

May 3, 2006

Contact – Stella Ononiwu

Workgroup Recommendations and Other Potential Control Measures
Non-Automobile Gasoline Engines Workgroup

NA005 – Insure Proper Disposal of Fuel Samples After Daily Aircraft Pre-Flight Checks

DESCRIPTION

This measure would require aircraft pilots to properly dispose of fuel samples accumulated during daily pre-flight checks required by the Federal Aviation Administration (FAA). Daily pre-flight routines include drawing fuel samples, each 3-4 fluid ounces, from the bottom of each fuel tank and the lowest point in the fuel system to examine for the presence of water. The common observed practice is to dispose of the fuel onto the tarmac, where it is left to evaporate. This practice generates VOC emissions that pollute the air, as well as possible runoff issues contaminating surface water and the soil. According to the Florida Department of Transportation, studies indicate that over 3 million gallons of aviation gasoline (AVGAS) are poured on aircraft parking ramps every year from sampling fuel during preflight inspections. In New Jersey, the estimate is about 1,460 gallons.

Climbing upon the wings of the aircraft is often necessary to return the fuel to the fuel tank once the check is completed, but most pilots are unwilling to do this. FAA does not disallow the action of returning the fuel to the aircraft's fuel tank provided that water is not present in the sample. Proper disposal of aviation fuel will not only be protecting the environment but will be providing some fuel savings by returning clean fuel to the aircraft fuel tank or tanks of other appropriate equipment.

IMPLEMENTATION

This measure is a mandatory measure. A rule would be required to implement it. The rule would require that pilots, fixed base operators (FBOs) or aviation technicians dispose of fuel samples after pre-flight checks in more environmentally acceptable ways. The State of Florida currently has a law (Section 403.727, Florida Statutes) that prohibits dumping "sumped" aviation fuel on the ground (soil, pavement or waterway). Violators of this law are subject to a fine of up to \$50,000. Arizona Department of Environmental Quality prohibits this practice as well.

Several options and devices are available to assist with the testing and proper disposal of preflight fuel. One option is the Gasoline Analysis Test Separator (GATS) jar developed by Embry-Riddle Aeronautical University. A preflight procedure using this jar allows the return of clean fuel back into the aircraft fuel

tank and contaminated fuel to be dumped into a disposal unit located on the ramp. Several other types of fuel filtering devices are available on the market and

May 3, 2006

Contact – Stella Ononiwu

Workgroup Recommendations and Other Potential Control Measures
Non-Automobile Gasoline Engines Workgroup

NA005 – Insure Proper Disposal of Fuel Samples After Daily Aircraft Pre-Flight Checks

can be purchased through aviation supply companies. Another option is to use your current fuel-testing cup but to dispose of the fuel sample into an appropriate waste fuel container. Airport facilities often have solvent disposal mechanisms in place whereby the unwanted fuel could be deposited in a receptacle. It can also be returned to the aircraft's fuel tank if it is not contaminated or used in other appropriate power equipment. If it is contaminated, it can be recycled using a Glannon Fuel Recycling Unit to remove residues; water and acid build up for re-use in ground support equipment or in other applications.

COST

The cost to the state would be minimal, as the only factors would be implementation and enforcement of the regulation. Contaminated fuel from pre-flight drains is disposed of at a cost of about \$1.00/lb and the procurement of a fuel-recycling unit may not be comparable to the fines that would be imposed on those that would not abide by the rules when they are adopted.

EFFECTIVENESS

It is estimated that about 4 gallons of aviation gasoline is disposed of on the tarmac everyday in New Jersey. This generates VOC emissions that pollute the air, as well as possible runoff issues contaminating surface water and the soil. Addressing this issue will not only be protecting the environment but will be saving fuel.

SOURCE

1. A Collaborative Report Presenting Recommended Air Quality Strategies for Further Consideration by the State of New Jersey, prepared by the Non-Automotive Gasoline Engines Workgroup, October 31, 2005, pg. 17.
http://www.nj.gov/dep/airworkgroups/docs/final_na_workgroup_report.pdf
2. Florida Department of Transportation.
http://www.dot.state.fl.us/aviation/text_version/environment.htm
3. Arizona Department of Environmental Quality.
<http://phoenix.gov//AVIATION/deervalley/aviation/tenant/gahandbook.pdf>
4. Aircraft Owners and Pilots Association (AOPA) – Safety Hot Spot: Fuel Management Checkup. http://www.aopa.org/asf/hotspot/fuel_check.pdf
5. http://fastt.navsea.navy.daps.dla.mil/frames/rec_6.htm

Disclaimer – The recommendations contained within this white paper do not constitute official state decisions nor reflect any pending regulatory or nonregulatory actions. The NJDEP welcomes public feedback on this (or any other) white paper.