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BEFORE THE

READINESS SUBCOMMITTEE AND

TACTICAL AIR AND LAND FORCES SUBCOMMITTEE

HOUSE ARMED SERVICES COMMITTEE

UNITED STATES HOUSE OF REPRESENTATIVES

ON ARMY FORCE PROTECTION AND AVIATION SAFETY PROGRAMS

SECOND SESSION, 109TH CONGRESS

FEBRUARY 1ST, 2006

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
COMMITTEE ON ARMED SERVICES

Chairman Weldon, Chairman Hefley, Ranking Member Abercrombie, Ranking Member Ortiz, and distinguished members of the Committee, on behalf of the Army witnesses here, thank you for the opportunity to appear before you today and to explain how the Army is protecting Soldiers to the greatest extent possible, and has done so throughout the present conflict. The help we have received from Congress, both in terms of oversight and provision of resources, has made a vast difference in the protection of Soldiers. Even so, the death of one service member reflects an immeasurable loss to the Nation in terms of that life's potential; we never lose sight of this, and we never stop trying to protect our forces better.

Before we review the details of several of the force protection measures we have taken, we will review briefly the nature of the dilemma we face in determining the appropriate level of armor for our Soldiers and their combat systems. The answer to the protection problem is not always found in adding more armor; we must apply Composite Risk Management by balancing the risk from the enemy with the risk from hazards and human performance. In fact, piling on too much armor presents as much risk to the Soldier as providing too little. Recent media reports have cited a study which speculates that some combat deaths may have been prevented by more body armor, or differently configured body armor. Unfortunately, this kind of narrow analysis does not account for the complexity of either the threat, or the individual circumstances of these deaths. It also does not reveal how many Soldiers or Marines have been saved because they were able to quickly raise and fire their rifles first, saving themselves, their comrades, and innocent bystanders. It does not show how many Soldiers were able to quickly escape damaged vehicles while under attack, or simply how many avoided becoming heat casualties. Where do we cross the line between giving the Soldier adequate protective armor, and turning him into a medieval knight—a sitting target for the enemy? Throughout the present conflict, Army leaders at every level have continually anticipated and adjusted protection measures appropriate to the conditions on the ground.

Interceptor Body Armor (IBA) remains a centerpiece program for the Army, one that we take extremely seriously. IBA is a modular design that provides protection against fragmentation and small arms ammunition and can be tailored to meet mission requirements. The standard system consists of an Outer Tactical Vest (OTV) and a set of ballistic inserts, oftentimes referred to as Small Arms Protective Inserts (SAPI).

Additional protection is provided through the Deltoid Axillary Protector (DAP) which provides protection to the shoulder and armpit regions of the body and Ballistic Side Plates. Total weight of all body armor components in size medium is 31 lbs.

A brief chronology of the evolution of Interceptor Body Armor:

- In 1999, the Army started fielding the Outer Tactical Vest (OTV) with Small Arms Protective Inserts (SAPI) to Soldiers Deployed in Bosnia.
- April 2004, the Coalition Forces Land Component Command requested Deltoid Axillary Protector (DAP) which provides protection to the shoulder and armpit regions of the body.
- April 2004, the Coalition Forces Land Component Command report 100 percent filled on both OTV and SAPI.
- January 2005, the Coalition Forces Land Component Command requested Enhanced Small Arms Protective Insert (ESAPI) which provides increase protection for Soldiers.
- September 2005, Coalition Forces Land Component Command requested Ballistic Side Plates.

The following chart shows the theater and Army wide requirements for the IBA ensemble to include the theater on hand quantity.

IBA Item (Numbers in thousands)	Total Army Requirement	Theater Requirement	O/H in Theater	Total # Funded
OTV	966	201	201	966
ESAPI	966	201	201	446
DAP	230	173	173	173
Side Plates	230	230	0	230

