

## Ralph's Crash Reconstruction Newsletter: Volume 16, Number 3—Summer 2017

**Tires.** We all ride on them. Most of us ride on four; some ride on two or six. A few ride on many more. Volume 27, Number 2 (March/April 2017) of the Accident Reconstruction Journal contained, among other articles and features, the National Transportation Safety Board (NTSB) report on “Selected Issues in Passenger Vehicle Tire Safety.” Among many details in this report were extremely detailed investigations into several tire failures which had resulted in fatal injuries. Another aspect of this report described the lack of effective recalls of tires sold through independent retailers and some proposed remedies for that problem. Tire aging was addressed. As I’ve written before, some sources indicate six years as the end of a safe life of a tire, whether it was in service or in storage. Other sources recommend that tires be inspected annually starting with the fifth year after manufacture until they appear unfit for continued service or until they are ten years old, at which time they should be removed from service. (I belong to the six years and scrapped camp.) It was indicated by the data collected by the NTSB that tire failures have diminished since the TREAD act empowered the National Highway Traffic Safety Administration (NHTSA) to require that all vehicles manufactured after 2007 include a tire pressure monitoring system. There is currently some debate regarding whether or not the 25 percent underinflation warning requirement is sufficient to prevent tire damage from overdeflected operation. Although it was agreed that the public should be provided with more information about tire aging and the dangers of not maintaining adequate inflation pressures, such warnings often go unheeded, so tire and vehicle manufacturers are working on systems and components to provide more stability assistance if a tire fails while the vehicle is underway and to provide more safeguards against sudden deflations or other sudden failures. The fact remains that, despite the public perception to the contrary, a rear tire failure is much more likely to cause loss of vehicle control in cars and light trucks than a front tire failure, and the best tires (if a choice must be made) should ALWAYS be on the rear axle, not the front axle, whether the vehicle is front-wheel-drive or rear-wheel-drive or all-wheel-drive.

As some of you may know, Alfa Romeo stopped selling sports cars in this country over 20 years ago. During that hiatus, Alfa Romeo was bought by Fiat but was fortunately left to continue designing cars and engines in the Alfa tradition. Alfa Romeo is now part of Fiat Chrysler Automobiles (FCA), and Alfa Romeo is staging a return to selling cars in this country. For those of you in the market for an upscale sport sedan, automotive enthusiast magazines all rave about Alfa’s new Giulia (pronounced “Julia”). The standard sedan was chosen as the favorite among sport sedans in the \$40K price range, winning over Audi A4 2.0T Quattro, Cadillac ATS 2.0T, Jaguar XE 25t, Lexus Is 200t F Sport, and Mercedes-Benz C300 in comparison testing in the June 2017 issue of Motor Trend. This is a common occurrence when the Giulia has been tested in comparison with similarly priced sport sedans of American, European, and Japanese origin. So, if you are interested in a vehicle in that price range, you might want to check out the Giulia. I had two Alfas in the late 70’s and early 80’s, but I didn’t have time to keep up with them when Alfa left the country and I had to get parts from all over the country and sometimes order them from Italy. But I loved them dearly when I could get them properly serviced regularly. I’m not ready

for a new car right now, but I’d seriously consider Alfa if I were. Mine gave me very little trouble, but apparently the brand had developed a reputation for problems. However, as one writer in that magazine wrote about the Alfa Romeo Giulia Quadrifoglio, “Better to have loved and been towed home than to never have loved at all.” The Quadrifoglio is Alfa’s high-performance model of the Giulia, and it was chosen first place over a BMW M3, a Cadillac ATS-V, and a Mercedes-AMG C63 S. The as-tested prices of those cars ranged from \$74K to \$89K—high performance is very expensive. There are many other fine cars in that price range, each with its own style and features. (I am not trying to get a sales commission from FCA; but, based on my experience with mine, I thought I should write about the new Alfas now available in this country for people who have never experienced the joys of driving an Italian sports car or sport sedan.) The image below shows the Quadrifoglio. You could be the first on your block to own one.



