

NOT FOR PUBLICATION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE

STATEMENT

OF

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BEFORE THE

SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

AND

AIR AND LAND FORCES SUBCOMMITTEE

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

MARINE CORPS FORCE PROTECTION EFFORTS

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Chairman Abercrombie, Chairman Taylor, Congressman Bartlett, Congressman Akin and distinguished members of the Subcommittees, I am honored to appear before you today and for this opportunity to discuss Marine Corps force protection systems. But first, on behalf of all Marines and their families, I want to thank you for your continued support for our Marines.

INTRODUCTION

We know the future will be challenging—not only in the immediate conflict in Iraq and Afghanistan, but in subsequent campaigns. This is a multi-faceted, generational struggle that will not be won in one battle, in one country, or by one method. Many of the underlying causes of the current conflict will persist in the coming decades and may be exacerbated by states and transnational actors who are unwilling or unable to integrate into the global community. In this environment, the Marine Corps must be able to adapt to broad strategic conditions and wide-ranging threats. We remain faithful to our enduring and legislated mission — to be ready wherever, whenever our country needs us and to prevail over whatever challenges we face. We have done this, and will continue to do so, by recruiting and retaining the best of our Nation’s sons and daughters, training them in tough, realistic scenarios, educating them broadly to be intellectually prepared, and providing them the best leadership and equipment available. We are confident that with your continued support, your Corps of Marines will remain the Nation’s expeditionary force in readiness and continue to fulfill our national security imperative of *being the most ready when the Nation is least ready*.

FORCE PROTECTION SYSTEM PROCUREMENT METHODOLOGY

The Marine Corps is committed to provide force protection equipment to save Marines’ lives, reduce Marine casualties, and limit the severity of our casualties. Our goal is to ensure that all of our in-theater force protection requirements are quickly met with the best systems available. To my knowledge, there are no available commercial force protection products more capable of saving our warfighters’ lives and reducing injuries in combat than the equipment and systems we will describe for you today.

It is important that we consider the environment in which our fielded systems will operate. Therefore, based upon warfighter input, and drawing on our intelligence resources for the latest information on the most prevalent devices and weapons our enemy is employing, and forecasting his next move, we identify the best systems available that can immediately meet the

tactical and safety needs of our warfighters and get those systems into the hands of our Marines as quickly as possible.

We have positioned ourselves to initiate innovative and rapid modifications to our equipment to meet evolving threats and future challenges by taking a rapid, iterative generational development and fielding approach. After a system is fielded, we continue to look for ways to improve those systems. We work with other government laboratories and agencies too; for example, we collaborate with the Office of Naval Research and the joint Science & Technology community on current and future technologies, and we turn to the medical community for their expertise in making our systems the safest they can be for our warfighters. Academia also plays a significant role in the development and testing of a variety of our force protection products. We have teamed with North Carolina State University, University of Virginia, Massachusetts Institute of Technology and others as we pursue and develop state-of-the-art protective equipment.

The mix of solutions that we provide our warfighters allows them to counter the enemy's ever-changing capabilities.

GROUND MOBILITY

The evolving threat environment requires proactive management of tactical wheeled vehicle programs in order to provide Marine warfighters with the most well protected, safest vehicles possible given technological limitations. Force protection remains a priority for the Marine Corps. We have fielded a Medium Tactical Vehicle Replacement (MTVR) Armor System for the MTVR, Fragmentation Armor Kits for the High Mobility Multipurpose Wheeled Vehicles (HMMWV), Marine Armor Kits (MAK) for the Logistics Vehicle System (LVS), Mine Resistant Ambush Protected (MRAP) vehicles, and starting this fiscal year we will begin fielding Logistics Vehicle System Replacement (LVSR) vehicles that include a removable armor kit. As we face continuous challenges, we strive to stay ahead of the threat. To this end, we have developed increased force protection upgrades to the MRAP vehicles and the Medium Tactical Vehicle Replacement Armor System, developed safety upgrades for the HMMWVs, and developed improved armor for the Logistics Vehicle System. We will continue to work with the Science & Technology community and with our sister Services to develop and apply technology to address force protection requirements. Congressional support for our force protection efforts

has been overwhelming. We thank you and ask that Congress continue their life-saving support in the coming years.

