EVALUATING OPERATIONAL READINESS FOR FIXED-WING TACTICAL AVIATION UNITS

A Monograph
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ABSTRACT

EVALUATING OPERATIONAL READINESS FOR MARINE CORPS FIXED-WING TACTICAL AVIATION UNITS, by LtCol Jeffrey L. Hoing, USMC, 59 pages.

The Marine Corps has used the Marine Corps Combat Readiness Evaluation System (MCCRES) and Commanding General's Inspections (CGI) to evaluate fixed-wing tactical aviation unit readiness for over 25 years. While these systems have served the Marine Corps well, they need to be analyzed to determine how effectively they measure operational readiness in today's environment.

The Secretary of Defense (SECDEF), Chairman of the Joint Chiefs of Staff (CJCS), and Commandant of the Marine Corps (CMC) have all provided guidance which challenges the current way Marine tactical aviation (TacAir) is organized, trained, and evaluated for combat. This guidance emphasizes the importance of increasing operational reach, agility, integrated operations, interoperability, and adaptability. Operations Enduring Freedom and Iraqi Freedom have provided Marine TacAir with a wealth of practical experience in a variety of methods in deploying, basing, and employing. There have been many lessons learned and innovations made to make these operations successful. This experience, if properly captured and applied, provides a tremendous opportunity for Marine TacAir to intelligently and expeditiously chart the proper course for the future.

A prerequisite to do an analysis of operational readiness evaluation systems is a common understanding of the operational level of war. Joint Publication 1-02: *DOD Dictionary of Military and Associated Terms* and *An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century* (*Joint Perspective*) define the operational level of war quite differently. For the purposes of this monograph, the operational level of war is defined as the level of war where component forces / units integrate to form the joint force whose tactical actions are designed to accomplish strategic objectives.

In order to achieve the capabilities directed by the SECDEF, CJCS, and CMC, the JP 1-02 definitions of combat readiness and operational readiness need to be decoupled. Combat readiness should maintain the current tactical focus and DOD definition. Operational readiness needs to be redefined as: the organization, manning, and training level of a unit that allows it to be rapidly deployed, integrated, and immediately employed as part of a joint, allied, or coalition force.

The Marine Corps MCCRES and CGI, Navy Carrier Air Wing, Air Force Operational Readiness Inspection, and NATO TACEVAL have all been evaluated within the framework of increasing operational reach, agility, integrated operations, interoperability and adaptability. The impact and opportunities of Navy / Marine Corps TacAir integration and Operations Enduring Freedom and Iraqi Freedom have also been assessed. This analysis was done to determine whether or not the MCCRES is an adequate system to evaluate operational readiness.

Analysis in this monograph concludes that the MCCRES, while sound as a framework for evaluating tactical readiness, is out of date and fails to adequately evaluate operational readiness. The Marine Corps Combat Readiness Evaluation System should be replaced by a unit training and readiness program to evaluate tactical readiness and as a way to maintain internal Marine Corps standards. Operational readiness should be evaluated through a combination of the unit training and readiness program, CGI, and new (recommended in this monograph) Marine Corps Operational Readiness Evaluation System. Marine TacAir must integrate changes at the operational level with other systems in the Marine Corps, the Navy, and the joint force to be successful.

The results of this monograph have applicability for Marine tactical aviation, for the Marine Corps, and for the joint force. The hallmark of the Marine Corps aviation has always been its training and standards and a capability-based Marine Corps needs to further expand its training and standards at the operational level. A critical piece of this effort is to develop an operational readiness evaluation system to assess operational reach, agility, adaptability, integrated operations, and interoperability.

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ACRONYMS

ABOC	ACE Battle Staff Officer Course
ACE	Aviation Combat Element
ACE	Allied Commander Europe
AEF	Aerospace Expeditionary Forces
AEW	USAF Air Expeditionary Wing
AFB	Air Force Base
AFEP	Air Force Exercise Program
AFFOR	Air Force Forces
AG	Air to Ground
AI	Aerial Interdiction
AIP	*Aviation Implementation Plan*
AIRNORTH	Headquarters Allied Air Forces Northern Europe
ALPM	Aviation Logistics Planning Module
AOC	Air Operations Center
APOD	Airport of Debarkation
ARG	Amphibious Ready Group
ATO	Air-Tasking Order
ATSO	Ability to Survive and Operate
C2	Command and Control
C2PC	Command and Control Personal Computer
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CAG	Carrier Air Wing Commander
CAS	Close Air Support
CAX	Combined Arms Exercise

CE	Command Element
CG	Commanding General
CGI	Commanding General's Inspection
CHOP	Change of Operational Control
CJCS	Chairman of the Joint Chiefs of Staff
CMC	Commandant of the Marine Corps
CMO	Civil-Military Operations
CO	Commanding Officer
CONUS	Continental United States
CQ	Carrier Qualification
CRO	Crisis Response Operations
CSAR	Combat Search and Rescue
CSS	Combat Service Support
CSSE	Combat Service Support Element
CTS	Collective Training Standards
CVBG	Carrier Battle Group
CVW	Carrier Air Wing
DCA	Deputy Commandant for Aviation
DF	Deployable Forces
DRRS	Defense Readiness Reporting System
EAF	Expeditionary Airfield
EMW	*Expeditionary Maneuver Warfare*
ESORTS	Enhanced Status of Resource and Training System
EWTG	Expeditionary Warfare Training Group (LANT--Atlantic, PAC--Pacific)
FAC	Forward Air Controller
FAC(A)	Forward Air Controller (Airborne)
FBO	Forward-Based Operations

