United States Marine Corps

Concepts & Issues 2000

Leading the Pack In a New Era

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Past is Prologue: 21st Century Marines

The contribution of the Marine Corps to the ascendancy of the United States as a superpower during the 20th century is a matter of record. We are the nation's premier expeditionary force. That is our history, our legacy and our future.

The roles and missions assigned to the Marine Corps of the 21st century will be consistent with the expectations of the American people that this nation remains the world's uncontested military capabilities leader. Today's Marine understands and accepts this challenge, and today's Marine Corps is secure in knowing that it can meet the nation's expectations. Simply put, we know who we are, we know what we do, and we are absolutely dependable in executing the nation's will across an increasingly wide spectrum of potential conflict.

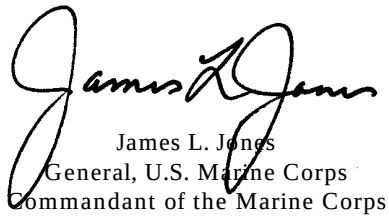
As we examine our current contribution to the nation's military capability at the dawn of the new century, we find that the Marine Corps provides 20 percent of the nation's ground maneuver battalions, 20 percent of its tactical fighter and attack aircraft, 17 percent of its attack helicopters, and about a third of the combat service support capability in the active structure. Increasingly in the future, when circumstances demand that America turn to military force, Marines will be a necessary and critical part of the equation.

To meet the challenges of the future, the Corps continues to evolve. Changes to our equipment bring an enhanced capability to project power when and where it is needed, while new tactics enable us to employ Marine forces with maximum advantage. We explore new patterns of thinking that reflect the realities of a changed world. We have redefined readiness to include non-traditional influences that affect unit

performance, such as family preparedness and base infrastructure. In all cases, we seek change for one reason: to enhance the capability and utility of our Operating Forces.

Concepts and Issues 2000 addresses our approach to this objective by explaining the breadth of the Marine Corps' modernization enterprise. It is a ready source of information concerning our operational focus and program direction, including the conceptual foundation that underpins our efforts, the past year's operations, and the specific programs that will equip our combat-ready Marine forces for the future.

Today, as always, our contribution to the nation lies in our ability to "Make Marines, Win Battles and Create Quality Citizens." This is a path that we have followed for generations. Concepts and Issues 2000 demonstrates our enduring commitment to meeting the expectations of the American public and the requirements of national defense in the new century.

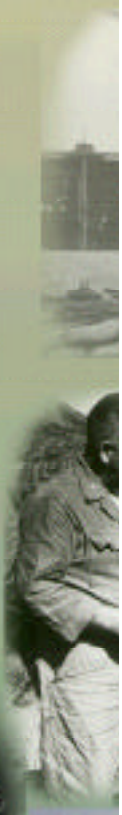


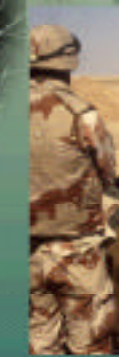
James L. Jones
General, U.S. Marine Corps
Commandant of the Marine Corps

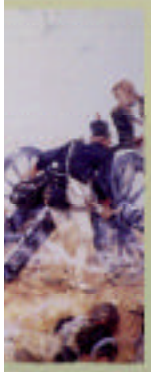
Past Is Prologue

The Marine Corps:

A Proven Force In Readiness







Marine Corps history is replete with accounts of the Corps' combat prowess and the heroism and tenacity of individual Marines in places such as Belleau Wood, Iwo Jima, and Hue City. The Corps' "force-in-readiness" function, evolved over the past century, is the primary catalyst for many of these innovations. When the United States entered the 20th century as an emerging major power, the nation's need for a potent yet compact force, wholly dedicated to combat readiness and skilled in the art of warfighting, became increasingly apparent.

A PROVEN FORCE IN READINESS

NAVAL CHARACTER

Unlike any military force in the world, the naval character of the Navy-Marine Corps team singularly gives our Nation an enduring means to shape and influence global events.

MAGTF

Marine Air Ground Task Forces are how Marines organize to fight. It is the integration of air and ground forces with supporting logistics and state-of-the-art command and control. A MAGTF can be as large as a Marine Expeditionary Force (46,000 Marines) or as small as a Marine Expeditionary Unit (2,200 Marines).

MEU OPERATIONS

Marine Expeditionary Units (Special Operations Capable) are 2,200 heavily armed Marine air and ground crisis response forces capable of conventional or special operations. MEUs are forward-deployed and

PAST IS PROLOGUE

Today it is hard to imagine a Marine Corps in which excellence in marksmanship was not the rule, but such was the state of the Corps in the 1890s. Through the leadership of a few Marines, beginning with Commandant Maj. Gen. Charles Heywood, the Corps developed the marksmanship techniques and training that would lead to the domination of competitive shooting and the accurate rifle fire identified

with latter-day Marines. The creed “every Marine a rifleman” became reality on the battlefields of France in World War I, in the Pacific during World War II, and in the wars in Korea, Vietnam, and the Persian Gulf.

The Corps’ attention to improvements in individual weapons, and its policy of insisting that every Marine qualify in their use, has paid great dividends. Marines provided the impetus for improvements in the M-14, and later M-16 rifle, leading to today’s more accurate and reliable M-16A2.

The development of amphibious warfare techniques and equipment is the area where Marine Corps innovation has played the most important role in warfighting doctrine. From the time of the Barbary Wars in the early 19th century, the Navy-Marine Corps team had proven to be a forceful instrument for projecting U.S. power and protecting U.S.

interests. The lessons of the Spanish-American War made it apparent that offensive assault missions from the sea could best be fulfilled by the Marine Corps. Marine visionaries and pioneers, who saw the close relationship between the exercise of sea power and the more narrow issue of seizing a hostile shore against entrenched opposition, developed and codified over the next several decades the doctrine needed to conduct an amphibious assault.

Writing to the General Board of the Navy in February 1922, Maj. Gen. John A. Lejeune asserted the importance of having "a mobile Marine Corps force adequate to conduct offensive land operations against hostile naval bases." This fresh direction for the Corps culminated in publication of the Tentative Landing Operations Manual in 1935. Annual fleet landing exercises were conducted with the Navy until the outbreak of World War II.

With the developments in doctrine and techniques came the need for specialized equipment to lift men and weapons ashore against hostile fire. After experimenting with the British-designed "Beetle boat" and "Christie tank," a ramp-type boat designed by Andrew Higgins was adopted and the LCVP (landing craft, vehicle, personnel) and LCM (landing craft, mechanized) became a reality—landing craft that would hit every beach from Guadalcanal to Normandy. Marine pioneers, foreseeing the need for a vehicle that could operate on land and water, pushed for the development of a military amphibian vehicle based on Donald Roebling Jr.'s "Alligator" rescue tractor. From the arrival of the first LVTs (landing vehicle, tracked) in July 1941, Marine innovators continued to be a driving force for improvements and modifications of the LVT throughout World War II.

During World War II many additions and variations were made on the tactics and techniques involved in amphibious operations.

logistically self-contained on amphibious assault ships on patrol in strategic areas of the world. MEUs are trained to respond to continguencies in less than six hours.

MPF ENHANCEMENT

The Maritime Prepositioning Force is a key element of the Marine Corps' expeditionary capability. The Marine Corps' MPF(E) program will add an additional ship to each squadron (for a total of three ships). The MPF remains a cost-effective, proven, and relevant capability for use in responding to crises overseas.

FORCE STRUCTURE

The Marine Air-Ground Task Forces are tailored for an expeditionary forward presence, rapid expansion, and warfighting.Whether it's Desert Storm or restoring hope in a third world country with humanitarian aid, our structure continues to demonstrate the versatility to project decisive action across the range of operational situations.

INNOVATION AT WORK

OMFTS

Operational Maneuver From the Sea is the Marine Corps' capstone operational warfighting concept for the 21st Century. It is applicable across the range of military operations, from Major Theater War (MTW) to smaller scale with the combined arms power of the MAGTF give the Marine Corps a powerful forced-entry capability.

MV-22

The V-22 Osprey is a joint, multi-mission, vertical/short take-off and landing (VTOL) tiltrotor aircraft. It performs a wide range of VTOL missions as effectively as a conventional helicopter while achieving the long-range cruise efficiencies of a twin turboprop aircraft.The Osprey is the Marine Corps'top aviation acquisition priority.

Perhaps the greatest improvements came in the use of naval gunfire to support landing forces, the perfection of close air support, and the development of fire support coordination centers to act as clearing houses for battlefield requests for close support.

Marine aviators made impressive contributions in the tactics and techniques of aerial warfare. Beginning in Nicaragua in 1927, Marine aviators experimented with dive-bombing. Later they developed and adopted the tactic of relying on ground troops to direct air attacks. They also demonstrated the effective use of aircraft in medical evacuation and resupply. These techniques and skills,

further developed in World War II, were refined into arts in Korea and Vietnam.

The Marine Corps pioneered three material innovations during the Korean War that proved successful and were adopted by the other services—the thermal boot, individual body armor, and the helicopter; all were first combat-tested in Korea's rugged hills.

While helicopters had been flown experimentally toward the end of World War II, it was the Marine Corps that, beginning in

1947, pioneered the development of combat techniques using the rotor-driven aircraft as a means of enhancing its amphibious assault capabilities. The Corps also developed tactics for "vertical envelopment" as an extension of assault operations. In addition to the practical use of the helicopter, several refinements in Marine Corps fixed-wing close air support proved to be decisive factors in a number of Korean War battles.

In the post-Korean War period the Marine Corps focused on further development of the Fleet Marine Force to support its force-in-readiness mission, along with adapting amphibious techniques and equipment to meet Cold War requirements. Among these pioneering efforts were the reconfiguration of a number of former attack aircraft carriers into helicopter carriers and the development of the short tactical airfield and fuel-handling systems.

Vietnam occasioned a refinement in the evolution of tactical mobility through the expanded use of helicopters, along with participation in pacification—more specifically, civic action, which became an integral part of Marine operations in Vietnam.

In the 1970s and 1980s Marine innovators continued to invigorate the traditional force-in-readiness concept of ground combat units

ADVANCED AMPHIBIOUS ASSAULT VEHICLE

The AAAV will allow naval expeditionary forces to eliminate the battlefield mobility gap and, for the first time in the history of Naval warfare, maneuver ashore in a single stroke giving both the ships and landing forces sufficient sea space for maneuver, surprise, and protection.The AAAV is the Marine Corps' number one ground acquisition priority.

JOINT STRIKE FIGHTER

The JSF will be a single engine, stealthy, supersonic, strike-fighter aircraft capable of short take-offs and vertical landing. It will combine the basing flexibility of the A/V-8B with the multi-role capabilities, speed, and maneuverability of the F/A-18 to fulfill both air-to-ground and air-to-air requirements.

INNOVATION AT WORK

MARINE CORPS WARFIGHTING LAB

This military applications laboratory serves as the cradle and testbed for the development of new operational concepts, tactics, and procedures for future wars.The lab is helping us build the Corps of the 21st Century.

URBAN WARFARE

The Marine Corps is emphasizing urban warfare training.The world's coastlines are becoming more urbanized and the Corps is training its Marines to fight in a high-tech, close quarter battlefield.

supported by air with the establishment of the Marine Air-Ground Task Force structure and the flexible rapid-deployment force (RDF). The RDF, in turn, provided the impetus for the Navy-Marine Corps Maritime Prepositioning Ship program which puts preloaded supply ships in strategically important locations in the world's oceans, allowing Marines to respond more quickly to crises around the world.

The introduction of the high-speed LCAC (landing craft, air cushion) greatly increased Marine Corps operational mobility and reach. Similarly, the introduction of the AV-8 Harrier vertical/short takeoff and landing attack aircraft (the most forward-deployed U.S. or coalition tactical aircraft in the Persian Gulf area during Desert Storm) represented a major evolutionary development in Marine Corps aviation.

This pattern of vision, experimentation, and innovation is a hallmark of our Corps. It continues today. For example, our Chemical-Biological Incident Response Force is a new, one-of-a kind unit that provides America a better ability to respond to the consequences of chemical-biological terrorism.

And at the dawn of the 21st Century, we are ushering in the MV-22 Osprey tiltrotor aircraft, Advanced Amphibious Assault Vehicle (AAAV), Joint Strike Fighter (JSF), Medium and Light Tactical Vehicle Replacement (M/LTVR) Programs, Logistics Vehicle System Replacement (LVSR) Program, Lightweight 155MM Howitzer (LW155), and the San Antonio Class Landing Ship LPD-17 which promise to enhance the Corps' firepower, mobility and mission flexibility in the future. The MV-22 will join the AAAV, LCAC and LPD-17 as an integral part of the Corps' concept of for enhanced power projection. These major contributions to the development of warfighting concepts, weaponry, and equipment enable the Corps to face the dawn of the 21st Century with a confidence born from a proud heritage of innovation, ingenuity, and a willingness to continually adapt to changes across the spectrum of conflict.

In fact, so fundamental is our commitment to the future that we have established a Warfighting Laboratory that is responsible for developing and field testing future operational and technological concepts. Sea Dragon is the Marine Corps' name for the laboratory's process to foster rapid military innovation. We intend to "ride the dragon of change" into the 21st Century, and continue to take advantage of the opportunities it brings.

NON LETHAL WEAPONS

The Marine Corps is fielding and training with a new class of weapons designed to stun and incapacitate without causing permanent injuries or gross physical destruction to property. NLW will expand the range of options open to commanders in Military Operations other than War.

CBIRF

Chemical Biological Incident Response Force is a national asset provided by the Marine Corps that is manned, trained, and equipped to respond to chemical or biological terrorist incidents. CBIRF is a rapid response, initial detection, decontamination, and treatment capability trained to respond after a chemical or biological attack.

CHAPTER 1

Concepts & Issues

The Marine Corps:
A Proven Force In Readiness

The Marine Corps is on duty around the globe as the 21st Century begins, working hard to serve the United States and to advance national interests. Of the 172,200 Marines on active duty today, two-thirds are in the Operating Forces. Nearly 30,500 Marines are forward deployed, forward based, forward stationed, or deployed for training.

SERVING THE NATION

Marines exist to meet the security needs of the nation and current affairs point out the many challenges of the post Cold War era. During the past year Marines operated worldwide. They supported humanitarian and peacekeeping operations in East Timor, and responded to contingencies in Southwest Asia, the Balkans, the Sinai, Africa, and the Caribbean. In South and Central America, Marines provided security, assisted in disaster relief, and contributed to the nation's counter-narcotics efforts. In the United States, Marines assisted hurricane victims in North Carolina, made many training deployments, and conducted a myriad of activities necessary to gain and to maintain essential combat skills. Beyond these operational tasks, Marines served the intelligence community, provided airlift support to the Executive Branch, guarded American diplomatic outposts in 123 international locations, and provided a Chemical Biological Incident Response Force that is now a national asset.

As we enter the 21st Century, the strategic role of the Marine Corps, as defined by the 82nd Congress, remains unchanged: to provide a capable expeditionary force-in-readiness that is versatile, adaptable, and powerful. While the focus of national security requirements has evolved since the Cold War, demanding contingencies at home and globally demonstrate that the Marine Corps will remain an essential element of our national security strategy. In short, to meet current and projected security challenges facing the nation, the primary focus of the Corps will be to provide ready and decisive crisis response forces, comprised of highly capable men and women.

THE 21st CENTURY - POLITICAL AND MILITARY REALITIES

The 21st Century security environment will confront the United States with situations of vast political and military complexity and geographical dispersion. The dangers we face are unprecedented in their intricacy. Ethnic conflict and outlaw states threaten regional stability. Terrorism, drugs, organized crime, and the proliferation of weapons of mass destruction are global concerns that transcend national borders. Environmental damage and rapid population growth undermine economic and political stability in many countries.

The future focal point of instability will likely be the world's littorals, where most of the great crises of the 20th Century occurred. Here, too, are well over half the world's population and over three-quarters of its cities. Littorals, where land and sea meet, are crucial economic areas. They are where seaborne trade originates and enters its markets and where control of the sea lines of communications and maritime choke points will increase in strategic importance.

To meet these challenges, the U.S. must maintain armed forces with a full-spectrum of capabilities to deter conflicts, to respond to crises, and to fight and win against any foe. A critical requirement, then, is to project and to sustain decisive military power in forward areas where challenges and America's interests converge. As the number of overseas bases declines and the number of U.S. military personnel permanently stationed overseas dwindles, the demand for versatile, responsive, sea-based forces becomes imperative. Usually, the force-of-choice to safeguard these vital U.S. interests is forward deployed naval expeditionary forces. Indeed, America's naval services - the Navy and Marine Corps - are engaged around the clock, providing on-scene presence of combat capable forces that can "shape" events ashore.

SEA DOMINANCE - GLOBAL POWER IMPERATIVE

The United States is a maritime nation, relying on the guaranteed use of the seas for both its economic well being and its ability to project military power in support of its national interests. Our global strategic importance to regional powers on the rim of Eurasia and the vibrant emerging nations of the Pacific-Indian Oceans, demands that our national security strategy be transoceanic. Even with extensive strategic airlift

capability, the sea remains the only viable means to move and sustain sizable military forces. Thus, seapower is essential for the U.S. to maintain global leadership. These facts, coupled with the country's national security strategy of engagement, mean that America's naval expeditionary forces will play an important future role in protecting vital U.S. interests. These forces also will ensure regional stability, project decisive combat power, and promote peace, free enterprise, and democracy.

The Navy and Marine Expeditionary Forces are powerful national security assets that no other nation can match. In fact, given the current and foreseeable international political environment, they will be the sine qua non of America's engagement capability in the 21st Century. This is so because naval forces are flexible, mobile, and offer rapid responsiveness and decisive power while sustaining themselves for extended periods. Naval forces also enjoy great freedom of movement on the open sea. They can reach a crisis spot without crossing national boundaries, remain unobserved over the horizon until needed, and then depart an area as swiftly as they arrived once a solution is reached. When land-based facilities are unavailable, naval forces can be tailored for specific situations, providing carrier-based air power, Marine air-ground task forces, sea-launched cruise missiles, or special warfare forces as needed. Naval expeditionary forces can conduct and sustain operations from sea bases. These forces also can project power inland further than ever before, which means that an increasingly larger portion of the globe now falls under the potential influence of U.S. naval power. Today, and

for the foreseeable future, naval power is essential if the U.S. is to effectively project global military influence.

Naval expeditionary forces are powerful instruments of national policy with special strengths stemming from the complementary but distinct capabilities of the Navy and Marine Corps to command the seas and influence operations ashore. These forces can dominate a foe in the littoral battlespace and the adjoining airspace thus reducing risks to follow-on forces. Naval expeditionary forces also can establish control of ports and airfields and inland areas to enable the majority of troops, equipment, and supplies to flow ashore. Significantly, naval expeditionary forces can easily reinforce and complement other American and allied forces, providing great unity of effort for land, sea, and air forces. The result is tremendous lethal striking power and an unprecedented means to leverage joint warfare.

Besides serving operational needs, forward deployed naval expeditionary forces also fulfill important diplomatic roles. They are a visible and tangible expression of U.S. political commitment and military strength. The military capabilities of these forces serve to deter regional aggressors and maintain regional stability. Friendly powers typically welcome the presence of American naval forces, seeing them as contributing to regional stability. They also remind potential belligerents that the entire military force of the United States can be deployed. By promoting peace through overseas engagement and partnership with our friends and our allies, naval forces prevent threats to stability and avoid the need to fight in defense of the nation's interests.

UNIQUE MARINE FORCE CAPABILITIES

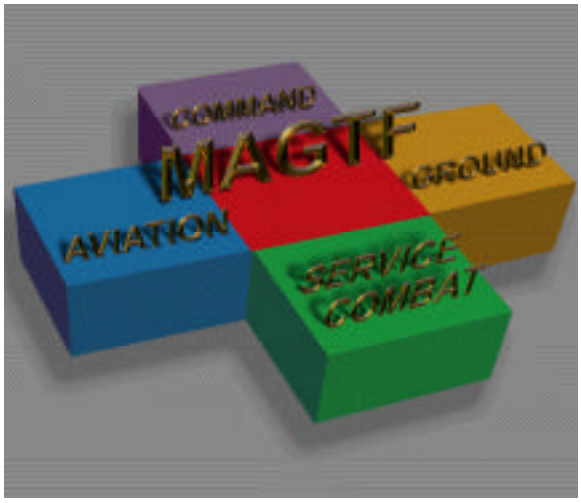
As the landward extension of naval expeditionary forces, Marine forces significantly magnify the projection capabilities of naval forces ensuring that they remain influential in peacetime, compelling in crisis, and decisive in war. Their expeditionary readiness, flexibility, and broad global utility make Marine forces a preferred global choice of the National Command Authorities in the execution of contingency missions. The Marine Corps' primary mission is to provide Fleet Marine Forces with combined arms capabilities to include integrated aviation and logistical elements, for service as part of a naval expeditionary force. These two dimensions, the combined arms concept and expeditionary readiness, together with its total force package, make the Marine Corps a unique military organization. The capabilities the Marine Corps provides are essential to naval expeditionary force success.

Combined Arms Concept

The Marine Corps has a long-standing, battle-proven commitment to combined arms operations. These operations closely integrate air, ground, and support units to achieve a potent synergy. Effectively blending infantry forces, artillery, armor, and tactical aviation, from the water's edge to deep inland, the Corps generates maximum combat power with a minimum logistical footprint. Marine air, ground, and logistics components work together on a daily basis and deploy routinely as combined arms components of naval expeditionary forces. They are equipped and trained to conduct forward presence and crisis response in the littorals.

Marine Air Ground Task Force (MAGTF)

To achieve the full benefit of the combined arms concept, the Marine Corps has evolved a basic and highly flexible structure — the Marine Air Ground Task Force (MAGTF). The MAGTF constitutes a unique Marine Corps contribution to national defense. Embarked on amphibious ships and forward deployed, the MAGTF can execute a variety of



missions, from rendering humanitarian assistance to conducting theater warfare. This ability comes from the MAGTF's structural flexibility. Configured as Marine Expeditionary Forces (MEFs), Marine Expeditionary Brigades (MEBs), Marine Expeditionary Units (MEUs), or Special Purpose units, they are tailored for the mission and may include a wide range of combat power: infantry, tanks, amphibious assault vehicles, light armored vehicles, artillery, and aircraft. MAGTFs range in size from small Special Purpose units to large MEFs. (See Appendix A.)

One of the key features of Marine expeditionary organization is expandability. Because of the frequent need for rapid response, the initial force at the scene of a developing crisis may not be the decisive force. Crisis response requires the ability to expand the expeditionary force after its introduction in theater without sacrificing the continuity of operational capability. The MAGTF's modular structure lends itself to rapidly and easily expanding into a larger force as the situation demands by simply adding forces as needed to the core units of each existing element. This allows them to expand into a joint or combined force because the generic MAGTF structure parallels the structure of a multi-dimensional joint force.

Regardless of mission or size, MAGTFs have four basic elements:

- ***The Command Element (CE)*** provides inherent capabilities for exercising joint force command and control, surveillance and intelligence coordination, and crisis action planning.

- ***The Ground Combat Element (GCE)*** conducts ground operations, using amphibious craft and transport helicopters, maneuvering from the sea, thus permitting the naval expeditionary force to project combat power when and where it chooses. Close air support provides the firepower needed to ensure the success of ground combat elements.

- ***The Aviation Combat Element (ACE)*** conducts air operations and assists the naval expeditionary force to achieve its objective of battlespace dominance. It provides six functions: anti-air warfare, assault support, offensive air support, air reconnaissance, electronic warfare, and control of aircraft and missiles. The ACE can deploy from ships, forward expeditionary land bases, or both.

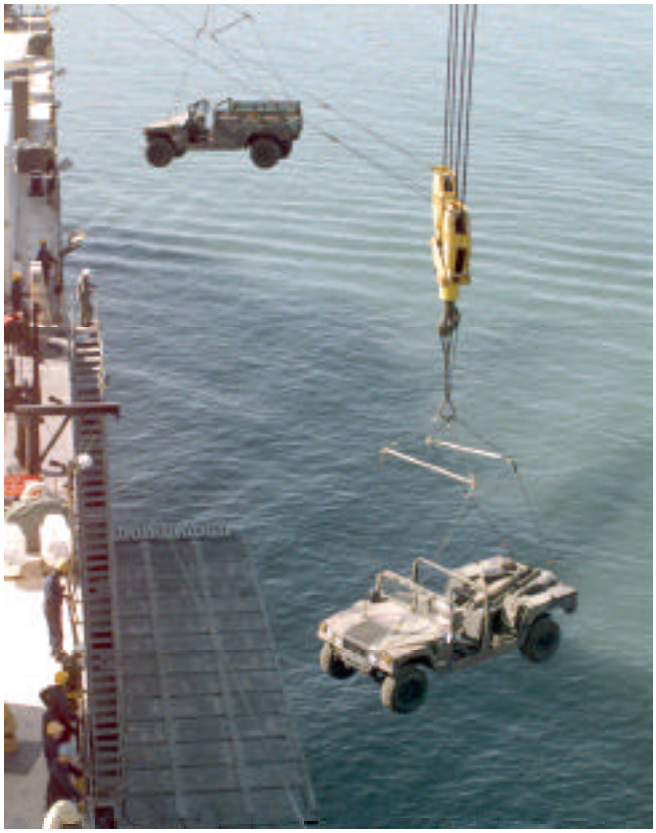
- ***The Combat Service Support Element (CSSE)*** provides many support functions. It can operate from naval vessels or expeditionary bases ashore. The CSSE can sustain forces and permit maximum flexibility in responding to crises.

The Marine Corps' commitment to combined arms operations has enabled it to work effectively with other services and allied forces. Marine forces are interoperable, both internally and externally, and effective in joint and combined operations. As operations become increasingly joint, the Marine Corps is well prepared to make significant contributions to integrated operations with other services.

Expeditionary Readiness

The Marine Corps can conduct operations that require substantial tactical and logistical depth. It achieves this through the use of:

- ***Maritime Prepositioning Forces (MPF).*** The MPF provides enough equipment and supplies to support a MEB during its first month of operations. Three Maritime Prepositioning Squadrons have the capacity to support a MEF of one Marine Division, one Marine Aircraft Wing, and one Force Service Support Group. The squadrons are located strategically and can reach a crisis within days. In addition, they can move supplies ashore from a pier or at sea. Maritime prepositioning ships of the future will provide indefinite sustainment by serving as a sea-based conduit for logistics support ashore. This might be accomplished as part of a larger sea-based logistics effort, which would include not only maritime prepositioning ships, but also aviation logistics support ships, hospital ships, and offshore petroleum distribution systems.



❑ ***Marine Aviation.*** Like Marine ground forces, Marine aviation units have an expeditionary focus that is unique among American military organizations. Marine aviation is tied closely to Marine ground units, providing overwhelming firepower to maneuver commanders. No other

American force has this critical, organic capability. Another special quality of Marine aviation is its ability to operate ashore and afloat at the same level of effectiveness. Again, this is unique to the Corps and unmatched by any other aviation branch. Both the FA-18 Hornet and AV-8B Harrier can operate from Navy ships, expeditionary airfields, and austere forward sites. In fact, the Expeditionary Airfield (EAF) system allows for rapid construction and operation of stand-alone airfields. Two Aviation Logistics Support Ships are ready to sustain Marine aviation units for extended periods in the world's littorals. These ships, the USNS Curtiss and USNS Wright are maintained in the Ready Reserve and operated by the Military Sealift Command. These vessels give commanders unparalleled logistical flexibility and operational reach.

❑ ***Total Force***. The U.S. Marine Corps Reserve is an important element of the naval expeditionary force. The Active Reserve is a force-in-readiness that repeatedly has proven its value in combat from Guadalcanal to the Gulf War. The Reserve greatly increases the military options available to civilian policymakers and operational planners. Reserve units routinely exercise with active forces. They have missions that lead to relevant combat responsibilities. They remain prepared to fight alongside the regular forces when needed. The Marine Corps Reserve is an essential part of the Total Force Marine Corps in peace and war. More than 98 percent of all Selected Marine Corps Reserve units are included in current operational plans.

TODAY'S CORPS — FOUNDATION FOR THE FUTURE

The Marine Corps today continues to be the expeditionary force-in-readiness envisioned by the 82nd Congress almost fifty years ago. The unique capabilities of Marine forces have never been more in demand, and employment of naval forces to influence events in littoral regions of the world has become a major focus of contingency planning. There are several compelling reasons why the Marine Corps' strategic concept will remain valid for the foreseeable future:

❑ The Marine Corps has an expeditionary focus - a special mindset - one that is constantly prepared for immediate deployment overseas to austere operating environments, bringing everything needed to accomplish the mission. This traditional Marine approach to operations has shaped its structure, values, and choice of equipment.

❑ The current National Military Strategy requires versatile, yet powerful forces that can respond quickly to fast-breaking events in regional situations. The Marine Corps is that kind of force, and now enjoys enhanced responsiveness capabilities.

❑ The Marine Corps' expeditionary readiness posture is designed to be immediately responsive. It does not require significant call-up of Reserves or massive national mobilization for crisis response. These attributes make the Corps a preferred and politically attractive instrument for missions of the National Command Authorities.

❑ The Marine Corps is a highly efficient and cost effective organization. The Corps historically has provided a proportionally larger share of the Department of Defense's operational forces than the resources it consumes. The economic focus of the world is shifting rapidly from Europe to the Pacific and Indian Oceans' littoral areas. An increased national security interest in these areas is inevitable, and can best be addressed by the Navy and Marine Corps.

THE WAY AHEAD - OPERATIONAL PRIMACY

Building upon current capabilities and its established record for strategic and tactical innovation, the Corps is enhancing its combined arms concept as it enters the 21st Century. It will remain fundamentally expeditionary and naval in character. Winning battles is the Corps' raison d'être, and its record of victory demonstrates Marine commitment to combat readiness and a warrior culture. The Marine Corps will continue to build on this foundation by doing those things that served it well in the past, while exploring new opportunities to enhance future capabilities. In this regard, the Marine Corps is focusing on the following areas: the primacy of the Marine and his rifle, enhancing MAGTF utility and combat power, modernizing with advanced technologies, and strengthening the partnership with the Navy.

Enhancing Individual Marines

The individual Marine is the lifeblood of the Corps. Today's Marine Corps is composed of the world's finest warriors - disciplined, motivated, and dedicated - fully worthy of those who preceded them. To maintain this distinction and to meet the challenges of the 21st Century, the Marine Corps is constantly searching for ways to improve how young women and men are transformed into Marines. To fulfill this objective,

the Marine Corps has lengthened and toughened recruit training, and revitalized Marine Combat Training. They have taken the first steps in a program focused on keeping Marines together throughout their first enlistment. The Corps is working to sustain and reinforce "transformation" throughout a Marine's career. Transformation will provide stronger, smarter, and more capable Marines, who have the self-confidence, warrior instincts, sense of team work, and flexibility of mind and body to meet the challenges of the 21st Century. And when Marines return to civilian life after three years or thirty, America will be better off because her sons and daughters have been United States Marines.

MAGTF Combat Power

Tested and re-tested in a myriad of situations that span the spectrum of operations from the compassion of humanitarian assistance to the animosity of combat, the MAGTF is the Marine Corps' legacy, trademark, and foundation for future success. It has been the organizational framework for employing Marine forces for the last 50 years, and as the Corps enthusiastically pursues new ideas today, it remains its basic combat organization. Nevertheless, as the Marine Corps evolves in the next century and embraces new concepts to meet new challenges it must explore new forms and employment of the MAGTF, to include the shape, training, and size.

The MAGTF of the next century must have increased combat power, operational versatility, utility, and deployability. The key to accomplishing this is the development of intermediate initiatives within current capabilities and conducting training programs that address those challenges that lay ahead. Furthermore, the Marine Corps must ensure its MAGTFs are sized correctly to accomplish a wide range of contingency missions. This means being prepared to deploy units of varying scale using a variety of means: aboard amphibious shipping, as Maritime Prepositioning Forces, by strategic airlift, or through a combination of these methods.

Modernization

The Marine Corps is aggressively modernizing to enhance its combat capabilities. Toward this end, the Marine Corps, with the Navy, is developing concepts and procuring systems/items which will enable operational superiority on the 21st Century battlefield. These efforts are extensive and include:

- The ***MV-22*** Osprey is a joint, multi-mission, vertical/short take-off and landing (VSTOL) tiltrotor aircraft. It performs a wide range of VSTOL missions as effectively as a conventional helicopter while achieving the long-range cruising efficiencies of a twin turboprop aircraft. The Osprey is the Marine Corps' main aviation acquisition priority.

- The ***Advanced Amphibious Assault Vehicle*** (AAAV) will be the Marine Corps' primary means of accomplishing surface power projection. It also will allow naval expeditionary forces to eliminate the battlefield mobility gap. The AAAV will be the principal means of armor-protected water and land mobility and direct fire support for Marine infantry during combat operations, including day/night, all-weather, and nuclear, biological, and chemical environments. For the first time in the history of naval warfare, maneuver ashore can be attained in one stroke, giving naval vessels and landing forces sufficient sea space for maneuver,

surprise, and protection. The AAAV is the Marine Corps' top ground acquisition priority.

❑ ***Amphibious Shipping*** must be adequate and state-of-the-art and is essential to the execution of Operational Maneuver from the Sea (OMFTS). The current modernization plan enables the formation of 12 Amphibious Ready Groups to meet forward presence, contingency, and warfighting requirements. This program will provide the most modern over-the-horizon launch and recovery platforms for the MV-22, the

AAAV, the Landing Craft (Air Cushion) (LCAC), and the short-take-off and vertical-landing (STOVL) variant of the Joint Strike Fighter - all of which are critical to the execution of OMFTS. Sea-basing also provides protection to the land force by reducing the vulnerabilities associated with large logistics "footprints" ashore.

❑ The ***Joint Strike Fighter*** (JSF) program will provide the Marine Corps' next generation aircraft, replacing the AV-8B and F/A-18C/D with a single STOVL platform. It will solve the tactical aircraft age and attrition problems and meet Marine aviation's goal to neckdown to a single type of fixed wing aircraft. But more importantly, it will provide the Marine Corps with a superior performance, stealthy, state-of-the-art technical, multi-mission jet aircraft that can operate with full mission loads from amphibious class ships or austere expeditionary airfields. To maintain the Marine Corps' force-in-readiness responsibilities, Marine aviation must sustain the capabilities of its legacy aircraft until they are replaced. The Marine Aviation Campaign Plan provides this blueprint: finding new ways to bring together technology, increased manning, and sustainable operational tempo to make Marine aviation units more robust.

It provides a bridge to the 21st Century when STOVL JSF, MV-22, UH-1Y/AH-1Z, and KC-130J will be the backbone of the Marine Aviation Combat Element (ACE).

- ***Non-Lethal Weapons*** (NLW) represent a new dimension in Marine Corps capabilities. The Marine Corps is fielding and training with a new class of weapons designed to stun and incapacitate without causing permanent injuries or gross physical destruction to property. NLW will expand the range of options open to commanders in Military Operations Other Than War (MOOTW).

- The ***Chemical Biological Incident Response Force*** (CBIRF) is a national asset provided by the Marine Corps that is manned, trained, and equipped to respond to chemical or biological terrorist incidents. CBIRF is a rapid response, initial detection, decontamination, and treatment capability trained to respond after a chemical or biological attack.

- ***Unmanned Aerial Vehicles*** (UAVs) are a new technology of interest to the Marine Corps. UAVs have many potential uses and can assist with intelligence, surveillance, communication, and reconnaissance. They can provide critical near-real time information.

- ***Artillery*** is a key component of the MAGTF, giving tremendous firepower to forward deployed units. The Corps is now evaluating the structure and equipment of Marine artillery. The intent is to increase the firepower organic to ground units. Future studies will cover many options, including advanced cannon artillery weapons and rockets.

Enduring Navy Partnership

Without the Navy, the Marine Corps' stalwart partner in littoral power projection, Marines would not be able to accomplish their mission. The Navy provides capabilities that complement, support, and sustain the MAGTF's expeditionary striking power. Strengthening the bonds of the Navy-Marine Corps Team and embracing new ideas that will benefit both services is a priority of the Corps. And all Marines, particularly those who work closely with Sailors, will continue to cultivate the strong traditional relationship that both services have enjoyed. As the next century brings forth new operational ideas and concepts, both services will embrace all opportunities that improve their interaction. The Corps and the Navy will need to reevaluate existing systems, programs, and processes in an attempt to determine future requirements for littoral power projection and focus on ways to further enhance the overall utility of naval forces. This effort will surely require change in some areas. While the doctrinal, procedural, and systemic forms of the Navy-Marine Corps alliance can and should evolve, the substance of the relationship will remain true to

the traditional sense of teamwork that has served them well throughout their long history together.

THE MARINE CORPS - THE 21st CENTURY FORCE OF CHOICE

The Marine Corps will continue to meet the needs of a dynamic security environment. It will remain prepared to fight, on short notice, under any circumstances, and in any conflict. The Corps will continue to be a force rich in history and tradition, but capable and ready to innovate and change, while always maintaining the highest values of honor, courage, and commitment. Individual Marines, the world's finest military professionals, will continue to be trained and educated to act intelligently and independently, to seek responsibility, and to be accountable.

This armed force will continue to be the world's finest military force, comprised of motivated, dedicated warriors, whose unique capabilities will be required in future conflicts. It will be an aggressive force with effective leaders possessing the abilities to rapidly observe, orient, decide, and act to achieve decisive results.

Innovation and improvisation will remain the foundation upon which the Corps will build its future vision. Marines will continue to show the same ingenuity and creativity that were used to develop amphibious doctrine before World War II, close-air support tactics in the Korean War, and the Marine Expeditionary Unit concepts that have served the United States so well over the last decade.

Building upon this framework, the Marine Corps will be better prepared to handle a wide diversity of missions across the entire spectrum of scenarios, ranging from a military attack against the United States or its interests, to acts of political violence against Americans abroad, to those operations currently described as "Military Operations Other Than War." Operating forward, in fully capable combined arms teams, the Marine Corps will remain fundamentally naval and expeditionary in character, as comfortable on the seas as on the land and in the air. With the Navy, Marines will be able to go anywhere rapidly and project force across any shore against any foe, sustaining themselves from sea or land bases. The Corps will be ever ready to project the power and influence of the United States from the sea and to any foreign shore.

Chapter 2

Concepts & Issues

Transforming today's highly capable Marine Expeditionary Forces to meet the challenges and uncertainties of the 21st Century requires a blending of our MAGTF concept with the new ideas emerging from advanced technology and the fast-changing military environment. New concepts require us to reconsider the manner in which we form MAGTFs and employ them. As we evolve to meet the challenges of a new era, we must explore new possibilities for the MAGTF's progressive adaptation to future realities.

In this environment, achieving support for those concepts and programs that underpin the Marine Corps' future operational success requires an informed consensus among the public, industry, and national leadership. This chapter presents those key concepts and issues that will enable the Corps to move into the next century.

Operational Maneuver from the Sea

Discussion

Operational Maneuver from the Sea (OMFTS) is a naval concept developed by the Marine Corps and executed in concert with the Navy. It places unprecedented emphasis on the littorals and demands greater cohesiveness between naval warfare and maneuver warfare. In OMFTS, naval forces focus on an operational objective using the sea as maneuver space to generate overwhelming tempo and momentum against critical enemy vulnerabilities. OMFTS requires overcoming challenges in

battlespace mobility, intelligence, command and control, and sustainment. Through the use of sea-based logistics, fires, and command and control, our forces ashore will be liberated from establishing large shore based logistics depots and providing rear area security to protect them. Furthermore, the concept of seabasing will provide the Joint Task Force commander with the capability to maneuver combat forces seamlessly

from the sea to the decisive objective area without the traditional impediment of securing the beach.

Several key platforms, each at the cutting edge of technology, are required to bring the OMFTS concept to fruition. They are the MV-22 Osprey, the Advanced Amphibious Assault Vehicle (AAAV), and the already operational Landing Craft Air Cushion (LCAC) vehicle. Once introduced to service, the STOVL variant of the Joint Strike Fighter (JSF) will provide fire support critical to the success of OMFTS.

Marine Corps Position

Operational Maneuver from the Sea--our capstone concept--introduces a blueprint for an enhanced capability and provides a conceptual framework for exploring improvements to our warfighting structure. There are many possibilities to consider. First, we will explore reshaping our MAGTFs to increase their combat power, operational, versatility, utility, and deployability. Concurrent with our focus on the future, the Corps will develop immediate initiatives within the framework of existing technologies to ensure current MAGTF capabilities remain relevant. This will shorten the bridge to the next generation.

Other Supporting Concepts

Discussion

The OMFTS concept reveals new ways of thinking about our primary mission of littoral power projection. Other supporting concepts build upon its theme, describing different aspects of future operations. Through wargaming and experimentation we identify and exploit the more promising concepts and supporting technologies for subsequent assessment. The Marine Corps' Warfighting Laboratory serves as the focal point for operational reform, and is charged with evaluating new and promising concepts and technologies and assessing their total impact on the Corps' warfighting capability. The Marine Corps is actively evaluating the following concepts intended to transform the Corps' operational capabilities:

- ***Ship To Objective Maneuver (STOM):*** STOM describes the tactical implementation of OMFTS through the application of the tenets of maneuver warfare to amphibious operations. It builds upon many of the themes introduced in OMFTS such as use of the sea as maneuver space, sea basing, and elimination of the requirement for a traditional beachhead. A departure from the traditional, linear form of amphibious operations practiced during most of this century, STOM envisions amphibious assaults in which highly mobile surface and vertical lift platforms launch from over the horizon attack positions, directly against objectives deep inland. The concept calls for exploitation of advanced navigation and information sharing technologies to allow landing force tactical commanders to monitor and coordinate the maneuver of their units throughout the operation. These technologies will also enable commanders to take advantage of enemy gaps and fleeting opportunities to overwhelm an adversary through the application of flexible, high tempo operations.

- ***Maritime Prepositioning Forces (Future) (MPF(F)):*** This is the concept by which next-generation MPFs will contribute to forward presence and power projection: capabilities which will remain central to U.S. deterrence and conflict resolution strategies well into the future. The enhancements envisioned will expand the functionality of MPF across the full range of contingencies. The concept is described through five key "pillars" of future MPF operations: force closure, amphibious task force integration, indefinite sustainment, reconstitution and redeployment, and force protection.

MPF(F) envisions conducting operations from over the horizon. Exploiting the sea as maneuver space, the dispersed, mobile MPF will

complicate the enemy's targeting process and take advantage of extended stand-off ranges, which will enable our combatants to more effectively acquire and defeat incoming threats. The medium for movement for the MPF, the sea, also serves as a barrier to terrorists or special operations forces whose mission would be to strike at facilities established in the landing force rear. Whether major theater war or operations in support of smaller scale contingencies, the ability to reduce the landing force's footprint ashore by basing it at sea will reduce exposure to threats from hostile forces, individuals, and the physical environment itself.

- ***Sustained Operations Ashore:*** The inherent flexibility of the MAGTF, merged with new technologies, will permit the future MAGTF to function as an operational maneuver element during sustained operations ashore. As an operational maneuver element, the MAGTF can be used to pave the way for operations by other elements, as a decisive force to unhinge the enemy's operational centers of gravity, or as an exploitation force to take advantage of opportunity on the battlefield. The role of the MAGTF in Sustained Operations Ashore will be different in the 21st Century. The battlespace of the future will often be nonlinear and lack large, easily targeted enemy formations. Critical vulnerabilities will be difficult to discern and difficult to engage. Physical occupation of large terrain will be less important than focused attacks aimed at reducing the enemy's ability and will to fight. The MAGTF will remain a general-purpose force, but one capable of executing a series of precise, combat actions. The inherent flexibility, versatility, and responsiveness of the

MAGTF and its incorporation of emerging technologies will permit an expanded role for the Marine Corps in future sustained joint operations.

❑ ***Beyond C2: Comprehensive Command and Coordination of the MAGTF:*** In the next century we are likely to see Marines conducting humanitarian operations, peacekeeping, and high intensity combat — all on the same day and in the same operating area. Execution of these diverse missions will require Marines to routinely work side by side with government, non-government, and international agencies. Beyond C2 outlines a transition from a traditional notion of command and control to the concept of command and coordination, wherein "control" is a part of effective command, and not resident in the technologies used. The aim of Beyond C2 is to empower commanders at every level to focus resources on a mission, while enabling the inventiveness and initiative of subordinates. Ultimately, future comprehensive command and coordination seeks to provide increased freedom of action to the operational forces; and the capability to provide superior command will further Marine Corps' ability to apply the tenets of OMFTS across the full spectrum of operations.

Beyond C2 suggests going beyond conventional forms of military power and incorporating all elements of national power in support of national objectives through a seamless command information architecture. This "reachback" access to non-traditional elements of power will give MAGTF commanders an improved ability to detect emerging crises, effect deterrent action, respond where necessary, and resolve threats to national interests. Specifically, the concept envisions a capability to coordinate, collaborate, and ultimately integrate the intellectual, diplomatic, experimental, and material power of the military, academia, industry, government, and non-government organizations to address the challenges of the 21st Century. The Marine Corps has already taken the first steps toward this capability through its efforts with the Chemical Biological Incident Response Force (CBIRF). The Marine Corps has tapped into the expertise of Nobel Laureate, Dr. Josh Lederberg, and others, to assist in the event of a chemical/biological attack. As the head of the reachback staff, Dr. Lederberg and his team join CBIRF at the scene of response via telecommunications and provide valuable diagnostic and treatment information. It is not difficult to visualize the expansion of the concept to a point where the expertise of chemical companies, computer and software firms, banks, and environmental groups can be made available to commanders operating on the battlefields of the 21st Century.

❑ ***MAGTF Aviation and Operational Maneuver from the Sea:*** MAGTF Aviation embraces a future environment characterized by increased chaos and instability. It describes the inherent capabilities unique to Marine Aviation, which make it an essential combined arms element of the MAGTF, and seeks to apply anticipated future aviation capabilities within the context of OMFTS requirements. MAGTF Aviation examines Aviation Combat Element (ACE) contributions as a catalyst to the MAGTF's overall capability through three primary activities: coordination, power projection and sustainment. MAGTF Aviation postulates that future operations will require even greater interdependence and reliance between the elements of the MAGTF. As ACE functional areas evolve, they will serve to bridge legacy systems with future capabilities. Although the activities embedded in ACE functional areas will remain valid for the foreseeable future, MAGTF Aviation acknowledges the requirement for closer correlation of its functions with those of the MAGTF. Therefore, this concept describes the ACE and its capabilities as an integral, indispensable element of the MAGTF's combat power, while calling for a vastly increased synergy between the elements that will enable the MAGTF to successfully conduct future operations in the littorals.

❑ ***Military Operations on Urbanized Terrain (MOUT):*** Given current projections of dramatic increases in urbanization, especially in the volatile developing world, Marines are preparing for extensive operations in cities. Historically, MOUT have been attrition style operations, relying upon overwhelming firepower to achieve the destruction of the enemy's

materiel assets. Such attrition style combat exacts a toll in casualties and infrastructure destruction. In the future, the Marine Corps will adapt maneuver warfare to the urban environment to accomplish its mission at significantly lower human and material costs. Marines will achieve the transformation to urban maneuver warfare through enhancements in the following seven areas: command and control, measured firepower, mobility, awareness, adaptability, force protection, and sustainability.

MOUT Advanced Concept Technology Demonstrations, co-sponsored by the Marine Corps Warfighting Laboratory (MCWL) and the U.S. Army's Dismounted Battlespace Battle Lab (DBBL), include numerous separate service and joint experiments to explore technological and tactical solutions for 32 identified urban warfighting requirements. Additionally, Project Metropolis, an initiative that evolved from the urban combat experiment in Urban Warrior, will focus on refinements and improvements at the tactical level.

- ***Advanced Expeditionary Fire Support:*** This concept proposes a combined system capable of providing fire support across the range of expeditionary operations. This system must be flexible, robust and responsive, providing all categories of fire support, from devastating lethal fires to tailored non-lethal fires. It must offer an optimal mix of engagement options, including both precision-guided munitions and precisely delivered general-purpose ordnance. OMFTS emphasizes seabasing, to include seabased naval and aviation fire support. Advanced Expeditionary Fire Support recognizes and embraces this principle, but identifies a continuing requirement for shore-based systems, as well.

- I***nformation Operations (IO):*** IO is an integrating concept that facilitates the warfighting functions of command and control, fires, maneuver, logistics, intelligence, and force protection. Not simply another "arrow" in the MAGTF commander's quiver, IO is a broad-based capability that "makes the bow stronger". Information operations involve actions taken to affect adversary information and information systems while defending our own. They consists of Offensive IO (PSYOPS, Physical Destruction, Deception, Electronic Warfare, OPSEC and Computer network attack), Defensive IO (physical security, Information Assurance, Electronic Protection, Counter PSYOPS/Intel, etc), Public Affairs and Civil Affairs. In the future, IO conducted by MAGTFs will be focused upon the information-oriented activities that will best support the traditional application of combat power. Specifically, Marine Corps IO will support maneuver warfare through actions to deny, degrade, disrupt, or destroy an enemy commander's ability to command and control his forces.

Information operations will not be conducted in a vacuum; rather, they will complement the traditional uses of military force and be carefully planned and fully integrated at all levels, tactical through national.

❑ ***Anti-Armor Operations:*** Marines will likely face hostile armored fighting vehicles in most future conflicts, to include smaller-scale contingencies. Further, Marines will frequently conduct expeditionary operations in the complex terrain which characterizes the urban littoral; and this environment will present unique challenges in locating, identifying, and engaging armored vehicles. New, sophisticated anti-armor systems are under development, as are active protection systems, advanced armor, and other countermeasures that will likely serve to maintain the status of armored vehicles as formidable combat platforms.

Anti-Armor Operations provides a future vision for addressing enemy armor. The concept outlines a fully integrated approach linking information operations with lethal and non-lethal fires. It starts with the

MAGTF commander, who will use enhanced situational awareness and information operations to deceive, confuse, and immobilize enemy defenders. He will exploit a command and coordination system that will provide an accurate and current tactical picture which, when integrated with the full range of seabased fires, will render enemy armored forces unable to move, sustain themselves, or effectively threaten friendly maneuver.

❑ ***Naval Mine Countermeasures (MCM) in Future Littoral Power Projection***: Jointly approved by CG, MCCDC and Commander, Naval Warfare Doctrine Command, the Concept for Future Naval Mine Countermeasures in Littoral Power Projection (Future MCM) will serve as the basis for future developments in naval MCM. It addresses MCM in the context of five "tactical situations" which frame requirements pertinent to littoral power projection operations. These are: transiting Sea Lines of Communications/Choke Points; Ship-to-Objective Maneuver; Carrier Battle Group/Amphibious Ready Group Operating Areas; operations in support of port break-in, break-out, and clearance; and independent operations.

