Taking Panoramic Photos

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1. Introduction

This is a summary of what was discussed at a recent group meeting. It looks at things you should bear in mind when taking photos to stitch together to make a panorama.
If you have a Sony camera with automatic panorama mode, you need read no more!
None of the material is original; it is a summary of more detailed advice from a number of sources. I am very grateful to all who have helped to provide the information.

2. Main points

These are expanded in later sections.

- Hold the camera in the ‘portrait’ direction.
- If possible, use manual exposure, not auto.
- Overlap shots by about one-third.
- Don’t include moving objects in the overlap.
- Try not to include telegraph poles or fence posts in the overlap if they form a line receding from the camera.
- If possible, swivel the camera round the middle of the lens, not round your feet.

3. Hold the camera in the portrait direction

When the photos are stitched together, you'll have to crop the top and bottom more than the sides. Holding the camera portrait fashion gives you the maximum number of pixels vertically. An alternative is to take two (or more) rows of pictures. This is even better but will make your stitching software work much harder.

4. Use manual exposure

This makes the brightness and colour match better in the overlaps and makes life easier for the stitching software.
The idea is to look at the panorama and pick a direction where the overall brightness is in the middle of the range.

Example

For a coastal panorama, you'll probably have a part which is nearly all sea (brighter) and part which is nearly all land (darker). Check what exposure your camera suggests for a shot which is part land, part sea and use that for all shots.
If you can't use manual exposure, then the software will do its best but you may see slightly odd brightness changes in the overlap.

5. Overlap by one-third

Doing this gives your software plenty of information to align and stitch the different shots.

6. No moving objects in the overlap

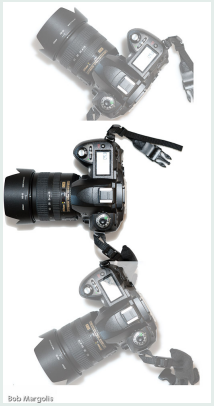
Moving objects in the overlap will confuse the software. It will still align and stitch the static objects but you are likely to get 'ghosts' of the moving objects.

7. Telegraph poles

Receding lines of posts or similar objects in the overlap will also cause ghosting. The reason is a bit technical: it is difficult to swivel the camera round the correct point to avoid this problem.
The correct swivel point depends on the lens in use and is always somewhere in the middle of the lens, so using a conventional pan head on a tripod doesn't help (much).
There are (very) expensive specialist panorama head for tripods which will solve the problem if correctly set up for your camera.
The ghosting will be most noticeable if you have a regular pattern of vertical poles or posts which are arranged in a line away from the camera. If the line of poles runs across the frame (left to right, say) then all should be well.

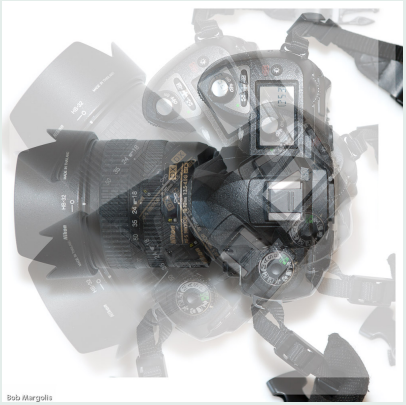
8. Swivel point

This is related to the telegraph pole problem. The stitching software will have a slightly easier time, and results will be a bit better, if you try to imitate what the expensive heads do.
When you simply swivel naturally, you are moving the camera in a circle with its centre somewhere in the middle of your body, well behind the lens.



Try moving round the camera so that you swivel round a point in the middle of the lens. It won't be as accurate as a panorama head but it will be reasonable close and a lot cheaper!

You need to move it something like in the picture.



9. Next step

There's a follow up document on how to stitch panoramas using Photoshop Elements(tm).