

# SANTA MONICA AIRPORT & PUBLIC HEALTH

## **PRESENTATION REGARDING COMMUNITY CONCERNS**

*by Martin Rubin, Director*

**CONCERNED RESIDENTS AGAINST AIRPORT POLLUTION**

NOVEMBER 30, 2011

California Senate Select Committee on Air Quality Hearing  
“Air Pollution Basics and Santa Monica Airport”

**EXPOSURE TO AIR POLLUTION FROM  
SANTA MONICA AIRPORT (SMO):**

**IS IT A PUBLIC HEALTH CRISIS ?**

**SHOULD THE NEIGHBORING  
COMMUNITIES BE CONCERNED?**

# Strong odors made residents aware of jet fumes

- Residents have become increasingly aware of the jet fumes due to their unique odor coupled with the rapid growth in jet traffic at SMO.
- **90%** of the time, ocean air currents from the west carry idling jet emissions into the downwind Los Angeles communities.
- When the wind currents shift direction, the idling jet emissions are carried into the downwind neighborhoods to the west.

## **Homes less than 300 feet from jet blast**

**A 1989 inter-departmental memo between the U.S. DOT and FAA warned that sensitive equipment and personnel should not be within 300 feet of jet fumes due to deleterious and dangerous health effects. The fact that there existed homes on both sides of the runway, situated less than 300 feet from the jet blast, was not taken into consideration.**

