



Marine Aviation Campaign Plan 2002





Letter from the General



The Marine Aviation Campaign Plan (MACP) is my vision for Marine Aviation to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while at the same time preserving and conserving our most precious assets: our Marines, our sailors, and our equipment. Imbedded within our combat readiness will be the ability to rapidly, effectively, and efficiently deploy on short notice and the ability to quickly and effectively plan for crises and/or contingency operations

thereby ensuring Marine Aviation remains ready for combat when or where the need arises. Woven into the fabric of everything we do will be our trademark - Professionalism. Professionalism in my mind is the key to achieving our goals. You will hear more from me on Professionalism later, but know that all the essential elements to getting the job done correctly, safely, on target, and on time with the desired results are in my mind contained in that single word.

The MACP incorporates technological advancements, innovative personnel management, balanced operations tempo, and Operational Risk Management to make our aviation units even more prepared for combat operations. This revision is the product of input from the operating forces tempered by the natural maturation of the MACP. The goals of each "core area" are intended to be a guide that will both enable and ensure Commanders maintain a common course while focusing on combat readiness. I envision that we will work together as a team to ensure progress is made toward our common goal.

This revision of the MACP must be discussed, understood, and embraced by every single element of the Aviation Combat Element (ACE). Its implementation depends on the understanding and full participation, to include open communication up and down the chain of command, of all to ensure our continued health and success.

I look forward to meeting the challenges ahead with each of you.

William L. Nyland

Lieutenant General
U.S. Marine Corps

Introduction

A natural step of a dynamic MACP is the necessity to regularly conduct an internal assessment and evaluate its inherent processes and objectives. Overall, the MACP has proven to be a useful tool for unit commanders and the various staff planning officers responsible for the management of critical resources – Marines and machines. There is always room for incremental improvement, clarification of intent driven by a changing environment, and a periodic compass check to ensure the direction of march will achieve the intended objective. The ultimate objective of the MACP is to ensure that when the call comes for the Marine Corps to be “first to fight,” our aviation Marines and equipment are in “first to fight condition.”

In this revision, the core areas of the previous version of the MACP remain the same. The core areas are defined in “The Box” below and are as follows: Operations, Training and Combat Readiness, Flight Operations, Aviation Manpower (Officer), Aviation Manpower (Enlisted), Simulation, Aircraft Material Condition, and Operational Risk Management. Efforts remain centered on Operations, Training and Combat Readiness with emphasis on the latter.

New areas addressed in this revision are: Aviation Ranges and Training Areas, Military Flight Operations Quality Assurance (MFOQA), Aviation Combat Element (ACE) Deployability, Aviation Ground Support (AGS), and the Transformation/Modernization plans for the future of Marine Aviation. As stated above, the MACP, like any plan, is dynamic and must be reviewed periodically to ensure it meets its intended objectives. Each “core area” is interdependent and synergistic with the others. A negative effect in one area may be the result of a deficiency in another. The MACP establishes the baseline for the health of Marine Aviation. Its purpose is to effectively diagnose problems as they arise and track the progress of initiatives designed to improve combat and aircraft readiness.



Manpower (Enlisted)

Since the release of the original MACP in February of 1997, there have been many positive manpower gains for the Aviation Combat Element (ACE). The overarching enlisted manpower objective is to ensure the ACE is a “balanced force” with all ACE units aggressively rising to or exceeding a “90% of T/O” staffing goal. Our goal is to eliminate enlisted staffing shortages in every aviation community, not just the flying squadrons. Enlisted Marines are the heart of the ACE, and without them mission success is not achievable. The Aviation Department, in concert with other Headquarters Marine Corps departments, is working hard to accomplish this goal.



We have been successful in building up the aviation force in the fixed and rotary wing communities.

Currently, we are meeting our goal of staffing flying squadrons at 90% of T/O in the aggregate.

Since May 2001, our flying squadrons have received “priority”
manning
and
staffing as a
result of
Marine Corps
Order
5320.12D

(Precedence levels for manning and staffing). The intent of this revised order is to staff all priority units at 95% of T/O&E, with allowances for limited grade and MOS substitutions to offset inventory mismatches. Aviation must also concentrate on the proper staffing of support and control group units. Under the revised order, our support and control group units receive a lower staffing priority than flying squadrons.

However, it is vitally important that our aviation ground units are manned and staffed appropriately to ensure that they too are fully ready for combat. Realization of our goal to staff all ACE units at or above 90% of T/O will ensure just that.

In concert with this objective, ACE T/Os have been reexamined to ensure that Marine Aviation is structured correctly and that our T/Os reflect aircraft group, control group, and support group warfighting requirements. The 1999 Force Structure Planning Group (FSPG) attempted to correct some historical ACE deficiencies. As a result of FSPG action, over 400 “wrench turners” have been added to squadron T/Os. These Marines will be on hangar decks by 2005. Other FSPG initiatives involved reorganizing CH-53D squadrons and ATC detachments to optimize personnel utilization and focus on the “mission.” Aviation will continue to pursue structure modifications to ensure all ACE T/Os accurately reflect warfighting requirements.

We continue to pursue modification of our enlisted grade structure to ensure our units are staffed with the expertise and experience level necessary to maintain and improve combat readiness. During the summer and fall of 1998, Aviation Manpower & Support (ASM) representatives performed a comprehensive review of squadron manpower requirements within 2d MAW. This analysis served as the foundation for the “Optimum Force Initiative” – a request to increase the grade structure of nearly 400 billets throughout Marine Corps aviation. The Commandant approved this request pending an increase in overall Marine Corps end strength. Since the conditional approval of the Optimum Force initiative, Aviation has continued to advocate a more experienced aviation enlisted force and has explored ways to increase our experience and “top six” structure, without an end strength increase. In the future, the Aviation Department will continue to engage other HQMC elements, most notably MCCDC TFS and M&RA, to ensure our units have the Marines they need to accomplish their warfighting mission.

Our national, Department of Defense (DoD), Department of The Navy (DoN), and Marine Corps leadership have sponsored recent positive initiatives to aid in personnel retention. Important among these initiatives are efforts to bring military pay and benefits more closely in line with

those of the civilian sector. Specifically, these efforts have focused on pay raises, pay table reform, and modification of the military retirement plan.

While Aviation will continue to advocate a more experienced force, all ACE Commanders must continue to do their part to retain quality Marines-or-
“grow our own.” Over the



last two years, Marine Aviation has been successful in meeting its First Term Alignment Plan (FTAP) target. An increased emphasis on aviation recruiting in the last four years has resulted

in a larger population of first term aviation Marines available to reenlist. This should give Aviation an increased opportunity to fill ACE MOSs to 100% of the FTAP requirement, with limited reliance on lateral moves to fill MOS “holes.”

