THE LAST FRAME
September 2005
St. Albert Photo Club's Monthly Newsletter

A Perspective on Sigma Lenses

Are you interested in supplementing your current arsenal of lenses or possibly just updating what you already have?

Maybe you wish to put a new camera lens on your forthcoming Christmas list.

Whatever your reasons are for requiring a new lens, perhaps you should consider lenses from Sigma instead of always sticking with your camera manufacturer's line.

For the first meeting of the 2005/2006 season of the St. Albert Photo Club, we had two representatives from Sigma Corporation discuss the current trends in lenses for both digital and film-based photography.

As the world's largest independent manufacturer of zoom and fixed focal length lenses, Sigma offers a creative selection of lenses from 8mm fish-eye up to 800mm telephoto and virtually everything in between.

John Kemp and Doug French, both from Gentec International, local distributors for Sigma, were our featured guest speakers.

Both were extremely knowledgeable and enthusiastic.

They brought with them an assortment of Sigma lenses for either Canon or Nikon camera systems, including a 12-24mm wide-angle zoom, a 28-70mm medium range zoom, a rather large and impressive 50-500mm telephoto zoom lens, and a 50mm macro lens with an accompanying Macro/Ringlight.

In addition to mounts for both Canon and Nikon camera systems, they manufacture lenses for all major camera brands as there are no manufacturer patents for lens mounts.

Two Types of Lenses

Sigma manufactures two types of lenses. Digital only lenses, known as DC lenses (for digital cameras) and DG lenses (dual-format lenses), applicable for both digital and film cameras.

The DC lenses are designed so that the image circle covers just the CCD area inside most digital SLR camera bodies.

The image circle has been designed to match the image elements that correspond to the APS-C sensor size.

Sigma rep John Kemp

Reducing the size of the image circle improves the image quality of digital SLR's and makes a lightweight and compact construction possible.

This contributes widely to the handling characteristics of the lens.

Due to the smaller size of the imager than the 35mm rectangular frame, lenses gain in focal length by a factor of about 1.5; thus a 28mm becomes an effective 43mm lens; but they suffer at the wide-angle end.

Camera manufacturers have thus responded by coming out with new amazingly wide lenses analogous to ultra-wide-angle lenses on 35mm camera bodies, such as 10-22mm, 12-24mm, and 10mm fish-eye lenses.

Note: Use of DC lenses is not possible for digital SLR cameras with image elements larger than the APS-C equivalent size 35mm SLR cameras and

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Image taken with the 12~24 mm aspherical Sigma lens.

APS-film SLR cameras. In case of such use, vignetting occurs both on the LCD screen and in the resulting images.

DG lenses, on the other hand, or dual format-lenses, are faster and fatter lenses.

They will work on both digital and film bodies. DG lenses tend to be fast, large aperture lenses, with an abundant peripheral illumination.

It is not unusual that they may be f/2.8 or faster.

These are the most suitable lenses for 35mm film SLR cameras as well as for digital SLR cameras.

Lens Designations

ASP-Aspherical Lenses

Lens elements that are not spherical can reduce the number of elements required in a lens' design.

They can deliver better performance while reducing weight and size.

Aspherical lenses maximize optical performance while minimizing lens size and weight.

They also help reduce some of the problems usually associated with wide-angle and zoom lenses, such as lens flare and edge distortion.

APO Lenses

These lenses use apochromatic design and Special Low Dispersion glass (SLD) for minimum colour aberration and ultimate telephoto image quality, improving contrast and sharpness.

Apochromatic (APO) telephoto lenses greatly minimize colour aberration, a phenomenon created by different wavelengths of light refracting at different angles.

This causes each colour to have a slightly different imaging point, resulting in poor image quality.

RF/IF. Rear Focusing and Internal Focusing

Conventional automatic focusing is done by moving either the entire lens system or just moving the front lens group.

For telephoto and telemacro lenses, Sigma developed an internal focusing system that moves lens groups inside the lens barrel, significantly improving macro capabilities.

For super wide-angle lenses with a large front diameter Sigma created a rear focusing system that moves only the rear lens group.

For mid-range lenses, they use an internal focusing system that moves the lens groups to allow a shorter minimum focusing distance, all the while retaining constant physical lens barrel length.

HSM-Hyper Sonic Motor

These lenses are motor driven by ultra-sonic waves to provide a quiet, high-speed autofocus.

This ennables virtually silent, highly responsive auto and manual focusing, as well as manual focus only override.

OS-Optical Stabilizer

This function utilizes a built-in mechanism that compensates for camera shake.

It dramatically expands photographic possibilities

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Can the Camera See Like an Eye?

By Eric Hagedorn

Much ink has been used trying to convince a photographer to "see like a camera sees".

By doing so the photographer can presumably improve his or her photographic skills and therefore produce a better quality of photograph.

Unfortunately many photographers are still disappointed by the results of their photographic endeavors.

What about reversing the procedure? Maybe a photographer's photography can be improved by trying to make the camera see like the human eye. Read on!

Both the human eye and the camera lens are marvelous pieces of optical equipment.

Both perform according to fundamental rules.

Why then does a photo of a scene often seem to be different from what you actually saw when you were taking the photo?

To answer this question we must look at the similarities and differences between the camera lens and the human eye.

First the similarities. Both have an adjustable aperture.

Both can be adjusted to focus at different distances to the eye or lens.

Both transmit all the light that passes through the aperture to a receiving sensor (retina or film).

