A SOLDIER'S MIND

New Helmet Sensors Will Measure Blast Impact

- Terri
- January 9th, 2008
- Equipment Review, In The News, Life, Military, PTSD, Traumatic Brain Injury, Military Medical Issues

Currently the Soldiers from the 101st Airborne Division "Screaming Eagles," are preparing to deploy to Afghanistan. They'll be taking with them another piece of equipment, that could prove to be vital in assessing the impact from blasts, roadside bombs and other incidents that can cause Traumatic Brain Injury. Right now, about 1,200 "Screaming Eagles" have already been issued the new sensors and the remainder will be receiving them within the next month. Troops from the 4th Infantry Division, who are scheduled to deploy to Iraq this fall, will be receiving the helmet sensors as well.

U.S.Army Maj. William Schaffer in the Army's Program Executive Office Soldier at Fort Belvoir, Va., displays a Kevlar helmet with an externally mounted sensor that collects blast data, and the sensor itself. The 101st Airborne Division is receiving the sensors before deploying to Afghanistan. Photo by Donna Miles

The hope is that the data that is gathered from the sensors will assist the Army in improving the helmets as well as other protective equipment that is issued to Soldiers prior to deployments. The sensors will gather data about the impacts, ranging from a helmet that is dropped or kicked, to the impact caused by a motor vehicle accident, to a weapon firing nearby, as well as the impact caused by an explosion. The sensors measure two specific actions; the energy wave generated by the event and the acceleration or jolt that follows. At this time, the medical community isn't ready to utilize the impact data to help diagnose Traumatic Brain Injuries. Hopefully that technology in the medical community will quickly follow suit, as I can see this as being a tremendous diagnostic tool, enabling the medical personnel to know before a Soldier even arrives from the field, if there is a possibility of a traumatic brain injury and thus allowing them to prepare the appropriate medical care.

The U.S. Army's Program Executive Office Soldier pushed the concept of a helmet-mounted sensor able to collect blast data from concept to fielding in a record six months. The 101st Airborne Division is receiving the sensors before its deployment to Afghanistan. Photo by Donna Miles

> "With the number of IEDs that we're seeing in Iraq and the traumatic brain injury that's coming out of it, obviously somewhere down the line we are looking at correlating the blast and the injury," said the Army's Program Executive Officer, Maj. William Schaffer. "But in the near term, we are looking at developing a more protective piece of equipment. The advanced combat helmet we have out there is the best in the world, but we are always looking at ways to make our products better, and this is a great way to start."

In June, Gen. Richard Code, Army vice chief of staff ordered the helmet sensor program. After three months the Program Executive Office Soldier had come up with several potential sensors and was putting each of them through extensive testing at Aberdeen Proving Ground, Md. Within 6 months, the field had been narrowed down to the models that proved to be the most promising. One is a model that is mounted externally and another is one that is mounted internally. Now that the two best models have been chosen, the Army is preparing extensive field testing each of them.

A soldier models a Kevlar helmet with an externally mounted sensor like those being issued to the 101st Airborne Division at Fort Campbell, Ky., before its deployment to Afghanistan. The sensor collects blast data for use in developing next-generation protective gear. U.S. Army photo

101st Airborne will be testing the externally mounted sensor, which attaches to the back of the helmet and is protected by a hardened casing that is covered by a camouflage flap. The sensor weighs about 6 ounces and the battery life is about 6 months. The sensor is designed to remain in a "sleep" mode until an event happens. It then automatically turns itself on and captures the data from an event, then turns itself off. It has the capacity to store data on up to 527 events. To retrieve the information from the sensor,

the Soldier has to simply connect it to a computer via a USB port and save it or send the data to a secure database.

The Soldiers of 4th Infantry Division will test an internally mounted model. This sensor will be mounted under the padding in the crown of the helmet. It has a rechargable battery, but otherwise identical capabilities as the externally mounted sensor.

The 4th Infantry Division will receive an internally mounted helmet sensor before its deployment to Iraq this fall. Photo by Donna Miles

> "One is protected by the helmet itself and one by the hardened casing around it," Schaffer said. "Both measure impact and acceleration."

Because many of the Soldiers who will be taking part in testing the sensors, have experienced combat and blasts while in combat, Soldiers from the 101st Airborne Division seem to be more than happy to play a part in helping to improve helmets and the protection they provide the Soldiers.

> "This shows everybody that the Army cares," Schaffer said. "We have got the best equipment in the world, but we are not resting on our laurels. We are always looking forward, always looking for the next generation of protective equipment to take care of the soldiers."

Myself, having spent many years working in Law Enforcement and EMS and knowing the devastating effect of head injuries, I can see the potential that this can provide in the medical sense. The ability to detect head injuries earlier and treat them appropriately, thus perhaps decreasing the possibility of lasting effects of those head injuries.

Defenselink

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