Future MCM challenges existing notions. It focuses on a "mine avoidance" capability as the goal for naval forces. This capability will support the application of the principles of maneuver warfare to amphibious operations. Naval expeditionary forces of the 21st Century will employ a combination of "organic" MCM capabilities, which will be immediately available to forward-deployed naval forces, and "supporting" capabilities that can be rapidly deployed for augmentation, as required.

❑ ***Seabased Logistics:*** Seabased Logistics proposes methods to support a full spectrum of littoral operations, and outlines implementing capabilities for Operational Maneuver from the Sea, while retaining joint

interoperability. The key tenets considered in this concept are seabased primacy, demand reduction, in-stride sustainment, adaptive response / joint operations capability, and the ability to close and reconstitute forces at sea. Overall, the concept seeks to employ improved logistics tactics, techniques, and procedures to deliver flexible, highly responsive support for future naval and joint operations. Seabased Logistics embraces existing and emerging commercial processes to expand the range, speed, and magnitude of tactical and operational sustainment. A primary enabler will be the coupling of seabased ships to objective distribution with network-based, automated logistics information to provide in-stride sustainment for maneuvering and fighting naval expeditionary forces. To ensure relevance, seabased logistics capabilities must be sufficiently flexible and suitably robust to overcome the challenges of future asymmetric operational environments.

❑ ***Other Operational Concepts:*** Additionally, the Marine Corps is actively evaluating the following concepts:

- *Other Expeditionary Operations*

- *Military Operations in a Riverine Environment*

Marine Corps Position

Creating new operational concepts to conduct future battlefield operations and developing innovative force designs that provide versatile organizational and employment arrangements are essential to Marine Corps success in the 21st Century. In order to realize these objectives, we must leverage new advanced technologies via emerging operational concepts to redefine how Marine forces will conduct successful operations across the conflict spectrum.

Revolution in Military Affairs

Discussion

Our success in the Gulf War and the explosive growth of information technologies have given rise to speculation that the character of warfare is profound transformation. Such an assessment holds that we are in the midst of a Revolution in Military Affairs (RMA). Many believe that information technology can help those who master it win large wars at long distances with small forces.

There are, however, several weaknesses to an information dominant approach. First, information dominance is of less value and is largely irrelevant in today's "smaller-scale contingencies". Second, the sophisticated information systems on which the RMA is predicated will themselves be vulnerable to information warfare. Third, the use of weapons of mass destruction may be stimulated by a Revolution in Military Affairs, since adversaries will be left no other effective means of attack. Fourth, the diffusion of information technology will permit potentially hostile states to acquire military capabilities pioneered at great cost by the United States. Some argue, in fact, that the RMA might lead

to a high-tech arms race that will eventually leave U.S. interests less secure.

On the other hand, that which many think of as a single RMA is really a series of potential improvements. It is not known which information systems, biotechnology, space systems, unmanned systems, directed energy and biological warfare can be exploited for military applications. Without a true understanding of how to leverage these technologies, it remains unclear how the RMA will influence the character and nature of war in the next century. Whatever technologies emerge, the degree to which future security challenges can be addressed by RMA technologies remains uncertain.

Ultimately, our national security strategy and our vital interests will not be assured by technology alone. We must develop capabilities to respond to a broad range of crises and conflicts. The forces we design today for "the day after tomorrow" must be capable in all operating environments, from deserts to densely populated urban centers. Our forces must be able to handle those things that technology alone cannot solve. By proper application of both the "science" and the "art" of war we will ensure success on the battlefields of the future.

Marine Corps Position

The Marine Corps believes that only when technology is combined with changes in military doctrine and organizational concepts that alter the conduct of operations do we achieve revolutionary leaps in capability. The Marine Corps focuses on a "system of systems" approach that brings together the human, conceptual, and technological dimensions of conflict.

Marine Corps Readiness

Discussion

Sustaining current operational readiness is the Marine Corps' highest priority. The readiness of our MAGTFs rests on four pillars: Marines and their families, current systems, facilities, and modernization. The Marine Corps' readiness concerns continue to be the maintenance of aging equipment and infrastructure, the need to accelerate modernization, and recruiting and retaining Marines. The fiscal trends of the past years are impacting our ability to fully achieve the balance between current readiness and other crucial concerns such as force modernization, infrastructure, and quality of life.

The Marine Corps is placing additional emphasis on the manning of our operating forces. In an effort to reduce the amount of time Marines spend involved in activities that do not directly contribute to combat readiness, the Marine Corps is looking for ways to reduce the time spent in routine "housekeeping" chores. The Marine Corps must find sensible, economic alternatives to such long-held practices as garrison mess duty so that our Marines can be assigned, integrated, and retained in combat-ready units with minimum disruption. Toward this end, the Marine Corps recently identified nearly 1,200 billets that are good candidates for replacement with civilian or contractor personnel. Manpower savings realized from these initiatives will result in increased manning levels in the units of the operating forces.

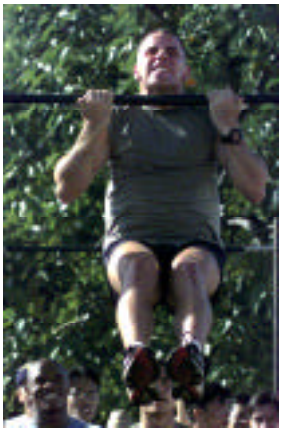
The Marine Corps is maintaining its equipment in the operating forces at a high state of readiness. This high state of readiness however, comes at the expense of equipment in organizations that have a lower priority, such as the supporting establishment. Decreased funding for modernization and depot level maintenance over the years is preventing the same level of readiness across the entire spectrum of equipment. The Congressional enhancements provided in the FY00 budget begin to address some of the Marine Corps' most pressing needs. However, the pace of modernization efforts and the investments in infrastructure remain a concern.

The Marine Corps faces considerable challenges in attaining the proper pace of modernization. The majority of these shortfalls are in crucial ground and aviation modernization programs required to overcome the block obsolescence that a number of major ground and aviation weapons are facing today. For example, the 29-year old AAVs had an original life of 10 years, then received a service life extension to add another 10 years of operation to their life, and are now undergoing a rebuild program to extend their service life until the AAAV is fielded, beginning in FY06. M198 howitzers average 17 years of age, TOW and Dragon systems are in their early 20s, and 81mm mortars are 14 years old. The 5-ton truck fleet is at the 19 year point of its planned 20 year life, and HMMWVs are well into their second decade of service.

The majority of Marine Corps aircraft (KC-130F, CH-46E, CH-53D, and UH-1N) have already exceeded their service life. The KC-130F, for example, is 18 years past its planned retirement. Our CH-46Es are entering their fourth decade of service, and CH-53Ds are only one year away from that milestone. The "A" and "B" models of F/A-18 force have been in service for 13 years, and CH-53Es are close behind them, averaging 11 years of age. The EA-6B fleet is at the 20 year point now, and many more flight hours have been logged on this airframe this decade than originally planned. Faced with this challenge, the Marine Corps has taken maximum advantage of service life extension programs for both ground and aviation weapons systems to maintain readiness while deferring modernization, but The Corps has reached a point at which it must replace old equipment.

Marine Corps Position

Each and every operational unit in the Corps remains either forward deployed or at the ready to deploy, fight, and win anywhere, against any foe. Modernization plans build a Corps for the 21st Century ensuring that it will meet the requirements associated with being the Nation's force-in-readiness. While the Corps is making great progress in developing new and innovative ways to increase readiness, continued resource support is needed to mitigate the effects that several years of high operational tempo have had upon its units and equipment. The readiness of the MAGTFs rests upon four pillars: Marines and their families, current systems, facilities, and modernization. All need due attention and resources in order to maintain a Corps that will be ready and relevant on the battlefields of the future.



Recruiting

Discussion

The Marine Corps Total Force depends on quality recruiting and the steady flow of new enlisted and officer accessions. During FY99, the Marine Corps continued its success by exceeding all of its assigned accession goals, as it has every month and every year since June 1995.

To continue this success, the Marine Corps must ensure it maintains an adequately resourced quality recruiting team. The highest quality Marines, enlisted and officer, continue to be screened and assigned to this demanding duty. Additionally, the Corps continuously evaluates and implements Quality Of Life (QOL) initiatives for recruiters and searches for new and innovative advertising to reach target market.

The warfighting requirements of the 21st Century mandate that the Corps recruit the best and brightest of America's youth. They must be physically and morally fit, intelligent, and comfortable with high technology. Quality recruits mean enhanced performance, stabilized attrition, and improved readiness.

The future environment will continue to test the Marine recruiting force. The market of qualified youth age 17 to 21 years has increased only slightly while their propensity to enlist has declined dramatically. Record low unemployment and ever-increasing college enrollment have also impacted recruiting. Accession missions, however, will continue to remain relatively constant.

The Marine Corps Recruiting Command (MCRC) continues to lean forward into the 21st Century with several initiatives designed to ensure future recruiting success. The Marine Corps, in conjunction with its advertising agency, has contracted the support of leading scholars to determine what motivates and appeals to a new generation of potential recruits. As MCRC continues to explore new advertising venues to reach the youth of America, it has requested additional funding from the Department of Defense. This allows the advertising budget to keep pace with increasing costs within the advertising industry, as well as the significantly larger advertising budgets available to the other services.

Improving the chances for Marine recruiters' success is MCRC's highest priority. Consequently, a force restructuring initiative has been established with the intent of "placing the fishermen where there are

plenty of fish." Restructuring involves modifying the placement of recruiters to better reach the target market of quality youth. As demographics change and populations shift, it is essential that the Marine Corps' sales force change along with it. This restructuring effort will put more Marine recruiters in the right places around the country to contact quality young people. The restructuring effort involves analysis of market research, advertising effectiveness, demographics, and logistical costs of relocating recruiters. This effort is currently underway at the Marine Corps Recruiting Command.

In spite of the challenges ahead, The Corps looks to the future with great hope and confidence. The quality of the individual Marine has never been higher. With the support of the American people, the Marine Corps' enduring image, and continued emphasis on core values of honor, courage, and commitment, the Corps will continue to attract sufficient numbers of high quality, young Americans with the desire to be United States Marines.

Marine Corps Position

Facing the most challenging recruiting environment in all volunteer force history, the Marine Corps continues to exceed DoD and CMC quality standards and remains on track to accomplish this feat again in FY00. In FY99, almost 96 percent of Marine recruits were high school graduates, and 64 percent of them scored in the upper half of the Armed Services Vocational Aptitude Battery. The Corps' recruiting emphasis continues to focus on the highest quality young men and women that will build the Corps of tomorrow, as the individual Marine continues to be The Corps' most precious asset. The Marine Corps remains committed to a strong and adequately resourced recruiting program. The goal for the 21st Century - smart, efficient recruiting for a more capable warrior!

Making Marines - Transformation

Discussion

The Corps has strengthened the way it makes Marines, builds self-confidence and strength of character, and instills a common set of values. The Corp's goal is not only to produce high quality Marines, capable of winning the nation's future battles, but also to make better Americans. The transformation of young men and women into Marines challenges them mentally, morally, and physically and occurs in four phases: recruiting, recruit training, cohesion, and sustainment.

Recruiters begin the transformation process by recruiting the highest quality men and women. The Delayed Entry Program allows recruiters to prepare recruits for the rigors of recruit training and to expose them to Marine core values of honor, courage, and commitment.

Recruit training has been modified to expand the influence of drill instructors, as well as the amount and quality of time they spend mentoring and setting the example for their recruits. Recruit training is a twelve-week program for both males and females. The Corps has retained its proven, tough, demanding recruit training program, but has enhanced it to ensure the Marines it makes are capable of prevailing in the future. The recruit training program of instruction has been significantly realigned to provide the drill instructor additional tools to transform America's youth into Marines. The realignment consolidated Basic Warrior Training, previously conducted at recruit training, with Marine Combat Training (MCT) at the Schools of Infantry, producing an improved training continuum of combat skills training for non-infantry Marines.

The culmination of recruit training is the "Crucible," an intense field training exercise designed to build unit cohesion, reinforce core values, and complete the transformation from recruit to Marine. The "Crucible" is the defining moment of the recruit training experience. As a right of passage, the "Crucible" is a 54-hour ordeal that tests the mettle of every recruit. The physical and mental challenges are intensified by sleep and food deprivation. The "Crucible" focuses on six major field events and is augmented by eleven challenging "Warrior Stations." Throughout this rapid paced exercise, emphasis is placed on the importance of teamwork in overcoming adversity and adaptive problem solving. The teams of recruits, under the leadership of their drill instructor, succeed as a team. The experience pushes recruits to their limits and culminates the transformation process.

Following recruit training, newly forged Marines are assigned into teams under a new program called "Cohesion." This program builds and assigns the recruits into teams from the "Crucible" through initial military occupational specialty training and then into the Fleet Marine Force (FMF). Unit Cohesion is designed to develop team integrity through the assignment of Marines who will remain together throughout their first term of enlistment, building bonds and developing confidence in one another. Achieving this objective requires synchronization of team assignments with deployment cycles so teams spend as much time as possible together in a unit. Ideally, first-termers will spend their entire enlistment with one unit. The focus of initial efforts is on ground combat units, but will ultimately be implemented throughout the Marine Corps.

The transformation process is sustained through the reinforcement of core values in the FMF and by holding Marines strictly accountable throughout their careers. This program provides stronger, smarter, and more capable Marines who have the maturity and flexibility to meet the challenges of the 21st Century battlefield.

Marine Corps Position

The recruit training process has been strengthened to better prepare Marines for the challenges of the 21st Century. The resulting "Transformation" produces more highly trained Marines with a stronger appreciation for the Marine ethos. More cohesive units improve the Corps' readiness posture and combat capabilities. The daily performance and conduct of Marines reflect the values of the Corps and the ideals of the Nation they serve.

Gender Segregated/Integrated Training

Discussion

The purpose of recruit training is simple - to make Marines. The young men and women who arrive at the recruit depots are generally away from home for the first time. They have brought with them diverse perceptions of right and wrong and varied appreciations of permissible behavior. Their experiences with authority figures may have been good or bad, proper or improper or even abusive. The only thing they have in common is their desire to be a Marine. By capitalizing on that desire, recruit training transforms these individuals into Marines imbued with a common set of values and standards.

Although recruit training teaches basic military skills such as physical fitness, close order drill and marksmanship, it does not train the recruit to fight and survive in combat - that comes later at Marine Combat Training (MCT). Instead, recruit training is more truly a socialization process. Civilians are transformed into basic Marines. It is a physically and mentally challenging ordeal, and one requiring constant supervision. Drill instructors control and manage the transformation of their recruits through constant interaction. They teach core values, institutional rights and wrongs, and what constitutes proper authority. This teacher-student/father-son/mother-daughter relationship is the heart and soul of the recruit training experience.

In gender segregated recruit training, the drill instructor provides impressionable young men and women strong, positive role models. For women it also removes the stereotype that only men can be authority figures. They see strong female role models not only in control of them and their group, but also positively interacting with other male drill instructors. Very early in their training cycle, women recruits come to realize that they are expected to be strong, assertive leaders. Gender segregated training provides an environment free from latent or overt sexual pressures, thereby enabling recruits the opportunity to focus on, and absorb, Marine standards of behavior.

Additionally, gender segregated training takes into consideration the difference in physical strength and endurance between male and female recruits. The recruit training physical conditioning program has two primary objectives —to achieve and maintain a peak level of physical fitness and to build confidence. Due to strength and endurance differences, initial physical fitness standards are different for male and

female recruits. Fully integrated recruit training with a common standard would result in either lowering the male standards or increasing the female failure/attrition rates — neither of which is acceptable.

The case for gender integrated training is often built on the "train as we fight" thesis which argues that men and women should train in gender integrated units because that is the way they will fight. This argument generally misses the point that the Marine Corps, unlike the other services, has a block of training entitled MCT, between recruit training (socialization) and military occupation skill training. It is at MCT that newly forged Marines are actually taught combat skill, and this training is conducted in partially integrated units at MCT-East, Camp Lejeune. Women Marines undergo MCT only at Camp Lejeune because the smaller number of female accessions only justifies a single site. Another important distinction is that MCT occurs after the intense transformation process that produces Marines with strong and clear standards of behavior, and the values, mental and physical toughens, self-reliance, and confidence essential to earn the title "Marine"

After Transformation, Marines are then, and only then, placed in a combat training environment. And most appropriately, it is in this expeditionary training environment that they will be organized into gender integrated units for the first time. Act MCT, both male and female Marines will be taught and led by male and female Marine Officers and Non-Commissioned Officers. Both male and female Marines are exposed to a gender integrated chain of command and the professional conduct between male and female leaders. In tough field conditions they see both male and female leaders in action. The objective is for male and female Marines to see themselves as members of the same team, committed to performing the same tough duties, mentally and physically, in the same demanding environment. From that experience they develop an appreciation of each other as professionals.

Marine Corps Position

The Marine Corps will continues to make Marines that are tough, dedicated, and imbued with the values of the Corps - Honor, Courage, and Commitment. Through this process we will emphasize the dignity of, all Marines. Current Marine Corps policy regarding gender segregated recruit training is sound and is supported by the Kassebaum Baker Congressional Committee chartered to evaluate this policy across the Services. Marine Corps gender integrated training is consistent with the "train as we fight" approach and commences at MCT.

Quality of Life

Discussion

The Marine Corps is committed to efficient, effective and equitable management and delivery of Quality of Life (QOL) programs and services. Taking care of Marines and their families is essential to Corps.

QOL programs directly impact readiness and operational responsiveness. As the Nation's force-in-readiness, maintaining the highest levels of operational readiness and responsiveness is paramount. Marines who know that they and their families are being taken care of are more likely to be focused on the job at hand — combat readiness. From a long-term perspective, QOL has a positive effect on recruiting, retention, and motivation to serve. These programs are tools for commanders to enhance, develop, and support Marines on an individual or unit basis.

The Commandant's QOL program priorities are: pay and allowances, appropriate and responsive health care, bachelor and family housing, and proactive, supportive community support programs. These programs are consistent with those of DoD and the Marine Corps has committed significant resources and effort to them.

QOL touches Marines in almost every area of their lives. Because of this, the Marine Corps has revolutionized its approach to QOL program and service delivery by creating Marine Corps Community Services (MCCS). MCCS provides a nearly seamless system of programs and services to support Marines and their families in almost every aspect of life. MCCS is more than a concept, it is the future of taking care of Marines and their families. It bundles the capabilities of previous support systems such as Moral, Welfare and Recreation (MWR), Family Services, and Voluntary Education and adds new service dimensions designed to build strong Marine families and Marine Corps communities.

MCCS is delivered through five operational pillars: Marine Corps Family Team Building, Semper Fit, Personal Services, Business Operations and General Support. These operate interdependently to provide a combination of programs and services that meet Marines' needs. There are two operational goals. Equity assures the availability of appropriate programs and services to all Marines wherever assigned. Prevention provides proactive support and education programs that foster prevention of problem behaviors before they occur, obviating the need for reactive intervention and treatment. The New Parent Support Program, Mentors in Violence Prevention, and Semper Fit Health Promotion are prime examples of this proactive, prevention based effort. Through these and

other innovative efforts, MCCS provides commanders with an impressive capability to address the needs of Marines and their families throughout the Corps.

Marine Corps Position

The Marine Corps has made a significant continuing commitment to QOL to sustain and support retention and readiness. The innovative MCCS organizational model, with its focus on equity and prevention, provides Marines and their families with "best-of-breed" programs and services that support and enhance the quality of their lives.

Marine Corps Total Force

Discussion

The Marine Corps performs many functions and missions in support of the national military strategy, and executes a wide variety of other tasks deemed essential for the Nation. The 172,518 active duty and 39,624 reserve Marines provide support to the intelligence community, airlift support to the Executive Branch, and a Chemical Biological Incident Response Force to the Nation as a whole. They help safeguard U.S. embassies and provide security at key naval installations. They support counter-narcotics operations, and serve in countless billets throughout the defense establishment and other government agencies. The Marine Reserve maintains a presence in 184 sites in the United States, and they - and the active Marines who support them - perform an impressive array of augmentation and reinforcement tasks as part of the Marine Corps Total Force.

While all of these duties are very important, The Corps' primary obligation to the people of the United States is to field fully manned, combat ready Marine Air Ground Task Forces (MAGTFs). In maintaining this expeditionary force in readiness the Corps mans a young and lean force. The Marine Corps has only 52 percent of its enlisted force in the highest 6 enlisted grades. This compares to 70 percent or higher for the other services. Additionally the Corps officer to enlisted ratio is 1:9, by far the leanest in the Department of Defense. These factors allow junior Marines to exercise more responsibility, initiative, and leadership while providing a significantly less expensive force.

The Corps number one concern is the manning of the operating forces. Approximately 112,000 Marines are in the Operating Forces with nearly 30,500 forward deployed, forward based, forward stationed, or deployed for training at any given time. There are 1,101 Marines guarding diplomatic outposts in 123 detachments around the world. All of these Marines are organized, trained, and equipped to face a broad array of potential threats. The Corps has recently identified 1,200 Marines in supporting billets that will be replaced by civilians enabling their transfer to the operational forces. The Corps will continue to search for additional such resource efficient alternatives that will allow it to achieve its goal of manning the forces at the highest possible level with the greatest possible economy.

The Marine Corps Reserve continues to play a vital role in the Total Force by providing trained and qualified units and individuals available for active duty during times of war, national emergencies, and other times

as national security may require. In FY99 Marine Reserve civil affairs detachments were called upon to provide support in Bosnia and Kosovo; reserve KC-130s supported Operation NORTHERN WATCH and continue to be called upon to support forward-deployed Marine Expeditionary Units. Infantry, aviation, and combat service support units, and individual reservists routinely participate in exercises BATTLE GRIFFIN in Norway, COBRA GOLD in Thailand, ULCHI FOCUS LENS in Korea, COMBINED ENDEAVOR in Germany, and ASCIET and URBAN WARRIOR in the United States. The Marine Corps Reserve, effectively augments the Active Component creating a Total Force that is ready when called upon.

Marine Corps Total Force includes the capability to mobilize a population of over 20,000 retired Marines to fill pre-assigned billets throughout the CONUS bases and stations. Their experience and dedication to Corps and country can be counted on in case of national crisis.

Civilian employees are a crucial part of the Total Force, providing unique skills and continuity essential in the supporting establishment. With the leanest population in DoD, the manning support provided by "civilian Marines" allows Marines to fill billets in operational units enhancing overall training, readiness, and sustainability.

Marine Corps Position

The success of the Marine Corps in war and in supporting national policy in peace is directly attributable to its commitment of providing a balanced and efficient Total Force. Maintaining expeditionary readiness is dependent on high quality people, both active and reserve Marines as well as civilian personnel.

Chemical/Biological Incident Response Force

Discussion

The 1995 Sarin gas attack on the Tokyo subway, Iraq's suspected possession of biological weapons, and the breakdown of controls on weapons of mass destruction in the former Soviet Union reveal that the threat of biological or chemical terrorism has significantly increased. Because of the catastrophic potential chemical or biological agents pose, the DoD has focused on preventing such an incident. It must, nonetheless, be able to respond to and manage the consequences of such an attack.

In recognition of this requirement the Marine Corps activated the Chemical/Biological Incident Response Force (CBIRF) in 1996. CBIRF is manned, trained, and equipped to respond to chemical or biological terrorist incidents. As a national asset, the CBIRF was used to support the 1996 Centennial Olympic Games in Atlanta, the 1997 Presidential Inauguration, the Summit of Eight in Denver, Colorado, the January 1998 State of the Union Address, and the NATO 50th Anniversity Summit during April 1999 in Washington, D.C.

CBIRF is capable of rapid response to chemical or biological incidents. When such an incident occurs, CBIRF immediately deploys to the affected site to provide a number of significant initial consequence management capabilities. These include: coordinating initial relief efforts; security and isolation at the affected site (when authorized); detection, identification, and limited decontamination of personnel and equipment; expert medical advice and assistance; and service support assistance. Throughout its response, civilian and government consultants advise CBIRF in areas related to chemical or biological incidents.

When not training, exercising, or responding to an incident, CBIRF personnel provide training to other organizations. CBIRF also continues to develop countermeasures, force protection training, and equipment support packages for deploying MEU(SOC)s. CBIRF will assist in the development of new doctrine, equipment, techniques, and procedures for responding to a chemical or biological attack or incident. Additionally, CBIRF assists federal, state, and local response forces develop chemical and biological incident training programs. CBIRF offers a model for developing similar capabilities elsewhere within DoD.

Marine Corps Position

DoD has a limited ability to respond effectively to chemical and biological incidents. The Marine Corps contributes to the national response capability by manning and equipping a consequence management force package specifically designed to respond to terrorist initiated chemical or biological incidents. CBIRF continues to develop the concepts, doctrine, organization, tactics, techniques, and procedures necessary to remain the Nation's premier incident response force. Additionally, CBIRF remains focused on increasing its capabilities in two areas: development of countermeasure and force protection training and equipment support packages for deploying MEU(SOC), and assistance to federal, state, and local response forces in development of internal training programs.

Joint Non-Lethal Weapons Issues

Discussion

In recent years, U.S. forces have increasingly conducted military operations other than war. This category of operations includes such missions as humanitarian assistance, military support to civil authorities, peace operations, and noncombatant evacuations. Increased interaction between friendly troops and friendly, neutral, or hostile civilian populations has become an inevitable feature of the contemporary landscape. The tactical application of non-lethal weapons (NLWs) is often useful in such scenarios.

Non-lethal weapons are explicitly designed and primarily employed to incapacitate personnel or materiel, while minimizing fatalities, permanent injury to personnel, and collateral damage to property and the environment. NLWs must be compatible with, easily integrated with, and complementary to, current and planned conventional weapons. They must be capable of achieving the desired effects on targets instantaneously without degrading the tactical posture of friendly forces.

NLWs reinforce deterrence efforts and expand the range of options available to commanders. They enhance our capability to discourage, delay, or prevent hostile action; to limit escalation; to isolate the battlefield. They also allow military action in situations where use of lethal force is not the preferred option. The DoD is now in the process of fielding NLWs capability sets. NLWs were employed during the withdrawal of United Nations forces from Somalia and during the intervention in Haiti. They are currently deployed in the former Yugoslavia. The current systems include non-penetrating projectiles (rubber bullets and bean-bag rounds), flash-bang grenades, pepper spray, aqueous foam barriers, and caltrops.

In 1996, the Under Secretary of Defense for Acquisition and Technology (A&T) appointed the Marine Corps DoD Executive Agent for NLWs. Leadership in this area transitioned from the Office of the Secretary of Defense (OSD) to the Joint NLW Directorate (JNLWD) in 1997. The JNLWD continues to review and harmonize joint requirements, Service funding, and program execution. The JNLWD has negotiated a Memorandum of Agreement among all Services and the U.S. Special Operations Command for effective management and coordination of non-lethal efforts.

Marine Corps Position

This joint concept supports the Marine Corps as the designated DoD Executive Agent for NLWs. It establishes a set of guiding principles to ensure common direction of the Services and agencies (both Defense and non-Defense) and efficient use of resources in the development of non-lethal capabilities. The Marine Corps believes that NLWs provide commanders increased options for resolving complex problems encountered across the range of military operations and expand policy choices. They provide a credible capability to use discriminate, measured force to influence pre-conflict, conflict, and post-conflict situations.

Nuclear, Biological, and Chemical (NBC) Warfighting Modernization

Discussion

Threats emerging from the proliferation of NBC weapons have become one of today's and the future's foremost security challenges. An increasing imbalance in conventional warfare capabilities has driven potential adversaries to find alternative means to obtain a balance of power. The worldwide proliferation of Weapons of Mass Destruction (WMD) has created a complex, uncertain and volatile NBC contingency environment. Marines must remain trained, equipped and ready to protect the Nation's security interests. To meet these NBC challenges, the Marine Corps is aggressively developing and fielding NBC Defense capabilities, and capabilities to conduct other missions, such as, Consequence Management. These development efforts include re-writing NBC Defense Concepts and Doctrine, fielding state-of-the-art technologies and equipment, and upgrading NBC Defense Training Plans to support the Marine Corps warfighting concepts Operational Maneuver From The Sea (OMFTS) and Ship to Objective Maneuver (STOM). Developing NBC Defense Capabilities is focused on the three pillars of NBC defense: Protection, Contamination Avoidance and Decontamination.

- The Weapons of Mass Destruction (WMD) Consequence Management Team is responsible for acquisition of equipment to support the Consequence Management Mission Areas of Reconnaissance, Decontamination, Force Protection, Medical, and Command, Control, Communication, Computers, Intelligence, and Interoperability (C4I2). This is accomplished through implementation of effective Acquisition Reform Policies and Procedures, when appropriate. It also includes the evaluation and acceptance of proven commercial and non-development technologies, cooperation with DoD technology development assets and operational testing and fielding. To date the WMD Consequence Management Team has rapidly and successfully fielded over sixty items of equipment to support the Marine Corps WMD Consequence Management Capability. During and subsequent to fielding, the WMD Consequence Management Team provided training sustainment and the implementation of a comprehensive logistical support infrastructure designed to ensure life cycle success of the CBIRF Consequence Management Capabilities and MEU (SOC) Enhanced NBC (E-NBC) Capability Sets.

❑ Individual and Collective Protection provide the warfighter life sustaining capabilities and the ability to continue operational capabilities in the event that early detection and warning is not possible or units are forced to occupy or traverse in NBC contaminated environments. This is especially important during the conduct of OMFTS and STOM operations. Individual protection includes protective masks, hoods, suits, boots and gloves exclusively designed for ground combat and air combat Marines. Collective protection includes two general categories: stand-alone shelters and integrated systems that provide a contamination-free, environmentally-controlled surrounding for Marines to perform their missions. Collective protection concepts include mobile and fixed command posts, medical facilities, rest and relief shelters, buildings/fixed sites, vehicles, aircraft, and ships. The Marine Corps is pursuing and fielding technologies that provide improved protection, better mobility in Mission Oriented Protective Postures (MOPP) vision and voice capabilities, and reduced heat stress over current individual protective equipment. It is also evaluating technologies for collective protection in contaminated areas to improve filtering and ventilation, and to reduce weight, volume, costs, and other resource demands.

❑ Contamination Avoidance includes NBC reconnaissance, detection, identification, warning, and reporting. Early and reliable detection and warning is fundamental in avoiding chemical and biological agent contamination. This early and reliable detection and warning provides the MAGTF Commander with Situational Awareness of NBC conditions throughout the battlespace. It provides the Commander with a real-time picture of the invisible hazards associated with NBC Defense. Situational Awareness takes advantage of Information Age Technology to build our Contamination Avoidance doctrine. Situational Awareness integrates detector (point and standoff), identification of the agent(s), sample collection and storage, (vapor, liquid, and solid) intelligence (collection and transmission), operations, weather, and unit location networks to provide all units and elements with the requisite information to “paint” the NBC situation. The Marine Corps is aggressively pursuing technology advances in chemical and biological standoff detection, remote and early warning detection, sensor miniaturization, and improved detection sensitivity.

❑ Decontamination systems provide the force a regeneration and restoration capability and a resumption of operations capability in the event that contamination cannot be avoided. Personnel and equipment must be decontaminated in order to reduce and/or eliminate hazards after chemical and biological agent employment and contact. Marine forces are developing concepts and training techniques to meet this

resource demanding requirement. Modular decontamination systems with engineering improvements have been fielded and future systems are being developed to include more effective personnel decontamination, fixed site, large equipment, and sensitive equipment decontamination. The Marine Corps is evaluating Sorbents, coatings, and physical removal of contamination on personnel, equipment, fixed sites, and sensitive equipment to permit forces to continue and resume operations. Additional considerations include reducing resource demands, developing effective concepts and doctrine, and organizing forces to efficiently conduct decontamination missions.

Marine Corps Position

The Marine Corps Combat and Materiel Developers are leveraging the Joint Services NBC Defense Program Development efforts and commercial and emerging technologies to field NBC Defense Capabilities to support Marine Corps Forces. Effective operational concepts and doctrine, validated and perfected by realistic exercise training remain fundamental to meeting and defending against the NBC threat.

Power Projection Capabilities

Discussion

Rapidly projecting decisive military power is key to the national military strategy. Amphibious and maritime prepositioning forces play a critical role in U.S. power projection. Replacing and revitalizing the essential platforms and improving the effectiveness of these expeditionary forces is a major goal. To that end, the Marine Corps will continually strive to blend advances in technology with newly developed operational concepts. Today, the Navy-Marine Corps Team is rapidly implementing the strategic and operational concepts of Operational Maneuver from the Sea (OMFTS) to take full advantage of the littoral environment and the

maneuver space it provides. Emerging technology will allow the OMFTS concept to become a reality and provide a tremendous increase in the flexibility, agility, and effectiveness of Marine Expeditionary Forces. The result will be a significant increase in naval power projection capabilities. The following initiatives are key to the achievement of Marine Corps operational objectives:

- ***Advanced Amphibious Assault Vehicle (AAAV).*** The AAAV is critical to the Corps' future ability to project power inland from amphibious ships. Significant enhancements in speed, firepower, and survivability for the AAAV will allow a faster buildup of combat power

ashore, ensuring greater force survival and effectiveness. AAAV allows tactical maneuvers from ship to inland objectives from over the horizon, creating significant operational advantages. The AAAV will replace the current AAV7A1 family of assault amphibious vehicles that are now almost 30 years old. The first prototype AAAV was successfully rolled out in 1999 and AAAVs will be tested in several locations throughout 2000. They are scheduled for fielding to the operational forces in 2006.

❑ ***MV-22 Osprey.*** The MV-22 tilt-rotor aircraft will allow combat power to transition ashore faster and increases the depth of the battlefield through its enhanced range, endurance, and flexibility. It will replace the aging medium lift fleets of CH-46 Sea Knight and CH-53D Sea Stallion helicopters. While fulfilling the Marine Corps' critical medium lift requirement, the MV-22's increased capabilities will provide significant tactical and operational leverage.

❑ ***Landing Craft Air Cushion (LCAC).*** The LCAC is a shipborne, over the horizon, high speed, amphibious landing vehicle capable of transporting payloads of up to 72 tons. The ship-to-shore payload may include both troops and equipment as heavy as the M1A1 Tank. The LCAC significantly increases the build up rate of combat power ashore, including over the beach and a limited inland transportation capability. A service life extension program, scheduled to begin during FY00, will ensure its viability into the future.

❑ ***Maritime Prepositioning Force (Enhancement) (MPF(E)).*** MPF(E) is a three ship conversion program funded in the National Defense Sealift Fund. Lessons learned during Operations Desert Shield/Storm, in Somalia and on annual exercises have highlighted the need to add additional capabilities to the current Maritime Prepositioning Force (MPF) program. Specific capabilities added are an Expeditionary Airfield (EAF), Naval Mobile Construction Battalion, and Navy Fleet Hospital. In addition, space was included for the restoration of equipment and supplies removed from existing MPF ships due to the introduction of larger, modernized equipment. Prepositioning of these additional capabilities and equipment with the existing Maritime Prepositioning Ships Squadrons (MPSRONS) will significantly enhance the capabilities available to the supported Commanders-in-Chief (CINCs).

❑ ***Shallow Water Mine Countermeasures.*** This program is designed to improve critical deficiencies in mine countermeasures. The development of technology and systems to detect, clear, and neutralize these threats is vital to allow Marine forces to maintain presence, to maneuver

unencumbered throughout the littoral areas, and to effectively project combat power ashore.

- ***Naval Surface Fire Support (NSFS)***. NSFS is an essential dimension of our power projection capabilities. Efforts to upgrade current ships are focused on modifications to the existing Mark 45 gun mount and the development of extended range guided munitions and the Land Attack Standard Missile. The long-term program calls for the development of a larger caliber gun and an extended range missile system. These enhancements will provide a critical boost to Marine amphibious capabilities by adding fires with more range, responsiveness, accuracy, and lethality to maneuver forces ashore.

- ***Joint Strike Fighter (JSF).*** The JSF will provide the Marine Corps with a state-of-the-art, next generation, short takeoff and vertical landing (STOVL) aircraft to replace the AV-8B and F/A-18A/C/D. It will be a superior performance, stealthy, multi-mission jet aircraft, possessing state-of-the-art technology, that can operate with full mission loads from amphibious class ships or austere expeditionary airfields. This blend of stealth, performance, and basing flexibility will enable the STOVL JSF to perform a broad range of missions including: escorting the MV-22; striking critical deep targets; providing armed reconnaissance, close air support, tactical reconnaissance, and suppression of enemy air defenses; and conducting active air defense missions. With the STOVL JSF, Marine aviators will be able to support the full range of OMFTS mission profiles and provide Marine ground forces the precise and timely fire support needed on the 21st Century battlefield.

Marine Corps Position

Technological advances enable the Corps to rapidly move OMFTS from the concept stage to reality. The Corps acquisition focus is to leverage technological initiatives that improve the mobility, flexibility, and lethality of Marine Expeditionary Forces in a cost-effective manner. These initiatives enhance the Marine Corp's role in the national military

Advanced Amphibious Assault Vehicle

Discussion

In the 1980s, the Navy and Marine Corps developed the concept of over the horizon (OTH) assaults to avoid enemy strengths, exploit enemy weaknesses, and protect Navy ships from increased land based missile threats and seabased mine threats. This littoral warfare concept has matured into the OMFTS concept. The AAAV Program, together with the MV-22 Osprey tiltrotor aircraft and the Landing Craft Air Cushion (LCAC), will provide the tactical mobility assets required to spearhead OMFTS. Furthermore, the AAAV is critically important to maneuvering a mobile and survivable surface assault force that can quickly secure inland objectives. Its swift and independent transit from OTH is the tactical assault capability currently lacking to enable LCACs to perform the follow-on assault and logistics functions for which they were originally designed. In addition to its greatly increased speed on the water, the AAAV will provide superior land mobility, tremendously increased firepower, and advanced survivability features that compare to the best land fighting vehicles in the world.

The AAAV's unique capabilities include: (1) over three times the water speed of the current AAV7A1; (2) equal armor protection with the current AAV7A1 (already enhanced by applique armor); (3) the ability to defeat future threat light armored vehicles; (4) land mobility equal to or greater than the M1A1 tank; (5) lift and carrying capacity for a reinforced rifle squad; and (6) Nuclear, Biological, and Chemical (NBC) protection for both the crew and embarked personnel (the only combat vehicle system for infantry in the U.S. inventory that does so). All of these capabilities will increase the survivability of the amphibious surface assault forces and the flexibility of future MAGTFs.

Marine Corps Position

The AAAV Program will allow the Navy and Marine Corps to seamlessly link operational maneuver at sea with maneuver ashore. It provides a critical capability for OTH forcible entry — a key component of OMFTS.

Amphibious Ships

Discussion

Naval expeditionary forces with embarked Marines provide forward presence and flexible crisis response forces for employment in support of foreign policy objectives. These forces provide the most formidable amphibious forcible entry capability in the world. The development and maintenance of this capability is the statutory responsibility of the Marine Corps as directed by Congress in Title X. Amphibious lift requirements support the national military strategy and are tailored to meet real world day-to-day commitments as well as to satisfy combat surge requirements.

Big deck amphibious ships are the centerpiece of the Navy-Marine Corps amphibious forces and are essential to maintaining amphibious lift and power projection capabilities. Currently 11 big deck ships are in the inventory. The twelfth big deck, LHD-7, is under construction and will be commissioned in FY2001. An LHD-8 transition ship and a follow on LHA replacement ship (LHX) will better serve and meet the Marine Corps' lift and future warfighting requirements than the TARAWA class ships.

The warfighting and forward presence requirement, the capability the Marine Corps strives to provide to our nation, remains at 3.0 MEB equivalents and equates to 14 three-ship Amphibious Ready Groups (ARGs) and 2 additional LPD 17s. The requirement for an amphibious force structure which supports sealift for 3.0 MEB equivalents, as originally stated in the Department of the Navy Lift Study, the Mobility Requirements Study, and later in the Quadrennial Defense Review, remains a priority requirement. This need has been validated by the Secretary of Defense's Global Naval Force Presence Policy (GNFPP) and reinforced by reoccurring requests from combatant commanders for MEU(SOC)/ARG forces.

Fiscal constraints, however, have limited the amphibious lift to a programmatic goal of 2.5 MEB equivalents. Achieving this fiscally constrained 2.5 MEB equivalents of sealift will occur in FY08 upon delivery of the twelfth and final LPD-17 class ship. In the meantime, maintaining LKAs and LSTs in the Naval and Ready Reserve Force is alleviating current Navy shortfalls in vehicle lift capabilities. The shortfall in active amphibious shipping remains an area of concern. Accordingly, the LPD-17 program is essential to providing an air-capable, LCAC-capable, wet-well ship that is optimized to meet our surge lift requirements.

Marine Corps Position

The LHA class of ships will approach the end of their service life beginning in 2011. In replacing the LHAs, an LHD-8 transition ship and follow on LHA Replacement (LHX) will meet the Marine Corps lift and future warfighting requirements.

SAN ANTONIO Class Landing Assault Ship

Discussion

The operational flexibility and capability of the Amphibious Fleet will be significantly enhanced with the FY03 delivery of LPD-17, USS SAN ANTONIO, the first of twelve new landing assault ships to be procured by FY04. As a class, these ships will overcome amphibious lift shortfalls caused by the decommissioning of aging LPDs, LSTs, LKAs, and LSD-36s and help the Marine Corps to meet its requirement of 2.5 Marine Expeditionary Brigades (MEB). These versatile ships will complement the LHD/LHA large deck amphibs with simultaneous wet-well and flight deck capabilities.

Each of the 25,000 ton ships will carry approximately 700 Marines, have a vehicle stowage capacity of 25,000 square feet, a well deck sized for two LCACs, and a flight deck capable of simultaneous operation of two CH-53E Super Stallions, two MV-22 Osprey tiltrotor aircraft, or four CH-46 Sea Knight helicopters. The ship class will be outfitted with the Rolling Airframe Missile system for self-defense and will incorporate design features which present a significantly reduced radar cross section, compared to previous amphibious ships.

Marine Corps Position

Maintaining projected delivery schedules and attaining operational readiness of this ship class is key to achieving a fiscally-constrained requirement of 2.5 MEB equivalents of amphibious lift. Ensuring that the ship maintains a robust C4I and self-defense capability as threat systems evolve is key to survivability in the littoral environment. Expanding the offensive capability of the ship to include a limited NSFS and strike capability is worthy of examination as an option to expand the striking power and flexibility of surface forces.

Maritime Prepositioning Force

Discussion

The Maritime Prepositioning Force (MPF) is a strategic power projection capability that combines the capacity and flexibility of prepositioned sealift with the speed of strategic airlift. Strategically placed around the globe, MPF supports the Strategic Mobility Enhancement initiative and national military strategy through forward presence and crisis response. These ships are organized into three Maritime Prepositioning Ships Squadrons (MPSRONS): MPSRON-1, based in the Mediterranean; MPSRON-2, based at Diego Garcia; and MPSRON-3, based in the Guam-Saipan area. MPSRONS are interoperable, with ships from one MPSRON interchangeable with ships from any other. MPF is flexible (from a Marine Expeditionary Unit to a Marine Expeditionary Force), employing from one to all thirteen ships (fourteen when the first of three funded MPF(E) ships is fielded in FY00). When needed, these ships move to a crisis region and offload in a benign environment either in port or offshore. Offloaded equipment and supplies are then married up with Marines arriving at nearby airfields. The end result is a combat ready Marine Air Ground Task Force (MAGTF) rapidly established ashore with minimal reception facilities. MPF is especially responsive to regional crises or natural disaster relief. MPF forces provide enough equipment and supplies to support a MAGTF (MEB is standard for MPF support) for its first 30 days of operations. MAGTF deployment planning and training is conducted by the Commanding Generals, II MEF (MPSRON 1); I MEF (MPSRON 2); and III MEF (MPSRON 3). The Commander, Marine Corps Logistics Bases, Albany, Georgia is responsible for attainment, prepositioning and maintenance of the Marine Corps supplies and equipment on each MPSRON. This is accomplished in conjunction with the Marine Expeditionary Forces (MEFs) through a maintenance cycle program conducted at the Blount Island facility in Jacksonville, Florida. The MPF ships are civilian owned and operated under long-term charter to the Military Sealift Command (MSC).

Marine Corps Position

A MPF remains a cost-effective, proven, and relevant capability for use in responding to crises overseas. It is consistent with “Forward... From the Sea” and significantly increases responsiveness to contingencies and improves operational flexibility for combat, disaster relief, and humanitarian assistance operations.

Mine Warfare

Discussion

This essential warfare capability is integral to the ability of naval forces to effectively open and maintain sea lines of communication and to operate in the littoral battlespace. A considerable array of modern mine countermeasure (MCM) systems continues to be developed and procured for MCM forces.

The U. S. Navy's dedicated MCM force is comprised of 14 MCM-1 class ships, 12 MHC-51 class mine countermeasures ships and two squadrons of MH-53 airborne mine countermeasures helicopters. It also includes Navy Special Operations Forces composed of 15 MCM specialized explosive ordnance detachments, 2 MCM Marine Mammal

System (MMS) detachments, and a specialized Very Shallow Water Detachment. The experimental Very Shallow Water (VSW) MCM Detachment, made up of Navy Explosives, Ordnance and Disposal personnel; Navy SEALS; and Force Reconnaissance Marines has proven to be a viable near term solution to critical operational shortfalls in VSW regions. The detachment is comprised of three platoons (mammals, divers, and unmanned underwater vehicles (UUVs)), providing an immediate MCM response via fly-in or transportation on ARG shipping, bringing an essential capability to a technologically challenging environment. In the mid-term, the intent is to replace the divers and mammals with semi or fully autonomous UUVs that can detect, classify, and neutralize mines in the VSW region. These forces are task-organized in a triad of Surface MCM (SMCM), Airborne MCM (AMCM), and EOD. The triad concept provides sustained combined capability MCM operations on short notice. The USS INCHON (MCS-1) provides a dedicated MCM command,

control, and support ship to coordinate and support multi-faceted MCM operations with surface, air, and Special Operations Forces.

The Navy's forward deployment of MCM ships in the Arabian Gulf and in the Western Pacific has significantly reduced the time required for SMCM forces to respond to multiple CINC MCM requirements in two likely areas of confrontation. Near term improvements to the dedicated force include upgrading the AN/AQS-14 airborne mine hunting sonar, improving the MK-105 influence minesweeping sled system, and providing the MH-53 with an organic mine neutralization system.

The Navy has invested in an aggressive programmatic initiative to deploy a fully capable organic MCM systems package with a Carrier Battle Group (CVBG). This systems' capability will allow the Task Force to conduct mine reconnaissance, mine hunting, minesweeping, and mine clearance to support maneuver in a mined environment. The far term goal is to outfit all Carrier Battle Groups and Amphibious Readiness Groups with some level of organic MCM systems packages to keep ships and personnel out of mine danger areas, while effectively conducting MCM operations.

Focused science and technology and developmental efforts are producing technological solutions to difficult mine warfare problems. For VSW and surf zone regions, efforts such as the Shallow Water Assault Breaching System and the Distributed Explosive Technology Net System are in development. These systems are designed to be used together to defeat mines and obstacles from the seaward edge of the VSW to the high water mark. The Remote Mine Hunting System (RMHS) is another system being supported to improve organic MCM capability. It will provide an organic, surface ship-hosted mine reconnaissance capability.

Marine Corps Position

To improve critical deficiencies in MCM continued support of the Shallow Water Mine Countermeasure Program is crucial. Focused science and technology and developmental efforts to provide capabilities to detect, avoid, clear, and neutralize mine threats will allow optimization of naval expeditionary force and power projection capabilities.

Naval Surface Fire Support

Discussion

OMFTS places unprecedented demands on Naval Surface Fire Support (NSFS) for range, accuracy, and responsiveness. Seabased fires will be challenged to support expeditionary operations and integrate its fires with the joint force over an extended battlespace. The Navy has developed a two-phase modernization program to upgrade its NSFS capabilities. Phase one includes improving and upgrading the capability on existing ships. Phase two is the new land attack destroyer, DD 21, and associated weapons systems.

The first phase of the Navy's modernization program includes modification of the current 5 inch gun mount, improvements in supporting arms coordination and fire control systems, and the development of Extended Range Guided Munitions (ERGM) and Land Attack Standard Missile (LASM). ERGM is a guided projectile fired from the 5 inch 62 caliber gun mount with a range up to 63 nautical miles. LASM will have a range far in excess of naval guns. It is intended to provide a highly responsive, accurate, all-weather means of addressing high pay-off targets and support to Marines deployed outside the protective range fan of naval gunfire. C2 system improvements include the Naval Fires Control System (NFCS) on shooters and command platforms and initiatives to integrate Navy and Marine supporting arms coordination systems on the command platforms.

For the second phase, the DD 21, although still a multi-warfare platform, is being developed from the keel up, with a focus on enhancement of land attack capabilities. It will be armed with the Advanced Gun System (AGS) and the Advanced Land Attack Missile (ALAM). The AGS will be a 155mm system capable of firing twelve rounds per minute to ranges beyond 63 nautical miles. The ALAM, a land attack missile tailored to meet the needs of the MAGTF commander, will provide increased range, accuracy, lethality, and responsiveness over LASM.

Marine Corps Position

Phase one of the Navy's modernization program will provide an interim NSFS capability. Phase two will provide increased range, accuracy, lethality and responsiveness required to support NSFS. These improvements will give the MAGTF commander an essential capability in executing expeditionary operations.

Marine Tactical Aviation

Discussion

The expeditionary nature of Marine aviation allows it to operate effectively across the full spectrum of basing options. Marine Tactical Aviation (TACAIR) squadrons deploy from conventional airfields when available, from aircraft carriers and amphibious ships as seabased airpower, and in the absence of adequate runways, the Marine expeditionary airfield system provides the capability to rapidly construct stand-alone airfields to support forward based TACAIR operations.

The ability of Marine TACAIR to integrate with, and reinforce, naval operations is well documented. Marine squadrons deployed aboard aircraft carriers in World War II, the Korean War, and during Vietnam. Today, every MEU(SOC) Composite Squadron includes AV-8Bs, while four Marine F/A-18 squadrons are currently integrated with navy carrier air wing deployments. Marine squadrons operating as part of navy carrier air wings or off amphibious ships have more recently participated in operations such as Operation Allied Force, Restore Hope, Deny Flight, and Deliberate Force.

Marine TACAIR assets not assigned to support shipboard deployments maintain the capability to do so. Marine TACAIR squadrons operate as an integral part of the MAGTF. During the early days of Operation Deny Flight, Marine TACAIR responded within 48 hours of the deployment order. In keeping with its expeditionary nature, Marine TACAIR will continue to maintain its aviation forces in a high state of readiness. The capability to task organize and deploy assets aboard ships or to expeditionary land bases located anywhere in the world within 72 hours of notification, will remain the Marine TACAIR standard.