FCLP	Field Carrier Landing Practice
FDF	Forward-deployed Force (non-doctrinal acronym)
FDP&E	Force, Deployment, Planning, and Execution
FISP	Fly-in Support Package
FLEETEX	Fleet Exercise
FMF	Fleet Marine Force
FW	Fixed Wing
GCE	Ground Combat Element
GSORTS	Global Status of Resources and Training System
HQMC	Headquarter Marine Corps
HRF	High Readiness Forces
HRF(A)	High Readiness Forces-Air
IAW	In Accordance with
IPF	In-place Forces
ISO	In Support of
ITS	Individual Training Standards
JFACC	Joint Forces Air Component Commander
JFCOM	Joint Forces Command
JNTC	Joint National Training Center
Joint Perspective	*An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution in the 21st Century*
JOPES	Joint Planning and Execution System
JP	Joint Publication
JROC	Joint Requirements Oversight Committee
JTF	Joint Task Force
JTFEX	Joint Task Force Exercise
LAAD	Low Altitude Air Defense

LMW	USAF Lead Mobility Wing
LRF	Low Readiness Forces
LTBF	Long-term Built-up Forces
MAB	Marine Air Board
MACCS	Marine Aviation Command and Control System
MACG	Marine Air Control Group
MACP	Marine Aviation Campaign Plan
MAGTF	Marine Air-Ground Task Force
MALS	Marine Aviation Logistics Squadron
MALSP	Marine Aviation Logistics Support Program
MAW	Marine Aircraft Wing
MAWTS-1	Marine Aviation Weapons and Tactics Squadron One
MCAS	Marine Corps Air Station
MCCRES	Marine Corps Combat Readiness Evaluation System
MCDP	Marine Corps Doctrinal Publication
MCO	Marine Corps Order
MCORES	Marine Corps Operational Readiness Evaluation System (only a system proposed in this monograph--NOT a current system or one in development)
MC Strategy 21	*Marine Corps Strategy 21*
MCTEEP	Marine Corps Training, Exercise, and Employment Plan
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MET	Mission Essential Tasks
METL	Mission Essential Task List
MEU	Marine Expeditionary Unit
MEU (SOC)	Marine Expeditionary Unit (Special Operations Capable)
MOA	Memorandum of Agreement

MOS	Military Occupational Specialty
MOU	Memorandum of Understanding
MPF	Marine Pre-positioning Force
MPF MEB	Marine Pre-positioning Force MEB
MSTP	MAGTF Staff Training Program
MWSS	Marine Wing Support Squadron
NAS	Naval Air Station
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological, Chemical
NMS	National Military Strategy
2002 NMS	*2002 National Military Strategy*
NSAWC	Naval Strike Air Warfare Center
OMFTS	*Operational Maneuver From the Sea*
OPASSESS	Operational Assessment (TACEVAL)
OPCON	Operational Control
OPEVAL	Operational Evaluation (TACEVAL)
OPLAN	Operational Plan
OPSO	Operations Officer
OPTEMPO	Operational Tempo
ORI	Operational Readiness Inspection
ORM	Operational Risk Management
POW	Prisoner of War
PTDO	Prepare To Deploy Order
QDR	Quadrennial Defense Review
2001 QDR	*Quadrennial Defense Review 2001*
RESCAP	Rescue Combat Air Patrol
RESP	Remote Expeditionary Support Package

SBCT	Stryker Brigade Combat Team
SCAR	Strike Coordination Armed Reconnaissance
SECDEF	Secretary of Defense
SERE	Survival, Evasion, Resistance, Escape
SFTP	Strike Fighter Training Program
SFWS	Strike Fighter Weapons School (PAC--Pacific, LANT--Atlantic)
SHAPE	Supreme Headquarters Allied Powers Europe
SOP	Standard Operating Procedures
SPMAGTF	Special Purpose Marine Air-Ground Task Force
SPOD	Sea Port of Debarkation
STEM	SHAPE Tactical Evaluation Manual
STO	Survive to Operate
MC Strategy 21	*Marine Corps MC Strategy 21*
Strike-U	Strike Warfare Center
SWATSLANT	Strike Weapons and Tactics School--Atlantic
SWO	Senior Watch Officer
TacAir	Tactical Aviation (USMC AV-8B, EA-6B, F/A-18)
TACC	Tactical Air Command Center
TACEVAL	Tactical Evaluation
TALCE	Tanker Airlift Control Element
T-AVB	Aviation Logistics Support Ships
T&R	Training and Readiness
TBMCS	Theater Battle Management Core System
TECOM	Training and Education Command
TEEP	Training, Exercise, and Employment Plan
THREATCON	Threat Alert Condition
TOPDOME	Carrier Airborne Early Warning

