

Dear

Thank you for your email.

As far as the Met Office is concerned there are only contrails - persistent and non-persistent. We do not recognise such things as chemtrails. We do realise there are others who do not agree and take a more sinister view that chemtrails exist and are causing damage to our atmosphere but we have no evidence to support that view.

The exhaust from jet engines contains the by-products of the combustion of aviation fuel. These by-products contain aerosols (microscopic particles suspended in the air) and also water vapour (water in its gaseous form). In certain atmospheric conditions these aerosols and water vapour can enhance the likelihood of condensation taking place (hence contrails).

There are fundamentally two forms of contrails; those that are non-persistent and those that are persistent:

If humidity and temperature are in the right balance (temperature must be below – 57 °C) these condensed trails cannot evaporate again and so persist for some time and can be dispersed into broader patterns by the wind at high altitudes. These persistent contrails can combine with the contrails from other aircraft to form what can effectively be described as high cloud. This can be very noticeable, especially if it occurs near air traffic route “hubs” where many aircraft converge.

On other occasions when prevailing humidity at altitude is low, the contrails can readily evaporate again and so are non-persistent.

The vast majority of global aviation is from commercial airlines. Military aircraft account for, by comparison, a very small portion of all contrails.

The effects of persistent contrails can reduce the amount of the sun’s energy reaching the surface of the earth (the so-called “global dimming” effect). This effect is small but measurable and has a very small cooling affect. Contrails during the night however, trap the earth’s heat and so have a warming effect. The net effect is therefore difficult to establish. The carbon dioxide emission from the burning of aviation fuel has a much more significant impact on the climate. Carbon dioxide is a greenhouse gas and so aviation, along with all other fossil fuel burning transport forms, is contributing to human caused global warming.

I hope this helps to clarify the matter for you and thank you for taking the time to contact us with your concern.

Kind regards,

Weather Desk Advisor

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