

Politico Pro

National Academy of Sciences urges FAA to pursue multiple paths to reduce lead in fuel

By Alex Guillén

The FAA, EPA and other federal agencies must deploy multiple strategies to reduce lead emissions from fuel used in certain small aircraft, according to [a report released Tuesday by the National Academy of Sciences](#).

“Achieving continuing, and potentially full, reductions of lead from aviation is a challenge for which there is currently no single known technical solution that is certain to be available in the near term,” the report said.

Background: While lead was banned from gasoline used in cars and trucks more than a quarter-century ago, it remains in a type of aviation gasoline known as "avgas" used in 170,000 small piston-engine aircraft in the U.S. One-third of those planes have engines that require a high octane achieved by adding a form of lead.

Efforts to switch to unleaded avgas have been hampered by the relatively small market and the fact that many airports have limited fueling infrastructure for small planes and therefore often offer exclusively leaded avgas, meaning many of the two-thirds of planes that do not need to use leaded fuel do so anyway. Congress in 2018 directed the Transportation Department to commission the NAS study to consider alternative fuels and mitigation measures.

There is no safe level of lead exposure. Lead emitted from aircraft, especially in high concentrations around airports, hurts cognitive development in children and creates other health issues.

What the report says: Creating a viable unleaded “drop-in” alternative could solve the problem but comes with “a high degree of uncertainty of success given the formidable technical challenges,” the report said. It recommended the FAA thus not put all its eggs in one basket and focus on a suite of mitigation measures in the near-term to reduce emissions and exposure.

In addition to continuing to develop lead-free avgas, the report calls on the FAA to seek out ways for more airports to offer the unleaded fuel that two-thirds of piston-engine aircraft can use but often don't have access to. It also suggested finding a way, potentially via legislation, to motivate refiners to supply an existing alternative avgas that has the necessary octane level but 20 percent less lead. That alternative, known as “100VLL,” “has not taken hold in the marketplace for reasons that are not entirely clear,” the report said.

The FAA should also update its guidance on "run-ups" — when pilots test their engines before taking the runway to ensure they can reach takeoff thrust — to try and reduce exposure from those emissions.

The report did not weigh options under the Clean Air Act because EPA has dragged its feet for more than a decade on how much of a danger lead emissions from aviation pose to public health. If tools under that law "were to become available, they would almost certainly have a prominent role in a lead mitigation strategy," NAS said.

The report threw cold water on several mitigation measures suggested by Congress. Simply restricting the use of leaded avgas is not viable, they concluded. And automotive gasoline contains ethanol, which corrodes aircraft parts.

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