

# Mute Your Commute: The Best Noise-Canceling Headphones

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## **We tested eight of the best wireless noise-canceling headphones on economy-class flights and busy commuter trains. Can Beats or Sony topple the new Bose QuietComfort 35?**

The latest crop of wireless headphones from Bose, Sony and Beats can kill outside noise so you can enjoy your commute, but they aren't all equal. WSJ's Geoffrey A. Fowler takes to the skies to test eight top brands. Photo/Video: Emily Prapuolenis/The Wall Street Journal

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94 COMMENTS

Sometimes you need the world to just shut up, already.

The roar of a jet, the clamor of a commuter rail and the murmur of an open office all conspire to keep you from concentrating. Or napping. Your options:

- 1) Move to the woods, leaving planes, trains and co-workers behind.
- 2) Go deaf by cranking your headphone volume to 11.
- 3) Use technology to outsmart the cacophony.

Guess which I recommend? Noise-canceling headphones, long the refuge of pilots and road warriors, have become so convenient they're worth a look for ordinary commuters and cubicle-dwellers, too. Normal headphones just cover your ears and

try to out-blast everything else. Noise-canceling ones use microphones and software smarts to actively delete sound before it reaches your ears. The result: peace and quiet—or clear audio—amid the barrage.



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Bose has been in this business for decades, has 50 noise-canceling patents and dominates the market for pricey noise-canceling headphones. But now it has serious competition, including several rivals that are, believe it or not, even more expensive. To keep up, Bose just released its first totally wireless pair, the \$350 QuietComfort 35.

Which are best? I took eight pairs of wireless noise-canceling headphones on a test flight from San Francisco to Las Vegas and back. To measure how much noise each pair could cancel, I stuck a tiny microphone in my ear. As I pulled the eight headsets from my Mary Poppins bag, one by one, the wary passenger next to me asked if I was a magician.

What I learned from flying economy class with all these headphones: Not all noise-canceling is equal. I plan to buy the jet-neutralizing Bose headphones. They sound good and the comfy earpads don't bother me even when I'm in nap mode. Still, they're not the only ones worth considering.

A few technological leaps have improved the current generation of noise-canceling headphones. They no longer require throwaway AA batteries: Now you charge them like a phone, and they can run for up to 20 hours at a time. (Many are smart enough to shut themselves off if you forget.) They can take calls, though the noise-canceling tech won't necessarily make your own voice clearer. Many come with apps to customize the experience.

## Advertisement

All the headphones I tested use Bluetooth to connect wirelessly to your phone. Bluetooth used to sound terrible, but the technology has improved. You can find cheaper, tethered headphones, like the \$300 Bose QC25 or \$100 Audio-Technica ATH-ANC7B<sup>[1]</sup>, but it's liberating to listen to music without treating your ears like dogs on a leash.

Suddenly a lot more people have reason to pay attention to wireless headphones: The new iPhone Apple is expected to release later this year won't have a headphone jack<sup>[2]</sup>. The headphones I tested do also let you plug in a physical cable—a must if you're tapping into the plane's entertainment system.

I had long avoided noise-canceling headphones because I suspected they were a gimmick. This experiment convinced me I was mostly wrong. Because my music no longer had to fight for attention, I discovered detail in it I didn't even know was there. My aha moment: Listening to Taylor Swift's hit "Blank Space," for the first time I accurately heard her sing "got a long list of ex-lovers," rather than "all the lonely Starbucks lovers."<sup>[3]</sup>

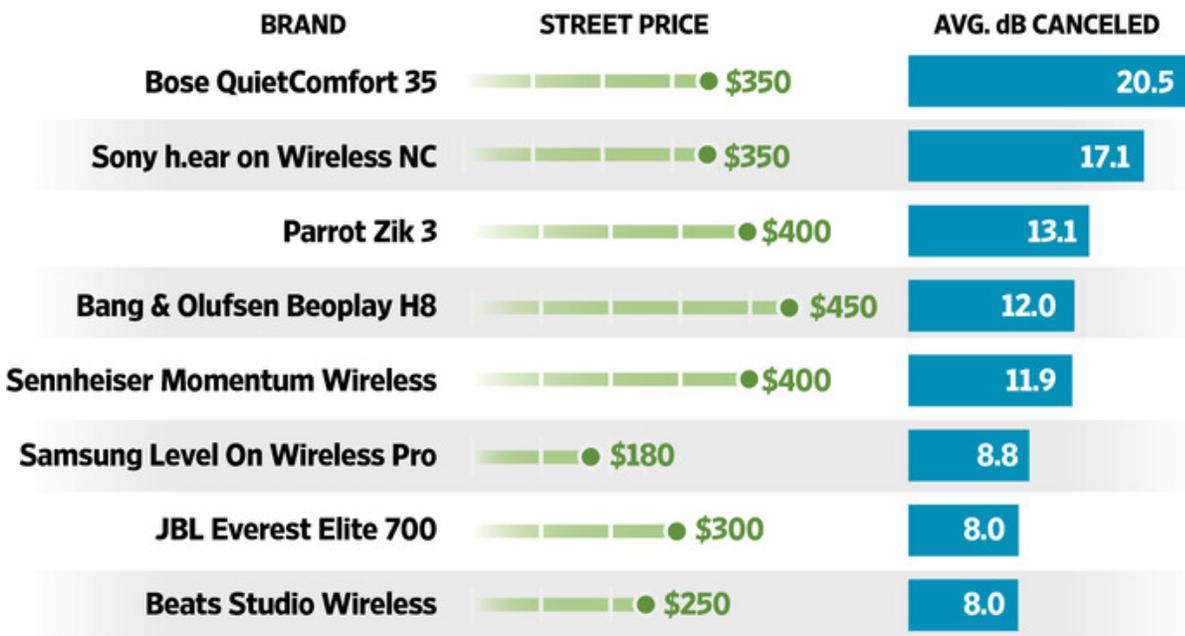
How do they work? Imagine a fire hose pointed at a target—your ear—and the water is sound waves that travel through the air. Say you used a second fire hose to deflect the first hose's stream from the target. That is kind of what noise-canceling tech does. Microphones on each set listen for outside sound, and then speakers inside the headphones play the sonic opposite.

