

# Compact-SLR Camera Comparison

Steve Hamlin – Worthington Arts Festival, 7/9/2011

## Compact Cameras

So-called compact cameras are “SLR-like”, in that they look very much like single-lens reflex cameras, but there are some notable differences:

- They don't have interchangeable lenses – whatever the focal length range of the attached lens is (usually given as “35mm equivalent”), defines the limits of the camera's ability to capture near or far images.
- The lack of interchangeability means your kit is going to be much smaller and less expensive.
- Hybridized viewfinder acts like the through-the-lens viewfinder of an SLR, but, like live view, uses circuitry and a tiny LCD screen to project the view that the camera's capture device – the sensor – is seeing to the eye. Because of its small size, the LCD screen in the viewfinder is usually quite pixelated, obscuring fine detail.
- Reduced size and weight. True to their name, compact cameras are about 80% of the size of an SLR with a normal range (24-135mm, for example) lens mounted. When compared to an SLR with a lens mounted that is a good length for wildlife photography (300-600mm), the difference in size is much more marked. Compact cameras also weigh less than their SLR cousins – a lot less when the SLR has a long lens mounted.

For a photographer on a budget, a compact camera can be a very good choice. With the recent trend of greater and greater zoom range (currently up to 35x), and the incorporation of image stabilization, a single compact camera can handle everything from landscapes, portraits, and macro-photography (close-ups of flowers and insects, etc.), to wildlife and action photography. To do an equivalent job with an SLR with such a wide range of potential subjects would require a number of lens changes. Cost-wise, a compact camera will cost about \$400, while an SLR kit that will do an adequate job with wildlife will cost at least double that (\$809.01 for the Pentax [K-r Digital SLR Camera with 18-55mm F3.5-5.6 DA-L and 55-300mm DA-L Zoom Lenses](#) at B&H Photo). The Pentax SLR (and other similarly priced SLR kits) has a maximum nominal focal length of 300mm, while a \$400 compact camera might have 600mm or more. The 300mm of the SLR will give an effective focal length of about 420mm, due to “cropping factor” – a result of the size of the sensor, compared to a 35mm film frame.

So you may be wondering, why spend the money on an SLR? My answer is: choice, quality, and extendibility. There is a broad spectrum of SLR choices, both in bodies and lenses – much broader than in compact cameras. Because of the interchangeability of lenses, a photographer would be smart to choose the brand of camera he or she will use based on the lenses available for it. An investment in a good lens will continue to pay off as fast-changing technology makes bodies obsolete. An attractively priced camera kit will lose its economy if it must be replaced in its entirety in order to get the lens length or features you find you need. Such is also the case with compact cameras – if one aspect of it proves unsatisfactory, the whole camera must be replaced.

The quality of SLR lenses, especially among the leading brands, draws on a long history of development for, and use by, film photographers. There is a mind-boggling array of lenses, ranging from inexpensive and consumer-targeted to those built for professionals that cost as much as a decent used car. With a few exceptions, any of them will work with any SLR body, as long as the mount matches. That means a

photographer can upgrade lenses as goals change and budget allows. The quality of both bodies and lenses is generally superior to compact cameras, even in the lowest priced kits, but especially in the mid-priced to pro classes.

Finally, as I alluded to already, an SLR gives the photographer many options for extending its usefulness. Chief among the options is the range of lenses available, but it doesn't stop there. There is a bewildering array of filters, flashes, and sundry gizmos that are made for the popular SLR brands and models. Many of these will also work on compact cameras, but often less effectively than on the SLR they were designed for. Of course, the main class of extendibility options – lenses – is useless to compact camera photographers.

Lastly, a word about focal length: more is not always better. With the zoom capability of compact cameras making greater and greater focal length available, it would be easy to fall prey to its allure. But, greater focal length comes at the cost of amplified camera shake and diminished light collecting ability. These tandem penalties conspire to make ultra-long focal lengths ineffective. Image stabilization helps to mitigate the camera movement problem, but it can only go so far. The diminished light collection results in a slower lens, requiring longer exposure times for equivalent conditions. Since wildlife has the annoying habit of seeking out dark hiding places, the long exposure times required can make hand-held shots virtually impossible. The conventional wisdom known as the “hand-held rule” recommends that the shutter speed of a shot should be equal to one over the focal length. This translates into 1/600 for a 600mm lens, and so on. Image stabilization makes slower shutter speeds possible, but the “one over” figure is still a good goal.

The best way to overcome the dual penalties of camera movement and diminished light collection is to look for the lens that has the largest aperture at the longest focal length (along with image stabilization). A typical lens is rated by two sets of numbers: focal length (range in the case of a zoom lens), and aperture (again, range for zooms). My top pick (and the one I own) among the compact cameras listed below has an effective focal length range of 25-600mm, and an aperture range of f/2.8-5.2. That means that at 25mm, the lens is a fast f/2.8 (the lower the number, the larger the aperture and faster the lens). At the 600mm end of the zoom, it's a respectable f/5.2. By comparison, the Fujifilm Finepix S3200 has slower lens speed throughout its range (f/3.1-5.9) and a shorter focal length range of 24-576mm. The lower the f-number, the more effective the lens is at collecting light. Lens speed is also frequently expressed as a ratio (such as 1:2.8), as the f-number is a comparison of aperture diameter to focal length. The effect of a lower f-number at a given focal length is a faster shutter speed for given conditions. Summing up, under the same conditions, the Fujifilm will require slower shutter speeds than the Panasonic, even though the focal length (and resulting magnification) of the Fuji is slightly less than the Panasonic.