TOPGUN	Naval Fighter Weapons School
TPFDD	Time-Phased Force Deployment Data
TRAP	Tactical Recovery of Aircraft and Personnel
UDP	Unit Deployment
UJTL	Universal Joint Task List
US	United States
USA	United States Army
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy
UTM	Unit Training Management
WOC	Wing Operations Center
WTI	Weapons and Tactics Instructor
WSPD	Weapon Systems Planning Document
WTTP	Marine Corps Aviation Weapons and Tactics Training Program
XO	Executive Officer
XTACC	Expeditionary Tactical Air Command Center

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CHAPTER 1: INTRODUCTION

The Marine Corps has used the Marine Corps Combat Readiness Evaluation System (MCCRES) and Commanding General's Inspections (CGI) to evaluate fixed-wing (FW) tactical aviation (TacAir--AV-8B, EA-6B, F/A-18) unit readiness for over twenty-five years. While these systems have served the Marine Corps well, how effectively do they measure operational readiness in today's environment?

There are four elements that drive the necessity to analyze the Marine Corps' operational readiness evaluation systems and one significant opportunity for this analysis. The first element is the Secretary of Defense's (SECDEF's) *2001 Quadrennial Defense Review* (*2001 QDR*) and transformation goals. The second element is the *2002 National Military Strategy* (*2002 NMS*) and joint concept, *An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution in the 21st Century* (*Joint Perspective*), that was approved by the Joint Requirement Oversight Committee (JROC). The Marine Corps concepts *Marine Corps Strategy 21 (MC Strategy 21)* and *Expeditionary Maneuver Warfare (EMW)* form the third element that challenges current standards. The fourth element is that Marine Corps Order (MCO) 3501.5 (TacAir MCCRES) is out of date with the latest update being in November 1994. Operations Enduring Freedom and Iraqi Freedom have provided Marine TacAir with a wealth of practical experience through a variety of methods in deploying, basing, and employing. This experience, if properly captured, provides a tremendous opportunity to intelligently and expeditiously chart the proper course for the future.

The Secretary of Defense's *2001 QDR* and transformation goals put a premium on strategic agility, operational reach, integrated operations, and force projection that challenge the military's current organization and readiness standards as the basis for a capabilities based

military.[1] The *2001 QDR* puts forth an aggressive concept where the military can maintain its forces in the United States, but deploy them rapidly and decisively overseas within hours or at most a few days. This is intended to eliminate the military's dependence on large, fixed, theater operating bases.[2]

The *2002 NMS* identified several strategic concepts that are directly applicable to this monograph including strategic agility, integrated operations, and overseaspresence which will figure prominently in analyzing operational readiness evaluation systems.[3] The *2002 NMS* stresses a combination of both *overseas* and continental US (CONUS)-based capabilities for joint power projection and requires the services to organize, train, and equip to serve as a fully integrated joint team. Critical joint force characteristics include a joint force that is interoperable, integrated, versatile, has decisive combat power, has strike capabilities, and has forcible entry capabilities. The *2002 NMS* places a great deal of emphasis on sustaining the joint force to achieve global operational reach. The desired tempo of operations demands a responsive, flexible, and up-to-date logistics system to support rapid mobilization, deployment, and simultaneous employment from widely dispersed units.[4]

Combatting the proliferation of weapons of mass destruction/effects (WMD/E) is a critical task identified by the *2002 NMS*. Joint forces must be proficient at consequence management. The *2002 NMS* defines consequence management as the actions to protect the force from the effects of WMD/E while continuing to operate effectively in a WMD/E environment.

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[1]SECDEC Donald Rumsfeld, "Secretary Rumsfeld Speaks on '21st Century Transformation' of U.S. Armed Forces," (transcript of remarks and question and answer period as delivered by Secretary of Defense Donald Rumsfeld, National Defense University, Fort McNair, Washington, DC, Thursday, 31 January 2002), 4-5 [document on-line]; available from http://www.defenselink.mil/speeches/2002; Internet.

[2]NDU QDR 2001 Working Group, *QDR 2001: Strategy-Driven Choices for America's Security,* ed. Michele A. Flournoy (Washington, DC: National Defense University Press, 2001), 299.

[3]Chairman of the Joint Chiefs of Staff, *National Military Strategy* (Washington, DC: Joint Chiefs of Staff, 16 October 2002), 20-23.

[4]Ibid., 29.

The joint force is also tasked to develop the capability to assist in restoring areas, both at home and abroad affected by WMD/E use through actions to contain, neutralize, and decontaminate.[5]

Joint Perspective was written by the Joint Staff and approved in January 2003 by the JROC to provide a common joint warfighting perspective and to articulate the Chairman of the Joint Chiefs of Staff's (CJCS's) future joint vision in actionable detail.[6] *Joint Perspective* outlines several imperatives for capability development and force planning. The first imperative is to develop an expeditionary and "joint team" mind-set in the Total Force. Services are to contribute to developing a more globally deployable, interoperable, and versatile joint force.

CJCS refers to joint warfare as "team warfare" that is integrated at the operational level of war. Services are tasked to develop modular forces capable of immediate integration and interoperability with the joint force. *Joint Perspective* identifies several operational themes to guide the services in developing future capabilities. These include:

1. A shift from the capability to project a large portion of CONUS-based forces over a relatively long time period to the ability to project a smaller but more capable joint force over a relatively short period of time.