Now the differences.

A human has two eyes to receive light while the camera has only one lens that receives light.

The film in the camera records all the light that reaches it in the same way all over its surface while the retinas of the two eyes receive the light and send it to the brain for interpretation.

The brain is the key difference because it chooses the important information and ignores anything deemed unimportant.

The differences between the two (eyes and camera) are what makes the images made by each different.

What happens when you "see" an object?

Your field of view is divided into two areas, a small central area called the "fovea" and all of the area around the fovea.

The object you "look at" is located in one tiny area of the fovea.

Even in the fovea only one small area is in focus and the focus decreases gradually outward in all directions to the edge of the field of view.

Your brain interprets the information from your eye and you see everything in sharp focus (you think).

If you concentrate while staring at an object you can notice that you look at only a tiny area of an object and the surrounding area is not quite in focus.

Look at a blank space between two lines on a page.

You may see the words in the line above and below the space in reasonable focus but everything farther away will be seen only as black lines.

Another way to see this effect is to isolate only a small area for viewing.

Look at any textured surface with one eye and note the clarity of all areas of the surface. (The weave of a denim pant leg works well for this.)

Now make a small circle with your thumb and forefinger and look at the same surface again with one eye.

The surface in the small ring should appear much sharper.

You are using only the point of focus in your fovea.

As you pan with your eyes a new object comes into the fovea and comes into sharp focus, your eye-brain continually updates.

This updating is so rapid that there appears to be no break in the record.

In fact your eye is focusing on new objects moving into the fovea of the field of view.

As you turn your head slowly you may notice that your eye actually stops and focuses on one object while your head keeps turning.

If you move your eyes quickly there will be a short time when nothing is in focus until your eye comes to rest on a new object.

The eye and brain is faster and more efficient and gives clearer and more detailed information than any other optical system available.

This ability to continually re - focus and update your vision becomes important when viewing photos.

Remember that your brain receives but allows you to ignore things that are out of focus or insignificant and you concentrate on the subject of the image made by the field of view.

To make the lens behave as if it were an eye your

brain has to be involved. You have to adjust the lens so that the one object in the center is in sharp focus while the area around it is out of focus.

This means that there can be nothing else in the same plane as the object to be photographed.

Remember that with a lens everything in the plane of focus is sharp whether you are looking at it or not.

To achieve this effect use a larger aperture to reduce the depth of field.

This throws the background out of focus and gives the same effect in a photo as actually viewing the object, one area is in sharp focus and the area around it (and behind it) is out of focus.

The resulting photograph allows your eye to remain looking at one object and your brain tells you to ignore the rest of the information presented.

When you look at the area that is out of focus, your brain treats it as being sharp until you decide otherwise.

Remember, the lens in your eye has depth of field also.

If everything in the photo is sharp your eye still behaves the same way as it darts around the photo.

The brain continually updates the image as you pan around the photo.

Remember, only the tiny area you are looking at is in focus and all the rest is out of focus in your brain.

Having everything in focus in the image is the same as looking at the real object.

The real object is sharp already.

The world of optical illusions provides another way your eye and your camera can see like your eye.

Your brain is conditioned to interpret the information from your eyes in two important ways.

First of all objects located in the bottom part of your field of view are assumed to be closer to you than are objects located in the upper part and secondly, large objects are assumed to be closer to you than smaller objects regardless of where they are in your field of view if there are no other elements to give indications of depth or distance.

Close one eye and with your elbows bent slightly try to bring your fingers together from each side.

It can be difficult to make the fingers touch each other.

There is nothing connecting them to give a sense of distance.

By closing one eye and having a friend hold up one hand and only a finger of the other hand it is possible to confuse the eye about the distance of each from the eye, especially if no other elements are provided to help with the perspective of distance.

Using your camera as an eye can provide optical illusions also.

A cloudless sky or a colored surface as a background can destroy the sense of depth if two or more objects are to be placed in the photo and have no connecting information between them.

View several of your own photos with only one eye and notice how they look different than with two eyes.

Turn the photos on their side or upside down and with one eye notice how they look different.

Knowing how the lens behaves compared to your eye or eyes can be a factor in the improvement of your overall photography.

Know what your equipment will or won't do.

It becomes apparent that the differences between the two are more significant than the similarities.

The eye-brain combination is a vastly more complex system than is the lens so the lens can approximate the eye's vision in only simple form.

Realizing the differences might give you some insight about what the lens will produce as a photo and how you might want to view that photo.

Enjoy your photography!

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by alleviating camera-movement when shooting handheld.

This is Sigma's response to Canon's IS (Image Stabilizer) or Nikon's VR (Vibration Reduction).

Taking the above considerations into account, the next time you are thinking of purchasing a new camera lens, do consider Sigma.

Optics are first grade and they can be purchased for somewhat less than the manufacturer's lenses sell for.

Article-Derald Lobay

Club Web

Our website is now up and running! On the front page of this newsletter there will be an active link to the site. Thanx to Tracey and her hard work. There will be a members gallery, back issues of the photo club newsletter, our past quest speakers, competition rule, etc. The web address is: www.stalbertphotoclub.com

The winner of this year's "Summer Project" themed *Our Alberta* was club president Derald Lobay, who is currently off to shoot more rock peectures some where.

Club secretary Allen Skoreyko should be back in his usual chair next month after a month long trip to Europe.

If you have camera gear for sale contact Tracey at tifoso1@shaw.ca for addition to the web site.