



Hillsboro Air & Water

Hillsboro Airport and Toxic Air Pollution

The Hillsboro Airport is the single largest industrial emitter of airborne lead in Oregon. This was reported by Environmental Protection Agency (EPA) *National Emissions Inventory (NEI)* in 2011, the most recent year that *NEI* data is available. According to the EPA, the Hillsboro Airport releases 1,160 pounds of lead annually into the air at 3355 NE Cornell Rd in Hillsboro.

To put the airborne lead pollution from Hillsboro Airport in perspective, of all the foundries, smelters, steel mills, battery manufacturers, airports, mines, chemical plants, and military bases in the United States, Hillsboro Airport placed 94th worst out of the over 34,000 sources of airborne lead pollution watched by the EPA.

Lead is dangerous. The Agency for Toxic Substances & Disease Registry (ATSDR), a federal public health agency of the US Department of Health and Human Services, reports on its website that "lead can affect almost every organ and system in your body." They warn that lead targets the nervous system in adults and children, can damage the brain and kidneys, and can cause miscarriages. ATSDR warns that "children are more sensitive to the health effects of lead than adults. No safe blood lead level in children has been determined."

Airborne lead pollution from airports is preventable — it is not caused by commercial passenger jet flights. Hillsboro Airport's unusual problem with lead is due to nonessential flight training and recreation flights using small piston-engine planes and helicopters. These small aircraft are using avgas which contains amounts of lead similar to the leaded gas used in cars back in the 1970's.



Due to the danger to human health, lead was phased out of automotive gas in the US beginning in 1973. It was banned in California in 1992. The Clean Air Act banned leaded gas nationwide in the US in 1996. The entire European Union started phasing out leaded gas in the 1980's and banned it in the late

90's. Lead Education and Abatement Design Group, an international nonprofit working to prevent lead poisoning and contamination, reported in 2011 that the only countries that still allow leaded automotive gas are Afghanistan, Myanmar, North Korea, Algeria, Iraq, and Yemen.

Portland Community College flight school, Hillsboro Aero Academy, and recreational pilots using small aircraft should switch to mogas, an unleaded fuel, and stop putting lead in Hillsboro's air. This report explains the danger of airborne lead to Hillsboro residents and what can be done about it.

Airborne lead gets into your body when you breathe it into your lungs. US Department of Health and Human Services Public Health Statement reports lead exposure is caused by either breathing in lead or swallowing it. According to the ATSDR, shortly after lead enters the body:

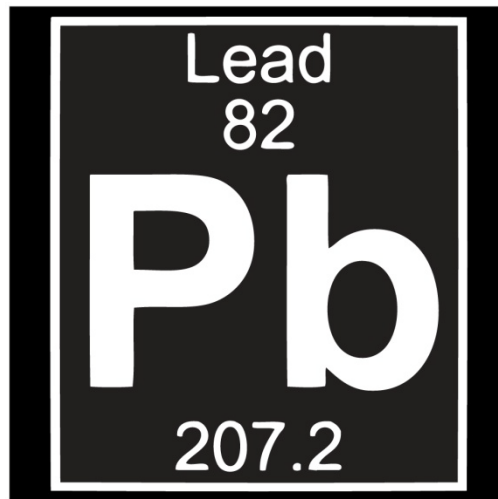
"... it travels in the blood to the "soft tissues" and organs (such as the liver, kidneys, lungs, brain, spleen, muscles, and heart). After several weeks, most of the lead moves into your bones and teeth.

In adults, about 94% of the total amount of lead in the body is contained in the bones and teeth. About 73% of the lead in children's bodies is stored in their bones. Some of the lead can stay in your bones for decades; however, some lead can leave your bones and reenter your blood and organs under certain circumstances (e.g., during pregnancy and periods of breast feeding, after a bone is broken, and during advancing age)."

Low levels of lead cause major health problems. The Center for Disease Control (CDC) Adult Blood Lead Epidemiology and Surveillance (ABLES) program published laboratory-reported Blood Lead Levels (BLL) from Americans in 41 states from 1987 to 2013. The CDC reported that

"evidence indicates that lead exposure at low doses can lead to adverse cardiovascular and kidney effects, cognitive dysfunction, and adverse reproductive outcomes."

The CDC includes decreased renal function and increased risk of hypertension as health problems associated with low levels of exposure.



Some people are more at risk of lead poisoning than others. While the CDC reports even low levels of lead were dangerous for adults, the ABLES study reviewed only Americans with "high" and "very high" Blood Lead Levels. These were primarily occupational lead exposures in the "battery manufacturing, lead and zinc ore mining, and painting and paper hanging industries."

