

Now Hear This!

New Hearing Aid For Shooters—ReSoundAIR

A few years ago at the NRA Annual Meetings in Kansas City, Mo., my wife was talking to a local banking executive and fellow NRA member who, with all of the background noise, was having a hard time understanding what she was saying. She made some comment about hearing loss from shooting, at which he smiled and said, "Aren't you familiar with the NRA salute?" He then snapped his right arm up in good military fashion and cupped his hand behind his ear. We all laughed, and we all understood the truth in the joke. If you spend the first 30 years of your life shooting without hearing protection, you, like all the rest of us old shooters, have high-frequency hearing loss.

Every time you shoot a rifle, pistol or shotgun without hearing protection you damage your hearing a little more in the high-frequency ranges. You also lose some high-frequency hearing as you age. So, if you're an older shooter, like me, you don't have that "selective hearing" your wife accuses you of—you're deaf as a post. Well, that's not really accurate, you can hear most sounds just fine, it's just that sometimes, especially in crowded rooms or where there's a lot of background noise, you have a hard time making out what people are saying. The reason is that most of the consonant sounds in speech fall within the mid-to high-frequency range. Throw in a little background noise and you

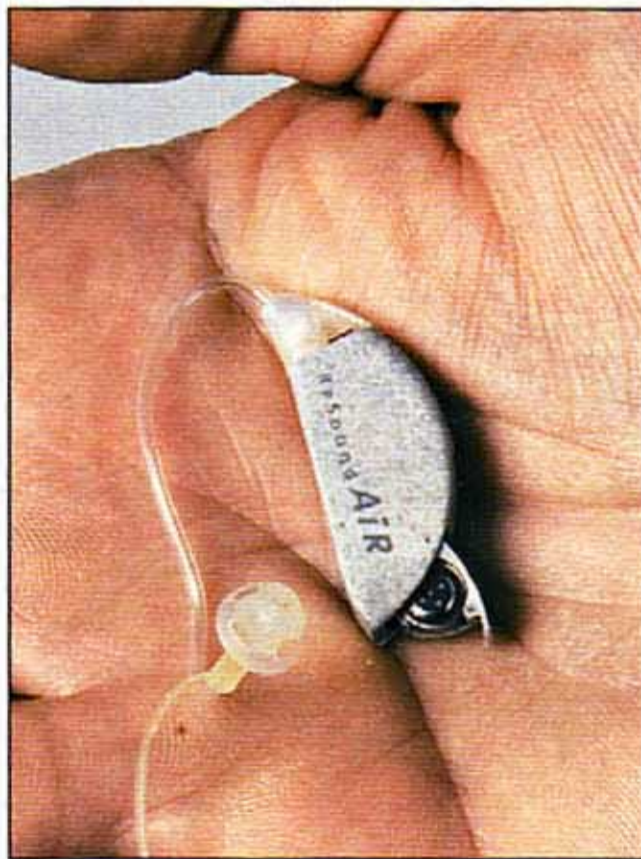
can't make out a "d" from a "b" from a "c," which, although frustrating for you, is often infuriating to your wife.

My wife, Annie, is an audiologist at St. Luke's Hospital in Kansas City, Mo., and spends her day evaluating hearing loss. For years she has badgered me to come to her office and



Photos by Lloyd Hill

Hearing aids have come a long way since the circa 1908 "hearing horn" (l.). The ReSoundAIR hearing aid transfers amplified sound through tiny plastic tubes. The tubes do not block the hearing passage, allowing for normal hearing of most sounds. The tubes are also almost invisible. ReSoundAIR hearing aids are computer-programmed for individual hearing loss. Powered by a tiny battery, the hearing aid is turned on when the battery compartment door is closed (below l.). No other controls are needed.



have my hearing tested, but I always refused. The fact is, I knew my hearing was really bad, but there was no way I was going to wear hearing aids. Not that I'm vain; the real issue for me was occlusion.

Years before I had acquired a pair of electronic earplugs that amplified sound, but blocked the loud noise of gunfire. The problem was that I could hear myself breathing; when I walked across dry leaves it sounded like something was sneaking up behind me, and the overall sound quality was just slightly less than those cheap transistor radios from the 1950s. In other words, my electronic earplugs created occlusion, and for my money it would be better to learn lip-reading than to wear hearing aids.