Enlisted Staffing Goals

1. Staff all ACE units at or above 90% of T/O.
2. Increase “Top Six” (E4 - E9) to 64% - 67% of Aviation Enlisted Force Structure.
3. ACE MOSs filled to 100% FTAP requirement.

Manpower (Officer)



The Officer Manning goal in the initial MACP was to decrease pilot resignations to less than 40 per year. In the October 1999 update, this goal was broadened to encompass the staffing of the entire aviation officer population. The revised goal highlighted the importance of properly staffing ACE units with officers of all MOSs. However, it is important to reference previous goals, such as pilot resignations, to avoid the appearance of avoiding goals that may be hard to achieve.

The good news is that the pilot/ naval flight officer (NFO) resignation rate has recently flattened out. In FY01,



the Marine Corps experienced 57 pilot/NFO resignations, versus 62 resignations for FY00 and a high of 108 in 1997. Marine Aviation may experience a slight rise in resignations after FY02, when pilots and NFOs with revised 8-year commitments reach the end of their obligated service. Though the drop in resignations is heartening, it is important to note that the shortage of aviators in certain year groups remains significant, especially in our fixed-wing communities.

Within the Department of Aviation, ASM representatives, working in concert with manpower planners (MPP) and monitors (MMOA-2), created a new Aviation Continuation Pay (ACP) program, first implemented in FY00.

This bonus program targets aviation officers that commit to a Marine Corps career (major-selects through lieutenant colonels) and provides long-term ACP payments through 22 years of commissioned service. As of April 2001, the Marine Corps started paying its most critical population, fixed-wing pilots, the maximum yearly bonus amount allowed by law. Other aviation communities (rotary-wing and NFO) are also being offered a bonus in order to help maintain a strong aviation force. It is hoped that a responsive, targeted ACP plan will give our aviation officers one more reason to make the Marine Corps a career and, in doing so, ensure the long-term health of our aviator inventories.

In other areas of retention, the Deputy Commandant for Manpower and Reserve Affairs continues to conduct Officer Force Management reviews-initiatives that examine all issues that span the breadth of Officer Force Management, to include: assignments, promotion, and career path alternatives for our officer corps.

As with enlisted manning, it is the goal of this MACP to staff ACE units at or above 90% of T/O. The available inventory of officers is somewhat restricted due to the high number of officers in training at any given time. The revised manning and staffing precedence order delineates that flying squadrons be manned and staffed at 95%. Unfortunately, given the available officer inventory, our support and control group units may see officer manning as low as 85% as we strive toward our goal of 90%.

While Headquarters has made great strides in keeping our aviators in the cockpit for 2 years or more, our goal is that every first term aviator remains in the cockpit for 3 years. Currently, MMOA has a policy of leaving an officer in position for a minimum of 2 years. The only exception to this policy has occurred when specific units have requested relief due to an inability to fly their pilots to MACP minimums.

Quality leaders and seasoned officers are essential to the success of our Corps. While there is no single factor that influences an officer's decision to stay or resign, it is more likely than not that the "intangibles" of being a Marine will keep our Corps of officers together even if the initiatives described above do not fully succeed. The camaraderie of the ready room, prospects for command, daily application of

leadership, and the ever rigorous challenge of preparing Marines and self for combat are reasons most officers initially decided to join the "band of brothers." A reaffirmation of the traditional and positive aspects of belonging to an organization "bigger than one's self" will ensure that we have quality, motivated, and highly proficient aircrews to man our aircraft in the 21st century.

Officer Staffing Goals

1. Staff ACE units at or above 90% of T/O.
2. First tour aviators remain in the cockpit for 3 years after qualification in T/M/S.

Time-to-Train

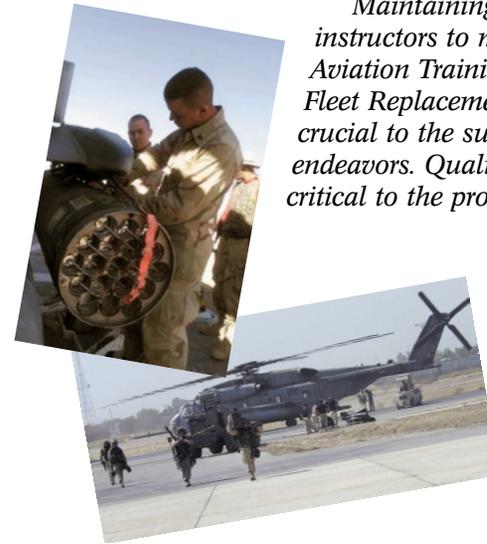
We must continue to reduce the time it takes for lieutenants to get from the Basic School to an operational squadron. The criticality of getting lieutenants vice captains to their first fleet squadron pays dividends in the seasoning of our vital cadre of second-tour captain flight leadership. This has been a high priority for this Headquarters. Although progress has been slow, we think we have finally "turned the corner."

There are many factors that have contributed to increasing the time for a young officer to advance through the training pipelines. Several improvements have already been initiated. First, Headquarters reduced pilot and NFO accessions to match the requirements of the current force structure. These reduced accessions have helped drain the pool of lieutenants waiting to start flight training. If current trends persist, we will see lower accessions and higher flight school loading to bring pre-flight school pools down to normal levels.



Second, Headquarters has limited the number of lieutenants with aviation contracts in each Basic School Company to 30% of the total—roughly a maximum of 75 per company. This action allows a steady, manageable flow of Student Naval Aviators and Flight Officers to Flight School.

Maintaining a steady flow of instructors to man Commander of Naval Aviation Training (CNATRA) and USMC Fleet Replacement Squadrons (FRS) is crucial to the success of our pilot training endeavors. Quality flight instructors are critical to the process of developing quality aircrews. It is also vitally important to maintain logistical support to training squadrons to keep training aircraft in the air.



Finally, various Marine Corps representatives from HQMC and the training establishment are participating with the Navy on the Naval Aviator Production Process Improvement (NAPPI) initiative that seeks to meet overall DoN fleet aviator demand while lowering time-to-train to 2-2.5 years (Navy) and 2.5-3 years (USMC). NAPPI covers the entire "street-to-fleet" process of training pilots and NFOs, from accessions to graduation from the FRS. Success in the NAPPI program is critical in ensuring that our aviator production goal is met.

The efforts of both the Marine Corps and NAPPI have resulted in a decrease in time-to-train over the last two years. The number of Marine students waiting to start flight school has decreased from over 160 in December of 1999 to 76 in October of 2001. Given the FY01 results, there is reason for optimism that the pool of students awaiting flight training will continue this encouraging trend and eventually be eliminated.

