

STRUGGLE FOR IRAQ: TROOP SHIELDS***Pentagon Study Links Fatalities to Body Armor*****By Michael Moss**

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Correction Appended

A secret Pentagon study has found that as many as 80 percent of the marines who have been killed in Iraq from wounds to the upper body could have survived if they had had extra body armor. Such armor has been available since 2003, but until recently the Pentagon has largely declined to supply it to troops despite calls from the field for additional protection, according to military officials.

The ceramic plates in vests now worn by the majority of troops in Iraq cover only some of the chest and back. In at least 74 of the 93 fatal wounds that were analyzed in the Pentagon study of marines from March 2003 through June 2005, bullets and shrapnel struck the marines' shoulders, sides or areas of the torso where the plates do not reach.

Thirty-one of the deadly wounds struck the chest or back so close to the plates that simply enlarging the existing shields "would have had the potential to alter the fatal outcome," according to the study, which was obtained by The New York Times.

For the first time, the study by the military's medical examiner shows the cost in lives from inadequate armor, even as the Pentagon continues to publicly defend its protection of the troops.

Officials have said they are shipping the best armor to Iraq as quickly as possible. At the same time, they have maintained that it is impossible to shield forces from the increasingly powerful improvised explosive devices used by insurgents in Iraq. Yet the Pentagon's own study reveals the equally lethal threat of bullets.

The vulnerability of the military's body armor has been known since the start of the war, and is part of a series of problems that have surrounded the protection of American troops. Still, the Marine Corps did not begin buying additional plates to cover the sides of their troops until September, when it ordered 28,800 sets, Marine officials acknowledge.

The Army, which has the largest force in Iraq, is still deciding what to purchase, according to Army procurement officials. They said the Army was deciding among various sizes of plates to give its 130,000 soldiers, adding that they hoped to issue contracts this month.

Additional forensic studies by the Armed Forces Medical Examiner's unit that were obtained by The Times indicate that about 340 American troops have died solely from torso wounds.

Military officials said they had originally decided against using the extra plates because they were concerned they added too much weight to the vests or constricted the movement of soldiers. Marine Corps officials said the findings of the Pentagon study caused field commanders to override those concerns in the interest of greater protection.

"As the information became more prevalent and aware to everybody that in fact these were casualty sites that they needed to be worried about, then people were much more willing to accept that weight on their body," said Maj. Wendell Leimbach, a body armor specialist with Marine Corps Systems Command, the corps procurement unit.

The Pentagon has been collecting the data on wounds since the beginning of the war in March 2003 in part to determine the effectiveness of body armor. The military's medical examiner, Dr. Craig T. Mallak, told a military panel in 2003 that the information "screams to be published." But it would take nearly two years.

The Marine Corps said it asked for the data in August 2004; but it needed to pay the medical examiner \$107,000 to have the data analyzed. Marine officials said financing and other delays had resulted in the study's not starting until December 2004. It finally began receiving the information by June 2005. The shortfalls in bulletproof vests are just one of the armor problems the Pentagon continues to struggle with as the war in Iraq approaches the three-year mark, The Times has found in a continuing examination of the military procurement system.

The production of a new armored truck called the Cougar, which military officials said had so far withstood every insurgent attack, has fallen three months behind schedule. The small company making the truck has been beset by a host of production and legal problems.

Meanwhile, the Pentagon is still relying on another small factory in Ohio to armor all of the military's principal transport trucks, the Humvee, and it remains backlogged with orders. The factory, owned by Armor Holdings, increased production in December after reports in The Times about delays drew criticism from Congress. But the Marine Corps said it was still waiting for about 2,000 of these vehicles to replace other Humvees in Iraq that are more lightly armored, and did not expect final delivery until June.

An initiative begun by the Pentagon nearly two years ago to speed up production by having additional companies armor new Humvees remains incomplete, Army officials said.

Body armor has gone through a succession of problems in Iraq. First, there were prolonged shortages of the plates that make the vests bulletproof. Last year, the Pentagon began replacing the plates with a stronger model that is more resistant to certain insurgent attacks.

Almost from the beginning, some soldiers asked for additional protection to stop bullets from slicing through their sides. In the fall of 2003, when troops began hanging their crotch protectors under their arms, the Army's Rapid Equipping Force shipped several hundred plates to protect their sides and shoulders. Individual soldiers and units continued to buy their own sets.

