



**THE AMERICAN WORKING GROUP FOR NATIONAL POLICY, INC.**

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*"Promoting a sustainable economy and environment through education and accountability."*

Attention Docket ID No.  
EPA-HQ-OAR-2007-0294.  
FR Doc. E7-22456.

Petition Requesting Rulemaking To  
Limit Lead Emissions from General  
Aviation Aircraft.

March 15, 2008

Since the 1990s our organizations have been making the United States Environmental Protection Agency aware of the significantly serious public health problem caused by aviation-generated lead pollution<sup>1</sup>.

Aviation gasoline fuel (100 LL) is now the major source of lead in ambient air<sup>2</sup>. It is currently the fuel with the greatest alkyl-lead (TEL) content, ranging from  $4.4 \times 10^{-3}$  to  $8.8 \times 10^{-3}$  lbs as lead/gal<sup>3</sup>.

Quite different from ground-based emitters, whose emissions fall to the ground and/or are assimilated within about 750 feet of the source<sup>4/5/6</sup>, this hazardous substance (lead) is emitted in fine particles overhead, like from a *toxic-crop duster*, exposing a large percentage of the population to bodily harm.

As the EPA has confirmed, the great majority of aircraft particulate emissions, including heavy metals, are PM 2.5<sup>7</sup> (more typically PM1.0), and the EPA is aware of the extraordinary harm that these inhaled ultra-fine particulates can have on human health.

It is also well established that lead is responsible for most cases of pediatric heavy metal poisoning<sup>8</sup>.

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<sup>1</sup> The American Working Group for National Policy, The Alliance of Residents Concerning O'Hare, Mothers Against Airport Pollution, Respiratory & Environmental Disabilities Assoc of HI, Neighborhood Aviation Advisory Committee of San Leandro, US-Citizens Aviation Watch Association (dissolved), and many others to numerous to list.

<sup>2</sup> Dr. Volker Mohnen, Professor Emeritus and Senior Scientist, Atmospheric Sciences Research Center, State University of New York at Albany (March 6, 2008).

<sup>3</sup> USEPA, *Great Lakes Binational Toxics Strategy: Report on Alkyl-lead: Sources, Regulations and Options*, Great Lakes National Program Office, June 2000, p. #11.

<sup>4</sup> Zhu (2004).

<sup>5</sup> Levelton Engineering Ltd., *Diesel particulate matter and associated environmental concerns, health risks and tradeoffs*. March 3, 2000 Project: # 499-0998.

<sup>6</sup> Zhu (2005).

<sup>7</sup> USEPA, Comments on the O'Hare Airport Modernization Draft Environmental Impact Statement (DEIS), Cook and DuPage Counties, Illinois, EIS #050018, Apr 6, 2005.

Note: areas around airports, within at least a 20-mile radius, provide long-term exposure. It is a possible carcinogen<sup>9</sup>, and, unlike metallic forms of lead, alkyl-lead is also easily absorbed through the skin<sup>10</sup>: “The effects of lead are the same, whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in your body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High level exposure in men can damage the organs responsible for sperm production.<sup>11</sup>”

There are tested and viable alternative fuels as mentioned in the comments, among them, 100% denatured ethanol (E95), certified through the FAA’s Supplemental Type certification process beginning in 1990. Using the same process, Brazilian Agricultural Pilots have flown over 800,000 hours of trouble free spray operations on 100% ethanol. This proves there is a viable unleaded alternative to leaded Avgas, which is incidentally, less than ½ the cost<sup>12</sup>.

It is probably criminal, if not at least embarrassing, that the United States is one of the few industrialized nations to have not banned lead, especially, from such an airborne source, which must be insidiously harming significant numbers of our populace.

We have reviewed the Friends of the Earth petition and find that we are in agreement.

At this time, we do not have any specific technical information that the EPA is requesting.

We also strongly recommend human health testing and mitigation, including free medical assistance.

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<sup>8</sup> (Roberts, 1999).

<sup>9</sup> Agency for Toxic Substances and Disease Registry, Division of Toxicology and Environmental Medicine.

<sup>10</sup> USEPA, *Great Lakes Binational Toxics Strategy: Report on Alkyl-lead: Sources, Regulations and Options*, Great Lakes National Program Office, June 2000, p. IV, #5.

<sup>11</sup> Agency for Toxic Substances and Disease Registry, Division of Toxicology and Environmental Medicine (FAQ), Agency for Toxic Substances and Disease Registry (ATSDR). 2007. [Toxicological Profile for Lead \(Update\)](#). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

<sup>12</sup> Baylor Institute for Air Science, Grazia Zanin, Director of Research, Baylor University.