Marine Corps participation in Kosovo, once again, validated its ability to task organize into a MAGTF while providing a responsive and credible warfighting capability. From forward-deployed Marine Expeditionary Units to Special Purpose MAGTFs, organic aviation assets combined to make a mobile, rapidly deployable and highly versatile force. Operating from two different air bases in Italy, an austere airfield in Taszar, Hungary, and from amphibious ships at sea fixed-wing aircraft commenced combat operations within days of arrival into the EUCOM area of operations. Marine rotary-wing aircraft operated from both ships at sea and a Forward Operating Base (FOB) in missions ranging from humanitarian assistance to close air support. Marine TACAIR has been, and will continue to be, ready to deploy an expeditionary task organized, air-heavy MAGTF capable of the full spectrum of TACAIR missions in Joint and Coalition environments to both existing airfields and austere locations.

Marine Corps Position

Air support to the MAGTF commander remains the primary mission of Marine aviation. Units scheduled in support of MAGTF elements must be trained to a level of proficiency that satisfies the MAGTF commander. Each Service brings unique capabilities to joint warfare that when integrated under joint doctrine improves service interoperability and overall warfighting effectiveness.

Marine Corps Aviation Modernization

Discussion

In addition to the aviation re-capitalization programs, several significant aviation modernization programs have been initiated, or are underway, to restore and enhance the capabilities of existing aviation platforms. This modernization effort is significant to the Marine Corps' overall re-capitalization effort. It has allowed the use of use the current and enhanced capabilities to sustain a combat edge while the next generation of aircraft, weapon systems and munitions is developed. Vital to the Marine Corps aviation modernization effort is the initiative to remanufacture our fleet of aging AV-8 attack aircraft. Other important aviation modernization initiatives include the F/A-18A upgrade, the EA-6B upgrades, the CH-53E Service Life Extension Program (SLEP), the CH-46 Engine Reliability Program (ERIP), the AH-1W Night Targeting System (NTS), the Advanced Tactical Air Reconnaissance System (ATARS), Pioneer (UAV), and Aviation Command and Control Modernization. These efforts, and many others, are vital to ensuring a capable and potent Marine Corps in the future.

- ***The AV-8B Remanufacture Program*** upgrades day attack aircraft into a more capable radar/night attack variant. The wing and many original items are retained. Added to a new fuselage is a night attack avionics suite (NAVFLIR, digital moving map, color displays, NVG lighting) and a surplus APG-65 multi-mode radar from the F/A-18. The aircraft receives the more powerful and reliable Pegasus (408) engine and an additional 6,000 hours of airframe life for 80 percent of the cost of a new aircraft.

- ***The F/A-18A Upgrade,*** ECP-583 consists primarily of avionics and hardware upgrades, which allows the F/A-18A to process and utilize the updated versions of the F/A-18C software and accessories. The modified "A" aircraft will be compatible with a Lot XVII F/A-18C aircraft; an aircraft 8 years newer. This ECP will enable the "A" aircraft to employ all current and programmed future weapons. A large portion of this modification enhances commonality between the "A" and "C" aircraft, which reduces logistics footprint, pilot and maintenance training, solves obsolescence issues and to the operational commander it becomes a single point solution. The "A" model aircraft is expected to remain in the active inventory until the 2015 time frame.

❑ ***EA-6B Upgrades*** retain Marine Prowlers as an essential combat-proven part of the MAGTF as well as the joint force. The cornerstone of the modification, repair and upgrade plans is the Block 89A-weapon system upgrade. Block 89A includes ARC-210 radios (SINGARS/Havequick capable), Embedded Global Positioning System/Inertial Navigation System (EGI), and an enhanced AYK-14 mission computer. Block 89A is the baseline aircraft configuration for the next and last expected major weapon system upgrade for the Prowler, the ICAP 3. The ICAP 3-weapon system will be a major warfighting capability that improves the aircraft's receiver suite and jamming capabilities while also improving aircrew situational awareness and reducing lifecycle costs. As the EA-6B fleet begins to reach the end of its airframe service life the re-winging and upgrades are critical to extending the aircraft's viability through 2015. The Marine Corps is scheduled to receive 10 Block 89As in FY01 and 02 for a total of 20 aircraft. ICAP is scheduled for introduction in FY04.

❑ ***The CH-53E Service Life Extension Program (SLEP)*** is critical to sustain the Super Stallion as the premier heavy lift aircraft for the MAGTF warfighter through the year 2025 when a Joint Common Lift aircraft can be procured. The current fleet of aircraft begins to reach the end of its service life in the next decade. The SLEP is currently programmed in two phases. Phase I will maintain the air worthiness of the fleet by modifying the airframe in critical structural wear points, improving tail rotor drive-shaft components and removing and replacing older KAPTON wiring. Phase II goes beyond basic air worthiness improvements with upgrades of obsolete avionics, cockpit integration, internal and external cargo systems, safety and survivability components, and dynamic components.

❑ ***The CH-46E Engine Reliability Program (ERIP)*** is essential to keep the CH-46E a viable and supportable airframe throughout the Marine Aviation "Transformation" until its full replacement by the MV-22 Osprey. By replacing the T58-GE-16 engine core and accessories, ERIP will arrest the downward trend in engine health, increase engine reliability, and restore operational power margins while providing a significant reduction in fleet labor and support costs.

❑ ***The KC-130J*** will replace the Corps' aged fleet of active force KC-130F/R Aerial Refueler/Tactical Transport aircraft. Recent results from a Service Life Assessment Program (SLAP) have confirmed that the actual fatigue life remaining on the Corps' venerable fleet of KC-130F/R Aerial Refueler/Tactical Transports is significantly less than indicated by previous data from NAVAIR. Greater reliability and maintainability (14 of

15 KC-130F/R/T readiness degraders eliminated), coupled with lower operating and support costs, will result in lower life cycle costs for the KC-130J. In addition to the increased warfighting capability associated with the newer technology inherent in the KC-130J, the Marine Corps will realize the added benefit of a reduction in manpower required to operate and maintain a KC-130J fleet.

❑ ***The AH-1W Night Targeting System (NTS)*** includes forward looking infrared, low light television, laser designator/range finder, and an automatic boresighting and tracking system. This multi-faceted enhancement enables the AH-1W to conduct its mission on a 24 hour basis and under conditions of reduced visibility. This expands the AH-1W's warfighting capabilities by increasing detection, recognition, and identification ranges in most degraded weather conditions to include low light level conditions. The laser rangefinder enhances conventional weapons delivery and supporting arms coordination missions, and the laser designator provides autonomous weapons engagement capability for the Hellfire missile.

❑ ***The Advanced Tactical Airborne Reconnaissance System (ATARS)*** is designed for the F/A-18D to restore a manned airborne reconnaissance capability to the MAGTF. The ATARS incorporates multiple sensor capabilities including electro optical, infrared, and synthetic aperture radar. The man in the loop remains the strength of this system. ATARS equipped aircraft will carry all sensor capabilities simultaneously. This multi-sensor capability will be completely selectable by the aircrew in flight. Another significant capability of ATARS is its ability to digitally transmit collected data in near real time to ground receiving stations. This information can be provided to various information/intelligence systems for national exploitation via the Joint Service Imagery Processing System-Tactical Exploitation Group (JSIPS-TEG). Consequently, ATARS, with its significant capability, is poised to become a major contributor in the national imagery arsenal.

❑ ***The Pioneer System*** will be the Marine Corps' backbone Unmanned Aerial Vehicles (UAV) until a replacement is fielded. UAVs will grow in

importance as the capability of these futuristic machines is developed. The Marine Corps ultimately views a VTOL capable UAV as a possible end state platform for the flexibility necessary for OMFTS. The Tactical Control Station (TCS) remains central to developmental efforts. TCS will give the Corps a Ground Control Station (GCS) with tremendous growth potential as well as connectivity with the whole family of UAVs from tactical to the High Altitude Endurance UAVs, as well as intelligence nodes. The Dragon Drone, Dragon, Warrior, and BURRO are UAV concepts that the Marine Corps Warfighting Laboratory is experimenting with. These experiments will provide important concept of operations experience and significant data on emerging technologies such as airframes, power plants, data links, and recovery systems.

- ***The Common Aviation Command and Control System (CAC2S)*** will provide aviation command and control modernization by incrementally replacing all current Marine Aviation Command and Control Systems (MACCS). CAC2S will provide a system that is capable of plugging into the Joint/Combined environment and is rapidly deployable and horizontally employable. CAC2S will stress shipboard compatibility while retaining joint capability ashore. The Marine Corps is nearing completion of its fielding of the AN/TPS-59(V)3 radar. The AN/TPS-59 is the Marine Corps' three dimensional, long-range air surveillance radar. The victor-3 variant includes enhanced detection, tracking, and cueing of smaller radar cross section targets to include theater ballistic missile point-of-origin/point-of-impact information. The improved radar provides land based air surveillance for the Marine component of a naval force and is a contributing sensor to the Navy's Cooperative Engagement Capability. Marine Aviation Command and Control will provide the landward "eyes" for seabased shooters as well as engagement control for land-based systems, and radar intercepts for airborne platforms. CAC2S will contribute to a commander's ability to have full spectrum situational awareness. This will produce a Joint, common, continuous and unambiguous air picture with fire quality data. This capability will enhance early detection, classification, and identification of all tracks and provide defense-in-depth with 360 degree coverage.

Marine Corps Position

The Marine Corps continues to pursue new and innovative weapon systems improvements and modernization efforts such as the AV-8B remanufacture, F/A-18A upgrade, EA-6B upgrades, CH-53E SLEP, CH-46 ERIP, AH-1W NTS, ATARS, Pioneer UAV, and Aviation Command and Control Modernization to maintain its combat superiority and tactical relevance in the changing world.

Marine Helicopter Recapitalization

Discussion

The Marine Corps has a long history of innovative solutions to warfighting requirements. In the past, when faced with the expense of replacing older aircraft such as the early versions of the AH-1, CH-46, and AV-8, the Marine Corps found affordable solutions through aircraft modernization programs. These programs were designed to correct existing aircraft deficiencies and enhance operational capability to provide the Marine Corps with a credible operational force. This is the same approach being taken to upgrade the fleet of utility and attack helicopters.

In 1995, the Secretary of the Navy approved the Marine Corps program to upgrade both utility and attack helicopters. This program, known as the H-1 upgrade, recapitalizes the entire fleet (acquisition objective of 100 UH-1N and 180 AH-1W). It builds on the existing aircraft capabilities, takes advantage of current upgrade efforts (COMNAV, Electronic Warfare and NTIS), and upgrades systems to provide the Marine Corps with an advanced fleet of utility and light attack helicopters. At the center of the upgrade is the installation of a

four-bladed rotor system, a newly developed drive train, and more powerful T700 engines. The addition of an integrated glass cockpit with modern avionics systems will provide a more lethal platform as well as enhanced joint interoperability through the digital architecture and the installation of DCS 2000 radios. In sum, this program incorporates all previously funded or planned modifications into one program, avoiding the cost of a "new start" replacement aircraft until a Joint Replacement Aircraft is fielded.

Operational enhancements include a dramatic increase in range, speed, payload, and lethality of both aircraft while significantly decreasing their logistic footprint. The utility variant will operate at nearly twice the current range with over double the payload. The attack variant will realize similar performance increases. It will also carry twice the current load of precision guided munitions with the addition of two wingtip ordnance stations. Both aircraft will achieve cruise speeds of over 150 knots. This program has coined a new word "identicality". Through use of the same major components, — drive train, cockpit and software —support for the fleet will be greatly simplified resulting in leaner logistic trains and more space available on already space-constrained amphibious and MPF ships. Moreover, these improvements will make the Marine Corps' attack and utility helicopter capabilities more compatible with the performance demands of all future war-fighting concepts.

Marine Corps Position

The H-1 upgrade program is an economical and comprehensive upgrade of both UH-1N and AH-1W helicopters that will resolve existing operational safety issues while significantly enhancing the capability and operational effectiveness of the attack and utility helicopter fleet. A key modernization effort, the H-1 upgrade will provide a bridge until the introduction of the Joint Replacement Aircraft in the 2020 timeframe.

MV-22 Osprey

Discussion

Today the Marine Corps stands on the threshold of a revolutionary capability employing 21st Century technology. Recognizing the tremendous operational advantages of tiltrotor technology, the Corps has championed the development of this innovative aircraft. The impact of this capability will be as far reaching as the Marine Corps' introduction of helicopters on the battlefield of the Korean War.

In December 1994, the Secretary of Defense announced the decision to replace the CH-46 Sea Knight helicopter with the MV-22 Osprey. The new tiltrotor aircraft has greater speed, range, and payload. It will carry 24 combat-loaded Marines enabling the MAGTF to exploit its combat power and effectively execute OMFTS well into the 21st Century.

Strategically mobile, the Osprey is capable of global self-deployment with its aerial refueling ability. The combination of range, speed, and payload of the MV-22 nearly triples the depth of a MAGTF's present day area of influence. This significantly complicates an enemy's defensive requirements and inhibits the enemy's opportunity to concentrate forces. The superior combat radius of this aircraft allows Navy ships to maintain adequate stand-off distance from enemy antiship missiles, enhanced observation devices, underwater mines, and other developing threats.

In today's volatile environment, the expeditionary Marine Corps is the most capable and cost-effective option among deployable conventional forces. The arrival of the MV-22 in the FMF will provide the flexibility needed to prevail against the increasing uncertainty of future aggressors.

Marine Corps Position

The acquisition of the MV-22 represents a tremendous improvement in the Corps' ability to project power from over the horizon to inland objectives. The MV-22 remains the Marine Corps' number one and most critical aviation acquisition priority.

Joint Strike Fighter (JSF)

Discussion

The Defense Department established the Joint Strike Fighter (JSF) program to develop a family of aircraft that would replace several legacy aircraft. The JSF will be the next generation strike fighter for the Marine Corps, Air Force, and Navy, and is being considered by the United Kingdom's Royal Air Force and Royal Navy. The JSF will replace the AV-8B and F/A-18C/D for the Marine Corps, the F-16C for the Air Force, and the F/A-18C and F-14A/D for the Navy. The JSF family of aircraft will include a Short Take-Off and Vertical Landing (STOVL) variant, a Conventional Take Off and Landing (CTOL) variant, and an Aircraft Carrier Capable (CV) variant. Commonality between the variants will help reduce both the development and life cycle costs, and will result in the greatest "bang for the buck" when compared to developing three separate aircraft.

The Marine Corps requires the STOVL variant to be capable of operations from large deck amphibious ships and austere sites, as well as from main operating bases. It will use the JSF for the following missions: Close Air Support, Air Interdiction, Armed Reconnaissance, Anti-Air Warfare, Suppression of Enemy Air Defense, Aerial Reconnaissance, Tactical Air Controller (Airborne), Assault Support Escort, support of Tactical Recovery of Aircraft and Personnel (TRAP/CSAR), and Strike Coordination and Reconnaissance (SCAR) with inherent Electronic Protection (EP), Electronic Attack (EA), and Electronic Warfare Support (ES). JSF will allow the Marine Corps to decrease its TACAIR inventory, while increasing affordability, lethality, survivability, and supportability when compared to legacy aircraft.

Marine Corps Position

The STOVL JSF is absolutely critical to the success of the Marine Corps and the MAGTF in the 21st Century as it will solve the significant problems of age/attrition currently facing Marine TACAIR. The STOVL JSF will provide the Marine Corps with a stealthy, state-of-the-art, high performance, multi-role jet aircraft that can operate within the expeditionary environment. The combination of stealth, basing flexibility and superior performance will revolutionize air warfare and Naval Aviation.

Marine Corps Aviation Precision Weapons

Discussion

The Marine Corps requires aviation weapons primarily to perform close air support, deep air support, armed reconnaissance, air interdiction, and suppression of enemy air defenses in support of the combined arms concept during OMFTS.

The Department of the Navy has established the future aviation weapons roadmap for Naval and Marine aviation. This strategy decreases the different types of weapons in the inventory by necking down to multi-purpose weapons that effectively address the multitude of threats in the 21st Century. This modernization effort will emphasize precise weapons that produce minimal collateral damage. In addition to the modernization effort, the Marine Corps is striving to maintain a high level of training for aircrews. Newly revised training and readiness manuals have set a realistic requirement for the amount of ordnance needed by aircrews to maintain proficiency and training.

The Reactive Weapon category is a principal focus for the Marine Corps for new procurements. For Marine aviation to successfully support the ground combat element, the procurement strategy has been developed to reduce the inventory of three types of weapons to one. This future weapon will be capable of being employed on both tactical aircraft and attack helicopters. Aircraft to employ this weapon are the F/A-18C/D Hornet, Joint Strike Fighter, AV-8B Harrier, and the AH-1W/Z Super Cobra.

The road map for precision weapons leads to Joint Direct Attack Munitions (JDAM) and future improvements to the family of JDAM variants. Joint Direct Attack Munitions is a mission kit that attaches to a general-purpose bomb body (1,000/2,000 pound variant) to make it more precise. This kit allows the bomb to be guided by GPS/INS and provides the capability of an accurate weapon in all weather, day or night, giving it a true precision capability. The JDAM family will replace laser-guided bombs and complement general-purpose bombs. The acquisition of these kits needs to be expanded to include all three categories of general-purpose bomb. At this time, only the 2,000 pound variant is fully funded. Aircraft to employ this weapon are the F/A-18C/D Hornet, Joint Strike Fighter, and AV-8B Harrier.

Marine Corps Position

The Marine Corps is pursuing innovative aviation weapons that will provide optimum support for the individual Marine on the ground. These weapons will allow the Marine Corps to maintain its combat superiority and tactical relevance well into the 21st Century. The Marine Corps remains committed to realistic and relevant training in order to enhance aircrew readiness and provide the most proficient combat force in the world.

Marine Corps Infrastructure

Discussion

The Marine Corps infrastructure consists of 17 major bases and stations in the United States and Japan. In keeping with the Corps' expeditionary nature, these installations are strategically located near air and sea ports of embarkation, and are serviced by major truck routes and railheads, to allow for the rapid and efficient movement of Marines and material.

Infrastructure development planning is designed to provide facilities for the efficient training of air/ground combat teams while minimizing excess or redundant capacities. The obvious advantages to a lean infrastructure are efficiency and cost-effectiveness. Challenges arise in providing and maintaining infrastructure that can meet changing mission requirements in the face of increasing external pressures and declining fiscal and manpower resources. These challenges include:

- ***Environmental Compliance.*** Our Nation has crafted a strong environmental code of conduct structured on a wide range of federal, state, and local laws and strengthened through increased regulatory agency scrutiny and enforcement. Due to the nature of the Marine Corps mission, these requirements present significant challenges. Through inspired leadership at all levels, hard work, Marine tenacity, and the Corps' approach of viewing environmental requirements as a way of doing business, the Corps has made significant strides to achieving its ultimate goal of strict compliance with all applicable environmental requirements while performing its mission. Today, Marines at all levels contribute to environmental goals by simply performing their jobs and being aware of potential environmental impacts. In this era of declining resources, the next challenge is to continue the environmental progress and protect the ability to train and operate while reducing overall costs. Pollution prevention and natural resource management strategies are being pursued to achieve goals.

- ***Encroachment Control.*** Once located in remote areas, many Marine installations are now surrounded by urban, industrial, residential and mining development. This growth of the civil sector is often accompanied by pressure for access to Marine resources or demands to curtail Marine operations to make them more compatible with surrounding land uses. Additionally, regulatory requirements such as endangered species protection continue to erode unlimited access to areas needed for training. The Corps maintains an aggressive encroachment control program that has resulted in win-win solutions to meet these demands

while not degrading the mission effectiveness of Marine installations. Encroachment takes many forms and requires constant vigilance to ensure the continued viability of Marine installations and access to the Corps' training ranges.

- ***Infrastucture Rightsizing***. The Marine Corps U.S. readiness infrastructure investment is more than $20 billion. Routine maintenance and repair protect this investment through its life cycle, but eventually facilities must be recapitalized. Recapitalization of an infrastructure investment of this magnitude once every 100 years would necessitate a Military Construction, Navy (MCON) funding stream of $200 million annually. This is not achievable within current or projected budgets. To offset this deficit, the Corps is aggressively pursuing several initiatives to downsize facilities at our bases and stations. The Corps must optimize its infrastructure usage by matching requirements to assets, no more- no less. Computerized master planning is a viable resource in this regard. The Corps is ensuring maximum use of our best infrastructure and reducing its inventory by demolishing its least energy efficient and most maintenance intensive facilities. In addition, it is examining the ways it does business to reduce the need for facilities to support the operating forces; such as, prime vendor delivery of goods instead of maintaining a warehouse of material. The Corps is looking to other services, agencies, and the commercial sector to provide needed facilities. Finally, Marines are taking advantage of recent legislation which provides greater access to public/private ventures, to reduce our requirement for funding for replacement of facilities.

- ***Base Operating Support (BOS).*** Military readiness requires an efficient and well-managed infrastructure with quality facilities and high quality of life features. In addition to capital improvements, The Marine Corps must invest in their long-term operation, maintenance, and repair. Failing to provide adequate resources will result in an eventual degradation of quality of life, operations, and mission accomplishment. Limited funding for BOS must be balanced to keep the backlog of maintenance and repair from growing, comply with environmental requirements, pursue aggressive energy savings programs, and pay for required services. These are the costs associated with responsible ownership. The Marine Corps is working to meet these challenges through a variety of means, including technological and business process changes to increase productivity. They are also exploring new ways to outsource and finance facility requirements and BOS programs require continued visibility and support throughout the budget process.

❑ ***Civilian Manpower.*** Installation management requires a diverse staff possessing skills ranging from the electrical and plumbing trades to professionals trained in environmental science and law. The Marine Corps has actively pursued more efficient business practices, including outsourcing various functions and using low maintenance technologies. This is evidenced by the fact the Marine Corps has the lowest ratio of civilian to military employees within DoD. It continues to examine this area for other efficiencies. Care must be exercised, however, to ensure that reducing civilian personnel does not impact the Corps' ability to provide a sufficiently skilled work force to adequately maintain our infrastructure. Support at all levels is required as this invaluable asset is analyzed.

❑ B***ase Realignment and Closure (BRAC).*** The limited size and lack of redundancy within the Supporting Establishment present certain advantages and disadvantages. The efficiencies associated with a small physical plant strategically located in support of air-ground teams are truly beneficial. During this period of force and base structure reductions, however, finding the means to further reduce infrastructure capacity while providing adequate facilities to meet the needs and maintain the integrity of our MAGTF organizations is difficult. Decisions made during 1995 as part of the last round of base realignments and closures provided the infrastructure blueprint for the Marine Corps into the next century. Implementing these decisions is requiring significant up front costs to achieve long-term economies. New technologies, changes in doctrine and training, a greater focus on jointness, and the fielding of new equipment necessitate continual assessment of capacity requirements and resultant planning for change. Effecting these changes will require the continued commitment at all levels within the DoD and the Congress.

❑ ***Quality of Life.*** Marines are a people intensive service. A Supporting Establishment that helps attract and retain outstanding Marines and Sailors requires a commitment to their quality of life by providing housing, recreational amenities, child care facilities, family services, community support centers, and more. The Corps has significant shortages of adequate housing for both bachelor and married service members. To satisfy the bachelor housing shortages, it will continue to commit a substantial portion of its Military Construction funding to replace all inadequate squad bay and gang head barracks by 2005. The Corps will then continue to build barracks so all Marines will be housed at the two-man per room assignment standard. The Corps is also dedicating maintenance of Real Property funding to eliminate the backlog of facility repairs to barracks by 2004. Furnishings are also being replaced on a whole-room basis and at a faster replacement cycle. For family

housing, the schedule is to replace or repair our core family housing inventory by the OSD goal of 2010. This and minor deficit reductions are being pursued using both traditional and creative financing mechanisms. In addition to housing, a commitment to excellent MWR and other Marine Corps Community Service programs and workplace quality improvements will be instrumental in recruiting and retaining our Marines. We will maintain this commitment to quality of life infrastructure improvements through the collective leadership skills and managerial abilities resident in the operating forces and the Supporting Establishment. This commitment to our people will result in improved readiness and ensure an excellent Supporting Establishment for future generations of Marines.

Marine Corps Position

The Marine Corps has a long range plan and specific goals to provide an economical infrastructure. The goal is to minimize redundancy and improve our training capabilities while providing the necessary quality of life features and environmental stewardship of the Corps' resources. Marine planning objectives are manifested in its vision of an infrastructure unparalleled in capability and efficiency to support America's expeditionary force in readiness.

Logistics Transformation

Discussion

Over the next five years, Marine Corps logistics will undergo a significant transformation that will challenge existing doctrines, concepts, and practices. As the advocate for logistics, the head of Installations and Logistics is responsible for leading this transformation. The Logistics Advocacy Board, which consists of logistics general officers, assists with defining and guiding logistics advocacy and the transformation of logistics. The approach to logistics transformation will be formed by three principle efforts.

Precision Logistics continues to embody the Corps' commitment to enhancing the MAGTF's expeditionary and joint capabilities through the transformation of logistics. The Precision Logistics initiative defines "what" Marine logistics needs to do based upon strategic, operational, and tactical requirements. Its principle focus is on the critical logistics elements necessary to implement OMFTS. These are improving equipment readiness, enhancing distribution, and developing a robust logistics command and control system.

The Marine Corps Logistics Campaign Plan communicates the Logistics Advocate's priorities and direction. It reinforces Precision Logistics by emphasizing the enhancement of operational capabilities. The plan also addresses the professional development of military and civilian logisticians, the adoption of best military and business practices, and the development of logistics advocacy. This plan is a living document and will be reviewed and appropriately revised on a semi-annual basis.

The third effort is the Logistics Integration Group whose role is to process logistics related needs through the Combat Development System and produce "how" these needs are to be met. The group's priority is to experiment with and further develop the recommendations resulting from the Integrated Logistics Capability (ILC) concept. These recommendations support the Precision Logistics focus by reducing the logistics burden on operational commanders, replacing footprint with information and speed, and by creating more capable combat service support elements. Over the next two years the Logistics Integration Group will conduct experimentation throughout the Corps to validate and refine the ILC's recommendations.

Marine Corps Position

The transformation of Marine logistics is critical to enabling MAGTF's to execute OMFTS and other emerging operational concepts. This transformation will ensure that commanders in the field will be absolutely confident that required support will be when and where it is needed.

Intelligence, Surveillance, and Reconnaissance

Discussion

Intelligence has always been the driving force of Marine Corps operations and planning, and the foundation upon which current and future operational capabilities are built. Surveillance and Reconnaissance are the means of collecting and reporting information from which intelligence is derived. Intelligence, Surveillance, and Reconnaissance (ISR) will be critical to the successful execution of Operational Maneuver from the Sea (OMFTS) and support to the Marine Corps of the next century.

From an intelligence perspective, OMFTS relies heavily on the MAGTF commander's ability, prior to arrival in the operating area, to gain timely, accurate, and relevant information on the enemy and operating environment in order to exploit the enemy's weaknesses and avoid the enemy's strengths. Once committed, organic ISR must provide 360 degree, three-dimensional, situational awareness for widely dispersed units, and the means to disseminate intelligence requirements in an expeditious and interactive fashion. Overall, OMFTS presents formidable challenges to organic collection, processing, and dissemination capabilities, as well as to the MAGTF's ability to leverage support from both theater and national level assets.

To meet these challenges, ISR will leverage emerging technologies and employ a combination of robust organic tactical assets and connectivity to theater and national capabilities. OMFTS will require ISR sensors that can be launched and controlled from ship, and the ability for intelligence to support planning and operations both afloat and ashore. ISR support to the Marine Corps of the 21st Century will place greater demands for new collection capabilities that are sustained, non-intrusive, and capable of complementing and operating with efforts already in place. Urban operations, for example, will require locally controlled, multifunctional aerial collection of imagery through organic manned and unmanned platforms with multiple modular payloads capable of providing continuous day/night, all weather coverage. Marine Corps Signal Intelligence (SIGINT) and Counter-Intelligence/Human Source Intelligence (CI/HUMINT) will require similar innovation. While technology is an important part in developing a 21st Century ISR capability, the ongoing, multi-year program to revitalize Marine Corps intelligence personnel and training will play as critical a role.

Development and maintenance of a friendly/enemy common picture of the battlespace is critical. In order to exploit the complex and dynamic operational environment of tomorrow, commanders must maintain continuous situational awareness. As the intelligence segment of MAGTF C4I, the Intelligence Analysis System (IAS) will provide the intelligence portion of the MAGTF commander's common picture of the battlespace with connectivity to higher and adjacent headquarters.

Marine Corps Position

In recognition of the increasingly crucial role intelligence plays on the modern battlefield, the leadership of the Marine Corps is committed to providing the resources necessary to ensure Marine Corps intelligence is organized, trained, and equipped to meet the challenges of today and tomorrow.

Marine Corps Warfighting Laboratory (MCWL)

Discussion

The Marine Corps Warfighting Laboratory (MCWL) was established in October 1995 at the direction of the Commandant of the Marine Corps. It is responsible for developing tactics, techniques, procedures (TTPs) and evaluating technologies that may create or refine advanced warfighting capabilities. These technologies and TTPs are field tested in concept-based experiments held in conjunction with operating forces on

both coasts. Technologies and TTPs that demonstrate potential are passed on to the Combat Development Process.

In early 1996, MCWL formulated an initial Five Year Experimentation Plan (FYEP). To date, two phases of the FYEP have been completed. The first, Hunter Warrior, examined small unit enhancements for the dispersed, extended battlespace. Urban Warrior, the second phase, examined operations in cities and urban environments and was completed in March 1999.

Capable Warrior, the last phase of the FYEP, builds on lessons learned in the two earlier projects. Its purpose is to develop or find technologies and TTPs that can enable Operational Maneuver from the Sea (OMFTS). Four major experimental areas will be explored in this effort. These areas are over-the-horizon (OTH) communications, command and control; sea-based fires; sea-based logistics and mine countermeasures (MCM).

Capable Warrior will also include Marine Corps participation in one of the largest joint experiments to date. MCWL, and its experimental unit, the Special Purpose Marine Air Ground Task Force (Experimental), will participate in the Millennium Challenge Advanced Warfighting Experiment with the U.S. Army in September 2000. In addition, at least two of the events will involve communications connectivity experiments between Navy and Marine Corps staffs and limited connectivity experiments with U.S. Army units.

These efforts will expand MCWL's already extensive joint efforts such as the Military Operations in Urban Terrain Advanced Concept Technology Demonstration (MOUT ACTD). Co-sponsored by MCWL and the U.S. Army's Dismounted Battlespace Battle Lab at Fort Benning, Georgia, the ACTD explores technological and tactical solutions for 32 identified urban warfighting requirements. To date, 10 separate service experiments and two joint experiments have been held. A culminating demonstration will take place in September 2000 at the Joint Readiness Training Center in Fort Polk, Louisiana as part of the Millennium Challenge AWE.

MCWL has also initiated a small-unit level Military Operations in Urban Terrain (MOUT) experiment , Project Metropolis, that focuses on tactics, techniques and procedures. Project Metropolis evolved from the urban combat events held during Urban Warrior and will feature experiments in several locations during 2000. The goal of the project is to develop a MOUT program of instruction for transition to the Combat Development System at Quantico.

Capable Warrior will conclude with an advanced warfighting experiment in the spring of 2001. Coalition Warrior will follow and is currently scheduled for 2001-2003. It will focus on the interoperability of joint and combined forces.

Joint Warrior will begin at the conclusion of Coalition Warrior. MCWL will lead the Marine Corps planning for the initial Major Joint Integrating Experiment, sponsored by Joint Forces Command, in 2004. Following this event, experimentation is scheduled to continue with Cyber Warrior from 2004-2006 and Ultimate Warrior from 2006-2008.

Marine Corps Position

The Marine Corps Warfignting Laboratory, through concept based experimentation, serves as the focal point for the refinement of future warfighting capabilities. The MCWL develops tactics, techniques, and procedures; evaluates advanced technologies that create or enhance future warfighting capabilities; and integrates them into the Marine Corps Combat Development System.

Technology Assessment and Development

Discussion

The Marine Corps maintains a robust Science and Technology (S&T) Program to assess and develop those technologies that can enhance maneuver, firepower, command and control (C2), logistics, training, and education. The S&T Program attempts to harness the technology needed to provide the Marine Forces with the capabilities necessary to perform their specified and implied missions. The end product can then be successfully fielded to meet the requirements of the Combat Development System (CDS).

The process for determining the Marine Corps S&T Investment Strategy is integrated with the CDS. An S&T allocation working group brings together, in one forum, the operational users and organizations that are vital to the development of capabilities. The end product of the process is a collection of prioritized capability deficiencies and requirement.

The S&T Program is composed of two elements: the Applied Research element and the Advanced Technology Development (ATD) element. The Applied Research element is responsible for all efforts short of formal development programs. It seeks solution of specific military problems and attempts to demonstrate feasibility, develop the new technology needed for future systems, and enable improvements of existing systems to meet known and projected threats for the next decade. The ATD elements use a process by which the products of research and development can be transitioned to useful applications. Additionally, the ATD element: defines operational requirements; reduces risk; identifies options, costs, and worth; achieves user/developer consensus; and defines operational utility. It also streamlines the Milestone I Decision and in some cases, may transition directly to a combined Milestone I/II Decision. Both elements support the warfighting experimental process of the Marine Corps Warfighting Laboratory (MCWL).

Marine Corps Position

The Marine Corps will continue to sponsor an S&T allocation working group to validate S&T requirements. This forum will identify technologies, integrate program feedback from the MARFORs, MCCDC, MCWL, OPNAV, ONR, and HQMC, and leverage ongoing programs from other Services and agencies. This approach will allow the Corps to apply scarce resources to develop or adapt technologies, or do both, for the Marines of tomorrow.

Modeling and Simulation

Discussion

The Marine Corps is aggressively exploiting the use of modeling and simulation across the spectrum of military missions in the operations, experimentation, training, acquisition and analysis functional domains. Increasing emphasis is being placed on employing simulators and advanced training devices and technologies to enhance Marine Corps Total Force operational and training effectiveness. A number of the key activities and initiatives actively being pursued are described here.

- ***Training Simulator Interoperability*** is a critical element in enabling Marines to conduct collective combined arms training in a virtual environment. The Marine Corps' MAGTF Federation Object Model (FOM) provides a foundation for allowing future or upgraded training simulators to interoperate with each other toward this end.

- ***Course of Action Assessment (COAA)*** is an important step in the deliberate planning process for conducting an operational mission. The Course of Action Assessment Support Tools (COAAST) project is designed to provide simulation supported course of action analysis capabilities for commanders' operational staffs. The intent of this capability is to speed up the decision making process and is planned to be either on site with the staff or available as a reach-back capability.

- ***Constructive Training Simulations*** play an important role in training Marine Corps operational staffs and units. The Marine Corps is a committed partner in the development of the next generation DoD training simulation, the Joint Simulation System (JSIMS). JSIMS will be the primary large scale training simulation used by the Marine Corps. The Marine Corps also uses the Joint Conflict and Tactical Simulation (JCATS), a high resolution model for conducting tactical level training of battalion-size and smaller units.

- ***M&S Science*** is concerned with discovering new methods and algorithms to more accurately model and simulate physical phenomena and complex human and organizational behaviors. The Office of Naval Research leads the effort to conduct research in this field..

- ***Simulation Based Acquisition*** uses new approaches of of modeling and simulation in systems acquisition which promise development and fielding of higher quality products with significant life cycle savings.

❑ ***Joint Programs*** The Marine Corps is fully engaged in joint programs such as the Joint Simulation System (JSIMS), the Joint Warfare System (JWARS), and the Joint Modeling and Simulation System (JMASS). To ensure our investment complements and builds upon DoD efforts, the Marine Corps is an active participant in Joint Staff and OSD development and implementation of M&S technologies and capabilities. Our investment strategy is founded upon leveraging joint and international development efforts.

Marine Corps Position

The Marine Corps is transitioning its training, operations, analysis, and acquisition technologies toward interoperability with the Joint M&S environment. Implementation will require continued Service and DoD investment. A significant portion of our FY99 investment was the development of Marine Corps unique capabilities within the JSIMS effort. Our continued confidence to invest in M&S efforts is ensured by joint development with DoD, industry, academia, and our Allies.

Marine Corps Security Forces

Discussion

During 1998, the Commandant of the Marine Corps and the Chief of Naval Operations agreed to reorganize Marine Corps Security Forces to dramatically enhance naval anti-terrorism/force protection globally and bolster the Department of the Navy's reputation as anti-terrorism/force protection experts. The Marine Detachments (MARDETs) afloat, previously serving aboard aircraft carriers, were disestablished in order to form a second Fleet Anti-Terrorism Security Team (FAST) Company within the Marine Corps Security Force Battalion. The establishment of the Second FAST Company provided an additional five platoons, bringing the total number of FAST platoons to eleven.

Recognizing the capability that FAST provides to Navy forces and installations overseas, the Marine Corps recommended the establishment of the FAST Deployment Program (FDP). The FDP provides select Fleet Commanders-in-Chief (CINCs) and/or Fleet Commanders forward deployed FAST platoons on six month unit deployments. There are three deployed FAST platoons participating in the FDP year round. One each is assigned to COMUSNAVCENT, CINCUSNAVEUR, and CINCPACFLT. The utility of the FDP was recently highlighted when two of the three platoons were called upon to provide security in the aftermath of the East African embassy bombings. The platoon from NAVCENT deployed to Nairobi, Kenya, and the platoon from NAVEUR deployed to Dar es Salaam, Tanzania. Their utility was further highlighted during 1999 when the platoon from Naples deployed to the American Embassy in Skopje, Macedonia, in the face of hostile local nationals and a deteriorating Balkan security situation.

Marine Corps Position

Highly skilled and responsive security forces are the best solution to today's volatile asymmetric security environment. Rapidly deployable and well-equipped FAST platoons, such as those of the FAST Deployment Program, can be deployed in advance, or in response to, a crisis and provide a significant enhancement to the force protection capabilities of the Fleet CINCs. The Marine Corps remains committed to supporting naval security as we prepare to face the security challenges of the 21st Century.

Business Reform

Discussion

The Marine Corps is committed to supporting the Secretary of Defense Reform Initiative (DRI) and the DON Revolution in Business Affairs (RBA) which are designed to apply those business practices that American industry and the public sector have successfully used to become more capable, lean, flexible and competitive. The Marine Corps program is designed to produce an outcome that achieves balanced performance and cost reduction improvements.

The focus of RBA in the Marine Corps is in the business enterprise, that part of the Marine Corps responsible for managing activities that consume resources that deliver goods and services to the operating forces. The primary "best business practice" being implemented in the business enterprise is Activity Based Costing and Management (ABC/M). ABC/M will increase visibility of performance and cost data, improve decision-making, improve performance, and reduce costs. ABC/M is being implemented world wide at every Marine Corps installation and at both maintenance depots. In the future, the Marine Corps plans to expand ABC/M to other organizations and to integrate ABC/M with strategic planning and the resource requirements process. This long-term commitment to systematically improve performance and reduce costs will make the Marine Corps a model of good stewardship.

The Marine Corps is actively involved with the DoD effort to increase/leverage competition within the government and the private sector to improve services and save money. It is are currently competing facility management and related business units at every U.S. installation. Other business units are being evaluated for competition and outsourcing in the future. Reengineering, privatization, and regionalization initiatives will complement competitive sourcing as appropriate.

Regarding acquisition, the Marine Corps, in conjunction with DoD, has embraced total life cycle management and Total Ownership Cost reduction concepts. Marine Program Managers have been designated "Life Cycle Managers" giving them "cradle-to-grave" responsibility for their systems and equipment. This designation, along with the stand-up of the Marine Corps Materiel Command, is designed to integrate the management of all phases of a system's life cycle. These initiatives will enable tradeoffs between investments in development, production and support with the goal of reducing the costs to procure, operate and maintain weapon systems, equipment and information systems in order to sustain modernization and maintain the readiness of the Marine Corps.

Other acquisition reform initiatives include: multi-year procurements, contractor incentives, reduced logistics response times, new cost tools to balance cost with performance (cost as an independent variable), and an improved financial system to capture these costs.

The Marine Corps has an active and aggressive facilities demolition program. From 1994 through 2000, it will have torn down 3.3 million square feet of unneeded or inadequate facilities. After 2000, it will continue to solicit and centrally fund demolition requirements submitted by the installations, resulting in perpetual savings in space and operation and maintenance costs, and improving safety and appearance.

The Marine Corps is actively supporting DoD initiatives to reengineer the defense travel and personal property programs and cargo documentation and financial processes. Efforts make use of the best business practices.

Marine Corps Position

The Marine Corps will continue to aggressively support Defense and DoN business reform by identifying, implementing, and using innovative tools and techniques to improve business practices. Marine Corps business improvement initiatives will build upon existing efforts and expand across the entire enterprise. Through ongoing cooperative networking and business improvement efforts the Corps will be able to accomplish its mission more efficiently and economically.

CHAPTER 3

Current Operations

Our Nation's leaders have great confidence in their Marine Corps' ability to succeed anywhere, anytime, and in any situation. The basis for such confidence is a highly effective form of operations which is uniquely suited to the Marine Corps' statutory role as the Nation's Force-in-Readiness. Marine Air-Ground Task Force (MAGTF) operating as part of a naval expeditionary force are a highly flexible, cost effective means of maintaining global U.S. presence and crisis response.

The Marine Corps stands ready to deploy the right size force, with the right set of capabilities, to get the job done rapidly and with the appropriate amount of force required. To accomplish this, MAGTF Operations rely upon scalable task organizations (e.g., Marine Expeditionary Units (Special Operations Capable) (MEU(SOC)), Marine Expeditionary Brigades (MEB), and Maritime Prepositioning Forces (MPF)), building upon whatever force is first on the scene, until the capabilities necessary to accomplish the mission are available. This unique building block approach optimizes both Marine combat power and conserves scarce defense resources.

Current Operations

Throughout 1999, the Marine Corps demonstrated why MAGTF Operations are among the most versatile instruments of U.S. military power. Whether conducting humanitarian assistance operations in Turkey, Maritime Interception Operations in the Arabian Gulf, peacekeeping support in East Timor, peace enforcement in Kosovo, security for High Value Transits through the Panama Canal, Noncombatant Evacuation Operations (NEOs) in Africa and in Albania,

or air strikes against the Former Republic of Yugoslavia, MAGTF Operations provided decision makers with numerous, tailored, crisis response capabilities applicable across the spectrum of conflict.

No other nation possesses the politically and operationally flexible range of crisis response capabilities provided by MAGTF Operations. A prime example of this flexibility is the 26th MEU(SOC)'s recent deployment to the European Theater. In response to President Slobodan Milosevic's failure to comply with the United Nations' Security Council Resolution (UNSCR) 1199 and the demands of the international community, Marines from the 26th MEU(SOC) participated in air strikes against the Former Republic of Yugoslavia in support of Operation Noble Anvil. Following the air strikes, Marines from the 26th MEU(SOC) provided the initial entry force for Operation Joint Guardian, NATO's peace enforcement operation in Kosovo. Upon completion of their role in Kosovo, 26th MEU(SOC) assisted with disaster relief in Turkey in Operation Avid Response following a severe earthquake. This ability to transition between desperate operational environments on a moment's notice is unique to the MAGTF and provides the Regional CINC's an unmatched combination of deployment and employment options.

Exercises

Marine Corps participation in realistic, worldwide exercises—whether internal specific, Joint, and/or Combined—provides a significant contribution to meeting capability requirements for sustaining a relevant force in readiness.

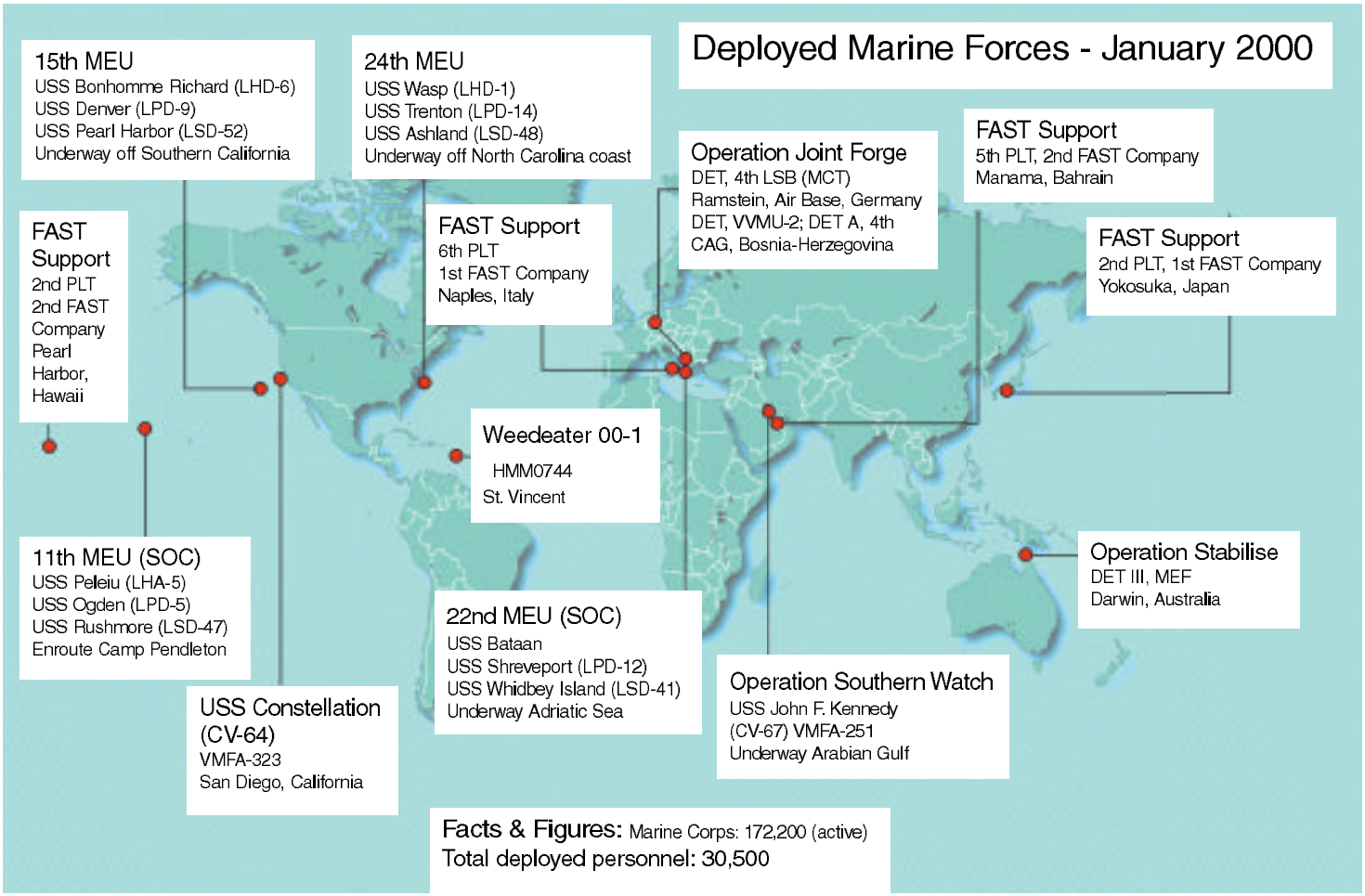
Internal Marine Corps exercises—such as Combined Arms Exercises (CAX) in Twenty-nine Palms, California; Mountain Warfare Training Center (MWTC) courses in Bridgeport, California; Weapons and Tactics Instructor (WTI) courses in Yuma, Arizona; and, MEU(SOC) workups—develop individual and unit proficiency/competency and test operational skills in order to provide those capabilities required to execute the full range of MAGTF Operations

Through Joint and Combined exercises—such as Ulchi Focus Lens in The Republic of Korea; Red Reef in Saudi Arabia; Bright Star in Egypt; Cobra Gold in Thailand; Cooperative Osprey in Camp Lejeune, North Carolina; Battle Griffin in Norway; and UNITAS in various South American countries and West African States—the Marine Corps improves its ability to rapidly project forces globally and enhances interoperability.

During 1999, Marines participated in over two hundred internal, Joint, and Combined exercises. These exercises were categorized as live fire, field training, command post, and/or computer assisted. Marine participation levels ranged from selected detachments (from small cadres of skilled specialists to trained battle staffs) to a Marine Expeditionary Brigade (MEB) in excess of two thousand troops. These exercises provided invaluable training in diverse locations around the world and ensured that we remained operationally ready and forward deployed.

Counterdrug Operations

During 1999, the Marine Corps continued to contribute to the Nation's counterdrug effort and participated in 40 counterdrug (CD) missions in support of Joint Task Force Six (JTF-6), Joint Interagency Task Force East (JIATF-E), and Joint Interagency Task Force West (JIATF-W). These missions were conducted along the U.S. southwest border, on federal lands, and within several domestic hot spots that have been designated as High Intensity Drug Trafficking Areas (HIDTAs). Individual Marines and units are assigned to these CD missions in order to provide support to domestic Drug Law Enforcement Agencies (DLEA) in their investigation of drug trafficking and apprehension of suspected traffickers throughout the United States. Seventy-five percent of the missions were executed by Marines of Marine Forces Reserve (MARFORRES).


