

GREAT UNKNOWNNS

BIG QUESTIONS.
ANSWERS YOU CAN'T FIND
ON THE INTERNET.



There are only two states where it's illegal to pump your own gas—New Jersey and Oregon. What's up with that?

A LIKE MANY SILLY laws, bans on self-service gas exist under the guise of safety. You, who are not a highly trained professional gasoline transfer specialist, could catch fire should you attempt this demanding, technical procedure on your own. The ceaseless pall of smoke that rises over the 48 states that callously disregard their citizens' well-being is acrid testimony to the legions of tragically DIY-minded motorists who leave this earth each day, losers in the deadly game of "gas-pump roulette."

So, it's safe to say it's not *really* safety—at least not in New Jersey. Back in the day, according to Sal Risalvato, executive director of the New Jersey Gasoline-Convenience-Automotive Association, an enterprising station owner lowered the price of gas by a nickel if customers fueled vehicles themselves. Angered by the competition, other station owners pushed the legislature to ban self-service, which it did in 1949. (Oregon followed in 1951.) "But there was nobody who was either for or against self-serve at that time," says Risalvato. "Nobody cared."

They care now. Jerseyans, especially, cherish their full-serve-only status. Among the benefits of the ban cited by proponents are convenience (why get out of the car if you don't have to?), jobs (someone's got to pump the gas), and an appreciation for tradition. The popularity of the Jersey ban is helped by the fact that the state has among the lowest gas taxes—and therefore among the lowest gas prices—in the nation. So it seems to be a benefit that comes with little or no cost. Accordingly, any

legislation introduced to repeal the Jersey ban invariably fails. Meanwhile, in Oregon, thanks to a recent revision of the law, residents of the Beaver state can now pump their own gas, but only at night in rural areas. Who came up with that? Bigfoot? Stay safe out there, people.



What kind of paint do they use on airplanes?

As you might surmise, the airlines don't just slap on a couple coats of Dutch Boy and call it good. The skies are not so friendly, at least when it comes to snazzy paint jobs (or liveries, as they're known). The paint on a plane needs to stand up to extreme environmental conditions—broiling sun, stinging rain, subzero temperatures—as well as speeds that may top 600 mph, meaning airborne grit, dust, sleet, etc., can hit with the force of a sandblaster. The paint also must be light: Even an extra 100 pounds is enough to reduce an airliner's fuel efficiency. Think about that the next time you hit the airport food court before your trans-Pacific flight.

To solve these challenges, current practice is to use a specially formulated, light, durable base coat in whatever garish colors the marketing department decides upon, covered with an exceptionally strong, clear, polyurethane topcoat. This is similar to how cars are finished, though the clear coat on a Hummer, say, is softer, so you can buff out the scratches when prickly environmentalists key your

vehicle. The latest specialized aviation coatings cost as much as \$300 a gallon, though they have extended the life of airplane paint jobs from five to as many as eight years—by which time the plane would likely need a makeover anyway, given the steady pace of mergers and bankruptcies in the industry.



Do people still try to set the odometer back when they sell a car?

Nah, that's just a myth. Now step over here and let me show you this cherry 1978 Dodge Dart we got in on trade from a little old lady who only took it to and from church—on the back of a flatbed truck. Zero miles! Can you believe it?

No, we can't. Of course "people"—and we use the term loosely, as only a despicable animal would engage in such chicanery—set back odometers, but we were shocked to learn how common it is, even in this age of digital counters. Peeling miles off can add thousands to a car's value, so the incentive is strong. Used-car-data purveyor Carfax estimates there are as many as 1.5 million vehicles with doctored odometers out there.

Time was, odometers were mechanical affairs, and cheats could nudge numbers back with dental picks. Less patient crooks could attach a drill to the odometer control cable and spool it backward. Eventually, manufacturers wised up and installed stops to prevent the wheels from turning in reverse. Sleazes overcame this by disassembling the entire odometer and putting it back together with the desired data showing.

Today there are no wheels to turn, but the problem persists. "Odometer fraud has reached the digital age," says Carfax spokesman Chris Basso. "Now instead of having to physically roll the analog odometers back by hand, it's as simple as going on the internet, buying tools and software that plug into the car's computer, and those will change the mileage within seconds."

That's a vexing thought, though there are ways to protect yourself. Reports from information services like Carfax may contain mileage readings recorded over a car's life. If those numbers don't match the mileage on the dash, it's a strong hint that that little old lady is the invention of a rip-off artist.

Do you have unusual questions about how things work and why stuff happens? This is the place to ask them. Don't be afraid. Nobody will laugh at you here. Email greatunknownns@popularmechanics.com. Questions will be selected based on quality or at our whim.