It is not just workers at lead mines and battery factories who risk getting dangerous levels of lead into their blood. A study of Blood Lead Levels of 125,197 children, including 13,478 children living near airports indicates that "living within 1,000 m of an airport where avgas is used may have a significant effect on blood lead levels in children." The three researchers Miranda, Anthopolos, and Hastings, whose study was published in *Environmental Health Perspectives*, reported that kids living 1,500 feet away from an airport that used avgas had Blood Lead Levels 2.1% higher who didn't live by an airport. Kids living within 500 meters of an airport where avgas is used had Blood Lead Levels 4.4% higher than kids living away from an airport."

According to research published by the Natural Resources Defense Council, "At least 3,200 students who attend schools near the Hillsboro Airport are at risk. A Montessori preschool is located across the street from the airport's entrance, and a day care center is situated just 800 yards from the end of the main runway."

The Center for Disease Control warns that "Children are more vulnerable to lead poisoning than adults... Even at much lower levels of exposure, lead can affect a child's

mental and physical growth... Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children."

The Hillsboro Airport, which has frequent corporate jet flights, pollutes more than excessive lead into the air. The Santa Monica Airport Health Impact Study found that airports are a significant source of black carbon which cause asthma, bronchitis, and cancer. Elevated levels of polycyclic aromatic hydrocarbons, another carcinogen, a host of other toxic chemicals from airplane exhaust, as well as excessive noise, affect a large population near the airport.

The flights that cause this dangerous pollution in Hillsboro are largely people flying for fun. These are small planes and helicopters used for recreation and flight training for small aircraft and to train recreational pilots and pilots from other countries for small aircraft. These flights that take off from Hillsboro airport, fly around nearby, and then land again at Hillsboro Airport are called "local" flights. According to the Environmental Protection Agency, "Local operations are those activities performed by aircraft operating in the local traffic pattern or within sight of the airport... in a designated practice area located within a



20-mile radius of the airport... This includes applications such as recreational, proficiency and instructional flying... Emissions during local flying are more likely to influence air and soil concentrations of lead in the vicinity of the airport because they occur near the airport."

Each year there are three times as many "local" flights at the Hillsboro Airport as there are flights used for transportation according to

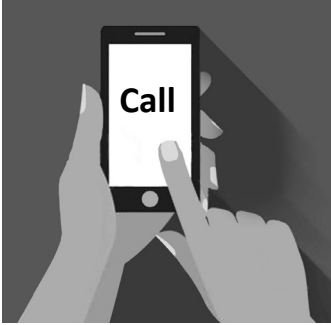
Federal Aviation Administration (FAA) records. Transportation flights, those that land at or leave from Hillsboro, are deemed "itinerant" flights. It is the local flights, those that are not being used for transportation, that are using these smaller planes using leaded gas.

On Nov 4, 2015 at the Hillsboro Airport Roundtable Exchange meeting with Representative Susan McLain and Senator Chuck Riley, Jon Hay, owner and Executive of Hillsboro Aero Academy, formerly called Hillsboro Aviation,

presented slides stating that 68% of the flight school students enrolled in the Academy are from overseas, mostly China.

While small planes cannot use fuel with ethanol, they can use Mogas, aka automotive gas sold without ethanol, which is unleaded. Many types of small planes can use Mogas by simply requesting a Supplemental Type Certificate from the FAA. Local flight schools could stop their lead pollution immediately. Flight training in Hillsboro should end immediately or switch to unleaded gas.

What You Can Do



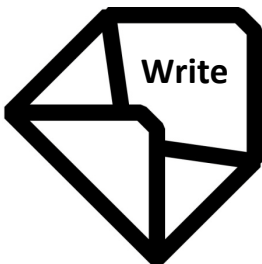
Contact Hillsboro Aero Academy and Portland Community College Aviation Science and ask them what they are doing to get Supplemental Type Certificates from the FAA so they can switch to unleaded fuel.

Hillsboro Aero Academy
1 (503) 489 1142

Portland Community College Aviation Science
1 (503) 722 6031 or
1 (503) 722 7256

Call the Federal Aviation Administration and ask what they are doing to reduce lead from Hillsboro Airport

Federal Aviation Administration
1 (866) 835 5322



Write a Letter to the Editor of local newspapers explaining why unleaded gas should be required at Hillsboro Airport. Please send published Letters to Hillsboro Air & Water.

Volunteer

send an email to greg@HillsboroAirWater.org



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