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THE HOUSE APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON DEFENSE

STATEMENT OF

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(COMBAT DEVELOPMENT AND INTEGRATION)

BEFORE THE

HOUSE APPROPRIATIONS COMMITTEE

SUBCOMMITTEE ON DEFENSE

CONCERNING

MARINE CORPS GROUND EQUIPMENT

ON

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"The pathway of man's journey through the ages is littered with the wreckage of nations, which, in their hour of glory, forgot their dependence on the seas."

- Brigadier General James D. Hittle, USMC (Retired), 1961
Military Historian and Theorist

Introduction

Chairman Dicks, Ranking Member Young, and distinguished members of this Subcommittee, I am honored to appear before you today. On behalf of all Marines, I want to thank you for your continued support to our Marines and their families. I also appreciate the opportunity to discuss Marine Corps ground equipment programs with you.

The Strategic Landscape

The 2010 Quadrennial Defense Review and the *Marine Corps Vision and Strategy 2025* clearly state our need to prepare for an uncertain future and balance our capabilities to prevail in today's wars while building the capabilities needed to deal with future threats. Assessing the conflicts we are engaged in today and looking into the future, we see a strategic landscape defined by an intricate interplay of geopolitical power struggles, the expansion and adaptability of threats from non-state actors, and an increased need for facilitating joint interagency and multi-national operations. The strategic landscape will also contain greater access challenges both in the form of active enemy defenses and the hosting of U.S. forces on foreign shores - all compounded by existing physical geographies that also challenge access.

The Threat: Today, we face a diverse range of adversaries who possess capabilities that span the entirety of the technological spectrum. The future security environment will see the continued transformation of previously considered conventional forms of conflict into what can be described as hybrid challenges. Hybrid challenges represent combinations of conventional, irregular, catastrophic, and disruptive threats that the adversary believes will negate the

overwhelming conventional strength of our forces. We also predict that hybrid challenges will be the most likely form of threat facing the United States in the future. Furthermore, our adversaries, both state and non-state actors, will continue to develop anti-access capabilities to prevent us from employing our forces. Arms proliferation has put advanced mines, anti-ship, and anti-air technology in the hands of both state and non-state actors. Therefore, we believe that access can no longer be assumed.

Constants: History teaches us that while the tactics and methods of warfare constantly change, the character of war does not. Warfare has been and always will be a clash of human wills. As such, the most adaptable, most effective, and by far most valuable asset to the Marine Corps is the individual Marine. Our Marines operate in a multi-faceted environment that spans from one extreme of primitive austerity through the other extreme of technological saturation. The Marines have prevailed and will continue to prevail by holding fast to our core values, emphasizing professional military education, stressing the importance of leadership at all levels, and executing brilliance in the basics. Materiel, while important, is not the only solution. Our philosophy is not only to train the Marine to employ the weapon or vehicle system, it is also to develop systems that enable, enhance, protect, and maximize the capabilities inherent to our Marines.

Prevailing in the 21st Century

Our Naval Character: For 235 years, the Nation has relied on the Navy/Marine Corps team to project power abroad, protect national interests, and to provide assistance both where and when needed. This could not be truer today as our Navy/Marine Corps team is simultaneously engaged across the globe in major combat operations, providing Humanitarian Assistance and Disaster Relief, and conducting Security Cooperation operations. From Haiti to the Helmand

Province in Afghanistan, we have demonstrated our ability to respond across the full range of military operations and proven that we are truly no better friend and if the situation requires --- an adversary's worst enemy.

Marine Air Ground Task Forces (MAGTFs) tailored and equipped to the mission and deployed aboard amphibious ships provide the Nation the unique capability to quickly respond from the sea to crises, conflict, security cooperation, or requests for assistance anywhere across the globe. In recent times, the amphibious withdrawal from Somalia in 1995, the projection of power from the sea in Afghanistan in 2001, several responses to natural disasters, and the Non-Combatant Evacuation Operation (NEO) in Lebanon in 2006 have proven the value of our investment in these forces and their wide ranging utility. The linchpin of our ability to operate from the sea is our amphibious fleet. As soldiers of the sea, our unique capabilities are enabled by the Navy's provision of protected force projection through amphibious and prepositioned lift.