2. Tailored combat forces that are joint and expeditionary in character, rapidly deployable, and immediately employable from a forward posture. The authors defined expeditionary in *Joint Perspective* as, "An expeditionary force is considered an armed force organized, trained, and equipped for rapid deployment, immediate employment, and sustainment under austere conditions."[7] These forces include CONUS-based and forward-based combat forces used to augment forward-deployed and initial expeditionary forces.

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[5]Ibid.

[6]Chairman of the Joint Chiefs of Staff, *An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century* (Washington, DC: Joint Chiefs of Staff, Joint Requirements Oversight Council, 28 January 2003), 1.

[7]Ibid., 5.

The Marine Corps' vision, *MC Strategy 21,* guides the development of future Marine Corps combat capabilities. Written in November 2000, *MC Strategy 21* identifies core competencies and characteristics for the Marine Corps that nest well under *2002 NMS* and *Joint Perspective.* These core competencies and characteristics are:

Ready to Fight and Win: Every Marine and Marine unit is ready to rapidly task organize, deploy, and employ from CONUS or while forward-deployed to contain crises or to immediately engage in sustained combat operations.

Expeditionary Culture: Marines are prepared to deploy into diverse, austere, and chaotic environments on short notice using the Marine Air-Ground Task Force's (MAGTF) integrated command, control, and logistic capabilities to operate independently of existing infrastructure. "Expeditionary" influences all aspects of organizing, training, and equipping units ensuring they are both lethal and swift to deploy.

Combined Arms: Marines fight as air-ground task forces--integrated organizations of air, ground, and logistic forces under a single commander.

Task Organized: MAGTFs provide combatant commanders with forces that are tailored to meet specific mission requirements and are able to rapidly reconfigure based on a changing situation to provide the right force for the next fight.

Forcible Entry From the Sea: Together, the Navy and Marine Corps provide the nation with its primary capability to project and sustain power ashore in the face of armed opposition.

Joint Competency: Whether forward deployed or deploying in a contingency, Marines can lead or seamlessly integrate into a joint or multinational force.[8]

The Marine Corps developed its capstone concept of *Expeditionary Maneuver Warfare (EMW)* to combine the Marine Corps' maneuver warfare philosophy and *MC Strategy 21* core

[8]United States Marine Corps, *Marine Corps MC Strategy 21* (Washington, DC: GPO, 03 November 2000), 2.

competencies and characteristics into a framework to serve as a guide for the organization, deployment, and employment of forces.[9] The Marine Corps is specifically challenged to enhance strategic agility, to increase operational reach, and to serve as a joint and coalition force enabler. These capabilities must be flexible enough to ensure the effective force deployment and employment using a combination of carrier and amphibious platforms, strategic sea lift and air lift, pre-positioned assets, and self-deployment options.[10]

MAGTF Aviation and Operational Maneuver from the Sea states that the aviation combat element (ACE) is, "Able to rapidly deploy and immediately employ, the ACE delivers its operational capability through speed, mobility, and flexibility."[11] There is no standard or definition assigned for "rapid deployment" or "immediate employment" and while some TacAir units can deploy and employ on fairly short notice, across the Marine Corps the entire ACE would be significantly challenged to rapidly deploy and conduct immediate sustained operations.

In the summer of 2002 Marine Corps TacAir decided, without a replacement system in place, to no longer utilize the MCCRES program because it is outdated and, in its current form, of little benefit to TacAir units or the Marine Corps. The last update to Marine Corps Order (MCO) 3501.5 *MCCRES;* Volume IV, *Fixed Wing Squadrons*, was published on November 1994 (change 9 to the basic order). Since November 1994 Marine Corps TacAir has introduced new upgraded airframes (AV-8B II+) and has implemented significant upgrades to capabilities (night vision, precision weapons, targeting pods, etc.). With all these major changes, the MCCRES has not changed.

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[9]United States Marine Corps, *Expeditionary Maneuver Warfare* (Washington, DC:GPO, 10 November 2001), 1, 6-10.

[10]Ibid., 8.

[11]Deputy Commandant for Aviation, *MAGTF Aviation and Operational Maneuver from the Sea*. (Headquarters Marine Corps: United States Marine Corps, 29 January 1999), 2; [document on-line]; available from http://hqinet001.hqmc.usmc.mil/AVN/documents; Internet; accessed on 18 December 2002.

The hallmark of the Marine Corps has always been its training and standards. Quality training is still occurring in TacAir units but it is due to the high standards of Marines, not Marine Corps standards (an impending war also tends to help focus training.) Marine TacAir is at a point where it needs to ensure its charted course is truly aligned with higher headquarters and Marine Corps guidance and institutionalize its standards and methods of evaluation. The Commandant of the Marine Corps through *MC Strategy 21* and *EMW* has given Marines an imperative to critically analyze its systems that support operational and combat readiness training, deployment, and employment. The experience gained and lessons learned from Operations Enduring Freedom and Iraqi Freedom will provide valuable input to any current or future readiness evaluation system and will present Marine Aviation a tremendous opportunity for change. This monograph will analyze current operational readiness evaluation systems to determine if they are adequate for Marine Corps FW TacAir units in the current and future operational environments.

