



Curious Contrails: Death from the Sky?

Q: Is someone or something criss-crossing our skies with poisonous vapor trails that fall to Earth, becoming harmful to people or other life?

—D. Phillips

A: We have all seen those white cloudy lines trailing aircraft across the distant sky; most people pay little attention to the contrails, assuming that they are both commonplace and harmless.

Then there're the conspiracy folks. According to myriad conspiracy theories, some of those "harmless" vapors are instead sinister "chemtrails." They are allegedly different from ordinary contrails in that they do not evaporate but instead spread out, causing a haze that eventually settles over populated areas. Some say the cloudy lines are part of government weather-controlling experiments; others say that they're a form of germ warfare. According to Jim Marrs, who claims to be the world's leading conspiracy theory author (or, at least, that's what they *want* you to think!), "the case for the reality of chemtrails is strong."

Physicist Kim Johnson, of the skeptics group New Mexicans for Science and Reason, examined photos and evidence of chemtrails presented to the New Mexico Attorney General's Office. Johnson concluded that "there is no evidence that these 'chemtrails' are other than expected, normal contrails from jet aircraft that vary in their shapes, duration, and general presentation based on prevailing weather conditions. . . . When a

jet engine burns its fuel, the major byproduct is water vapor. When the exhaust passes over the rear stabilizer of an aircraft, the tips or ends of the stabilizer cause the exhaust to expand rapidly. When it does, the temperature decreases rapidly within a turbulent flow, and ice crystal formation is forced. Generally, this makes it look as if the jet were spraying a cloud from the ends of the stabilizer."

Marrs disputes the scientific explanation, writing in his 2008 book *Above Top Secret* (published, ironically, by The Disinformation Company), "Chemtrails often occur at altitudes and in conditions where it would be impossible for a contrail to form." As evidence of the threat posed by chemtrails, Marrs points to a 2007 "investigation" by a television station in Louisiana, KSLA. Investigative reporter Jeff Ferrell tested water captured under a crosshatch of alleged chemtrails. According to Ferrell, "KSLA News 12 had the sample tested at a lab. The results: high level of barium, 6.8 parts per million, (ppm). That's more than three times the toxic level set by the Environmental Protection Agency."

Scary, isn't it? Except that SI contributing editor David E. Thomas, a physicist, took a closer look at the TV report. As Thomas notes, "The actual video clearly shows 68.8 µg/L (micrograms per liter), or 68.8 ppb (parts per billion). . . . 68.8 millionths of a gram per liter corresponds to 68.8 parts per billion. . . . Ferrell overestimated the amount of barium in the test report by a factor of 100. . . . The test result was not 'three times the toxic level set by the EPA'; it was around thirty times *less* than the EPA's toxic limit." Apparently

a big chunk of Marrs's "strong evidence" for chemtrails is simply the result of a TV reporter's poor math skills. Ooh, awkward—unless, of course, those who devised mathematics were in on it with their suspicious basic math and tiny percentages!

There's also the question of what possible purpose the contrails (er, chemtrails) would serve. As Bob Carroll notes in *The Skeptics Dictionary*, "Any biological or chemical agents released at 25,000 feet or above would be absolutely impossible to control, making any measurement of effects on the ground nearly impossible. . . . Such an exercise would be pointless, unless you just wanted to pollute the atmosphere. And where is the evidence of the illnesses being caused by these agents?"

Alas, conspiracy buffs have no answers for these fundamental questions. It's easier (and much more fun) to just sit back and wonder what secret government experiments we are being exposed to that "they" aren't telling us about. □

References

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