Recent media reports describing this program have been, at best, inaccurate. In April 2004, Central Command reported that it had enough Body Armor for every Soldier and DoD civilian deployed in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF in Afghanistan). To date, the Army has fielded over 700,000 sets of body armor worldwide. Our IBA is the best military body armor in the world. As you have heard, the Army has continued to improve its IBA ensemble, consistent with theater requests and scientific developments. In this regard we have fielded over 200,000 sets of Enhanced Small Arms Protective Inserts (ESAPI), as well as 173,000 sets of Deltoid Axillary Protection (DAP), which protects the shoulder and sides of the body. The most recent improvement to the body armor ensemble is the side armor

plate program. In response to a request from the theater commanders, the Army designed, tested, and placed on contract a side armor plate and carrier. Deliveries will commence this month. The Army is constantly searching for better body armor. The Army is committed to testing any reasonably appropriate body armor product submitted to assess whether it has potential to meet the high standards established for protection, durability, and weight. Thus far, we have tested hundreds of products. We are also pursuing a robust science and technology effort to identify promising body armor technologies. We are convinced that our Soldiers are wearing the best possible equipment right now. Commanders in the theater of operations have the means to give their Soldiers the highest levels of protection known to the Army today. Interceptor Body Armor is saving Soldiers' lives every day.

There is a military proverb that holds that the best defense is a good offense. We give our Soldiers more than body armor so that they can engage the enemy effectively. In October 2002, the Army began issuing Soldiers and units new equipment through the Rapid Fielding Initiative (RFI) program. The RFI leverages current programs and commercial-off-the-shelf technology to provide Soldiers, squads, and platoons, with equipment such as squad communications gear and building entry devices to enhance effectiveness in engaging the enemy. These items help Soldiers fight more effectively, reducing exposure to enemy attacks. Since the start of the RFI program, we have equipped over 520,000 Soldiers in 54 brigade combat teams and units supporting those teams. In Fiscal Year 2004 (FY04), the Army equipped over 184,000 National Guard, Reserve, and Regular Army Soldiers, issuing over 3,000,000 pieces of equipment. In FY05, the number of Soldiers fielded increased to over 260,000 Soldiers. Current plans for this Fiscal Year call for equipping over 296,000 Soldiers, with plans to equip the entire operating Army by the end of September 2007.

Protecting the force also means anticipating the enemy's tactics, and frustrating his attacks before they occur. Improvised Explosive Devices (IEDs) remain the most lethal form of attack against Coalition forces. Progress, however, is being made to combat this deadly threat. Through a Department of Defense-wide effort led by the Joint IED Defeat (JIEDD) Organization, thousands of counter-measure devices, vehicles, and systems have been deployed to the theater to mitigate the IED threat. Significant resources, nearing $2 billion, have been applied to innovative, cutting-edge technology and training. Specific examples include: Individual and unit IED defeat

training, ground and aerial countermeasures, Counter-IED Bomber Program, IED intelligence, surveillance, and reconnaissance sensors, vehicle-borne IED and suicide bomber detectors, Explosive Ordnance Disposal (EOD) vehicles and robots, specialized search dogs, and technical exploitation programs. There are currently numerous devices in the theater of operations, and over the next nine months we will significantly increase the number of devices available to our Soldiers. With the support of Congress, the JIEDD Organization is procuring not only Army countermeasures systems, but also systems developed by the United States Navy and Special Operations Forces program managers. Organizations have been modified to enable better intelligence collection and operating methods in an environment increasingly dominated by IEDs. Hundreds of units and thousands of Soldiers, Sailors, Marines and Airmen have been trained on the latest techniques and tactics for defeating IEDs. Bureaucratic processes have been streamlined to facilitate rapid development and fielding of needed equipment. National laboratories, academia and industry partners have been engaged and leveraged to assist in providing solutions. To date, nearly 2,000 companies and dozens of government and non-government agencies have contributed to this effort. These efforts in combination with effective tactics, techniques and procedures employed by coalition forces have resulted in a drop in IED casualty rates despite an overall increase in IED attacks.

We are bolstering the protection afforded to our Soldiers when they are mounted and traveling the dangerous roads of Iraq and Afghanistan. The Secretary of the Army stood up an Armor Task Force at the General Officer level to provide increased management to the armoring effort. Weekly meetings of this task force were initiated on December 1, 2004, with the short-term goal of speeding up the armoring of tactical wheeled vehicles and the long-term goal of determining a comprehensive armoring strategy for all Army vehicles. The working group continues today to address emerging armoring and vehicle safety issues.