# View of west side of SMO



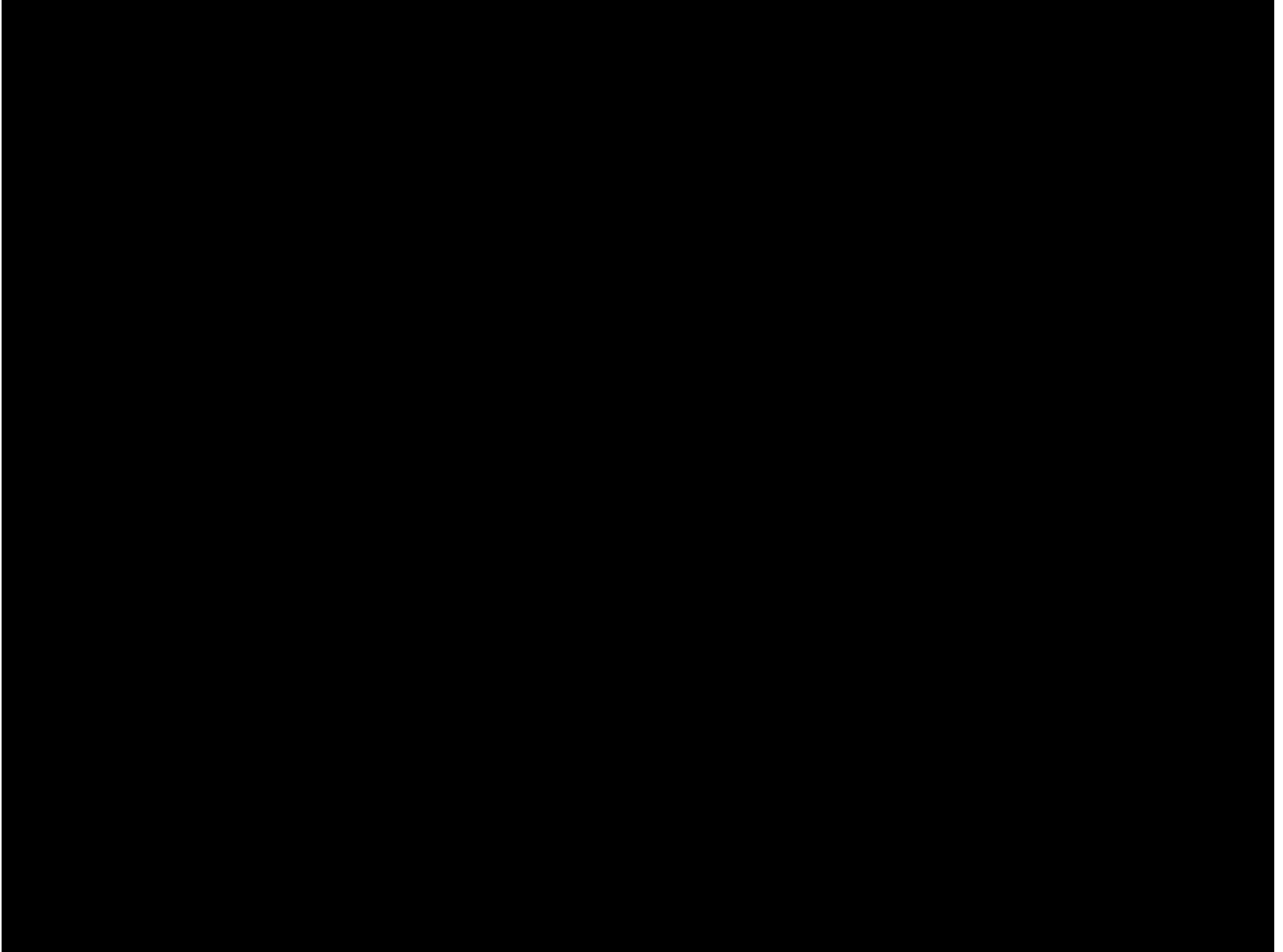
# View of east side of SMO



Data USGS

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

# Video

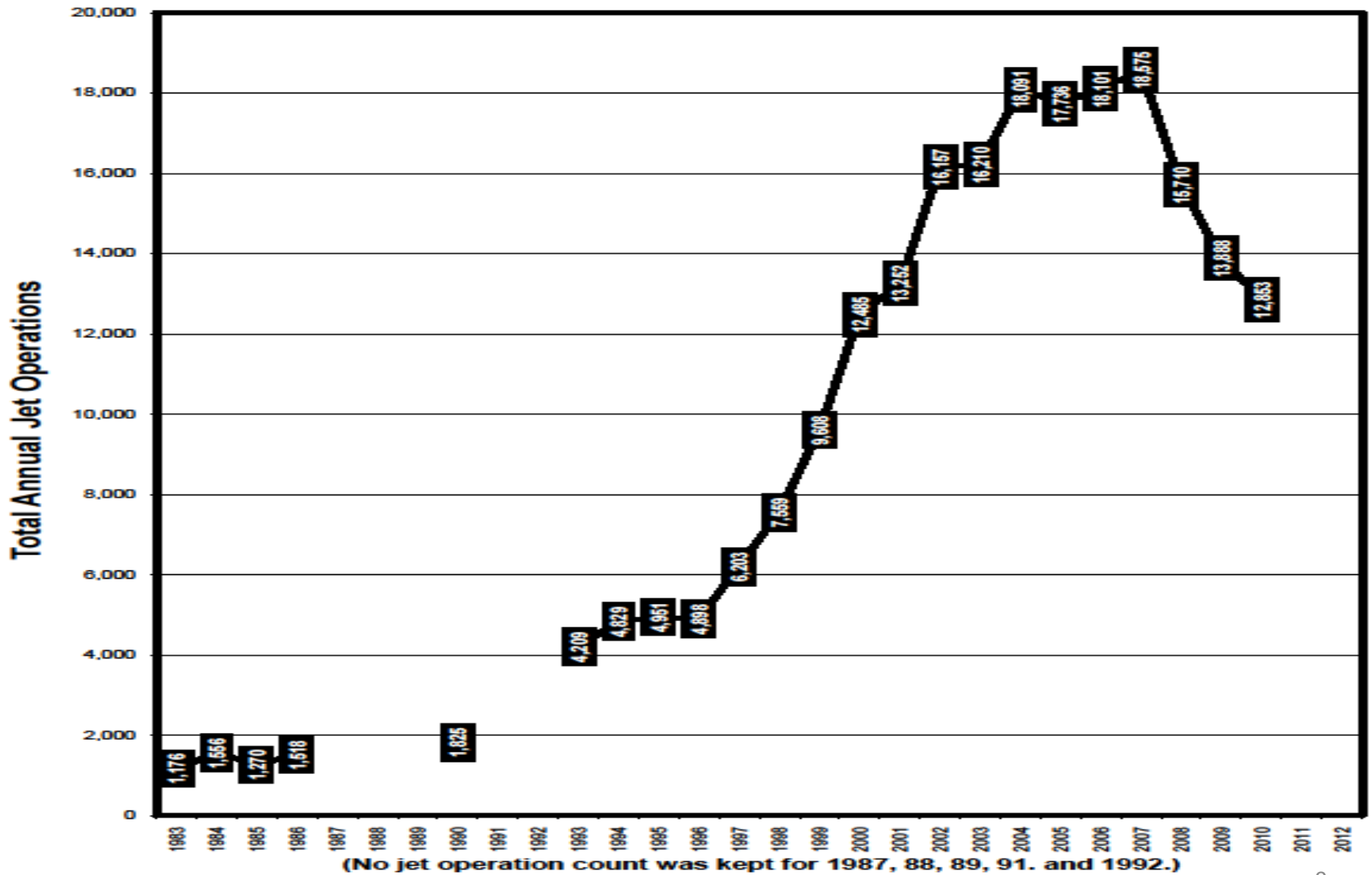


# Jet fumes continued to increase

- Busiest single runway General Aviation Airport in the country.
- Jets wait at the hold line idling for extensive lengths of time.
- These short term exposures are extreme.  
1000 times normal UFP – 200 times normal black carbon.



# SMO Jet Operation Growth from 1983



# **Piston Aircraft at SMO use LEADED AVGAS**

## **Exposure to lead, even small amounts of lead, has adverse health effects:**

- There is no “safe” threshold level for lead exposure.
- Lead is highly toxic, causing a variety of adverse health effects, even at low doses.
- Health effects include: death; brain damage; learning disabilities; lower IQ levels; increased blood pressure; nerve damage.
- Lead is a probable carcinogen.

# Piston Aircraft at SMO use LEADED AVGAS

- Lead exposure presents a particular danger to the development of children's nervous systems.
- A recent study found a link between living within a kilometer of an airport and higher blood lead levels in children – <http://dx.doi.org/10.1289/ehp.1003231> (Marie Lynn Miranda et al., *A Geospatial Analysis of the Effects of Aviation Gasoline on Childhood Blood Lead Levels*, ENVTL. HEALTH PERSPECTIVES (Jul. 13, 2011)). According to EPA estimates, approximately 16 million people live within one kilometer of an airport facility in the United States using avgas. More than 3 million children attend school within one kilometer of these facilities.

# **Pattern flying by flight schools**

**Between 30 to 50% of all the operations at SMO circle the same area, flying to the south over Venice, Mar Vista, and West Los Angeles.**

