

Guidelines for taking panorama photos

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CHINOOK ARCH OVER CHIEF MOUNTAIN

MAY 13, 2009

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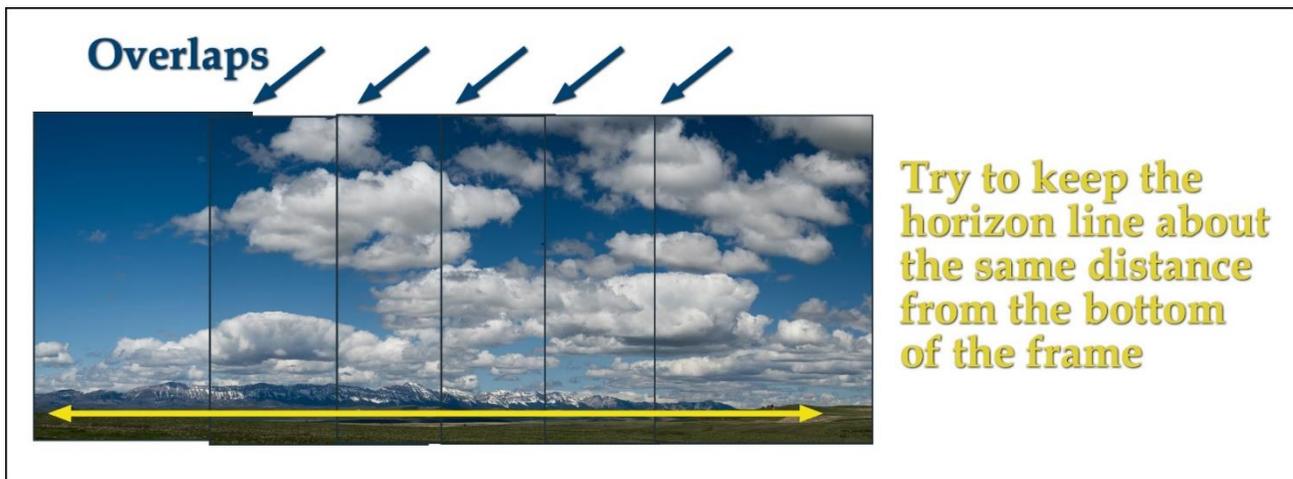
Chinook Arch over Chief Mountain. Made from nine portrait photos. May 2009.

Taking decent multi-shot panoramas (panos) is quite simple. Here are few guidelines. Guidelines are meant to be broken, but perhaps these will help get started.

1. **Shoot in manual exposure!!** If shooting in auto exposure and there is some variation in brightness of the sky from left to right, the camera will try to expose each photo individually. (Remember you might be shooting everything from due north to due south so there will be variation in light intensity across the scene. It's a given!) Then, when the photos are stitched¹, there may be too much variation in the exposure of the sky in (say) the right side of Photo 4 and the left side of Photo 5. If shooting in manual, the exposures may not be “perfect” in all shots, but the adjacent photos will blend better. Set the M exposure based on about average exposure across the scene. However, **try not to overexpose bright areas**—which is impossible if the sun is part of the scene. Areas that are a bit too dark can be lightened in Photoshop, Lightroom, Adobe Camera Raw or other suitable editing software. However, overexposed areas can never be properly corrected because pure whites have zero detail—white is simply white. (Details in dark areas can be lightened.) Experiment!
2. Let's get the “**must use a tripod**” out of the way fast. A tripod is usually recommended, but I rarely use one. (I would use a tripod if light was low.) The theory behind the tripod is that your panned photos will be in a similar plane which is only true if the tripod head is indeed level. I usually hand hold and ...

¹ Stitching is merely the term used when photos are merged (seamlessly stitched) together to make panoramas.

3. **Watch the horizon and try to keep the horizon line** (assuming it is somewhat flat or horizontal) **in the same relative position from photo to photo.** i.e., the horizon should almost always (depending on topography) be about the same distance above the bottom of the frame.
4. **Overlap!** Space photos so there is about 30% to 50% overlap.



