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News

How aircraft emissions contribute to warming

Aviation contributes up to one-fifth of warming in some areas of the Arctic.

Rex Dalton

The first analysis of emissions from commercial airline flights shows that they are responsible for 4–8% of surface global warming since surface air temperature records began in 1850 — equivalent to a temperature increase of 0.03–0.06 °C overall.

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Jacobsen's 'models' don't correlate to empirical data. The 911 event and impact on surface temps is a fact. http://archives.cnn.com/2002/TECH/science/08/07/contrails.climate/index.html. That showed a 1.1C INCREASE in temp. Jacobsen's model shows a 0.06C impact, not even measurable. Additionally, Jacobsen's model is based off 1850 start point when, again a fact, the Little Ice Age [LIA] was just ending.

Garbage in, garbage out. You can create a model to say anything you want.

Posted by: **Dave Peach** | 22 Dec, 2009

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Posted by: **Dave Peach** | 22 Dec, 2009

Reply to comment by Dave Peach: the link he provides does NOT report a 1.1 C increase in temperature. To the contrary, it explicitly states "whether the jet clouds have a net effect on global warming remains unknown". It is only the variability of temperature which increased after 9/11 due to the lack of contrails – quite plausible since the trails act as atmospheric filters just as ordinary clouds do, dampening the temperature fluctuations on the surface.

Posted by: **Holger Lange** | 22 Dec, 2009

Dave, I think you're misinterpreting the results of the post-9/11 study. The CNN article (which summarizes **this Nature paper**) states that "during the three-day commercial flight hiatus . . . the *variations* in high and low temperatures increased by 1.1 degrees Celsius (2 degrees Fahrenheit) each day. . . . *While the temperature range is significant, whether the jet clouds have a net effect on global warming remains unknown*." (emphasis added). Thus the post-9/11 study found a trend in the *spread* between the daily high and low temperatures, which does not necessarily imply a trend in the *average* temperature (which is the metric for global climate change).

Posted by: **Elson Liu** | 22 Dec, 2009

No doubt there is gaseous and particiulate pollution from aircraft engines, but acoustic pollution also needs to be addressed. Airplanes of all sizes, for the benefit of a miniscule percent of the human population, disturb, annoy, and quite likely injure the health of a very large percentage of all living organisms.

Posted by: **Leif Lauritzen** | 22 Dec, 2009

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maybe the assgas from polar bear also contribute to the warmming of our planet! every thing have two facets,"jet clouds" also could reflect light from sun away, which may dampen the temperature.

Posted by: **jiaxin liang** | 22 Dec, 2009

I've been a sailplane pilot for 32 years, including two extended stays in the UK. I often flew from a site ne Oxford. On days when cirrus clouds would persist, the contrails of jets flying to European destinations would spread and cut the available 'lift' by half. If 600 feet per minute vertical development was forecast, we'd only encounter 300 feet per minute. The 'contrail cirrus' clearly scattered the sunlight, made it more diffuse, and probably reflected some percentage. Less vertical development meant less vigorous atmospheric mixing, smaller cumulus clouds, and dampened our soaring performance as well. The diffus nature of the light didn't really impact the forecast maximum temperature for the day, but I suspect the l vigorous mixing in the lower atmosphere resulted in a lower inversion and hazier conditions which absorbed the heating. If we could fly north to clear the 'contrails cirrus' influence, then conditions would as forecast.

Posted by: **Frank Whiteley** | 22 Dec, 20

It would be interesting to see if the effect of contrails can be linked to the apparent reduction in the rate c warming during the last decade. In addition to the general growth in avaiation, there has been a large increase in the use of regional jets during that period with a greater propensity to produce contrails than lower flying turbo-props.

Posted by: **Forlorn Hope** | 23 Dec, 20

Interesting if unscientific graph of global temp and aviation fuel use:
http://i629.photobucket.com/albums/uu20/blouis79/globaltemp_aviationfuel.png

Commentary here:
http://chiefio.wordpress.com/2009/12/15/of-jet-exhaust-and-airport-thermometers-feed-the-heat/

Posted by: **Brad Louis** | 24 Dec, 20

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