

MANKIND'S POLLUTION OF OUR EARTH'S "SKIN-OF-LIFE":

JET AIRCRAFTS' SAD CONTRIBUTION



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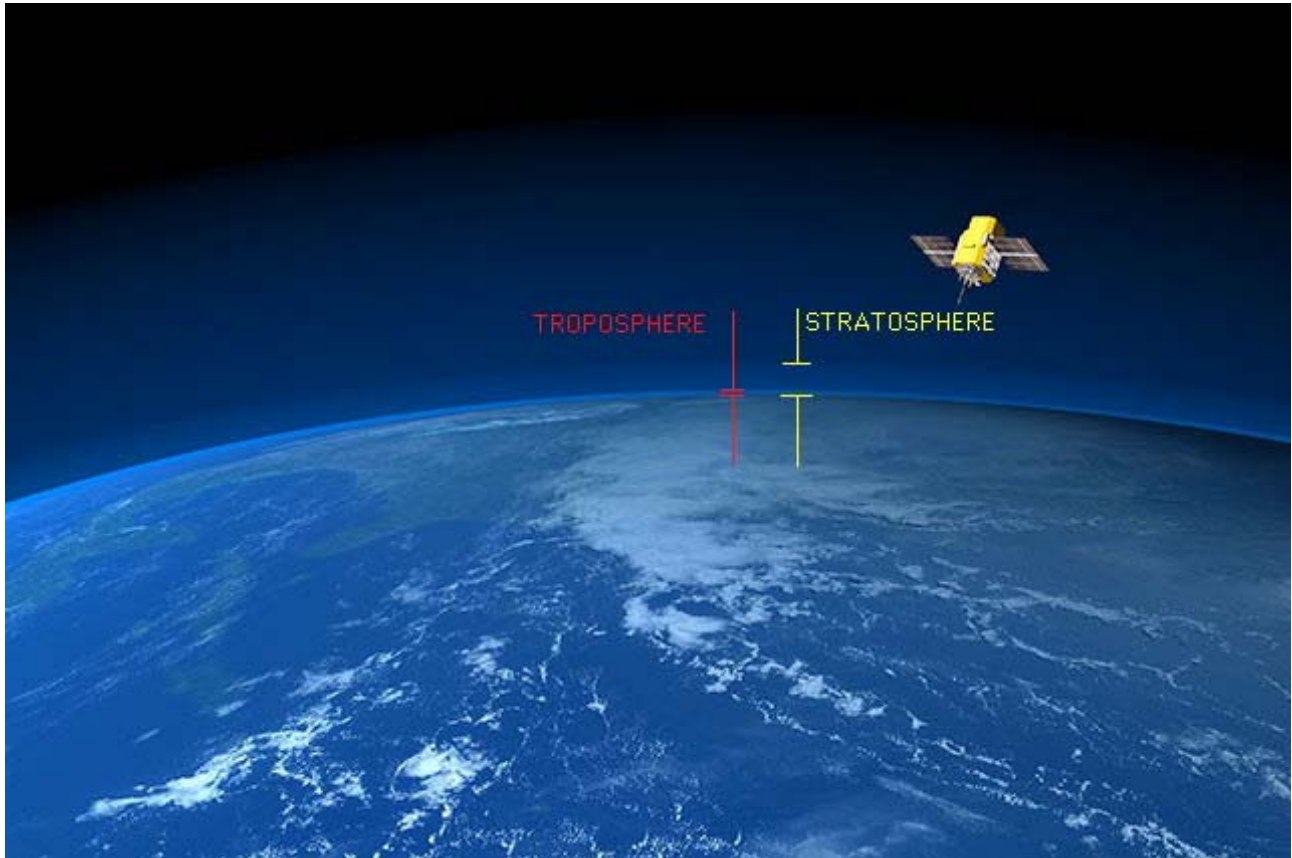


www.earthday.net

**The Alliance of Residents Concerning O'Hare, Inc. (AReCO)
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Mankind's Pollution of the Earth's "Skin-of-Life" Jet Aircrafts' Sad Contribution

All life depends on our earth's atmospheric oxygen, yet the majority of humanity fails to adequately grasp that all of this life-force oxygen is contained in an extremely thin skin surrounding the earth, with approximately 80% contained in the troposphere, which extends about 12Km. (5-7 mile range) above the earth's surface. Can you detect this skin in the photograph?



The troposphere is the thin bright blue line immediately above the surface (approximately 1.4/32 inch altitude in the photo). Frighteningly miniscule isn't it?! [For reference, the left-to-right earth's surface distance is about 2925Km. (1818 mi.) in real terms.]

The stratosphere extends to a height of about 50Km. (31 mi.) above the earth (to about 5.9/32 inch in the photo), in which for all practical purposes 100% of all oxygen is contained, is seen as the boundary of the next lighter blue layer; still disturbingly thin.

Between the top of the troposphere and the transition to the stratosphere is a region known as the tropopause, where the atmospheric temperature ceases to drop with altitude and begins to rise instead.¹ This phenomena is important for a number of reasons, one of which is that it places a lid

¹ Tropopause: the boundary layer between the troposphere and stratosphere, where an abrupt change in temperature lapse rate usually occurs; it is defined as the lowest level at which the lapse rate decreases to 2 degrees Celsius per

on the bulk of vertical circulations due to thermal updrafts/downdrafts in the troposphere.² In other words, surface and low altitude air pollution emissions remain generally trapped in the tropospheric layer.

So, picture the fact that all the atmospheric pollutants continuously emitted by mankind are injected into this very thin tropospheric skin. Scary!

There is one exception to this, that being the world's jet aircraft fleet. Though this fleet (and all of their support vehicles and related operations) dump a prodigious amount of combustion product pollution into the troposphere, the air we breathe, yet, about 90% of their pollutants are dumped into the tropopause, which is their normal cruising altitude. These pollutants do not easily circulate to the troposphere and as such, remain essentially trapped in the tropopause.

The amount of fuel expected to be burnt by commercial and military jet aircraft, each year, by year 2025 is 347Tg³, and if 90% of this is burnt in the tropopause, it amounts to about 1.9 billion 55-gallon drums of fuel per year, which if stacked side-by-side would encircle the entire earth about 30 times! All of this fuel gets converted into heat and emissions (CO₂, water, NO_x, particulates, etc.) and is dumped into our tropopause to build up over time.

As one example of impact, aviation deposits in the upper atmosphere in about 10 seconds a number of (ultra-fine) particles equal to all the blades of grass in a golf course that covers the entire earth's surface! That's a lot of particles.... and they stay there for a very long time, increasing by that amount every ten seconds!

Do you think you and mankind should be worried about that immense amount of pollution injected into our earth's life-force skin?

The Alliance of Residents Concerning O'Hare does.

For more information see: www.areco.org

-or-

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kilometer or less, provided that the average lapse rate between this level and all higher levels within 2 kilometers does not exceed 2 degrees Celsius per kilometer.

² Large and tall thunderstorms can penetrate this lid.

³ AERO2k Global Aviation Emissions Inventories for 2002 and 2025.