5. If hand holding (or using a tripod) make sure the camera is level to the horizon vs at a tilt.
6. Depending on what you are shooting and trying to accomplish, consider **shooting vertical** (portrait) vs landscape—see example above. This can help get more sky in the scene. If you are shooting (say) a Chinook Arch, that extra “sky” can be important. When shooting vertically, you will need to take more photos to cover the scene left to right.
7. Shoot in the largest format available in your camera. The images can be reduced in size before stitching depending on the amount of overlap and what size the end product is to be. If the scene has a wide variation in exposure value (EV) from quite bright to quite dark, shoot in RAW. Raw gives more flexibility in editing lights and darks.
8. Avoid using a very small (i.e., wide) focal length if possible. Edge distortion can interfere with stitching.
9. Shooting with a telephoto is not only handy on occasion, but can result in better panos. If you don't have a wide-angle lens you can take panos with a telephoto and (with some software) can stitch images that are made up of photos taken in a grid, i.e., both horizontal and vertical. See examples on the last page.

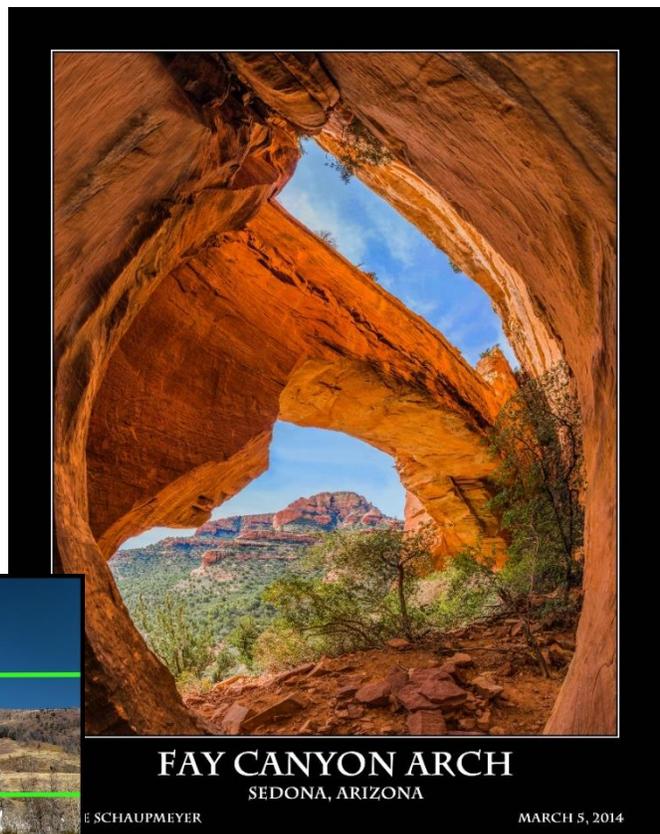
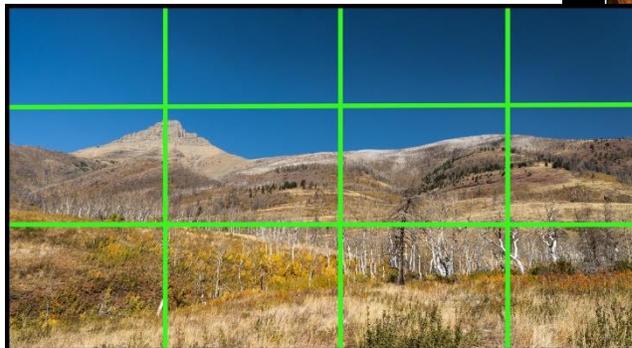
10. Do not get too close to your subject as the result may be distorted—see example below. The Livingstone Range was distorted in the lower inset because the camera was far too close to the “base” of the range.²



Stitching

I use Photoshop Elements and it has a pano stitching feature. However, for almost all stitching I used **MS Image Composite Editor (ICE)** which is available for PCs running Windows.

In addition to making standard side-by-side panos, ICE will also stitch photos in a two-dimensional grid—like schematic below. This photo of Fay Canyon Arch in Arizona, was made from 39 photos shot both up and down and horizontally.



² BTW, a Chinook Arch is not much of an arch at all. It looks arched simply because the “peak” is perhaps only 30 km away and yet the far ends might be 100 km away and therefore look smaller. It’s just perspective.

Examples of telephoto panos

You can take photos with the telephoto and make a pano. I was in the river valley a few weeks ago and was too lazy to change lenses so took a few photos with the telephoto set at the minimum 200 mm and created this from four landscape photos.



This shot of the Livingstone Range was made from six photos shot at 200 mm.



Here are links to two examples of quite extreme panos, i.e., very wide and narrow.

Chinook Arch

https://clivesphotos.weebly.com/uploads/5/1/0/9/51095487/chinook-panorama-2000-b-6555_orig.jpg

Springtime in the Rockies

https://clivesphotos.weebly.com/uploads/5/1/0/9/51095487/panorama-1197-seagate_orig.jpg

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