You'd think this would make things louder, but in fact the sound waves neutralize each other. You only feel a slight change in pressure, as if you just rode express to the top of the Empire State Building.

Before you shell out for the headphones, though, understand that even the best noise-canceling tech has limitations. It can counter low-register and constant sounds, like the hum of an engine, but often not higher-pitched ones. Whoever invents noise-canceling tech that filters the crying of babies and/or politicians will surely become a billionaire.

## Bye-Bye Noise, Hello Sound

The more decibels (dB) of outside noise that get canceled by these headphones, the more you can enjoy your music—especially on a loud airplane, where these tests took place.



Note: Tests conducted during two commercial 737 flights  
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There’s no industry standard for noise-canceling, and I was surprised at how wildly the eight headphones I tested varied in capability. I fashioned my portable comparison rig with the guidance of Richard Craig, whose firm BRC helps pro engineers measure and analyze sound. Using an old earbud as a holder, I was able to stick a tiny microphone into my ear and monitor sound using an app on my phone. Aboard the 737, I repeatedly measured sound in decibels—first without any headphones, then while wearing headphones alone, then finally with noise-canceling turned on.

Headphone padding alone did little to dampen the drone. With the noise-canceling

turned on, the Bose cut it by a significant 21 dB. Sony<sup>[4]</sup>'s \$350 h.ear on Wireless<sup>[5]</sup> was a respectable runner-up, notching a 17 dB reduction.

From there, the results quickly fell off a cliff. The Parrot Zik 3<sup>[6]</sup>, Bang & Olufsen Beoplay H8<sup>[7]</sup>, Sennheiser Momentum Wireless<sup>[8]</sup> and Samsung Level On Wireless Pro<sup>[9]</sup> all showed just-passable reduction. I wouldn't buy them just for noise-canceling. The JBL Everest Elite 700<sup>[10]</sup> and Beats Studio Wireless<sup>[11]</sup> were even worse.

On my light-rail train commute, the roar in the station muffled to a din when I wore the Bose headphones. With the Beats, I had difficulty determining whether noise-canceling was turned on.

Wearing the Bose or Sony headphones on the street is a little disorienting because you can't hear what's coming. (Common sense alert: You should never use noise-canceling<sup>[12]</sup> while driving, riding a bike or walking in traffic or near train crossings.)

Of course, there are other factors that go into picking the right pair of headphones.

**Audio quality:** Audio geeks argue that noise-canceling distorts music; some would rather use high-end headphones without the tech, even on a plane. I'm not in that camp. A few of these headsets provided significantly better sound quality than the headphones I normally use.

The best sound—with noise-canceling turned on and turned off—came from Sennheiser's Momentum Wireless<sup>[13]</sup>, currently selling for \$400. It had balance and rich detail across all genres. It might have been my overall recommendation, if not for its mediocre noise-canceling.

The Bose had good balance and detail for pop music but they were just OK at classical. The Sony headphones often beat Bose in sound quality, making them a serious rival to the longstanding champ. The Beats headphones sounded decent, but they jack up the bass by default. That's not bad for pop music, but they make other kinds of music sound odd.

**Comfort:** Which fits your ears well enough to seal out unwanted noise? And, since

you're probably going to use these on a plane, which could you nap in?

Two of the headphones—from B&O and Samsung—sit on, not over, your ears. Some people, especially those who wear earrings, swear by on-ear headphones, but I found they pressed against my glasses and quickly got uncomfortable.

Of the over-ear variety, Bose was the most lightweight and comfortable. And the headset's clear physical buttons made it easy to turn on and adjust volume.

Style: My colleagues actually laughed when I walked in one day wearing the JBL headphones. Their large ear pads apparently made me look like a space alien. You won't win any style points for the pleated pads on the Bose, either, though at least they are slim and foldable. Parrot's Zik line is all about fashion, with faux crocodile skin that you will either love, or find exquisitely ugly. For my aesthetic, the coolest were the foldable Sony, which come in five candy colors.

The lesson: You don't always get what you pay for. My favorite noise-canceling headphones—Bose and runner-up Sony—aren't cheap at \$350, but three other pairs in my test lineup sell for \$400 or more. Try on a pair before buying. See if you can give the store the silent treatment.

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