Deployed Marine Forces - January 2000
15th MEU
USS Bonhomme Richard (LHD-6)
USS Denver (LPD-9)
USS Pearl Harbor (LSD-52)
Underway off Southern California
24th MEU
USS Wasp (LHD-1)
USS Trenton (LPD-14)
USS Ashland (LSD-48)
Underway off North Carolina coast
Operation Joint Forge
DET, 4th LSB (MCT)
Ramstein, Air Base, Germany
DET, VVMU-2; DET A, 4th
CAG, Bosnia-Herzegovina
FAST Support
5th PLT, 2nd FAST Company
Manama, Bahrain
FAST Support
2nd PLT
2nd FAST
Company
Pearl
Harbor,
Hawaii
FAST Support
6th PLT
1st FAST Company
Naples, Italy
FAST Support
2nd PLT, 1st FAST Company
Yokosuka, Japan
Weedeater 00-1
HMM0744
St. Vincent
11th MEU (SOC)
USS Peleiu (LHA-5)
USS Ogden (LPD-5)
USS Rushmore (LSD-47)
Enroute Camp Pendleton
Operation Stabilise
DET III, MEF
Darwin, Australia
22nd MEU (SOC)
USS Bataan
USS Shreveport (LPD-12)
USS Whidbey Island (LSD-41)
Underway Adriatic Sea
USS Constellation
(CV-64)
VMFA-323
San Diego, California
Operation Southern Watch
USS John F. Kennedy
(CV-67) VMFA-251
Underway Arabian Gulf
Facts & Figures: Marine Corps: 172,200 (active)
Total deployed personnel: 30,500

CY99 USMC Operations Matrix

Date	Location	Mission	Force
Oct 92 - Present	Southeast Asia	POW/MIAAccounting	Dets from 1st MAW and 3d FSSG
Apr 96 - present	Haiti	Security	Dets II MEF
Jul 96 - Present	Southwest Asia	Force Protection	Dets I MEF
Jan 98 - Present	South America	Counterdrug support	Det, MACG-28
Jun 98 - Present	Aviano AB, and Ramstein Germany	Peace enforcement/keeping	Dets, VMU-2 4th CAG and 2d LSB, 22d MEU(SOC)/ESSEX ARG
Jul 98 - Mar 99	Kosovo, Republic of Serbia	Diplomatic observer mission	Individual augmentees from II MEF
Aug 98 - Sep 99	Nairobi, Kenya	Security Augmentation	2d Plt 2d FASTCo Individual MSG Bn Augmentees Plt (Rein) BLT 2/1, 13th MEU(SOC)
Nov 98 - Mar 99	Honduras, El Salvador Guatemala	Disaster Relief Support	CSSD-68 CSSD-69 8th MTBn, COMMARFOR
Jan - Feb 99	Arabian Gulf	Maritime Interdiction Operations	Elements 31st MEU
O/AFeb 99 Mar - Jun 99 (Commenced Combat Operations)	Former Republic of Yugoslavia Aviano AB Italy (VMAQSqdns) MODLOC Aegean Sea (MEU)	Staging and subsequent Combat Operations ISO SACEUR Phased Air Operations	VMAQ-2, VMAQ-1(-) VMAQ-4(-) 24TH MEU(SOC)/Nassau ARG 26th MEU(SOC)/Kearsarge ARG
May - Jun 99	Naples, Italy	Force Protection	MCSF Co Naples, Italy
May - Jul 99	Taszar, Hungary	Combat Air Operations	MAG-31 FWD (VMFA(AW) 332 and 533
Mar - Jul 99	Skopje, Former Yugoslavian Republic of Macedonia	AT/FPSecurity Support to American Embassy	3d Plt, 1st FASTCo 6th Flt LNO 3d Plt, 2d FASTCo
Apr - Jul 99	Tirana, Albania Fier, Albania/(Camp Hope), 15km east of Fier (Camp Eagle)	Refugee Assistance and Security Operations	Individual Augments from II MEF 26th MEU(SOC)/ Kearsarge ARG
Jun - Jul 99	Kosovo - General vicinity of Gnjilane	Peacekeeping Enabling Force Operations	26th MEU(SOC)/USS Kearsarge ARG
May - Sep 99	Incirlik, Turkey	NFZ enforcement over Northern Iraq	-Det, VMGR-234-Det, VMGR-452 -Det, VMGR-352
Aug - Sep 99	Izmit, Turkey	Humanitarian Assistance	26th MEU(SOC)/ Kearsarge ARG
Sep 99 - Present	East Timor, Indonesia	Peacekeeping	Elements from III MEF and MARFOR-PAC
Ongoing (as required)	Several U.S. States	Domestic Support	I MEF AND II MEF
Apr 99	Washington, DC	Domestic Support	MCB Quantico, VA and II MEF
Sep - Oct 99	Eastern U.S.	Domestic Support	MFLAND II MEF
Sep - Dec 99	U.S. and territories	Domestic Support	USMC

Description of Action
FULLACCOUNTING - Support of national efforts to account for POWs/MIAs from the Vietnam War
U.S. SUPPORT GROUP - HAITI - Security, Counter Intelligence (CI) and Engineer Operations in support of U.S. Support Group - Haiti
DESERT FOCUS - Conducting CI Force Protection Operations in support of CJTF-SWA
LASER STRIKE - Counterdrug radar and communications support
JOINTFORGE - Peace enforcement/keeping operations
BALKAN CALM - Diplomatic observer mission
RESOLUTE RESPONSE - Security augmentation as a result of 7 Aug Terrorist Bomb Attacks
OPERATION STRONG SUPPORT - HURRICANE MITCH DISASTER RELIEF OPERATIONS - Marines conduct disaster relief operations in Central America to mitigate near-term human suffering and accelerate long-term regional recovery
Ships of the ARG MEU conducted boarding and searches of ships in Gulf
OPERATION NOBLE ANVIL/ALLIED FORCE - Deployed to support US/NATO military actions as a result of failed negotiations between Serbian and Kosovar leaders. VMAQ Sqdns providing airborne E/W operations ISO of strike packages 24th MEU(SOC) provided stand by TRAPsupport and flew combat sorties (BAI/CAS) Relieved on station by 26th MEU who assumed BAI and TRAPresponsibilities Provided fixed site security Flew combat sorties providing strike mission support
IRT violent demonstration around the American Embassy Skopje (no MSG Det assigned) C6F deployed FASTfrom Naples to Skopje
OPERATION SHINING HOPE - HArelief planning no formal tasking of direct support 26th MEU(SOC) deployed forces ashore to provide Security for Camp Hope and provided security support for Camp Eagle. Elements of BLT 3/8 provided security for CTF 64 helo's embarked aboard USS Inchon.
OPERATION JOINTGUARDIAN - Conduct Initial Entry Force tasks and support for NATO forces in Kosovo. Tasks included: providing initial command and control, conducting initial reconnaissance operations, and providing security for follow-on forces until relieved. 26th MEU(SOC) Marines involved in shooting incidents at various Marine checkpoints and operating areas. No Marine casualties were suffered.
OPERATION NORTHERN WATCH VMGR detachments providing aerial refueling support for CSAR helicopter
OPERATION AVID RESPONSE - In coordination with Office of Defense Coordination (ODC), Task Force Avid Response provided disaster relief near Izmit/Golcuk Turkey after a severe earthquake
OPERATION STABILISE - UN directed, Australian led, U.S. supported peacekeeping mission in East Timor, Indonesia, to assist Australia's contingency planning efforts for East Timor and to provide specific planning support for unique U.S. capabilities in support of potential deployment of international/UN peacekeeping force to East Timor
Wildfire suppression
50th NATO Summit security
Humanitarian Assistance/Disaster Relief Operations - Hurricane Floyd
Y2K Consequence Management Naples to Skopje

CHAPTER 4

Major Acquisition Programs

This chapter provides background information regarding key programs being pursued by the Marine Corps and the Navy to permit execution of the "Forward... From the Sea" naval warfare concept. These programs aggressively exploit advances in technology to improve readiness; enhance intelligence and information processing; increase the speed, mobility; supporting firepower, and logistics support of sea-based expeditionary forces; and significantly minimize potential casualties during future operations. This chapter is divided into five sections. The first four sections correspond to programs integral to each of the major component elements of the MAGTF. The final section address general MAGTF support programs.

PART 1 - Command Element Programs

The Command Element (CE) of the MAGTF headquarters is task organized to provide the command, control, communications, computers, intelligence, and interoperability (C4I2) necessary for the effective planning and execution of Marine Corps power projections capabilities.

MAGTF C4I is the overall concept for the migration and integration of tactical data systems, communication systems, and information security systems in the Marine Corps. MAGTF C4I provides commanders with a common tactical picture and the means to manage the increasingly complex modern battlefield. MAGTF C4I provides the ability to send, receive, process, filter, store, and display data to aid in tactical decision making. MAGTF C4I employs the same types of common hardware and software whether ashore or afloat or while in garrison or in the field. The development plan for MAGTF C4I envisions the creation of an integrated migration strategy which requires that software functionality of migrating systems be incorporated into the MAGTF Software Baseline (MSBL). Successive versions of MSBL will provide increased functionality as the threat changes and doctrine and requirements evolve.

By capitalizing on the existing core services of the Unified Build/Defense Information Infrastructure and Common Operating Environment, the Marine Corps intends to reengineer numerous systems across the mission areas of land operations, intelligence/dissemination, airspace management/air operations, fire support, combat service support, and tactical warfare simulation. The ongoing MAGTF C4I migration effort is consistent with, and supportive of, the Assistant Secretary of Defense for C3I mandate to designate DoD standard migration systems. Individual systems will be merged so information can be shared via MAGTF C4I. An additional goal is to reduce the acquisition schedule and cost of initiatives associated with MAGTF C4I.

This section provides basic descriptions of Marine Corps C4I programs/systems under development or scheduled for procurement or fielding during FY00 and FY01. The system descriptions are organized according to the primary command and coordination functional areas they support.

Global Command and Control System (GCCS)

DESCRIPTION

The Global Command and Control System (GCCS) is an intermediate step to establishing a joint Command, Control, Communication, Computing, Intelligence, Surveillance and Reconnaissance (C4ISR) system to provide total battlespace information to the warrior. It is a distributed client-server based architecture that incorporates a Common Operating Environment (COE) infrastructure with interfaces that support the hosting and execution of heterogeneous applications. This architecture has been designed, developed, and fielded not as a single system, but through periodic accretions of functionality and capability since 1994. GCCS is used over the spectrum of command from NCA to the operational level. GCCS gives the Joint Force Commander (JFC) the means to exercise authority and direct assigned and attached forces in the accomplishment of the mission. GCCS allows the Marine Corps component to share information with service specific and JTF elements. GCCS is the JFC's principal IT/ITM tool used to collect, transport, process, and disseminate C4I information.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*27*	*107*

OPERATIONAL IMPACT

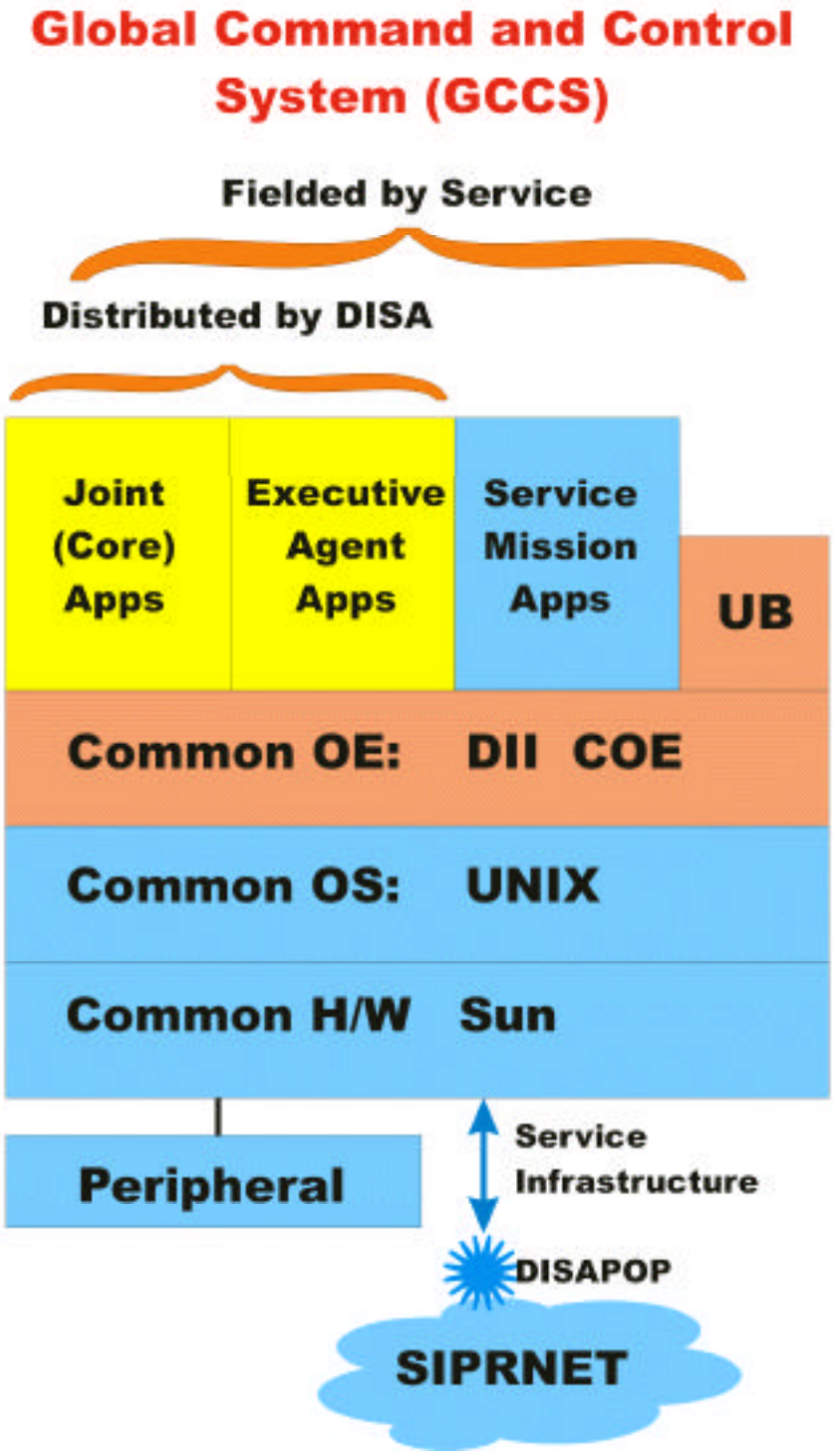
GCCS enables the Marine Corps participation in joint warfare planning and execution. The successful employment of GCCS, as a C2 system, has a direct impact upon the mission of the Marine Corps and our ability to participate as a component of the JTF.

PROGRAM STATUS

Joint GCCS does not have Operational Requirement Documents (ORDs) and Program Plans. GCCS employs an evolutionary acquisition strategy rather than the traditional milestone approach in which phases and milestones are interpreted with an evolutionary context. The decisions to approve development and delivery/fielding are revisited each time additional capabilities or functionalities are planned. Milestone-like approvals are replaced with Evolutionary Decision Reviews. This method explicitly anticipates that successive achievements will be obsolesced by subsequent advances.

DEVELOPER/MANUFACTURER

DISA is the Lead Agency for the development and maintenance.


Global Command and Control System (GCCS)
Fielded by Service
Distributed by DISA
Joint (Core) Apps
Executive Agent Apps
Service Mission Apps
UB
Common OE: DII COE
Common OS: UNIX
Common H/W Sun
Peripheral
Service Infrastructure
DISAPOP
SIPRNET

GCCS Marine Common Hardware Suite Program

DESCRIPTION

The GCCS Marine Common Hardware Suite program provides high performance and general purpose workstations and servers that support both UNIX (RISC) and Intel (CISC) base applications. The program includes two components: 1)Tactical C4I and Functional USMC programs and 2) Computer Workstations(Desktop and Laptop) and File/Application Servers Modernization. The goals of the program are to: centralize the Marine Corps-wide procurement of workstations, file application severs and software; reduce the number of levels of computer technologies to 3-4 platforms; minimize the number of equipment manufacturers; lower the total cost of ownership by reducing the number of different configurations of computers; verify hardware compliance with minimum environmental suitability testing; and provide integrated logistics support for all fielded MCHS hardware.

PROCUREMENT PROFILE:	FY00	FY01
Quatntiy: Modernization:		
Workstations	*8,842*	*11,984*
Servers	*353*	*334*

Note: Program buys are based on multiple variances in cost and configuration.

OPERATIONAL IMPACT

The GCCS Marine Common Hardware Suite (MCHS) Modernization program implements an enterprise approach to managing the existing Marine Corps IT infrastructure. This infrastructure concept is based on commercial “best practices” and focuses on reducing the total cost of ownership.

PROGRAM STATUS

A Milestone I/III decision was made and a contract vehicle was awarded in FY99. IOC was reached in the 1st Qtr FY00 with FOC expected in FY06.

DEVELOPER/MANUFACTURER

All MCHS equipment is Commercial-Off-The-Shelf (COTS) hardware procured from Original Equipment Manufacturers or their reputable reseller

Tactical Combat Operations (TCO) System

DESCRIPTION

The TCO system, as an operations component of the MSBL, automates the MAGTF's ability to receive, fuse, select, and display information from many sources and disseminate selected information throughout the battlefield. The TCO is being fielded in both a desktop Unix-based variant (TCO) as well as a laptop Microsoft Windows NT based variant, the Intelligence Operations Workstation (IOW). The TCO system attributes include: automated message processing; mission planning; development and dissemination of operations orders and overlays; display of current friendly/enemy situations; display of tactical control measures; and interfaces with local and wide area networks. The Joint Maritime Command Information System/Unified Build forms the core software for the TCO desktop system. The Command and Control Personal Computer (C2PC) application forms the core software for the laptop system. Both software baselines allow the MAGTF to share battlefield information with the Navy and Coast Guard. The TCO system will transition to the DII COE in FY00, providing seamless interoperability with the GCCS and other DII COE compliant systems.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The system links the operations section of all MAGTF units of battalion/squadron size and larger. MARFORs embarked aboard Navy ships will "plug in" to the Naval Tactical Command System Afloat. When ashore, MAGTF C4I allows interoperability with joint forces over internal and external communications networks.

PROGRAM STATUS

Milestone III was approved in 1995 and IOC was achieved in 1996, with 334 Unix systems fielded down to the regimental/group level. FOC will be accomplished with the fielding of the IOW by the end of FY00.

DEVELOPER/MANUFACTURER

Integration - Space and Naval Warfare Systems Center, Code 61, North Charleston, SC.

Hardware - Hewlett Packard, IBM

Digital Technical Control (DTC)

DESCRIPTION

The Digital Technical Control (DTC) facilitates the installation, operation, restoration, and management of individual circuits and digital links consisting of many multiplexed circuits. It provides the primary interface between subscriber systems/networks within a local area and long-haul multi-channel transmission systems to transport voice, message, data, and imagery traffic. It can add, drop, and insert digital circuits into multiplexed groups; provide a source of stable timing to connected equipment; condition circuits; and perform analog/digital, 2-wire/4-wire, and signaling conversions. It contains the monitoring, testing, and patching equipment required by technical controllers to troubleshoot and restore faulty circuits and links.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*17*	*0*

OPERATIONAL IMPACT

The DTC will act as a central management facility terminating most communication links and individual circuits for major commands and allow the MAGTF commander to install, operate, and maintain the supporting C4I system. The DTC, along with the Unit Level Circuit Switch, Tactical Data Network, Tactical Communications Central, and various multi-channel radios, will form the backbone of the Marine Corps digital communication network. The DTC will integrate the communications assets of a node into an efficient system that provides the commander seamless communications while making efficient use of limited bandwidth and equipment.

PROGRAM STATUS

The program is in acquisition phase III.

DEVELOPER/MANUFACTURER

General Dynamics Communication Systems

Tactical Data Network (TDN) System

DESCRIPTION

The TDN system consists of a network of interconnected gateways and servers. These systems and their subscribers are connected by a combination of common-user, long-haul transmission systems, LANs, single channel radios, and the switched telephone network. The TDN system provides basic data transfer and switching services as well as access to strategic, supporting establishment, joint, and other service component tactical data networks. The TDN supports network management capabilities and value-added services such as message handling, directory services, file sharing, facsimile handling, and terminal emulation support.

The TDN gateway deployed at the Marine Expeditionary Force (MEF) and other major subordinate commands will provide access to the Nonsecure Internet Protocol Router Network (NIPRNET), Secret Internet Protocol Router Network (SIPRNET), and other services' tactical packet switched networks. It will be configured in a heavy variant High-Mobility, Multi-purpose Wheeled Vehicle (H-HMMWV)-mounted shelter for mobility. A second H-HMMWV is also provided in support. The TDN server deployed to the battalions will be in four man-portable transit cases. The TDN will give MAGTF C4I users the ability to transition from AUTODIN to its mandated replacement system, the Defense Message System (DMS).

PROCUREMENT PROFILE:	FY00	FY01
Quantity:(Gateways)	*13*	*0*
(Servers)	*20*	*0*

OPERATIONAL IMPACT

The TDN augments the existing MAGTF communications infrastructure to provide an integrated data network for the MAGTF's tactical data systems.

PROGRAM STATUS

The program is in the Production phase. The production contract was awarded in January 1999.

DEVELOPER/MANUFACTURER

General Dynamics Communication Systems, Taunton, MA

Mobile Electronic Warfare Support System (MEWSS) Product Improvement Program (PIP)

DESCRIPTION

Mobile Electronic Warfare Support System - Product Improvement Program (MEWSS-PIP) is an advanced Electronic Warfare suite integrated into a Light Armored Vehicle. It provides the Marine Air Ground Task Force a mobile EW system capable of operating in a wide variety of tactical situations. The system serves as a significant force multiplier, providing friendly forces with a complete picture of communications and non-communications emitters in the area of operations. The MEWSS-PIP can provide targeting information to indirect fire centers, indications and warnings to local commanders, cross-cueing of other intelligence collection assets, and valuable signals intelligence for mission planning.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*3*	*4*

OPERATIONAL IMPACT

The MEWSS-PIP will intercept, identify, locate and exploit modern threat radio communications and battlefield radars; as well as disrupt or deny the threat's use of the electromagnetic spectrum.

PROGRAM STATUS

MEWSS-PIP is currently in Low Rate Initial Production (LRIP). Operational Testing and Evaluation is scheduled for the 2nd Qtr of FY00. Milestone III (Full rate production) will occur in FY02 with a FOC in FY05.

DEVELOPER/MANUFACTURER

Prime Integrator- Lockheed Martin Federal Systems, Owego, NY

Major Subcontractors:

Lockheed Sanders, Nashua, NH

Rockwell Collins, Cedar Rapids, IA

Condor Systems, San Jose, CA

Diesel Division GM, Ontario Canada

TecMotiv, Niagara Falls, NY

Topographic Production Capability (TPC)

DESCRIPTION

The Topographic Production Capability (TPC) is an advanced Geographic Information System, employing commercial computer hardware and software, to provide a framework for the common operational picture and produce digital and hard copy geographic intelligence for the MAGTF Commander. The TPC will be able to generate digital products to be disseminated electronically through the C4I infrastructure, as well as, low volume replication of traditional hard copy products.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*2*

OPERATIONAL IMPACT

The TPC provides the Marine Air Ground Task Force Commander his common operational picture of the battlefield. It also provides the geo spatial data needed for many other systems. Without the TPC we will not have the capability of updating and communicating with other DoD agencies like the National Imagery and Mapping Association.

PROGRAM STATUS

The TPC is currently in Program Definition and Risk Reduction Phase (Phase I). IOC is scheduled for FY01 with FOC in FY02.

DEVELOPER/MANUFACTURER

TBD

Joint Service Imagery Processing System Tactical Exploitation Group (JSIPS TEG)

DESCRIPTION

The JSIPS TEG is an imagery ground station, configured in three HMMWVs, that supports MAGTF tactical imagery exploitation operations. The JSIPS TEG provides the capability to receive, process, store, exploit, and disseminate imagery derived from the F/A-18D Advanced Tactical Air Reconnaissance System (ATARS). ATARS has electro-optical, infrared, and synthetic aperture radar sensors that are currently recorded to tape and will be capable of direct downlink to JSIPS TEG in 2001. JSIPS TEG will be capable of utilizing imagery from additional tactical and theater platforms (e.g., UAVs, U-2) when upgraded with the common imagery processor (CIP) in 1999. The JSIPS TEG can deploy with any MAGTF to provide imagery intelligence for all aspects of operational planning.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

A JSIPS TEG will be fielded to each MEF and operated and maintained by the Force Imagery Interpretation Unit (FIIU). When fully interoperable with the JSIPS National System, TEG will provide the MAGTF or a Joint Task Force (JTF) with the capability to receive, exploit, store, and disseminate imagery and imagery products from national imagery sources as well. The JSIPS TEG will then provide the MAGTF with the capability to produce and disseminate imagery reports and products from all available imagery sources.

PROGRAM STATUS

The 2d FIIU at Marine Corps Air Station, Cherry Point, NC, completed an extensive user evaluation on a prototype TEG, the results of which were used to finalize system specifications for production TEGs. IOC for the JSIPS TEG is planned for FY00.

DEVELOPER/MANUFACTURER

Prime - Raytheon (E-Systems)

Principal Subs - GDE Systems, Inc. and TRACOR (Vitro, Inc.)

Combat Identification (CID)

DESCRIPTION

CID is a combination of capabilities, systems, and technologies that when properly integrated and employed, provide near real time situational awareness to commanders and real time target identification to combatants in four mission areas: surface-to-surface, air-to-surface, surface-to-air, and air-to-air. CID systems will provide accurate characterizations of entities in the battlespace to facilitate near real time application of tactical options by commanders and real time employment of weapons systems at their maximum effective ranges by operators. The Marine Corps requires interoperable CID systems that are tailored to the unique operational requirements of each mission area. CID equipment will be employed down to the individual Marine, dependent upon the lethality of the weapons system being employed, integrating virtually all weapon systems above individual small arms. CID must facilitate and complement the projection of combat power at the distances required during littoral operations and Operational Maneuver from the Sea.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

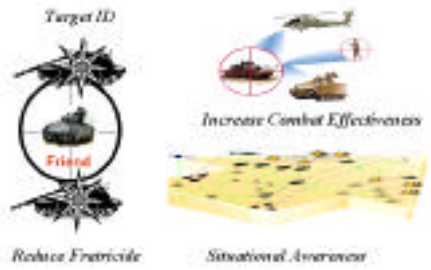
Combat Identification enhances combat effectiveness throughout the MAGTF's battlespace, contributes to Joint interoperability, provides warfighters with situational awareness and real time target identification in all mission areas. When applied with optimal tactics, techniques, and procedures, CID equipment will minimize battlefield uncertainty and provide our warriors with renewed confidence to employ their weapons with maximum lethality.

PROGRAM STATUS

The Marine Corps Combat Identification Program is currently in Phase 0. An Analysis of Alternatives is currently being conducted to identify potential material solutions to the Marine Corps Combat Identification requirement. Initial Operating Capability is scheduled for FY05 with FOC in FY10.

DEVELOPER/MANUFACTURER

TBD



Coastal Battlefield Reconnaissance and Analysis (COBRA)

DESCRIPTION

The purpose of the COBRA program is to provide rapid, tactical reconnaissance of the littoral area. The initial focus is detecting the presence of minefields, obstacles and camouflaged defenses on or near potential beach penetration areas during the planning and execution of ship to objective maneuver (STOM). The program will incorporate technologies of Advanced Technology Demonstrations (ATD), legacy and novel systems. One such ATD which demonstrated the greatest potential for satisfying the needs of the COBRA Program employed two gated-intensified multi-spectral cameras mounted and operated from a Pioneer Unmanned Aerial Vehicle (UAV) and integral ground processing equipment. The UAV payload sensor collects and records Multi Spectral Imagery using video standard, COTS equipment. The collected imagery is digitally searched by specialized algorithms within the ground processing equipment to provide rapid, automatic cueing of minefields. Methods to most efficiently deliver detection reports and imagery are being researched in conjunction with Concept of Employment (COE) development. The initial system will consist of a payload and a Ground Processing Requirement (GPR) with connectivity to the MEF IAS. Studies to incorporate the GPR as a modular addition into currently planned systems such as the JSIPS-TEG, TPC, JSTARS-CGS, NUAV TCS are underway. The system will be designed to inter-operate with TUAVs, NUAV TCS and the Marine Corps C4ISR Architecture. The planned system open architecture will facilitate insertion of emerging technological developments from several organizations.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The proliferation of landmines throughout the world has degraded the Marine Corps' ability to conduct surface born STOM. The concept of OMFTS allows us to circumvent mined areas if they can be rapidly and remotely detected. In order to rapidly and automatically conduct reconnaissance at our future areas of operation, we must obtain equipment that exploits the rapidly increasing capabilities of Data Processing Equipment (DPE), Digital Imagery Exploitation Algorithms and Geographic Information Systems. The COBRA Program in conjunction with JSIPS-TEG, TPC and MEF IAS is the first step in that direction and focused on solving one of the most disturbing problems facing current and future forces.

PROGRAM STATUS

The COBRA program entered Phase 1 in FY98. Risk reduction studies and acquisition documentation are being completed in preparation for a mid FY01 Milestone II. IOC is planned for FY05 with a FOC in FY07.

DEVELOPER/MANUFACTURER

TBD

Common Aviation Command and Control System (CAC2S)

DESCRIPTION

The CAC2S is a coordinated modernization effort to replace the existing command and control (C2) equipment of the Marine Air Command and Control System (MACCS) and to provide the Aviation Combat Element (ACE) commander with the necessary hardware, software, equipment, and facilities to effectively command, control, and coordinate air operations. The CAC2S system will accomplish the MACCS missions with a suite of operationally scalable modules capable of supporting any operational contingency. The CAC2S integrates the functions of aviation C2 into an interoperable naval system that will support the core competencies of all Marine Corps warfighting concepts.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The CAC2S, in conjunction with MACCS organic sensors and weapons systems, supports the tenants of OMFTS and fosters a Joint interoperability with other Service C2 systems. It will replace legacy C2 systems in the following Marine aviation C2 elements:

Tactical Air Command Center (TACC)

Tactical Air Operations Center (TAOC)

Direct Air Support Center (DASC)

Marine Air Traffic Control Detachment (MATCD)

Low Altitude Air Defense Battalion (LAAD BN)

PROGRAM STATUS

The CAC2S and UOC programs are being reviewed for commonalities and possible consolidation of effort. CAC2S is programmed for a Milestone 1 decision during 2nd quarter FY00. IOC/FOC is planned for FY04 and FY07, respectively.

DEVELOPER/MANUFACTURER

Engineer/Integrator - SPAWAR System Center, Charleston, SC

Air Defense Communications Platform (ADCP)

DESCRIPTION

The ADCP is a shelterized HMMWV based air defense communications node. Its primary mission is to convey Theater Ballistic Missile Defense (TBMD) information collected by the AN/TPS-59 radar to elements of the theater integrated air defense system. The ADCP receives, processes, transmits, and forwards critical voice and target data information to required MACCS agencies and Joint users of the Joint Tactical Information Distribution System (JTIDS) network.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The fielding of the ADCP enhances the ability of the MAGTF commander to effectively deploy air defense assets. Until CAC2S is fielded, the single configuration HMMWV based system will meet all interim requirements for receiving and passing cueing to internal and external units engaged in TBMD, tactical ballistic, and cruise missile defense systems.

PROGRAM STATUS

A Milestone I/II decision was rendered during FY95 and Milestone III decision was approved in FY98. System fielding is in process with FOC scheduled for FY00.

DEVELOPER/MANUFACTURER

Software - Naval Surface Warfare Center, Crane, IN

Hardware and Integration - Naval Surface Warfare Center, Crane, IN

Improved Direct Air Support Central (IDASC) Product Improvement Program (PIP)

DESCRIPTION

The High Mobility Downsized (HMD) Direct Air Support Central (DASC) is an IDASC PIP consisting of three components: downsizing/repackaging of the AN/TSQ-155 (IDASC) and OE-334/TRC (Antenna Coupler Group); automation of selected DASC functions; and communications upgrades. Elements of the program will be fielded to both the Marine Air Support Squadrons (MASS)and the Marine Tactical Air Command Squadrons (MTACS).

The AN/TSQ-207 (Communications, Air Support Central) replaces the AN/TSQ-155 IDASC and the OE-334/TRC Antenna Coupler Group for MASSs. The AN/TSQ-207 consists of five lightweight multipurpose shelters (LMS) mounted on M-1097 heavy HMMWV's towing M-116A3 trailers. Each LMS is equipped with a dynamic communications distribution system (CDS) that provides operators access to various radios, telephones, and intercoms . The DASC receives twelve ruggedized Telos SS-5 laptop computers and three Telos SS-20 servers per each AN/TSQ-207. The system will include mobile electric power and environmental control units for each vehicle/trailer set.

The AN/MRQ-12 replaces the OE-334/TRC Antenna Coupler Group, AN/TYA-16C Communications Group, and selected portions of the AN/TYQ-51 Advanced Tactical Air Command Central for MTACS. The AN/MRQ is a single LMS mounted on an M-1097 heavy HMMWV with a M-116A3 trailer. The system will include mobile electric power and environmental control units for each vehicle/trailer set.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:		
AN/TSQ-207 per MASS (2)	*0*	*0*
AN/MRQ per MTACS (3)	*0*	*0*

OPERATIONAL IMPACT

The acquisition objective is a total of 54 vehicles Each system supports 20 operators in the MASS and 26 operators in the MTACS.

PROGRAM STATUS

The program reached FOC in FY99.

DEVELOPER/MANUFACTURER

System Integrator - Naval Surface Warfare Center, Crane, IN

Tactical Air Operations Center (TAOC)

DESCRIPTION

The TAOC is comprised of several weapon systems that are in various stages of their life cycle. The individual systems include the AN/TYQ-23 (V) 1 Tactical Air Operations Module (TAOM), AN/TPS-59 (V) 1 and AN/TPS-63 air surveillance radar an interim Joint Tactical Information Data System (JTIDS) capable JTAOM utilizing a modified AN/TSC-131, and the Sector Antiair Warfare Facility (SAAWF). The AN/TYQ-23 (V) 1 will be upgraded to the AN/TYQ-23 (V) 4 and the ADCP is being considered as a replacement for existing interim JTIDS capability. The TAOC provides the equipment and organization necessary to plan, direct, and control tactical air operations, and to perform specified air space management tasks.

PROCUREMENT PROFILE:	FY00	FY01
Quantity: TAOM(V)4	*(0)*	*0*
TPS-59(V)3	*(0)*	*0*

OPERATIONAL IMPACT

The TAOM(V)4 or Operator Console Upgrade (OCU) is a reliability centered engineering change that replaces the existing operator console and provides a commercial interface to external networks. The OCU introduces GCCS functionality and windows-based man-to-machine interface. JTIDS was initially integrated through an interim JTIDS Module (JTAOM) configuration. It will be upgraded to a common TACC/TAOC solution by incorporating the AN/TYQ-82, HMMWV mounted JTIDS shelter. In a related effort, the AN/TPS-59 is upgraded to the (V) 3 configuration which incorporates a Theater Ballistic Missile (TBM) detection and tracking capability. TBM early warning and track data is disseminated to the theater via the Air Defense Communications Platform. The Navy's Cooperative Engagement Capability (CEC) is also planned to interface with both the AN/TPS-59 (as a contributor) and the TAOC (as a user) and support the establishment of a Single Integrated Air Picture. Finally; in response to a growing low altitude, cruise missile threat, the AN/MPQ-62, Continuous Wave Acquisition Radar (CWAR) will be integrated into the TAOC to enhance low altitude surveillance for Marine Corps SHORAD units.

PROGRAM STATUS

During FY97 the OCU Upgrade EMD prototypes were delivered and tested by means of a Field User Evaluation by the FMF. A Milestone III and a production contract were awarded in FY98. Initial fielding will begin the in FY00 and finish in FY01. Also during FY97 the TDCP EMD

prototypes were delivered. The TDCP underwent a successful IOT&E in FY98. The TDCP is preparing for a FY99 Milestone III decision. The SAAWF was fielded in FY96 and upgraded in FY98 to extend TAOM voice communications to operator positions. A future Combat Integration Capability/ SAAWF configuration is being developed under a joint Air Force/Marine Corps initiative.

DEVELOPER/MANUFACTURER

AN/TYQ-23(V)4 OCU Upgrade - Litton Data Systems

AN/TYQ-82 TDCP - Litton Data Systems

AN/TYQ-87 SAAWF w/Voice - MCTSSA / Litton Data Systems

MTS Radar Interface - Litton Data Systems

AN/TPS-59 (V) 3 Upgrade - Lockheed Martin

The Multi-Role Radar System (MRRS)

DESCRIPTION

The Multi-Role Radar System (MRRS) is a highly mobile radar system to be employed by the Marine Aviation Command and Control System (MACCS) in all phases of Marine Corps operations including Joint or Combined operations. The system will serve as a Gap Filler radar by providing 3-D coverage of those areas out of view of the AN/TPS-59 (V) 3 due to terrain masking or other line of sight limitations. Additionally, the radar will be capable of providing radar cueing data to all short-range air defense units deployed in support of the MAGTF. The radar is intended to replace and perform all the missions currently associated with the AN/TPS-63 radar, AN/TPS-73 Air Traffic Control radar, and the AN/MPQ-62 surveillance radar. The radar will have connectivity to the Cooperative Engagement Capability network. The radar will be deployed early during Operational Maneuver from the Sea (OMFTS) to augment sea-based air defense sensors and command and control capabilities.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The radar will provide the speed and flexibility required for enhanced low level Air Breathing Targets (ABT) detection identification, and tracking in the execution of OMFTS, Sustained Operations, and Other Expeditionary Operations. Execution and support of these strategies requires the maneuver and control of aircraft, Cruise Missile, and Unmanned Air Vehicle assets from ships well over-the-horizon direct to objectives at much greater distances inland than has been historically required. In addition, the radar will be capable of cueing and reporting on targets detected within its coverage limits to designated air command and control agencies. The reduced logistical footprint of the Radar will enhance the capabilities of MACCS elements in support of all phases of MAGTF operations. Once ashore, the Radar will possess the mobility required to keep pace with supported maneuver elements, and will complement the Marine Corps' long range radar, the AN/TPS-59 (V) 3, by providing accurate low-level ABT tracks.

PROGRAM STATUS

The MRRS has been submitted for the FY02 POM cycle. It is currently pre-milestone 0.

DEVELOPER/MANUFACTURER

TBD

AN/TPS-59 (V) 3 Radar

DESCRIPTION

The primary mission of the AN/TPS-59 radar is to provide long-range surveillance, Ground Control Intercept and a Tactical Ballistic Missiles (TBM) surveillance capability for the MAGTF. The radar operates in any and all environmental conditions associated with an on-shore combat zone. The radar supports Anti-Air Warfare (AAW) operations, enroute traffic control to a distance of 300 nautical miles (NM), and TBM surveillance to 400 NM. The AN/TPS-59 (V) 3 will serve as the primary provider of land-based long range track data to the Single Integrated Air Picture of the Navy's CEC. The radar is transportable by tactical/non-tactical aircraft, helicopter aircraft, surface shipping, and organic landing force vehicular transportation. The AN/TPS-59 (V) 3 program provided an immediate theater missile defense capability to defend against TBMs through improvements to the Marine Corps' exclusive three-dimensional long range radar.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The radar will be phased ashore in an amphibious operation, rapidly installed, and autonomously operated to provide a landward extension of the MAGTF Air Defense System. On command, the employment of the radar will be increased to include its primary function as a sensory device of the Marine Corps Air Command and Control System (MACCS). In this phase of the operation, the radar data will be supplied to the TAOC of the MACCS for the TAOC GCI operations and air traffic control in the objective area. Additionally, to fulfill its TBM surveillance capability, the radar will supply radar cueing data. This TBM surveillance capability will exist in both the autonomous and the TAOM- automated configuration.

PROGRAM STATUS

Research and development efforts beginning in FY01 will develop ECP's to replace obsolete hardware to ensure the AN/TPS (V)3 will remain viable through 2010. These will be implemented in FY03 through FY05.

DEVELOPER/MANUFACTURER

Lockheed Martin Corporation Ocean, Radar and Sensors Systems, Syracuse, N.Y.

Cooperative Engagement Capability (CEC)

DESCRIPTION

The Cooperative Engagement Capability (CEC) system enables all CEC equipped, Anti-Air Warfare (AAW) weapon systems in a battle force to operate as a single, distributed AAW system. This is accomplished by providing timely sharing of fire control quality sensor data, correlated identification data, and AAW weapon system management status via a Data Distribution System (DDS). The data is processed independently by the Cooperative Engagement Processor (CEP) on-board each Cooperating Unit (CU) to construct a detailed rack and status database in real time to provide required remote data to and from the local AAW weapon system elements (hardware and software modified for CEC). In this manner, each CU of a battle force can operate cooperatively with the other CUs, taking advantage of diverse locations and aspect angles, various AAW system capabilities, and degrees of availability by sharing sensor data, and coordinating engagements, fire control illuminators, and AAW missiles.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

CEC facilitates broader air coverage of the battle force against all airborne threats. The current flexible design as an Aerostat, AWACS, or an E-2 aircraft. CEC enables land-based systems to expand the common air situational picture and facilitate a broad-based, wide-area land and air defensive posture, supportive of a joint tactical commander and Operational Maneuver from the Sea (OMFTS).

PROGRAM STATUS

Currently the CEC is in the Phase 0. Milestone I is planned for FY00. IOC is planned for FY03 with FOC in FY05.

DEVELOPER/MANUFACTURER

Hardware - Raytheon E-Systems, St. Petersburg, FL

Software - John Hopkins University Applied Physics Laboratory, Laurel, MD

CEC Systems Integration:

Hardware - NSWC, Crane, IN

Theater Battle Management Core Systems (TBMCS)

DESCRIPTION

TBMCS is an Air Force led, ACAT 1AC program, and is the follow-on program to the Contingency Theater Automated Planning Systems (CTAPS). It is composed of a 27-workstation host system located in the Tactical Air Command Center (TACC), with remotes located throughout the MAGTF. Employed at the force and unit level, TBMCS provides the Joint Force Air Component Commander (JFACC) and subordinate staffs with a single point of access to real or near real time information and planning data necessary. TBMCS software can be divided into five functional categories: Planning, Execution Management, Resource Management, Reporting and Analysis (intelligence) and Common Tools.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*7*	*7*

OPERATIONAL IMPACT

At the force level, TBMCS provides the JFACC and subordinate staffs, with an automated spectrum of Command and Control (C2) capabilities, enabling the planning and execution of air operations. Within the Marine Corps, TBMCS is located at the TACC, with remotes located throughout the MAGTF. It provides the Air Combat Element (ACE) Commander, the tools necessary to generate, disseminate and execute the ATO in a joint, coalition and USMC only contingency. It is modular and scalable, allowing the Commander the ability to support ATO requirements for any size MAGTF, to include JFACC capability.

PROGRAM STATUS

TBMCS is an upgrade to CTAPS, which is in the Operational Support Phase (Phase III), post Milestone III of its life cycle. IOC is scheduled for FY00 with FOC in FY01.

DEVELOPER/MANUFACTURER

Developer - U.S. Air Force

Manufacturer - Lockheed Martin Mission Systems (LMMS), Colorado Springs, CO (Integration Contractor)

Expeditionary Air Traffic Control (ATC)

DESCRIPTION

Expeditionary ATC equipment provides air traffic controllers with the information necessary to safely and expeditiously control friendly aircraft and provide information to aircraft navigating in friendly airspace. ATC-CAC2S will replace the currently fielded Marine Air Traffic Control and Landing System (MATCALS) with a system of HMMWV mounted radars. The AN/TSQ-216 Remote Landing Site Tower (RLST) is a system that will replace the currently fielded TRC-195 tower cab with a HMMWV mounted control tower.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:		
ATC-CAC2S	*0*	*0*
RLST	*6*	*6*

OPERATIONAL IMPACT

ATC-CAC2S will provide a HMMWV mounted state-of-the-art ATC surveillance and precision approach radar system that significantly reduces tactical and strategic lift requirements. The system will be fully interoperable with other CAC2S applications, utilize common hardware and software, and be capable of functioning as an ACE C2 node. The AN/TSQ-216 RLST will provide a fully functional two-position control tower complemented by a robust communications capability. These two programs provide a dynamic expeditionary ATC capability.

PROGRAM STATUS

The acquisition strategy to migrate from MATCALS to ATC-CAC2S has been approved. An analysis of alternatives is currently being conducted. IOC is scheduled for FY02 and FOC is scheduled for FY05. A Milestone III decision for the AN/TSQ-216 RLST is scheduled for FY99. IOC is scheduled for FY99 and FOC is scheduled for FY00.

DEVELOPER/MANUFACTURER

ATC-CAC2S - TBD

AN TSQ-216 RLST - Sierra, NV

Advanced Field Artillery Tactical Data System (AFATDS)

DESCRIPTION

The Advanced Field Artillery Tactical Data System (AFATDS) is a joint Army/Marine Corps program to replace the Initial Fire Support Automated System (IFSAS). It employs a building block approach to automate fire support functionality. As a multi-service, integrated battlefield management and decision support system, it assists the commander in the planning, delivery and coordination supporting arms. AFATDS satisfies the fire support C2 requirement of the Marine Corps. All echelons of the Marine Air Ground Task Force will receive the AFATDS and it will be employed from the Assault Amphibious Vehicle, Light Armored Vehicle and Advanced Assault Amphibious Vehicle.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*230*	*135*

OPERATIONAL IMPACT

AFATDS will be the primary Commanders Fire Support Coordination System employed from Marine Expeditionary Force (MEF) to Battery level. AFATDS will be used to provide the commander with the ability to rapidly employ all fire support assets at his disposal. This will allow him the flexibility to determine what weapon systems to employ in shaping and dominating his battlespace. AFATDS will greatly enhance the interchange of tactical data between all MAGTF Tactical Command and Control Systems through the use of graphics, common operating applications and communications.

PROGRAM STATUS

The USMC adopted the Army's Milestone III decision in FY96. The Marine Corps made its' Procurement Decision in 99. IOC will occur in FY02. FOC is scheduled for FY02.

DEVELOPER/MANUFACTURER

Software - Raytheon Systems Company

Hardware - General Dynamics and Sun

Target Location, Designation, and Hand-off System (TLDHS)

DESCRIPTION

The Target Location, Designation, and Hand-off System (TLDHS) is a modular, man-portable equipment suite that will provide the ability to quickly acquire targets in day, night, and near-all-weather visibility conditions. Operators will be able to accurately determine their own locations as well as that of their targets, digitally transmit (hand-off) data to supporting arms elements, and designate targets for laser-seeking Precision Guided Munitions (PGM) and Laser Spot Trackers (LST). The TLDHS will be fielded to FO teams, NGF spot Teams, Tactical Air Control Parties (TACPs), and Reconnaissance teams.

The TLDHS is composed of two subsystems: the Target Locator, Designator Subsystem, which is the Lightweight Laser Designator Rangefinder (LLDR), and Target Hand-off Subsystem (THS). The LLDR and THS can be used independently or together as the TLDHS to provide the target location, designation and hand-off capability.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*51*

OPERATIONAL IMPACT

TLDHS provides increased accuracy and timeliness of fire support and improved effects of fires on target for surface and air-delivered munitions. It also provides increased operator mobility due to the reduction in size, weight, and modular design over existing systems and reduction in fratricide due to accuracy of enemy target location.

PROGRAM STATUS

TLDHS is currently in the Engineering Manufacturing and Development phase. IOC is scheduled for FY03 with FOC in FY05.

DEVELOPER/MANUFACTURER

LLDR - Litton Laser Systems, Apopka, FL

TLDHS/THS Software - Synetics Corporation, King George, VA

Data Automated Communications Terminal (DACT)

DESCRIPTION

The Data Automated Communications Terminal (DACT) will be a computer and communications terminal, or family of terminals, used in both tactical and garrison environments for preparing and exchanging information, to include situational awareness, critical to the conduct of the particular mission at hand.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*950*

OPERATIONAL IMPACT

The DACT will be the primary Command and Control Information System for Commanders below the Battalion/Squadron level within the Marine Corps. It is the forward entry device for entering information into the Marine Corps' tactical data network ultimately flowing into other C2 systems such as TCO, IAS, AFATDS, GCCS, and others. It is also the recipient device of information from those systems. The DACT will also have a large operational impact with approximately 4,000 systems planned for fielding throughout the FMF and supporting establishment.

PROGRAM STATUS

The DACT is currently in the Engineering and Manufacturing Development Phase. IOC is scheduled for FY01 with FOC in FY03.

DEVELOPER/MANUFACTURER

Hardware manufacturer: EPS/Tadiran

Vehicle Mount Adapter: Raytheon Technical Services Corp.

Software Developers: INRI, MCTSSA

Super High Frequency (SHF) Tri-Band Advanced Range Extension-Terminal (STAR-T)

DESCRIPTION

The STAR-T satisfies the Marine Corps requirement for SHF, tactical tri-band SATCOM terminals. It is a heavy HMMWV-mounted, multi-channel, tri-band SATCOM terminal. The STAR-T will replace the currently fielded Ground Mobile Forces (GMF) SATCOM terminals. It brings to the battlefield an increased channel bandwidth capability and greater operational flexibility. The STAR-T supports the equivalent of four 1.544 Mbps circuits. It can communicate over the Defense Satellite Communications System (DSCS) and commercial satellite systems. It will provide communications planners more options to support the MAGTF commander.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*40*	*0*

OPERATIONAL IMPACT

Currently, the deployed GMF multi-channel SATCOM terminals do not have the bandwidth to meet the MAGTF commander's requirement for increasing quantities of information. Fielding of the STAR-T terminal will help alleviate the burden on today's communications systems.

PROGRAM STATUS

The STAR-T is an Army lead program. It completed Phase 0, Concept Exploration, and entered the LRIP/production phase with a Milestone I/IIIA decision in 1996. Milestone IIIB is expected in FY00

DEVELOPER/MANUFACTURER

Raytheon Electronics Systems, Marlborough, MA

Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T)

DESCRIPTION

The SMART-T is a transportable, HMMWV mounted tactical SATCOM terminal that operates with Military Strategic and Tactical Relay (MILSTAR) compatible communications payloads. The SMART-T transmits an extremely high frequency (EHF) uplink signal and receives a super high frequency (SHF) downlink signal to provide robust, low-probability- of-intercept, jam resistant communications. SMART-T will provide medium data rate and low date rate communications simultaneously.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*1*	*0*

OPERATIONAL IMPACT

The SMART-T aligns the Marine Corps with the Joint Military SATCOM architecture in the EHF spectrum and provides MAGTF elements with multi-channel internal and external, long-haul, critical C2 communications. The SMART-T meets the joint requirement for a data/voice system that provides secure, mobile, worldwide, anti-jam, reliable, low probability of intercept, and tactical SATCOM that are not subject to terrain masking or distance limitations.

PROGRAM STATUS

The SMART-T contract was awarded in 1996. LRIP for the Army commenced in FY96. Full scale production will commence in FY99. IOC for the Marine Corps is FY01 and FOC is scheduled for FY02.

DEVELOPER/MANUFACTURER

Raytheon Electronic Systems, Marlborough, MA

Enhanced Position Location Reporting System (EPLRS)

DESCRIPTION

The Enhanced Position Location Reporting System (EPLRS) provides Marine Forces with a critical command, control, and situational awareness tactical data distribution network that does not currently exist. EPLRS links the dynamic MAGTF C4I tactical data system architecture with a robust, user-transparent, automatic relaying, and automatic rerouting communications network. The end product is communications connectivity to support a flexible, seamless, and integrated MAGTF C4I tactical data architecture. Packet radio technology employed within a Time Division Multiple Access (TDMA) scheme provides secure, jam-resistant, and self-healing data distribution. EPLRS provides for data transfer during unit maneuver and mobile command post operations. The system will be fielded to infantry, artillery, light armored vehicle (LAV), tank, and mobile command units.

EPLRS will be the primary entry node for sensor collected information from forward deployed units for transmission to higher headquarters; this type connectivity is not currently available.

The EPLRS system is being fielded to the U.S. Army as their tactical data distribution network, thus, data connectivity between Army and Marine Forces will be made easier when operating in a Joint environment. The Air Force is incorporating EPLRS in their Situational Awareness Data Link (SADL) program. This link provides both F-16 and A-10 aircraft the ability to see friendly EPLRS equipped forces on the ground as well as providing a data link between aircraft. The U.S. Navy is employing EPLRS as part of its KSQ-1 program. This functionality supports Marine Forces during amphibious operations.

The primary EPLRS system components are a Downsized Enhanced Net Control Station (NCS-E(D)) and Enhanced PLRS Radio Sets (RS). The NCS-E(D) provides control, timing, monitor, and cryptographic variable generation and update for the EPLRS network.

