I have added a new lens to my collection. This is a 100 mm f/2.8 macro lens which is capable of close-focusing on an object to an image ratio of 1:1. This is quite a unique lens, including a three-group, internal floating system which features inner focusing; the length of the lens never changes, even when shooting life-size. It incorporates ultrasonic–motor autofocus. The construction features twelve elements in three groups. This is my sixth Canon EF lens. One of my goals is to consistently provide excellent photographs of the materials or locations I have examined.

When I was forced to convert from film to digital, I selected a Canon EOS 5D body. It featured a 12.3 megapixel image sensor of the same size as the image on 35 mm film. It is capable of storing images in JPEG and RAW formats. The JPEG images are typically in the range of 6-8 MB, and RAW images are in the range of 15-20 MB.

The EOS 5D has served me very well for these years. Quite recently, however, Canon upgraded the EOS 5D, adding "Mark II" to its name. This body is a quantum leap from its predecessor. It includes a 21.1 megapixel, full-frame, CMOS sensor and uses Canon's DIGIC 4 image processing. The base ISO range is 100 to 6400, but it is expandable to 25600; at that setting, a photographer can almost capture a person's thoughts! (Excuse my exaggeration ☺) It is capable of shooting at 3.9 frames per second. It incorporates a three-inch monitor on the back. Shutter speeds range from bulb (nomenclature carryover from the days when flash attachments used bulbs) to 1/8000th of a second. Although the size of the JPEG images is relatively unchanged from the previous version of this camera, the typical RAW file size has increased to 25 MB per image. If all of that weren't enough, it is capable of full HD (1920 x 1080) video capture for up to 4 gigabytes per clip and has HDMI output for HD viewing of stills and video. And it has a self-cleaning sensor. I was drooling over this very desirable item for months; since very shortly after the release of this body, demand far exceeded supply. After months of very regular checks at several different suppliers, I finally obtained one! And the price on this body is $300 less than what I paid for my EOS 5D about three years ago—good for purchasers of the Mark II, but rough on us who have the original. I also had to buy two 8GB UDMA Compact Flash cards—my 2 GB and 4GB CF cards filled up too quickly!

The two images above show different locations of a tire that was in service on my pickup truck and was in the process of self-disassembly. The current feature which was placed on my Web site on March 22, 2009, shows more photographs of that tire and gives more details. As I write this newsletter, I believe that the March 2009 current feature will still be on my Web site at www.ralphcunningham.net when you receive this edition. The proverbial bottom line on this impending failure is that the tire was in the process of developing a tread belt separation which began at the outboard edge because a penetrating object remained in this tire for an indeterminant amount of time before it was removed and the puncture was repaired. That extended period of operation with a penetrating screw allowed contaminants into the region of the two steel tread belts and was causing their separation, which was becoming manifest at the tread shoulder. User abuse (whether intended or accidental or inadvertent) is the cause of most of the tire failures I have been asked to investigate over the last 37 years. Tread separations are a less obvious manifestation of abuse or neglect. Overall overheating and subsequent failure from ply separations or cord failure are obvious indications of severe overdeflection, which is almost universally the result of underinflation in a tire from a private passenger vehicle. Impact-induced failures generally create diagonal splits in bias-ply tires (there are still a few of those in service) and radially oriented splits in radial-ply tires. In a few cases in which I have been involved, loss of control for some reason other than tire failure has caused a tire to be debeaded; after the car has come to rest, the discovery of the deflated and debeaded tire suggests that tire failure may have caused the loss of control. There has been more than one case in which a "failed" tire sent to me for failure evaluation has been placed on an undamaged rim of the proper size and shape and was found to hold air normally. Not that you would ever want to put that tire back into service, but it obviously did not fail until some lateral force pulled one of its beads away from the rim flange. Commercial vehicle tire failures are very similar to those in tires sized for private passenger vehicles, small utility trailers, boat trailers, and other, smaller, highway vehicles, but I avoid evaluating failures in commercial tires because of the difficulties associated with handling and storing them.