Mine Resistant Ambush Protected (MRAP) Vehicles

Mine Resistant Ambush Protected (MRAP) vehicles are designed to protect vehicle crew and passengers from mine blasts and fragmentary and direct fire weapons. They are designed with a “V” shaped hull and are employed to protect against the three primary kill mechanisms of mines and improvised explosive devices – fragmentation, blast overpressure, and acceleration. The Marine Corps is executing this joint urgent requirement to provide as many highly survivable vehicles to theater as quickly as possible. In November 2008, the Joint Requirements Oversight Council established a new 16,238-vehicle requirement for all Services and Special Operations Command (SOCOM). The current Marine Corps requirement of 2,225 vehicles supports our ongoing theater operations and home station training. As of 27 January 2009, 16,230 vehicles are under contract with over 15,000 accepted by the government and over 11,200 fielded in theater. We will contract for eight additional SOCOM vehicles. Our Marine Corps requirement was satisfied in June 2008.

The Marine Corps is supporting the Central Command (CENTCOM) Joint Urgent Operational Need, for a lighter, more agile vehicle better suited to the rugged environment in OPERATION ENDURING FREEDOM. We are aggressively executing an acquisition strategy to quickly procure this MRAP All Terrain Vehicle (M-ATV). Submitted proposals are currently under review and the evaluation will include assessments of production representative vehicles. The Marine Corps is conducting the necessary analysis to establish our specific vehicle requirements for the MRAP-All Terrain Vehicle.

Up-Armored HMMWVs

Life cycle management of HMMWVs will continue to be a focus area due to their ubiquity and expeditionary capability. Safety modification kits (3 point seat belts, automatic fire sensing and suppression systems, gunner’s restraints and intercoms) requested by the warfighter have been shipped to theater for installation. Installations were completed in February 2008. Production units of 400 amp alternator kits required to power Counter IED jammers and other electronics are targeted to be installed in the beginning of 2009. We will continue to work with the Army to assess additional upgrades, particularly related to armor and the suspension system. We are currently evaluating the Army’s Vehicle Emergency Escape (VEE) Windshield kit,

which allows Marines to quickly exit the HMMWV in the event of a rollover. Every HMMWV that leaves the Forward Operating Base (FOB) is equipped with armor protection per Marine Corps Central Command policy.

Medium Tactical Vehicle Replacement (MTVR) Armor System (MAS)

For our Medium Tactical Vehicle Replacement 7-ton trucks, we developed what is known as the Medium Tactical Vehicle Replacement Armor System (MAS). This armor system is a permanent modification to our Medium Tactical Vehicle Replacement fleet. It is designed for the life of the vehicle (twenty-one years). The Medium Tactical Vehicle Replacement Armor System is capable of withstanding small arms fire, improvised explosive devices, and mines. It provides complete 360 degree protection, as well as overhead and underbody protection for the cab occupants, and includes upgraded suspension, A/C system, removable armored personnel carrier (with ballistic glass), and machine gun mounts.

The Medium Tactical Vehicle Replacement Armor System is installed in all Medium Tactical Vehicle Replacement variants in Iraq and Afghanistan. We have continued to improve the Medium Tactical Vehicle Replacement Armor System in response to Urgent Universal Needs Statements (UUNS) – adding increased underbody blast protection, fuel tank fire protection kits, and 300 amp alternator kits (for powering Counter Improvised Explosive Devices (CIED), etc.). Every Medium Tactical Vehicle Replacement that leaves the FOB is equipped with the Medium Tactical Vehicle Replacement Armor System. The latest upgrade to the Medium Tactical Vehicle Replacement Armor System incorporates a removable cab roof to support Maritime Prepositioned Shipping requirements.

Logistics Vehicle System Replacement (LVSr)

The Logistics Vehicle System Replacement is replacing the Logistics Vehicle System as the Marine Corps heavy transport logistics vehicle. There are three variants of the Logistics Vehicle System Replacement – Cargo, Tractor and Wrecker. All vehicles are designed to accept removable vehicle armor packages that provide 360 degree protection for the vehicle crew. The Logistics Vehicle System Replacement Cargo vehicle will begin fielding in Fiscal Year 2009, including vehicles for Afghanistan. The Wrecker and Tractor variants are targeted to begin fielding in Fiscal Year 2011. The Wrecker will provide the capability to recover all USMC tactical vehicles, including MRAP vehicles.