PROCUREMENT PROFILE:	FY00	FY01
Quantity: RS	*320*	*0*
NCS	*0*	*0*

OPERATIONAL IMPACT

EPLRS provides mission critical data (common tactical picture and sensor to shooter information) distribution during unit maneuver and mobile command post operations. This type of connectivity (Regiment and below) is not currently available. EPLRS links the MAGTF C4I TDS architecture with a robust, user-transparent, automatic relaying, and automatic rerouting communications network. It acts as the primary entry node for sensor collected information from forward-deployed units for transmission to higher headquarters. EPLRS will be fielded to infantry, artillery, LAV, tank, and mobile command units.

PROGRAM STATUS

The Army as lead service, issued a successful Milestone III and fielding decision in February 1997. The Marine Corps conducted a successful Operational Assessment involving Tactical Data Network (TDN) servers and various host equipment (TCO, IAS, Banyan Client PC's) in FY99. A fielding decision is scheduled for early FY00 with.IOC in FY00.

DEVELOPER/ MANUFACTURER

Raytheon

Base Telecommunications Infrastructure (BTI) Program

DESCRIPTION

The Base Telecommunications Infrastructure program provides a backbone information transmission system at every Marine Corps base and station. These systems will support the capability to electronically transfer all types of information: data, imagery, voice and video-from, to, and between all locations aboard the base or station and provide access to and from worldwide systems, including those supporting deployed forces.

The equipment purchased by this program includes copper cable, fiber optic equipment using Synchronous Optical Network (SONET) technology, Asynchronous Transfer Mode (ATM) transmission technology, and Integrated Services Digital Network (ISDN) capable telephone systems. This technology can be scaled rapidly and economically to accommodate any future bandwidth requirements.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*various*	*various*

OPERATIONAL IMPACT

The BTI program must be implemented completely and in a timely manner to ensure available, reliable support from Marine Corps bases, camps and stations to Marine forces that are deployed in training or in combat.

PROGRAM STATUS

The Operational Requirements Document is in staffing at Marine Corps Combat and Development Center (MCCDC), Quantico, VA. MCCDC is developing an Operational and Organizational concept, based on the joint Capstone requirements document for the Defense Information Systems Network.

DEVELOPER/MANUFACTURER

Northern Telecom

Public Key Infrastructure (PKI) Technology

DESCRIPTION

Public Key Technology encompasses the use of two cryptographic keys, a public key and a private key.

Public and private keys are mathematically related. The advent of complexity and speed in modern computer and telecommunications system has driven the need for a more robust and efficient form of cryptography. Public key cryptography, in addition to maintaining privacy and security, has several other security-related attributes, including digital signatures. A digital signature provides proof the originator of the message is authentic. If the originator wants to sign the message prior to sending it to an addressee, the message is passed through a mathematical function (hash function), which provides a summary (hash code) of the message itself. The hash code is then encrypted with the private key and attached to the end of the message. The resultant code constitutes a digital signature. PKI will provide an integrated public key infrastructure that supports a broad range of commercially based, security enabled applications and provides for secure interoperability with the DoD and its federal, allied and commercial partners while minimizing overhead and impact to operations. It will be developed in accordance with the DoD's Defense in Depth, layered information assurance (IA) specifications.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*TBD*

OPERATIONAL IMPACT

PKI is a vital element in achieving a secure Information Assurance (IA) posture for the Defense Information Infrastructure (DII). PKI will support the operating forces and supporting establishment by providing multiple assurance levels in order to enable users to cost effectively and efficiently select appropriate security solutions based on the sensitivity or value of the data, the level of risk, and reliance of the security mechanism on the certificate management information.

PROGRAM STATUS

The Marine Corps has set up a Marine Corps Registration Authority (RA) at MITNOC. There will be a Local Registration Authority (LRA) located at each Region. The first will be located at MITNOC due to the rapid implementation of several applications such as DTS, EDA, and Marine Corps Manpower application Marine on Line (MOL). The USMC is actively pursuing the aggressive time line set by the DEPSECDEF Memorandum dated 6 May 1999.

DEVELOPER/MANUFACTURER

TBD

Navy/Marine Corps Intranet (N/MCI)

DESCRIPTION

The N/MCI program is developing a long-term outsourcing arrangement with the commercial sector which transfers both the responsibility and the risk for providing and managing the majority of the Department of Navy (DoN) desktop, server, infrastructure, communication assets and services. The scope of this effort includes non-tactical systems and activities within the Continental United States (CONUS) and Hawaii. The Tactical Data Network (TDN) desktops and associated elements will be part of the N/MCI when they are not deployed. Marine Corps Information Technology (IT) outside the CONUS will be addressed in a follow-on program. Navy and Marine Corps personnel use IT to support DoN's core business, scientific, research, and computational activities. As DoN strives to optimize the productivity of its work force through the efficient use of desktop computers, high performance networks, and sophisticated applications, it is imperative the commercial sector deliver cost-effective services which meet mission and program needs while achieving a high level of customer satisfaction. DoN's objectives are to provide universal, secure and interoperable IT network-based services to the Naval Enterprise. Services will be provided to users on the basis of "seats." Approximately, 360,000 seats, of which 68,000 are Marine Corps, will be transitioned into the N/MCI. For each included seat, the contractor shall provide basic services including e-mail, help desk, word processing, telephone, security, data storage and retrieval. Optional services including video teleconferencing, distance learning support, and secure voice will be provided for some seats at an additional cost.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*TBD*

OPERATIONAL IMPACT

The N/MCI will provide a total force, end-to-end IT solution and will be joint-standards based. Plug-and-play interoperability will be supported in all environments including IT-21, Joint Coalition, and Host Nation in support of National Policy goals of the United States. N/MCI operations will be flexible and will support peacetime operations, low-intensity conflict/military operations other than war, major theater war, while supporting business process engineering.

PROGRAM STATUS

In development, the N/MCI was conceived and the Request for Proposal (RFP) was released in FY00. The contract award and implementation are scheduled for mid 2000 with an IOC set for FY01.

DEVELOPER/MANUFACTURER

TBD

ATLASS II

DESCRIPTION

ATLASS II is a client-server-based supply, maintenance, and materiel readiness AIS that is readily deployable and functions equivalently deployed and in garrison. The ATLASS II open segmented architecture enables the exchange of modules between other Defense Information Infrastructure Common Operating Environment (DII COE) compliant systems and any system that has a similar open standards based architecture. This open architecture also allows ATLASS II to exploit existing commercial off-the-shelf/government off-the-shelf software.

ATLASS II consolidates the intermediate and organic level supply and maintenance information management functions into a single materiel management system. It provides multiple user access to a central unit database via a local area network (LAN). Data is input through co-located or geographically dispersed client workstations. Physical interaction with the database is constrained only by LAN connectivity and security requirements. The database integrates both maintenance and supply data and processes. The database is a RDBMS located at every organizational (Battalion/Separate Company) level. The RDBMS eliminates the need for reconciliation between supply and maintenance, and facilitates queries and reports.

ATLASS II supports the doctrine associated with Operational Maneuver from the Sea (OMFTS) and sustained operations ashore by including methods of transmitting data, developing reports, and sustaining internal operations at the using unit level. ATLASS II is scalable enough to support any size deployment from the smallest detachment to a two-MEF composite, while retaining the flexibility to support the employment of forces ashore or afloat.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*various*	*various*

OPERATIONAL IMPACT

ATLASS II provides a real-time view of the materiel posture, supply and maintenance requirements, and readiness information to the battlefield commander for use in strategic and tactical decisions.

PROGRAM STATUS

The ATLASS II program is in the final stages of Phase II - Engineering and Manufacturing Development. Developmental testing and a user acceptance test was conducted at Camp Lejeune, North Carolina between May and July 1999. The ATLASS II+ program is currently undergoing field deployability testing which will be followed by shipboard testing later in FY00. A Milestone III fielding decision is expected during FY00. IOC is scheduled for FY00 with FOC scheduled for FY02.

DEVELOPER/MANUFACTURER

Software - Space and Naval Warfare System Center, Chesapeake, VA

Hardware - various

PART 2 - GROUND COMBAT ELEMENT PROGRAMS

The Ground Combat Element (GCE) is organized from resources and units of one or more divisions. This includes the division headquarters, infantry regiments, artillery regiments, and separate battalions. The mission of the GCE is to locate, close with, and destroy the enemy by fire and maneuver or repel the enemy's assault by fire and close combat. The GCE commander has the means to conduct combined-arms operations. It is imperative the GCE's resources be integrated with the full complement of MAGTF capabilities so they may be brought to bear against the enemy. For the MAGTF commander, the GCE provides a capability to exercise command and control, conduct maneuver, apply firepower, and provide force protection.

The following programs will enable the GCE to execute OMFTS through enhancements in mobility, survivability, and accuracy of fires.

Advanced Amphibious Assault Vehicle (AAAV) Program

DESCRIPTION

The Advanced Amphibious Assault Vehicle (AAAV) will join the MV-22 and LCAC, as an integral component of the amphibious triad required for executing Operational Maneuver from the Sea. The AAAV will allow naval expeditionary forces to eliminate the battlefield mobility gap and, for the first time in the history of Naval warfare, maneuver ashore in a single, seamless stroke giving both the ships and landing forces sufficient sea space for maneuver, surprise, and protection. The AAAV's unique combination of offensive firepower, armor, and Nuclear, Biological, and Chemical (NBC) protection, and high-speed mobility on land and sea represent major breakthroughs in the ability of naval expeditionary forces to avoid an enemy's strengths and exploit its weaknesses. The AAAV remains the Marine Corps' number one ground acquisition priority.

PROCUREMENT PROFILE:	FY 00	FY 01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The AAAV will allow immediate, high-speed surface maneuver of Marine infantry units as they emerge from ships located over the visual horizon 25 miles and beyond. Projection of these forces will be conducted in a manner that exploits the intervening sea and land terrain to achieve surprise and rapidly penetrate weak points in the enemy's littoral defenses to seize operational objectives.

PROGRAM STATUS

The first AAAV prototype was publicly presented in June 1999. In August 1999 the prototype began contractor shake out testing, with Developmental Testing and Early Operational Testing conducted concurrently. Under the current schedule, Full Rate Production will begin and IOC will be achieved in FY06, though the program is pursuing a strategy to achieve IOC in FY05. A total of 1013 AAAVs will be produced. FOC is planned for FY 12.

DEVELOPER/MANUFACTURER:

General Dynamics Amphibious Systems-located at the AAAV Technology Center in Woodbridge, VA

Armored Vehicle Driver's Vision Enhancer (AVDVE)

DESCRIPTION

The Armored Vehicle Driver's Vision Enhancer (AVDVE) is a passive infrared uncooled thermal imaging system operating in the 8-12 micrometer waveband that is vehicle powered. It is a single, self-contained unit that is inserted directly into a vision block hole or other aperture in the combat vehicle. A periscope head is the only part of the DVE that protrudes above the armor. It enables the driver to maneuver the vehicle by detecting temperature differences between objects and their background, and is not dependent upon visible or ambient light. The system consists of a B-Kit (sensor, display and control module) and a vehicle A-Kit (mounting hardware and cabling). The display will be remote to the vehicle commander on the M88, AVLB, and all mission role variant LAVs except the LAV-25 and LAV-AD. It will be remote to the supported element Platoon Leaders, Company Executive Officer, and Company Commander on AAV P7s.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*1,199*	*1,015*

OPERATIONAL IMPACT

It will also improve our ability to Identify Friend or Foe (IFF) in areas with limited visibility. Without the DVE the USMC will not be able to operate as effectively with U.S. Army AVDVE equipped units, due to the inability of all current USMC devices to penetrate battlefield obscurants.

PROGRAM STATUS

Follow-on Operational Test and Evaluation is scheduled for FY00, with fielding of AVDVEs scheduled to begin in FY00. IOC is scheduled for FY01 with FOC in FY03.

DEVELOPER/MANUFACTURER

Raytheon Systems Company

The MATTRACKS System

DESCRIPTION

The MATTRACKS system is being evaluated as a bolt-on/bolt-off capability to the current fleet of HMMWVs. It consists of four individual triangular track systems fastened in place of the vehicle's wheels using standard hand tools without modification of the vehicle. Providing over 3700 square inches of bearing surface, the MATTRACKS system is best suited for use in mud, soft soil, sand and snow with greatly reduced ground pressure.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The MATTRACKS system will greatly enhance the Marines capability to traverse marginal terrain to include mud, soft soil, sand, and snow.

PROGRAM STATUS

The MATTRACKS system is in the concept exploration phase.

DEVELOPER/MANUFACTURER

TBD

Interim Fast Attack Vehicle (IFAV)

DESCRIPTION

The Interim Fast Attack Vehicle (IFAV), is the immediate interim answer (2000 - 2003) for the Marine Corps' need to maintain the capability for fast attack vehicular maneuver when operating in the littorals. This capability was previously provided with the aging Fast Attack Vehicle (FAV) M-151, which was originally modified for this role in 1988. The Interim Fast Attack Vehicle is commercially procured, diesel powered and internally transportable by rotary wing aircraft.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The IFAV overcomes the shortcomings (instability on rocky roads, lack of speed, difficulty in maintenance and use of gasoline as a fuel) that exist in the current system. The IFAV accommodates an M2 .50 Caliber or a MK-19, and is well suited for numerous USMC missions.

PROGRAM STATUS

An accelerated acquisition reform program. Milestone I/III occurred in FY99, and fielding was completed in FY 00.

DEVELOPER/MANUFACTURER

Advance Vehicle Systems (AVS), Inc. / Daimler Chrysler

Amphibious Assault Vehicle (AAV) Reliability-Availability-Maintainability/ Rebuild to Standard (RAM/RS) Program

DESCRIPTION

The Amphibious Assault Vehicle (AAV) Reliability, Availability, Maintainability/Rebuild to Standard (RAM/RS) Program was approved by the Commandant in June 1997. This program focuses efforts on reducing total ownership costs by identifying the top (10) fleet cost drivers. Specifically, a Bradley derivative V903 engine rated at 525 hp replaced the existing CUMMINS V903 400 hp engine. Also, the existing suspension was replaced with a Bradley derivative suspension. The suspension replacement requires that each hull's suspension area be cut, new metal welded on and new machining performed to permit "bolt on" application of the new suspension system. In each case there is greater than 90% commonality with the Army's fleet of more than 5000 Bradley vehicles. This enhances the USMC logistics capability, permits higher volume procurements of the sub-systems, provides "economies" of parts procurement and revitalizes a vendor base for supporting this aging platform. The rebuild to standard portion was specifically tailored to address fleet problems. The RAM/RS program will modify 680 of the 1322 AAV7A1 vehicles in the USMC inventory at the rate of 170 vehicles per year.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*170*	*170*

OPERATIONAL IMPACT

The RAM/RS program will ensure the AAV remains a viable weapon system until the AAAV is fielded in FY06 to FY12.

PROGRAM STATUS

Milestone III review was successfully in 1998. Production commenced in FY99. IOC was achieved in FY99 with FOC in FY03.

DEVELOPER/MANUFACTURER

United Defense LP, is providing the Hull Modification, suspension kits and other related parts. Engines are provided by Cummins through an U.S. Army contract. Rebuild is accomplished by the Marine Corps Logistics Bases Maintenance Centers in Albany, GA and Barstow, CA.

Tactical Unmanned Vehicle - Medium (TUV-M)

DESCRIPTION

The TUV-M will provide Marine forces with an unmanned, tele-operated ground vehicle for remoting combat tasks in order to reduce risk and neutralize threats. The primary function of the TUV-M is to provide the Ground Combat Element (GCE) with unmanned tactical scouting/surveillance capabilities. The system is designed primarily to support dismounted infantry during the performance of their mission, across the spectrum of conflict and range of military operations. The TUV-M will be expeditionary in nature, inexpensive, easily operated, durable, highly mobile, and multi-functional. The system will use a modular configuration and will not increase the expeditionary embarkation footprint or manpower requirements of the MAGTF. The system will use designated, vice dedicated, operators and organic vehicles for transportation. This is a joint program with the U.S. Army.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

This system will increase operational capabilities through its ability to: Perform remote combat tasks, thereby minimizing risk to individual Marines by eliminating or reducing their exposure to enemy fire; Enhance the ability of tactical commanders and the MAGTF to rapidly detect, identify, locate, and neutralize a variety of threats to include enemy force activity, chemical and biological agents, and impassible terrain or unusable routes/roads; Provide real time intelligence to tactical commanders, thus providing them with additional time and distance to effectively make decisions and execute plans maximizing the effects of combat power upon enemy vulnerabilities; Provide the capability for the remote application of non-lethal weapons during OOTW operations.

PROGRAM STATUS

Currently in the Program Definition and Risk Reduction Phase progressing toward a Milestone II scheduled in FY00. IOC scheduled for FY04 with FOC in FY05.

DEVELOPER/MANUFACTURER

TBD

Lightweight 155mm Howitzer (LW155)

DESCRIPTION

The LW-155 is a joint USMC/Army 155mm towed artillery system that will meet or exceed all the requirements of the current M198 system while reducing the weight from 16,000 to 9,000 pounds. The lower weight of the LW155 allows for much faster emplacement and displacement and also allows for tactical lift by the CH-53D and MV-22, and its smaller size footprint reduces the strategic lift required. While the crew size has not changed from the M-198, the actual operation of the howitzer requires fewer personnel, allowing for local security and dispersed battery operations. The lighter XM777 makes for a highly mobile fire support system for OMFTS and operations ashore. The LW-155 also offers significant advantages in the areas of automatic breech opening, automatic primer feed, crew ergonomics, stability, and safety. The weapon is compatible with all U.S. and NATO standard and developmental 155mm munitions and propelling charges. The maximum rate of fire is five rounds per minute. Maximum range using unassisted projectiles is 24 kilometers (15 miles), and with assisted projectiles it is 30 kilometers (18 miles). LW-155 can traverse 400 mils left and right of center. The lightweight design of the 155 also allows for quick, easy shifting to fire missions outside primary traverse limits.

The development of a pre-planned product improvement which digitizes the weapon is being funded by the U.S. Army. This upgrade known as Towed Artillery Digitization (TAD) will add an aiming and pointing system, on board GPS location, on board fire control computations, and radio communications. The fire control computer will integrate data from a muzzle velocity system as well as stored data from previous missions and shell fuze combinations. These enhancements will greatly increase response time as well as accuracy. The battery will no longer need to wait for survey, but can emplace in any suitable location quicker and with better accuracy than available today even with survey. These capabilities allow for coordinated massed fires from dispersed firing locations. TAD will also provide an automated direct fire sight that integrates a laser range finder with a ballistic computer to deliver probability of kills not achievable with conventional systems. The TAD upgrades can be retrofitted onto the early USMC howitzers by 2nd echelon mechanics.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The LW-155 will provide significant increases in performance over the current M198 system. Compared to the M198 survivability is increased by 70%, lethality is improved, providing 25% more kills, and the weapon can traverse 20% more terrain than the system it is replacing.

PROGRAM STATUS

The program is in the Engineering and Manufacturing Development (EMD) phase with first EMD weapon being delivered in the summer of 2000. EMD is scheduled for completion in late FY01. Production is scheduled to begin in FY02 with IOC (first two Battalions) scheduled for FY04. TAD development began in late 1999 and will continue through FY03. Production will begin in late FY03.

DEVELOPER/MANUFACTURER

Developed by Vickers Shipbuilding & Engineering Limited, in the United Kingdom. Plans are to manufacture up to 70% of the weapon in the United States by a contractor who is still to be determined.

Javelin

DESCRIPTION

The Javelin System is a man-portable, fire-and-forget, medium-range antitank weapon system consisting of the Command Launch Unit (CLU) and the Round. The CLU's Imaging Infrared (I2R) system is used to detect targets during conditions of poor visibility and night operations. The Round consists of the fire-and-forget missile and the discardable Launch Tube Assembly (LTA). The fire-and-forget capability increases the gunner's ability to survive and continue fighting. The Javelin can kill a target at a range of greater than 2,000 meters. In addition, the missile has two gunner-selectable flight modes, the Top Attack mode allows the missile to impact on top of the target and the Direct Attack mode allows the missile to engage targets that are in a covered position. The Javelin has a "soft launch" for minimized launch signature and firing from enclosure capability. An elevated trajectory, combined with tandem, shaped-charge warheads, optimizes the Javelin's lethality against modern tanks. Eight Javelin systems will replace the twelve DRAGON systems currently in the Anti-armor Section, Weapons Company, Infantry

Battalion. The standard combat load for a 2 man Javelin team is one CLU (14.5 lbs.) and 3 rounds (35 lbs. ea.). The Anti-armor section will be reduced from 24 to 16 Marines, resulting in an overall saving of 264 structure spaces.

PROCUREMENT PROFILE:	FY00	FY01
Quantity: Missiles	*998*	*293*
Launchers	*77*	*0*

OPERATIONAL IMPACT

Javelin more than doubles the range of the DRAGON currently employed in the Infantry Battalion. Its increased lethality, added range, selectable attack modes and soft launch capability give increased flexibility to the commander. A typical 24-hour mission for Javelin would include 16 hours in the defense and 8 hours of offensive combat. In the defense, the Javelin team would expect to move 2.5 miles and use the CLU as a day and night observation device. With vehicle support, Javelin teams could be employed beyond the forward edge of the battle area in hunter killer teams to disrupt advancing enemy armor. During offensive operations the Javelin team would move 3 to 5 miles and act as an overwatch for advancing infantry.

PROGRAM STATUS

Javelin is in the second year of Full Rate Production. IOC was achieved in early FY00. FOC is scheduled for FY03.

DEVELOPER/MANUFACTURER

Raytheon/Lockheed Martin Javelin Joint Venture

Predator

DESCRIPTION

The Predator SRAW is a one-man portable, short range, disposable, fire-and-forget antitank weapon. It is capable of defeating all current and future Main Battle Tanks incorporating advanced armor protection, supplemental armor kits, and explosive reactive armor. The Predator features an advanced inertial guidance and control system, a soft launch capability, and a lethal, explosively formed penetrator warhead. Once launched, the missile flies in a top-attack (i.e., fly over, shoot down) profile and uses optical and magnetic sensors to detect the target and detonate the warhead. Predator can effectively engage moving targets from 17 to 200 meters and stationary targets from 17 to 600 meters. Its modular design will enhance the ability to incorporate future preplanned product improvements.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*698*

OPERATIONAL IMPACT

The Predator (SRAW) will provide the infantry battalion with the organic capability to engage and destroy ERA-equipped Main Battle Tanks at ranges between 17 and 600 meters. Its soft-launch (fire from enclosures) and fire-and-forget features will significantly enhance both gunner survivability and the ability of the battalion to conduct anti-armor operations in urban terrain. It will provide greater range and lethality than both the AT-4 and SMAW (HEAA).

PROGRAM STATUS

The Predator (SRAW) program is in the final stages of the Engineering and Manufacturing Development (EMD) phase. All Developmental Testing is scheduled to be completed during FY00. Initial Operational Test and Evaluation also will be conducted during FY00 with the Milestone III also scheduled for FY00. FOC is scheduled for FY03.

DEVELOPER/MANUFACTURER

Principle Development Activity - Naval Surface Warfare Center, Dahlgren, VA, Division Prime Contractor - Lockheed Martin Electronics and Missile Division, Orlando, FL

Complimentary Low Altitude Weapon System (CLAWS)

DESCRIPTION

CLAWS is a MEU deployable, highly mobile, high firepower, surface to air weapons system intended to complement (not replace) existing Marine Corps Short Range Air Defense (SHORAD) assets. The system is complementary in that it provides an increased range and target set over that of any existing SHORAD systems. The CLAWS is especially lethal against the developing Cruise missile threat. CLAWS is an assemblage of Commercial off the shelf/Government off the shelf (COTS/GOTS) equipment and includes three primary components: a Heavy HMMWV for mobility, a HMMWV mounted launch platform for missile support and command and control (C2) interface, and a missile. The Advanced Medium Air to Air Missile (AMRAAM) has been demonstrated to be the missile of choice at this stage of development.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

CLAWS is a complementary air defense capability providing speed and flexibility required for the execution of Operational Maneuver from the Sea. It will possess the mobility/lethality required to keep pace with supported maneuver elements to fill gaps in Naval Air Defense coverage created by extended littoral operations. It will complement Stinger/Avenger systems by prosecuting enemy cruise missiles and other air breathing targets beyond the capabilities/ranges of these systems.

PROGRAM STATUS

A Milestone 0 decision for CLAWS in 1999 and is subsequently proceeding with concept exploration activities. IOC is planned for FY05 with FOC in FY06.

DEVELOPER/MANUFACTURER

None

Anti-Personnel Obstacle Breaching System (APOBS)

DESCRIPTION

APOBS is a self contained, two-man portable obstacle breaching system packaged in two 65-pound backpacks. It can be deployed in less than 120 seconds, has a safe standoff distance of 25 meters, and creates a breach lane 0.6 meters wide by 45 meters long. APOBS is 90% effective against single impulse Anti-Personnel (AP) mines. Other mines, such as double impulse or magnetically fused mines, will remain intact unless systematically detonated or damaged by the explosives in APOBS. APOBS will replace the M1A2 Bangalore Torpedo Demolition Kit currently in the inventory.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*1,089*

OPERATIONAL IMPACT

APOBS significantly improves the standoff breaching capability of Marine Corps infantry and combat engineer elements against AP mines and wire obstacles. One APOBS employed by two Marines from a 25-meter standoff distance creates a breach lane that presently requires three bangalore torpedo kits (564 LBS), a squad of Marines, and 15 minutes to deploy.

PROGRAM STATUS

A Milestone III decision was made in FY99. Systems produced in FY99 will be used for production prove-out testing. Full rate production will begin in FY01. IOC is scheduled for FY02 with FOC in FY07.

DEVELOPER/MANUFACTURER

The Ensign-Bickford Company, Simsbury, CT

Thermal Weapons Sight (TWS)

DESCRIPTION

The Thermal Weapons Sight (TWS) is a lightweight, low power, high performance Forward Looking Infrared device. TWS will augment/replace existing crew-served night vision sights. It does not rely on visible light for operation, and is virtually unaffected by weather and obscurants (both natural and man made). The TWS operates by discerning the temperature variation between targets and their background. The TWS is completely passive and although designed for target detection and engagement with Marine Corps crew served weapons, can be used for all weather surveillance.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*743*

OPERATIONAL IMPACT

TWS provides twenty four (24) hour target detection, recognition, identification, and engagement capability for Marines armed with ground mounted crew served weapons. With this technology Marine gunners and crews can remain undetected while engaging threat targets. Currently, TOW and DRAGON anti-armor missiles, as well as numerous aircraft fire control systems use FLIR to ensure targeting capability in all weather, under the widest range of battlefield conditions. TWS provides ground units with a versatile long range all weather targeting capability against the complete range of threats (personnel, vehicles, armor, air) found on the modern battlefield.

PROGRAM STATUS

The U.S. Army, as the Lead Service, has reached Milestone III for the Low Rate Initial Production and Bridge configured TWS Operational Test and Evaluation is scheduled for FY00, with a Marine Corps Acquisition Decision expected in FY01. IOC is anticipated in FY03 with FOC in FY07.

DEVELOPER/MANUFACTURER

Raytheon Systems Company

M1A1 Firepower Enhancement Program (FEP)

DESCRIPTION

The Firepower Enhancement Program (FEP) is a suite of upgrades for the M1A1 Tank. It will include a second-generation thermal site and a north finding/far target location capability. This will allow overmatch of threat FLIR capabilities, far target location/hand-off, improved situational awareness.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The firepower enhancements program will increase the capabilities to detect, recognize, and identify targets, all-weather engagement ranges, crew situational awareness and the target hand-off capability

PROGRAM STATUS

The FEP is currently in phase 0. The IOC is planned for FY05 with FOC in FY08.

DEVELOPER/MANUFACTURER

TBD

Light Armored Vehicle Service Life Extension Program (LAV SLEP)

DESCRIPTION

The Light Armored Vehicle Service Life Extension Program (LAV SLEP) will ensure the LAV's combat capabilities are preserved through 2015, or until a replacement system is fielded. The SLEP will accomplish this by enhancing mission-specific performance, such as survivability and lethality; improving reliability, availability, and maintainability; and reducing operations and support costs. Two facts underpin the SLEP requirement: the proliferation of weapon system technologies project a more capable threat to the LAV; and projections of current trends of LAV Fleet operations, support, and sustainability show serious issues in operating and supporting the LAV through 2015.

PROCUREMENT PROFILE:	FY00	FY01
Quantity Kit Procurement	*0*	*0*
Installation	*0*	*0*

OPERATIONAL IMPACT

The SLEP will ensure that the LAV FOV can accomplish its assigned missions through 2015 at reduced operations and support costs. The SLEP will enable the Light Armored Reconnaissance Battalion to better perform reconnaissance and security missions, offensive and defensive missions or other operations as the supported Commander may direct.

PROGRAM STATUS

Currently in the Program Definition and Risk Reduction Phase progressing toward a Milestone II scheduled in FY00. IOC is scheduled for FY05 with FOC in FY09.

DEVELOPER/MANUFACTURER

TBD

Light Armored Vehicle Command and Control (LAV-C2) Modification

DESCRIPTION

The Light Armored Vehicle Command and Control (LAV-C2) Program Upgrade will provide a mobile, mission tailorable command and control system that will enhance situational awareness, interoperability to, and connectivity with all required Marine Air Ground Task Force (MAGTF) communications links within the framework of the Marine Corps' C4I architecture. The LAV-C2 Upgrade Program is simultaneously investigating two potential technological solutions to current deficiencies. First a system to integrate multiple Marine Corps "legacy" C4I systems, such as the DACT, IOW, AFATDS, IAS, TDN, EPLRS, mobile SATCOM, and other MAGTF C4I systems. The second solution incorporates state-of-the-art waveform communications technology recently developed for the US Army's "Army Airborne Command and Control System" (A2C2S). This technology can transmit and receive multiple, simultaneous communications waveforms such as HF, UHF, VHF, and mobile SATCOM, allowing for connectivity and interoperability to all required communications circuits and USMC C4I systems from one system based on the Joint Communications Information Terminal (JCIT). The A2C2S configuration will be compliant with the Joint Tactical Radio System Program.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The LAV-C2 will provide the Light Armored Reconnaissance (LAR) Battalions and independently operating LAR companies a highly mobile command and control capability that provides the ability to conduct deep

maneuver over extended ranges for prolonged periods, during amphibious operations and subsequent operations ashore.

PROGRAM STATUS

LAV-C2 is currently in Phase I, Program Definition and Risk Reduction.

DEVELOPER/MANUFACTURER

TBD

Stinger Missile System Service Life Extension Program (SLEP)

DESCRIPTION

Stinger Missile platforms provide defense against high speed, close in, low altitude, fixed and rotary wing aircraft throughout the theater of operations. The Stinger Missile is a heat seeking air defense guided missile capable of man-portable, shoulder launch or vehicle launch via the Standard Vehicle Mounted Launcher. The Stinger Missile employs a unique image scanning technique that allows it to discriminate among targets, flares, and background clutter. The Stinger Missile is also unique in that it possesses the Target Adaptive Guidance technique that biases missile orientation toward vulnerable portions of the aircraft and assures maximized lethality. This superior lethality is derived from hit-to-kill accuracy, high warhead lethality, and the impact force of the Stinger Missile's kinetic energy generated by speeds of up to Mach 2.0. The Stinger Missile is also highly deployable because it is a lightweight, self-contained air defense system that can be rapidly deployed in any combat situation. The Stinger Missile's fire-and-forget ability also increases the survivability of its crew. This fire-and-forget technology allows gunners and platforms to take cover or engage new targets immediately after firing. The Stinger Missile also has a low life cycle cost. The Stinger Missile is issued as a certified round of ammunition, so it requires no field maintenance or associated logistical costs. The upgrade (SLEP) consists of a new generation processor, software enhancement, a roll frequency sensor, and a lithium battery.

PROCUREMENT PROFILE:	FY00	FY01
Quantity: Block I	*0*	*356*
SLEP	*0*	*544*

OPERATIONAL IMPACT

The Stinger Missile is the only Air Defense Weapon in the forward area. It supports the maneuver style of warfare of the Marine Air Ground Task Force providing defense against high speed, close in, low altitude, fixed and rotary wing aircraft throughout the theater of operations. However, the magnitude of the threat has proliferated to the point that most developed countries have or are developing more advanced systems. The capabilities of the existing stockpile of Reprogrammable Micro Processor (RMP) needs to be increased to meet these threats by

modernization through technology insertion. The upgrade (to the Block I configuration) will eliminate several shortcomings of the RMP Missile that include shelf life concerns, capabilities against low-aspect angle targets, reactive infrared countermeasures, night engagements, and engaging targets in clutter. This upgrade has increased the acquisition range of the missile (out beyond 10 kilometers) and has been proven (has demonstrated) to be more effective against Unmanned Aerial Vehicles and low end Cruise Missiles.

PROGRAM STATUS

The Stinger Missile is a fully fielded missile. The Stinger Missile (SLEP) will start fielding in early FY01 and will be completed in late FY02.

DEVELOPER/MANUFACTURER

Raytheon Missile Systems Corporation

PART 3 - AVIATION COMBAT ELEMENT PROGRAM

The Aviation Combat Element (ACE) provides the MAGTF commander with enormous flexibility, mobility, and firepower. Part of the ACE's mission is to provide day and night, all-weather air support to the MAGTF. It accomplishes this mission through responsive offensive air and assault support. Offensive air support isolates the battlespace and provides timely and accurate close air support to maneuvering forces. Assault support ensures the rapid movement of combat power ashore, and provides a means to quickly maneuver ground forces in the battlespace. The following aviation programs enhance and complement the Marine Corps expeditionary nature and execution of OMFTS.

Vertical Takeoff and Landing (VTOL) Unmanned Aerial Vehicle (UAV)

DESCRIPTION

The Navy and Marine Corps have initiated a program to develop and field a Vertical Takeoff and Landing (VTOL) Unmanned Aerial Vehicle (UAV). The VTOL UAV is planned to replace the current UAV system, Pioneer, beginning in FY03. The VTOL UAV will have the capability to takeoff and land from any air capable ship (a ship possessing at least one helicopter landing spot) as well as operate from austere unprepared sites ashore. Additional capabilities include: range of 200 km, speed of 135 kts, and service ceiling minimum of 15,000 ft. The initial payload required is an electro-optic/infrared camera with a laser designator.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The concept of OMFTS is intensive from both the manpower and technology perspective. This concept is based on leveraging technology to both reduce risk and manpower required. The use of unmanned systems, such as UAVs, is a key component of this concept. The Marine Corps' vision of the Tactical UAV is to operate it as an integral part of our MAGTF ACE. Initially integrated into our MEU (SOC) operations, this capability will become full time support of a MEF. The Marine Corps foresees a Tactical UAV with a VTOL capability that can operate from any air capable ship as well as extremely austere locations ashore. The Marine Corps requires a very robust system that is easily deployed and sustainable to provide the MAGTF and JFC commanders maximum capability and flexibility.

PROGRAM STATUS

VTOL ORD was approved by the JROC during 1999. OPNAV (code N-85), the resource sponsor, has full funding for a VTOL UAV capability for a new program start in FY00.

DEVELOPER/MANUFACTURER

TBD

MV-22 Osprey

DESCRIPTION

The MV-22 Osprey is a tiltrotor, vertical/short takeoff and landing (V/STOL) aircraft designed to replace the current fleet of CH-46E and CH-53D aircraft. The MV-22 will join the AAAV and LCAC as an integral part of the amphibious triad necessary to execute the concept of OMFTS. Specific missions include amphibious and land assault, raid operations, medium cargo lift, tactical recovery of aircraft and personnel (TRAP), fleet logistic support, and special warfare. The MV-22's design incorporates the advanced but mature technologies of composite materials, fly-by-wire flight controls, digital cockpits, airfoil design, and manufacturing. The MV-22 Osprey is capable of carrying 24 combat-equipped Marines or a 10,000 pound external load. It also has a strategic self-deployment capability with a 2,100 nautical mile range with a single aerial refueling. The MV-22's 38-foot rotor system and engine/transmission nacelle mounted on each wing tip allow it to operate as a helicopter for takeoff and landing. Once airborne, the nacelles rotate forward 90 degrees, converting the MV-22 into a high-speed, high-altitude, fuel-efficient turbo-prop aircraft. The MV-22 is a multi-mission aircraft originally designed for use by all the Services. The Marine Corps, Navy, and Air Force have committed to fielding this unique aircraft. Procurement of the MV-22 remains the Marine Corps number one aviation acquisition priority.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*11*	*16*

OPERATIONAL IMPACT

The MV-22 will be the cornerstone of Marine Corps assault support possessing the speed, endurance, and survivability needed to fight and win on tomorrow's battlefield. This combat multiplier represents a quantum improvement in strategic mobility and tactical flexibility for amphibious and prepositioned maritime forces.

PROGRAM STATUS

The MV-22 has completed developmental testing and the program is nearing the end of the EMD phase. Nineteen Low Rate Initial Production (LRIP) aircraft have been procured in three lots to support MV-22 Operational Evaluation (OPEVAL) and initial fleet fielding. The final LRIP lot of 11 aircraft will be procured in FY00. OPEVAL will determine the aircraft's effectiveness and suitability for the Marine Corps mission and support program entry into the final phase - production,

Fielding/Deployment and Operational Support. OPEVAL will require use of the first four LRIP aircraft. A Milestone III Full Rate Production decision is expected in October 2000. The total programmed buy for the Marine Corps, Navy, and Air Force is projected at 458 aircraft. The Marine Corps requirement is for 360 aircraft.

DEVELOPER/MANUFACTURER

Bell Helicopter Textron, Fort Worth, TX

The Boeing Company, Philadelphia, PA

H-1 Upgrade (UH-1Y/AH-1Z) Program

DESCRIPTION

The H-1 Upgrade (UH-1Y/AH-1Z) program replaces the current two-bladed rotor system on the UH-1N and AH-1W aircraft with a new four-bladed, all-composite rotor system coupled with a sophisticated fully-integrated, state-of-the-art cockpit. In addition to the new rotor system and cockpit, the H-1 Upgrade will incorporate a new performance-matched transmission, a four-bladed tail rotor and drive system, and upgraded landing gear for both aircraft.

For the AH-1W, structural modifications to support six weapons stations will be completed. The AH-1Z increases aircraft agility, maximum continuous speed, and payload. The advanced cockpit reduces operator workload, improves situational awareness, and provides growth potential for future weapons and joint interoperability. It integrates on-board planning, communications, digital fire control, self-contained navigation, night targeting, and weapons systems in mirror-imaged crew stations. The UH-1Y incorporates the identical rotor system and dynamic components which results in maximum commonality and supportability between the two aircraft. The UH-1Y returns the required aircraft power margin and provides adequate mission payload and warfighting capability growth potential.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The H-1 Upgrade (UH-1Y/AH-1Z) program is designed to reduce life-cycle costs, significantly improve operational capabilities, resolve existing safety deficiencies, and extend the service life of both aircraft. Commonality between aircraft will greatly enhance the maintainability and deployability of the systems with the capability to support and operate both aircraft within the same squadron structure.

PROGRAM STATUS

The H-1 Upgrade (UH-1Y/AH-1Z) program continues in the EMD Phase. The Critical Design Review was completed in 1998 without major discrepancies. The Marine Corps has delivered four AH-1Ws and three UH-1Ns to Bell Helicopter for modification to support the EMD Phase. The first flight is scheduled for FY01.

DEVELOPER/MANUFACTURER

Bell Helicopter Textron Inc

Integrated Cockpit - Litton and Rockwell Collins

Target Sight System - Lockheed Martin

KC-130J

DESCRIPTION

The KC-130 is a versatile multi-engine, tactical aerial refueler/transport which supports all six functions of Marine aviation. It is the only long-range assault support capability organic to the Marine Corps. The KC-130J with its increase in speed (+21 percent) and range (+35 percent), features an improved air-to-air refueling system and state-of-the-art flight station. The flight station includes 2 head up displays (HUDs), night vision lighting and augment crew station and fully integrated digital avionics architecture. An Allison AE 2100D3 propulsion system with full authority digital electronic controls, Dowty R391 advanced technology six bladed propeller system, and 250 knot cargo ramp and door complete the package that will provide the MAGTF commander with a state-of-the-art, multi-mission, tactical aerial refueler/transport well into the next century. The Marine Corps desires to replace its aging active fleet of KC-130Fs and Rs with the new KC-130J.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*1*	*2*

OPERATIONAL IMPACT

The KC-130 provides both fixed-wing and helicopter tactical in-flight refueling, rapid ground refueling of aircraft or tactical vehicles, assault air transport of air landed or air delivered personnel, supplies and equipment, command and control augmentation, pathfinder, battlefield illumination, tactical aero-medical evacuation, and tactical recovery of aircraft and personnel (TRAP) support. This force multiplier is well suited to the mission needs of the forward deployed MAGTF. The KC-130J will bring increased capability and mission flexibility to the planning table with its satellite communications system, survivability enhancements, night systems, enhanced rapid ground refueling, variable speed refueling paradrogue, and improved aircraft systems. Greater reliability and maintainability, coupled with lower operating and support costs, will result in lower life cycle costs for the KC-130J.

PROGRAM STATUS

The KC-130J is a commercial -off-the-shelf aircraft currently in production. Initial delivery of the KC-130J to the Marine Corps is anticipated during 2000.

DEVELOPER/MANUFACTURER

Lockheed Martin

STOVL Joint Strike Fighter (JSF)

DESCRIPTION

The STOVL JSF will be a single engine, stealthy, supersonic, strike-fighter aircraft capable of short takeoffs and vertical landings. It will combine the basing flexibility of the AV-8 with the multi-role capabilities, speed, and maneuverability of the F/A-18 to fulfill both the air-to-ground and air-to-air requirements of the Marine Corps. The aircraft is intended to have a very low RF and IR signature, with superior capabilities over both of the aircraft it will replace (AV-8B, F/A-18C/D) in the areas of survivability, lethality, and supportability.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The JSF provides a multi-mission offensive air support and an offensive/defensive anti-air capability. The JSF also provides the MAGTF with a platform capable of tactical air control and tactical reconnaissance. Additionally, the aircraft will be able to provide suppression of enemy air defenses. The requirements for this aircraft are focused on readiness, expeditionary capability, the combined-arms concept, and the conduct of OMFTS.

PROGRAM STATUS

The JSF is a Joint program with the Air Force, Navy, and Marine Corps. Presently the program is in the Concept Demonstration Phase, with two contractors, Boeing Aircraft Company and Lockheed Martin, building an aircraft that will fly in FY00. The Marine Corps anticipates first aircraft delivery in FY08 with IOC of the first JSF squadron in FY10. Total procurement for the Marine Corps will be 609 aircraft.

DEVELOPER/MANUFACTURER

Boeing/Lockheed Martin

Hughes/Westinghouse

Pratt & Whitney/General Electric

AV-8B Harrier Remanufacture (Reman)

DESCRIPTION

The AV-8B Harrier is a single-seat, transonic attack aircraft. Its vertical/short take-off and landing (V/STOL) design gives it the capability to operate from a variety of land and sea-based platforms. The current Harrier II (plus) model incorporates an improved engine, night warfighting capabilities, and the APG-65 multi-mode radar. The remanufacture program will upgrade 72 older day-attack aircraft to the current radar/night-attack standard at approximately 80 percent of the cost of a new aircraft.

PROCUREMENT PROFILE:	FY00	FY01
Quantity: (Reman)	*11*	*10*

OPERATIONAL IMPACT

The MAGTF relies heavily on its organic aviation to offset limited artillery and tank assets and to provide fire support. The V/STOL capability of the AV-8B allows forward basing to facilitate timely close air support to Marine ground forces. The AV-8B operates from "L" Class ships, from rapidly constructed expeditionary airfields, from forward sites such as roads, and from smaller or damaged conventional airfields. The addition of night-attack and radar capabilities allows the Harrier to be responsive to the needs of the MAGTF at night and in adverse weather.

PROGRAM STATUS

The remanufacture of 72 aircraft is programmed through FY01.

DEVELOPER/MANUFACTURER

Boeing/BAE

F/A-18A/B/C/D Hornet

DESCRIPTION

The F/A-18 Hornet is a twin-engine, supersonic, strike-fighter aircraft. It fulfills both the air-to-air and air-to-ground mission requirements and can operate from conventional airfields and aircraft carriers. The F/A-18Cs delivered since FY90 have increased night and marginal weather capability, including a color moving map display, night vision goggle-compatible lighting and a navigation forward-looking infrared (NAVFLIR) sensor. The two-seat version, F/A-18D, incorporates all warfighting capabilities of the F/A-18C and will include a tactical reconnaissance capability. This aerial reconnaissance capability, Advanced Tactical Air Reconnaissance System (ATARS), provides near real-time aerial imagery to the MAGTF and will deploy with four systems per VMFA (AW) squadron beginning in FY00.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The F/A-18C provides modern multi-mission offensive and defensive anti-air capability and offensive air support. The F/A-18D provides the MAGTF with a platform capable of tactical air control and reconnaissance while retaining the capabilities of the F/A-18C. Both aircraft provide powerful and flexible air support and suppression of enemy air defenses. The maintainability and multi-mission capabilities of the F/A-18 make it well suited to the needs of the MAGTF in an austere expeditionary environment.

PROGRAM STATUS

The Marine Corps has initiated the upgrade of 34 F/A-18As (with a program objective of 76) to Lot XVII F/A-18C aircraft capability as well as digital communications and tactical data link. The Marine Corps anticipates programmed upgrades to enhance the current capabilities of the F/A-18C/D with digital communications, tactical data link, and tactical reconnaissance systems. This ensures that our F/A-18s remain viable and relevant until replaced by the STOVL Joint Strike Fighter (JSF).

DEVELOPER/MANUFACTURER

The Boeing Company

Northrop Grumman

Hughes

PART 4 - COMBAT SERVICE SUPPORT ELEMENT PROGRAMS

The Combat Service Support Element (CSSE) provides many support functions to the MAGTF. It can operate from naval vessels or expeditionary bases ashore. CSSE can sustain forces and permit maximum flexibility in responding to crises.

The following programs will enhance the CSSE's ability to support the MAGTF:

The Medium Tactical Vehicle Replacement (MTVR) Program

DESCRIPTION

The Medium Tactical Vehicle Replacement is a cost-effective, state of the art system to replace the existing M809/M939 medium tactical trucks. The MTVR can readily negotiate terrain twice as rough as the current fleet's capability and has a mission profile of 70% off road and 30% on-road, increased payload (7.1 tons off road and 15 tons on road), and improved cross-country speed (up to 30 mph). It is also a safer, more reliable system through extensive use of proven commercial heavy truck componentry that meets today's over the road truck safety standards.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*788*	*2,027*

OPERATIONAL IMPACT

The user will benefit from the increased reliability and performance of a truck that is just as deployable as the current fleet of 5-tons. The MTVR will have the same embarkation footprint as the current M939 series truck, with regards to length and width. The MTVR's weight of 28,000 lbs and reducible height of 98 inches make it internally transportable by C-130 and externally by CH-53.

PROGRAM STATUS

Low Rate Initial Production (LRIP) is on-going. Full Rate Production is programmed to begin in FY01 and will continue through FY03. Research and Development on the MTVR variants began in FY99. MTVR is currently in the design phase. Testing of the variants will begin in FY02 with follow-on production programmed for FY03. IOC is scheduled for FY01 with FOC in FY04.

DEVELOPER/MANUFACTURER

Oshkosh Truck Company, Oshkosh, WI

Light Tactical Vehicle Replacement (LTVR) Program - HMMWVA2 Program

DESCRIPTION

The current light tactical fleet of more than 17,000 HMMWVs was originally fielded in the mid-80s and is reaching the end of its economic useful life. Upgrades to safety (improved braking system), reliability (improved engine, transmission, electrical start and drive train systems) and availability, maintainability and durability (corrosion prevention and the addition of access panels) have been incorporated in the A2 modifications. The use of hot dip galvanization and e-coating of selected parts is expected to help ameliorate the highly corrosive operating environment that is degrading the current fleet.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*1,918*	*1,886*

OPERATIONAL IMPACT

These HMMWVA2 upgrades will improve the safety of our Marines through improved braking systems. The reliability improvements will improve the reliability, availability, and maintainability of the fleet. The corrosion reduction initiatives also improve the operational availability in very demanding and corrosive environments.

PROGRAM STATUS

Production and fielding of the HMMWVA2 began in FY98. FOC is scheduled for FY05.

DEVELOPER/MANUFACTURER

AM General

Third Echelon Test System (TETS)

DESCRIPTION

Third Echelon Test Set (TETS) is a portable, automated test unit that is controlled by a ruggedized micro-processor computer. It is a modular design configuration using mature and proven Non-developmental Item components and modules to accommodate 3 configurations: Basic, Radio Frequency (RF) and Electro-Optical (EO). The Basic configuration will consist of sufficient test capabilities to screen analog, digital and hybrid Modules and Circuit Card Assemblies to obtain a GO/NO GO finding. The RF configuration will consist of the basic configuration plus additional test capability to screen RF Modules and Circuit Cards. The EO configuration will consist of the basic configuration plus additional test capability to screen EO Modules and Circuit Assemblies. TETS will also have the capability of limited discrete component diagnostics. Primary power input is 28VDC, provided via the standard NATO slave receptacle on a HMMWV. Secondary input power is 108-220 VAC, 40 - 400 Hz.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*126*	*38*

OPERATIONAL IMPACT

The MAGTF has numerous systems and equipment that contain electronic printed circuit cards. However, the Marine Corps has no man portable automatic test capability that can be used to fault isolate and repair LRU's down to the faulty circuit card assembly. This deficiency frequently requires maintenance personnel to evacuate equipment to rear areas for required repairs. TETS will overcome these deficiencies as it is primarily transported and employed in the rear of a HMMWV. TETS will facilitate the rapid repair and restoration of degraded Weapon Systems by screening LRU's to determine a single failed circuit card assembly within that LRU. TETS will significantly enhance 3rd and 4th echelon maintenance support capabilities.

PROGRAM STATUS

Currently, TETS is in the Production Phase. First Article Testing was completed and approved in FY99 with deliveries from Lot I delivered in FY00. Lot II production contract was awarded after First Article Test approval in FY99. TETS fielding will begin in late FY00 with Marine Corps Communications Electronics School and Test Instrument Repair School targeted for IOC.

DEVELOPER/MANUFACTURER

ManTech Test Systems, Chantilly, VA

Mobile Electric Power (MEP) Generator

DESCRIPTION

Mobile Electric Power (MEP) generators are skid or trailer mounted and are diesel engine powered. The current family of military standard generators was manufactured 24 years ago. We are currently fielding the replacement Tactical Quiet Generators (TQGs). The updated TQGs feature an enhanced noise suppression capability, reduced O&M costs, and EPA compliance for emissions. The Mobile Electric Power program is a rollup of several generators ranging in size from 3KW to 100KW output.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*457*	*Various*

OPERATIONAL IMPACT

Power Equipment is operationally linked with any information system, weapons system, or equipment requiring electrical power. C4I systems are increasing as technology continues to advance, which increases the demand for Tactical Quiet Generators. The readiness of supported systems and equipment is directly affected by the readiness of power equipment.

