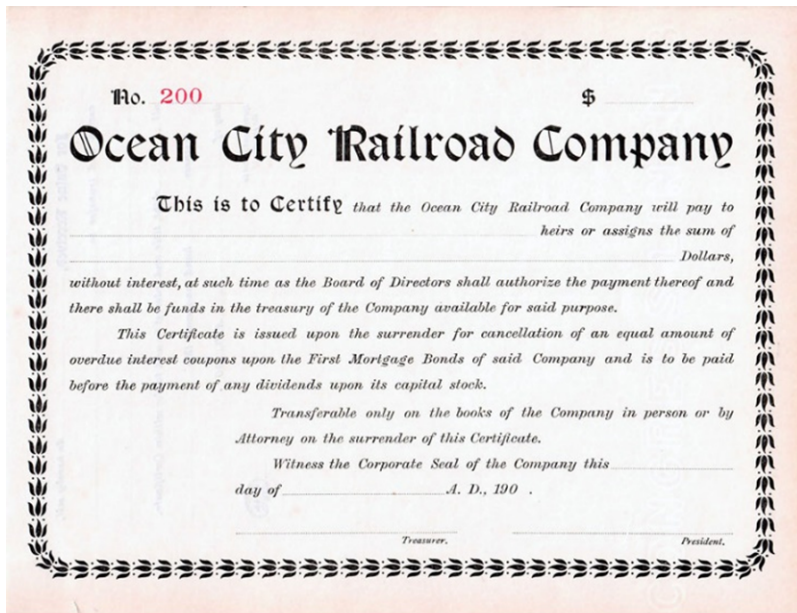


# → IMAGE MANIPULATION ←

## Sharpening using Photoshop©

I'm going to show how to improve under-exposed images of certificates using Photoshop©, the hands-down leader in image editing software. If you use a scanner and scan at a sufficiently high resolution (300 dpi or more), you're probably never going to need to sharpen. At least not the vignettes. Conversely, I have seen lots of camera and smartphone images on eBay that could use judicious sharpening.

I am using a certificate for this tutorial with mostly text, scanned at only 100 dpi. The image looks fine if reduced, but not if viewed at full scale.



Here is a portion of the text scanned at 300 dpi (top) and 100 dpi (bottom.) Notice that the 100 dpi text is "soft." You can read it, but the letters are not "crisp." The edges of the letters are not as distinct as your eye would like. The letters are not "sharp."

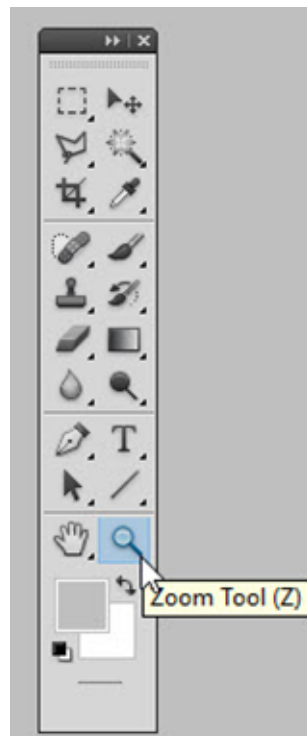
*funds in the treasury of the Company*

*funds in the treasury of the Company*

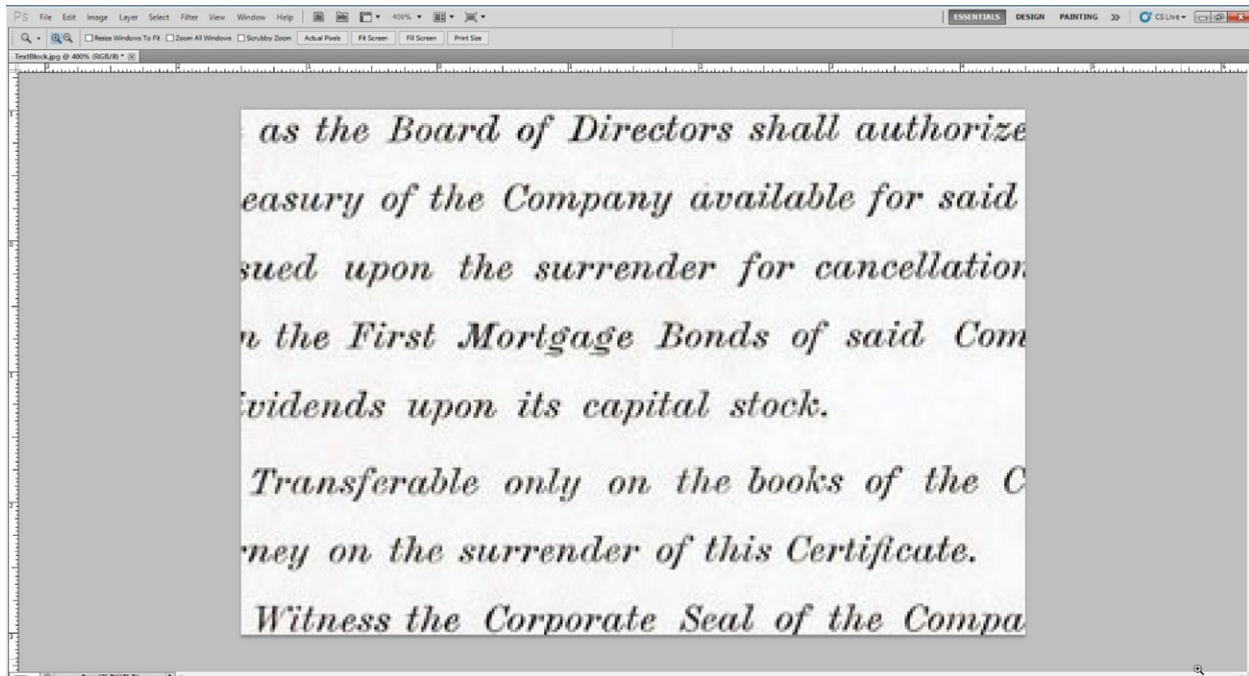
Let's use a larger block of text to demonstrate sharpening.

