

## 3 ways to redesign planes so people don't attack one another

So far, 2017 has been filled with airline fiascos.

In April, United Airlines came under fire after a video showing police officers dragging a man off a flight [went viral](#). About three weeks later, Delta Air Lines [kicked an entire family](#) off a red-eye after a mother refused to give up her 2-year-old's seat. And in the first half of May alone, there have been brawls on flights operated by Southwest Airlines and Nippon Airways.



David Cedler/Flickr

Some observers think these incidents are at least in part caused by airplanes' design, which can also increase anxiety for both passengers and crew members.

Business Insider spoke with Pat Askew, the head of the aviation division at the architecture firm HKS, who recommended a handful of ways to redesign the traditional plane to reduce stress (and the likelihood of a fight) on flights.

**Make the everything in the plane – from the seats to the luggage compartments – larger.**

Before airline deregulation in the 1970s, the average coach seat was [18 inches wide](#). Since then, it has shrunk to 16 1/2 inches (while people on average are 28 pounds heavier today than in 1960). When seats are smaller, airlines can fit more passengers on a plane and, thus, make more money.

A small plane, however, contributes to feelings of claustrophobia, stress, and anxiety, Askew says. He suggests making virtually every part of the plane larger, including the aisles, seats, luggage compartments, and windows. Raised ceiling heights would also help.

Airline attendants spend most of their shifts inside these small spaces, which can increase frustration for them, too.

"If you're in a middle seat or the back during a flight that's over an hour, it can be very uncomfortable and contribute to passenger anxiety," Askew says. "And the same thing happens with the crew."

## **Make sure the air is perfectly pressurized, clean, and circulated.**

A full plane has [one of the smallest volumes of air per person](#) of any enclosed public place. About half of the air passengers breathe comes from outside oxygen, which is filtered. The rest is recirculated air.

As *Air and Space* magazine [notes](#), cold, exterior air moves through a filter and the plane's engine compressor, which heats it to a high temperature. The air is then cooled again, and the pressure is [regulated](#) by special sensors. [Newer planes](#) have figured out how to make the airflow even more responsive to changes in air pressure and oxygen levels throughout flights.

Good ventilation not only reduces the risk of infection, but it also helps with jet lag, according to [some research](#). And when people are less tired, they might be less cranky.

## **Integrate high-tech windows that let passengers control the amount of light.**

In addition to larger windows, Askew says, it's important for passengers to control the amount of light for a better flight experience.

Most plane windows have plastic shades that can be raised or lowered, but in 2016 the French company Vision Systems [gave the standard jet window an upgrade](#). It launched windows that could tint themselves, either automatically or with a remote. The windows feature microscopic particles between layers of polycarbonate or glass panes, so that when voltage is applied, they can change from transparent to opaque. The windows automatically turn black whenever the plane is parked, so attendants don't need to pull down the shades after every flight.

Askew adds that the best new planes that incorporate the above design features are the Boeing 787, used primarily by Japan Airlines, All Nippon Airways, and United on some flights, and the Airbus A350, used by Qatar Airways and Singapore Airlines. These planes are also more fuel-efficient than many older planes, so it costs airlines less money to travel the same distance.

"New planes have taken passenger comfort seriously in a tremendous way," Askew says. "The planes are quieter and are made of composite materials. They're not all metal. They flex and blend, and don't creak and groan like older planes."

From larger seats to better air, these small design changes could help make flights more comfortable and give passengers more agency — which perhaps could prevent some future fights.