

## **THE AIR WE BREATHE: IMPROVING AIRCRAFT AIR QUALITY**

The technological achievements that enable modern transportation are often stunning in scope and vision. High-speed trains, electric buses, and intricate transit systems give Americans mobility options that would have been unthinkable just a few generations before. Of course, nothing has shrunk the world as dramatically as modern air travel. Yet, even if we stop to marvel at our collective ability to board a metal tube and fly off to the farthest corners of the earth in mere hours, we too often take for granted some of the more basic advancements that allow for commercial air travel.

Take, for instance, the systems that pressurize an aircraft cabin during flight to provide breathable air 40,000 feet above the surface of the earth. Modern aircraft use bypass air from the engines that is continuously circulated into the cabin while outflow valves control internal pressure. However, mechanical processes and malfunctions can result in air inside the cabin becoming contaminated with fumes that are harmful to flight crewmembers and passengers. Engine oil, hydraulic fuel, and other fluids can leak and create fumes, smoke or vapor that mixes with the cabin air supply. These toxic fumes can be absorbed through the skin or inhaled, and can cause respiratory, neurological, and psychiatric symptoms. They may also increase the risk of cancer.

There is clearly a need to assess and address the public health and flight safety risk for the millions of American who fly on commercial airlines, many of whom are unaware of this danger. In just this past year there were several incidents where passengers have become ill due to exposure to toxic fumes, including one incident in which eight passengers were hospitalized when contaminated air entered the aircraft cabin on a plane waiting to take off.

The near and long-term health effects are exacerbated for those who have repeated or prolonged exposure to these toxic fumes. This is particularly problematic for crewmembers – pilots and flight attendants – who often deal with fume events during their work. Flight attendant unions have documented numerous cases where their members have suffered severe and career-ending disabilities due to exposure.

Unfortunately, current U.S. aircraft do not have sensors in place to detect or measure the level of contamination when cabin air has been compromised. Furthermore, regulators lack the data necessary to make informed operational and aircraft design decisions that would mitigate the problem. This is in part due to the lack of standardized reporting processes for when fume events occur.

The health risks related to fume events for both passengers and flight crewmembers cannot be ignored. Fortunately, legislation introduced in both the House and Senate would address this problem. The Cabin Air Safety Act (H.R.2208/S.1112) would create a framework for data collection and dissemination of information on fume incidents. It would also require the FAA to

develop training requirements for pilots, flight attendants, first responders and aircraft maintenance technicians on how to respond to incidents involving smoke or fumes on board aircraft. Further, it would standardize reporting procedures when incidents occur, with guidelines developed in consultation with aviation stakeholders, including airline unions. Finally, the bill would require carbon monoxide detectors on board aircraft, and direct the FAA to continue research on technologies to detect bleed air contaminants. This research is vital to providing better, more detailed detectors.

People and governments around the world are increasingly conscious of the affects that airborne pollutants can have on public health and are focused on generating policies that improve air quality. In fact, few Americans in their 20's can even remember a day when smoking was allowed in bars, let alone on aircraft. It is nonsensical, then, that our government has failed to address the threat of fume contamination in an enclosed aircraft cabin. More can and must be done to improve the air that passengers and workers alike breathe, and transportation labor will fight to ensure that toxic fume events are as distant a memory as ashtrays in seat armrests.

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