Expanded Capacity Vehicles

The Expanded Capacity Vehicle (ECV) is the latest configuration for the HMMWV fleet. The Expanded Capacity Vehicle increased the gross vehicle weight to 12,100 pounds, and has a more powerful turbo-charged engine, upgraded suspension and integrated air conditioning system. Additionally the Expanded Capacity Vehicles are designed to accept armor kits, installed either at the factory or at organic maintenance facilities.

All new deliveries of Expanded Capacity Vehicle configurations (M1151, M1152 and M1165) to the Marine Corps are manufactured as armored vehicles and will have FRAG Kits 2 and 5 level capabilities integrated. FRAG Kit 2 is designed to enhance ballistic protection in the front part of the vehicle around the driver and A-driver wheel-wells. FRAG Kit 5 is designed to degrade improvised explosive device effects and reduce armor debris that results from overmatch.

COMBAT ENGINEERING EQUIPMENT

Prior to the start of OPERATION ENDURING FREEDOM and OPERATION IRAQI FREEDOM I, the Marine Corps had no standard armor protection kits for our material handling and construction equipment. Since then, we have developed armor solutions that provide protection from improvised explosive devices, indirect fire, and other small arms fire to an operator conducting engineer missions. A total of 259 armored Combat Engineering kits were procured and fielding was completed in November 2008.

Mine Rollers

We are also fielding mine rollers to our Marines. These systems are designed to protect convoys from the effects of pressure-plate activated mines and victim initiated improvised explosive devices. The Lightweight Mine Roller system can be mounted on a variety of vehicles, including High Mobility Multipurpose Wheeled Vehicles, Medium Tactical Vehicle Replacements, and Light Armored Vehicles. It provides full-width protection coverage for the host vehicle. The “mine roller” system can be used while traveling at tactical convoy speeds.

A total of 685 systems were procured and fielding of 640 more systems was completed in January 2009.

Vehicle Armoring in Closing

We have direct day-to-day communications with our U.S. Army counterparts to coordinate our armoring strategies for our ground vehicles. We are committed to aggressively evolving our equipment to changing threats. Our ability to rapidly modify our vehicle armoring systems is a testament to this commitment. The following chart depicts the current state of our vehicle armoring efforts as of 25 January 2009.

MARCENT Current Vehicle Armoring Posture as of 25 January 2009 (for official use only)

**Since August 2004 all Marine Corps vehicles operating outside the
FOBs have been at Level II or better armor protection.**

	Vehicle Systems in CENTCOM AOR	OIF O/H	OEF O/H	HOA - Bahrain O/H	Total	Level I	Level II	Level III	Total Unarmored Vehicles not Leaving FOBs
LTV	M1114	1917	158	0	2075	2075			
	HMMWV	544	48	41	633	0	1873	9	10
MTV	5-ton	56	0	0	56	0	56	0	0
	MTVR	976	0	0	976	890	86	0	0
HTV	LVS	226	0	0	226	0	226	0	0

Level I: A wheeled vehicle that is manufactured as an armored vehicle
Level II: HQDA and Marine Corps approved Add-on-Armor (AoA) kits
Level III: Hardening of vehicles through fabricated armor (HQDA) approved steel

LTV: Light Tactical Vehicle
MTV: Medium Tactical Vehicle
HTV: Heavy Tactical Vehicle

PERSONAL PROTECTION

The wartime environment constantly changes and no one is better suited to determine what is the most effective in any given situation than the warfighter. Therefore, we provide solutions that can be configured to meet varying levels of threat. In the case of body armor, we provide every Marine with a modular ballistic body armoring system. Operational commanders

are then able to determine what specific equipment their Marines will wear based upon specific mission requirements and environmental conditions.

Vests and Armor Plates

Evolution of Tactical Vests

The foundation for our modular ballistic body armoring system is the Interceptor Body Armor System. Combat operations over the last few years have highlighted a need for improvements in our protective vest system. Therefore, we have transitioned from the Outer Tactical Vest to a new, more capable Modular Tactical Vest (MTV) and are currently in the design phase for the development of an Improved Modular Tactical Vest (IMTV). The soft and hard armor within the personal protective vests issued by the Marine Corps and the Army are the same and provide the same level of fragmentation and ballistic protection and are similar. The vests are similar, but not identical. The Marine Corps collaborated with the Army throughout the acquisition process to include sharing of test and evaluation data.

