Newly Patented "ACCESs" to Better Hearing Protection

AFRL's newly patented ACCES® [Attenuating Custom Communications Earpiece System] technology (Air Force image)

The US Patent and Trademark Office recently assigned the Air Force Materiel Command–submitted patent application entitled "Vented Earpiece System" patent number 7,784,583. The new patent covers the lab's Attenuating Custom Communications Earpiece System (ACCES®) technology, the need for which surfaced as part of efforts to identify—and address—cockpit communications deficiencies stemming from excessive noise.

Notwithstanding the many and varied attempts to resolve pilot hearing protection and noise reduction shortfalls via existing technologies, it was not until AFRL partnered with Westone Laboratories (through Cooperative Research and Development Agreement) that ACCES® emerged as the design of choice. Satisfying all established requirements, which revolved primarily around F-22 aircrew needs, the technology promptly proved its viability with unequivocal success under all flight conditions and for all communications extremes. Consequently, the lightweight, cost-effective innovation's distinct advantages extend well beyond military pilot and maintenance (flight line) use to include industrial construction crews, heavy-equipment operators, and commercial air and ground personnel as well.

Weighing several ounces less than the conventional helmet-mounted speakers it replaces, ACCES® provides excellent passive attenuation, reducing damaging noise by an average of 30 dB when used in conjunction with military-standard helmets and headsets. The technology not only surpasses legacy systems in terms of safeguarding hearing, a top Department of Defense priority, but also provides superior voice communications clarity. Having already received the safe-to-fly designation needed for use in fighter and bomber aircraft, the newly patented ACCES® is on track to help the Air Force better protect personnel hearing and thereby minimize the substantial long-term costs of treating noise-induced hearing loss.