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Besides, if Annie found out how bad my hearing actually was, she'd hound me to get a pair. So it was with interest that I listened to her describe a new hearing aid that didn't block the ear canal and was programmed by computer to amplify only those high-frequency ranges that had been diminished. Also, the aid was extremely small, flesh-colored and nearly invisible behind the ear; sound was transferred through a tiny clear plastic tube that could barely be seen. With great reluctance I agreed to have my hearing tested and give the new hearing aids a try.

My hearing was perfect ... up to about 1,000 Hertz, where my graph showed a downhill slide like the value of a "dot-com" stock. With the incriminating evidence in hand, Annie programmed the chip inside the hearing aids with her computer and fit the little plastic tubes for my ears. The whole process took less than 30 minutes, the batteries were installed and I was wired for sound. There was no occlusion, as the tubes didn't block my ear canal. I could



The ReSoundAIR hearing aid is extremely small, lightweight and comfortable to wear. The contour of the clear plastic sound tube holds it securely in place, and most wearers quickly forget they have them on. This unit, chosen by the author, has a gray housing—one of five-colors offered—to match his grizzled hair.

hear some amplification that sounded a little unnatural, but I was willing to give it a fair test. Looking in the mirror I could hardly see the little tubes and even from the side I couldn't see the tiny piece of plastic behind my ear; well, perhaps I am a little vain.

While I was checking myself in the mirror, Annie told me about the technology behind these hearing aids.

Until recently, open-canal hearing aids were not feasible for a couple of reasons. The first problem was feedback: The microphone would pick up

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its own amplified sound and re-amplify it over and over, creating a loud, high-pitched squeal. The GN ReSound Company had developed a Stabilizer feedback suppressor, which alleviated that problem, but the technology only worked on high-frequency amplification. The second problem was processing time. Since with the open canal system you're also hearing non-amplified low frequency sounds, if there is any delay in the processing of the high-frequency sounds, it would sound like you're in an echo chamber.

GN ReSound answered that problem by developing what it bills as the "WarpOpen" compressor that processes sound almost instantaneously. In addition, the WarpOpen compressor works in conjunction with a filter bank to help suppress background noise, while ensuring that soft voice sounds are sufficiently amplified and that loud sounds are not over-amplified. When you damage your high-frequency hearing, you lose different amounts at different frequencies. The GN ReSound Air digital hearing aids are computer-programmed to

amplify only the specific high frequencies you have lost, and only to the extent of the loss, to bring the high-frequency ranges closer to normal levels. However, they're not perfect and they can't fully restore all of your hearing loss. Also, it takes some time to retrain your brain to process all of those sounds that it has not heard in a long time. For me, the process started

almost immediately.

Pulling out of the hospital parking lot I suddenly realized that my turn signal was making a clicking sound, I instantly understood all of the conversation, including the song lyrics coming out of the radio. By the next day, I had forgotten that I even had the things on. Annie and my daughters were thrilled that they could now critique me and point out my shortcomings with certain knowledge that I heard what they were saying. I drove up to see my brother, who had been kept out of the war in Vietnam due to high-frequency hearing loss from shooting rifles. (I never have understood that bit of military wisdom.) I told him all about the wonders of my new hearing aids as I took them out and handed him one. He turned the tiny device over in his fingers, studying it closely as I rambled on.

At a pause in my explanation he handed back the hearing aid and asked, "What kind is it?" I set both of my hearing aids on the counter, looked at my watch and replied, "It's two o'clock."

ReSoundAIR

MANUFACTURER: GN ReSound U.S.A. (Dept. AR) 8001 Bloomington Freeway Bloomington, MN 55420-1036; (800) 248-4327; www.gnresound.com

MODEL: AIR60 digital hearing aid
Effective frequency range: 500 Hz to 6,000 Hz

KEY FEATURES: WarpOpen wide dynamic range compression; stabilizer digital feedback suppression; multi-band noise reduction/low-level expansion; hardware designed for open fittings; standard configuration, directional microphone; SmartStart power-up timer; battery door with integrated on/off switch; size 10A battery

OPTIONS: Five different case colors

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