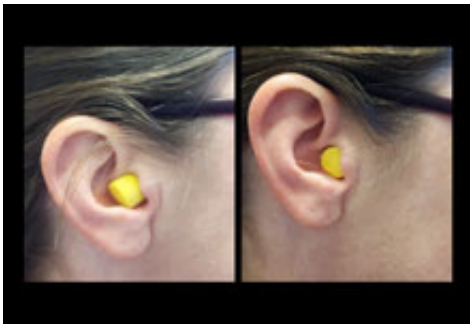


# Sound Off! The Navy, hearing protection and mobile devices

January 31 2017, by Warren Duffie Jr.

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Credit: Office of Naval Research

Noise is an unavoidable fact of life on U.S. Navy vessels and during naval operations. Jets roar as they take off and land. Engine room machinery churns in an ear-splitting cacophony of sound. Weapons fire deafening rounds.

Hearing loss and tinnitus (commonly referred to as ringing in the ears) are among the most common disability claims submitted to the U.S. Department of Veterans Affairs. To counteract this threat, the Office of Naval Research (ONR) is sponsoring the development of a new app to help warfighters learn about [hearing protection](#) on their mobile Android devices—and snap close-up selfies of themselves wearing earplugs to see if they're using them properly.

Called the Warfighter's Hearing Health Instructional Primer (WHHIP),

the app is available for free download in the [Google Play store](#). It was created in partnership with the Naval Submarine Medical Research Laboratory and Sensimetrics Corporation, a research company specializing in human communication.

"Hearing loss is a major concern for the Navy," said Kurt Yankaskas, who manages ONR's Noise-Induced Hearing Loss program and oversees WHHIP's development. "It affects everything from mission productivity and effectiveness to the retention of personnel."

To protect the ears of Sailors and Marines, the Navy's Hearing Conservation Program works to post visible signs identifying "noise hazardous" areas on vessels and naval installations, provide [hearing](#) protection to personnel, conduct regular medical monitoring such as audiograms, and offer education and training through Navy hearing specialists.

WHHIP complements and builds on these efforts by allowing warfighters to look up hearing-related information on their personal devices. Experts believe that using WHHIP will foster a better understanding of [hearing loss](#) risks, and the proper selection and use of hearing protection.

"We envision WHHIP as a resource similar to WebMD," said Dr. Kelly Watts, the technical lead at the Naval Submarine Medical Research Laboratory. "It's not intended to replace the advice or expertise of a hearing professional such as an audiologist, but it's a useful way to answer questions or get information about hearing health and well being."

WHHIP consists of four sections, or activities: Learn, Demos, Hearing Protection Device (HPD) Check, and Glossary.

The Learn and Glossary activities allow warfighters to scroll through topics related to hearing conservation, such as noise descriptions. The Demos section contains a sound library—for example, a phone ringing, tire screeching or police siren blaring—and can play them at normal volume or at diminished levels mirroring hearing loss. With the HPD Check activity, Sailors and Marines can place the protective plugs they already use in their ears, snap a selfie and compare that image with a photo of someone wearing professionally fit plugs.

WHHIP's text is written in plain, easy-to-understand English, so anyone can comprehend the complex concepts unique to hearing loss. When medical terminology is required, however, users can access pop-up definitions of technical jargon.

This year, Watts will conduct a study of WHHIP users to learn what they like about the app, how they benefit from its information and any improvements that could be implemented. After making the recommended enhancements, she and her team will develop WHHIP for Apple devices like the iPhone, and release it for download in the Apple App Store.

Provided by Office of Naval Research

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