This includes enhancing the protection levels of tactical wheeled vehicles in one of three possible ways. The first, and the optimal solution, Level I, refers to new vehicles with factory integrated armor, ballistic windows, and air conditioning. The Army met the theater commander's Level I High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) armor requirements in July 2005. Nevertheless, Level I HMMWVs continue flowing into Theater to replace Level II armored vehicles. Level II vehicles have been

outfitted with Add-on-Armor kits consisting of Army designed and tested armor plates, ballistic glass, and air conditioning. No un-armored vehicles may leave Forward Operating Bases, and are being phased out of the theater. The Army has extensively tested each of these armoring solutions against a variety of threats and will continue to test all applications submitted by industry and others.

The tactical wheeled vehicles that have received additional protection include: the HMMWV, the Heavy Expanded Mobility Tactical Truck (HEMTT), the Palletized Load System (PLS), the Family of Medium Tactical Vehicles (FMTV), the Heavy Equipment Transport (HET), the 5-ton truck, and the line haul truck tractor. The table below provides details of each of these systems with their requirements, funded level, and on hand information.

VEHICLE SYSTEM	VALIDATED ARMOR REQMT 30 MAR 05	FUNDED	ARCENT REPORT AS OF 18 JAN 06 LEVEL I / II	PERCENT OF TOTAL VALIDATED REQMT LEVEL I & II
UAH	**9,727**	**16,129**	**11,177 / 0**	**115%**
HMMWV	**13,872**	**13,939**	**0 / 13,598**	**98%**
FMTV	**3,335**	**3,879**	**0 / 3,583**	**107%**
M939+(5 TON)	**2,688**	**3,000**	**0 / 2,660**	**99%**
HEMTT	**2,430**	**2,705**	**0 / 2,334**	**96%**
PLS	**914**	**1,275**	**0 / 1,009**	**110%**
HET	**758**	**796**	**0 / 757**	**100%**
M915	**1,877**	**2,125**	**0 / 1,845**	**98%**
SUBTOTAL	**35,601**	**43,848**	**11,177 / 25,786**	**103%**

The Up-Armored HMMWV is one example of a type of vehicle with integrated armor (Level I) protection. The Up-Armored HMMWV protects against many of the known threats we have experienced in the AOR. Theater commanders deployed with 235 Up-Armored HMMWVs in May 2003. Industry produced 450 Up-Armored HMMWVs in October 2004; production increased to 630 per month in November 2005. The United States Central Command currently has over 11,000 Up-Armored HMMWVs in its area of responsibility. The Army continues to test and evaluate improvements to these systems, including ways to protect against the ever evolving threat.

Another system with integrated armor protection is the Armored Security Vehicle, or ASV. This vehicle is a versatile asset for tactical commanders in both local patrolling and protecting road convoys. The current production per month was reduced because the manufacturing plant was badly damaged by Hurricane Katrina. However, production is climbing from 6 ASVs produced in September 2005 to 24 scheduled for production in February 2006, and up to the maximum production capacity of 48 in August 2006. A total of 1,118 ASVs are funded.

We have deployed a family of enhanced Route Clearance vehicles to aid in defeating IEDs. Currently, several hundred of these vehicles are in Iraq and Afghanistan. Starting in FY07, the Army will procure the equipment for, and stand up three Route Clearance Companies per year, for a total of twelve companies.

Protecting our aviation platforms is another key element of the Army's Force Protection Program. The Army's program to continually improve aircraft survivability equipment, or ASE, on aviation platforms complements the efforts to protect vehicles. At the time of their deployment, all deployed aircraft were equipped with the best available ASE for the particular aircraft mission, design, and series. Since that time, at the direction of the Secretary of the Army, and with the support of Congress and Industry, the Army is providing aircrews with enhanced protection from man-portable air defense systems (MANPADS) and continues to seek ways to field this capability to the aviation force as soon as possible. In January 2004, the Army approved an accelerated ASE program. This program includes installation of a Common Missile Warning System with an Improved Countermeasure Munitions Dispenser scheduled for completion for all aircraft deployed to Iraq and Afghanistan by the end of fiscal year 2006, well ahead of the program schedule.

In addition to the aircraft platform ASE, we have improved the ballistic tolerance of airframes, protected critical flight controls and issued Small Arms Protective Inserts (SAPI) plates for the aircrews to make the system more survivable. We also improved survivability training for our aircrews by increasing school quotas for Survival, Evasion, Resistance, Escape level C (SERE-C) as well as dunker training, and are completing

plans to open an Army Aviation Centric SERE Training Program at Fort Rucker, Alabama. With this said, we have lost 71 aircraft (14 more aircraft pending) in combat operations in OEF/OIF; 17 were lost due to enemy fire (See chart below).