The Challenge

The Marine Corps is currently responding to three distinct areas of operational demand. One demand is the Nation's requirement for sufficient forces involved in major combat operations conducting counter-insurgency and counter-terrorism. The second area is the steadily growing demand from geographic Combatant Commanders and the U.S. Department of State for Theater Security Cooperation. The third area of increasing demand is from geographic Combatant Commanders for forward deployed expeditionary forces to respond to crises across the full range of military operations. The Marine Corps is balancing the competing needs of re-setting the force, providing the unique equipment needs to our forces in Afghanistan, and modernizing our force. As we modernize, we must remain focused on retaining and developing a general purpose force ready to prevail in the future operating environment.

Marine Corps Ground Equipment

Expeditionary Equipment Requirements: The term "expeditionary" implies the employment of Marine Corps forces that are characterized as being fast, austere, and lethal. In order to address hybrid threats, the focus of our modernization efforts must be making our equipment lighter, faster, more efficient, more survivable, and more lethal. In a word, all of our equipment must be expeditionary. As we modernize, we will be developing equipment that is optimized to fit into amphibious shipping, can be transported by aviation platforms organic to the MAGTF, provides operational flexibility to the commander to operate faster, further, and safer; and provides accurate firepower. Furthermore, our Marines need a family of vehicles that allows them to maneuver more rapidly than the enemy, includes an enhanced communications suite, and can operate for longer periods of time further from sources of support. Integrated fire support from organic indirect fire, Naval surface fires, and aviation will support this maneuver. Sustaining this maneuver requires new technologies such as the Cargo Unmanned Aircraft System (Cargo-UAS). In all cases, ground mobility is essential to the survivability and effectiveness of an expeditionary force.

The Ground Combat and Tactical Vehicle Strategy: Within the parameters of protection, payload, performance, and cost, our Ground Combat and Tactical Vehicle Strategy defines how we are balancing the needs of today's fight against preparing for future operating environments without focusing too heavily on one or the other. While fielding the platforms needed to succeed in our overseas contingency operations, we are simultaneously focused on designing, developing, and fielding platforms that will prevail in future challenges. This strategy for ground combat and tactical vehicles is synchronized to support the demands of the current fight with a balanced

set of vehicles that the MAGTF requires in order to conduct expeditionary operations across the spectrum of conflict.

Nine years of operating in Iraq and Afghanistan have produced volumes of lessons learned and improvements needed for our ground equipment. Thanks to the support of Congress, the American people, and industry, we have been able to upgrade some of our current assets and provide our Marines with the best equipment possible.

For example, the **Mine Resistant Ambush Protected vehicle (MRAP)** is designed as a multi-mission platform capable of mitigating the effect of IEDs, underbody mines, and small arms fire. The Fiscal Year 2010 budget plans include Independent Suspension System upgrades for 1,504 Marine Corps Category I (urban combat operations and ambulance) and Category II (Cougar – multi-mission convoy lead, troop transport, ambulance, and utility) vehicles operating in Afghanistan. Furthermore, the **MRAP-All Terrain Vehicle (M-ATV)** is designed as a lighter, more agile MRAP variant for operations in the rural, rugged, and mountainous environment in Afghanistan. As of 11 March 2010, the Marine Corps has fielded 597 of the 1,420 Marine Corps M-ATVs required for operations in Afghanistan. The current number of M-ATVs fielded includes the completion of our 80 vehicle requirement for Home Station Training, which better enables us to deploy fully trained forces and expedite the fielding process in-theatre. The **M88A2 Hercules**, with its 25 ton lift and 70 ton towing capability, provides the robust and survivable repair and recovery capability necessary for MRAP support operations in Afghanistan.