**These flights burn leaded Aviation Gasoline.**

# Air Quality Studies Regarding Santa Monica Airport

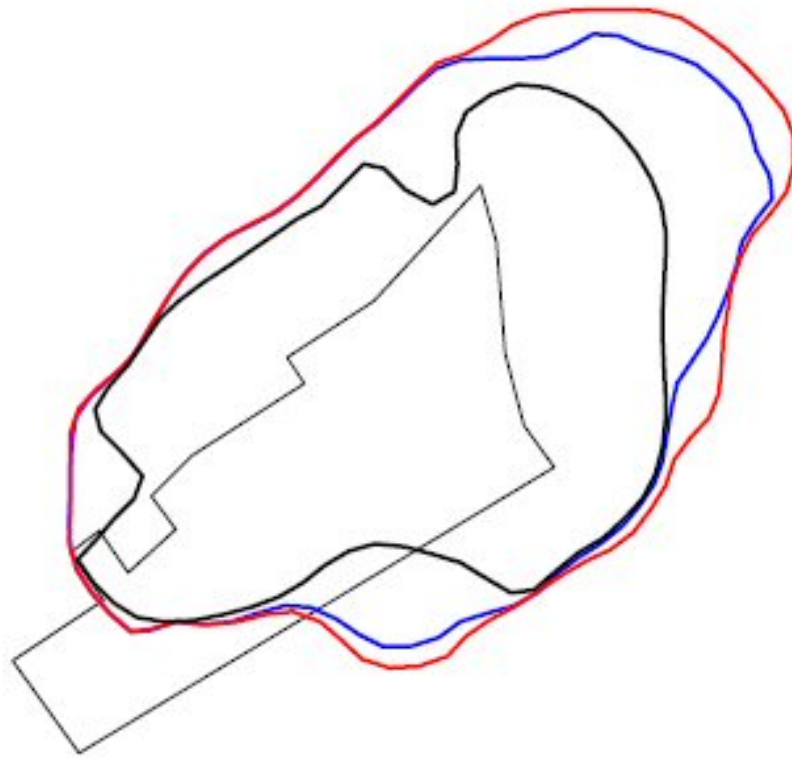
1. **1999** - Los Angeles Unified School District Risk Assessment  
"Santa Monica Municipal Airport A Report On The Generation And Downwind Extent Of Emissions Generated From Aircraft And Ground Support Operations"
2. **2002** - A science project by middle school student Jake Bloch  
Santa Monica Airport: Is it Ruining Our Neighborhood Air?
3. **2009** - UCLA Department of Atmospheric and Oceanic Sciences  
"Aircraft Emission Impacts in a Neighborhood Adjacent to a General Aviation Airport in Southern California"
4. **2010** - South Coast Air Quality Management District  
"General Aviation Airport Air Monitoring Study"
5. **2010** - United States Environmental Protection Agency  
"Development and Evaluation of an Air Quality Modeling Approach for Lead Emissions from Piston-Engine Aircraft Operating on Leaded Aviation Gasoline"
6. **2010** - UCLA Pediatric Residents  
Santa Monica Airport Health Impact Assessment  
*A health-directed summary of the issues facing the community near Santa Monica Airport*
7. **2011** - South Coast Air Quality Management District  
"General Aviation Airport Air Monitoring Study: Follow-up Monitoring Campaign at the Santa Monica Airport"

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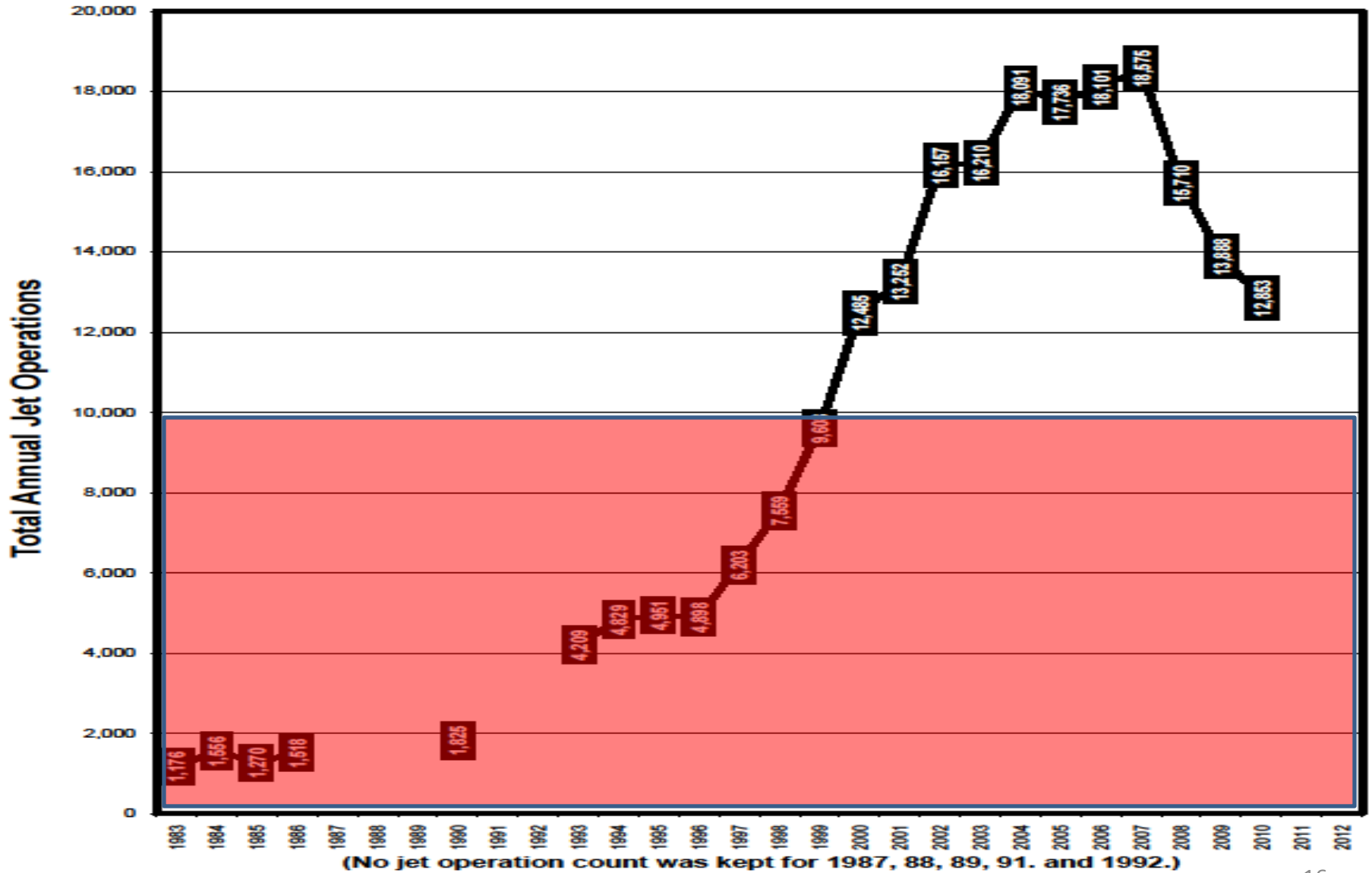
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Contours denote excess cancer risk  $\geq$  one in a million ( $1 \times 10^{-6}$ ) for the following scenarios:

- ◆ Piston
- ◆ Baseline
- ◆ Increased Turbojet

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# What about the airport neighbors?

- Santa Monica Airport neighbors are being exposed to a toxic soup of air pollution from private and corporate jet traffic and from lead in piston aircraft aviation gas.
- To date there has been no investigation into what the negative human health effects are from these huge short-term exposures to jet fumes.

# JET FUEL TOXICOLOGY EXPERT

Mark Witten, Ph.D. was a Professor of Pediatrics and Director of the Lung Injury Laboratory at the University of Arizona College of Medicine from 1990-2010. He was sponsored continuously during this twenty-year period by the U.S. Air Force Office of Scientific Research to study the effect(s) of jet fuel exposure on the lungs. He has published over 50 peer-reviewed manuscripts on jet fuel exposure on the lungs and in 2010 was the chief editor of a book entitled, "Jet Fuel Toxicology". Additionally, he has served as an expert consultant on jet fuel toxicology for the Australian Air Force.

# Dr. Witten statement

“In my more than 19 years of jet fuel research for the U.S. Air Force, I only dealt with uncombusted jet fuel in my exposure models. There are two thousand different constituents in uncombusted jet fuel, including benzene and naphthalene (the ingredient in moth balls that gives them their smell) that have been linked to cancer. I have no estimate how many different toxic constituents there would be in combusted jet fuel. The combustion products of any burning substance, i.e., cigarette smoke, are filled with a huge number of oxygen radicals that are well known to be very harmful to living tissue. For example, it is estimated that one exhaled breath of cigarette smoke contains one million oxygen radicals. I cannot imagine what an idling jet engine would be emitting every second in terms of oxygen radicals; however, my best estimate would be in the hundreds of billions of oxygen radicals.”

# Regarding Black Soot

- Dr. Witten rubbed the fence situated across Bundy Drive from SMO.

“Yes, the soot I saw on the fence near Santa Monica Airport was similar to what I observed at the Montana Air National Guard Base hangers.”

# **NO Protection for airport neighbors!**

**No Federal rule exists that establishes a minimum distance between airport ground operations and residential communities.**

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