The Modular Tactical Vest accommodates use of our existing Enhanced Small Arms Protective Inserts and our Enhanced Side Small Arms Protective Insert plates. These are the same armor plates used by the Army and will continue to be the same as we make improvements to the Modular Tactical Vest.

The United States Marine Corps has teamed with engineers from the U. S. Army's Research, Development and Engineering Center in Natick, Massachusetts to address the areas of concern identified by Marines who wore the Modular Tactical Vest and to design an Improved Modular Tactical Vest that does the following:

- Mobility: Reduce Weight, Maximize torso/shoulder mobility to the greatest extent possible
- Comfort: Reduce soft armor overlap and bunching; and make cummerbund adjustments
- Accessibility: Reduce donning/doffing concerns, improve cummerbund flap closure
- Weapons Employment: Facilitate stock weld
- Modularity/Scalability: Facilitate the commander's discretion/flexibility for determining overall system weight and level of protection based on the prevailing threat and mission requirements

The acquisition objective for the Improved Modular Tactical Vest is 108,000 systems. A Request for Proposal is planned for release sometime this summer, 2009. Deliveries are planned to begin after a competitive award, with anticipated completion of deliveries in 2010. At the same time, we are conducting collaborative planning on the Next Generation personal protective vests with our sister Services.

Scalable Plate Carrier (SPC)

The Scalable Plate Carrier is a lighter vest that provides a body armor capability with greater mobility and reduced thermal stress in high elevations, thick vegetation and tropical environments than that provided by the Modular Tactical Vest. It allows greater mobility and reduced thermal stress while maintaining direct fire protection. Both vests use Enhanced Small Arms Protective Inserts (E-SAPI) and Side SAPI plates and provide the best protection available against a wide variety of small arms threats. We recently fielded approximately 14,000 Scalable Plate Carriers. Coupled with the Modular Tactical Vest, the Scalable Plate Carrier provides commanders options to address various mission/threat requirements.

Scalable Plate Carrier feedback from Marine combat veterans has been clear and positive. Marines have welcomed protective equipment which provides identical ballistic protection at a lower weight, improving mobility in combat. The acquisition objective has been increased to approximately 65,000 plate carriers. Planned improvements to the Improved Scalable Plate Carrier (ISPC) include a cummerbund interoperable with the Modular Tactical Vest/Improved Modular Tactical Vest and enhancements to the shoulder straps to simplify donning/doffing.

Enhanced Small Arms Protective Inserts (E-SAPI)

Every Marine in theater today has the Enhanced Small Arms Protective Insert. These inserts provide more capable protection against a wider variety of small arms threats than its predecessor the Small Arms Protective Insert.

All personnel are issued the Enhanced Small Arms Protective Inserts prior to their deployment.

X-Small Arms Protective Inserts (X-SAPI)

The Marine Corps is participating in the development of X-SAPI ballistic plates and can buy X-SAPI plates from US Army contracts. The limits of technology in this category have yielded a tradeoff for X-SAPI levels of protection. The additional protection brings an additional weight burden on the back of the warfighter. We must balance levels of protection in order to

maintain the agility, mobility and lethality of our Marines. We have worked closely with the Army during the conduct of technical evaluation and testing of X-SAPI plates.

Lightweight Helmet

We are committed to providing the best head protection available to our warfighters. The Lightweight Helmet provides the best performance and combat protection capabilities required by our Marines. The Marine Corps' Lightweight Helmet weighs slightly less than its predecessor and provides a high level of protection against fragmentation threats and 9mm bullets. Study results have demonstrated that the Lightweight Helmet with the pad suspension system provides greater protection against non-ballistic blunt trauma than the Lightweight Helmet with the sling suspension system. Therefore, the Marine Corps requires the use of the pad system in all of our Lightweight Helmets. We have completely replaced the sling suspension with pads. All new Lightweight Helmets produced by the manufacturer are delivered with the approved pad system installed. Independent testing conducted by University of Virginia and the U.S. Army Aeromedical Research Laboratory showed that our pads provide the best blunt trauma protection across the widest possible temperature ranges.