Concurrently, other legacy systems are receiving upgrades in protection, mobility, reliability, and/or lethality. The **Light Armored Vehicle (LAV)** has received the A2 upgrade in order to improve its survivability. In addition to a new armor package, automatic fire-

extinguishing system, and stronger suspension components to handle the increased weight, the add-on mine blast and IED shields are proving to be life-savers in combat. The **M1A1 main battle tank**, which continues to provide unsurpassed survivability as a precision direct-fire platform, is receiving upgrades to its communications equipment to improve tank-infantry coordination in the urban areas, improved sighting and target acquisition, and the implementation of a bulldozer kit to assist in clearing obstacles.

The **Medium Tactical Vehicle Replacement (MTV-R)** has served as the "backbone" of the logistical support in Iraq and now in Afghanistan. This is mainly due to its robust design and the **MTVR Armor System (MAS)**. This permanent improvement provides complete 360 degree protection as well as overhead and underbody protection for the cab occupants.

The **Logistics Vehicle System Replacement (LVSR)** is replacing the aging Marine Corps heavy-tactical wheeled vehicle, the LVS. The LVSR is the Marine Corps' heavy logistics vehicle, and performs logistics missions such as transport of break-bulk, bulk liquids, ammunition, and heavy engineer equipment. Three LVSR variants (Cargo, Tractor, and Wrecker) replace five LVS variants. In addition to a base armor kit, the LVSR has the capability to accept additional armor kits which meet or exceed all survivability requirements in extensive live fire testing. In its short time deployed to Afghanistan, it has displayed its toughness in dealing with the operating conditions and IED environment. Since its introduction as the host vehicle for the Mobile Trauma Bay (MTB), which I will discuss later, the LVSR has also contributed significantly to enhancing the Marine Corps' forward trauma care capability.

Future Ground Combat Acquisition Programs. While we must commit considerable capital to provide our Marines with the best equipment needed to prevail in the current operations in

Afghanistan, we must also prepare to face hybrid threats elsewhere within the future strategic landscape. I will now discuss a few key future ground vehicles.

Joint Light Tactical Vehicle (JLTV): This Joint Marine Corps/Army program, with the Army as the lead Service for acquisition, is currently in the Technology Development phase. The JLTV family of vehicles is designed to replace a portion of the current family of M-ATVs and HMMWVs. All Marine Corps JLTVs will be required to be externally transportable by Marine Corps Heavy Lift CH-53 helicopters and be transportable aboard both Navy amphibious vessels and Maritime Pre-positioned Ships (MPS); these expeditionary requirements will define maximum allowable weights and dimensions. The JLTV family of vehicles will have scalable levels of protection consisting of a base armor and safety capabilities with add-on armor kits available. The basic vehicle design will account for the heaviest anticipated payloads including armor kits to permit the vehicle to retain its all-terrain mobility capabilities when fully loaded.

Industry teams are currently on track to meet key program requirements. The JLTV program plans to maintain healthy competition now and through the Engineering, Manufacturing, and Development phase. The Marine Corps' initial acquisition objective is for approximately 5,500 vehicles in 4 passenger configurations to support the infantry transport, heavy guns carrier and anti-armor missile employment missions; and 2 passenger configurations to support the cargo and ambulance missions.

Marine Personnel Carrier (MPC): The MPC will be a multi-wheeled, armored personnel carrier designed to operate in constrained urban terrain. Required to carry 8-10 combat loaded Marines and a 2-man crew, the MPC will enable high-speed land maneuver as well as substantial ballistic protection to embarked Marines. MPC is a pre-milestone (MS A) program.

Expeditionary Fighting Vehicle (EFV): The EFV will provide the Marine Corps and the Nation with the ***means to project surface forces directly from amphibious ships to the shore and onward to objectives in an uncertain environment***. In an era of increasing challenges to access, it is our number one ground acquisition priority. The vehicle's design will permit it to carry combat-ready Marines ashore using the sea as maneuver space. This will provide our seabased forces the ability to overcome anti-access weapons and strategies. As demonstrated by Hezbollah's use of anti-ship missiles in Lebanon, over-the-horizon capabilities may be critical even for operations like non-combatant evacuations. The EFV's ability to conduct high speed maneuver at sea as well as on land, combined with its weapon, communication, and protective systems make it a highly survivable and lethal capability.

