

Perspective Correction

by D. L. Ashliman

When an ordinary camera is pointed upward (for example, to photograph a tall building) vertical lines at the edges tilt inward in the resulting image. If the camera is pointed downward, vertical lines at the edges will tilt outward. Depending on the subject, the effect can add to the sense of depth, or it can be a distraction.

Tilting vertical lines



The Temple of the Reclining Buddha, as photographed in Bangkok, Thailand. Here I liked the inward tilting vertical lines, so I did nothing in Photoshop to change the perspective.

Correcting unwanted perspective distortion.

Historically, professional photographers have solved the “problem” of converging parallel vertical lines by using elaborate large cameras fitted with tilting lens mounts and tilting film holders. Photoshop Elements offers a simpler and much less expensive solution.

“Old Glory,” as photographed at the New York Stock Exchange.

This scene required an extreme upward camera angle.



The same photograph, with the colors brightened, contrast increased, and the perspective distortion corrected. As outlined on the next page, this distortion correction was done with the Skew tool.

Note that this operation left the scene unnaturally elongated.



The same photograph, now with the flag's original proportions restored. As outlined on the next page, this was done by pushing the sides inward with the Free Transform tool.

Note that this last transformation resulted in an aspect ratio (format) change for the photo as a whole.



How to correct perspective distortion with Photoshop Elements.

The instructions below refer specifically to version 11. Other versions may differ slightly.

Open your photo in the editor, expert mode.

1. To make the grid visible, follow this pathway: View > Grid.
2. To find the Skew tool follow this pathway: Image > Transform > Skew. Behind the scenes, choosing the Skew option adds an invisible second layer. This does not change the way you work, but it will necessitate flattening the image and/or saving it as in the jpeg format at the end of your session.
3. Using the handles on the corners of the photo, drag the corners until the horizontal and/or perpendicular edges in your photo line up with the grid. It is usually best to pull the corners outward instead of pushing them inward, as this will reduce the amount of cropping that you have to do later to exclude blank space from your final product.
4. If you run out of workspace in completing the previous step, follow this pathway to bring your photo back into bounds: View > Fit on Screen.
5. When everything is lined up to your liking, finalize the skewing process by clicking on the green checkmark. You cannot proceed without completing this step.
6. You will probably want to hide the grid at this point. Uncheck it by following the pathway in step one above.
7. The skewing process may have altered your subject's proportions (for example, made a thin person look corpulent). To change your photo's proportions follow this pathway: Image > Transform > Free Transform. Pull or push any of the handles at the middle of each line to change the proportion. (Yes, you can make a thick person look thin by stretching the photo upward or downward. Don't tell anyone this secret!) Finish this step by clicking on the green checkmark.
8. At this stage you can do any additional editing such as changing the color balance, darkening highlights, brightening shadows, adding contrast, saturating colors, etc.
9. Before saving your final product, be sure to flatten the image, following this pathway: Layer > Flatten Image.
10. The last step in any editing session involving the movement of pixels is to sharpen the photo. I prefer this method: Enhance > Adjust Sharpness. For a starting point, choose these variables: Amount—100%, Radius—1.0 px, Remove—Gaussian Blur. Press OK to complete this step.
11. Save your photo with this command: File > Save As. If a new name (with "edited") has not already been selected, then choose one yourself. Be sure that the JPEG format is selected. After pressing Save, you will be asked to choose a quality level. Level 8 is sufficient for most purposes.

Note for users of Photoshop CS and Photoshop CC. Follow the steps outlined above, with these exceptions:

1. Before using any of the Transform tools, you must add a duplicate layer to your image.
2. Find the Skew tool using this pathway: Edit > Transform > Skew.
3. Find the Free Transform tool using this pathway: Edit > Free Transform.
4. The sharpening tool that I prefer is named "Smart Sharpen," and is under the Filter menu.