There is still a lot of work to be done to reform the entire aviation training process and meet our MACP time-to-train goals. However, Marine Aviation is poised to make great strides in time-to-train in the near future. Not only will lowering aviator time-to-train positively impact the time it takes for new aviators to arrive at their operational units, it will also have positive effects on aviator retention and officer staffing. Success in this endeavor will ensure the operational readiness of our units, both now and in the future.



Naval Aviator Time-to-Train Goal

- 1. Produce the required number of aviators within 10% of the programmed time-to-train.*

Flight Operations

The Flight Operations core area has remained fundamentally unchanged since the first edition of the MACP. Simply put, this core area is composed of two elements: the Flying Hour Program and the Sortie Based Training Program. The Flying Hour Program is our budgeting tool; the Sortie Based Training Program is our execution tool.

Since formalization of the Sortie Based Training Program, there has been a concerted effort to educate our operating forces and other services on this training philosophy – it is unique and has often been misunderstood. Each subsequent MACP has attempted to provide clarity to the program. While it is unique, it is also clear that it is inextricably linked to the DoN's budgeting process. The program's intent has not changed since the first MACP: To provide combat capable aircrews to MAGTF commanders.

The Sortie Based Training Program reinforces the concept that quality, frequency, and interval of flying is more critical than how much "time" we fly-flight hours alone do not equal combat readiness. Under the program, we fly to meet our training and mission objectives. It is intended to allow the squadron commander to focus on the combat readiness of his unit rather than accomplishing a flying hour goal. It is important to note that all post-graduate flight training, including that conducted at Top Gun and the MAWTS-1 Weapons and Tactics Instructor (WTI) course, is based on successful completion of training sorties-not the number of hours flown.

A sortie goal of a minimum of 12-15 sorties per aircrew per month allows aviators to go through the constant process of planning, briefing, executing, and debriefing to reinforce the precious skills required to maintain tactical proficiency. Some less experienced crews may require additional sorties per month while more experienced aviators may need less.



Additionally, specific Type/Model/Series (T/M/S) such as the KC-130 may require fewer sorties per month simply because of the nature of operations the squadron performs and the length of individual sorties. These determinations are the responsibility of each squadron commander. The Sortie Based Training Program must support the commander's requirement to maintain proficient aircrews. It is imperative that the T&R syllabus reflects the requirement to maintain an acceptable level of proficiency, as well as currency.

As stated in previous editions of the MACP, sortie based training is founded upon the following overarching principles: (1) The sortie based program must stress unit capabilities over individual training goals. (2) The sortie based program is focused on training to the core capabilities of each T/M/S aircraft. (3) The sortie based program is developed from operational and training requirements, not the OP-20 budget model.

With some exception, we have done well in achieving the goal of 12-15 sorties per crew per month. A viable and well-managed sortie based training program enables the Marine Corps to provide combat ready aircrews when called upon.

The previous version of the MACP defined three categories that reflect the manner in which Marine Aviation operates. These categories are: Training Requirements, Training Support, and Operational Support. The reporting of hours and sorties in these categories is vital to support our Flight Operations Program requirement. These three areas best represent the breadth of flight operations actually flown. The definitions of the three Flight Operations categories are:

Training Requirements.

- Those sorties that build and maintain our core skills that are delineated in T&R manuals.

Training Support.

- Those sorties such as maintenance checks flights, weather/performance re-fly, instructor sorties, etc. that must be performed in support of primary training.

Operational Support.

- Those sorties that include tasking external to the squadron, such as FRAGs, exercises, etc.

All three areas (T&R, Training Support, and Operational Support) combine to provide a total picture of actual squadron flight operations. Our goal is to properly document these three distinct areas to accurately account for the way we fly, both within and outside T&R events, in order to forecast long term Marine Aviation requirements and funding.

Accounting tools already exist within the two systems in use today: the Naval Flight Record Subsystem (NAVFLIRS) and the Budget OPTAR Reports (BOR). NAVFLIRS quantify sortie based training while BORs report the USMC Flying Hour Program. Inputs for both of these systems originate at the squadron level.

Sorties must be accurately accounted for using appropriate NAVFLIRS flight purpose codes (FPC) for the three areas of the Flight Operations Program. Every squadron contributes directly to this effort. Squadron operations officers are encouraged to review OPNAVINST 3710.7R, Appendix D, on how to properly document FPCs. In general, most Training Requirement sorties start with "1," most Training Support sorties start with "2," and most Operational Support sorties start with "3-7." The instruction provides detailed definitions on each component of the FPC. For Training Support and Operational Support sorties, any training achieved (referred to as "overlap") should be documented using the appropriate training code while also logging the FPC for the Training Support or Operational Support sortie.

	Purpose of Flight	General Purpose Code	Specific Purpose Code
Training Requirement	1	A,B,E,F,G	0-9
Training Support			
Instructor hours flown to qualify air crew in T&R Events	2	K	4
Training re-fly requirements for:			
Weather	2	O	1
Maintenance	2	N	0-9
Operations	2	O	2-9
Sub-standard Performance	2	A,B,C,E,F	0
Post Maintenance Check Flights	2	K	1.2.7.8
Transit/Ferry	2	J	1.2
Air Shows	2	Q	4
Noncombatant, nontraining flights no elsewhere classified	2	Q	5
Operational Support			
MAGTF/External Tasking	3.4.5.6.7	M.R	1-6

We must further ensure that the corresponding BORs match the NAVFLIRS reports. The match between the Sortie Based Training Program and the Flying Hour Program is the “link” required for a Flight Operations Program that is accurate and credible. Our goal is to execute our Flight Operations Program within 5% of our sortie based projections. In simplest terms-plan the number of sorties you need and can fly, execute your plan, and account for your sorties.

Flight Operations Program Goals

- 1. Average Minimum of 12-15 Sorties/Month/Aircrew.*
- 2. Execute Flight Operations Program within 5% of Sortie Based Projections.*
- 3. Implement FPC tracking focused on the three core areas of the Flight Operations Program.*
- 4. 100% match between BORs and NAVFLIRs.*



Simulation

The Marine Corps Aviation Simulator Master Plan (MCASMP) is entering its third year of execution. The MCASMP team spent the first year of the program working with contractors and MAWTS-1 to develop our post-FRS single simulator requirements and networking strategy. At the completion of the first year, the MCASMP team had the documentation necessary to build our first three simulators. The MACP goal of maintaining the MCASMP program has been achieved. The program requirements include the purchase of additional simulators and the upgrading of our legacy simulators to bring them into the configuration established by the MCASMP. The new simulators are required to function as a system of networked trainers, to include our MV-22 simulators. Our overarching goal is to provide a common simulator configuration that will allow our new MCASMP, MV-22, and West Pac simulators to function with upgraded legacy simulators. Additionally, the Marine Aviation Simulator Steering Committee (MASSC) was established in December 2001 to guide decision-making for aviation simulation training procurement.

