

Navy SBIR/STTR Success



Talk Through Audio Technologies for Navy Hearing Protection Devices

Compared to battery-operated wireless insert earphones, the RTH battery-free wireless insert earphones could save the U.S. Navy approximately \$200 per year per maintainer.

Topic Number: N05-095

SBIR Investment:
\$1,794,973

Phase III Revenue:
\$1,071,322

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About the Technology:

Normal Hearing Protection Devices (HPDs) isolate the wearer from the environment and reduce the ability to identify and localize sound sources. This isolation decreases situational awareness and consequently readiness and safety. Additionally, when face-to-face communication is necessary, users must remove the HPDs, which is time consuming and exposes the user to high acoustic levels. Addressing this critical need, Red Tail Hawk (RTH) developed the "Hawk System" – a high-performance hearing protection headset, for use in a Flight Deck Cranial (FDC) and other compatible equipment, with talk-through features to provide superior hearing protection and restore situational awareness. The RTH Hawk System employs three salient features: Battery-free wireless communications insert earphones, acoustic ear simulators, and an audio processor with speech enhancement. The system fits a standard helmet and may be integrated into the next generation FDC systems currently being developed.

Naval Benefit

The Hawk System benefits Strike Fighter flight deck/line maintainers by reducing noise, improving communications, increasing situational awareness, and improving overall hearing health safety. Hearing protection performance and sound localization performance are available upon request. These benefits also extend to ground troops, mechanized units, underwater applications, rotorcraft crews, artillery units and heavy equipment operators. The Hawk System employs a self-powered insert earphone that directly converts electromagnetic energy into an acoustic signal, and thus requires no battery or additional cables. This eliminates the risk of battery failure during critical communication and also results in cost savings. Wireless insert earphones would normally require hearing aid batteries, which can be expensive and cause logistical problems. Moreover, wired insert earphones require additional costs for installation of cables and connectors and repairs of these components over time. The battery-free feature eliminates these risks and equates to an estimated cost savings of approximately \$200 per year per maintainer compared to other wireless solutions, and approximately \$100 per year per maintainer compared to wired solutions.

Transition

Red Tail Hawk was awarded a Phase III contract to deliver 20 systems to the U.S. Navy in 2011 and was also awarded an IDIQ for future deliveries valued at over \$9 million. In addition, Red Tail Hawk recently partnered with Gentex Corporation to incorporate these technologies into their product sets to provide improved hearing protection and situational awareness to the military markets Gentex serves. Beyond the applications within the Department of Defense, these talk-through systems are appropriate for commercial aircraft maintainers, first responders, construction workers, miners and pilots, to name a few.



Red Tail Hawk Corporation

Published 2013