CHAPTER 2: DEFINITION OF CONCEPTS AND TERMS

In order to proceed through a coherent, logical analysis of operational readiness evaluation systems, it is necessary to define some key concepts and terms and to define the scope of this monograph. These concepts and terms include those from the MCCRES; T&R Program; Marine Corps Training, Exercise, and Employment Plan (MCTEEP); readiness reporting system; operational level of war; operational readiness; and key elements of operational readiness. This monograph is aimed at Marine Corps FW TacAir but has applicability to several systems across the Marine Corps.

MCCRES Concepts and Terms

A critical part of the combat readiness cycle is a unit evaluation. The only acceptable standard for a Marine squadron is to deploy in a combat ready status, perform as a coherent unit in battle, and return from any conflict victorious.[1] The current Marine Corps system used to evaluate combat readiness is the MCCRES.

The purpose of MCCRES is to provide the Marine Corps with an evaluation system based on mission performance standards (MPS). The MCCRES provides Fleet Marine Force unit commanders with a comprehensive set of MPS from which training programs are developed, implemented, and evaluated for effectiveness and efficiency. MPS are mission-oriented collective training standards that establish minimum acceptable performance criteria.[2] A further discussion of the MCCRES will be given in chapter 3.

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[1]Commanding General, Marine Corps Combat Development Center, Marine Corps Order 3501.5 (with changes 1-9), *Marine Corps Combat Readiness Evaluation System (MCCRES);* vol. 2, *Fixed-Wing Squadrons* (Quantico, VA: Marine Corps Training and Education Command, November 1994), 2.

[2]Ibid.

Training and Readiness (T&R) Concepts and Terms

The purpose of the Training and Readiness (T&R) Program is to develop unit warfighting capabilities. The T&R Program contains syllabi with specific performance standards for tactical pilot skill development. The T&R Program has recently been expanded to begin focusing on unit capability, not just to measure the proficiency of individual pilots.

The following are some key T&R terms and concepts that focus on unit capability development. MCO 3500.14G, *The Training and Readiness Manual, Administrative* (*T&R Admin*) defines mission essential tasks (METs) as those tasks that are the very essence of the unit's existence and are absolutely necessary, indispensable, or critical to mission success. Mission essential task lists (METLs) are a combined list of a unit's METs that allow a unit to accomplish the mission(s) it was designed or assigned to execute. Core capabilities are the minimum levels of performance a unit must be capable of sustaining during extended combat operations. Core competencies are core capabilities, skills, and missions that can be realistically expected to be assigned in combat and support the METLs.[3] Unit T&R collective training standards (CTS) are criteria that specify mission and functional area unit proficiency standards.[4]

Marine Corps Training, Exercise, and Employment Plan (MCTEEP)

CMC directed in 1995 that the MCTEEP be used as a management tool to help commanders manage training and reduce operational tempo (OPTEMPO). MCTEEP utilizes software to track deployment tempo (DEPTEMPO) and manage resources. MCTEEP tracks units and events at the squadron level and higher echelon units up to the JCS and combatant

[3]Commanding General, Marine Corps Combat Development Center, Marine Corps Order 3500.14G, *Marine Corps Training and Readiness Manual: Administrative* (Quantico, VA: Marine Corps Training and Education Command, August 2002), 1-4.

[4]Ibid., B-2.

commander level.[5] MCTEEP gives multiple levels of command a snapshot to track, deconflict, and prioritize training, events, exercises, and operational commitments.

Readiness Reporting

An operational readiness evaluation program is a part of an overall system that includes training and readiness reporting. While this monograph will address training systems in some detail, only a brief synopsis of readiness reporting will be presented in order to present the analysis of evaluation systems in the proper context.

The US military uses the Global Status of Resources and Training System (GSORTS) to report identity, location, and resource information to the CJCS, SECDEF, and President to facilitate planning and resource management. GSORTS is designed to report a unit's level of resources and training to complete its wartime mission and tracks readiness in four sub-areas: personnel, equipment and supplies on hand, equipment condition, and training. Each of these four subareas is rated and, with the commander's input, an overall readiness rate is assigned.[6]

The Department of Defense (DoD) recognized that GSORTS relies heavily on resource and individual training readiness and does not give a completely accurate presentation on a unit's combat readiness. On 3 June 2002 DoD issued DoD Directive 7730.65 which established the Defense Readiness Reporting System (DRRS) and a new Enhanced Status of Resource and Training System (ESORTS.) DRRS takes a significantly different approach to reporting than

[5]Commanding General, Marine Corps Combat Development Center, *Marine Corps Order 3500.25, Marine Corps Training, Exercise, and Employment Plan (Short Title: MCTEEP) Manual*, vol. 2, *Tactical Fixed-Wing* (Quantico, VA: Marine Corps Training and Education Command, 19 April 2002), Enclosure (4).

[6]Chairman of the Joint Chiefs of Staff, CJCSI 3401.0, *Global Status of Resources and Training System, Change 2* (Washington, DC: Joint Chiefs of Staff, 1 April 2001), 4.

GSORTS by mandating that services establish formal training standards that link METs to readiness reporting.[7]

Operational Level of War

A prerequisite to do an analysis of operational readiness systems is a common understanding of the operational level of war. This common understanding of the operational level of war frames the analysis of an operational readiness system and allows the development of a list of evaluation criteria. The remainder of this chapter contains a succinct overview of the operational level of war and presents a list of evaluation criteria to be used in subsequent chapters for analysis.