As we start to deliver these new simulators and upgrade our legacy devices, it is imperative that we manage these multi-million dollar networking assets appropriately. In July 2001, MARFORLANT and HQMC established the Director of Aviation Simulation (DAS) at MCAS New River. In Phase I of this effort the DAS is responsible for all MV-22 Aircrew training at MCAS New River. Phase II will bring the rest of MCAS New River simulation under the responsibility of the DAS, while Phase III will provide this same structure to each Marine Aircraft Wing. Our goal is to bring our aviation simulator assets under the operational control, management and scheduling of each wing commander. These DAS billets will facilitate our simulation goal of updating each T&R Manual to reflect a proper level of simulator usage.

Our goal remains to deliver the world’s best simulation technology to improve overall aviation readiness. The focus of our simulator procurement is to challenge aircrews in a realistic flight environment with visual and mental stressors. The MCASMP is designed to procure simulators that will

provide a source of realistic flight experience to the already capable aviator. Although simulation is never a substitute for actual flight, it has immense value in the augmentation of aircrew training. These simulators will provide an unsurpassed enhancement to the valuable time an aviator spends in an aircraft. Our drive to increase simulator use reflects the worldwide trend in both defense and industry for this type of training. It also makes sense to save service life on our aircraft and decrease some of the risk inherent in certain operational and training flight scenarios.



We will continue to explore the use of simulation with specific focus on the post-FRS aviator. In order to gain the maximum benefit possible, simulators will be linked for “multi-

plane” networked training using integrated threat scenarios and MACCS integration. In certain instances, such as weapons proficiency and high threat scenarios, we will conduct realistic and economical training by utilizing a simulator rather than an aircraft. Simulator technology is rapidly improving, allowing aircrews and controllers to efficiently rehearse “real world” missions as a prelude to combat flight operations.

Currently, many of our communities do not have adequate simulators either in quality or quantity. Our MCASMP outlines the acquisition strategy for hardware, software and Contract Officer Representative support. Our goal is for all CONUS sites to have two networked simulators for each T/M/S. West Pac locations will have one simulator for each T/M/S. All Reserve sites not collocated with active T/M/S will also have simulator capability. Our shipboard simulation requirements include the capability to conduct multi-ship networked simulation on a desktop PC, using a head mounted visual display and real world data bases.

Eventually, this capability would allow Marines to conduct mission rehearsal training on the terrain they would be required to fly over, incorporating actual threats that they would likely encounter. Once fully implemented, our MCASMP will help us reach a higher degree of training readiness than we could ever hope to achieve through aircraft-only training.

Eventually, an aviator’s preflight preparation will be the same whether preparing to conduct a simulator training flight or an actual flight in an aircraft. Each community must periodically evaluate and update its T&R Manual to take advantage of increasing simulator capabilities. The focus should be on higher-level T&R sorties that would gain the most benefit from a simulator flight. As simulators progress in capability and availability, the goal is to apply CRP credit for this enhanced simulator training.

Simulation’s application is not limited to aircraft. The Control Group’s concerns are also addressed in the MCASMP. Soon, air traffic controllers will have a tower trainer that will be utilized for air traffic controller training. When the Common Aviation Command and Control System (CAC2S) is delivered, it will contain an embedded simulation capability that will provide a simulated air picture using program data link displays.

Commanders at all levels need to continue to emphasize simulator training as access to high fidelity simulation improves. We must embrace the valuable role that simulation will play in the future of Marine Aviation training.

Simulation Goals

- 1. MCASMP - Programmed/Funded.*
- 2. During each T/M/S T&R review, update manuals to reflect upgrades in simulator capability and networking.*
- 3. Establish direct on site leadership of aviation simulators at each Marine Aircraft Wing.*
- 4. Apply CRP credit to simulator training in proportion to simulator capability.*

Operations, Training and Combat Readiness

Training and Readiness (T&R) Program

In garrison, training for combat is the most important mission for our ACE units. Units train for those missions that they expect to fly in combat. In the past, a large amount of training was spent on high-risk missions that had a low probability of being flown in combat. The MACP has refocused aviation training on core competencies. Core competencies-which are further broken down into unit core capabilities and individual core skills-serve as the foundation of the T&R Program. Our revised system reflects a fundamental shift away from viewing combat effectiveness as an average of individual readiness to one of aggregate unit readiness. Regardless, the goal remains – to prevail in combat.

OPTEMPO Management

Marine Corps Aviation focuses on being ready to fight “in any clime and place,” but we realize that from time to time we must be able to step back and evaluate. To that end, we have institutionalized “operational pauses.” These are deliberately planned after periods of high-tempo operations, to allow our people and equipment the time to recover and prepare for the next mission. Operational pauses should be effectively managed at the lowest level possible to coincide with the unit’s operational cycle.

Although deployed training provides enhanced training opportunities and helps to develop our junior Marines, we must continue to find ways to reduce deployed training time, while increasing our training in the local area. We will look after our most precious resource-individual Marines and their families. When deployed, tasks required of our Marines often exceed those required while in garrison. While deployments and the associated OPTEMPO are a fact of life for the Marine Corps, our Aviation leadership is committed to establishing OPTEMPO in garrison that is both sustainable and manageable.

Readiness Reporting

Our current Status of Resources and Training System (SORTS) does not completely or accurately reflect unit combat potential. We revised each T&R syllabus to emphasize core competencies and we have de-emphasized individual combat readiness in favor of unit readiness. We will now reflect that philosophy by changing the way in which training readiness is reported through SORTS. The goal is to revise SORTS in order to display a more accurate picture of what an individual squadron is capable of providing to the CINC or MAGTF Commander – a picture that provides a direct correlation between T&R Manuals, the flying hour program, the sortie based training program, and the training readiness reporting system. Additionally, in the area of Non Combat Expenditure Allowance (NCEA) quantities apportioned to our operational forces, it is imperative for commanders to justify their requirements and document any lack of munitions training that will adversely affect their unit's readiness. To that end, we must also expend what we request in order to establish both a baseline and a record of executability.