FY02 - Present

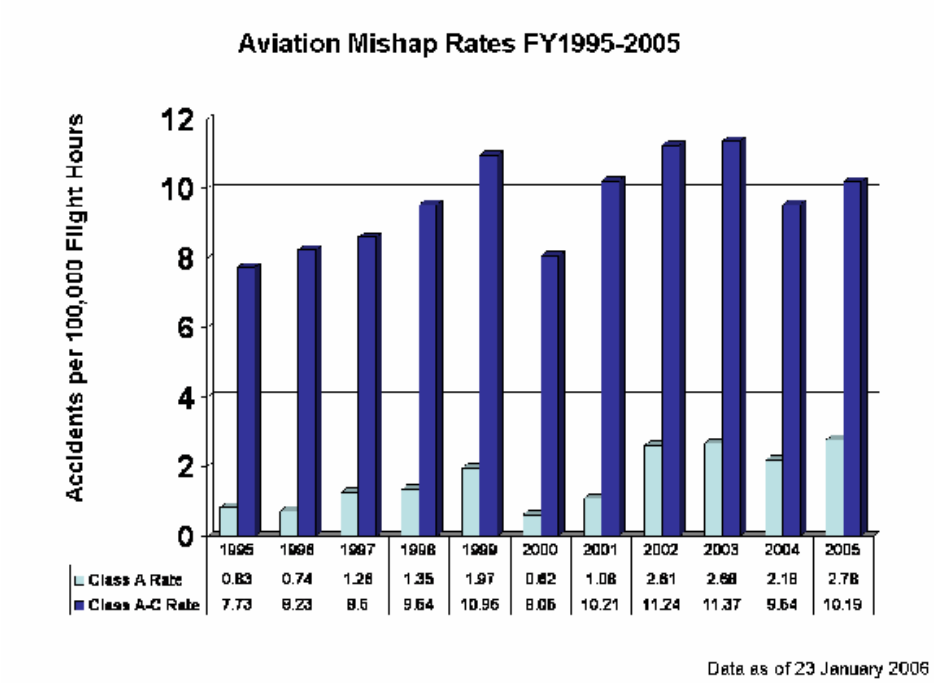
**As of 25 Jan 06*

MDS	Attrited			Pending Attrition/ECOD		
	OIF/ OEF	Non OIF/OEF	Total	OIF/ OEF	Non OIF/OEF	Total
AH-64A/D	21	20	41	6	2	8
UH/MH-60A/L	14	9	23	7	3	10
CH/MH-47D/E	14	2	16	0	0	0
OH-58D	22	6	28	1	0	1
TOTALS	**71**	**37**	**108**	**14**	**5**	**19**

Legend:
Attrited: Destroyed; Sent to DRMO; Loss from Inventory
Pending Attrition / ECOD: Aircraft Accident / Incident with Damage; Awaiting Reparability Determination (ECOD) or Release by JAG

Closely related to Aircraft Survivability are the Army's efforts in Aviation Safety and Training Programs to combat a thinking enemy whose tactics are consistently evolving and the harsh environmental conditions we face. Safety is embedded in every aspect of aviation operations as we strive to minimize aviation accidents.

The chart below depicts the Army aviation mishap rate for the past ten years.



A detailed review of accidents in fiscal years 2002 to 2006 reveals that 84 percent of the Class A accidents were attributed to human Factor (HF) causes, 15 percent to materiel causes, and 1 percent to environmental causes. Of the total Class A-C accidents, 71 percent were attributed to HF, 16% to environmental causes, and 13 percent to materiel causes.

Army aviation utilizes Composite Risk Management (CRM) to mitigate these risks in aviation operations. CRM blends tactical threat based risks with hazard-based risks to provide a more thorough understanding or evaluation of possible dangers to the aircrew during the conduct of operations. CRM emphasizes there is not only a tactical danger to the aircraft and aircrew, but also environmental risk, aircraft systems risk, and human error risks. Summarized from the viewpoint of the Soldier: What is out there that can kill me?

