Federal Aviation Administration

Memorandum

Date: JUN 19 2013

To: Regional Airports Division Managers, Regional 610 Branch Managers, and Airports District Office Managers

From: Ralph Thompson, Manager, Airport Planning and Environmental Division, (APP-400)

Subject: Interim Guidance on Mitigating Public Risks Associated With Lead Emissions from Avgas

Introduction

Aviation gasoline (avgas) is a specialized fuel used to power piston engine aircraft. Due to the high octane requirements of these aircraft engines, a fuel additive, tetraethyl lead (TEL), is used as an octane booster in avgas. The presence of TEL in avgas results in engine emissions from these aircraft that include lead.

In late 2008, the Environmental Protection Agency (EPA) established more stringent National Ambient Air Quality Standards (NAAQS) for lead concentrations—the EPA changed the standard from 1.5 micrograms per cubic meter to 0.15 micrograms per cubic meter. In conjunction with lowering the lead NAAQS, the EPA required monitors to be placed in areas near industrial facilities with estimated lead emissions of 0.50 tons or more per year, at airports with estimated emissions of 1.0 ton or more per year, and on a case-by-case basis in locations where information indicates a significant likelihood of exceeding the standard. This lead monitoring is conducted by state and local air quality agencies.

In 2010, the EPA decided to undertake a monitoring study and identified airports using the following criteria: 1) estimated lead emissions greater than or equal to 0.50 tons per year and less than 1.0 ton per year, 2) airport runway configuration and meteorology that lead to a greater frequency of operations from one or two runways, and 3) ambient air within 150 meters of the location(s) of maximum emissions. As part of the airport lead monitoring study and the monitoring requirement established in 2008, the EPA conducted lead monitoring at 17 airports.

Based on its recent acquisition of certified but partial lead monitoring data from 17 airports, the EPA has summarized and made that data available at: http://www.epa.gov/otaq/regs/nonroad/aviation/420f13032.pdf. The EPA anticipates having a full year of certified data from all of the study airports by May 2014.

The EPA also requires that monitoring continue beyond the one-year study period at any location where the monitoring data indicate lead concentrations are over half the Lead NAAQS level.

Short-Term Mitigation Measures

Based on the EPA's certified but partial monitoring data, the Federal Aviation Administration (FAA) has identified airports of concern, and offers the following options for consideration by any airport operator concerned about lead emissions.

Airport operators are encouraged to evaluate these suggested measures while taking into account the specific operational and safety needs unique to their airport.

Before implementing any of these proposed options, the airport operator must carefully consider any impact to the safe and efficient movement of aircraft. Any change in operation that relocates a lead emission source must also be evaluated so as not to exacerbate exposure to lead emissions. Further, the FAA strongly urges airport operators to be mindful that some of these measures may require environmental review, analysis and determination under applicable state and federal laws before implementation. This memorandum identifies potential mitigation measures to minimize the general public's exposure to airborne lead concentrations at and near airports where piston-powered aircraft use leaded avgas.

The FAA is working with airport operators to promote the use of currently available reduced-lead and unleaded fuel formulations, to identify and consider operational changes at the airports, and to consider implementation of vapor controls for airport fuel storage and dispensing systems that would mitigate lead emissions.

If existing run-up areas typically cause propeller wash to be directed off-airport property or into areas where the general public can be exposed, the airport operator should consider shifting either the location or orientation of run-up activities to locations where the emissions can be better contained to non-public areas on the airport.

In cases where it is not immediately feasible to reduce lead emissions, consider minimizing the public's outdoor air exposure to lead emissions by either shifting fences (to increase the distance between run-up areas and public observation areas) and/or posting signs to discourage loitering by the public in those areas where there may be potential and unnecessary exposure to lead from piston engine aircraft emissions.

Longer-Term Solution

As a solution to the problem of lead content in avgas, the FAA has been actively working with the aviation industry and the EPA to develop an unleaded fuel replacement by 2018. This effort is part of the FAA's Unleaded Avgas Transition Plan located at http://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/Avgas.ARC.RR.2.17.12.pdf.

For additional information, please see the FAA's National Avgas Fact Sheet located at http://www.faa.gov/news/.