**Sound** is a normal part of the lives of people with essentially normal hearing. Some sounds are pleasant, some are annoying. Sounds are simply waves of various frequencies moving through the air. (For Star Wars fans, a viewer in outer space would not hear the propulsion engines or the firing of the weapons—sound does not travel in a vacuum. But who would watch a modern movie with no sound?)

The common unit for measurement of sound is the decibel (dB), named after Alexander Graham Bell. It is equal to a tenth of a bel, a unit initially used to quantify signal loss over wires. It is commonly used in measuring or expressing sounds or noise, but it actually applies to a variety of fields, such as electronic recordings, electronics, radio field strengths, etc. An important thing to remember about dB is that it is not a linear scale—it is logarithmic, which makes it confusing for people who don’t use it routinely. For example, doubling the sound pressure is a difference of six dB, but it actually takes a difference of approximately 10 dB for most people to perceive a sound as twice as loud. While some sounds and some noises are unpleasant or distracting to most people, exposure to high levels of sound will cause permanent hearing loss, regardless of the frequency. That level varies with duration, and “safe” levels (i.e., levels at or below which no hearing protection to prevent permanent hearing loss is required) depend, at least to some extent, on the length of the exposure, but, in general, prolonged exposure to 120 dB or above is likely to cause hearing loss. Persons who are subjected to short bursts of loud noise, such as those repeatedly firing weapons at targets, should wear hearing protection when firing or whenever close to those who are firing. Hunters usually do not wear hearing protection; they want to hear the sounds of the woods, and one or two shots now and then won’t cause permanent loss. Bird hunters, however, may want to wear some ear protection in situations where game birds are plentiful; bird hunting can produce noise exposure similar to skeet or trap shooting.

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**Balk lines** (stop bars) are the heavy lines painted at most intersections indicating where the driver is supposed to stop. Interestingly, at many intersections with stop signs, the stop bar is painted at a location roughly aligned with the location of the stop sign, but, from that position, it is often not possible to have adequate vision to safely enter the intersection. So, legally, we are all supposed to stop at the balk line, but that rarely happens; most of us, perhaps all, myself included, stop at a position such that we can see crossing traffic approaching from both directions before we enter to turn or cross. And, if your community is like mine, there are many drivers who never stop, and some who don't appear to even slow down for a stop sign.

There are also balk lines at most, if not all, signal-controlled intersections; many signal-controlled intersections are traffic-controlled. Although a few traffic-controlled intersections are now optically controlled, most are still controlled by detecting the ferrous mass of vehicles above the pavement using parallel conductors embedded in the pavement. In my region, those take the form of three parallel lines which are generally quite discernible. They are typically one car length long, although they are longer at some intersections. But, in my region, some of the motorists do not discern their function, despite signs that instruct motorists to stop at the "stop bar" to activate the signal. I have often seen a vehicle whose driver has stopped fully beyond the stop bar waiting for a left-turn arrow that will not come until someone stops behind that vehicle to alert the controller to the presence of a vehicle in the left-turn-only lane. I have also seen a vehicle stopped so far away from the balk line that the result is the same. I once sat in a long line of vehicles waiting to make a left turn because the driver in front of that line had stopped so far back from the balk line that traffic in that line never got a left-turn arrow. I was squeezed into that line (cars in line here typically leave around 12 to 18 inches while in line at a stop sign or signal), so I couldn't get out of the line, and I was too far back from the front to get out of my car to walk to the front to tell the driver in front to move forward to the stop bar to get a turn arrow. I waited through four traffic-signal sequences at that intersection before traffic in that line began to move. I'll never understand why the driver of the second vehicle in line didn't do something, like a toot a horn or whatever, but that delay it really happened. And I have seen other instances where the same thing happened at the intersection where I was in a through lane, but I didn't have opportunity to tell the driver of the lead car to my left that he/she needed to move forward to the stop bar to activate the signal. The optically controlled intersections, then, have several advantages over the conventional magnetically controlled intersections: nothing needs to be embedded in the pavement, and vehicles don't have to stop at the stop bar. There are several optically controlled intersections in the county where I live, and they seem to me to react more quickly than the magnetically controlled intersections. Perhaps the associated controllers are programmed to respond faster.

Thank you for reading my newsletter. Please contact me any time you have a question about any of the vehicle-related services I offer.

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