Joint Publication (JP) 1-02, *DOD Dictionary of Military and Associated Terms,* defines the operational level of war as the level of war at which campaigns and major operations are planned, conducted, and sustained to link tactics and strategic objectives.[8] *Joint Perspective* defines the operational level of war as where components and the joint force integrate.[9] For the purposes of this monograph, the operational level of war is defined as the level of war where component forces integrate to form the joint force whose tactical actions are designed to accomplish strategic objectives through campaigns and integrated operations.

Operational Readiness

The Marine Corps views the Marine Expeditionary Force (MEF) as a tactical warfighting unit. This creates a natural tension in viewing USMC readiness at the operational and tactical levels of war. Operational readiness is generally regarded as a unit's ability to tactically operate

[7]DoD, Directive Number 7730.65, *Department of Defense Readiness Reporting System (DRRS),* (Washington, DC: U.S. Government Printing Office, 3 June 2002), 4-10.

[8]Department of Defense, Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: U.S. Government Printing Office, 1994), 311.

[9]Chairman of the Joint Chiefs of Staff, *An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century,* 7.

(at the tactical level of war) to a defined standard. JP 1-02 defines both operational readiness and combat readiness as the capability of a unit, ship, weapon system, or equipment to perform the combat missions or functions for which it is organized or designed.[10] In order to achieve the capabilities directed by the Secretary of SECDEF, CJCS, and CMC, the definitions of combat readiness and operational readiness need to be decoupled. Combat readiness should maintain the current tactical focus and DOD definition. Operational readiness needs to be redefined as: the organization, manning, and training level of a unit that allows it to be rapidly deployed, integrated, and immediately employed as part of a joint, allied, or coalition force.

There are several key operational tenants and characteristics that are common to *2001 QDR, 2002 NMS, Joint Perspective, MC Strategy 21,* and *EMW* that are also implied in the definition of operational readiness. The first is the concept of operational reach. Two additional concepts are agility and integrated operations. Two common characteristics that apply to operational readiness are interoperability and adaptability. The remainder of this chapter contains definitions of these common concepts and characteristics in order to use them as evaluation criteria in the analysis of the operational readiness.

Operational Reach

The operational reach of forces is one of the attributes that determine the true value of a force. The *2001 QDR, 2002 NMS, Joint Perspective, MC Strategy 21,* and *EMW* contain concepts and characteristics that are designed to increase operational reach and guide the joint force toward global operational reach. MCDP 1-0, *Operations*, defines operational reach as "the distance and duration across which a unit can successfully employ military capabilities."[11] It is important to remember that operational reach varies based on the situation and factors, such as the

[10]Department of Defense, JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 77, 311.

geography, the enemy, the mission, duration of the mission, sustainment capabilities, and the friendly lines of communication. The evaluation of operational readiness systems must be done within the context of increasing operational reach.

Agility

Agility has a great impact on operational reach and is the first operational concept that will be used as an evaluation criterion. Agility has four main parts: rapid global deployment, force tailoring, sustainment, and immediate employment. Rapid global deployment is not simply rapidly moving forces to a crisis. The *2002 NMS* defines strategic agility as the timely concentration, employment, and sustainment of military capabilities anywhere, at a speed and tempo that no adversary can match.[12] TacAir units are in a unique position because they are often forward deployed or may deploy from the CONUS to a crisis so the units must be flexible and agile enough to successfully utilize a variety of deployment, basing, and employment options to achieve the mission.

The second part of agility is force tailoring, which is selecting the right mix and sequence of forces. This is a tactical strength of the Marine Corps that can be enhanced at the operational level. It is essential to ensure both initial and follow-on forces are deployed as integrated force packages that furnish a continuous balance of combat, combat support, sustainment, and command and control capabilities.[13]

The third part of agility is the hardest part, sustainment. Agility causes great tension between being light enough to deploy rapidly but with enough support to conduct immediate sustained combat operations. There are many challenges associated with rapid global deployment

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[11]United States Marine Corps, MCDP 1-0, *Marine Corps Operations* (Washington, DC: Government Printing Office, 2001), F-16.

[12]Chairman of the Joint Chiefs of Staff, *2002 NMS*, 20.

[13]Huba Wass de Czege and Richard Hart Sinnreich, *Conceptual Foundations of a Transformed U.S. Army* (Arlington, VA: Association of the United States Army, March 2002), 20-21.

including the pressure to reduce the logistical footprint to minimize risk and force protection concerns. Streamlining the "logistical tail" must strike a balance between effectiveness and efficiency to ensure the force does not culminate.

The fourth part of agility is the capability for immediate employment. Next to sustainability, this is the toughest TacAir challenge. Rapid deployment makes planning critical for immediate employment. The criticality of getting early, adequate, and accurate intelligence to support a joint planning architecture and process that allows for parallel and collaborative planning of disbursed and enroute forces is critical to mission success. Command and control connectivity throughout this whole process is paramount.