The EFV will be built in two configurations. The command and control variant will provide a mobile command post for regimental and battalion commanders. The personnel variant will carry 17 embarked infantrymen and a 3-man crew. The program completed critical design review in December 2008 and is on schedule to begin Low Rate Initial Production in 2013. The acquisition objective is 573 vehicles. Initial Operational Capability is planned for 2016 and Full Operational Capability is planned for 2026. There are seven new prototypes currently being manufactured at the Joint Services Manufacturing Center in Lima, Ohio. These vehicles will begin Developmental and Operational Testing later this summer following contractor testing.

The Triad of Ground Fire Support. The Marine Corps has long operated under the maxim of combined arms - maneuver supported by fire. This is critical in conducting counterinsurgency or other operations needed to address hybrid threats. The high mobility and accuracy of these

platforms is necessary to deliver precision fires while reducing the instances of civilian casualties and collateral damage.

The Lightweight 155mm Towed Howitzer: The M777 weighs about half as much as the cannon it is replacing and fires projectiles to a range of 15-19 miles. Our Marine Expeditionary Brigade in Afghanistan has 15 of these howitzers at three different locations.

High Mobility Artillery Rocket System (HIMARS): The HIMARS provides both precision and volume rocket based fires to the MAGTF. There are two HIMARS battalions in the Marine Corps: one active duty battalion based in Camp Pendleton, California and one reserve battalion with a headquarters in Grand Prairie Texas and subordinate battalions in Fort Sill, Oklahoma, El Paso, Texas, and Huntsville, Alabama. Each HIMARS battalion has three batteries consisting of six mobile launchers. Currently, one HIMARS battery is deployed to Afghanistan. This support is expected to continue for the near future and will be sourced by both active and reserve forces. Full Operational Capability will be achieved this summer when training is complete.

The Expeditionary Fire Support System (EFSS): The EFSS is a rifled, towed 120mm mortar which is designed to be carried internally by the MV-22 Osprey, CH-53s, and CH-47s and will accompany and support vertical assault maneuver units. EFSS is currently being fielded to active duty artillery battalions. When complete, there will be ten EFSS batteries fielded. Each of these batteries will have six 120mm rifled mortars in addition to six LW155 howitzers. EFSS Initial Operational Capability was achieved in March 2009. The first EFSS deployed with the 24th Marine Expeditionary Unit (MEU) in January 2010 and is currently en route to the Central Command Area of Responsibility. A second EFSS battery will deploy with the 26th MEU in the fall of 2010.

Other Initiatives. The versatility, flexibility, and adaptability of our Marines continues to be enabled by a number of other initiatives as well.

The **MAGTF Combat Operations Center (COC)** has evolved from the original Unit Operations Center (UOC). It is a common, modular, scalable expeditionary capability enabling a MAGTF Commander to implement command and control (C2) in operational conditions spanning the full range of military operations (ROMO). COC is not a component of any other system, but rather acts as the key MAGTF enabling capability for the integration of MAGTF Tactical Data Systems (TDS) and tactical voice radios. The COC replaces the requirement for MAGTF Commanders to develop and field their own ad hoc COC systems.

Within the MAGTF, Command Aviation Command and Control System (CAC2S) and Global Combat Support System-Marine Corps (GCSS-MC) enable aviation and logistics operations.