Readiness reporting for the Marine Aviation Logistics Squadron (MALS) has long been the missing link to clearly identifying the aviation logistics community's true ability to support expeditionary operations. Although current MALS SORTS data reflects personnel readiness, it does not reflect MALS readiness with regard to support equipment (SE), mobile facilities (MF) and spare parts. Including the readiness of these three areas is crucial to identifying aviation logistics shortfalls across all Marine Aviation. To support the development of a MALS SORTS format, HQMC (ASL) will lead a working group as a component of the Aviation Logistics Department (ALD) Operational Advisory Group (OAG), in the development of the metrics required to accurately depict MALS readiness.

The pending fleet-wide implementation of Optimized OMA (OOMA) NALCOMIS will continue to influence the manner in which aircraft maintenance is managed and recorded. Initial research indicates that squadrons utilizing OOMA NALCOMIS experienced a decline in both readiness and direct maintenance man-hours per flight hour, and an

increase in cannibalization rates. Despite some drawbacks, the level of integration available in this new system will ultimately enhance the accuracy of logistics data.

In an effort to better understand the readiness impact of OOMA NALCOMIS, a review of current readiness metrics is being conducted along with a concurrent evaluation of additional methodologies introduced by new aircraft platforms. The result will be a revised collection of metrics that provide an improved perspective of aircraft performance, reliability, and sustainability.



Apart from the growing pains associated with implementing new information systems, policies and procedures, the result will be greater visibility of available assets, greater data validity, and near real-time availability of information. We should embrace

advancements in technology; particularly those that will enhance our ability to provide timely information to better sustain our equipment and increase our wartime effectiveness. Conversely, we also have a responsibility to demand that these new technological developments provide systems that meet our particular needs, and notify developers when their efforts fall short of our requirements.

Interoperability

We must ensure that our C4I systems are interoperable with each other and those with whom we work. Currently, not all the systems used by Marine Aviation meet this standard. Not only are there incompatible systems within Marine Aviation, there are additional challenges to ensure that key systems connect and properly exchange information with those used by MAGTF, Naval, and Joint forces. Aviation has initiated a series of efforts to reconcile its current C4I programs and systematically get its requirements and systems synchronized with current and future MAGTF, Naval, and

Joint standards. Marine Aviation is working with Marine Corps Systems Command to assist in the development of a MAGTF C4I integrated database and architecture vision. These aviation initiatives will make the Marine Corps more effective in combat and more efficient in the use of limited taxpayer dollars.

A common theme expressed throughout current strategic documents is the requirement to transition to Network Centric Warfare (NCW), which will require interoperability between all platforms and operators. This transition will initially come from improvements to legacy avionics systems. The Core Avionics Master Plan (CAMP) is designed to provide a coherent resourcing strategy to efficiently and economically implement these improvements. Core Avionics are defined as those systems applicable to multiple platforms that can be managed as functional commodities. The CAMP describes benefits of commonality, emphasizes dual-use solutions and echoes higher doctrine in mandating system interoperability. It lays out OPNAV strategies for system evolution to NCW and incorporation of Civil Air Traffic Management interoperability requirements. The CAMP also addresses avionics technology requirements in the development of Science and Technology initiatives to meet future naval capabilities. The CAMP is managed and kept current by the Common Support Systems section of OPNAV.

Also playing a key role in meeting the goal of enhanced interoperability is the Marine Air Command and Control System (MACCS). Over the balance of this decade, MACCS will transition to modern, mobile and scalable sensors, systems and weapons. These new sensors, systems and weapons must allow for real time combat direction of aviation assets and incorporate the capability to collect, categorize, characterize and fuse information. By developing this capability, the MACCS can quickly, accurately and selectively deliver the right information to the right Marine, at the right time and in the right form. These new systems must be fully interoperable with Naval, Joint, and Allied information systems and aircraft and, most importantly, they must fully support the MAGTF.

To meet these ambitious goals, the MACCS has embarked on a program to transform its equipment, its training and its

organization. The equipment portion of the strategy, known as the “MACCS convergence,” will result in the fielding of a complete set of new equipment designed to meet these complex requirements.

Key items of equipment included in the MACCS convergence are the:

- *Common Aviation Command and Control System (CAC2S)*
- *Composite Tracking Network (CTN)*
- *Multi-Role Radar System (MRRS)*
- *Air Surveillance and Precision Approach Radar Control System (ASPARCS)*
- *Complementary Low Altitude Weapon System (CLAWS)*
- *Pioneer Unmanned Aerial Vehicle Replacement*

CAC2S is the central component in this new architecture. This system will allow the MACCS to move from today's “stove piped” closed architecture systems to a single system. CAC2S will perform all the functions of the current systems and be far more mobile, flexible and scalable. Interoperability is the central requirement for the system's development.



Specifically, this system will enable the integration of sensor data from multiple sources. This will provide controllers and aviators the information they need to prepare plans, make real time decisions, and disseminate fire control quality data to weapons and aircraft. Moreover, when tied to appropriate communications equipment, it will also have the ability to fully exchange data with other elements of the MAGTF, Naval, Joint, and Allied forces. Ultimately, the technology, capabilities and interoperable elements embedded in CAC2S will serve as the base for the Unit Operations Center (UOC)

that will replace the Fire Support Coordination Center in the Ground Combat Element and the Force Fires Coordination Center in the MAGTF Command Element.

Training and Education

Marine Corps Order P1553.4 states that PME is an integral part of every Marine's professional development. As such, all Marines shall have an equal opportunity to participate in its programs. Commanders should not use OPTEMPO or the indispensability of a particular individual to prevent that Marine from satisfying PME program requirements. The responsibility begins with leaders to ensure that their Marines have the opportunity for educational advancement. Ultimately, it falls upon each individual

Marine to ensure his or her own personal development, but commanders must ensure that both opportunity and time are made available. It is also our duty to ensure that PME is pertinent, available, and that formal school seats are filled.



Training and education may influence other core areas such as Aviation Manpower. When we speak of “growing our own” in the ACE enlisted force as a positive step toward reaching our goal for the “top six”, we must create the conditions necessary to motivate our Marines to choose the Marine Corps as a career. One such condition is to open up opportunities for them to attend formal schools despite a potential short-term negative impact on the unit. In the end, the individual Marine and the Corps will be better served.

We must also develop an MOS-specific learning environment in the squadron by improving the Maintenance Training Management and Evaluation Program (MATMEP). The program that will replace MATMEP is the Aviation Maintenance Training Continuum System (AMTCS). AMTCS is automated and based on NALCOMIS. It will eventually replace the time-consuming paper-based process of MATMEP. The goal is to have user-friendly computer-based training

systems in ACE units that interface and eliminate legacy systems that require excessive man-hours to administer. Additionally, Maintenance Trainers provide valuable training to our Enlisted Marines enrolled in Fleet Replacement schools. It is imperative that maintenance personnel receive training on the same equipment that they will eventually be responsible for maintaining in fleet and reserve units. We will continue to apply appropriate funding to these important assets and ensure priority is given to configuration management of the trainers.

