Shh! I Can't Hear That Boeing 757 Flying Overhead

Airplanes are no longer a major cause of noise pollution

Today there are about 17,000 commercial airplanes -- four and one-half times as many as the approximately 3,800 that flew in 1970.

Yet according to the Federal Aviation Administration, the number of people worldwide disturbed by airplane noise has dropped from 19 million in 1970 to less than 800,000 today. That's a remarkable 95 percent reduction. One of the main reasons for this improvement is that airplane manufacturers have been extremely conscientious about improving aviation technology. Thus, airplanes built today are much quieter than their older counterparts.

"For instance, two miles is the typical distance between airplanes taking off and people on the ground," said Bill Glover, director of Airplane Environmental Performance Strategy for Boeing Commercial Aircraft. "The noise during takeoff of a new Boeing 737 at that distance would register about 70 dBA (decibels adjusted for the human ear). That's about as quiet as the average household vacuum cleaner."

Compare that to the noise of a high-speed train, which affects the population all along its route, from departure to destination.

"The distance between the train and the citizens along the way is only 200 feet," Glover said. "The noise created by the train 200 feet away is much more than the 737 from two miles away -- 85 dBA. Furthermore, most airplane noise is limited to the perimeter of the airport."

The majority of an airplane's noise is generated by its engines, and advancements in technology have had significant success in dampening engine noise on all of Boeing's airplanes.

For example, the noise of the 747-400 built today affects an area 47 percent smaller than the noise of a 747-100 manufactured in 1969. The noise footprint made by the Boeing 717-200 is 12 times smaller than its predecessor, the DC-9. And the 757 freighter is so quiet that it is allowed to operate without night restrictions at even the world's most noise-sensitive airports. These dramatic reductions are due to a combination of improved engine and airframe designs.

Advanced-technology wing devices such as this winglet, shown here on the wing of a Boeing 737-800, help make airplanes quieter in flight.

Another reduction in airplane noise is due to the introduction of advanced-technology wing devices. Winglets are upswept tips attached to the end of an airplane wing, and raked wingtips are highly back-swept wingtip extensions. Both are either standard or options on different Boeing airplanes that give many operating advantages, including quieter flight.

Airplanes that utilize older, less-effective noise technology are being retired. Very few still are flying in countries where the overwhelming majority of the world's fleet is located. The noise levels of airplane operations will continue to decline dramatically as airplanes such as the Boeing 727 and 737-200 are removed from service or modified.

Since the beginning days of commercial aviation, Boeing and its aerospace partners have never stopped trying to make airplanes quieter. And because of their unwavering commitment, airplanes built today are one of the quietest forms of modern transportation.

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