

The California Air Resources Control Board has a web site, [www.arb.ca.gov/aqd/aqd.htm](http://www.arb.ca.gov/aqd/aqd.htm), that can easily be accessed by anyone interested in seeing air quality test results and graphs on air quality in the State of California. The 2002 California Almanac of Emissions and Air Quality (EPA) is available to the public and there is a CD, containing air quality data, criteria pollutant data and toxic air contaminant data, that is available free upon request from the ARB's Planning and Technical Support Division by calling (916) 322-6076.

Whenever possible the following information is provided for your information in Chronological Order:

**The Press Democrat, Thursday, June 20, 2002**

**The Headline Reads: "State could adopt world's strictest air rules ...Agency officials link microscopic particles to deaths of thousands of Californians."** by Andrew Bridges, Associated Press. "Los Angeles-The California Air Resources Board will consider amending the state's air quality standards for dangerous microscopic pollutants to make them the world's strictest...the revised standards to be considered today target a class of pollutants made up of particles of soot and dust one-seventh the diameter of a human hair or smaller. The material comes from a variety of sources, including combustion in cars and power plants, and can contain heavy metals that contribute to lung, heart and other health problems. In recent years, studies have linked the particles to the deaths of thousands of Californians."

"...The Air Resources Board estimates that 99 percent of Californians are exposed to air that on an average daily basis exceed current health standards for PM10, particles that are smaller than 10 microns in diameter." Bonnie Holmes-Gen, a lobbyist for the American Lung Association of California, "...said that PM10 standards have not been reviewed for 20 years. Since then, there have seen hundreds of new studies on premature mortality, emergency room visits, school absences and other health impacts related to elevated particle levels in the air..."

"...The Air Resources Board estimated that 2,431 tons of the tiny particles were emitted every day in California in 2001. Sources include activity on farms, construction sites and wildfires. Dust from roads is the largest single contributor and can contain tiny pieces of brakes and tires...You probably get the biggest dose from the vehicle in front of you (in traffic)..."

It should be noted that jet fuel emissions which have similar particulate matter emissions, the same as cars were not mentioned in this article. In addition, the United States Air Force has admitted releasing chaff, aluminum coated fiberglass, into the atmosphere as well. According to the Air Force "...Chaff falls to the earth at a settling velocity of approximately 30 cm per second. Atmospheric times range from 10 minutes for the majority of chaff released at 100 am to approximately 10 hours for chaff released at 10,000 feet." These particulates may also impact human and animal health and should be studied as well.

The United States Air Force on their web site states that "...Chaff is made of glass silicate fibers with an aluminum coating. The fibers are approximately 60% glass fiber and 40% aluminum by weight. The typical Air Force RR-188 Chaff bundle contains about...5 million fibers. The fibers are 25 microns in diameter and typically 1-2 cm in length. In 1997, the Air Force used about 1.8 million bundles worldwide...The amount of chaff released worldwide is approximately 500 tons per year."

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**The following Information is from the Bae Systems Website - 2002**

**Aluminum Coated Fiberglass - Chaff**

Bae Systems, 2002, was the world's foremost producer of chaff to protect aircraft from radar-targeting missiles, and they were the only manufacturer of chaff in the United States.

Raw glass is fiberized and metalized, cut into different dipole lengths for the desired radar threat frequencies, and packed into several configurations of finished cartridges. They also produce roll and bundle chaff that is fed continuously and cut by the dispensing equipment configured to suit any aircraft's needs. Half-wavelength dipoles of aluminum-coated glass monofilament fibers offer multiple broadband frequency protection. They also produce Aluminum-coated superfine glass filaments.

Pre-cut dipoles of metallic monofilament glass fibers are sandwiched between tow wraps of Mylar film. Dispensers carry six 52-pound rolls; unwrap the film of each chaff roll in turn, allowing the dipoles to continuously disperse and bloom, creating a dense chaff corridor.

The M-1 Chaff Cartridge variant is used by the U.S. Army for helicopter protection. Bae Systems' Chaff is deployed from their own threat-adaptive countermeasure dispensing systems and other dispensers.

The North Carolina Operations Bae Systems Facility produces nearly one million pounds of chaff per year and integrates over two million chaff cartridges per year. According to Bae Systems this represents nearly 80% of the world's production.

**Note: "...A 1998 report from the General Accounting Office, done at the request of U.S. Senator Harry Reid, Democrat, Nevada, found that the health effects of chaff on humans and animals is unknown..."**

#### **Questions regarding Chaff:**

- 1) Is Chaff considered litter on either public or private lands in violation of the California Penal Code?
- 2) What fraction of emitted chaff breaks up in atmospheric turbulence into particles that can be inhaled by humans or animals?
- 3) What are the shapes of chaff particles after they are released from airplanes or helicopters?
- 4) How much Chaff is released over California each year?
- 5) Where is Chaff released in California and by what public or private entities? How much Chaff is released by all branches of the military in California?
- 6) What studies have been completed on the health effects of Chaff and what are the results of those studies? Who conducted said studies?
- 7) How do chaff emissions and expected concentrations compare to emissions and concentrations from other particles emitters over the time and areas where chaff is released?
- 8) What quantities of inhalable chaff are found in areas where Chaff is used in California?

**Note: The United States Air Force Website states: "...Aircraft testers with the 418th Flight Test Squadron here proved the T-39B transport aircraft's capability to dispense chaff and flares by releasing both types of expendables in China Lake airspace recently...Flares are used to interfere with the ability of heat-seeking missiles to lock on a target..."** What are the health effects of both chaff and flares release to human health?

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**San Francisco Chronicle, Saturday, August 31, 2002:**

**The Headline Reads: "California's air judged dirties in the United States". The article goes on to note the following, "State smog levels exceeded standards 4,634 times last year." by H. Joseph Hebert,**

**Associated Press. "Washington** - With nearly twice as many 'smog days' as any other state, California continues to lead the nation in dirty air, followed by Texas, Pennsylvania, New Jersey and Ohio...in the summer of 2001, there were 4,634 reported times when smog levels exceeded federal health standards-about a 10 percent increase in violations from the summer of 2000...preliminary data from 20 states suggest even more air quality violations this summer, with 15 of the states already having passed the total number recorded all last summer, says the report.."

The statistics in this report on dirty air were "...gathered from states and regional offices of the Environmental Protection Agency, which monitors air quality to determine whether counties around the country meet minimum pollution levels for what is considered healthy air...a violation occurs when the amount of ozone, a precursor of smog, exceeds 0.08 parts per million average over an eight-hour period..."

One of the questions is, especially in remote areas of Northern California, what is causing this type of pollution? Could it be both commercial and increasing non-commercial jet fuel emissions from jet air traffic over these remote areas? It has been noted that non-commercial jet air traffic has been increasing in recent years. In addition, what is causing increased pollution in so many states?

In Northern California recent radio broadcast commercials from California Air Quality (on "Spare-the-Air" Days) ask people to not use leaf blowers and lawnmowers to reduce air pollution. Carpooling is also recommended along with stopping wood burning in fireplaces. Why aren't these commercials recommending that non-commercial jet air traffic be curtailed or industrial polluters asked to reduce emissions? How many leaf blowers and lawn mowers must be left off to make up for the air pollution of 1 jet idling at an airport or flying across our county? The air pollution from 1 jet is equal to how many car miles traveled?