As important as it is to make sure our Marines have access to the training they need and the education they deserve, we must strive to do more. Specifically, the training establishment must work with Marine Aviation to continually scrutinize the entire training process. The goal of this scrutiny is to make sure that the training system is producing Marines with the proper skills and enables them to maintain those skills throughout their career.

As an example, the impending "MACCS convergence" will require a complete revision in the training of air command and control operators and maintainers. To fully utilize the remarkable potential of the wide array of new systems, we must develop a program of "lifelong training" that is affordable, focused and effective. Only by doing so can Marines and the systems they operate achieve their full potential. All aviation communities face similar concerns as the maintenance and operation of equipment become increasingly tied to the effective use of information technology.

Finally, development of training materials and lesson plans is a time consuming process that presents a challenge to most squadrons as they strive to balance competing requirements. We must look to invest training dollars to help units establish formal training libraries that have professionally produced and relevant materials. We must also leverage multimedia and distance learning technologies to ensure that courseware offered at formal schools is available for use in our squadrons.

Aviation Ranges and Training Areas

Aviation ranges and training areas play a vital role in our operational training. To ensure that fleet Marine squadrons remain combat ready, it is essential that adequate aviation ranges and training areas are a priority. In support of the sortie based training program, aviation ranges and training areas must be able to support future weapons and tactics training. Greater airspace and ranges are required to realistically support training required for standoff weapons and platforms that are now the standard.

The number one threat to aviation ranges and training areas today is encroachment. Encroachment on ranges and training areas worldwide has limited aviation training in support of the MAGTF, and there exists a constant threat by outside interest groups, organizations and private citizens to limit or reduce the size and scope of our aviation ranges and training areas. The root causes of encroachment are increasing population, urbanization and air traffic around our bases, ranges and training areas. Environmental and wildlife groups also leverage their public appeal by challenging the military's environmental and endangered species stewardship. An effective balance between the environment, wildlife and combat training on our ranges and training areas is essential.

An Executive Agent for ranges and training areas has been established at MCCDC TECOM. In light of encroachment and environmental restrictions placed on aviation training, it became imperative that the Marine Corps consolidate range issues under one executive agent (EA). With establishment of the EA for ranges and training areas, the Marine Corps can effectively develop an overall Range and Training Area Master Plan to formulate policy, sponsor funding, interact with other DOD agencies, engage communities and stakeholders and facilitate the joint use of all Marine Corps ranges. The Range Air Installation Compatibility Use Zone (RAICUZ) program provides periodic study of Marine Corps owned and operated aviation ranges. The RAICUZ program encompasses noise analysis, weapons impact safety zones, socio-economic, legal and environmental impacts of aviation ranges. As the advocate for aviation ranges and training areas, DC Aviation utilizes all available resources to ensure that our ranges are available to facilitate ACE training in support of the MAGTF.

Ranges and Training Areas Goals

- 1. Ensure adequate aviation ranges and training areas are available to support ACE combat readiness.*
- 2. Reduce encroachment on all aviation ranges and training areas.*
- 3. Assist the EA for Ranges and Training Areas in the development of an overall Range and Training Area Master Plan.*

Operations, Training, and Combat Readiness Goals

- 1. Aircraft Utilization Rates less than or equal to peacetime WSPD utilization rates.*
- 2. Execute Planned TEEP.*
- 3. Maintain Minimum Squadron Core Capability per T&R Manual.*
- 4. Implement Revised SORTS Order.*
- 5. Develop SORTS reporting criteria that accurately demonstrates MALS readiness.*
- 6. Fill ACE school quotas 100%.*
- 7. Implement a user-friendly and integrated AMTCS.*
- 8. Reconcile aviation C4I requirements and programs to naval and joint standards. Assist MARCORSYSCOM in ensuring interoperability with MAGTF, Naval, and Joint C4I architectures.*
- 9. Develop more automated training libraries and invest in Distance Learning Labs.*



Operational Risk Management

As noted in Marine Corps Doctrinal Publication One, Warfighting, "Risk is inherent in war and is involved in every mission." In order to ensure mission accomplishment while reducing risk, the Marine Corps is incorporating the Operational Risk Management (ORM) process into all training and operations. Risk Management is a critical piece of the MACP. ORM is a thought process that provides unit operators and planners at all levels with an effective method for maintaining readiness in peacetime and ensuring readiness for combat, without infringing upon the prerogative

of the commander. At its heart, ORM increases the ability to make informed decisions by answering the question, "Do the benefits outweigh the risks?" ORM is being implemented throughout Marine Aviation in accordance with MCO 3500.27.



The ORM process is based on the following principles:

- (1) Accept risk when benefits outweigh the cost.*
- (2) Accept no unnecessary risk.*
- (3) Anticipate and manage risk by planning.*
- (4) Make risk decisions at the proper level.*

Based on these principles, ORM is a tool intended to help us Identify Hazards, Assess Hazards, Make Risk Decisions, Implement Controls, and Supervise.

Marine Aviation must continue to use the risk management process and adhere to the principles of risk management.

At a minimum, all briefs should answer two questions: (1) What were the risks identified in this mission or course of action? and (2) What has been done to reduce those risks to an acceptable level? To aid this process, standardized instructions and risk assessment tools will be used by all of our Aircraft Wings. By rigorously utilizing the risk

management process in the planning stage, we have the greatest potential for identifying hazards and reducing risk, thereby improving our opportunity for mission success.

Squadron Assistance Risk Assessment (SARA) is an operational risk management,

training management and flight scheduling software tool currently in use throughout the FMF. All flying squadrons will use SARA to assess risk in the flight schedule, publish the schedule and manage aircrew data. HQMC will develop common aircraft risk models. These risk models will be evaluated and adjusted in accordance with applicable standardized instructions. MCCDC Aviation Training Branch has assumed responsibility for the short-term refinement of SARA and follow-on implementation of SMARTR. SMARTR is the long-term aviation automation tool to be used throughout Marine Aviation.



Operational Risk Management Goals

1. Fully implement ORM.
2. Commanders periodically review individual ORM aircrew risk status.
3. ORM Standardization Goals:
 - All like-ACE units use the same risk model.
 - All ACE units review standard risk models on a regular basis.
 - All squadrons use the latest version of SARA.

