

# meteoLCD Weblog

A weblog on climate, global change and climate measurements

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## Global land warming: an airport fingerprint?

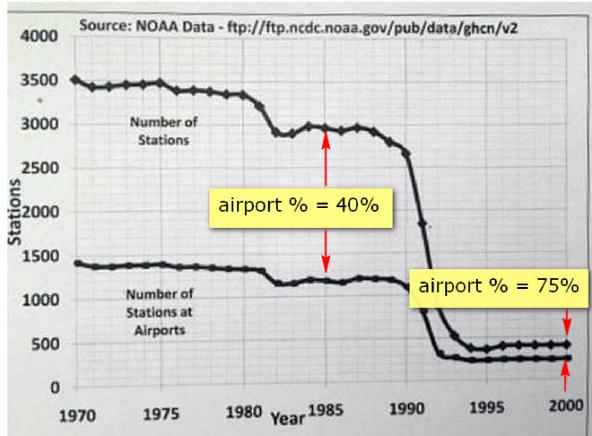


[Picture courtesy [Wattsupwiththat](#) shows Svalbard (Spitzbergen) runway with weatherstation]

Prof. Fred Singer has an interesting article in the "American Thinker" where he suggests that the recent global warming given in the IPCC reports and many other data sources may be a fake, compared to the "real" global warming seen during the early period 1910 – 1942.

Let me just give a very short comment concerning the global land temperatures, as given by GISS Nasa; the numbers I use are from the CSV file ([link](#)), smoothed data column.

First look at this graph which shows how dramatically the number of weather stations has fallen, with rural stations taking the biggest toll:



Before the plunge, the percentage of weather stations located at an airport was ~40%, increasing to ~75% in 2000.

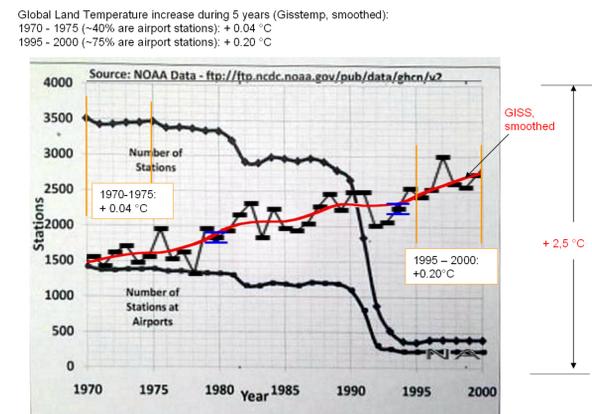
Now we all know that an airport has large surfaces of dark tarmac and that the exhaust from the aircraft turbines is very hot air; so even if the meteorological sensors are mounted inside a Stevenson hut, at the regular height over grass covered soil, one should not be surprised that such an airport location will show warmer temperatures compared to a plain rural one.

Look here at the Findel airport in Luxembourg (courtesy Google maps): notice how the exhaust of the parked blue-tailed plane blows in the direction of the weatherstation in the westerly wind conditions (which are the most frequent in Luxembourg).



Let us also remember that at most airports the traffic increased dramatically between 1970 and 2000. All these factors could produce a **fake warming**, on top of an eventual existing "real" warming".

In the next figure I superposed the graph of global land temperature anomalies from GISS to the previous plot:



I calculate the 5 year warming for two periods where the percentage of airport based station is more or less constant: from 1970 to 1975 (less than 40% airport stations) the warming is +0.04 °C, from 1995 to 2000 (about 75% airport stations) the warming is +0.20°C. The increase in atmospheric CO2 was +5.43 ppmV and +8.73 ppmV (Mauna Loa data).

The table resumes this situation:

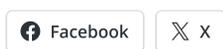
period	airport %	warming	CO2 increase
1970-1975	40%	0.04	5.43
1995-2000	75%	0.20	8.73

So we have a land warming that is 5 times higher when the percentage of airport located stations has nearly doubled and the CO2 increase is less than double. **Do you really think that the location has no influence at all on the observed land warming, and that the CO2 increase is the sole cause?**

History:

14 May 2017: added pictures of weatherstations at Svalbard and Findel airports.

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