New hardware at last!  Despite very tight finances for the last several years, I scraped together enough cash for a new notebook computer and a new desktop computer.  The notebook is a Toshiba Satellite Pro model with 32-bit Windows 7, 4 GB of RAM, a 16-inch screen, and the standard goodies one finds on a Windows 7 notebook.  The new desktop, however, is several levels above standard. I started with an Antec Sonata III 500 Quiet case.  Case features include front-mounted USB ports and an eSATA port, two 120 mm auxiliary case cooling fans, and a washable air filter to minimize dust ingression.  I replaced the standard 500-watt power supply with a 900-watt power supply to provide plenty of power to the GeForce GTS250 1 GB PCIe video card, the triple 750 GB Seagate Barracuda hard drives, the DVD multi-burner, and the dual Blu-Ray burners.  The Intel DX58SO motherboard was fitted with an Intel Core i7-940 2.93 GHz 8 MB 4.8 GT/sec processor and a total of 12 GB of 10600 1333 MHz RAM.  I also had a multi-card reader installed to simplify downloading the digital photographs from my camera's compact flash cards.  The pair of HP LP2065 monitors I bought with my last new desktop still look great and work perfectly, so I didn't have to buy new monitors.

The new machine has 64-bit Windows 7 as the operating system.  I chose to stick with Office 2007 rather than upgrade to Office 2010 at this time.  Most of the programs I've been using which ran under 32-bit versions of Windows continue to run well under 64-bit Windows.  There have been a few programs which have claimed 64-bit compatibility but which seem to require a re-installation every time I want to use them. (Duh!  Isn't progress fun?  Don't you love being a pioneer?  Don't you think we should be getting paid for being the quality control people for some of these software vendors?)  There are other programs I have been using for years which don't claim compatibility with 64-bit operating systems, but Microsoft thoughtfully provided a 32-bit Virtual Machine and a Windows XP Emulation mode for the 64-bit version of Windows 7 Professional.  So far, everything that I've been using that wouldn't run in 64-bit Windows 7 runs fine in XP Emulation mode.  But the emulator takes some significant number of seconds to load, and, since it's only (effectively) a 32-bit OS, it can only use about 3.5 GB of the 12GB of RAM the machine has.  I immediately adjusted to the huge speed increase in Windows 7; when I have to use the emulator, I am reminded that computers were very much slower only a few years ago.  The 32-bit Windows 7 notebook, however, is significantly faster than its Vista predecessor.

Moving to a 64-bit operating system allowed certain software upgrades that would have been impossible otherwise.  The most notable of those is Adobe Creative Suite 5 with 64-bit Photoshop and the concomitant installation of 64-bit Adobe Lightroom.  The 64-bit versions of those programs are very much faster than their 32-bit counterparts, as one would expect.

I was able to find compatible drivers for all hardware, but some of the hardware did not have complete, compatible software packages for the 64-bit environment.  An example of that is the HP Color LaserJet CP3505x printer.  The full software package for that printer allows the user to select which of the three trays will be the paper source, the orientation (portrait or landscape), whether or not to print on both sides, and certain other options.  The HP universal printer driver, the only 64-bit compatible driver available for that machine, only sends print commands. When I want more flexibility in printing, I move the file to my 32-bit Windows 7 notebook machine and print from there, where I have the full software package for the CP3505x installed.

I have ordered a new software package which is still being developed—ARAS 360.  This is a comprehensive reconstruction program which is continuously in 3D mode. It allows diagrams to be prepared over aerial photographs, such as those from Google Earth, onto which total station data can be superimposed to create an accurate 3D representation.  It also includes analytical tools to allow evaluations of post-impact vehicle motions based on various input parameters.  The program has a wealth of features which will take me some time to learn to use.  I believe that it will help me provide more accurate and attractive diagrams and other visuals of accident sites and scenes.