PROGRAM STATUS

This is a Joint DoD program. DoD provides all branches of service with the necessary research, development, and program management and contract vehicles. USMC funds are for procurement only.

DEVELOPER/MANUFACTURER

Fermont Corporation, Bridgeport, CT

MC II, Dallas, TX

1500 Gallon per Hour (GPH) Reverse Osmosis Water Purification Unit (ROWPU)

DESCRIPTION

The Marine Corps currently uses the 600 GPH ROWPU to produce potable water from salt, brackish, and fresh water sources in amphibious and expeditionary environments. The 1500 GPH ROWPU will incorporate technological advances that will produce a significantly more efficient water purification system. The new system will more than double the production rate of potable water while maintaining the same physical envelope or "footprint" as the 600 GPH unit.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The 1500 GPH ROWPU is a joint DoD effort intended to replace the existing 600 GPH ROWPU on a 1 for 2 basis. It is designed to meet the Services' water usage demands and to eliminate deficiencies identified during Operation Desert Shield/Desert Storm.

PROGRAM STATUS

The Army is the lead Service in this joint Army-Marine Corps development. Milestone III and type classification of the system is projected for FY00 with competition for a Production Contract scheduled for FY01. The Marine Corps IOC is scheduled for FY03 with FOC in FY05.

DEVELOPER/MANUFACTURER

U.S. Army Tank-Automotive & Armaments Command (TACOM), Warren, MI & Naval Facilities Engineering Service Center, Port Hueneme, CA

Logistics Vehicle System Replacement (LVSR) Program

DESCRIPTION

The Logistics Vehicle System Replacement (LVSR) is the Marine Corps heavy tactical wheeled vehicle fleet replacement. The LVSR is comprised of five modules, a front power unit (FPU), three interchangeable rear body units (RBU), and a tandem tow trailer. When the front power unit is coupled to a rear body unit, it forms an integral all-wheel drive vehicle. Through interchangeable rear body units, the LVSR will fulfill various heavy lift missions including throughput of bulk fuel and water, ammunition, engineer equipment, standardized containers, and palletized/breakbulk cargo and wrecker/recovery missions. The

LVSR Cargo RBU is self-loading/unloading. The LVSR also provides the Marine Corps only tactical tractor for towing semi-trailers. The LVSR will incorporate state-of-the-art automotive and electronic technology, featuring advances in electronically controlled power trains, RAM-D and asset tracking. An integral ancillary item of equipment to the LVSR is the Flatrack and associated modules. They provide the LVSR a demountable platform which can accommodate 33,000 lbs of palletized, breakbulk or containerized cargo, a 3500-gallon Bulk Fuel Tankrack, a 3000-gallon Fuel Distribution Flatrack with a dispensing pump, and a 2900-gallon

Potable Water Distribution Flatrack with a dispensing pump. Flatracks are 20 foot long by 8 foot wide, and are ISO certified for transport and have integral twist locks and ISO corners.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The LVSR will address the current fleet deficiencies in off-road mobility, payload capacity, available power, ride quality, stability and braking. It will provide the Marine Corps heavy lift capability for transporting bulk fuel and water, ammunition, ribbon bridges & components, bridge boats, standardized containers, bulk, breakbulk and palletized cargo (on flatracks), engineer equipment and provide wrecker/recovery capability. The Flatrack enhances distribution and speeds resupply, integral to the LVSR's role as a logistics throughput system in OMFTS and STOM, by allowing staging of bulk liquids, ammunition, and other supplies without dedicating a vehicle remain on site. The LVSR brings commonality between the Marine Corps and NATO and the U. S. Army's Palletized Load System in the types of loads that can be carried by Heavy Tactical Vehicles.

PROGRAM STATUS

The LVSR Program is in Phase 0, Concept Exploration. Technology Demonstrators have been fabricated and Modeling & Simulation/Virtual Prototyping efforts have begun. The Technology Demonstrators will undergo Developmental Testing and an Early Operational Analysis in FY00. The LVSR will begin fielding in FY06, and will reach FOC in FY09.

DEVELOPER/MANUFACTURER

TBD

Marine Corps Motorcycle (M1030B1) Replacement Program

DESCRIPTION

The Marine Corps Motorcycle (M1030B1) is a gasoline fueled dual-purpose utility vehicle with a mission profile of 70% off road and 30% on road. The motorcycle is a commercially available Kawasaki, Model KLR 650 that has been modified for military use. The M1030B1 incorporates the following modifications: Engine/transmission skid plate, operator hand guards, blackout lighting, pannier bags, heavy-duty suspension, upgraded air filtration system, enhanced electrical wiring and aggressive dual purpose tires. In FY02 the 293 original gasoline powered M1030B1's will be modified with diesel engines and an additional 124 new diesel motorcycles will be procured.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The M1030B1 is capable of operations in garrison and field environments (primary roads, secondary roads, cross country woodlands, deserts and beaches). The M1030B1 is designed for operation in all weather conditions except snow and ice, with appropriate cautions during wet weather. The M1030B1 is particularly suited for tactical and urban reconnaissance.

PROGRAM STATUS

The M1030B1 began fielding in FY00 with FOC expected FY02.

DEVELOPER/MANUFACTURER

Hayes Diversified Technologies, Inc., Hesperia, CA

Aviation Refueler Capability (ARC)

DESCRIPTION

The Aviation Refueler Capability (ARC) program will field a cost-effective, state of the art replacement for the current fleet of M970 refueling units used to satisfy aviation requirements. The Marine Corps plans to procure a commercially available tanker truck refueler through the GSA schedule.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*102*

OPERATIONAL IMPACT

The M970 replacement will enable the Marine Corps to move into the 21st Century with a state-of-art commercially supportable aviation refueler. This alternative has the advantage of simplified acquisition, low administrative cost, and reasonable unit cost while providing a solution that meets USMC performance and schedule requirements.

PROGRAM STATUS

The ARC is scheduled for Milestone I/III in FY01, IOC in FY03, and FOC in FY05.

DEVELOPER/MANUFACTURER

TBD

Extended Boom Forklift (EBFL)

DESCRIPTION

The Truck, Forklift, Extendable Boom (EBFL) is a diesel-powered, four-wheel drive, rubber-tired forklift with two-wheel, four-wheel and crab steering. The EBFL will be capable of moving all palletized classes of material, up to the forklift's rated capacity of 10,000 pounds.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*60*

OPERATIONAL IMPACT

The EBFL would be required to lift and horizontally traverse 6,000 pounds. to a distance of 15 feet and 4,000 pounds. to a distance of 20 feet from the load center. This would enable the EBFL to load/unload trucks and trailers from one side by reaching across the 8 foot wide bed. Also this feature would enable the EBFL to reach into ISO containers and both fixed wing and rotary wing cargo aircraft to place/retrieve a 4,000 pound palletized load.

PROGRAM STATUS

EBFJ is currently in Milestone 0 and expected to move into Milestone I in FY00 then into Milestone III in FY00. A Contract award should occur during FY01. The IOC is scheduled for FY02 with FOC in FY05.

DEVELOPER/MANUFACTURER

TBD

Tractor Rubber-tired Articulated Steering Multi-purpose (TRAM)

DESCRIPTION

The Tractor Rubber-tired Articulated Steering Multi-purpose (TRAM) is a diesel-powered, four-wheel drive, rubber-tired, articulated steering tractor capable of operating in rough terrain and in 60 inches of water. The TRAM is outfitted with a multipurpose bucket and a 10,000 pound forklift attachment.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*125*	*125*

OPERATIONAL IMPACT

The TRAM is configured primarily as a scoop loader and secondarily as a forklift. In addition, the TRAM will accept other attachments (i.e., snowplow, snowblower, brush clearer and sweeper broom) to enhance its role as a combat multiplier. The TRAM will also be capable of being transported by CH-53E and C-130 aircraft.

PROGRAM STATUS

The contractor remanufacture strategy was approved in FY99. This will allow approximately 125 TRAM to be remanufactured per year through FY03 with approximately 50 to be remanufactured in FY04. The re-remanufacture will extend the TRAM service life for 10 years.

DEVELOPER/MANUFACTURER

John Deere Co

Lightweight Maintenance Enclosure (LME)

DESCRIPTION

The Lightweight Maintenance Enclosure (LME) is a modular/expandable, frame supported, lightweight, quickly deployed, highly mobile maintenance shelter sized to allow performance of maintenance functions across the battlefield. The LME accommodates tracked vehicles, oversized-wheeled vehicles, and ground support equipment. The LME provides protection for personnel, vehicles, and equipment from the debilitating effects of continuous environmental exposure during maintenance/repair procedures in all climactic conditions. In addition, the LME provides blackout capability and reduced IR. The LME will replace the current maintenance shelters called Tent, Frame, Type, Maintenance Shelters and Tent, Maintenance, Shelter, Type.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*282*	*94*

OPERATIONAL IMPACT

The LME is not designed to counter a specific threat. It gives rapid deploying and forward maintenance elements added capability while providing increased light discipline for night maintenance operations. The LME is approximately half the weight of the current maintenance shelters, is less bulky and requires less time with fewer Marines for set-up and strike facilitating maintenance unit mobility.

PROGRAM STATUS

Currently in Phase II; IOC scheduled for FY00; FOC scheduled for FY05.

DEVELOPER/MANUFACTURER:

Principal Design Activity - Natick Research and Development, Boston, MA

Manufacturer - Camel Manufacturing Company, Garyville, TN

Improved Recovery Vehicle (IRV)

DESCRIPTION

The M88A2 Hercules is a full tracked heavy recovery system that is a significant upgrade to the current M88A1. The system improvements include increased armor protection, a more powerful engine, modified transmission, improved final drives, increased vehicle weight (to aid in towing stability), upgraded suspension, improved hydraulic system, new heavy duty wench, and increased overhead lift capability. It will replace the aging M88A1 tracked recovery vehicle as the sole heavy recovery asset in the Marine Corps. It will be called upon to recover and tow M1A1 Tanks as well as any other asset in the Marine Expeditionary Force that requires a heavy recovery vehicle.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*24*	*16*

OPERATIONAL IMPACT

The additional capabilities of the Hercules will give the operating forces relief from the current limitations of the M88A1. One Hercules can safely tow the M1A1Tank. This capability will eliminate the need to use two recovery vehicles when towing a tank. The power train improvements will provide a more reliable recovery asset and reduce O&S costs. The ability to quickly and safely recover combat vehicles with the fewest assets possible will be a force multiplier.

PROGRAM STATUS

The Hercules is currently in production and being fielded by the U.S. Army. The Marine Corps ' Acquisition Strategy was approved in FY99 with a Procurement decision scheduled for FY00. FOC is scheduled for FY05.

DEVELOPER/MANUFACTURER

United Defense Limited Partnership York, PA

Quadruple Containers (QUADCON)

DESCRIPTION

Quadruple Containers (QUADCON) are modular, lightweight, and durable family of containers and accessories to be used for storage and transportation of organic equipment and consumable supplies during deployment and in garrison. The QUADCON, horizontal connectors, inserts and half length inserts will replace the metal mount out boxes. The QUADCON is ISO configured and CSC Certified. The removable inserts that are provided will be used for the storage of publications, administrative supplies and other small items.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*1,401*	*1,400*

OPERATIONAL IMPACT

The QUADCON provides a significant increase in current capability by using modern technology to containerize and unitize break-bulk cargo. It is a weather tight, prefabricated, dimensionally standard and reusable container. They have the capability to integrate with container ships and other merchant vessels. They are a more efficient method of packaging and moving of cargo. They provide the degree of containerization required for rapid and efficient movement to the AOA.

PROGRAM STATUS

Thirty Percent (30%) of the QUADCONs have already been fielded. IOC was reached in FY94 with FOC scheduled for FY08.

DEVELOPER/MANUFACTURER

Charleston Marine Container, Charleston, SC

Rapid Deployment Kitchen (RDK)

DESCRIPTION

The RDK is a new concept in field kitchens utilizing a single oil burner to heat thermal fluid, which is circulated to kitchen appliances. It is conceptually similar to a forced hot water home heating system, but uses a food grade mineral oil instead of water and appliances instead of radiators. It will be a container based kitchen that is capable of preparing a mix of cook-prepared perishable and shelf stable ration meals that can feed a minimum of 650 Marines, two meals daily. The kitchen operates using 5 cooks.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	0	0

OPERATIONAL IMPACT

The RDK will be used to support designated maneuver elements throughout the MAGTF theater of operation. The RDK will provide the capability to support the assault echelons of the MAGTF with two hot meals a day. The commander will use the RDK in expeditionary operations to provide meals to enhance unit morale, performance and health, while concurrently meeting nutritional standards identified by the Bureau of Medicine (BUMED).

PROGRAM STATUS

The RDK program is currently pre-milestone 0, awaiting a decision on the need for operational testing.

DEVELOPER/MANUAFACTURER

Principal Design Activities - Natick Research and Development Engineering Center and MARCORSYSCOM. Prototype Manufactured by Frederick Manufacturing.

Internally Transportable Vehicle (ITV)

DESCRIPTION

The Internally Transportable Vehicle (ITV) program is a USMC led, joint program with the US Special Operations Command to field a family of light vehicles supporting Operational Maneuver from the Sea. The ITV will provide a deployed Marine Air-Ground Task Force and Marine Expeditionary Unit - Special Operations Capable with a ground vehicle that is internally transportable in all medium and heavy lift rotary wing aircraft, to include the MV-22 and CV-22 tilt rotor aircraft. The vehicle will serve primarily as a high mobility weapons platform to support a variety of operations, especially the amphibious raid. The vehicle will provide ground units equal or greater mobility than the MAGTF maneuver elements they support, thereby enhancing their mission performance and survivability. The family of vehicles will provide Special Operation Forces with a ground mobility platform to support the five primary and other secondary missions that include special reconnaissance, direct action, unconventional warfare, foreign internal defense, counter-terrorism, personnel recovery and anti-terrorism.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The ITV family of vehicles has the mission to provide an internally transportable, light tactical wheeled vehicle for command and control, troop transport, light cargo transport, ambulance, and weapons platform throughout all areas of the battlefield and mission areas. All vehicles will be built off a common chassis design. Internal transport is critical, especially for the MV-22, so as not to decrease in-flight speed and maneuvering envelope. The Light Strike variant of the ITV will be used across all spectrums of employment as a crew served weapons platform.

PROGRAM STATUS

The ITV Program recently entered the Program Definition and Risk Reduction (PDRR) phase. In FY01, a competitive down selection will take place to award a single contractor for the EMD Phase. The current schedule calls for Low Rate Initial Production in FY03 and IOC in early FY04 with FOC of all variants in FY07.

DEVELOPER/MANUFACTURER

TBD

PART 5 - OTHER SUPPORT TO THE MAGTF

The programs, enhancements, and systems in this section provide other support to the MAGTF. They are not specifically within the realm of the Command Element, The Ground Combat Element, the Air Combat Element or the Combat Service Support Element, yet could be used with one or all of those elements, or for training only, depending on the situation.

Many of these efforts are in the Nuclear, Biological and Chemical (NBC) defense program where the Marine Corps is pursuing a number of enhancements that will increase the effectiveness of personnel and units within the NBC environment. Over the past decade there has been a proliferation of chemical and biological agents. Marines must be able to defend themselves and continue to operate in an NBC environment.

Additionally, the development of basic individual skills, combined with challenging individual and collective sustainment training is essential, especially during peacetime. Realistic training systems and standards-based and performance-oriented training are used to enhance combat readiness. The Marine Corps is continuing to explore and field a number of new systems and simulators that will contribute significantly to training effectiveness while reducing overall training costs.

Whether through NBC enhancements, training or other programs the following efforts directly or indirectly support the MAGTF.

Chemical/Biological Incident Response Force (CBIRF)

DESCRIPTION

The Chemical/Biological Incident Response Force (CBIRF) is a Marine Corps unique organization that provides rapid initial consequence management to mitigate the effects of a chemical and/or biological terrorist incident in support of a designated civilian or military commander. The CBIRF will also provide training to "first responders nationwide and assist with the development of new equipment, techniques, and procedures for responding to the use of chemical and biological agents.

OPERATIONAL IMPACT

The CBIRF is equipped with a variety of state-of-the-art items that will enable the unit to perform its mission in chemical/biological detection, decontamination, medical care, security, and service support. Procurement efforts to support the CBIRF are ongoing and involve many different kinds of equipment and manufacturers. Initial procurements involve state-of-the-art, readily available, commercial-off-the-shelf, certified items.

PROGRAM STATUS

A prime vendor logistics support contract was awarded to Battelle Memorial Institute in August 1998. This contract, providing support to the CBIRF, incorporates innovative logistics support methods currently demonstrated in private industry. The support to be provided includes supply chain management, spare parts, end item/equipment repair and/or replacement, calibration support, warranty management, inventory control, forecasting, engineering services, technical services, configuration management, and training and deployment support.

DEVELOPER/MANUFACTURER

COTS multiple manufacturers

Joint Service Light Nuclear, Biological, and Chemical Reconnaissance System (JSLNBCRS)

DESCRIPTION

JSLNBCRS is a Joint Service program. The LNBCRS will detect, identify, and mark NBC hazards and toxic industrial chemicals on the integrated battlefield as well as providing information reports and warning to follow-on forces and commanders. The LNBCRS will have significantly less impact on strategic and intra-theater lift resources and provide a NBC reconnaissance capability to light forces in a manner consistent with their unique mission requirements. Planned Systems include HMMWV and LAV variants.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*6*

OPERATIONAL IMPACT

The JSLNBCRS will be employed by Marine Corps forces in areas where it is reasonable to expect that NBC weapons and toxic industrial chemicals will be employed against friendly forces. In the forward combat area, the LNBCRS is integrated into the overall reconnaissance and surveillance effort to either confirm or deny contaminated areas to support combat operations. The LNBCRS will be used in the rear areas to monitor main supply routes, logistics bases, airfields, ports, and key command and control centers for NBC hazards. These missions can occur during peacetime and wartime operations including expeditionary and power projection missions. The system will also support other hazard assessment missions as necessary. Employing the JSLNBCRS, the MAGTF commander will be able to maneuver forces to detect, locate, avoid, and report contaminated areas. The JSLNBCRS will provide units with accurate and rapid NBC combat hazard information. Employment of the JSLNBCRS will have significantly less impact on strategic and intra-theater lift resources than that of current systems.

PROGRAM STATUS

IOC is scheduled for FY02 and FOC is FY07. The Program is currently seventh in priority of forty-four programs on the Joint Service Integration Group (JSIG) for NBC Defense. The JSLNBCRS will be located in the Marine Division, Marine Aircraft Wing, and Force Service Support Group. Within the Marine Division, the JSLNBCRS will be located at and employed by the Light Armored Reconnaissance Battalions (Combat Assault Battalion with the 3rd Marine Division). Within the FSSG, it will be located and employed at Headquarters and Service

Battalion. Within the MAW, it will be located and employed at Marine Wing Support Squadrons. Each JSLNBCRS will be employed and operated by three NBC specialists, During peacetime, the JSLNBCRS could be employed in support of humanitarian relief/peace keeping missions.

DEVELOPER/MANUFACTURER

TRW Inc,Tactical Systems Division

Joint Service Lightweight Integrated Suit Technology (JSLIST)

DESCRIPTION

The JSLIST will provide the wearer with protection from the effects of NBC contaminants and Toxic Industrial Material (TIM) in any form or state. The JSLIST will be an integrated ensemble consisting of a protective garment (with/without a hood), footwear and gloves; and be compatible with the protective mask currently in inventory and those in development. The garment will be suitable for wear while performing combat operations, whether on land or at sea, in any climate, with minimal impact on combat effectiveness. JSLIST will be designed to permit efficient communications, and it must be compatible with existing and planned clothing and equipment including load-bearing equipment, helmets (cranial protection), handwear, footwear, body cooling systems, and protective masks of the respective Services and Special Operations Forces (SOF). The garment may be worn over undergarments, over the combat uniform and combat boots, or under/over cold weather clothing. The garment will be designed to reduce psychological, physiological, and heat stress. The JSLIST will be capable of being decontaminated and laundered. Each component is based on state-of-the-art material technologies that have undergone extensive user evaluation, field and laboratory testing.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*29,096*	*29,563*

OPERATIONAL IMPACT

When combined with other personal and unit NBC defense clothing and equipment, the JSLIST provides an effective integrated individual protective system based on the threat and operational requirements. It will be wearable in all environments and climates with minimal degradation to combat effectiveness and communications capability. JSLIST provides the highest level of protection against current CB threats while reducing heat stress, weight, and bulk to a minimum. Balancing CB protection and heat stress management with Service-defined mission

requirements optimizes user performance. The main thrust of the JSLIST program has been to develop the next generation CB protective system. However, considerable focus also remains on ensuring full compatibility and integration with developmental equipment such as new masks and body armor, and developmental systems such as Land Warrior, Air Warrior, Mounted Warrior, and the Marine Corps' Integrated Infantry Combat System.

PROGRAM STATUS

JSLIST is the number one priority on the JSIG Program priority list. JSLIST is in the initial fielding phase and FOC is scheduled for FY07. This Marine Corps lead program is under the management of the four Service program managers. JSLIST has Joint participation in every aspect of the program from management, system planning, system and component design, material selection, test execution, and data assessment. The program structure and approval process has been configured to assure full user participation so those common and Service unique requirements are met. The Milestone III Decision occurred in April 1997 and production began in August 1997. The JSLIST P3I program has structured an iterative process that will allow for periodic technology insertion of tested and approved materials into the JSLIST production cycle such as the special operations requirements for an improved chemical protective glove and a chemical sock. Other JSLIST Preplanned Product Improvement (P3I) requirements include a 60 day over-garment, 30 day over-garment, with and without hood, 7 day over-garment and undergarment with Fire Retardant (FR) characteristics.

DEVELOPERS/MANUFACTURERS

Creative Apparel, Belfast, Maine

Group Home Foundation, Belfast, Maine

NCED, El Paso, Texas

Trade winds Inc., Gary, Indiana

Joint Warning and Reporting Network (JWARN)

DESCRIPTION

The Marine Corps is the lead Service for implementation of the JWARN program. JWARN will provide Joint Forces with an integrated comprehensive analysis and response capability to minimize the effects of hostile NBC attacks or accident/incidents, environmental hazards, or hazards from Toxic Industrial Material (TIM). The system will consist of hardware, software, and connectivity with Command, Control, Communications, Computers, Intelligence, and Information (C4I2) systems and remote detectors/sensors. JWARN will be compatible and integrated with Joint/Service C4I2 systems, the Defense Medical Surveillance System (DMSS) and networks/broadcasts.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*47*	*6*

OPERATIONAL IMPACT

JWARN will be compatible and integrated with Joint Service C4I2 systems. The JWARN will be located in C2 centers at the appropriate level, defined by Service specific annexes, and employed by NBC defense specialists and other designated personnel. It will transfer data for decisions for disseminating warnings down to the lowest level on the battlefield. It will provide additional data processing, production of plans and reports, and access to specific NBC information to improve the efficiency of limited NBC defense personnel assets. The JWARN will accelerate the warfighter's response to an enemy NBC attack.

PROGRAM STATUS

JWARN is forth on the JSIG priority list. IOC is scheduled for FY02 and FOC for FY04. The JWARN Program is being executed through a Joint Integrated Product Team (JIPT) process. Urgent need requirements submitted by the Marine Corps CBIRF and the Army 5th Corps led to an acquisition community decision to separate the program into a three Block phase. Block I, Interim/Standardization (IS), is the initial acquisition and fielding of commercial off the shelf (COTS) and Government off the shelf (GOTS) software to standardize NBC warning and reporting throughout the Marine Corps, Army, Navy, and Air Force. The Block I (IS) program will provide the following products: Block 1A - COTS NBC analysis software package for DOS, UNIX, and GOTS models; Block IB - COTS NBC analysis software package with Battlefield Management functionality for operation on the Army's Maneuver Control

System/Phoenix (MCSP); and Block IC- COTS NBC analysis software package with Battlefield Management functionality for Windows 32 Bit Environment. The Block II upgrade provides the total JWARN capability by integrating NBC Detector Systems, NBC Warning and Reporting Software Modules, and NBC Battlefield Management software modules into the Services C4I2 systems. The Block III Product Inhancement Program will include artificial intelligence modules for NBC operations, upgrade to match future C4I2 systems, and standard interfaces for use with future detectors.

DEVELOPER/MANUFACTURER

TBD

Automatic Chemical Agent Detector Alarm (ACADA)

DESCRIPTION

The ACADA is an automatic, man-portable, point sampling, field alarm capable of monitoring air in ambient atmosphere inside a collective protection environment (CPE) and when mounted on mobile or stationary standard wheeled and tracked vehicles, is capable of detecting the presence or absence of six nerve and blister agent vapors.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*4,759*	*0*

OPERATIONAL IMPACT

The ACADA is capable of manned or unmanned air monitoring in ambient atmosphere in either a man portable, mobile, or stationary configuration and can be integrated as a component of a battlefield chemical defense system. It can be employed in the open or in collective protection shelters, and on wheeled and tracked vehicles including the NBC reconnaissance system. The ACADA is capable of being employed remotely to provide early warning of approaching hazardous vapor clouds. Knowledge of the actual location of the chemical agent cloud assists commanders in their decision making processes and employment actions - maneuvering around the cloud, mitigating the potential damaging effects of the agent, and/or the potential negative impact on mission performance. The system will detect and monitor the presence of hazardous agents, provide an audible and visual alarm, and provide essential data to the affected unit. The ACADA detects 6 chemical agents. The ACADA will operate on battery and/or line power. The system will interface with automated battlefield communications systems (e.g. JWARN).

PROGRAM STATUS

The ACADA program is eighth on the JSIG priority list. The ACADA replaces the M8A1 Chemical Agent Alarm and is currently being fielded to FMF units. FOC is scheduled for FY02. A Product Improvement to the ACADA will include a probe that will be employed to monitor personnel and equipment. The ACADA will be distributed down to the company/squadron level. It can operate on battery or line power, and it has a communications system that will interface with battlefield NBC defense detection, warning and reporting systems.

DEVELOPER/MANUFACTURER

Graysby Dynamics LTD,UK

Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD)

DESCRIPTION

JSLSCAD is a lightweight, passive, standoff, chemical agent detector capable of providing on the move, 360 degrees coverage. It can be employed from a variety of tactical and reconnaissance platforms at distances up to 8 kilometers while detecting an agent cloud within 15 seconds of entering the detector's field of view. It is a second-generation chemical agent vapor detector which improves upon the capabilities of the M21 (RSCAAL) first generation system.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The JSLSCAD is a sensor that will detect the presence or absence of nerve and blister agents at a distance up to 8 kilometers. The JSLSCAD can operate while on the move or from a stationary position, providing point and mobile detection. The System can also be employed from a fixed site. JSLSCAD platforms include the Lightweight Nuclear, Biological and Chemical Reconnaissance System (LNBCRS), Unmanned Agent Vehicles (UAVs), the Tactical Unmanned Ground Vehicles (TUGVs) and other vehicles. JSLSCAD will increase troop penetration and maneuver unit combat capabilities. It will provide enhanced early warning for contamination avoidance. When avoidance is not possible, it will provide extra time for warfighters to don full protective equipment.

PROGRAM STATUS

Milestone II was in September 1996 and IOC is scheduled for FY03, FOC for FY05. JSLSCAD is sixth on the JSIG priority list.

DEVELOPER/MANUFACTURER

Intellitec

Small Unit Biological Detector (SUBD)

DESCRIPTION

The SUBD is an ongoing R&D initiative to provide a lightweight, real-time, biological agent detector. The SUBD is a three year effort that will initially develop promising bio-detection technologies and will culminate in an integrated bio-detector based on the most current bio detection technology available.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The focus of this program is to provide the user with a hand-held bio-detector that is both sensitive and specific. The SUBD will be deployed down to the small unit level to provide near real time detection capability for forward units.

PROGRAM STATUS

The SUBD will be initially fielded in support of Consequence Management, then transitioned to the Joint Program Office for Biological Defense (JPO-BIO), for inclusion in future bio-detection programs.

DEVELOPER/MANUFACTURER

Battelle Memorial Institute; CALSPAN; and ECHO Technologies.

Joint Biological Point Detection System (JBPDS)

DESCRIPTION

The JBPDS will provide rapid point biological agent detection and warning, identification, and sample isolation capability. As a point detector, JBPDS will be used as an integral part of an evolving detection and warning/de-warning network. To meet the operational requirements, the JBPDS may include multiple biological detection and identification solutions into platform specific configurations. Each system configuration will consist of three functional areas: detection and warning, sample collection, and identification. The JBPDS is a Joint program with the Army as the lead Service. It provides real-time biological agent detection, warning, identification, and also collects and preserves samples for further analysis. This system is self-contained and portable and requires minimal operations and maintenance support. The Program is second on the JSIG priority list.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*4*

OPERATIONAL IMPACT

The JBPDS provides commanders with a capability to sample, detect, and identify all classes, forms, and types of biological warfare (BW) agents - those listed under International Task Force (ITF) - 21, and to warn of their presence. Because of the limitations in technology, initial models/configurations of JBPDS may be limited to identifying selective classes or types of BW agents (e.g. Bacillus Anthracis and/or Botulinum Toxin A). In fulfillment of its mission, JBPDS is expected to provide commanders with an indication of the presence and/or absence of BW agents and/or toxins. The JBPDS along with intelligence, vaccinations and protective clothing and equipment, and NBC Defense tactics, training, procedures will form an integrated biological defense system to maximize combat effectiveness. The JBPDS will be fielded on a variety of platforms: vehicle mounted, shipboard, fixed-site, and man-portable. Unit NBC specialists will maintain the JBPDS. The JBPDS can utilize alternate power sources and provide two-way communications through a telemetry link, a secure command and control radio frequency link, or a two-wire surface link. The JBPDS delivers both a visual and aural warning upon detection of possible biological agents.

PROGRAM STATUS

IOC is scheduled for FY01 and FOC for FY03.

DEVELOPER/MANUFACTURER

Lockheed Martin

Joint Chemical Agent Detector (JCAD)

DESCRIPTION

The JCAD is a Joint Service program what will provide all the Services with a hand held detector capable of detecting, identifying, quantifying, and warning personnel of the presence of nerve, blister, and blood agents by state (e.g., aerosol, gases, or liquid); and provide warning of the presence or absence of the agents. The JCAD will be capable of displaying the detected agent by class, cumulative dosage, point concentration, and alarm levels. The JCAD can be mounted inside of vehicles and aircraft and employed as a personal detector. The system may be a single detector or network of detectors capable of providing warning of the presence of CW agents.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The JCAD will provide local and remote audible and visual alarms as well as providing and receiving digitized information, via standard data ports compatible with Joint Technical Architecture, to and from existing or future warning and reporting systems such as, but not limited to, the GCCS and JWARN. The JCAD will be located down to the company/squadron level. As an individual detector/unit detector, the quantity required is one per thirteen Marines. As a vehicle mounted detector, the requirement is one per vehicle/platform. The JCAD can be employed as a fixed facility detector and survey detector for monitoring chemical agents concentrations and accumulated dose.

PROGRAM STATUS

JCAD is fifth on the JSIG priority list. IOC is scheduled for FY02 and FOC for FY04.

DEVELOPER/MANUFACTURER

MARCONI and Femtometrics

Joint Service Fixed Site Decontamination (JSFXD) Program

DESCRIPTION

The Joint Service Fixed Site Decontamination (JSFXD) Program is a Marine Corps-led effort that will provide the Services with a capability to decontaminate fixed sites, ports of entry, airfields, logistics support bases, and key command and control centers, in an environmentally safe manner, which have been exposed to the damaging effects of NBC warfare agents and Toxic Industrial Materials (TIMs). Because the Operational Requirements Document for JSFXD requires multiple technology capabilities, the program will consist of three over-lapping blocks, Block I will be conducted between FY99-FY02. Block II will be conducted between FY99-FY04. And, Block III will be conducted between FY99-FY06.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The JSFXD will be employed on the integrated battlefield as a means to remove, neutralize and/or eliminate NBC/TIMs hazards posing threats to military operations. The JSFXD will use the latest in technology to eliminate NBC/TIM hazards in a safe and effective manner. The JSFXD will have minimal logistics resources impact.

PROGRAM STATUS

The JSFXD obtained a Milestone 0 approval in the 1st Qtr FY00. IOC is scheduled for FY04 with FOC in FY06.

DEVELOPER/MANUFACTURER

TBD

Enhanced NBC (E-NBC) Capability

DESCRIPTION

The E-NBC Capability program resulted from the Commandant of the Marine Corps' Planning Guidance Frag Order dated 31 August 1997 in which he directed the Chemical, Biological Incident Response Force (CBIRF) to focus its efforts on "developing countermeasure and force-protection training and equipment support packages for deploying MEU's (SOC)." An initiative to field the 13th MEU (SOC) with an initial enhanced NBC package complete with new equipment training, contractor logistics support, and an OCONUS Weapons of Mass Destruction operational scenario evaluation (potentially using CBIRF as a follow-on augmentation force) is being developed to occur in FY00. An E-NBC capability set includes such items as a self contained breathing apparatus, Level A protective suit, Level B coveralls, powered air purifying respirator, protective footwear and other miscellaneous equipment.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*13*	*6*

OPERATIONAL IMPACT

The13th MEU (SOC) E-NBC capability initiative will provide valuable lessons learned in the areas of equipment suitability, embarkation, training, maintenance support, and concept of employment prior to full scale fielding of the E-NBC capability to subsequent MEU (SOC) s.

PROGRAM STATUS

IOC for Phase I is scheduled for FY00 with FOC in FY01.

DEVELOPER/MANUFACTURER

Various

Chemical/Biological Individual Sampler (CBIS)

DESCRIPTION

The Chemical/Biological Individual Sampler is an Advanced Concept Technology Demonstration (ACTD) that will demonstrate the capability to continuously monitor and record an individual's exposure to sub-clinical amounts of chemical and biological warfare agents. The CBIS will be developed in two phases. The first phase will be a passive chemical sampler that provides no real-time data, and the second phase will change the chemical sampler to real-time while incorporating a biological sampler with non real-time data. The CBIS ACTD is a two-year initiative. The CBIS will be fielded initially to CBIRF as the premier test bed for prototype equipment and operational evaluation of new technologies. Based upon a favorable CBIRF evaluation, the CBIS will transition from an ACTD to a Joint Service acquisition program for future Consequence Management Capabilities.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The CBIS will ideally be the size of an ID badge and worn on the warfighter's load bearing equipment. The CBIS will be powered by internal batteries, which can be easily changed while wearing protective gear. Upon detection of CB warfare agents the system will alarm to notify the warfighter of a potential risk.

PROGRAM STATUS

IOC for Phase I is scheduled for FY00 with FOC in FY05.

DEVELOPER/MANUFACTURER

TBD

Indoor Simulated Marksmanship Trainer-Enhanced (ISMT-E)

DESCRIPTION

The Indoor Simulated Marksmanship Trainer-Enhanced (ISMT-E) is an interactive training system designed to support marksmanship skills in a classroom setting. The ISMT-E provides training in marksmanship skills for the M16A2, M9, M249, M240G, Mk19, AT4, SMAW, M203, MP5, SRAW/Predator, shotgun, and mortars. Shooters fire laser-fitted infantry weapon simulators to engage target sets projected on a large screen display employing three-dimensional graphics simulation technology.

PROCUREMENT PROFILE:	FY00	FY01
Quantity: ISMT-E	*22*	*0*
IST-E	*25*	*0*

OPERATIONAL IMPACT

The ISMT-E will replace the current video-based ISMT system at selected units. The current ISMT system has four firing positions with the Infantry Squad Trainer (IST) (the expanded version of the ISMT) providing 12 firing positions. The ISMT-E will add a fifth firing position and the IST-E will accommodate up to 15 shooters. These systems present trainees with target sets in a variety of realistic scenarios that exercise marksmanship and weapons skills, small unit proficiency, and shoot/no shoot judgment. Forward observer (FO) spotting and firing with night vision devices can also be performed, and the system employs a shoot-back mechanism that is compatible with MILES. ISMT-E will enable individual Marines and small units to train in a Distributed Interactive Simulation (DIS)/High Level Architecture (HLA) environment by providing the ability to interface with other ground training simulators and systems such as the Combat Vehicle Appended Trainer (CVAT) and Range Instrumentation System (RIS). ISMT-E will also add new weapons simulators for the M4 carbine, Joint Service Combat Shotgun and Predator.

PROGRAM STATUS

ISMT (E) will be procured in FY00. IOC is scheduled for FY01, with FOC in FY02.

DEVELOPER/MANUFACTURER

TBD

Multiple Integrated Laser Engagement System (MILES) 2000

DESCRIPTION

The Multiple Integrated Laser Engagement System (MILES) 2000 is the next generation of Tactical Engagement Simulation Systems (TESS). MILES 2000 is the planned replacement for the currently fielded basic MILES that has been in use since the 1980s and has reached the end of its service life. MILES 2000 will provide the Fleet Marine Force with a family of low-power eye safe lasers that simulate the direct fire characteristics of all weapons organic to a Reinforced Infantry Battalion. MILES 2000 will enhance the tactical training environment by replicating the direct fire range, capabilities, limitations and ammunition characteristics.

PROCUREMENT PROFILE:	FY00	FY01
Quantity BN Sets:	*0*	*10*

OPERATIONAL IMPACT

Miles 2000 will provide the capability to conduct realistic reinforced infantry battalion force on force engagements. Additional enhancements will provide longer battery life, lighter weight, reduced MILES equipment profiles, and an After Action Review feedback capability. A MILES Target Interface Device (MTID) will be available that will make MILES 2000 inter-operable with currently fielded Remote Target Systems (RETS) and Portable Infantry Target Systems (PITS).

PROGRAM STATUS

IOC is scheduled for FY00 and FOC in FY01.

DEVELOPER/MANUFACTURER

Cubic Defense Systems, San Diego, CA

The Combat Vehicle Appended Trainer (CVAT)

DESCRIPTION

The Combat Vehicle Appended Trainer (CVAT) is a family of full-crew deployable mission simulators that are appended to an AAV, LAV, and M1A1 tank. CVAT provides high fidelity, deployable appended, precision gunnery and networked tactical training that will allow combat vehicles to satisfy standardized, individual, collective and joint training objectives.

PROGRAM PROFILE:	FY00	FY01
Quantity:	*0*	*35*

OPERATIONAL IMPACT

The CVAT system design will support training in garrison, field, forward and deployed environments. The CVAT system fulfills the requirement for a deployable appended trainer to the M1A1, LAV and AAV operational platforms. CVAT provides collective task training for familiarization, proficiency, sustainment, and force-on-force training at the individual, crew, section, and platoon level.

PROGRAM STATUS

Currently in Phase 0, with a planned Milestone I/II decision in FY00 and a projected contract award in FY00. IOC is planned for FY02 with FOC in FY04.

DEVELOPER/MANUFACTURER

TBD

Remoted Engagement Target System (RETS)

DESCRIPTION

The Remoted Engagement Target System (RETS) is an automated system of pop-up stationary and moving targets for infantry, armor, and anti-armor training. The system offers computer-driven programmed tactical scenarios or it can be operated in a manual mode with group or individual targets raised on command.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

RETS will significantly enhance the capability to train individual Marines, crew-served weapons teams, small units, and combat vehicle crews in the employment of their weapon systems under the most realistic combat conditions possible.

PROGRAM STATUS

Thirteen of the total acquisition objective of forty has been fielded. FOC is scheduled for FY05.

DEVELOPER/MANUFACTURER

Lockheed Martin; Huntsville, AL

Range Instrumentation System (RIS)

DESCRIPTION

The Range Instrumentation System (RIS) is an integrated data collection and analysis system designed to provide realistic training feed back for force-on-force and live-fire training environments. RIS consists of components carried on aircraft, vehicles and personnel; communications infrastructure; data analysis subsystems; and an after-action review process. RIS provides immediate feedback and captures detailed information about the performance of individuals and units. RIS quantifies performance by replacing subjective assessments with measurable data that can be rigorously analyzed.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

An integrated data collection system that provides realistic training feedback for force-on-force and live-fire training environments.

PROGRAM STATUS

Program is in Phase 0, the concept and exploration phase.

DEVELOPER/MANUFACTURER

TBD

Closed Loop Artillery Simulation System (CLASS)

DESCRIPTION

The Closed Loop Artillery Simulation System (CLASS) is a simulator that will be used for artillery training within the operational forces. Primary users of this system would be the Marine Forces active and reserve, artillery crews, batteries, fire direction centers and forward observers. CLASS will monitor and evaluate each crew member's performance and provide feedback. The monitoring and evaluation will be accomplished by using appended sensors on the howitzer to monitor the position of the gun tube, monitoring the fuse setting to ensure the correct fuse is set and monitoring the communication traffic, both voice and data, between each position.

PROGRAM PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The CLASS system will provide integrated training to the Forward Observer (FO), Fire Direction Center (FDC), and firing battery personnel. The integrated mode will be a closed loop environment that will network the FO, FDC, and battery team to conduct fire missions. The firing battery team will have the ability to operate in the live fire or simulated mode. Currently, the only way to fully exercise this team is through live fire exercises.

PROGRAM STATUS

Currently in a Phase 0, with a planned Milestone I/II decision in 4th Qtr FY01. IOC is scheduled for FY03 with FOC in FY05.

DEVELOPER/MANUFACTURER

TBD

The Joint Simulation System (JSIMS)

DESCRIPTION

The Joint Simulation System (JSIMS), when fully developed, will be the flagship program of the next generation of constructive models. JSIMS is a single, seamlessly integrated simulation environment that includes a core of common and joint representations and services, a run time hardware and software infrastructure, and interfaces augmented by representations of air, space, land and maritime warfare functionally residing in a common repository. These can be composed to create a simulation capability to support joint or Service training, rehearsal, or education objectives. JSIMS will provide not only an improved capability for inter-Service operability, but also an enhanced Joint Battle-Staff Training Capability for the Warfighting CINCs. At IOC, JSIMS will, at a minimum, replace the useful training functionality of the 1998 Joint Training Confederation as defined by the CINCs and Services. At IOC, JSIMS will focus on support for training at the strategic-theater and operational levels of war for unified combatant command staffs, Joint Task Force (JTF) commander and staff, and JTF component commanders and staffs. At FOC, JSIMS will provide a comprehensive and accredited JSB, spanning strategic-national levels down to tactical levels. At FOC, JSIMS will support all warfare domains in all phases of operations (mobilization, deployment, employment, sustainment, and redeployment).

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*TBD*

OPERATIONAL IMPACT

The FOC version of JSIMS will also be suitable for supporting training and preparation for all tasks identified in the UJTL. By FOC, JSIMS will have evolved fully to support professional military and senior officer education, mission planning, mission rehearsal, and doctrine development. At maturity, JSIMS will allow globally dispersed forces, including deployed U.S. forces, R&D test facilities and ranges, defense educational institutions, reserve components, U.S. Government agencies, allies, and multinational forces to participate simultaneously in multi-echelon, simulation-assisted training events.

PROGRAM STATUS

JSIMS is currently in phase I. IOC is planned for FY01 with FOC in FY04.

DEVELOPER/MANUFACTURER

TBD

Distance Learning (DL) Program

DESCRIPTION

Distance Learning (DL) is a Marine Corps wide Defense Information Infrastructure compatible distributed Intranet that allows Marines to receive individual and formal training via the appropriate interactive media, when and where the learning is needed. DL consists of commercial-off-the shelf hardware and software than runs on the Marine Corps Enterprise Network or existing Base Telecommunications Infrastructure. DL hardware consists of the Training and Education Point of Presence (TEPOP) Server Suites to store the DL courseware; Learning Resources Centers (LRC), Deployable LRC's and Video Tele-training (VTT)Center classrooms for accessing DL products. The DL program is an ACAT III-IT total force program.

PROCUREMENT PROFILE:	FY00	FY01
Quantity TEPOPs:	*6*	*5*
LRCs	*9*	*15*
VTTs	*5*	*4*
DLRC	*0*	*18*

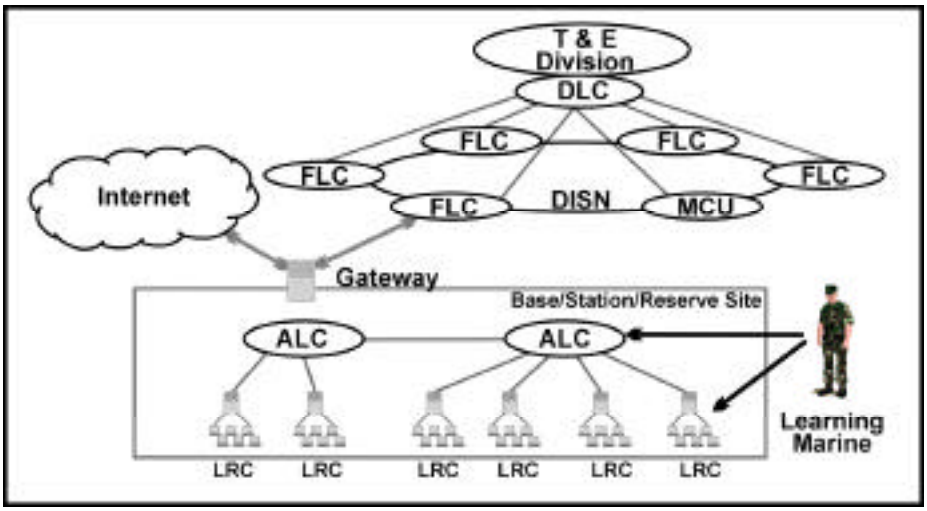
OPERATIONAL IMPACT Distance Learning allows each Marine to keep pace with our rapidly expanding educational and training needs.

PROGRAM STATUS

Milestone III is scheduled for FY00. IOC is scheduled for FY02 with FOC in FY05.

DEVELOPER/MANUFACTURER

Various OTS from local distributors and wholesalers.



Non-Lethal Weapons (NLW) Capability Set

DESCRIPTION

The NLW Capability Set contains the weapon systems, munitions, and equipment required to satisfy appropriate NLW employment. Its components are designed primarily to incapacitate personnel or materiel, while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment. The NLWs are not required to have no probability of producing fatalities or permanent injuries, but must significantly reduce those probabilities when compared to traditional military weapon systems, munitions, and equipment. The various NLWs are intended to augment the warfighters current capabilities and enhance their role in Military Operations Other Than War, rather than to replace or supplant existing weapons. The set is intended to provide a core NLW capability and a repository for future NLW components.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*6*	*0*

OPERATIONAL IMPACT

The NLW Capability Set is designed to counter a variety of threats which Marines have previously lacked the appropriate tools to address. Components are ideally suited for use against noncombatants who, by their presence or actions, jeopardize a unit's ability to accomplish its assigned mission.

PROGRAM STATUS

The program is currently fully funded. However, more funding will be required over the years to keep the NLW Capability Set current and to achieve the highest degree of commonality attainable among the Services.

DEVELOPER/MANUFACTURER

Commercial Integrator - Aardvark Tactical Inc., Arcadia, CA

Outer Tactical Vest (OTV)

DESCRIPTION

The Outer Tactical Vest (OTV) is a protective vest worn over clothing for protection against fragmentation and small arms threats. The OTV alone is capable of defeating small arms threats up to 9mm projectiles. When the Small Arms Protective Inserts (SAPI) are added, the level of small arms protection is increased to 7.62mm. The OTV has a removable collar, throat protector, and groin protector. Webbing on the front of the OTV allows the attachment of pockets from the Modular Lightweight Load Carrying Equipment. The OTV also has side ventilation flaps for comfort and fit.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*6,719*	*12,623*

OPERATIONAL IMPACT

Fielding of the OTV will increase the survivability of the Marine on the battlefield while reducing the Marine's load weight when compared with the current flak jacket.

PROGRAM STATUS

Fielding is currently underway. FOC is expected by FY05.

DEVELOPER/MANUFACTURER

Point Blank Body Armor, Ft Lauderdale, FL

Forward Resuscitative Surgery System (FRSS)

DESCRIPTION

The FRSS is a new concept for Health Service Support that will bring a surgical capability forward into Echelon II and will either augment the Battalion Aid Station or the Shock Trauma Platoon. The FRSS consists of a shelter, limited medical equipment and supplies, selected personnel from the Surgical Company, and organic support from the FSSG to sustain a 72-hour mission or 18 patients without resupply.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

Where no surgical capability had previously been provided, the FRSS will treat critically injured Marines with abbreviated surgeries to stabilize patients so that they will survive evacuation to a higher Echelon of care.

PROGRAM STATUS

FRSS is in the Concept Development Phase and a Milestone I is expected in the 2nd QTR of FY00. Developmental testing is expected to begin in FY00.

DEVELOPER/MANUFACTURER

TBD

Modular Lightweight Load Carrying Equipment (MOLLE)

DESCRIPTION

MOLLE is a fully integrated, modular load bearing system consisting of a load bearing vest with butt pack, main ruck with sustainment pouches and sleeping bag compartment attached to an external frame. There is also a patrol pack, which can be used separately or combined with the main ruck for added load carrying capability. MOLLE can be configured in several different variations to fit the load handling needs of the mission. The load-bearing vest is always worn and holds pockets for magazines and hand grenades. A connecting device on the vest is designed so that the external frame of the main ruck attaches to the waist belt of the vest to transfer the load from the shoulders and back to the hips where it can be carried much easier with less fatigue. There are also different variations of the load-bearing vest for each member of a squad. These configurations include a rifleman, pistol, squad automatic weapon, grenadier, and corpsman configuration.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*11,289*	*33,662*

OPERATIONAL IMPACT

MOLLE will increase the combat effectiveness of Marines in the field by reducing fatigue and injury. A unique ergonomic design permits most of the weight of the load to be borne on the wearer's hips. This design reduces the burden on a Marine's shoulders and back to lessen muscle fatigue and heat stress.

PROGRAM STATUS

Fielding is currently underway. FOC is expected by FY05.

DEVELOPER/MANUFACTURER

Specialty Defense Systems, Dunmore, PA

Truck, Firefighting, Aircraft Crash and Structure Fire, A/S32P-19A (P-19A) Rebuild Program

DESCRIPTION

The P19-A is mobile, flexible, and capable of operating in extreme weather conditions as well as in a Nuclear, Biological and Chemical (NBC) environment. Rebuilding will greatly increase the system's reliability. The Truck, Firefighting, Aircraft Crash and Structure Fire, A/S32P-19A (P19-A) Rebuild program is designated an ACAT IV (M) Minor Upgrade program. It is a critical asset in airfield operation providing Crash, Fire and Rescue (CFR) services. The P19-A series vehicle exceeded their planned service life of twelve years in 1997, and commenced a three-year program to rebuild the existing fleet.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*33*	*34*

OPERATIONAL IMPACT

The P19A provides the Marine Air Ground Task Force a fire-fighting truck to accomplish its expeditionary airfield operations of rescue protection for Aviation Combat Element aircraft, structural firefighting protection for tactical airfield-related facilities and miscellaneous support vehicles.