Adaptability

The capability to utilize a variety of deployment, basing, and employment options mandates that TacAir units are adaptable. TacAir units need to be capable to deploy via shipboard platforms, strategic lift, self-deployment, or a combination of these means. They need to be able to deploy to and operate from an austere expeditionary base, forward-operating base, or shipboard platform as part of the MAGTF, joint force, or coalition force. TacAir must be able to operate effectively under less-than-optimum conditions and be proficient at survive-to-operate (STO) skills in a nuclear, biological, chemical (NBC) environment.

Integrated Operations

The second concept to be used to evaluate operational readiness evaluation systems is integrated operations. Integrated operations is the merging of capabilities to effectively execute combat operations. Marine TacAir as its core capability must be capable of integrated operations in the MAGTF. In order to be postured to support the MAGTF in today's environment, Marine TacAir must be able to functionally lead or integrate into a joint or coalition force. This is done through organization, doctrine, training, and standardization.

The Marine Corps advertises a joint force air component commander (JFACC) capability but is not systematically organized, trained, and equipped to fulfill this role. This is mainly a function of command and control. Through the Marine Air Control Group (MACG), MAW G-5/7 (the Commanding General's Future Plans Divisions), and Marine Aviation Weapons and Tactics Squadron–One (MAWTS-1), the Marine Corps has some resident experience and expertise in this area. The Tactical Air Command Center (TACC) and Expeditionary TACC (XTACC) have the potential to fill this role, and MAW G-5/7 and MAWTS-1 already conduct training toward this capability. If the Marine Corps wants to have "truth in advertising" in leading a joint force and be a true joint enabler, it needs to assess its organization, training, doctrine, and equipment to ensure it is adequate.

In order to integrate into a joint and coalition force, Marine TacAir organization, training, doctrine, and equipment must be sufficient to "plug in" to the joint force. Without being able to lead or integrate with a joint or coalition force, Marine TacAir may not be able to provide the requisite support to the ACE and MAGTF. This makes integrated operations a key criterion to any operational readiness evaluation system.

Interoperability

An enabling characteristic of integrated operations is interoperability. Interoperability is the connectivity and capability to operate together. Interoperability can be enhanced by technology and by a common understanding of doctrine, planning, standardization, rehearsal systems, and execution. This is essential because forces may be coming from multiple locations, doing collaborative and parallel planning, conducting joint enroute rehearsals, and then executing operations on a distributed battlefield.

Chapter 3 contains a synopsis of Marine Corps operational readiness and evaluation systems. Chapter 4, in turn, contains a description of non-Marine Corps operational readiness evaluation systems. The analysis of the operational readiness systems will be contained in

chapter 5 within the context of increasing operational reach using the concepts of agility and integrated operations and the characteristics of adaptability and interoperability.

CHAPTER 3: MARINE CORPS PROGRAMS AND SYSTEMS

There are several Marine Corps programs and systems that must be considered when evaluating operational readiness evaluation systems. Each of these systems has its "niche" and is integrated into an overall Marine Corps approach to training and readiness. Chapter 3 contains references starting with Marine Corps aviation's guiding documents, *Marine Aviation Campaign Plan* (*MACP*) and *Aviation Implementation Plan* (*AIP*). These documents show Deputy Commandant for Aviation's (DC Aviation's) guidance for developing capabilities that are operational in nature and are not consolidated in any other Marine Corps aviation publication or program.

The Marine Aviation T&R Program focuses on tactical readiness and forms the base for operational readiness. The T&R Program, Combined Arms Exercise (CAX), Marine Corps Aviation Weapons and Tactics Training Program (WTTP) and MAWTS-1 will be described to provide a basic understanding of other systems and organizations that have a role in tactical and operational readiness. The Navy and Air Force have programs similar to the T&R Program and therefore, only significant differences that affect operational readiness will be noted in chapter 4. The Marine Aircraft Wing (MAW) Commanding General's Inspection (CGI) also addresses some key issues that impact operational readiness. How the CGI interacts with operational readiness will be explored in this chapter.

Marine Aviation Campaign Plan and *Aviation Implementation Plan*

> 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 contingencies.[1]

[1]Deputy Commandant for Aviation, *Aviation Campaign Plan 2002* (Headquarters Marine Corps: United States Marine Corps, 2002), 1[document on-line]; available from http://hqinet001.hqmc.usmc.mil/AVN/documents/ACPlan 2002.pdf; Internet; accessed on 18 December 2002.

The Deputy Commandant for Aviation (DC Aviation) publishes the *Marine Aviation Campaign Plan (MACP)* to provide key guidance and form a shared vision across Marine Aviation. The *Aviation Implementation Plan (AIP)* is intended to provide the blueprint for the future of Marine Aviation that ensures aircraft and equipment procurement are properly synchronized with training, manpower, logistics support, and facilities with sufficient lead time to reduce organizational turbulence and minimize impacts to warfighting capabilities. The *MACP* and *AIP* are reviewed on a biennial cycle, out of cycle with each other effects timely revisions to ensure consistency across aviation functional areas and integration with naval and joint organizations.

The operational concepts of Marine Corps aviation, as presented in the *MACP* and *AIP*, are framed by the following tenets of: battle space awareness, reach, interoperability, flexibility, lethality, and survivability. These tenets are designed to encompass the operational capabilities that will enable the MAGTF to respond rapidly with a credible force in contingency operations.[2] In the framework of these tenets, the *MACP* and *AIP* stress interoperability, sustainment, and integrated operations.

