

Airports: Deadly Neighbors

by Charles R. Miller

About the Author

Mr. Miller was formerly a supervisor with a major airline and is currently a director of the Alliance of Residents Concerning O'Hare (AReCO) working on airport environmental issues.

The following is the full text of his paper, originally titled "Your Unfriendly Skies." An edited version of this paper was published in the [Earth Island Journal](#) in Summer 1998.

Recent articles in the Journal discussing aviation impact (Behind the Contrail Curtain, Summer 1997; Airport Demos Rock Europe, Winter 1997-1998) focused first, globally and second, locally. While global impact may be our most serious concern, it is of a more or less long term nature. Local impacts are understudied and much more immediately, seriously troubling. Several resident (grassroots) organizations and the National Resources Defense Council have serious concern for citizen health in large, (very large) areas near most all airports.

Noise, as millions are all too aware, is a serious physiological and psychological health hazard. It is readily apparent when it intrudes on conversation, listening pleasure or interferes with sleep and education. Government-designated 24-hour "average noise levels" ignore single, sudden events offering false measurement of actual impacts and grossly underestimating the number of people affected. Inaudible low-frequency and high frequency sound waves, about which little is known, also probably contribute to adverse health effects.

Harmful as noise may be, its effects may be minor when the products of jet engine exhaust and other airport sources are considered. I, and other members of the Alliance of Residents Concerning O'Hare (AReCO) and our recently organized national organization, US-Citizens Aviation Watch (US-CAW), with the Natural Resources Defense Council have come upon much interesting information about airport and aircraft operations, which produce massive amounts of hazardous and toxic emissions.

Here is just a partial, astonishing list of constituent compounds: Freon 11; Freon 12; Methyl Bromide; Dichloromethane; cis-1,2-Dichloroethylene; 1,1,1-Trichloroethane; Carbon Tetrachloride; Benzene; Trichloroethylene; Toluene; Tetrachloroethene; Ethylbenzene; m,p-Xylene; o-Xylene; Styrene; 1,3,5-Trimethylbenzene; 1,2,4-Trimethylbenzene; o-Dichlorobenzene; Formaldehyde; Acetaldehyde; Acrolein; Acetone; Propionaldehyde; Crotonaldehyde; Isobutylaldehyde; Methyl Ethyl Ketone; Benzaldehyde; Veraldehyde; Hexanaldehyde; Ethyl Alcohol; Acetone; Isopropyl Alcohol; Methyl Ethyl Ketone; Butane; Isopentane; Pentane; Hexane; Butyl Alcohol; Methyl Isobutyl Ketone; n,n-Dimethyl Acetamide; Dimethyl Disulfide; m-Cresol; 4-Ethyl Toulene; n- Heptaldehyde; Octanal; 1,4-Dioxane; Methyl Phenyl Ketone; Vinyl Acetate; Heptane; Phenol; Octane; Anthracene; Dimethylnaphthalene(isomers); Flouranthene; 1-methylnaphthalene; 2-methylnaphthalene; Naphthalene; Phenanthrene; Pyrene; Benzo(a)pyrene; 1-nitropyrene; 1,8-dinitropyrene; 1,3-Butadiene; sulfites; nitrites; nitrogen oxide; nitrogen monoxide; nitrogen dioxide; nitrogen trioxide; nitric acid; sulfur oxides; sulfur dioxide; sulfuric acid; urea; ammonia; carbon monoxide; ozone; particulate matter (PM10, PM2.5); and finally this compound; 3-nitrobenzanthrone.*

According to chemist Hitomi Suzuki of Kyoto University, the last compound, 3-nitrobenzanthrone, may be the most hazardous compound ever to be tested for carcinogenicity, scoring substantially higher in the well-known Ames test than its nearest rival, 1,8-dinitropyrene listed above. (New Scientist, 25 October 1997.) Many of the other compounds indicated above are also considered to be carcinogens. Adding to the direct effect of any single chemical listed above, the probabilities of synergistic effects must be considered. The toxic brew of compounds is also subject to reactions caused by atmospheric and solar effects, resulting in new, consequent compounds.

Let's look at an airport, Chicago's O'Hare, historically the world's busiest, not as a place to catch that nice vacation flight, but as one of the largest, possibly the largest point-source of man-made pollution in the world. In addition to aircraft caused pollution, a vast amount of automobile and truck traffic is generated at or in the airport's vicinity. (Note that many other airports, medium to large, would be similar, although smaller point-sources.) Excepting vehicular traffic on and around them, airports are under little or no regulation and need not report most emissions nor adhere to most Clean Air Act standards; here the Federal Aviation Administration (Air Transport Industry) rules the roost and does very little regulation.

While we of AReCO and US-CAW recognize the importance of aviation, we also see the seriously damaging effects caused by the industry. All pollution produced by airport/aircraft operations should be weighed as if from one source. Airports/aircraft and their collateral operations are significant source polluters. (The "bubble" concept is the area in and around the airport.) When aircraft emissions are combined with other aircraft operation sources they produce twice the Volatile Organic Materials (Compounds) per year than all the on-road vehicles at and near O'Hare, including automobiles and trucks, which are supposedly known to be the primary source of air pollution problems in the Chicago metro area.

What kinds of health effects may be occurring to the population in your neighborhood can be seen from a report, dated June 20, 1997 to the Georgetown Crime Prevention and Community Council by the Seattle-King County Department of Public Health. Georgetown is an area of Seattle, and surrounds the King County International Airport (Boeing Field), King County, in turn, surrounds greater Seattle. (The Georgetown Council is a sister organization to AReCO and member of US-CAW. When comparing hospitalization rates for Georgetown (Zip Code 98108) to those of King and North King Counties, the following, alarming statistics resulted:

- a 57% higher asthma rate
- a 28% higher pneumonia/influenza rate
- a 26% higher respiratory disease rate
- an 83% higher pregnancy complication rate
- a 50% higher infant mortality rate
- genetic diseases are statistically higher
- mortality rates are 48% higher for all causes of death: 57% higher for heart disease, a 36% higher cancer death rate with pneumonia and influenza among the top five leading causes
- average life expectancy 70.4 years (the same as in many developing nations) compared to Seattle's of 76.0

Neither of the previous articles mentioned another impact of aviation.

Currently airports do virtually no reporting of large volumes of de-icing fluids (which are comprised of several toxic chemicals), fuel spills, oils, greases and other pollutants which regularly flow from airports and are shed from flying planes into nearby streams, lakes and aquifers. In addition to chemicals formed in exhaust, de-icing fluids are significant pollutants in surprisingly large amounts, not only during winter weather, but also in unexpected times such as summer, when some aircraft types are sprayed to prevent formation of ice on upper wing surfaces in cold, high-altitude operation.

De-icing fluids represent hazards to water tables, streams and waste water treatment plants. As they are shed from planes, the fluids are corrosive to paint. How much of this hazardous chemical load is finding its way into your drinking water sources? King County Int'l Airport has approximately 300,000 annual operations compared with 900,000 at O'Hare. How many operations are there yearly at your airport? Think, too, you do not have to be an immediate airport neighbor. That pollution is shed over an enormous area surrounding a busy airport, diminishing, of course, in a radius of at least 24 miles and from an elevation of about 3500 feet to the ground.

Finally, consider a remark made by a Boeing physicist that the pollution levels from one 747 take-off are somewhat similar to setting the local gas station on fire and flying it over your head.

What You Can Do: Contact Mr. Jack Saporito, President, US-CAW at Box 1702, Arlington Heights, IL 60006. Tel: 630/415-3370 for more information.

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