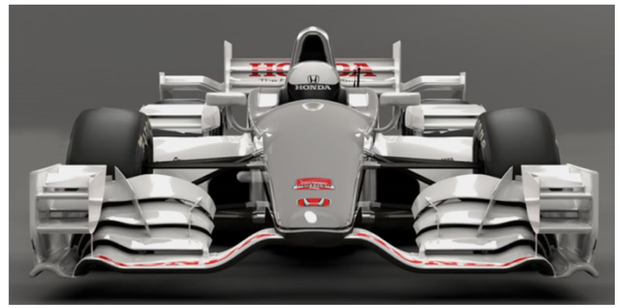
Many of you may remember when you went to a Georgia State Patrol office to get a driver's license and the Georgia Driver book was little more than a pamphlet. Now that Georgia has a Department of Driver Services (DDS), all has changed. Testing is conducted at and licenses are issued through the DDS. Another significant change is that Georgia now has different and better publications for beginning drivers. The three basic ones include one for those seeking conventional class C licenses to drive a car or light truck. There is a separate booklet for motorcycle operators, which requires a class M endorsement, and a third for drivers of commercial vehicles, which includes several categories of drivers of buses and large trucks. Each booklet is printed on coated paper and is a little smaller than a letter-size sheet of paper. Each booklet contains a wealth of information; probably nothing new for current license holders with lots of experience but excellent guides for young and/or newly-licensed drivers. The publications are free when visiting a DDS office, and the information is available online at http://georgia.gov/agencies/georgia-department-driver-services.

With the advent of relatively inexpensive, small video cameras, many people have installed them on or in modes of transportation, and many others are recording vehicle-related movements. There is a series on Velocity Channel, called Wheels That Fail, which features those videos to show a wide variety of vehicle crashes, stunts gone wrong, and similar videos typically involving components of vehicles. If you are interested in seeing new ways people manage to crash or overturn their vehicles, look for the listing among your cable channels. So far, the episodes I have seen did not involve cases in which participants were grievously injured.

For those of you who follow racing, the latest iterations of IndyCar vehicles look like something from a Star Wars movie. Airflow is affected by numerous panels and vanes, minimizing air resistance and optimizing cooling of critical components, air feed to the engine, and downforce to maintain optimum traction. I wonder if any of those changes will filter down to road vehicles. The panel to the right shows the Chevrolet IndyCar design on the left and the Honda IndyCar design on the right.

Along a somewhat related vein, many of you are probably aware of the Dodge Challenger and Charger Hellcat cars. The 707-horsepower engine available in those models has produced a huge demand for them, but demand far exceeds supply, and some dealerships are taking advantage of that by what many would consider unscrupulous business practices: selling cars on order that they know will not be delivered for many months and/or charging substantially more for the Hellcat model than the manufacturer's recommended ("sticker") price. I remember, decades ago, when Honda produced a small, sporty coupe with a sticker price of around $7000. It was an extremely popular car, and all dealerships in Atlanta added $2000 to the sticker price as additional dealer markup. Certainly within their legal rights, but I considered it abusive. I would have bought one if not for the $2000 gouge.

I have found it interesting that emission and corporate average fuel economy requirements and limitations have resulted in more powerful cars which get better fuel mileage. The latest Corvette, for example, is the most powerful production Corvette ever offered by Chevrolet, yet it (allegedly) gets 22 mpg on the highway. Even most modern "economy" cars have engines which will take them to top speeds in excess of 100 mph. When I first started driving, most production cars would reach top speeds of 100 mph or a little higher; exceptions were a few luxury cars, muscle cars, and cars with aftermarket modifications to their engines. A full-size sedan was lucky to get over 16 mpg, and the higher performance vehicles couldn't even achieve that fuel economy when cruising at normal highway speed. Modern cars handle better, stop faster, provide more crash safety, and give equal or better performance while delivering significantly better highway fuel economy than those of past eras. The prices we pay for those improvements are vehicles which cost more to buy and require computers and technicians to diagnose and repair, with concomitant higher costs for parts and labor; there's not much a shade-tree mechanic can fix on a modern car.



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Back on the topic of high-performance vehicles, the Galpin Rocket is a 725-horsepower coupe based on the 2015 Ford Mustang. This car gets its power from a supercharged and upgraded 5.0-liter Ford engine. (The original Ford Mustang 5.0 V8 engine was actually more aptly described as a 4.9, but it seems that no one called Ford to task for that misleading moniker. There weren't enough details available in the article I read to allow me to determine if the Rocket's engine was a true 5.0-liter engine or based on the original Ford 4.9-liter engine.) Numerous body upgrades reduce weight and improve aerodynamics of the Galpin Rocket. It is apparently intended to be a regular-production vehicle, although I suspect that the price, not shown in the article I read, will limit purchases of this exotic machine.

Many of you may recall the "pony car" races of the 60's and early 70's. The International Motor Sports Association (IMSA) Continental Tire Sportscar Challenge Grand Sport class is one which features essentially showroom type production cars. This should not be confused with the Sports Car Club of America (SCCA), which is a different class of vehicles altogether. Pony cars of years gone by included the Ford Mustang, from which the class of vehicles got its nickname, the Chevrolet Camaro, American Motors AMX, and the Dodge Challenger. The AMX has been out of production for decades. Although Dodge still markets the Challenger, the greater popularity of the Mustang and Camaro with racing fans limits interest in the Challenger.

According to an article in the March 2015 edition of SAE's *Automotive Engineering,* the Mustangs and Camaros are at it again. Recent events have been run at Road Atlanta and at the Virginia International Raceway. Although the cars are essentially showroom production stock, some changes are necessary for racing in the IMSA series. All cars must use Continental brand tires. The 505-hp engine in the Camaro Z/28 R requires a 2.7-inch diameter restrictor plate on the 3.5-inch throttle body so that it will not have a power advantage over cars like the 2013 Ford Mustang Boss 302 with its 444-hp engine. Camaros for IMSA racing are stripped of their carbon ceramic rotors which are replaced with iron rotors, and their six-piston Brembo calipers are currently required to be replaced with six-piston AP Racing calipers. The exotic Multimatic shock absorbers are replaced by more conventional Penske racing shocks. Because of the speeds involved, cars for racing generally require different (higher) final drive ratios (i.e., lower effective gearing) and modifications to the transmissions. Among other features, over-the-road transmissions have an overdrive highest gear which would have no value on the racetrack. One fact which I found particularly interesting is that the racing Camaros use a factory-stock engine, with no modifications whatsoever (except for the addition of the required restrictor plate). Most racing engines feature dry-sump lubrication systems, but the engine in the Camaro is raced with the factory-standard crankcase-based lubrication system and other standard features.

For the 2014 model year, Ford offered the Boss 302S, which was suitable for racing in a variety of series, and a Boss 302R, which is specifically modified to perform best in the IMSA Continental Sportscar Challenge series. Ford is also developing and may already be marketing a Shelby GT350 for the 2015 and/or 2016 model year. Predictions that the GT350 engine will produce more than 500 horsepower will probably mean that it gets a restrictor plate, too.

Those of you who are old enough to remember the handling and other performance characteristics of cars in the 60's, 70's, and 80's will realize that not even "sporty" cars like the Mustang and Camaro could reasonably be raced in showroom-production form; it was hard enough to keep them between the ditches on the highway! Remember four-wheel drum brakes? I'm delighted that they are a thing of the past. Remember the body roll every time you made a turn, and the body heave every time you braked hard? Current production cars are vastly superior to cars of bygone eras in terms of safety, braking, road-holding, and handling. Aren't we lucky!

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