I may have written in a previous newsletter that Kia and Hyundai have developed and are selling their own crash data retrieval systems, specific only to their vehicles. Although the two companies are closely related, they each have their own system, and each system is currently selling for US$3700. It is my understanding that all 2013 and later vehicles made by both manufacturers have event data recorder capabilities. As of this writing, I have never been requested to download one of the models by either manufacturer, so I'm in no hurry to buy their systems. There is a place in Jacksonville, Florida, that has purchased the systems and is prepared to do the downloads, and there is another place in New Mexico. If and when I'm asked to access crash data in one of those vehicles, it may only be feasible to remove the airbag control module and send it to Jacksonville. I am also wondering if the NHTSA is going to put pressure on Kia and Hyundai to work with Bosch to incorporate their hardware and software with the Bosch CDR system. The Federal regulations regarding data access only require that the data be accessible with a commercially available system, not with a universally applicable system. But the NHTSA will now have to buy hundreds of Kia and Hyundai kits for their field crash investigation teams. And there may be other manufacturers who produce crash data retrieval systems specific to their vehicles. There will probably be many changes to the crash data retrieval marketplace in the next year and a half.

New hardware time again! Some years ago, I purchased and began using a Canon EOS 5D camera when that model was first introduced. When the 5D was upgraded to the 5D Mark II, I bought that body, too, and it became my primary use camera, with the original 5D body carried as backup. I also had carried two premium Canon zoom lenses, a 24 to 70 mm and a 70 to 200 mm, both f/2.8 (constant aperture) lenses, Canon's best shoe-mount flash, and related accessories and equipment, all in the same large Pelican case. The entire case was stolen from me, and I had no insurance to cover the $12K loss, and I didn't have $12K extra to replace it all, so I bought a Sony A900 with a Sony 28 to 70 mm zoom lens and a Sony shoe-mount flash. The Sony camera takes excellent, high-resolution images, but they don't look quite as good as the images I had taken with the Canon equipment. I was finally able to purchase a replacement EOS 5D Mark II body, a Canon 24-70 mm f/2.8 L Series II lens, and a Canon Speedlite 600 EX-RT shoe-mount flash, along with some related parts and accessories. Would you believe the filter ring for the lens is 82 mm in diameter? A quality slim UV filter and a quality slim circular polarizer for the lens were over $100 each. The lens weighs one and three-quarter pounds. What a hoss! The Speedlite flash is Canon's newest/latest and its most powerful shoe-mount flash, with a guide number of 197 (ASA 100). The flash has many features and applications I don't need, but I bought it for its power and versatility. It's often better to have something and not need it than to need it and not have it. Images of the lens and flash are shown to the right of this text.

Although I've never used it for recording motion, the Canon EOS 5D Mark II camera has the capability of recording HD video. An EOS 5D Mark II camera was used to record an entire episode of the television series "House." I am looking forward to many years of taking superb still photographs with my new equipment. And yes, it and all other business equipment are now insured against loss, at replacement cost.

I have attached a 50 mm macro lens to my Sony A900 camera body, and I will use it for taking very close photographs in the field. I have that camera, the lens, the Sony flash, and some related equipment in a separate Pelican case, so I can throw it in my truck on short notice whenever it is needed.

When I take pictures, I usually have the camera store the images in both high-resolution JPEG and RAW formats. Although the JPEGs can make fine images to 8 by 12 inches, and possibly larger, there have been occasions when I have needed to print images up to 12 by 18 inches in size. In one case, I needed to take a relatively small portion of some of the 12 by 18 images and blow each up to 12 by 18. As you might imagine, the JPEG images would exhibit pixilation at that magnification. The way I created sharp, clear images at those magnifications was to use the RAW images to create uncompressed TIFFs. Those TIFFs varied in size from around 80 MB each to over 100 MB each and were able to provide unpixilated, sharp images in the large sizes I needed to print. That's just one advantage of having a camera with a high-resolution, "full size" (24 by 36 mm) image sensor. Coupled with a fast lens, the images are sharper than those which were created by 35 mm color print film. Frankly, I'd still rather be shooting film, but the world has become digital, so I have been forced to adapt.

There will be the annual combined crash conference of SCARS (South Carolina Association of Reconstruction Specialists), SeARS (Southeast Accident Reconstruction Society), and IAARS (International Association of Accident Reconstruction Specialists) in Charleston, South Car-

olina this July. I am a member of all three organizations, a charter member of SeARS, and Treasurer and Secretary for IAARS. I have been invited (once again) to be a presenter at that conference, but I would attend anyway. It is perhaps the best crash conference presented anywhere, for a number of reasons. Monday of each conference is crash day, when documented, staged collisions occur for all attendees to watch. The collected data are presented later during the week, as well as numerous other presentations by a variety of experts in reconstruction-related fields. And the hospitality provided by the SCARS people is unmatched at any other crash conference I've attended.

Many of you may remember the former ambulance I bought several years ago. I still have it, and, overall, it's in excellent mechanical condition, but I seem to be plagued with alternator issues. Every time I take it on a long trip, the alternator quits, but only when I am more than one hundred miles form home. It's not an alternator that can be purchased over the counter at an auto-parts store; it's a special-order item which can usually be in hand in a about a week, it is very expensive, and it's not a simple job to replace it. The most recent outage was in Tifton, Georgia. When the alternator quit, I stopped at an auto parts store; I bought two of the best batteries they had which would fit in the ambulance plus a battery charger, keeping the two batteries already present in the ambulance at that time, and continued to my destination. As I was spending several nights in the area, I fully charged the two new batteries plus the two batteries that were in the truck at the time the alternator failed. The four batteries got me back to Conyers, driving without benefit of alternator, stereo, air conditioning, or cruise control. Once home, I took the ambulance to the electrical shop and left it with them for a week and a half. It's back with me now, and working fine, probably until the next long trip I take with it. But I keep it, because there are some things the ambulance will carry that won't fit in anything else I own. Whenever I take a long trip in it in the future, I will carry the two old batteries, fully charged, along with me, as well as a battery charger. Some trouble, but not nearly as much trouble as getting stranded many miles from home, perhaps for a week or more. The ambulance only gets 8 or 9 mpg on the currently available alcohol-laced gasoline, so I don't drive it very often. Life wouldn't be fun without some challenges!

I have considered purchasing a total station system—modern, current equipment for mapping a crash scene. But I have typically worked alone, which means I would have had to buy a robotic system (one with motor drives to locate a prism held by an operator and record the data without having someone at the machine to perform those functions). However, a friendly competitor who doesn't live far away has bought a total station system, and I will be able to get him to help me map a scene when it is necessary. Although many scenes can be properly mapped with a measuring wheel and/or steel tapes, some scenes need more sophisticated measuring. There will be extra cost when the total station system is used, but it will be less expensive than having to pay a mapping crew, as I've done in the past. Please call anytime you need detailed site mapping or other vehicle-related services.

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