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## Response to Cessna Pilots article on avgas

*The GAFuels Blog is written by two private pilots concerned about the future availability of fuels for piston-engine aircraft: Dean Billing, Sisters, Ore., a pilot, homebuilder, and expert on avgas and ethanol, and Kent Misegades, Cary, N.C., an aerospace engineer, aviation sales rep for U-Fuel, and president of EAA1114.*

The June 2012 issue of the [Cessna Pilots Association](#) Magazine featured an article from Jim Cavanagh titled "Get the Lead Out!" The third part in a series, it dealt with alternatives to 100LL. While it includes a good review of efforts to find an unleaded 100-octane replacement, we felt the need to weigh in on the comments regarding auto gas. We asked Todd Petersen, owner of Petersen Aviation, for his thoughts:

"Jim Cavanagh's recent article in CPA on the future of leaded fuel dismisses auto fuel as any sort of alternative, and that is a mistake. I'm not sure where he picked up his information but his article is inaccurate and misleading.

While the number of the specification has changed since the 1980s, the substance is basically the same. D-439 and D-4814 are basically interchangeable. The only reason the spec was changed was to allow for the use of oxygenates (ethanol). D-4814 doesn't require the addition of ethanol, but it makes it legal to include it. D-439 did not allow for the use of ethanol, period. That is the primary difference between the specs.

So to say that gasoline today is somehow of lower quality than before due to changes in the spec totally misses the point of the original spec change. If it has ethanol in it then I'd agree that it is a substandard product. However straight gasoline sold today without ethanol is every bit as good, indeed is better, than gasoline produced to D-439 in the 1980s.

It's better because the EPA, starting in 1992, began requiring a lower vapor pressure in order to cut down on evaporative emissions. The spec still allows a higher vapor pressure, but the EPA does not. Hence the chances of vapor lock are much less than during the 1980s. This is why we maintain that today's auto fuel (without ethanol) is [better than it used to be](#), and more like avgas than ever.

The exception to this is BOB - "Blendstock for Oxygenate Blending." BOB has a reduced octane rating so that once ethanol is added, the octane rating ends up where they want it in the end product. This allows oil companies to manufacture a substandard product, then add ethanol to jack up the octane rating. BOB is not available to the general public until after the ethanol is added and no one is saying that this is acceptable for our airplanes.

Jim also indicates that there are aromatics such as toluene in auto gas, as if they do not exist in 100LL, which is false. 100LL contains aromatics as well. Unlike auto fuel STCs, there was no testing involved with the approval of 100LL, the powers that be simply sat around a table and decided how they'd make it. In the late 1970s when 100LL was introduced, it was first made available in the Midwestern part of the country, Nebraska included. I was flying then and I have vivid memories of how o rings would swell when using 100LL. There turned out to be a lot of problems with materials compatibility with 100LL, due primarily to aromatics such as toluene. 80/87 never had any aromatics. By the time the autofuel STCs came out in the early 1980s, companies that made hoses, seals, o-rings, etc., had already changed these materials to make them compatible with 100LL, hence they were compatible with auto fuel as well. If fuel containing aromatics isn't acceptable, then we can't use 100LL either.

He also alludes to 14 accidents last year that were fuel related but he doesn't give us any further information. I would like very much to see those 14 accident reports. To my knowledge there has never been an accident that has been related to the use of auto gas. Indicating that all of them were due to auto gas is grossly misleading since even running out of gas is considered "fuel related." I repeat that if anyone has an accident report that indicates auto gas as the cause, please forward either the report or the N number to us. Without that, it's only so much rumor and innuendo.

Airports interested in supplying ethanol-free auto gas should obtain it from terminals. Since ethanol is added at terminals, there are far more locations from which suppliers can obtain ethanol-free avgas than they can obtain 100LL. For individuals going to gas stations, we recommend that auto gas be obtained only from major manufacturers, as opposed to the cheapest outlet you can find, and that it all be tested for ethanol. Brand name stations provide a better end product than cut-rate outlets."

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