*as the Board of Directors shall authorize  
casury of the Company available for said  
sued upon the surrender for cancellation  
n the First Mortgage Bonds of said Com  
vidends upon its capital stock.  
Transferable only on the books of the C  
ney on the surrender of this Certificate.  
Witness the Corporate Seal of the Compa*

Open the file in Photoshop and enlarge it so we can see the effects better. Photoshop gives you three methods for zooming. 1. zoom by clicking the Zoom Tool (magnifying glass) in the toolbox. 2. Tab "Z" on the keyboard and the magnifying glass appears. 3. "Ctrl" key and tap the "+" sign. (Ctrl + "-" zooms out.).



The result below:



Photoshop offers three preset levels of sharpening accessible by clicking in the top menubar:

- **Filter > Sharpen > Sharpen**
- **Filter > Sharpen > Sharpen More**
- **Filter > Sharpen > Sharpen Edges**

The first is probably the quickest and most helpful method, appropriate for a wide range of situations where *some* sharpening is helpful. Here is an example of the first applied to the sample text block.

*as the Board of Directors shall authorize  
treasury of the Company available for said  
issued upon the surrender for cancellation  
in the First Mortgage Bonds of said Com  
dividends upon its capital stock.  
Transferable only on the books of the C  
ney on the surrender of this Certificate.  
Witness the Corporate Seal of the Compa*

At this scale, the “artifacts” of over-sharpening are not visible, but they are there. The other two fixed methods are too much for this 100 dpi image.

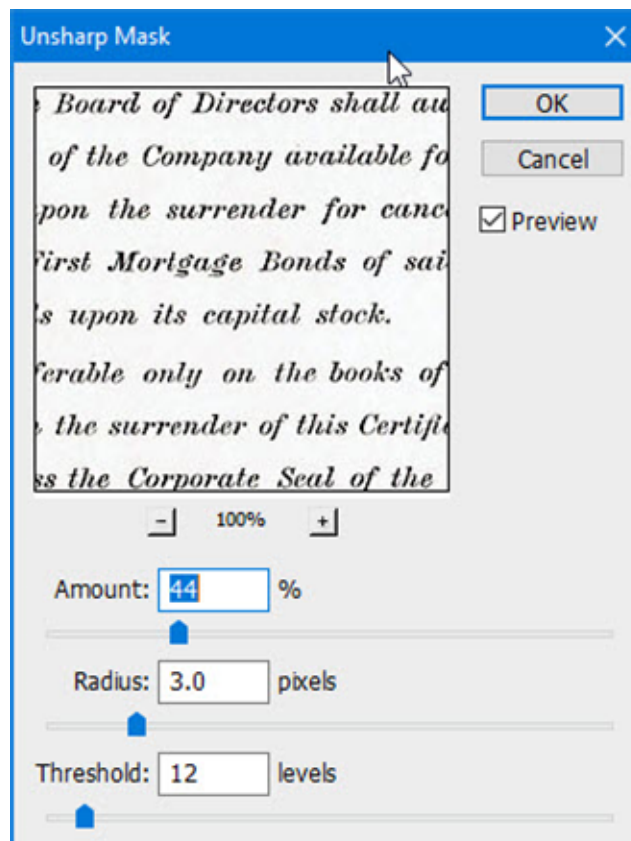
Photoshop also has two methods that users can use if they want to better control the amount of sharpening.

- **Filter > Sharpen > Smart Sharpen**
- **Filter > Sharpen > Unsharp Mask**

The methods are quite similar, although Unsharp Mask has an added control for the amount of contrast. Here is an example using that method.

*as the Board of Directors shall authorize  
 treasury of the Company available for said  
 sued upon the surrender for cancellation  
 in the First Mortgage Bonds of said Com  
 dividends upon its capital stock.  
 Transferable only on the books of the C  
 ney on the surrender of this Certificate.  
 Witness the Corporate Seal of the Compa*

The nice thing about Unsharp Mask is that it offers an enlargeable preview screen.