But this is not all we have done to reduce risk. We have undertaken a training regimen to best prepare our flight crews for operations within desert and mountain environments. This training includes brown out, high-hot-heavy flight operations, and the use of the Tactical Terrain Visualization System and the High Altitude Aviation Training site. Additionally, we have incorporated lessons learned into the contemporary operating environment and simulations training. To enhance our aircrew's lethality and increase their survivability, we have adapted our tactics, techniques and procedures (TTPs) and increased aircrew training for running and diving fires, hellfire/rocket proficiency, and maneuvering flight. A new Aircrew Coordination Training program, titled Aircrew Coordination Training - Enhanced (ACT-E), is under development at the U.S. Army Aviation Warfighting Center, Fort Rucker, Alabama. The ACT-E program will build on the original exportable training package, revitalizing it from a one-time training event and enhancing it to a dynamic, relevant program incorporating TTPs and Global War on Terrorism (GWOT) lessons learned that is continuously updated and improved. The new program of instruction will be fielded incrementally to initial aviator training, instructor pilot training, and annual aviator refresher training programs as it is developed over the next eighteen months.

It is necessary to repel and survive the enemy's attacks, but it is much more important to detect and prevent those attacks before they happen. The Army employs multiple means to detect and counter enemy activities to include the use of unmanned aerial vehicles, or UAVs, as an effective means of seeing the enemy first and disrupting

their attacks. The UAVs provide an enhanced surveillance capability to the tactical commander. Examples of systems presently fielded include: the Improved Gnat (I-GNAT) UAV system, the Hunter UAV system, the Shadow tactical UAV (TUAV) system, and the Raven small UAV system. There are currently 14 Shadow TUAV Platoons in Iraq.

Over the last year, there have averaged more than 50 mortar and rocket attacks per week. The Counter-Rocket, Artillery and Mortar (C-RAM) project evolved from an operational requirement to protect friendly forces from the effects of hostile indirect fire (IDF) attacks. It is a holistic approached built around seven tenets: Shape, Sense, Warn, Intercept, Respond, Protect, and Command & Control (C2), allowing an integrated Joint and Combined Arms approach to counter and defeat enemy IDF attacks utilizing the whole spectrum of proactive and reactive measures.

The C-RAM capability initially fielded consists of fire support and air defense radars, Navy localized alerting systems and modified Phalanx gun systems and Army and Naval battle management hardware and software integrated to provide commanders a range of options for countering IDF attacks. The Army fielded an initial Joint and Combined Arms C-RAM early warning and mortar/rocket intercept capability in less then 11 months from receiving Theater's operational requirement and continues to rapidly field integrated sense and warning capabilities to other Theater forward operating bases (FOBs). While continuing to refine and improve this capability, the Army plans include fielding integrated C-RAM early warning capability to more Theater FOBs with a subset of these FOBs having intercept capabilities to protect critical strategic assets.

The Army continues to spare no effort in anticipating and solving Force Protection challenges. For the past four months, at the direction of Army leaders, the Army Training and Doctrine Command's Futures Center has been leading a Comprehensive Force Protection Initiative. This initiative, in conjunction with Materiel Development, Test, and Acquisition communities, is looking across the entire spectrum of doctrine, organizations, training, materiel, logistics, personnel, and facilities to identify OIF/OEF force protection gaps and to develop solutions to significantly enhance Army force protection efforts.

We also continue to exploit the ability of the Army's Rapid Equipping Force (REF) to rapidly identify and procure materiel solutions to better protect our Soldiers. REF

works in partnership with industry, academic and military leaders to support Soldier needs as quickly as possible. It provides field commanders with readily employable solutions to enhance lethality and survivability. The REF is enabling us to remain ahead of an adaptive enemy and to save Soldiers' lives, often by using off-the-shelf and developmental technologies. Examples of last year's REF successes include the deployment of digital translators, scanning systems and robots able to inspect possible threats.

Mr. Chairman, on behalf of our Soldiers, we deeply appreciate the previous assistance of the Congress, and in addressing these needs by supporting the President's Budget, and supplemental appropriation requests and by engaging in a continual dialogue with us in this critically important area. We have described some successes in force protection above. However, be assured we are well aware that as long as Soldiers are in harm's way we have the sacred responsibility to remain committed to continuing to explore means and methods to improve their protection. Your continued support will directly assist us in giving our Soldiers in combat the best possible protection available. We are an Army at war, relevant and ready—today and tomorrow—and a full member of the Joint and Interagency Team now fighting terror around the world. Thank you for this opportunity to appear before you today; we look forward to answering your questions.