PROGRAM STATUS

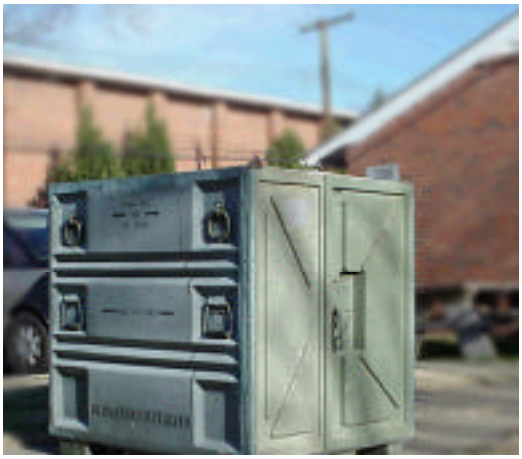
Milestone I/III occurred in FY96. Production began in FY98. IOC occurred in FY99 with Full Operational Capability in FY01.

DEVELOPER/MANUFACTURER

Crash Rescue Equipment Services, Inc. Dallas, TX

Pallet Containers (PALCON)

DESCRIPTION



The Pallet Containers (PALCON) are a modular, lightweight, and durable family of containers and accessories to be used for storage and transportation of organic equipment and consumable supplies during deployment and in garrison. The PALCON, PALCON rack, inserts and half length inserts will replace the wooden mount out boxes and flat box pallets that are currently used for transporting cargo. The removable inserts that are provided will be used for the storage of publications, administrative supplies and other small items.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*2,289*	*TBD*

OPERATIONAL IMPACT

The family of cargo containers provides a significant increase in current capability by using modern technology to containerize and unitize break-bulk cargo. It is a weather tight, prefabricated, dimensionally standard and reusable container. They have the capability to integrate more efficiently with the current fleet of organic vehicles, and provide a more efficient method of packaging and moving cargo. They provide the degree of containerization required for rapid and efficient movement.

PROGRAM STATUS

Thirty Percent (30%) of the containers have already been fielded. IOC began in FY94 with FOC scheduled for FY08. PALCON procurement during FY01 and FY02 depends on funding allocations for those years.

DEVELOPER/MANUFACTURER

Plastics Research, Santa Anna, CA

Family of Tactical Soft Shelters (FTSS)

DESCRIPTION

The Family of Tactical Soft Shelters (FTSS) are state-of-the-art soft shelters that replace current Command Post (CP) and General Purpose (GP) (Medium) tents. FTSS utilizes modular/expandable construction technology and state-of-the-art fabrics and manufacturing techniques to produce shelters that are mobile, durable, terrain-adaptable, all weather, quicker to erect and strike, waterproof, and have connectivity/interoperability with tactical vehicles and ancillary equipment (power and heating, ventilation and air conditioning).

PROCUREMENT PROFILE:	FY00	FY01
Quantity	*937*	*617*

OPERATIONAL IMPACT

The FTSS is not designed to counter a specific threat. It is intended to improve the effectiveness with which a variety of battlefield functions are accomplished. They are modular, lightweight, durable and quick to erect and strike and easy to transport by the Marine Corps tactical cargo vehicles enhancing the ability to conduct maneuver warfare. The FTSS environmentally protects personnel performing the following functions: command and control, medical, dental, administrative, supply, maintenance, billeting, storage, and messing. In addition, the FTSS provides blackout capability and reduced IR.

PROGRAM STATUS

Currently in Phase II; IOC is scheduled for FY00 with FOC in FY05.

DEVELOPER/MANUFACTURER

CP; Principal Design Activity - Natick Research and Development Manufacturer, Boston, MA

Camel Manufacturing Company Garyville, TN

GP (Medium); Principal Design Activity - Natick R&D, Boston, MA

Manufacturer - Johnson Worldwide Associates, Eureka, KS

Lightweight Helmet (LWH)

DESCRIPTION

The Lightweight Helmet (LWH) will provide ballistic protection equal to that of the standard Personnel Armor System for Ground Troops (PASGT) helmet but is lighter and more comfortable to wear. The LWH will replace the PASGT as the primary means of head protection for ground troops in the Marine Corps.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The Lightweight Helmet (LWH) will be used in close combat for protection from fragmentation. It will also have a measure of ballistic protection to protect from 9mm small arms projectiles.

PROGRAM STATUS

A Milestone III decision is expected in FY00. IOC is scheduled for late FY00 with FOC by FY07.

DEVELOPER/MANUFACTURER

GENTEX Corporation

Small Arms Protective Insert (SAPI)

DESCRIPTION

SAPI consists of interchangeable ceramic plates which are inserted into the front and back of the Outer Tactical Vest (OTV) to increase a Marine's protection capabilities to defeat small arms rifle fire and indirect flechette protection. SAPI is capable of defeating multiple hits from small arms fire up to 7.62mm at muzzle velocity. The weight of both protective inserts is 8 pounds. When combined with the OTV, the total weight of the OTV and SAPI is 16 pounds. This is far below the performance threshold requirement of 23.5 pounds.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*5,000*	*6,345*

OPERATIONAL IMPACT

Fielding of SAPI will greatly increase the survivability of the Marine on the battlefield.

PROGRAM STATUS

Fielding is currently underway. FOC is expected by FY03.

DEVELOPER/MANUFACTURER

Specialty Defense Systems, Dunmore, PA

Smart Card Technology (SCT) Program

DESCRIPTION

The Smart Card Technology (SCT) program is a technology insertion program that includes software application development, business process re-engineering, smart cards, computer hardware and telecommunications infrastructure. Identical in size and feel to credit cards, smart cards store information on an integrated microprocessor chip located within the body of the card. These chips hold a variety of information, from stored monetary value, used for financial transactions, to secure information and applications for higher-end operations such as medical and personnel records. Smart cards may also contain a magnetic stripe and a standard bar code. Additionally, smart cards may be used for personal ID and public/private key infrastructure (PKI) for encryption and authentication.

PROCUREMENT PROFILE:	FY00	FY01
Quantity:	*TBD*	*TBD*

OPERATIONAL IMPACT

SCT has applicability across multiple functional areas: operations, readiness, quality of life, security, logistics, finance, and personnel administration. The savings in current personnel structure and the reduction in costs afforded by leveraging SCT should release more support personnel for duty in the operating forces and allow the Marine Corps to re-program savings into other areas.

PROGRAM STATUS

The Department of the Navy (DON) SCT Business Plan includes USMC plans for implementing SCT in FY00 and FY01. It is anticipated that fielding will begin during the 2nd Quarter of FY00.

DEVELOPER/MANUFACTURER

TBD

Military Eye Protection System (MEPS)

DESCRIPTION

MEPS is a Joint Army and Marine Corps program. It will be issued to all personnel in the in the Ground Combat Element and to Marine Security Force personnel.

Procurement Profile:	FY00	FY01
Quantity:	*0*	*0*

OPERATIONAL IMPACT

The system will offer protection from ballistic and laser threats from frequency agile lasers operating anywhere within the electromagnetic spectrum. Equipment being fielded will ensure Marines can fight in all environments. All of the equipment will be reliable and easy to maintain. This item is to be procured in sufficient quantities to adequately sustain MEFs during extended operations in an NBC environment.

PROGRAM STATUS

Two companies have been awarded R&D contracts and are in a design competition. IOC for the MEPS is FY 02. FOC is set for FY 04.

DEVELOPER/MANUFACTURER

Principal Design Activity - Natick Research and Development

Engineering Center and MARCORSYSCOM

SAN ANTONIO Class LPD 17

DESCRIPTION

The SAN ANTONIO Class LPD 17 is the newest amphibious ship class designed to provide the large lift capacity necessary for the rapid build-up of combat power ashore. In addition, it significantly enhances the operational flexibility of a three ship Amphibious Ready Group. It will carry about 700 Marines, have a vehicle stowage capacity of 25,000 square feet, a cargo stowage capacity of 27,000 cubic feet, a well deck sized for two LCACs, and a flight deck capable of simultaneous operation of two CH-53E Super Stallions, two MV-22 Osprey tiltrotor aircraft, or four CH-46 Sea Knight helicopters. This ship class is optimized for size, flexibility, and economy.

PROCUREMENT PROFILE:

FY	96	97	98	99	00	01	02	03	04	05	06	07	08	09	Total
Funded	1	0	0	1	2	2	2	2	2						12
Deliver								2	1	2	2	2	2	1	12

OPERATIONAL IMPACT

Current emphasis on regional contingencies and rapid deployment by naval expeditionary forces increases the importance of amphibious lift assets. The LPD 17 class is required to overcome shortfalls of amphibious lift assets caused by the decommissioning of aging LPDs, LSTs, LKAs, and LSDs. When construction is completed, the 12 SAN ANTONIO Class LPDs will provide the lift necessary to meet crisis response and forward presence requirements.

PROGRAM STATUS

The 1990 DoN Integrated Amphibious Operations and Marine Corps Air Support Requirements Study reaffirmed the SAN ANTONIO Class requirement. The MNS was validated in September 1990 and the DAB approved Milestone 0 in November 1990. Preliminary design work was completed in November 1993 and was followed by commencement of contract design. The contract for the lead ship was awarded in December 1996. Initial delivery is scheduled for FY03.

DEVELOPER/MANUFACTURER

Avondale Industries

Bath Iron Works

Joint Military Intelligence Program (JMIP)

DESCRIPTION

The JMIP, established in 1995, provides oversight of selected DoD intelligence programs and resources under the Deputy Secretary of Defense. The JMIP consists of the following component programs:

- Defense Cryptologic Program (DCP)
- Defense Imagery and Mapping Program (DIMAP)
- Defense Joint Counterintelligence Program (DJCIP)
- Defense General Intelligence and Applications Program (DGIAP) which is comprised of:
  - Defense Airborne Reconnaissance Program (DARP)
  - Defense Intelligence Counterdrug Program (DICP)
  - Defense Intelligence Tactical Program (DITP)
  - Defense Space Reconnaissance Program (DSRP)
  - Defense Intelligence Special Technology Program (DISTP)

The JMIP funds the RDT&E and procurement associated with the Marine Corps Joint Service Imagery Processing System (JSIPS) National Input Segment (NIS) at Camp Pendleton, CA, and the Common Imagery Ground/Surface System (CIGSS) TEG development in the DARP. The NIS, operated by the Marine Corps Imagery Support Unit (MCISU), became fully operational in 1996. The DARP also funds the Unmanned Aerial Vehicles (UAV) System RDT&E and procurement to include the Marine Corps Pioneer and the Tactical UAV programs. Although in Navy funding, the DARP has provided the RDT&E and procurement dollars for the Advanced Tactical Air Reconnaissance System (ATARS). The Marine Corps will receive 24 ATARS for use on the F/A-18D aircraft.

DCP RDT&E funding has led to marked improvements in the tactical SIGINT collection and processing capabilities of the Marine Corps. DCP investment led to fielding and/or improvements to the Team Portable Collection System (TPCS), Technical Control and Analysis Center (TCAC), and Mobile Electronic Warfare Support System (MEWSS). Under the Radio Battalion Modernization and Concept Exploration project, DCP RDT&E investment improved radio direction-finding capability, special intelligence communications, and signal intercept capability.

JMIP support to the Marine Corps also provides funds for pay and allowances, travel, and per diem for Marine Corps Reserve intelligence personnel to augment and support CINCs, CINC-supported exercises and activities, and other joint production and exercise functions.

National Foreign Intelligence Program (NFIP)

DESCRIPTION

The NFIP is composed of 12 programs and the CIA Retirement and Disability System (CIARDS). These NFIP programs are not organizational but rather financial accounts that provide funding for intelligence operations and activities. The Marine Corps participates directly in 3 component programs of the Director of Central Intelligence sponsored NFIP:

- ***Consolidated Cryptologic Program (CCP)*** - The CCP provides for Marine Corps participation in the United States Cryptologic System. The Marine Support Battalion, working in concert with the National Security Agency and the Naval Security Group, supports the worldwide SIGINT and INFOSEC needs of national decision-makers and operational commanders. These Marines routinely augment MAGTFs in direct support of expeditionary forces, such as in Bosnia and Kosovo, and in joint exercises.

- ***General Defense Intelligence Program (GDIP)*** - The GDIP funds Service and Defense Intelligence Agency (DIA) distributed production functions of the Marine Corps Intelligence Activity (MCIA). It also provides for Marine Corps participation in the Defense HUMINT Service (DHS), on CINC staffs, and in the Joint Intelligence/Joint Analysis Centers (JIC/JAC) at USPACOM, USACOM, USSOUTHCOM, USCENTCOM, and USEUCOM. GDIP provides augmentation pay for Marine Corps Reserve personnel performing intelligence duties at the national and theater level. FY99 GDIP funds have provided over 5,500 man-days of Reserve intelligence support and are currently slated to receive $920K during FY00.

- ***Foreign Counterintelligence Program (FCIP)*** - The FCIP provides for Marine Corps participation in DoN counterintelligence activities through the Naval Criminal Investigative Service.

The NFIP allocates resources to support reimbursable or direct costs and compensation for over 900 Marines and Marine Corps civilian personnel as well as fund-limited operations and maintenance activities.

Chapter 5

Fiscal Resource Overview

The FY01 Budget emphasizes the primacy of the Marine Air Ground Task Forces (MAGTFs) and balances our resources across the four pillars upon which readiness is built. These pillars are our Marines and their families, our current systems, our modernization efforts, and our infrastructure. Properly funding these four pillars is absolutely essential to ensure we remain ready, relevant and capable as we enter the 21st Century.

Marines and their families are our first priority and our greatest success story. We continue to dedicate resources to attract and retain quality young men and women. Our individual and unit training continue to be demanding and rewarding enough to build an esprit de corps that is unequaled in any other service. Recent quality of life improvements in pay and retirement allowances will help us retain our highly qualified Marines. Initiatives funded in this budget will help restore our “shock absorber” capability by freeing up over 2,100 Marines from supporting establishment duties and returning them to the Fleet Marine Force.

Our current systems are the key to near-term readiness. To maintain near term readiness we have dedicated significant resources - both dollars and man-hours to maintaining our legacy systems. Many of these systems have reached the end of their useful service lives. We are virtually facing block obsolescence in our major ground and aviation weapons systems. Marines are required to spend more and more time and money to maintain aging equipment and weapons systems. We can no longer pour scarce resources into maintaining aging legacy systems at the expense of modernizing the force.

Modernization of the Marine Corps is the key to addressing this near-term readiness challenge. Ground equipment has been funded well below the historical, or “steady state” level of $1.2 billion for the last seven years. This extended period of underfunding has driven the recovery rate to $1.8 billion per year for ground equipment modernization. The increases provided in this budget will allow us to sustain the “steady state” level we first achieved in FY00. However, it is still well short of the recovery level.

Regarding aircraft modernization, this budget balances aircraft modernization with new aircraft procurement necessary to maintain warfighting capability through new aircraft transitions. Modernization programs like CH-46E ERIP, ECP-583 F/A-18 upgrade and the AV-8B remanufacture programs are essential for the transition to MV-22 and JSF, respectively. At the same time, immediate savings in operating and support costs can be realized with the greater reliability and maintainability of new aircraft like the KC-130J and UC-35."

Our infrastructure, Marine Corps bases and stations, is the platform for developing, training, and maintaining our Marines. It also serves as the centerpiece for our quality of life programs. While investment in our aging physical plant is long overdue our ability to do so remains limited. In the last two years we have been able to arrest our previously growing backlog of maintenance and repair (BMAR) at approximately $650 million. This is well short of our goal to reduce BMAR to $100 million by FY10. In terms of military construction, the Marine Corps' fiscally constrained goal is to replace physical plant every 70 years compared to an industry standard of 50 years. However, current funding levels allow for a replacement cycle in excess of 100 years. Investment in family housing has been underfinanced for many years. While we are on schedule to revitalize our current inventory by FY10, we are unable to address our current deficiency.

The current budget proposal allows for significant progress toward solving some of our most pressing needs, however, solutions to our problems will not be achieved overnight. To meet tomorrow's challenges and maintain the "expeditionary force in readiness" our Nation requires will take a sustained period of funding support for our modernization program. This chapter reviews the FY2001 Department of Defense (DoD) Budget resources allocated to the Marine Corps.

Fiscal Resources

Funds to support the defense strategy are programmed, budgeted, authorized, appropriated, obligated, and finally expended to cover Service investment and operational requirements. Total Obligational Authority (TOA) refers to the total financial resources available. Budget Authority (BA) refers to financial resources appropriated by Congress. The DoD Planning, Programming, and Budgeting System establishes procedures for the allocation of DoD TOA. Figure 5-1 displays the BA for all of DoD from FY95 through the FY01 Budget request. The FY01 level of $292.2 billion represents a level profile, in constant dollars, from the FY00 Congressionally approved funding level.

FIGURE 5-1: BUDGET AUTHORITY

There is a general perception that defense spending has increased over the past few years. However, figures 5-2 and 5-3 show otherwise. Figure 5-2, which shows the long-term trend in budget authority for the Department of Defense, depicts more than a decade of real decline in defense spending. Defense spending is now 31 percent below the FY85 peak year and on a par with the FY75 post Vietnam level.

FIGURE 5-2: DOD BUDGET AUTHORITY TREND ($B)

Viewed in terms of the percentage of total Federal spending, figure 5-3 shows how Defense spending has been on a downward trend since the early 1960's where it reached a level of over 50 percent of the Federal Budget in FY62. Since then mandatory spending has increased to over 50 percent of total outlays and DoD has dropped to 16 percent. DoD Budget outlays are now significantly lower than non-DoD discretionary funding.

FIGURE 5-3: BUDGET TRENDS

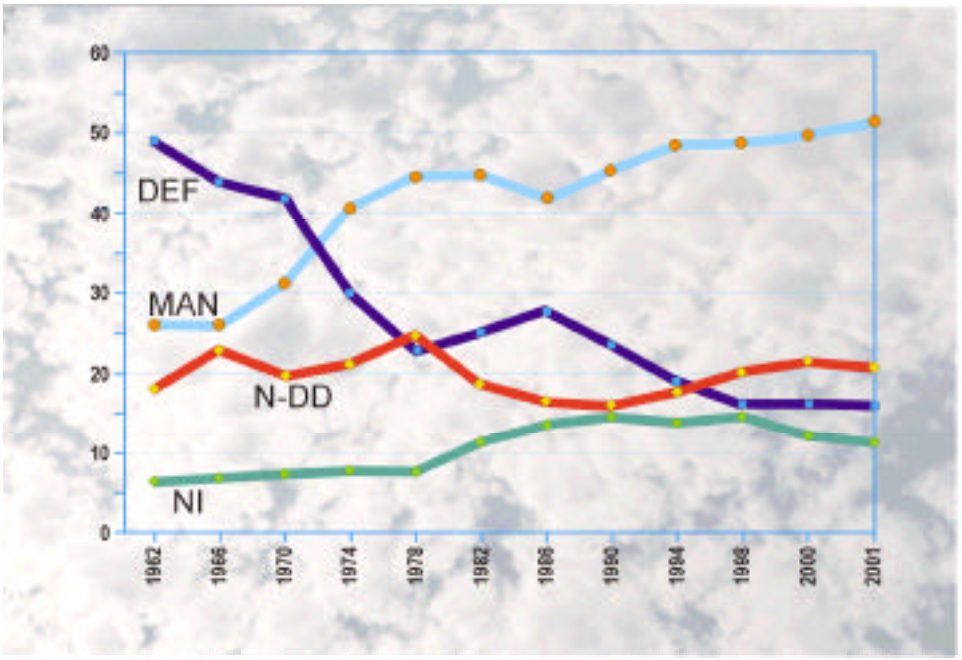


Figure 5-4 is a comparison of the relative amount of resources provided to each Service. Although the Marine Corps share is comparatively small, it leads the DoD in converting every dollar into credible combat power.

FIGURE 5-4: SERVICE COMPARISON OF TOA IN THE FY01 DOD BUDGET (FYDP $B)

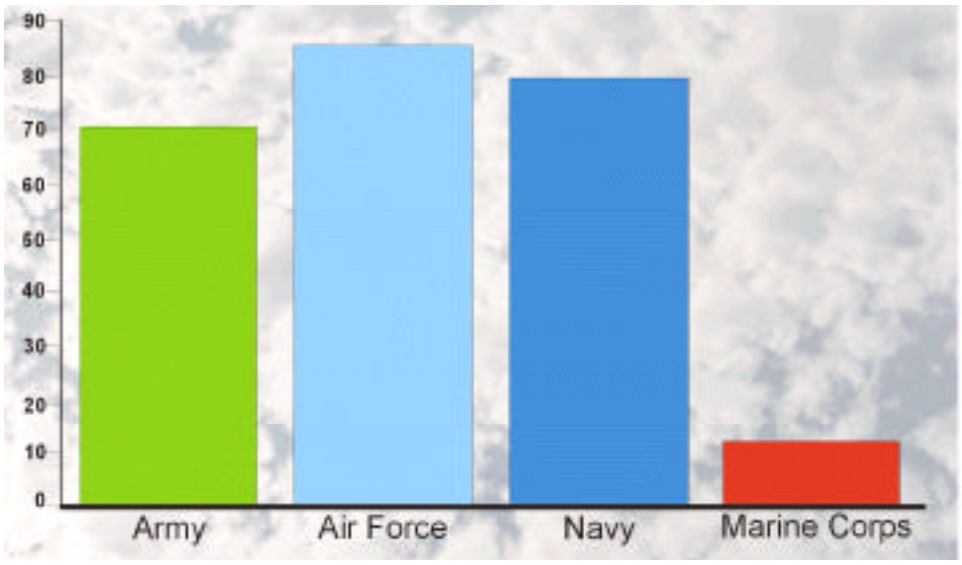
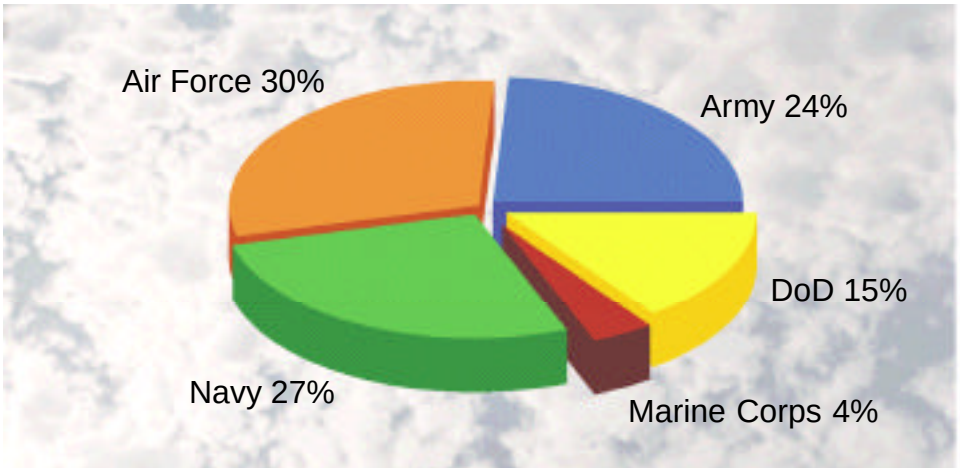


Figure 5-5 depicts the percentage of DoD funds budgeted by each Service. Each Service's TOA is subsequently divided into appropriations.

FIGURE 5-5: DOD FY01 TOA SHARES



Appropriations

Figure 5-6 displays the TOA allocated to each of these appropriations. As indicated, our personnel accounts, which make up 60 percent of the Marine Corps budget, have grown as we have instituted pay table reform and improved basic allowance for housing rates. However, most of the remaining accounts decline slightly from FY00 appropriated levels. This is because the FY00 column includes much needed congressional adds that occur a year at a time and do not carry over into the FY01 budget estimate. PMC investment remains improved over the FY99 level as we strive to overcome block obsolescence of our major ground systems. Our MILCON and FHMC accounts continue to deal with our aging infrastructure - although critical shortfalls remain in both. The O&M accounts are also down from prior years as we have tried to strike a judicious balance between maintaining near term readiness and attaining the modernization that is required for the long term health of our Corps. These trends reflect the Marine Corps difficulty in improving modernization while maintaining readiness.

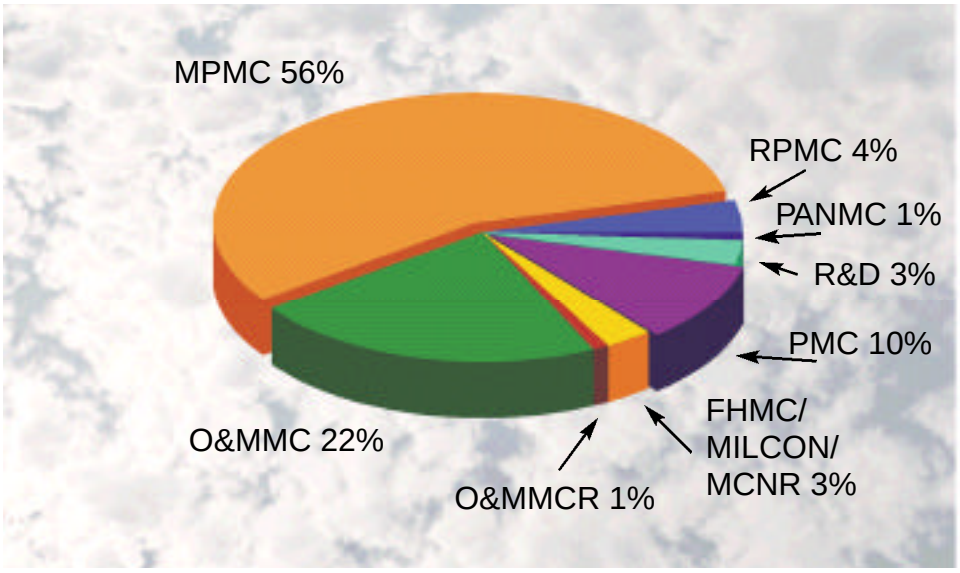
FIGURE 5-6: MARINE CORPS TOA (FYDP $M)

	FY99	FY00	FY01
MPMC	6,211	6,566	6,822
RPMC	398	413	436
O&MMC	2,675	2,712	2,706
O&MMCR	127	138	134
PMC	857	1,294	1,172
PANMC	180	192	134
R&D	350	425	390
MILCON	145	187	146
FHMC	197	252	214
MCNR	5	11	7
Sub-Total	11,145	12,190	12,161
QoL, Defense	35	58	
Total	**11,180**	**12,248**	**12,161**

Figure 5-7 depicts Marine Corps TOA trends since FY91 in constant dollar terms. This data reveals the total impact of reduced spending over time. The Marine Corps TOA, in constant dollar terms, has decreased by 7.5 percent since FY91.

FIGURE 5-7: TOTAL OBLIGATIONAL AUTHORITY
(FY01 CONSTANT DOLLARS)

FIGURE 5-8: USMC FY01 TOA BY APPROPRIATION



USMC FY01 TOA by Appropriation

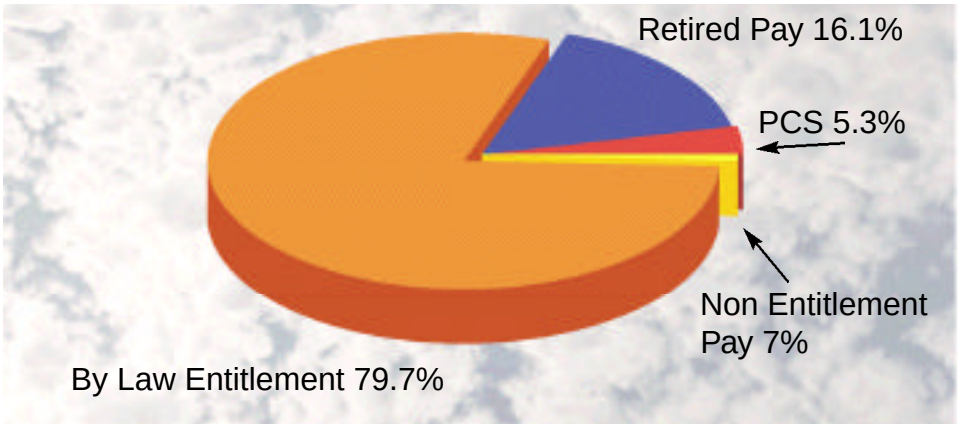
The largest elements within the Marine Corps budget request are the manpower and the operation and maintenance accounts. These accounts support our military personnel, readiness, and operations programs. Figure 5-8 shows that, combined (active and reserve), these appropriations make up 83 percent of the Marine Corps FY01 Budget.

Marine Corps procurement and research and development appropriations account for 14 percent of the budget request. These accounts support key modernization programs that are critical to the Marine Corps success on future battlefields. The remaining three percent represents investment in infrastructure in the form of family housing and new construction for active and reserve forces.

❑ *MILITARY PERSONNEL AND RESERVE PERSONNEL MARINE CORPS (MPMC and RPMC) BUDGET*

The key element to supporting our people is proper compensation. The Marine Corps active and reserve manpower accounts provide this compensation and comprise sixty percent of Marine Corps TOA. The FY00 budget included three initiatives aimed at improving retention and providing a more equitable compensation package to military personnel. These were; pay raises based on full Employment Cost Index (ECI); pay table reform targeting mid-grade enlisted and officer personnel; and a 50 percent retirement benefit for all service members retiring at 20 years. The FY01 budget continues these entitlements and capitalizes on them by increasing the domestic basic allowance for housing entitlement and reducing out-of-pocket expenses to military members from the current 19 percent in FY00 to 15 percent in FY01 and eliminating them totally by FY05. The vast majority of the MPMC account funds by-law entitlements as shown in Figure 5-9.

FIGURE 5-9: MILITARY PERSONNEL FY01 BUDGET (FYDP $M)

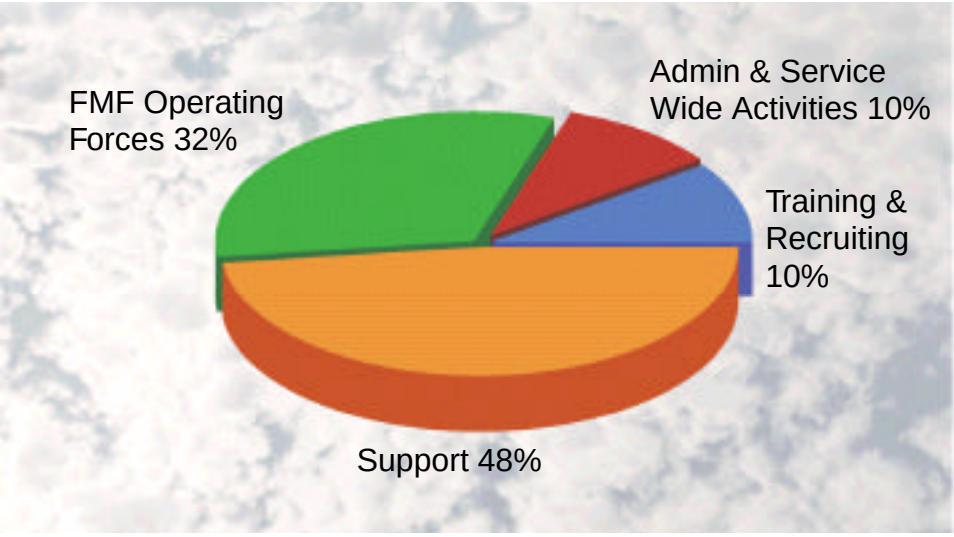


The nondiscretionary portions of this appropriation represent compensation for our Marines as authorized by Congress. Small discretionary programs (Selective Reenlistment Bonus, Aviation Continuation Pay, Enlistment Bonus, and College Fund) are modest investments that reap large dividends. These programs help the Marine Corps shape its force properly through recruiting and retention and save the taxpayers' money through reduced training costs. The Reserve Personnel Marine Corps appropriation funds the same type of programs for our reserve component. We remain committed to Reserve contributory support to enhance and complement the active force while maintaining unit readiness to meet crisis requirements.

❑ *OPERATION AND MAINTENANCE, MARINE CORPS (O&MMC AND O&MMCR) BUDGET*

The O&M budget request of $2.8 billion represents, in real terms, a decrease of 5.2 percent from FY00 after discounting the transfer of resources to fund the Marine Corps share of Pentagon rents and quality of life defense projects.

FIGURE 5-10: OPERATION AND MAINTENANCE BY MAJOR ACTIVITY



The O&M accounts finance the day-to-day operation of the Marine Corps. These daily operations span the width and breadth of Marine Corps activities from the recruiting, accessing, and training of Marines to the exercise and operations they conduct as part of the Fleet Marine

Force. It also includes the daily cost of operating and maintaining the bases and stations that house, support, and provide training ranges for them. Thus the O&MMC account is a crucial component of our overall readiness. This budget will support a FMF of three active divisions and associated support and combat service support elements, station and Marine-unique support for three aircraft wings and the operation and maintenance of training bases, logistics functions, and administrative activities. Despite lower spending levels, the budget includes support, at minimally acceptable levels, for the operating forces of the Marine Corps, to include continuation of the fielding of improved equipment for the individual Marine. The budget also finances the continuation of investment in outsourcing and privatization studies reflecting savings associated with operational efficiencies, and contains funding to maintain an acceptable level of depot maintenance unfunded backlog. This budget fully finances requirements for recruit training, initial skill training and follow-on training courses. It also continues our efforts to reduce the training pipeline and increase manpower strength in the FMF through the Distributed Learning program.

This budget continues to support our recruit accession goals and expanded recruit advertising campaign. Highly qualified and motivated young men and women are a foundation of our Corps. During this period of low inflation and high employment, the Marine Corps must continue to remain competitive in attracting quality recruits. Our competitiveness is a direct result of our dedication of resources, both recruiting manpower and advertising. The FY01 budget maintains recruiting and advertising at the level established in FY00.

A major portion of FMF support covers the areas of base operations and maintenance of real property. While essential levels of base operations consistent with prior years' experience have been financed, fiscal constraints have precluded necessary investment in maintaining plant property at Marine Corps bases and stations. While funding in this budget will arrest the backlog of maintenance and repair at approximately $665 million, this level still far exceeds our goal of reducing backlog to $100 million by FY10.

One of the Marine Corps highest priorities is the restoration of the FMF's shock absorber by increasing manning levels in the operating forces. This budget, through a series of initiatives is projecting the return of over 2,100 Marines to the FMF. These initiatives include military billet savings from installation reform, regionalizing food service operations, and civilianizing Fleet Assistance Program billets.

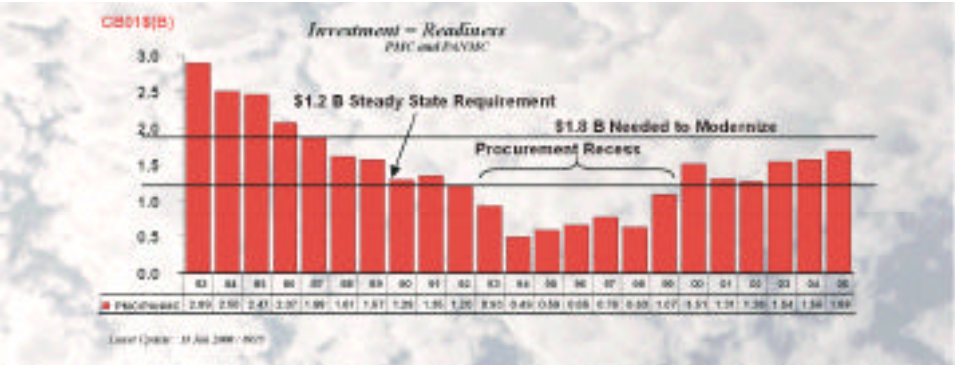
Our budget continues to support the Maritime Prepositioning Program through replenishment, modernization, and replacement of equipment during the MPS maintenance cycle. Also funded under this appropriation is the transportation of materiel to and from Marine Corps logistics bases.

The Department's funding of Marine Corps operations provides highly ready forces to respond to the full spectrum of crises by providing appropriately sized, positioned, and mobile forces for joint or independent operations. The O&MMCR account supports a Marine Reserve Force that includes the Fourth Marine Division, the Fourth Marine Aircraft Wing, the Fourth Force Service Support Group, and the Marine Corps Reserve Support Command. The budget also continues funding for environmental programs and provision of initial issue equipment.

❑ *PROCUREMENT, MARINE CORPS (PMC), PROCUREMENT OF AMMUNITION, NAVY AND MARINE CORPS (PANMC), AND RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, NAVY (RDT&E,N)*

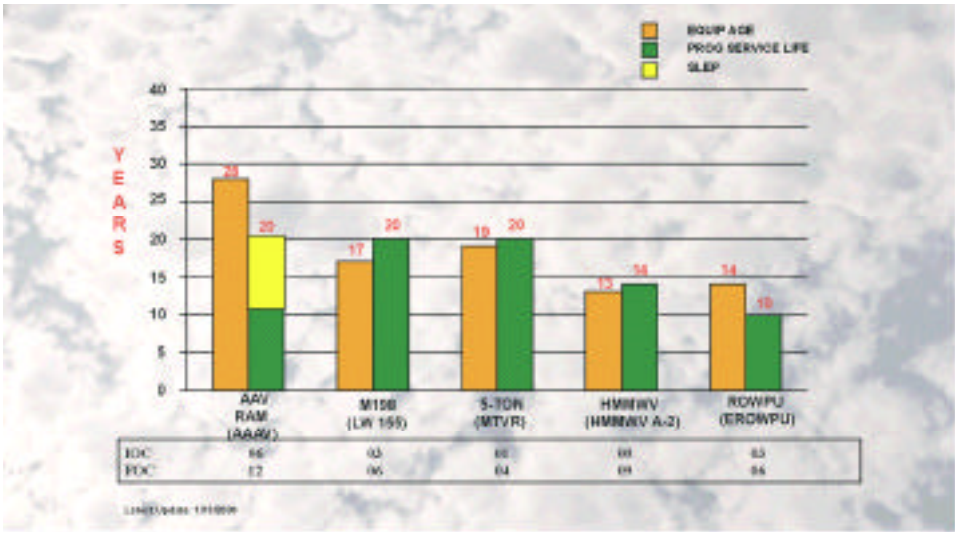
These appropriations buy all equipment Marine Corps ground forces use, all their ammunition, and necessary follow on research and development for future systems. Marine Corps equipment modernization and research and development accounts were seriously underfunded from FY93 through FY99. Figure 5-11 shows during this period, the total underfunding of our procurement accounts totaled $3.6 billion due to annual funding being well short of the steady state level of $1.2 billion needed annually to sustain the Corps. This extended period of underfunding has driven the recovery rate to $1.8 billion per year. While the budget returns to the sustainment level it does not recover from the cumulative effect of those years of underfunding.

FIGURE 5-11: PROCUREMENT MARINE CORPS DOLLARS (FY01 CONSTANT DOLLARS)



As indicated in Figure 5-12 most of our major ground weapons systems are at or near the end of their planned service lives. When possible, we have taken advantage of remanufacturing and service life extension programs to extend their useful lives and bridge the gap until new equipment will be fielded. However, as discussed earlier in this chapter, maintaining old equipment is a serious burden on both the man-hours of our young Marines and our O&M resources. Increasing the pace of modernization is key to meeting this challenge.

FIGURE 5-12 GROUND EQUIPMENT AGE



The PMC & PANMC budget request of $1.3 billion represents, in real terms, a decrease of 14 percent over FY00. Figure 5-13 depicts how the PMC appropriation is allocated to budget activities in the FY01 Budget.

FIGURE 5-13: MARINE CORPS PROCUREMENT BY BUDGET ACTIVITY (FYDP $M)

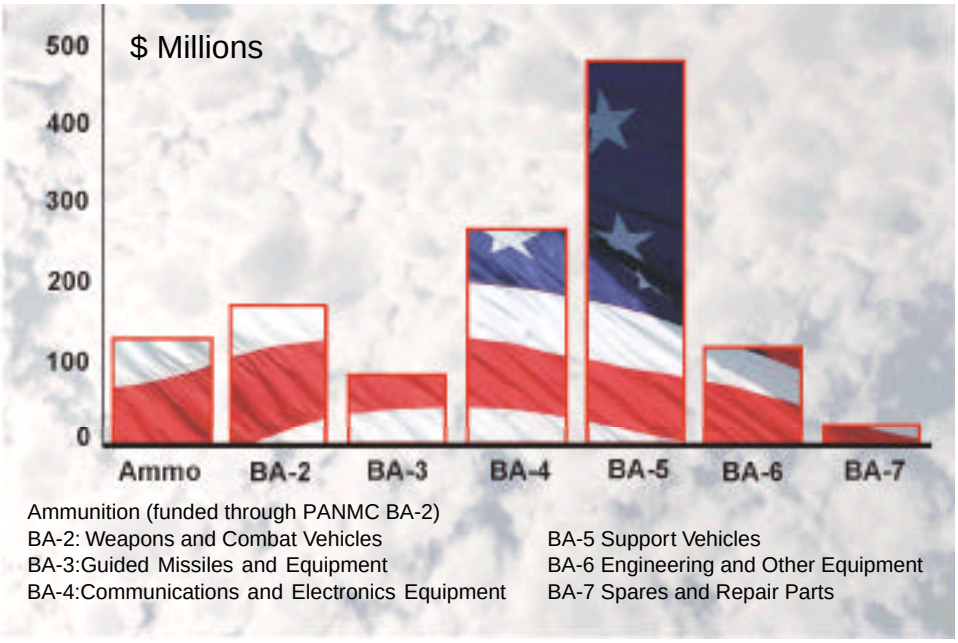
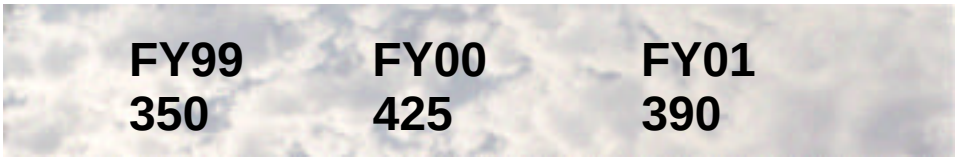


Figure 5-14: Represents R&D to support ground equipment.

FIGURE 5-14: MARINE CORPS RDT&E TO SUPPORT GROUND EQUIPMENT (FYDP $M)



❑ *MARINE AVIATION PROCUREMENT*

Marine Aviation procurement is a component of Aviation Procurement, Navy. In this context Marine Aircraft procurement funding is well below the historical "steady-state" level of $1.95 billion (See Figure 5-15). This extended period of under funding has resulted in deferred replacement of our fleet of aging aircraft and resulted in increased time and money being spent to maintain aviation readiness. It has also driven our legacy systems to significantly exceed their service lives (See figure 5-16). While significant progress has been made in the current budget to

recover from the procurement recess it still falls short of our steady state requirement necessary to sustain a modern capable Marine Corps.

FIGURE 5-15: HISTORICAL AIRCRAFT PROCUREMENT SUMMARY

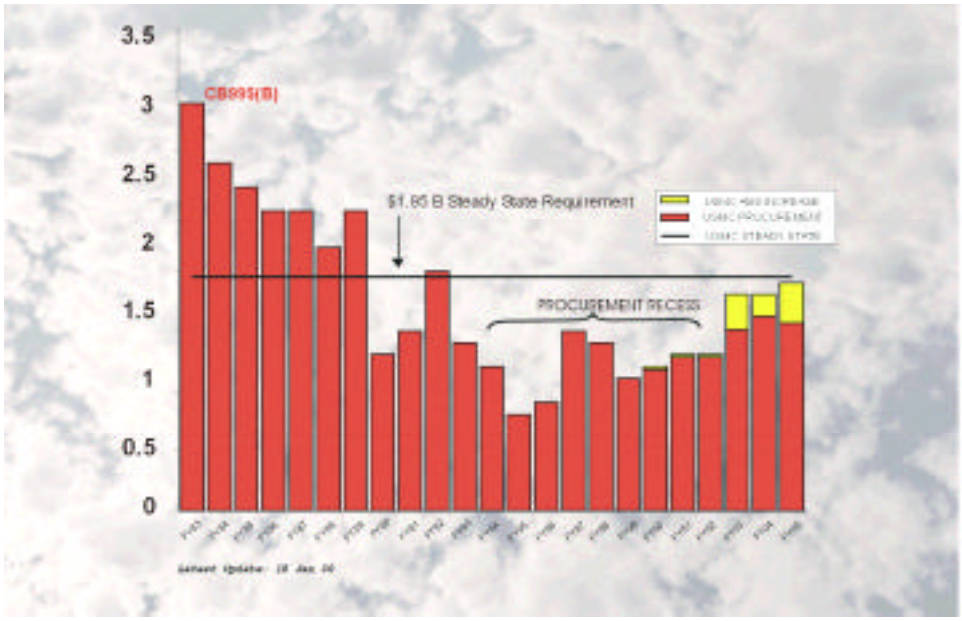
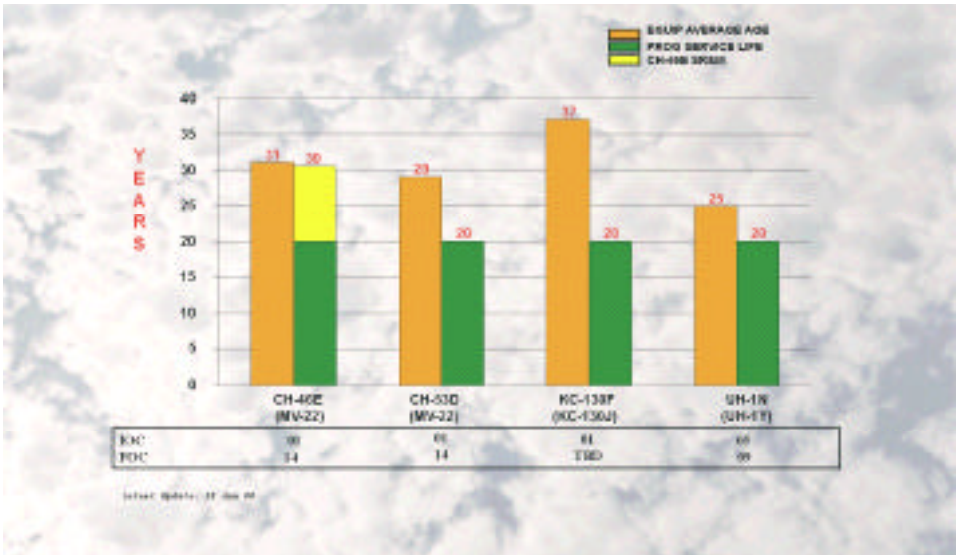


FIGURE 5-16: AGING AVIATION EQUIPMENT



Marine Corps Ground Equipment

The FY01 budget continues to focus on the development and procurement of technologies and systems that support the Marine Corps.

The FY01 budget continues funding at the steady state procurement level and the outer funding levels continue the overall upward trend toward the recovery rate. Several major replacement, remanufacture and modernization programs are included in this budget, such as the High Mobility, Multipurpose Wheeled Vehicle (HMMWVA2), the Medium Tactical Vehicle Replacement (MTVR) and the Assault Amphibious Vehicle (AAV) Reliability and Maintainability (RAM) Rebuild to Standard (RS). The HMMWVA2 program will replace our current aging inventory of first generation HMMWVs. The MTVR program will remanufacture 5-ton trucks over the next four years and provides for the economical replacement of the current medium truck fleet with enhanced off-road capabilities. The FY01 Procurement Marine Corps budget funds the continuation of the AAV7A1 RAM/RS program to provide a cost-effective method to sufficiently bridge our operational requirements until the AAAV replaces the AAV7A1. This program provides for the return of mobility performance and allows affordable achievement of combat readiness.

This budget supports enhanced firepower with the continued multi-year procurement of the Javelin Missile, a medium range, man-portable, anti-tank weapon to replace the Dragon system. Development, prototyping and engineering efforts also continue for the Lightweight (LW) 155mm Howitzer, a replacement for the aging, operationally deficient M198 howitzer. The LW155 will provide artillery fire-support with increased mobility, survivability, deployability and sustainability in an expeditionary environment. LW155 procurement funding begins in FY01 for long lead and support materials.

Funding for the procurement of ammunition is reflected in the Procurement of Ammunition, Navy and Marine Corps appropriation. The FY01 budget continues the effort to reach the Marine Corps goal of satisfying the combat requirement through the FYDP while meeting the annual ammunition training requirements.

A significant portion of the Marine Corps FY01 Ground Research and Development budget is dedicated to the AAAV, which will replace the thirty year old Assault Amphibious Vehicle. As highlighted in Chapter IV, the AAAV is an integral part of the amphibious triad that is essential for Operational Maneuver From the Sea. The AAAV will allow for the immediate, high speed maneuver of Marine infantry units as they emerge from ships located over the visual horizon.

Also continuing in FY01 is the development of the Short-Range Anti-Armor Weapon (Predator), a lightweight, disposable, main battle tank killer. The FY01 R&D budget continues to finance the Marine Corps led experimentation with future tactics, concepts and innovations involving both Marine and Navy forces. The Marine Corps Warfighting Laboratory is the centerpiece for operational reform in the Corps, investigating new and potential technologies and their impact on how the Marine Corps organizes, equips and trains to fight in the future. Additionally, as the DOD Executive Agent for Non-lethal Weapons (NLW), the USMC budget continues to finance NLW research and development. In the FY01 budget, we seek to leverage developing and emerging technologies that have applications across the spectrum of warfare. Specific R&D efforts will focus on NLW capabilities that are counter-personnel and counter-materiel in nature.

Military Construction (MCON/MCNR)

Our Military Construction (MilCon) appropriation provides funding for the planning, design, construction, alteration, and improvement of Marine facilities. At a facilities replacement rate in excess of 100 years, our MilCon budget remains well short of the Marine Corps fiscally constrained goal to replace our physical plant every 70 years. Our main efforts focus on the most immediate needs to ensure readiness, to meet safety and operational needs, and to maintain our commitment to eliminate inadequate bachelor enlisted quarters. This budget places a high priority on readiness as we replace or modernize armories, aircraft rinse facilities, training ranges, aircraft hangars and other vital infrastructure needs that contribute to the readiness of our Corps. Within top line constraints we have ensured that an adequate portion of our MilCon budget is dedicated the quality of life of our Marines through maintaining a minimal investment of approximately $50 million every year for bachelor enlisted quarters construction or renovation. Additionally, we continue to dedicate funds annually to maintain physical fitness family service, and child development centers.

Family Housing (FAMHSG)

Our Family Housing appropriation finances the construction, improvements, operations (furniture, utilities, and management services), leasing, and maintenance of family housing. Our current budget includes several new construction and improvement projects to improve the Quality of Life for our families residing in on-base facilities. Additionally, we are pursuing Public-Private Ventures (PPV) to eliminate our deficit of inadequate family housing units. PPV projects focus on privatizing the replacement, renovation, maintenance, and operation of existing government housing. The FY01 budget includes several PPV projects at varying stages of completion. However, current and projected funding levels remain inadequate.