When using one of these methods, it is a good idea not to apply sharpening to the whole image. Instead select an area desired and “feather” it using **Select > Modify > Feather**. That way, the effect will blend

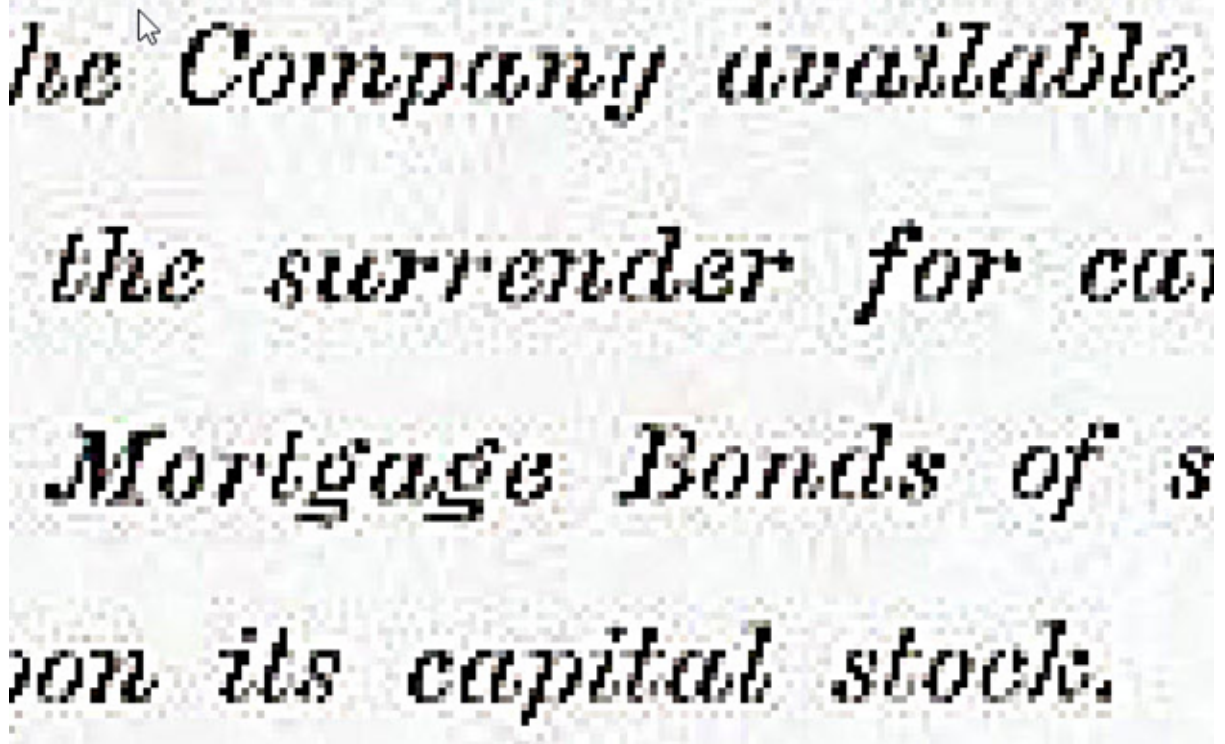
into the surrounding image and be less noticeable. When it comes to sharpening, "less is more." Sharpening should never be evident. But, to illustrate, I will show the unaltered 100 dpi text, then the same text with *some* sharpening and then an example with a LOT.

*as the Board of Directors shall authorize  
treasury of the Company available for said  
issued upon the surrender for cancellation  
in the First Mortgage Bonds of said Com  
dividends upon its capital stock.  
Transferable only on the books of the C  
pany on the surrender of this Certificate.  
Witness the Corporate Seal of the Compa*

*as the Board of Directors shall authorize  
treasury of the Company available for said  
issued upon the surrender for cancellation  
in the First Mortgage Bonds of said Com  
dividends upon its capital stock.  
Transferable only on the books of the C  
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Witness the Corporate Seal of the Compa*

The bottom example uses the "Sharpen More" setting and does not look terrible at this resolution. However, zoom in and over-sharpening artifacts become clear. The sharpening routine is "trying" very hard to find things to sharpen and the only differences it can emphasize are minor color variations in the paper. Here is a highly enlarged illustration of "Sharpen More."



*The Company available  
the surrender for call  
Mortgage Bonds of \$  
on its capital stock.*

These kinds of hazy outlines around letters and vignettes is a sure sign someone got hold of the sharpening tool and wouldn't let go.

The next page shows a raw 300 dpi vignette at top and the same image with *some* sharpening below. The source vignette is excellent. Light sharpening improved this vignette, especially in the ground surface and in shadows in the bright dresses. The portion of the vignette used is 2.84 inches wide on certificate (7.2 cm). Engraved images usually suffer when rendered by pixels on computer screens. Engravings like this need to be displayed at large scales to actually impress. Conversely, etched and engraved vignettes suffer greatly with heavy-handed sharpening. Vignette by American Bank Note Company.