Military Flight Operations Quality Assurance (MFOQA)

Digital aircraft like the F/A-18, AV-8B, MV-22 and KC-130J are in the fleet now or will soon be introduced in large numbers. In the near future, more aircraft will be equipped with Flight Data Recorders and 1553 data buses. Military Flight Operations Quality Assurance (MFOQA) is a process that can capitalize on the data acquired from these new systems. MFOQA involves the regular downloading of flight data from available sources, analyzing that data for exceedences and trends, and taking action on the information gained.

Furthermore, the downloaded data can be converted into animation to provide a valuable debriefing tool. Commercial aviation has discovered that an effective Flight Operations Quality Assurance process results in increased readiness and a reduction in unscheduled maintenance. Full utilization of this process in Marine Aviation units can enhance training and readiness and reduce maintenance costs.



Military Flight Operations Quality Assurance (MFOQA) Goal

1. Conduct a demonstration project of the MFOQA process to validate its potential.

Logistics

Aircraft Material Condition

The Marine Corps is our Nation's premier crisis response force...first on the scene and first to fight. While modernization remains a high priority, the legacy aircraft that we fly today must serve the Corps for many years to come. We must carefully maintain, preserve, and enhance the capability of our legacy aircraft and systems. To support this effort, our goal is to accomplish the following: (1) Ensure all squadrons, deployed, non-deployed, and reserve are maintained at 100% PAA, (2) Meet or exceed the operational category "B" aircraft goals for MC/FMC, as listed in OPNAVINST 5442.4M, for all aircraft assigned to active and reserve squadrons, to include FRS squadrons, (3)

Complete SDLM cycles without extension of the negotiated estimated completion date, (4) Increase the priority of corrosion control efforts by making every effort to ensure that aircraft coming out of scheduled



corrosion special inspections have minimal outstanding corrosion discrepancies, and (5)

Ensure that no "A" status aircraft remain in a non-flying status for more than 60 days.

Additionally, we will continue with the standardized policy of limiting outstanding maintenance discrepancies for each T/M/S aircraft. The following guidelines for awaiting maintenance (AWM) discrepancies apply:

F/A-18A/C/D	.10
AV-8B	.10
KC-130F/R/T	.25
EA-6B	.10
CH-46E	.15
MV-22B	.20
CH-53D/E	.25
UH-1/AH-1	.10

The Marine Corps insists on flying safe aircraft, but we must also insist on "healthy aircraft," aircraft that are professionally maintained in order to achieve maximum reliability, performance and combat capability.

Aircraft Material Condition Goals

1. All squadrons maintained at 100% PAA.
2. Meet or exceed the established operational category "B" aircraft goals for MC/FMC rates as specified in OPNAVINST 5442.4 (series).
3. Complete SDLM cycles within the estimated completion date.
4. Corrosion: Dedicate increased priority to treating and preventing corrosion by making every effort to ensure aircraft coming out of scheduled corrosion special inspections have minimal corrosion discrepancies.

Require annual training for all aircrew and maintenance personnel in the corrosion identification, prevention and correction process.
5. Ensure no "A" status aircraft remains in a non-flying status for more than 60 days.

ACE Deployability

The rapid, light and flexible deployment of aviation logistics personnel, support assets, and command and control systems are key enablers that give Marine Aviation the ability to enter an operational area and act decisively in support of the MAGTF. Accordingly, Marine Aviation has two ongoing efforts to enhance its capacity to support Marines anywhere in the world.

The first of these is the Marine Aviation Logistics Support Program (MALSP). It provides the ability to rapidly deploy Marine aviation assets using expeditionary support packaging, geo-prepositioning and aviation logistics support ships (T-AVBs). As Marine Aviation continues to frequently deploy in support of regional and small scale contingencies, it has become increasingly essential that aviation logistics planners be prepared to rapidly develop aviation logistics support packages that not only fulfill necessary support requirements but do so with the least amount of required airlift. To support the efforts of our frontline aviation logistics planners, we will steadfastly pursue the development and fielding of the Aviation Logistics Planning Module (ALPM) to provide the planner the ability to rapidly define aviation logistics support assets required to support various aircraft mixes. The ability to develop accurate Time Phased Force Deployment Data (TPFDD) within a 72-hour period remains essential to Marine Aviation's ability to get to the fight.

Airlift constraints have also necessitated that deliberate planning be conducted to ensure that only those logistics support assets required to support the initial deployment of Marine aircraft be deployed. As such, the Remote Expeditionary Support Package (RESP) is the means to identify the initial logistics support package to be deployed. It remains critical to the deployability and effectiveness of Marine Aviation that continuous refinement of RESPs be conducted.

The second effort is MACCS convergence. The goal of this effort is to dramatically decrease the physical size of MACCS equipment and to repackage it in mobile configurations. By taking full advantage of modern technology, MACCS convergence will provide Marine Aviation with equipment that is simultaneously more mobile, transportable and possesses increased capabilities. The Multi Role Radar System (MRRS) exemplifies this effort. Specifically, MRRS will replace three

current radar systems and will fit into two HMMVs with trailers. It is not only more deployable but has superior capabilities to enhance Marine Aviation's ability to generate decisive effects on the battlefield.

ACE Deployability Goals

- 1. Develop and field the Aviation Logistics Planning Module (ALPM).*
- 2. Develop RESPs in support of all deliberate war plans.*

Aviation Ground Support (AGS)

The AGS capability provided by the Marine Wing Support Group ensures the unique, expeditionary nature of Marine Aviation. The subordinate Marine Wing Support Squadrons provide all essential AGS requirements for the ACE.

The ability of the ACE to provide on and off-road aircraft refueling capability at expeditionary airfields, forward arming and refueling points (FARPs) and other unimproved sites is compromised by the lack of a replacement for the M931/M970 refueler. The M931/M970 has age-related reliability and supportability problems that are severely degrading equipment readiness. We will resolve this developing capability gap through a near and long term strategy. The near term replacement for on-road refueling is the Aviation Refueling Capability (ARC). The ARC is a non-developmental, commercial refueler that can be fielded quickly to replace the aging fleet of M931/M970 refuelers. FY02 funding is in place for the purchase of 97 of 138 required units. Aviation will seek funding to complete the full fielding of the ARC.

To meet the off-road refueling requirement, we will advocate the development of the off-road aviation refueling capability in our POM cycles. Conceptually, this system will consist of two sub-components: two flat rack fuel tanks and one tactical prime mover vehicle. Each flat rack is comprised of a 2500-gallon tank and pump unit. With the exception of pump capacity, this refueling system will be common with off-road refuelers supporting the GCE and CSSE.

