



TCAPS Prepares to Protect and Serve

Captain Jack Moore, part of the Project Manager Soldier Warrior team, discusses how the US Army's future hearing protection requirements are being addressed through the Tactical Communication and Protective Systems effort

Hearing protection is becoming a priority because soldier protection - everything from boots to helmets now has much greater visibility. The initiative to provide a Service wide solution, across the US Army is known as the Tactical Communication and Protective Systems (TCAPS). Now in the latter stages of finalisation within Program Executive Office Soldier, TCAPS will provide tactical communications headsets with integrated hearing protection and "talk through" functionality.

Captain Jack Moore, part of the PM Soldier Warrior team working on TCAPS, commented, "With TCAPS, we now have the solution and a competitive pricing solution to be successful in addressing the issue of soldier hearing protection."

Begun in 2007, TCAPS was originally developed by Army's Training and Doctrine Command at Fort Monroe, to address the problem of hearing damage by both actively reducing damaging battlefield noise and simultaneously enhancing hearing and communication to deliver tactical advantage. Capt. Moore said, "Over the years, we have seen a large amount of dollars being spent to benefit soldiers who had lost their hearing, either in training or combat. We are now trying to address that problem in such a way that we can not only get enhanced hearing protection, but we can also get an enhancement of communication capabilities incorporated as well."

A draft requirement document for TCAPS is in the process of being completed with the aim of developing a list of qualified products for use by the US Army. At its core, the Army requires three key capabilities according to draft specifications: 'First is to provide clear two-way audio communications via earphone and microphone. Second is to provide protection from high ambient

noise, both continuous type (vehicle noise) and impulse type (gunfire and explosions). Third is to provide talk-through capability for verbal conversation and ambient sounds to preserve audio situational awareness in low noise environments. This specification does not include bone conduction microphone (including throat band types) or bone conduction speaker designs.' TCAPS also requires headsets to provide sufficient attenuation to allow for a noise exposure of 2000 impulses or more per day for small arms, grenade launchers and crew-served weapons.

Headsets addressed under TCAPS come under two classes Class 1: Military Use, Extremely Rugged and Class 2: Military Use, Basic. Each class is further subdivided into Over the ear and In-ear form factor categories, each with two variants to deal with a moderate noise environment for infantry in wheeled vehicles and a second to address high noise, tracked environments.

Addressing the technical requirements of TCAPS, Capt. Moore said, "The system has to manage both continuous noise conditions and high noise levels (above 85 dBA), to ensure protection against the loss of hearing. Currently, the combat ear plug issued to soldiers uses passive, nonlinear attenuation."

In an assessment of multiple vendors' systems undertaken by the Army in 2008, two systems; the in-ear Nacre QuietPro and over-ear Peltor sets were assessed as meeting the Army's provisional requirements. These two systems were subsequently adopted as Government Furnished Equipment for the Ground Soldier Ensemble programme.

Capt. Moore said, "There are other systems out there but these are the only two that passed the Army Test and Evaluation Command's base line standard. We sent the other products back to the vendors for

improvements. When this programme becomes funded, hopefully in the next year or so, we will then have the capability of testing and evaluating those vendors again and bring new technology in, in addition to the two systems that we currently have."

Having a single solution is very much an interim measure as Capt. Moore emphasised, "In line with the Secretary of the Army and the Secretary of Defense's policy on competitive pricing, we would have to have more systems out there than just one [for each category] which is what we currently have."

"The TCAPS programme is intended to be fielded to the entire Army", explained Capt. Moore. Units can either adjust their table of equipment or they could be directed to have a specific system. We are trying to give them a choice of systems for both an in ear and over the ear capabilities." Under the TCAPS concept, exactly which system is issued would become an individual soldier issue that would then be managed by the organisation that the soldier is assigned to.

Capt. Moore said, "When a soldier shows up to 1st Brigade, 3rd Infantry Division for example, he will have a system waiting for him there he will then take possession of it while he is there."

Capt. Moore has brought personal operational experience to Afghanistan and Iraq using both over the ear and in ear solutions. "In Afghanistan I had unit funds available to purchase systems and issued [Over ear] systems after I was introduced to them through a SOF organisation I encountered. I subsequently used an [in ear solution] in Iraq as part of the Land Warrior organisation to which I was attached as B Company Commander of the 4/9 Manchus." Troops issued with Land Warrior equipment could select between the QuietPro and Peltor Headsets.



Land Warrior equipped troops in Iraq selected between the Peltor over-ear and the Nacre QuietPro in ear solution, the latter shown here © US Army

"In total, I have survived more than a dozen IED attacks in Iraq and Afghanistan and probably two dozen or more small arms engagements, RPGs and mortar attacks. I have extensive experience – and a lot of luck – being at the right place and at the right time."

"The headset I used in Afghanistan proved its worth multiple times. I was in a large IED attack which swallowed my entire vehicle, and blew the whole front end off of it. I was the only one wearing a headset, only because I was talking into radio at the time. Every other soldier in the vehicle lost a significant amount of hearing in both ears."

"In Baquba, Iraq in 2007, an RPG exploded six feet above my head on a third storey window. All the 4/9 Manchu soldiers in the room had headsets on and suffered no hearing loss but the three Iraqi soldiers in the room who had no protection, all lost their hearing as a result of the detonation explosion nearby. That goes to show just why we need to protect our soldiers better and that is what the TCAPS programme is going to do."

As well as protecting soldiers hearing, enhanced hearing has also provided tactical advantage in the field as Capt. Moore attests. "When we were conducting clearance operations in the Diyala river valley in Iraq during August 2007, we were able to locate and destroy a substantial enemy cell when we heard them cooking food, because the soldiers in the lead squad had [in ear solution systems] which improved their hearing capability. Later, back in the US, I was talking to Manchu veterans from Vietnam who described a similar event in 1967. Only then, the enemy heard the Manchus first and there were substantial casualties. In 2007 we had no casualties."

Educating users in the proper use of hearing protection is a recognised and integral part of the TCAPS. Capt. Moore said, "If you put something on and you didn't know how to use it then you are not going to get the full effect. I know for a fact that for the [in ear solution] there is a good half day of training so that you learn how to use it correctly and it then maximises your protection. Without the education that was provided when we first received the systems as we first entered Iraq in May 2007, we could have been using it incorrectly and caused ourselves harm, danger and damage." ■