Current collaborative Research and Development efforts with the U.S. Army and industry partners have shown progress towards a potential replacement for the Lightweight Helmet. The Marine Corps' vision for the next Department of Defense helmet provides rifle ballistic protection at the same weight as the Lightweight Helmet. Our goal is to produce the next generation helmet providing that level of protection as quickly as possible.

Flame Resistant Organizational Gear (FROG)

In order to provide additional protection against flame threats, the Marine Corps began fielding Flame Resistant Organizational Gear (FROG) to all Marines in theater. This system consists of an ensemble of clothing items (gloves, balaclava, long sleeved flame retardant shirt, combat shirt, and combat trouser). When worn as a system, this life-saving equipment provides protection against flame exposure and mitigates second and third degree burns. Flame Resistant Organizational Gear provides protection that is comparable to the NOMEX Combat Vehicle Crewman suit/flight suit. At the same time it weighs less and retains less heat by using moisture-wicking material.

Additionally, we have developed and fielded the Marine Corps Cold Weather Layering System (CWLS). The Cold Weather Layering System provides both thermal and personal

protection from flame and the environmental conditions where we expect to operate. These components include under-layer long johns, fleeces and other outer garments designed to provide protection from various climatic and environmental conditions. The various properties we have developed in our cold weather component items are focused against mold and mildew, moisture, thermal, sun, wind, dust and extreme cold weather. We are committed to providing Marines state of the art equipment that improves characteristics such as weight, packing volume, thermal efficiency and flame resistance. By providing flame resistant cold weather components, Marines can employ these protective items in the current theater of operation where we face a significant blast and Improvised Explosive Device threat.

Personal Protection In Closing

It is very importance to the Marine Corps that we provide robust personal protection solutions to our warfighters -- and provide these solutions to them immediately. Working with our nation's dedicated manufacturing base and our sister Services, the Marine Corps continues to be able to provide the best possible levels of personal protection to known and anticipated threats; and we remain committed to aggressively matching our equipment to changing threats. Our Personal Protective Equipment works.

HIGH POWER JAMMERS

During 2005, radio-controlled (RC) devices became the most deadly triggering mechanisms for Improvised Explosive Devices (IED). In recognition of that fact, in June 2005 the Commandant of the Marine Corps directed the Marine Corps Systems Command to find a rapid means to counter this threat. Working with the Joint IED Defeat Task Force (now JIEDDO), we immediately embarked on a world-wide search for a solution. By April 2006, we began fielding into the theater of operations jamming systems to counter the RCIED threat.

Today, we have a significant number of Counter Radio-Controlled Improvised Explosive Device Electronic Warfare (CREW) systems in theater and protecting Marines. Every Marine vehicle in theater that travels outside of operating bases is protected by a CREW system that counters the RCIED threat. To that end, since the fielding of these systems, injuries or deaths that can be attributed to RCIEDs have been all but eliminated.

Our CREW systems will continue to evolve to meet or stay ahead of the threat.

CLOSING

Our enemy is constantly evolving and changing his tactics. We are protecting our Marines' by developing and fielding more capable systems faster and more efficiently. The Marine Corps is not just looking to combat our enemy's current capabilities, but also to prepare ourselves for future adaptations in enemy tactics.

For the time at-hand, we will continue to execute our current force protection requirements. The Marine Corps Systems Command will also execute any new, validated requirements or capability needs that are identified by the warfighter. We will make every effort to consider all available options as we work to find solutions to new threats, regardless of whether the solution can be found here or abroad. We will also look for ways to provide capability enhancements and for opportunities to shorten delivery schedules.

We are doing everything we can to ensure the safety of our Marines by providing them with the best and most effective force protection equipment. The lives of our Marines, Soldiers, Airmen and Sailors are a precious asset and protecting them with better and more capable equipment has been, and will always be, the highest priority of the Marine Corps Systems Command. Your support for continued robust, timely funds will position Acquisition Organizations throughout the Department of Defense to continue with proactive approaches and ensure our warfighters' safety.

With your continued support, we can ensure our Marines are ready for the current fight, as well as any future fights. Thank you.