Common Aviation Command and Control System (CAC2S): The Common Aviation Command and Control System is the cornerstone of Marine Corps aviation command and control modernization efforts. CAC2S emerged as a top-down, bottom up requirement to provide the aviation command and control portion of the MAGTF triad with a state of the art system of systems that will both meet war-fighter needs and incorporate Joint and Department of Defense directives for a modernized, mobile, interoperable, and common suite of capabilities. CAC2S fuses data from sensors, weapons systems, and C2 systems into an integrated display that increases situational awareness and facilitates decision making. CAC2S shares many common parts with the Marine Corps Combat Operations Center, thereby decreasing the logistics footprint and simplifying training requirements. It enhances a MAGTF commander's ability to integrate MAGTF aviation capabilities in the Joint framework, and control the timing of organic,

Joint, and Coalition fires, maneuver, and logistics while operating within the MAGTF battle-space.

Global Combat Support System-Marine Corps (GCSS-MC) is a portfolio of approximately 40 legacy systems that provide the backbone for all logistics information required by the Marine Air Ground Task Force (MAGTF), is the primary technology enabler for the Marine Corps Logistics Modernization strategy. The core is a modern, commercial-off-the-shelf enterprise resource planning software with a design focus on enabling the warfighter to operate while deployed with reach-back from the battlefield.

Ground/Air Task Oriented Radar (G/ATOR): G/ATOR was designated as a "Special Interest Program" by Under Secretary of Defense for Acquisition, Technology & Logistics (USD, AT&L), in February 2009. The G/ATOR is a multi-role, ground-based, expeditionary radar that replaces five legacy radar systems for the MAGTF. It satisfies the Marine Air Command and Control System and the Ground Counter Fire and Counter Battery capabilities.

Mobile Trauma Bay (MTB): Developed in response to an Urgent Operational Needs Statement where battlefield commanders identified a requirement to provide on-the-spot medical care close to the point of contact, the MTB is an outstanding example of innovation that will cut casualty evacuation times from hours to minutes. The MTB was originally designed as a makeshift shelter with free-moving cots and loose medical equipment with Kevlar blankets lining the interior of an MTVR cargo bay. It has now gone through 914 concept drawings and upgrades. Currently, the MTB is a self-contained armored unit mounted on an LVSR that provides for the conduct of forward resuscitative care. The MTB enables the Shock Trauma Platoon to provide emergency/trauma care through task organized tactical trauma teams with a means of force protection and environmental control. The Marine Corps Logistics Command in

Albany, Georgia designed and developed the prototype and produced 9 systems: 6 deployed to Afghanistan, 2 to home stations, and 1 is retained for further refinement and technological upgrades. The MTB is not yet a program of record.

Cargo Unmanned Aircraft System (Cargo-UAS): To date, the Marine Corps Unmanned Aircraft Systems have matured and continue to provide Intelligence, Surveillance, Reconnaissance, and Target Acquisition for the MAGTF. Responding to a 2009 Urgent Universal Need Statement and Joint Urgent Operational Need Statement for unmanned cargo delivery capability, the Marine Corps was designated as the lead service in developing this platform. The focus of this effort is to get "trucks off the road" using autonomous cargo UASs in order to mitigate the threat to re-supply convoys in the CENTCOM area of operations as soon as possible.

Energy Initiatives: The Marine Corps is aggressively pursuing greater warfighter effectiveness by investing and developing material and non-material solutions that make our Corps more self-sufficient, increase our agility, and "free us from tyranny of existing fuel solutions." To achieve this vision, we have established an Experimental Forward Operating Base in Quantico, VA to test and develop alternative power, water, and shelter solutions. In addition we just deployed 8 solar-water purifiers that are now producing fresh water for local Afghanis without the need of generators. The Corps is pursuing a comprehensive strategy in cooperation with other services and DoD to additionally "lighten the load" on individual Marines and help reduce the amount of traffic dedicated to hauling fuel and water.

Closing

We face an adaptive enemy and an uncertain future. We must also be adaptive and provide our Marines with the tools they need to maximize their operational flexibility and

continue to prevail. To do this, we must modernize our ground equipment to be lighter, faster, and more sustainable while maximizing the effectiveness and protection of our most important asset… our Marines. With the support of the Congress, the American people, and industry we can ensure our Marines are ready for the current fight as well as the uncertain future. Again, I thank you for the opportunity to report on their behalf.