Summary

The pace of modernization continues to be a concern. Marines are at this moment continuing to have to deal with aging platforms and aging infrastructure. While this budget addresses these concerns to the extent of restoring historical procurement levels and arresting the growth of the backlog of maintenance and repair, it will take several years before our Marines fully reap the benefit of this investment.

FISCAL DEFINITIONS

The following are Marine Corps appropriation Categories, with a brief synopsis of what each provides:

- ***Appropriation -*** A legal apportionment by an act of Congress to incur obligations for specified purposes and authority to make payments from the Treasury of the United States. Funds may be expended only for the purpose appropriated.

- ***Military Personnel, Marine Corps (MPMC) -*** Active and retired pay, allowances, individual clothing, interest on deposits, expenses for organization movements, expenses for temporary duty, travel between permanent duty stations, and subsistence.

- ***Reserve Personnel, Marine Corps (RPMC) -*** Pay, allowances, clothing, subsistence, gratuities, travel, and related expenses for personnel of the Marine Corps Reserve.

- ***Operation and Maintenance, Marine Corps (O&MMC) -*** Expenses for support of the FMF, equipment and facilities maintenance, civilian employee pay, travel and transportation, training, consumable supplies, recruiting and advertising, base operations, and base communications.

❑ ***Operation and Maintenance, Marine Corps Reserve (O&MMCR) -*** Expenses for operation and maintenance, including training, organization, and administration, repair of facilities and equipment, hire of passenger motor vehicles, travel and transportation, recruiting and advertising, base operations, and communications for the Marine Corps Reserve.

❑ ***Procurement, Marine Corps (PMC) -*** Expenses for the purchase and manufacture of guided munitions, tracked combat vehicles, guided missiles and equipment, communications and electronics, support vehicles, engineer and other equipment, spares, and repair parts.

❑ ***Procurement of Ammunition, Navy and Marine Corps (PANMC) -*** Expenses for the purchase and manufacture of ammunition, to include all unguided munitions. (Prior to FY98, the Marine Corps ammunition budget was submitted as BA-1 of the PMC budget.) The following Navy appropriations include functional areas for which the Marine Corps programs and budgets. The complete Marine Corps TOA includes both Marine-unique appropriations described above, as well as resources from the following appropriations:

❑ ***Military Construction, Navy (MILCON)*** - Acquisition, construction, and installation of permanent public works, naval installations, and facilities for the Navy and the Marine Corps.

❑ ***Family Housing, Marine Corps (FHMC)*** - Construction, improvements, operation, maintenance, repair, and design of Marine Corps housing and ancillary facilities required at bases and stations.

❑ ***Military Construction, Navy Reserve (MCNR) -*** Construction, acquisition, expansion, rehabilitation, and conversion of facilities for the training and administration of the Reserve components of the Navy and Marine Corps.

❑ ***Research, Development, Test, and Evaluation, Navy (RDT&E, N) -*** Research, development, test, and evaluation in the areas of basic research and technology development, advanced technology development, strategic and tactical programs, intelligence and communication programs, and overhead and support costs of the Marine Corps RDT&E effort.

Appendix A
How the Marines are Organized

Marines are organized as a "force-in-readiness" to support national needs. They are divided into four broad categories:

Headquarters Marine Corps

Operating Forces

Reserves

Supporting Establishment

Headquarters Marine Corps

Headquarters, U.S. Marine Corps consists of the Commandant of the Marine Corps and those staff agencies that advise and assist the Commandant in discharging those responsibilities prescribed by law and higher authority. The Commandant of the Marine Corps is directly responsible to the Secretary of the Navy for the administration, discipline, internal organization, training, requirements, efficiency, and readiness of the Marine Corps; the operation of the Marine Corps materiel support system; and the total performance of the Marine Corps.

Operating Forces

Operating forces, considered the heart of the Marine Corps, constitute the forward presence, crisis response, and fighting power available to the combatant commanders. Major elements include the Marine Forces Atlantic, Marine Forces Pacific, Marine Corps Security Forces, and the Marine Security Guard Battalion with its detachments at embassies and consulates around the globe. About 64 percent of all active duty Marines are assigned to these operating forces.

The "Forces for Unified Commands" Memorandum assigns Marine Corps operating forces to each of the combatant commands. Although there are five Marine Corps components, there are only two Marine Corps component commands. The Marine Corps has established two combatant command level service component commands: Marine Corps Forces Atlantic and Marine Corps Forces Pacific. The II Marine Expeditionary Force is provided by Commander, Marine Corps Forces Atlantic to the Commander-in-Chief, U.S. Atlantic Command and the I and III Marine Expeditionary Forces are provided by Commander, Marine Corps Forces Pacific to the Commander-in-Chief, U.S. Pacific Command. This assignment reflects the peacetime disposition of Marine

Corps Forces (MARFORs). Marine expeditionary forces are apportioned to the remaining geographic combatant commands for contingency planning and are provided to the combatant commands when directed by the Secretary of Defense.

The Commander, Marine Corps Forces Atlantic is assigned to the Commander-in-Chief, U.S. Atlantic Command and the Commander, Marine Corps Forces Pacific is assigned to the Commander-in-Chief, U.S. Pacific Command. In order to provide three star general officer representation to the remaining three geographic combatant commands, Commander, Marine Corps Forces Atlantic is the Marine Corps Component Commander to both Commander-in-Chief, U.S. European Command and Commander-in-Chief, U.S. Southern Command. The Commander, Marine Corps Forces Pacific is designated as the Marine Corps Component Commander to the Commander-in-Chief, U.S. Central Command.

The Marine Corps Security Forces protect key Naval installations and facilities worldwide. Although not assigned to combatant commands, they are part of the operating forces of the Marine Corps. These Security Forces include Marine Barracks and Marine Security Forces Companies in the continental United States and abroad. Marine Corps Security Forces personnel operationally report to the Chief of Naval Operations. The Marine Security Guard Battalion provides forces to the Department of State for embassy security. Marine Security Guard personnel operationally report to the Secretary of State.

Marine Air Ground Task Force (MAGTF)

The MAGTF (pronounced “mag-taff”) is the Marine Corps principle organization for the conduct of all missions across the range of military operations. The MAGTF provides a combatant commander-in-chief or other operational commanders with a versatile expeditionary force for responding to a broad range of crisis and conflict situations. MAGTFs are balanced, combined arms forces with organic command, ground, aviation, and sustainment elements.

MAGTF Capabilities

MAGTF capabilities are not built merely to wait for the next amphibious assault or regional war; they are deployed every day. Through operational experience, developed procedures, and honed training routines, the Marine Corps stands ready to respond. Our organization has evolved to handle uncertain world situations and has repeatedly

demonstrated its worth. Embarked aboard amphibious ships, forward-deployed MAGTFs provide decision makers with the capabilities to:

- ❑ Move forces into crisis areas without revealing their exact destinations or intentions;
- ❑ Provide continuous presence in international waters;
- ❑ Provide immediate national response in support of humanitarian and natural disaster relief operations;
- ❑ Provide credible but non-provocative combat power over the horizon of a potential adversary, for rapid employment as the initial response to a crisis;
- ❑ Support diplomatic processes for peaceful crisis resolution before employing immediate response combat forces;
- ❑ Project measured degrees of combat power ashore, at night, and under adverse weather conditions, if required;
- ❑ Introduce additional forces sequentially into a theater of operations;
- ❑ Operate independent of established airfields, basing agreements, and overflight rights;
- ❑ Conduct combat operations ashore using inherent combat service support brought into the theater of operations;
- ❑ Enable the introduction of follow-on MAGTF or Joint and/or Combined forces by securing staging areas ashore;
- ❑ Operate in rural and urban environments or hostile nuclear, biological, and chemical situations;
- ❑ Withdraw rapidly at the conclusion of operations or remain to help restore stability to the affected areas; and
- ❑ Plan and commence execution of a mission within 6 to 48 hours of receiving a warning order.

MAGTF Composition

The Marine Corps task organizes for combat consistent with its statutory tasking to "... provide forces of combined arms, including aviation..." by forming forces into integrated, combined arms MAGTFs employed to accomplish assigned missions. MAGTFs are specifically tailored for rapid deployment by air and/or sea. MAGTFs are comprised of four elements:

- ***Command Element (CE)***. The CE contains the MAGTF headquarters and other units that provide intelligence, communications, and administrative support in general support of the MAGTF. As with all other elements of the MAGTF, it is task organized to provide the command, control, communications, computers, intelligence, and interoper-ability (C4I2) necessary for effective planning and execution of all operations.

- ***Ground Combat Element (GCE)***. The GCE is task organized to conduct ground operations to support the MAGTF mission. It may include infantry, artillery, reconnaissance, armor, engineer, and other forces as needed. The GCE can vary in size and composition from a light, air transportable unit such as a reinforced infantry battalion to one that is relatively heavy and mechanized, which may include one or more Marine, Army, or Allied divisions.

❑ ***Aviation Combat Element (ACE).*** The ACE conducts offensive and defensive air operations and is task organized to perform those functions of Marine aviation required to support the MAGTF mission. It is formed around an aviation headquarters with appropriate air control agencies, combat, combat support, and combat service support units. The ACE can vary in size and composition from an aviation detachment of specifically required aircraft to one or more Marine aircraft wings (MAWs).

❑ ***Combat Service Support Element (CSSE).*** The CSSE is task organized to provide the full range of combat service support functions and capabilities necessary to support the continued readiness and sustainability of the MAGTF as a whole. It is formed around a combat service support headquarters and may vary in size and composition from a support detachment to one or more force service support groups (FSSGs).

Types of Marine Air Ground Task Forces

Four types of MAGTFs can be task organized as follows: the Marine Expeditionary Force, the Marine Expeditionary Brigade, the Marine Expeditionary Unit (Special Operations Capable), and the Special Purpose Marine Air Ground Task Force.

❑ ***Marine Expeditionary Force (MEF).*** The MEF is the principal Marine Corps warfighting organization, particularly for a larger crisis or contingency, and is normally commanded by a Lieutenant General. A MEF can range in size from less than one to multiple divisions and aircraft wings, together with one or more FSSGs.

With 60 days of accompanying supplies, MEFs are capable of both amphibious operations and sustained operations ashore in any geographic environment. With appropriate augmentation, the MEF command element is capable of performing as a Joint Task Force (JTF) Headquarters.

MEFs are the primary “standing MAGTFs” (i.e., they exist in peacetime as well as wartime). Currently the Marine Corps is organized with three standing MEFs, each with a Marine division (MarDiv), MAW, and FSSG. The I Marine Expeditionary Force (I MEF) is located at bases in California and Arizona. The II Marine Expeditionary Force (II MEF) is located at bases in North Carolina and South Carolina. The III Marine Expeditionary Force (III MEF) is forward-based in Okinawa and Mainland Japan. Marine component headquarters, COMMARFORLANT or COMMARFORPAC, may form smaller MAGTFs from these MEFs.

The Marine Corps reservoir of combat capabilities — the divisions, wings, and force service support groups — are assigned to these standing MEFs. A MEF will normally deploy in echelon and will designate its lead element as the MEF (Forward).

❑ ***Marine Expeditionary Brigade (MEB).*** The MEB is the mid-sized MAGTF and is normally commanded by a Brigadier General. The MEB provides transitional capability between the forwarded deployed MEU and the MEF, our principal warfighter. The MEB is a task organized MAGTF notionally composed of a reinforced infantry regiment, a composite Marine Aircraft Group (MAG), and a Brigade Service Support Group (BSSG). The command element of the MEB is embedded within the command element of its parent MEF.

The MEB provides supported CINCs with a scalable, warfighting capability across the spectrum of military operations that is rapidly deployable and which can impact all elements of the battlespace. An expeditionary force, it is capable of rapid deployment and employment via amphibious shipping, strategic air/sealift, geographic or maritime prepositioning force assets, or any combination thereof. With 30 days of accompanying supplies, MEBs are capable of amphibious assault and sustained operations ashore in any geographic environment. A MEB can operate independently or serve as the forward echelon of a MEF.

With additional MEF CE augmentation, a MEB is capable of performing as a JTF Headquarters. Currently, the 1st, 2d and 3d MEB Command Elements are embedded within the CEs of I, II and III MEF, respectively.

❑ ***Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)).*** Forward deployed MEU (SOC)s embarked aboard Amphibious Ready Group (ARG) shipping operate continuously in the areas of responsibility of numerous Unified Commanders. These units provide the National Command Authorities and Unified Commanders an effective means of dealing with the uncertainties of future threats by providing forward deployed units which offer unique opportunities for a variety of quick reaction, sea-based, crisis response options in either a conventional amphibious/expeditionary role or in the execution of maritime special operations. The forward deployed MEU(SOC), forged and tested in real-world contingencies, remains the benchmark forward operating Marine force. The MEU is commanded by a colonel and deploys with 15 days of accompanying supplies.

Prior to deployment, the MEU undergoes an intensive 6 month training program focusing on its conventional and selected maritime special operations missions. The training culminates with a thorough evaluation and certification as "Special Operations Capable (SOC)".

❑ ***Special Purpose MAGTF (SPMAGTF).*** A SPMAGTF is task organized to accomplish a specific mission, operation, or regionally focused exercise. As such, SPMAGTFs can be organized, trained, and equipped to conduct a wide variety of expeditionary operations ranging from crisis response to training exercises and peacetime missions. They are designated as SPMAGTF with a mission, location, or exercise name: e.g., "SPMAGTF (X)," "SPMAGTF Somalia," "SPMAGTF UNITAS", or "SPMAGTF Dade County." Their duties cover the spectrum from non-combatant evacuation to disaster relief and humanitarian missions.

World Map Showing Location of MEFs, MPSs, & MARFORS

MAGTF Sustainability

A fundamental characteristic of a MAGTF is its ability to operate for extended periods as an expeditionary force, relying on internal resources for sustainment. All MAGTFs have inherent sustainability to be self-sufficient for planned periods. Larger MAGTFs have a deeper, broader,

and more capable organic support capability. MAGTFs deploy with a portion of their accompanying supplies sufficient for a specific period of time:

- MEF - 60 days
- MEB - 30 days
- MEU - 15 days
- SPMAGTF - As the situation requires.

MAGTFs can augment their organic sustainability by using external support from Navy organizations, wartime host nation support (WHNS) agreements, interservice support agreements (ISSAs), and in theater cross service support.

Maritime Prepositioning Forces (MPF)

MPFs provide an added dimension in mobility, readiness, and global responsiveness. The MPF program involves 13 ships organized in three squadrons. These squadrons are strategically positioned in the Atlantic, Indian, and Pacific Oceans. The MPF program reduces MAGTF response time from weeks to days by prepositioning the bulk of equipment and 30 days of supplies for a 17,300 MARFOR aboard specially designed ships. Personnel and selected equipment can be airlifted quickly, using roughly 250 airlift sorties, to an objective area to join with required equipment at a secure site.

As graphically demonstrated in Operation Desert Shield, MPFs are integral to the rapid deployment of credible combat power. MPF program flexibility has been increased through selective and innovative loading plans and development of enhanced deployment options.

Unique Unified Commander Support

A Combatant Commander or subordinate Joint Force Commander may also require MARFORs that do not possess all elements of a MAGTF; thus they are not given a MAGTF designation. Examples are installation security forces, engineer and medical support teams for humanitarian operations, deployments for training, law enforcement operations, and mobile training teams. In these cases, forces will be designated by the name of the senior headquarters having operational control; e.g., 1st Combat Engineer Battalion (Rein), 1st MarDiv.

Marine Expeditionary Units (Special Operations Capable)

COMMARFORLANT and COMMARFORPAC maintain forward-deployed MEU(SOC)s in the Mediterranean, Persian Gulf, and Pacific regions. In addition to conventional capabilities, the MEU(SOC) is augmented with selected attachments to provide enhanced capabilities. These special capabilities include:

- Close Quarters Battle;
- Specialized Demolition Operations;
- Clandestine Reconnaissance and Surveillance;
- Maritime Interdiction Operations;
- Direct Action;
- Gas and Oil Platform Operations;
- Tactical Recovery of Aircraft and/or Personnel;
- In-Extremist Hostage Recovery; and
- Clandestine Recovery Operations.

Other Special Purpose Marine Corps Forces

- ***Air Contingency Forces.*** Both COMMARFOR PAC and COMMARFORLANT maintain Air Contingency MAGTFs (ACMs) in a continuous state of readiness. ACMs are air deployable forces available to the Unified Commanders with lead elements ready to deploy within 18 hours of notification. The ACMs provide great versatility in that they can be used as part of the fly-in echelon of a MPF, as reinforcement for an amphibious force, or as the lead element of a MEF.

The ACM will be task organized to meet the mission, the threat, and airlift availability. The size of the GCE can range from a reinforced rifle company plus a battalion headquarters element, to a regimental size force consisting of a regimental headquarters, two infantry battalions, a two battery artillery battalion, a two platoon reconnaissance company, a two platoon engineer company, and appropriate aviation and combat service support elements.

❑ ***Norway Prepositioning Program***. Similar in concept to the MPF but land based, this program currently stores supplies and combat equipment at secure locations in Norway for an airlifted force. Forward positioning of equipment saves both reaction time and tremendous additional airlift assets.

❑ Marine Corps Security Forces (MCSF). About 3,200 Marines support or augment Navy security forces around vital naval assets worldwide. These forces are assigned to the Chief of Naval Operations and serve as operating forces of the Marine Corps. These forces include Marine Barracks, Marine Corps Security Force Companies, two Fleet Anti-terrorism Security Team (FAST) Companies which will deploy three FAST platoons in support of COMUSNAVCENT, CINC-PACFLT and COMUSNAVEUR, and a small number of cadre assigned to Navy regions to assist in training of Navy security personnel. The Marine Detachments previously assigned to aircraft carriers were disestablished in early 1998 as part as a coordinated effort to improve Naval security and force protection worldwide.

❑ Marine Security Guard Battalion. The Marine Corps also provides forces to the Department of State for embassy security. Organized into the Marine Security Guard Battalion, these Marines are currently assigned to 123 embassies and consulates in 110 different countries. While not every American embassy or consulate has a Marine Security Guard detachment, those that do are protected by a security element that is both practical and impressive. Additionally, 36 new detachments are scheduled to open over the next 3 to 5 years.

❑ Chemical/Biological Incident Response Force (CBIRF). CBIRF is the only U.S. force currently capable of performing Counter Terrorism Consequence Management on a large scale in a Chemical and/or Biological (CB) containment environment. CBIRF provides a MAGTF or on-scene commander with a fully integrated post-incident CB response management capability. CBIRF possesses enhanced NBC detection and protection capabilities beyond those of standard military units and is capable of detecting and identifying toxic industrial materials in addition to warfare agents.

❑ Enhanced NBC Capability Set. This set will enhance near real-time agent detection, identification, processing, and decontamination support to the MEF and MEU(SOC) Commanders' initial response to an adversary's chemical and/or biological agent employment thereby increasing the units force protection capabilities.

Reserves

In addition to active forces, force expansion is made possible by the activation of the Marine Corps Reserve, which like the active forces, consists of a combined arms force with balanced ground, aviation, and combat service support units. Organized under the Commander, Marine Forces Reserve (COMMARFORRES), units of this command are located at 190 training centers in 47 states, Puerto Rico, and the District of Columbia

Over the past several years, the Reserve Component has been closely integrated with the Active Component in our Total Force concept. The Reserves provide individuals and specific units to augment and reinforce active capabilities.

Supporting Establishment

The Marine Corps Supporting Establishment consists of those personnel, bases, and activities that support the Marine Corps operating forces. This infrastructure consists primarily of 17 major bases and stations in the United States and Japan and all personnel, equipment, and facilities required to operate them. This equates to approximately 32,000 Marines. The Supporting Establishment also includes the Marine Corps Recruiting Command, the Marine Corps Combat Development Command, and Marine Corps Systems Command, as well as all the training activities and formal schools. Additionally, the Supporting Establishment includes those civilian activities and agencies that provide support to the MARFORs.

Marine Corps Total Force

There is a direct relationship between the size of the Marine Corps and the contribution made to our national defense. Large scale deployments, operations, and training exercises with Allies are part of our training and presence requirements in peacetime. About 23 percent of our operating forces are forward deployed during peacetime, which predicates a high deployment tempo and a corresponding CONUS rotation base. As the U.S. retains a desire to maintain stability in areas where we have significant interests, the requirement for forward deployed forces will continue.

Appendix B - Abbreviations and Acronyms

This appendix provides a list of abbreviations and acronyms commonly used in Marine Corps correspondence, publications, and daily dialogue, and is provided for reference purposes. Not all listed acronyms are included in this publication.

A2C2S	Airborne Command and Control System
AAAV	Advanced Amphibious Assault Vehicle
AAP	Abbreviated Acquisition Program
AAV	Assault Amphibious Vehicle
AAW	Anti-Air Warfare
AAWS-H	Anti-Armor Weapon System-Heavy
AAWS-M	Advanced Antitank Weapon System-Medium
ABC/M	Activity Based Costing and Management
ABT	Air Breathing Targets
ACADA	Automatic Chemical Agent Detector Alarm
ACAT	Acquisition Category
ACE	Aviation Combat Element
ACM	Air Contingency MAGTF
ACP	Aviation Continuation Pay
ACS	Advanced Countermine System
ACTD	Advanced Concept Technology Demonstration
ADCP	Air Defense Communications Platform
ADFC	Advanced Digital Fire Control System
ADM	Acquisition Decision Memorandum
ADS	Advanced Distributed Simulation
AE	Assault Echelon
AFATDS	Advanced Field Artillery Tactical Data System
AFOE	Assault Follow-On Echelon
AFV	Armored Fighting Vehicle
AGLEP	Advanced Ground Laser Eye Protection
AGS	Advanced Gun System
AIT	Automated Identification Technology
ALAM	Advanced Land Attack Missile
ALC	Area Learning Center
ALICE	All-Purpose Lightweight Individual Carrying Equipment
AMRAAM	Advanced Medium Air to Air Missile
AMC	Air Mobility Command
AMCM	Airborne Mine Countermeasures

ANBACIS	Automated Nuclear Biological and Chemical Information System
ANGLICO	Air/Naval Gunfire Liaison Company
AO	Acquisition Objective
AOA	Analysis of Alternatives
AOR	Area of Responsibility
AP	Anti-Personnel
APN	Aircraft Procurement Navy
APOBS	Antipersonnel Obstacle Breaching System
APS	Active Protection System
ARC	Aviation Refueler Capability
ARDEC	Army Research Development and Engineering Center
ARG	Amphibious Ready Group
ARPA	Advanced Research Projects Agency
AS	Analysis Substation
ATACC	Advanced Tactical Air Command Central
ATACMS	Army Tactical Missile System
ATARS	Advanced Tactical Airborne Reconnaissance System
ATC	Air Traffic Control
ATD	Advanced Technology Development
ATF	Amphibious Task Force
ATLASS	Asset Tracking Logistics and Supply System
ATM	Asynchronous Transfer Mode
ATO	Air Tasking Order
AUTODIN	Automated Digital Network
AVDTV	Armored Vehicle Driver's Thermal Viewer
AVDVE	Armored Vehicle Driver's Vision Enhancer
AWE	Advanced Warfighting Experiment
BA	Budget Activity/Authority
BFV	Bradley Fighting Vehicle
BMAR	Backlog of Maintenance and Repair
BOS	Base Operating Support
BRAC	Base Realignment and Closure
BST	Basic Skills Trainer
BTI	Base Telecommunications Infrastructure
BU	Block Upgrade
BUMED	Bureau of Medicine
BUR	Bottom-Up Review
C2	Command and Control
C2PC	Command and Control Personal Computer
C3I	Command, Control, Communications and Intelligence

C4I	Command, Control, Communications, Computers and Intelligence
CAC2S	Common Aviation Command and Control System
CAEMS	Computer-Aided Embarkation Management System
CAM	Chemical Agent Monitor
CASTFOREM	Combined Arms and Support Task Force Evaluation Model
CATF	Commander Amphibious Task Force
CAX	Combined Arms Exercise
CBIRF	Chemical/Biological Incident Response Force
CBIS	Chemical/Biological Individual Sampler
CBRS	Concept Based Requirements System
CBV	Combat Breacher Vehicle
CCP	Consolidated Cryptologic Program
CCS	COMINT Collection Subsystem
CCS-OS	CCS Outstation
CD	Counter-drug
CDR	Critical Design Review
CDS	Combat Development System
CE	Command Element
CEC	Cooperative Engagement Capability
CECM	Communications Electronic Countermeasures
CENTCOM	Central Command
CFR	Crash Fire and Rescue
CG	Commanding General
CI	Counter Intelligence
CIA	Central Intelligence Agency
CIARDS	CIA Retirement and Disability System
CIC	Combat Integration Capability
CID	Combat Identification
CIGSS	Common Imagery Ground/Surface System
CINC	Commander-in-Chief
CINCLANT	Commander-in-Chief Atlantic
CINCPAC	Commander-in-Chief Pacific
CJTF	Commander Joint Task Force
CLASS	Closed Loop Artillery Simulation System
CLAWS	Complimentary Low Altitude Weapon System
CMC	Commandant of the Marine Corps
CMOS	Cargo Movement Operations System
CMV	Combat Mobility Vehicle
CNA	Center for Naval Analyses
COBRA	Coastal Battlefield Reconnaissance and Analysis

COE	Common Operating Environment
COE	Concept of Employment
COMINT	Communications Intelligence
COMNAV	Communications Navigation
COMSEC	Communications Security
COMUSNAVCENT	Commander U.S. Navy Central
COMUSNAVEUR	Commander U.S. Navy Europe
COMUSNAVPAC	Commander U.S. Navy Pacific
CONUS	Continental United States
CORM	Commission on Roles and Missions of the Armed Forces
COTS	Commercial off-the-Shelf
CP	Command Post
CPE	Collective Protection Environment
CPG	Commandant's Planning Guidance
CPU	Central Processing Unit
CPX	Command Post Exercise
CQB	Close Quarters Battle
CR	Combat Requirement
CRDEC	Chemical Research Development & Engineering Center
CRS	Canteen Refilling System
CS	Communication Subsystem
CSAR	Combat Search and Rescue
CSS	Combat Service Support
CSSE	Combat Service Support Element
CTAPS	Contingency Theater Automated Planning System
CTI	Central Tire Inflation
CTT	Commanders Tactical Terminal
CU	Cooperating Unit
CV	Aircraft Carrier
CVAT	Combat Vehicle Appended Trainer
CVBG	Carrier Battle Group
CWAR	Continuous Wave Acquisition Radar
DAB	Defense Acquisition Board
DACT	Data Automated Communications Terminal
DAMA	Demand Assigned Multiple Access
DARP	Defense Airborne Reconnaissance Program
DASC	Direct Air Support Center
DAWMS	Deep Attack Weapons Mix Study
DBBL	Dismounted Battlespace Battle Lab
DBOF	Defense Business Operations Fund
DCP	Defense Cryptologic Program

DCU	Dynamic Component Upgrade
DDS	Data Distribution System
DEPTEMPO	Deployment Tempo
DF	Direction Finding
DFT	Deployments for Training
DGIAP	Defense General Intelligence and Applications Program
DHS	Defense HUMINT Service
DIA	Defense Intelligence Agency
DICP	Defense Intelligence Counterdrug Program
DII	Defense Information Infrastructure
DIMAP	Defense Imagery and Mapping Program
DIS	Distributed Interactive Simulation
DISA	Defense Information Systems Agency
DISTP	Defense Special Technology Program
DITP	Defense Intelligence Tactical Program
DJCIP	Defense Joint Counterintelligence Program
DL	Distance Learning
DLC	Distance Learning Center
DMRD	Defense Management Review Decision
DMS	Defense Messaging System
DMSO	Defense Modeling and Simulation Office
DMSS	Defense Medical Surveillance System
DOA	Days of Ammunition
DoD	Department of Defense
DON	Department of the Navy
DOS	Days of Supply
DPE	Data Processing Equipment
DPG	Defense Planning Guidance
DPP	Defense Program Projection
DPRB	Defense Planning and Resources Board
DSCS	Defense Satellite Communications System
DSN	Defense Switched Network
DSRP	Defense Space Reconnaissance Program
DT	Developmental Test
DTC	Digital Technical Control
DTS	Defense Transportation System
EA	Electronic Attack
EAF	Expeditionary Airfield
EB	Enlistment Bonus
EBFL	Extended Boom Forklift
EDM	Engineering Development Model
EHF	Extremely High Frequency

ELINT	Electronics Intelligence
E-MAIL	Electronic Mail
EMD	Engineering and Manufacturing Development
E-NBC	Enhanced NBC Capability
EO	Electro Optical
EOB	Electronic Order of Battle
EOD	Explosives Ordnance and Disposal
EP	Electronic Protection
EPLRS	Enhanced Position Location Reporting System
EPUU	Enhanced PLRS User Units
ERGM	Extended Range Guided Munitions
ERIP	Engine Reliability Program
ESP	Extended Service Program
ESS	Electronics Intelligence (ELINT) Support System
ETSS	Extended Training Service Specialist
EUCOM	European Command
EUL	Economic Useful Life
EW	Electronic Warfare
FAC	Forward Air Controller
FARP	Forward Arming and Refueling Point
FAST	Fleet Anti-Terrorism Security Team
FATS	Firearms Training System
FAV	Fast Attack Vehicle
FBU	Front Power Unit
FCIP	Foreign Counterintelligence Program
FDC	Fire Direction Center
FDP	FAST Deployment Program
FDS	Field Development System
FEP	Firepower Enhancement Program
FEX	Field Exercise
FH	Frequency Hopping
FHMC	Family Housing Marine Corps
FIE	Fly-in Echelon
FIIU	Force Imagery Interpretation Unit
FLC	Functional Learning Center
FLIR	Forward Looking Infrared
FLPP	Foreign Language Proficiency Pay
FM	Frequency Modulation
FMF	Fleet Marine Force
FOB	Forward Operating Base
FO	Forward Observer
FOC	Full Operational Capability
FOF	Floating Offshore Facility

FOTT	Follow-on-to-TOW
FPLIF	Field Pack Large with Internal Frame
FRSS	Forward Resuscitative Surgery System
FSC2S	Fire Support Command and Control System
FSCC	Fire Support Coordination Center
FSED	Full Scale Engineering Development
FSSG	Force Service Support Group
FTE	Full Time Equivalent
FTS	Full Time Support
FTSS	Family of Tactical Soft Shelters
FY	Fiscal Year
FYDP	Future Year Defense Plan
FYEP	Five Year Experimentation Plan
GCCS	Global Command and Control System
GCE	Ground Combat Element
GCS	Ground Control Station
GDIP	General Defense Intelligence Program
GLPS	Gun Laying and Positioning System
GMF	Ground Mobile Forces
GOTS	Government off-the-Shelf
GP	General Purpose
GPR	Ground Processing Requirement
GPS	Global Positioning System
GTN	Global Transportation Network
HARM	High-Speed Anti-radiation Missile
HEMTT	Heavy Expanded Mobility Tactical Truck
HAW	Heavy Anti-armor Weapon
HF	High Frequency
HLA	High Level Architecture
HMD	High Mobility Downsize
H-HMMWV	Heavy Variant High Mobility Multipurpose Wheeled Vehicle
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HQMC	Headquarters, U.S. Marine Corps
HUD	Head-Up Display
HUMINT	Human Source Intelligence
HWTS	Heavy Weapons Thermal Sight
I2	Image Intensification
IA	Information Assurance
IAC	Intelligence Analysis Center
IAS	Intelligence Analysis System
ICAD	Individual Chemical Agent Detector
ICCE	Individual Combat Clothing and Equipment

IDASC	Improved Direct Air Support Center
IELD	Improved External Lift Device
IEWCS	Intelligence and Electronic Warfare Common Sensor
IFAV	Interim Fast Attack Vehicle
IFF	Identify Friend or Foe
ILC	Integrated Logistics Capability
IFSAS	Initial Fire Support Automated System
IMI	Interactive Multimedia Instruction
IMINT	Imagery Intelligence
INFOSEC	Information Security
INTEL	Intelligence
INS	Inertial Navigation System
IO	Information Systems
IOC	Initial Operational Capability
IOT	Initial Operational Test
IOT&E	Initial Operational Test and Evaluation
IOW	Intelligence Operations Workstations
IPCOT	In-Place Continuation of Overseas Tour
IR	Infrared
IRAM	Improved Reliability and Maintainability
IR3B	Integrated Resources and Requirements Review Board
IRR	Individual Ready Reserve
IRV	Improved Recovery Vehicle
IS	Interim Standardization
ISDN	Integrated Services Digital Network
ISMT	Indoor Simulated Marksmanship Trainer
ISMT-E	Indoor Simulated Marksmanship Trainer-Enhanced
ISR	Intelligence, Surveillance and Reconnaissance
ISSA	Inter-service Support Agreement
IST	Infantry Squad Trainer
IT	Information Technology
ITV	Internally Transportable Vehicle
ITV	In-Transit Visibility
JAC	Joint Analysis Center
JBPDS	Joint Biological Point Detection System
JCAD	Joint Chemical Agent Detector
JCATS	Joint Conflict and Tactical Simulation
JCS	Joint Chiefs of Staff
JDAM	Joint Direct Attack Munitions
JFACC	Joint Force Air Component Commander

JFC	Joint Forces Commander
JIC	Joint Intelligence Center
JIPT	Joint Integrated Product Team
JM	JTIDS Module
JMA/SA	Joint Mission Area/Support Area
JMASS	Joint Modeling and Simulation System
JMCIS UB	Joint Maritime Command Information System Unified Build
JMIP	Joint Military Intelligence Program
JNLWD	Joint Non-Lethal Weapons Directorate
JOPES	Joint Operation Planning and Execution System
JOTS	Joint Operational Tactical System
JPO-BIO	Joint Program Office for Biological Defense
JROC	Joint Requirements Oversight Council
JSCP	Joint Strategic Capabilities Plan
JSF	Joint Strike Fighter
JSFXD	Joint Service Fixed Site Decontamination
JSIG	Joint Service Integration Group
JSIMS	Joint Simulation System
JSIPS	Joint Services Imagery Processing System
JSIPS TEG	Joint Services Imagery Processing System Tactical Exploitation Group
JSLIST	Joint Service Lightweight Integrated Suit Technology
JSLNBCRS	Joint Service Light NBC Reconnaissance System
JSLSCAD	Joint Services Lightweight Chemical Standoff Agent Detector
JSTARS	Joint Surveillance Target Attack Radar System
JTF HQ	Joint Task Force Headquarters
JTF	Joint Task Force
JTIDS	Joint Tactical Information Distribution System
JWARN	Joint Warning and Reporting Network
JWARS	Joint Warfare System
JWCA	Joint Warfighting Capability Assessment
JWFC	Joint Warfighting Center
JWID	Joint Warrior Interoperability Demonstrations
LAAD	Low Altitude Air Defense
LAAD BN	Low Altitude Air Defense Battalion
LAAM	Light Anti-Aircraft Missile
LAI	Light Armored Infantry
LAN	Local Area Network
LASM	Land Attack Standard Missile
LAV	Light Armored Vehicle

LAV-AD	Light Armored Vehicle-Air Defense
LAV-FIST	LAV-Full-Crew Interactive Simulator Trainer
LCAC	Landing Craft Air Cushion
LEWDD	Lightweight Early Warning Detection Device
LHA	Amphibious Assault Ship - General Purpose
LHD	Amphibious Assault Ship - Multipurpose
LIC	Low Intensity Conflict
LLDR	Lightweight Laser Designator Rangefinder
LLI	Long Lead Item
LMCC	Logistics Movement Control Center
LME	Lightweight Maintenance Enclosure
LMS	Lightweight Multipurpose Shelter
LNBCRS	Lightweight Nuclear Biological and Chemical Reconnaissance System
LOE	Limited Objective Experiment
LOGAIS	Logistics Automated Information System
LP/OP	Listening Post/Observation Post
LPD	Amphibious Transport Dock [Ship]
LPH	Amphibious Assault Ship - Helicopter
LRA	Local Registration Authority
LRC	Learning Resource Center
LRIP	Low Rate Initial Production
LRU	Line Replaceable Units
LST	Laser Spot Trackers
LTA	Launch Tube Assembly
LTVR	Light Tactical Vehicle Replacement
LUT	Limited User Test
LVS	Logistics Vehicle System
LW155	Lightweight 155mm Howitzer
LWH	Lightweight Helmet
LWTC	Littoral Warfare Training Complex
M&S	Modeling and Simulation
MAA	Mission Area Analysis
MACCS	Marine Air Command and Control System
MACS	Magnetic Countermine System
MAG	Marine Aircraft Group
MAGIS	Marine Air-Ground Intelligence System
MAGTF	Marine Air-Ground Task Force
MARCENT	Marine Forces Central Command
MARCORSYSCOM	Marine Corps Systems Command
MARDIV	Marine Division
MARFORLANT	Marine Forces Atlantic
MARFORPAC	Marine Forces Pacific

MARFORRES	Marine Forces Reserve
MARINENET	Marine Corps Learning Network
MASINT	Measurement and Signature Intelligence
MATCALS	Marine Air Traffic Control and Landing System
MATCD	Marine Air Traffic Control Detachment
MAW	Marine Aircraft Wing
MAW	Medium Anti-Armor Weapon
MAWTS-1	Marine Aviation Weapons and Tactics Squadron-One
Mbps	Megabits per second
MBST	Marine Battle Skills Training
MBT	Main Battle Tank
MCAGCC	Marine Corps Air-Ground Combat Center
MCARMS	Marine Corps Ammunition Requirements Management System
MCAS	Marine Corps Air Station
MCASS	Marine Common Application Support Software
MCB	Marine Corps Base
MCB	Mine Clearing Blade
MCCDC	Marine Corps Combat Development Command
MCCPIP	Marine Corps Continuous Process Improvement Program
MCCS	Marine Corps Community Services
MCDN	Marine Corps Data Network
MCEN	Marine Corps Enterprise Network
MCFSS	Marine Corps Fire Support System
MCHS	Marine Corps Common Hardware Suite
MCI	Marine Corps Institute
MCIA	Marine Corps Intelligence Activity
MCISU	Marine Corps Imagery Support Unit
MCM	Mine Countermeasures
MCMP	Marine Corps Master Plan
MCMSO	Marine Corps Modeling and Simulation Management Office
MCMWTC	Marine Corps Mountain Warfare Training Center
MCNR	Military Construction Navy Reserve
MCON	Military Construction
MCRC	Marine Corps Recruiting Command
MCSF	Marine Corps Security Forces
MCSSC2	Marine Combat Service Support Command and Control
MCT	Marine Combat Training
MCTEEP	Marine Corps Training Exercise Employment Plan

MCTSSA	Marine Corps Tactical System Support Activity
MCWL	Marine Corps Warfighting Laboratory
MDL	MAGTF Data Library
MDSS	MAGTF Deployment Support System
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MEP	Mobile Electric Power
MEP	Marine Enhancement Program
MEU	Marine Expeditionary Unit
MEU(SOC)	Marine Expeditionary Unit (Special Operations Capable)
MEWSS	Mobile Electronic Warfare Support System
MEWSS-PIP	Mobile Electronic Warfare Support System-Product Improvement Program
MHE	Materials Handling Equipment
Mhz	Megahertz
MIIDS	Military Integrated Intelligence Data System
MILCON	Military Construction Navy
MILES	Multiple Integrated Laser Engagement System
MILSTAR	Military Strategic and Tactical Relay
MLA	Medium Lift Alternative
MLRS	Multiple Launch Rocket System
MLS	Marine Load System
MMS	Marine Mammal System
MNS	Mission Needs Statement
MOA	Memorandum of Agreement
MOB	Mobile Offshore Base
MOL	Marine on Line
MOLLE	Modular Lightweight Load Carrying Equipment
MOOTW	Military Operations Other than War
MOPP	Mission Oriented Protective Posture
MORE	Military Operations in a Riverine Environment
MOS	Military Occupational Specialty
MOUT	Military Operations on Urbanized Terrain
MPF	Maritime Prepositioning Force
MPF(E)	Maritime Prepositioning Force (Enhanced)
MPF(F)	Maritime Prepositioning Force (Future)
MPIM	Multi-Purpose Individual Munition
MPMC	Military Personnel Marine Corps
MPS	Maritime Prepositioning Ships
MPSRON	Maritime Prepositioning Ships Squadron
MRS	Mobility Requirements Study
MRRS	Multi-Role Radar System

MSBL	MAGTF Software Baseline
MSC	Major Subordinate Command
MSC	Military Sealift Command
MSE	Major Subordinate Element
MSR	Main Supply Routes
MTACCS	Marine Tactical Command and Control System
MTID	MILES Target Interface Device
MTT	Mobile Training Team
MTVR	Medium Tactical Vehicle Replacement
MTWS	MAGTF Tactical Warfare Simulation
MULE	Modular Universal Laser Equipment
MWR	Morale, Welfare and Recreation
MWSG	Marine Wing Support Group
MWTS	Medium Weapon Thermal Sight
NALMEB	Norway Air-Landed MEB
NAPDD	Non-Acquisition Category Program Definition Document
NAS	Naval Air Station
NATO	North Atlantic Treaty Organization
NAVFLIR	Navigation Forward Looking Infrared
NBC	Nuclear, Biological and Chemical
NCA	National Command Authorities
NCO	Noncommissioned Officer
NCS-E(D)	Downsized Enhanced Net Control Station
NDI	Non-Developmental Item
NDP	National Defense Panel
NDSS	Network Data Storage Solution
NEF	Naval Expeditionary Force
NEO	Noncombatant Evacuation Operations
NESEA	Naval Electronics System Engineering Activity
NFCS	Naval Fires Control System
NFIP	National Foreign Intelligence Program
NIMA	National Imagery and Mapping Agency
NIPRNET	Nonsecure Internet Protocol Router Network
NIS	National Input Segment
NITF	National Imagery Transmission Format
NLW	Non-Lethal Weapon
NM	Nautical Miles
NMCB	Naval Mobile Construction Battalion
N/MCI	Navy/Marine Corps Intranet
NMS	National Military Strategy
NOS	Network Operating System
NRT	Near Real Time

NSE	Naval Support Equipment
NSF	Navy Stock Fund
NSFS	Naval Surface Fire Support
NTCS-A	Naval Tactical Command System Afloat
NTIS	Night Thermal Imagery System
NTS	Night Targeting System
NVG	Night Vision Goggles
O&MMC	Operation and Maintenance Marine Corps
O&MMCR	Operation and Maintenance Marine Corps Reserve
OCU	Operator Console Upgrade
OEO	Other Expeditionary Operations
OMFTS	Operational Maneuver from the Sea
ONR	Office of Naval Research
OPEVAL	Operational Evaluation
OPLAN	Operation Plan
OPNAV	Chief of Naval Operations
OPP	Offload Preparation Party
OPSEC	Operational Security
OPTEMPO	Operational Tempo
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
OST	Order Ship Time
OT&E	Operational Test and Evaluation
OTEIP	Overseas Tour Extension Incentive Program
OTH	Over-the-Horizon
OTV	Outer Tactical Vest
PAA	Primary Aircraft Authorization
PALCON	Pallet Containers
PANMC	Procurement of Ammunition Navy and Marine Corps
PASGT	Personal Armor System Ground Troops
PCS	Permanent Change of Station
PDEA	Power Driven Excavating Arm
PDR	Preliminary Design Review
PDRR	Program Definition and Risk Reduction
PEO	Program Execution Officer
PERSTEMPO	Personnel Tempo
PGM	Precision Guided Munitions
PGS	Precision Gunnery System
PGTS	Precision Gunnery Training System
PIP	Product Improvement Program
PITS	Portable Infantry Target System

PKI	Public Key Infrastructure
PLGR	Precision Lightweight Global Positioning Receiver
PLRS	Position Location Reporting System
PMC	Procurement Marine Corps
PME	Professional Military Education
POE	Port of Embarkation
POM	Program Objective Memorandum
PPBS	Planning, Programming and Budgeting System
PRG	Program Review Group
PSD	Propulsion System Demonstrator
PSYOPS	Psychological Operations
PWRMS	Prepositioned War Reserve Material Stocks
QDR	Quadrennial Defense Review
QOL	Quality of Life
QUADCON	Quadruple Containers
R&D	Research and Development
R2D2	Radio Reconnaissance Distribution Device
R3B	Resources and Requirements Review Board
RAC	Riverine Assault Craft
RACWETS	Riverine Assault Craft Weapons Engagement Training System
RAM	Reliability, Availability and Maintainability
RAM/RS	Reliability, Availability and Maintainability/Rebuild to Standard
RBA	Revolution in Business Affairs
RBE	Remain Behind Equipment
RBU	Rear Body Units
RCT	Repair Cycle Time
RDK	Rapid Deployment Kitchen
RDT&E	Research Development Test and Evaluation
RETS	Remoted Engagement Target System
RF	Radio Frequency
RFP	Request for Proposal
RHC	Ruggedized Handheld Computer
RIS	Range Instrumentation System
RLST	Remote Landing Site Tower
RMA	Revolution in Military Affairs
RMP	Reprogramable Micro Processor
RMS	Remote Mine Hunting System
RO/RO	Roll-On/Roll-Off
ROC	Required Operational Capability
ROE	Rules of Engagement

ROWPU	Reverse Osmosis Water Purification Unit
RPMC	Reserve Personnel Marine Corps
RREP	Radio Reconnaissance Equipment Program
RRR	Residual Reserve Requirement
RRT	Radio Reconnaissance Teams
S&T	Science and Technology
SAAWC	Sector Anti-Air Warfare Coordinator
SAAWF	Sector Anti-Air Warfare Facility
SACC	Supporting Arms Coordination Center
SAPI	Small Arms Protective Insert
SANG	Saudi Arabia National Guard
SAR	Search and Rescue
SATCOM	Satellite Communications
SCI	Special Compartmented Information
SCN	Shipbuilding and Conversion Navy
SCT	Smart Card Technology
SEP	Soldier Enhancement Program
SESAMS	Special Effects Small Arms Marking System
SHADE	Shared Data Environment
SHF	Super High Frequency
SHORAD	Short Range Air Defense
SIDS	Secondary Imagery Dissemination System
SIE	Systems Integration Environment
SIGINT	Signals Intelligence
SINCGARS	Single-Channel Ground and Airborne Radio System
SIPRNET	Secret Internet Protocol Router Network
SLEP	Service Life Extension Program
SLOC	Sea Lines of Communication
SMART-T	Secure Mobile Anti-Jam Reliable Tactical Terminal
SMAW	Shoulder-Launched Multipurpose Assault Weapon
SMCM	Surface Mine Countermeasures
SMCR	Selected Marine Corps Reserve
SNCO	Staff Noncommissioned Officer
SOC	Special Operations Capable
SOI	School of Infantry
SONET	Synchronization Optical Network
SPMAGTF	Special Purpose Marine Air-Ground Task Force
SPMAGTF(X)	Special Purpose MAGTF (Experimental)
SRAW	Short Range Antitank Weapon
SRB	Selective Reenlistment Bonus

SRI	Surveillance, Reconnaissance and Intelligence
SRIG	SRI Group
SRR	Strategic and Residual Requirement
SRU	Shop Replacement Units
STAMIS	Standard Management Information Systems
ST	Science and Technology
STAR-T	SHF Tri-Band Advanced Range Extension Terminal
STOM	Ship-to-Objective Maneuver
STOVL	Short Takeoff and Vertical Landing
SUBD	Small Unit Biological Detector
SWA	Southwest Asia
SWMCM	Shallow Water Mine Countermeasures
TAD	Towed Artillery Digitization
T/M/S	Type/Model/Series
TACAIR	Tactical Aviation
TACC	Tactical Air Command Center
TACO	Tactical Communications
TACOM	U.S. Army Tank-Automotive & A
TAOC	Tactical Air Operations Center
TAOM	Tactical Air Operations Module
T-AVB	Aviation Logistics Support Ship
TBD	To Be Determined
TBM	Tactical Ballistic Missile
TBMCS	Theater Battle Management Core System
TBMD	Theater Ballistic Missile Defense
TCAC	Technical Control and Analysis Center
TCC	Tactical Communications Center
TCIM	Tactical Communications Interface Module
TCO	Tactical Combat Operations
TCS	Tactical Control Station
TDCP	Tactical Data Communications Processor
TDMA	Time Division Multiple Access
TDN	Tactical Data Network
TDS	Tactical Data System
TEG	Tactical Exploitation Group
TEMP	Test and Evaluation Master Plan
TEPOP	Training and Education Point of Presence
TERPES	Tactical Electronic Reconnaissance Processing and Evaluation System
TESS	Tactical Engagement Simulation System
TETS	Third Echelon Test Sets
TFDSS	Total Force Decision Support System

THS	Target Handoff Subsystem
TIM	Toxic Industrial Materials
TLAM	Tomahawk Land-Attack Missile
TLDHS	Target Location Designation and Hand-off System
TOA	Total Obligational Authority
TOW	Tube-Launched Optically-Tracked Wire-Guided Missile
TPC	Topographic Production Capability
TPCS	Team Portable Collection System
TPFDD	Time Phased Force Deployment Data
TQG	Tactical Quiet Generator
TRAM	Tractor Rubber-tired Articulated Steering Multi-purpose
TRANSCOM	Transportation Command
TRAP	Tactical Recovery of Aircraft and Personnel
TRE	Tactical Receive Equipment
TRHS	Tray Ration Heating System
TRSS	Tactical Remote Sensor System
TSS	Target Sight System
TTP	Tactical Techniques Procedure
TUGV	Tactical Unmanned Ground Vehicles
TUV-M	Tactical Unmanned Vehicle-Medium
TWGSS	Tank Weapon Gunnery Simulator System
TWS	Thermal Weapon Sight
TWSEAS	Tactical Warfare Simulation Evaluation & Analysis System
UAV	Unmanned Aerial Vehicle
UB	Unified Build
UHF	Ultra High Frequency
ULCS	Unit Level Circuit Switch
UNMIH	United Nations Mission in Haiti
UNOSOM	United Nations Operations Somalia
UNPROFOR	United Nations Protection Force
USACOM	United States Atlantic Command
USCENTCOM	United States Central Command
USEUCOM	United States European Command
USMC	United States Marine Corps
USPACOM	United States Pacific Command
USSOUTHCOM	United States Southern Command
UUV	Unmanned Underwater Vehicle
V/STOL	Vertical/Short Takeoff and Landing
VTOL	Vertical Takeoff and Landing

VHF	Very High Frequency
VSW	Very Shallow Water
VVT	Video Teletraining
WAN	Wide Area Network
WHNS	Wartime Host Nation Support
WMD	Weapons of Mass Destruction
WPN	Weapons Procurement Navy
WTI	Weapons and Tactics Instructor
WWMCCS	Worldwide Military Command and Control System
Y2K	Year 2000

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