The Army's former acting secretary, Les Brownlee, said in a recent interview that he was shown numerous designs for expanded body armor in 2003, and had instructed his staff to weigh their benefits against the perceived threat without losing sight of the main task: eliminating the shortages of plates for the chest and back.

Army procurement officials said that their efforts to purchase side ceramic plates had been encumbered by the Army's much larger force in Iraq compared with the Marines' and that they wanted to provide manufacturers with detailed specifications. Also, they said their plates would be made to resist the stronger insurgent attacks.

The Marine Corps said it had opted to take the older version of ceramic to speed delivery. As of early last month, officials said marines in Iraq had received 2,200 of the more than 28,000 sets of plates that are being bought at a cost of about \$260 each.

Marine officials said they had supplied troops with soft shoulder protection that can repel some shrapnel, but remained concerned that ceramic shoulder plates would be too restrictive. Similarly, they said they believed that the chest and back plates were as large as they could be without unduly limiting the movement of troops.

The Times obtained the three-page Pentagon report after a military advocacy group, Soldiers for the Truth, learned of its existence. The group posted an article about the report on its Web site earlier this week. The Times delayed publication of this article for more than a week until the Pentagon confirmed the authenticity of its report. Pentagon officials declined to discuss details of the wound data, saying it would aid the enemy.

"Our preliminary research suggests that as many as 42 percent of the Marine casualties who died from isolated torso injuries could have been prevented with improved protection in the areas surrounding the plated areas of the vest," the study concludes. An additional 23

percent might have been saved with side plates that extend below the arms, while 15 percent more could have benefited from shoulder plates, the report says.

In all, 526 marines have been killed in combat in Iraq. A total of 1,706 American troops have died in combat there. The findings and other research by military pathologists suggests that an analysis of all combat deaths in Iraq, including those of Army troops, would show that 300 or more lives might have been saved with improved body armor.

Military officials and contractors said the Pentagon's procurement troubles had stemmed in part from miscalculations that underestimated the strength of the insurgency, and from years of cost-cutting that left some armoring companies on the brink of collapse as they waited for new orders.

To help defeat roadside ambushes, the military in May 2005 contracted to buy 122 Cougars whose special V-shaped hull helps deflect roadside bombs, military officials said. But the Pentagon gave the job to a small company in South Carolina, Force Protection, that had never mass-produced vehicles. Company officials said a string of blunders had pushed the completion date to this June.

A dozen prototypes shipped to Iraq have been recalled from the field to replace a failing transmission. Steel was cut to the wrong size before the truck's design drawings were perfected. Several managers have left the company.

Company officials said they had also lost time in an interservice skirmish. The Army, which is buying the bulk of the vehicles, asked for its trucks to be delivered before the Marine vehicles, and company officials said that move had upended their production process until the Army agreed to get back in line behind the Marines.

"It is what it is, and we're running as fast as we can to change it," Gordon McGilton, the company's chief executive, said in an interview at its plant in Ladson, S.C.

On July 5, two former employees brought a federal false-claims case that accuses Force Protection of falsifying records to cover up defective workmanship. They allege that the actions "compromise the immediate and long-term integrity of the vehicles and result in a deficient product," according to legal documents filed under seal in the United States District Court in Charleston and obtained by The Times.

The legal claim also accuses the company of falsifying records to deceive the military into believing the company could meet the production deadlines. The United States Attorney's office in South Carolina declined to comment on the case. The Marine Corps says the Justice Department did not notify it about the case until December.

Force Protection officials said they had not been made aware of the legal case. They acknowledged making mistakes in rushing to fill the order, but said that there were multiple systems in place to monitor the quality of the trucks, and that they were not aware of any deficiencies that would jeopardize the troops.

STRUGGLE FOR IRAQ: TROOP SHIELDS Correction: February 18, 2006, Saturday A front-page article on Jan. 7 about problems encountered by American soldiers in Iraq with body armor referred imprecisely to a statement by the military's medical examiner, Dr. Craig T. Mallak, that information he was collecting on military deaths "screams to be published." Dr. Mallak's information concerned a range of noncombat and combat-related deaths and was not limited to armor-related incidents. The error was reported by a reader late last month, and this correction was delayed for additional research.