Ground Support Goals

- 1. Obtain funding to field mobile refueling systems.*

Organizational Change

New equipment and new capabilities create opportunities to reconsider existing organizations and doctrine. As Marine Aviation fields modern advanced platforms, whether these are aircraft or refueling vehicles, it must reexamine its structure to ensure this equipment and the Marines who operate it are organized in ways that allow them to maximize their contribution to the MAGTF. Marine Aviation must carefully evaluate the modern technological trends that have already resulted in flattened organizational structures in much of the private sector and ascertain whether it needs to similarly transform its organizations. In theory, the adaptation of such organizational structures will improve coordination, reduce reaction times, and free up more Marines to fly aircraft or to “turn wrenches.”

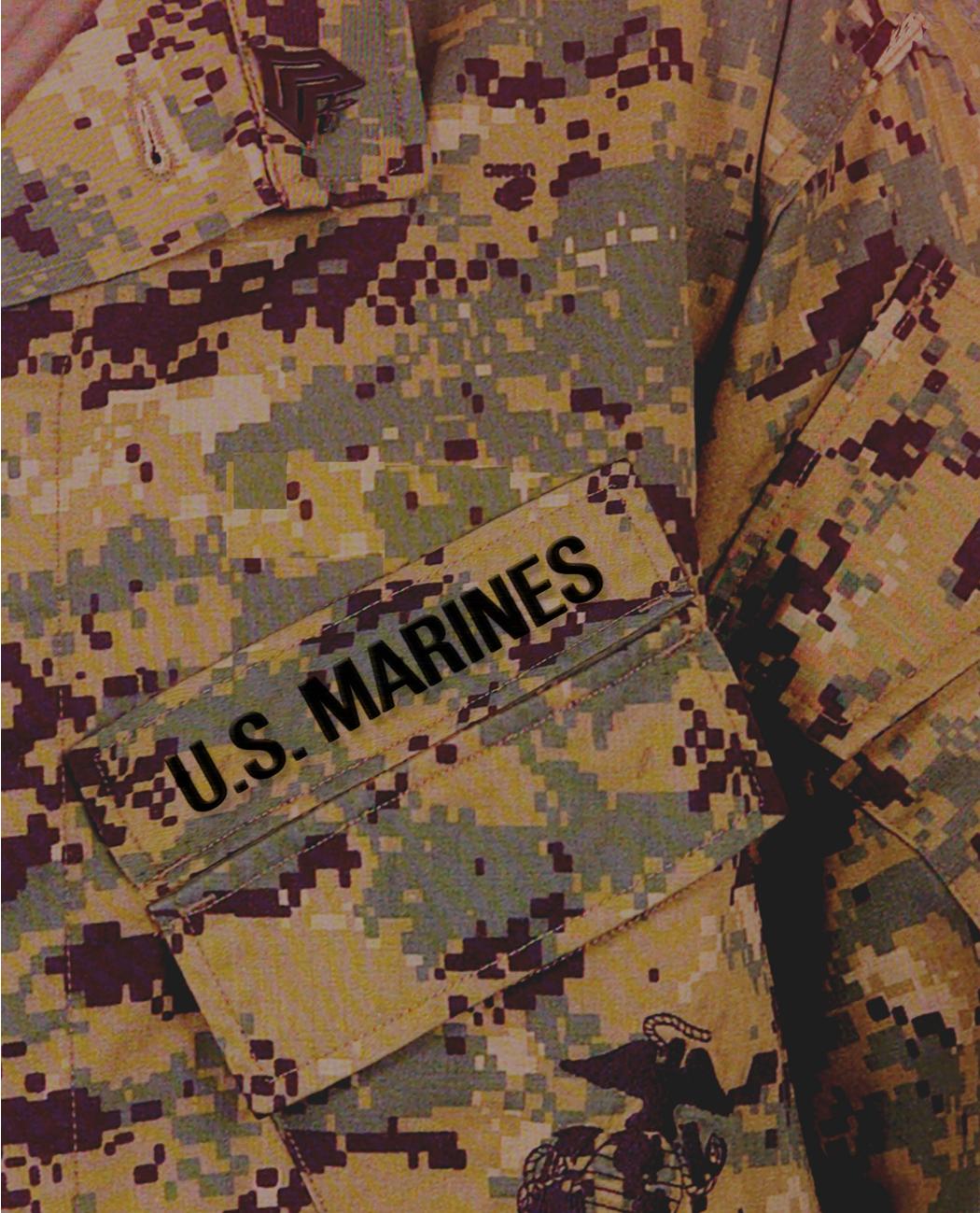
The MACCS is an ideal place to start these organizational experiments. As noted earlier, the MACCS is scheduled to re-equip itself later this decade with far more capable, flexible, mobile, and interoperable equipment. The contrast between such systems and the current legacy ones is very apparent. It is doubtful that organizations developed to support legacy systems are also the best ones for the new equipment under development. By experimenting with alternative organizations, such as cross functional commands now, Marine Aviation can ensure that it is ready to take full advantage of the capabilities of the new equipment as soon as it is fielded.

Transformation/Modernization

The Deputy Commandant for Aviation has established Transition Task Forces (TTFs) to ensure the effective introduction of new aviation weapons systems into the operating forces. These TTFs are the key link between the immediate goals of the MACP and the long term modernization goals outlined in the Aviation Implementation Plan (AIP). TTFs are in place for the following aviation programs: MV-22, KC-130J, UH-1Y/AH-1Z, and JSF. TTFs for Aviation Command & Control and Aviation Logistics will soon be implemented.

The TTF conferences provide a proactive mechanism for the Operational Forces, both active and reserve, to act in concert with the program office and acquisition agencies in the formulation and implementation of each of the T/M/S introduction plans. The TTF events provide a forum for the operational forces to address and prioritize community issues and concerns, as well as to recommend changes that enhance the transition strategy. The TTF conference’s are designed to achieve specific objectives, to include: providing an overview of the program, transition plan, concept of employment, Developmental & Operational Test & Evaluation, transition logistics, aviation manpower, and the TTF/ Working Group Process.

Following introductory presentations, conference attendees split into focused Cross Functional Teams (CFTs) for detailed discussions of issues. The CFTs discuss the following issues: Doctrine, Organization, Training and Education, Equipment, and Support & Facilities (DOTES). The conferences are well attended and include representation from various operational commands and agencies interested and responsible for the successful transition of the assets into the Marine Corps inventory. The CFTs utilize web-enabled, automated action chits to capture the requirements and identify specific events to be monitored and properly budgeted for in the POM process. This process enables HQMC to capture the requirements necessary to successfully introduce combat-ready T/M/S aircraft into the operational forces. For more information on Marine Corps Aviation Transformation, visit the MCAT web site at: <https://usmc-aviation.org>.



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