

# Boeing, NASA, and United Airlines Join Forces to Assess Environmental Impact of Contrails Using SAF

Posted on November 16, 2023 by Brian Davidson



On October 31, a collaborative effort between Boeing, NASA, and United Airlines embarked on an ambitious project to measure the environmental impact of contrails produced by aircraft. This initiative, part of a larger effort to assess sustainable aviation fuel (SAF) benefits, involved a specially equipped United Airlines Boeing 737-10, known as the ecoDemonstrator Explorer, flying with 100% SAF and conventional jet fuel in separate tanks. A NASA DC-8 Airborne Science Lab followed closely, tasked with measuring emissions from each type of fuel and analyzing contrail ice particles.

The primary objective of this mission was to explore how SAF can potentially reduce soot and impact contrail characteristics. Contrails, the persistent condensation trails left by airplanes in cold, humid air, have been suggested in some studies to trap heat in the atmosphere, though their full impact is not fully understood. The researchers aimed to understand how advanced fuels, engine combustor designs, and other technologies might reduce atmospheric warming.

This project represents the latest phase in a multi-year partnership between Boeing and NASA. It highlights the potential of SAF to significantly reduce emissions—by up to 85% over the fuel’s life cycle—compared to conventional jet fuel. This reduction in emissions presents a considerable opportunity to lessen aviation’s CO2 impact over the next 30 years. SAF’s capability to produce less soot also holds promise for improving air quality near airports.

United Airlines Chief Sustainability Officer Lauren Riley emphasized the importance of this collaboration. She noted that the project could enhance understanding of contrails and provide insights into the broader environmental benefits of transitioning to SAF, beyond just greenhouse gas reductions.

This endeavor illustrates a concerted effort by key players in the aviation industry to address environmental concerns related to air travel, focusing on innovative solutions like SAF and its potential to mitigate climate change impacts.

Sources: AirGuide Business [airguide.info](https://airguide.info), [bing.com](https://bing.com), [united.com](https://united.com), [nasa.gov](https://nasa.gov)

