

MARTINSVILLE BULLETIN

Local soldier's experiences lead to new body armor design

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From the battlefield to the laboratory, Jeff O'Dell is dedicated to finding ways to serve his country and the men and women charged with protecting it.

The student and a handful of his classmates have hit on a new design for body armor. The idea for the new body armor grew from a biomedical class at the University of Virginia's Engineering School and his own military experience, according to U.S. Army Staff Sgt. O'Dell.



Staff Sgt. Jeff O'Dell is shown on duty in Iraq in a contributed photo. He used his experiences in the military to come up with a new design for protective body armor.

Now 29, O'Dell said he joined the Army and left his native Henry County right out of Magna Vista High School. "I've been all over the world" in his first four-year stint, O'Dell said, including four months in Baghdad.

That is where O'Dell learned firsthand the importance of body armor. He also knows how Enhanced Small Arms Protective Inserts can restrict movement and fail to stop multiple bullets, according to The Associated Press. The four bulky ceramic plates now in use in protective vests used by American forces are also heavy, bringing the weight of a vest to nearly 30 pounds.

"I was deployed in Iraq as a fire support specialist from August 2005 to December 2006," O'Dell told the AP. "Our armor vest had single ceramic plates in the front, back and on each side. The vest has saved the lives of some of my buddies, but having worn it a lot I know it can be improved upon."

"It's too heavy, it doesn't stop multiple rounds and it doesn't flex," said O'Dell, who is serving in the National Guard while attending U.Va., according to the AP. "I really think it's something that needs to be fixed."

When he returned home, O'Dell said he decided to pursue degrees in biomedical and mechanical engineering at the University of Virginia. He frequently visits his parents, Sanford "Sandy" and Phyllis O'Dell, in Henry County.

Now in his second year of college, O'Dell said he has learned he will be deployed for a second time sometime this year and he hopes to be better prepared.

When O'Dell, as part of a five-person team, was assigned the task of selecting a "real life" problem, getting a design together and implementing the project, body armor came to mind, he said.

The team decided to try to find a way to redesign the armor to make a more lightweight and flexible system that provides as much or more protection as the current system.

According to the Army's Web site, a soldier who recently addressed Congress reported that the body armor he wore in Iraq "was sometimes too heavy and bulky for the specific mission he was performing."

"It comes to a point where you are more mission-incapable of doing our job or you're more at risk or vulnerable with all the equipment on," said Staff Sgt. Fred Rowe of the 101st Airborne Division (Air Assault) while testifying Feb. 5 before the House Armed Services Committee's joint session of the air and land forces subcommittee and the seapower and expeditionary forces subcommittee, according to the Web site.

O'Dell said that's because the system currently in use employs "one large plate" and is cumbersome, bulky and weighs in at about 30 pounds, he said. "Once it's impacted, it weakens the entire system," he said. "We've worked to improve that."

Citing security reasons, O'Dell declined to discuss specific improvements he is proposing for body armor. However, he said the new design is proving to be "a pretty effective system." A few months ago examples of the students' new vest were put to the test at H.P. White Lab in Maryland, the AP reported.

In the company's ballistics testing facility, round after armor-piercing round were fired into the vests. The team's radically new design proved so successful and groundbreaking that a second round of testing was scheduled. This time Army representatives will be present to evaluate the students' system firsthand, according to the AP.

"The Army is interested because we've come up with a design that offers flexibility and more capability for stopping multiple armor-piercing rounds," O'Dell told the AP. "A lot of it has to do with our design, and a lot of it is the material we're changing."

Providing their design passes the Army's muster, O'Dell and his group will work to commercialize the equipment, he said. They are looking to partner with a company if tests show the project is worth pursuing commercially.

"We hope to bring it to market as soon as possible" if all goes well, O'Dell said — "hopefully, before I deploy again."