The firmware in my Vericom 4000DAQ vehicle dynamics recording computer has been upgraded.  The associated analytical/display software, called Profile, has also been upgraded to version 5 and patched.  Change is the only constant!  It seems to me that change is not always for the better, but it comes nonetheless.  And they always want more money for it.

The used ambulance has finally been put into service.  I don't use it on every job because of its fuel consumption, but it's handy to have.  For a while, it seemed that something else failed each time I planned to put it in service.  Since I bought it, it has had the alternator, power steering pump, steering gear, hydraulic brake booster, brake master cylinder, front rotors and pads, belts, hoses, numerous bulbs and lamps, the air conditioning compressor/expansion valve/receiver-drier, filters, tires, rims, and a few other parts and pieces replaced, as well as having had some minor body work done on various components which were not fully cooperative.  Perhaps I would have some cash if I didn't have a used ambulance! ☺ The Avalanche keeps rolling along, needing nothing but gasoline (and not a tremendous amount of that), oil changes, other routine maintenance, and a set of tires.  With nearly 100,000 miles on the Avalanche, I'm still using the factory brakes, which aren't worn out.  It will soon be time to replace the spark plugs.

As for personal vehicles, I am sticking with what I have for now, considering the economy, as I imagine many of you are.  My 2001 Oldsmobile Aurora only has 137,000 miles on it; it still looks and drives like it did when it was new.  My wife has taken a strong liking to the 2005

Saturn Relay, which suits me—I have never pictured myself as a minivan person. It only has about 106,000 miles on it. I consider that I've gotten my money's worth from a vehicle after the odometer passes 200,000 miles; everything else is gravy.

Perhaps you heard a recent news release from Toyota. A current claim is that the event data recorders (EDRs) in their vehicles accurately record crash-related data but that the software in the equipment they use to analyze that data has flaws when converting some of the data from some of the vehicles. When Chrysler downloads first became possible through the Bosch CDR system, there were some modules for which the software to analyze the data was not correctly written, and the output was "crazy-wrong." The error involved the location of pointers in the data stream to indicate which raw data values were associated with which operational parameters. That problem was corrected quickly. But this remains emerging technology. The components and concepts are nothing new, but putting them together in useful fashion has presented the occasional challenge.

What effect does ABS have on dry-road stopping distance? In the early days of ABS, there was no reliable answer to that question. The purpose of ABS was to allow a vehicle to stop in a straight line in panic-stop mode. The early systems controlled each front wheel separately and both rear wheels as one unit. As such, stopping distance may not have decreased significantly, and it may have increased. For those vehicles which were equipped with rear-only ABS (to keep the back end from swinging out during hard braking), an **increase** in stopping distance in many circumstances was virtually guaranteed. But ABS components are much better now than they were when first introduced. A fellow reconstructionist took his wife's 2008 Volvo XC70 AWD vehicle for some stopping tests. (It needed new tires, anyway.) All tests were conducted on the same surface, same day, same vehicle, same driver, same tires, etc. Without ABS, the rate of deceleration (in effect, the sliding coefficient of friction between those tires and that surface) ranged from 0.66 to 0.70. With ABS, the rate of deceleration ranged from 0.91 to 0.97. Rates of deceleration numerically equal to the acceleration of gravity (i.e., effective coefficient of friction of 1.0) were unheard of in ordinary street vehicles only a decade ago. How much difference do those values make in stopping distance? A stop from 60 mph at a net drag factor of 0.68 would take 177 feet; a stop from 60 mph at a net drag factor of 0.94 would take 128 feet. Fifty feet can make a huge difference in a potential collision situation.

Traffic fatalities are at an all-time low, at least as a percentage of miles driven. One certain factor is the stricter enforcement of laws against driving under the influence of alcohol and/or other drugs. But technology obviously has played a big factor. Modern cars are designed with crumple zones to absorb impact energy, seat belts to restrain occupants, airbags to cushion, protect, and contain them, and other crash-safety features which weren't even conceived several decades ago. What good old days? I'll take my newer vehicles, thank you very much.

Please contact me whenever you have a forensic, vehicle-related question or issue.