MACP places heavy emphasis on supportability when addressing deployability. It recognizes that without an increase in expeditionary support capability, increased speed in deployability is not possible. Accordingly, Marine Aviation has three ongoing efforts to enhance its capacity beyond the fly-in support package (FISP) 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-pre-positioned and aviation logistics support ships (T-AVBs). Marine aviation is also developing remote expeditionary support packages (RESPs) as a means to identify the initial logistics support

[2]Deputy Commandant for Aviation, *Aviation Implementation Plan* (Headquarters Marine Corps: United States Marine Corps. 1999), ii; [document on-line]; available from http://hqinet001.hqmc.usmc.mil/AVN/documents/ACPlan 2002.pdf; Internet; accessed on 18 December 2002.

package to be deployed and already have capability through maritime pre-positioned stocks. The *MACP* states that ACE deployability goals are:

1. Develop and field the aviation logistics-planning module (ALPM).

2. Develop RESPs in support of all deliberate war plans[3]

While Marine aviation doctrine and publications do not set specific deployment standards, speed of deployment is considered. The first consideration is sustainment, which was discussed in the paragraph above. The second consideration is the *MACP* standard for Marine aviation to be able to develop accurate time phased force deployment data (TPFDD) within a 72-hour period in order to be able to "get to the fight." This is a tremendous challenge given the variety of TacAir deployment, basing, and employment options. The *AIP* states that a MPF MEB deploys with a JFACC enabler that can be deployed in the region and configured for combat in less than nine days.[4] There are currently no programs in place to train and test to these standards.

In keeping with the Marine Corps' expeditionary nature, TacAir has the ability to deploy and operate from austere expeditionary airfields, forward operating bases, amphibious platforms, and aircraft carriers that makes it a highly responsive combat force. Forward-deployed MAGTFs, as a part of a naval expeditionary force, are often the first to respond to a crisis. ACE command and control must enable stand-alone aviationoperations, yet also provide a foundation to integrate follow-on forces and assets into a larger MAGTF or as part of a working joint task force (JTF) command structure. The ACE commander may be tasked to serve as an enabling JFACC and this will require the ACE to have the capability to exercise JFACC command functions. Integration training for forward-deployed TacAir with CONUS-deployed TacAir units is currently not conducted.

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[3]Deputy Commandant for Aviation, *Aviation Campaign Plan 2002*, 32–33.

[4]Deputy Commandant for Aviation, *Aviation Implementation Plan*, A-7.

The Marine Corps uses a combination of programs to evaluate combat and operational readiness. In order to holistically analyze operational readiness, three Marine Corps programs must be taken into account. These three programs are the Commanding General's IUnspection (CGI), and two programs under the Marine Corps' Unit Training Management (UTM), the T&R Program, and the MCCRES. While each of these programs has its specific "lane," each program overlaps and covers a part of operational readiness. Additionally, a brief description of the Combined Arms Exercise (CAX) Program and of MAWTS-1 will be presented due to their role in the combat readiness cycle.

Training and Readiness (T&R) Program

The goal of T&R Program is to develop unit warfighting capabilities, not to measure the proficiency of individuals.[5] Syllabi are based on specific performance standards designed to ensure proficiency in core competencies. The *MACP* emphasizes a sortie based training program that is focused on core capabilities and competencies and is founded upon the overarching principle that unit capabilities are more important than individual training goals. Unit training programs, according to the *MACP*, must emphasize squadron qualifications and the overall combat readiness of the unit. This is a significant shift for Marine aviation away from viewing combat effectiveness as an average of individual readiness to one of aggregate unit readiness.[6]

The Marine Corps, Navy, and Air Force all have strong individual training programs that develop pilot tactical skills, but only the Marine Corps' program will be presented in this monograph. Marine Corps core individual tactical skills are developed against individual training standards (ITS) outlined in the T&R manual and MPS in the MCCRES order. Individuals must gain and maintain proficiency in core skills in order to execute the unit core capability, and operational readiness is built on the individual training foundation. While tactical level skills are

[5] Deputy Commandant for Aviation, *Aviation Campaign Plan 2002,* 10-14.

not the focus of this monograph, a brief synopsis of the combat readiness cycle must be presented to appreciate unit and operational-level training.

The combat readiness cycle is a building block approach to training that is based on core competencies. Core skills are individual skills that support a unit's METL. Each Marine Corps TacAir community (AV-8B, F/A-18, EA-6B) unit has a T&R manual volume that specifies a training syllabus for pilots to learn and stay proficient at individual core skills. These core skills progress from basic flying skills (100 series sorties that are taught in the Fleet Readiness Squadrons), wingman skills (200 series sorties taught upon initial check-in to fleet squadrons), flight leadership skills (300 series sorties), mission commander skills (400 series sorties, advanced sorties taught in fleet squadrons), instructor skills (500 series), and special skills (600 series). The ability of TacAir units to utilize these skills in the execution of the unit's mission is critical.

The Marine Corps T&R Program is evolving to incorporate and replace MCCRES training standards in a unit T&R. The T&R Program will eventually serve as a single reference for individual and unit training.[7] The intent of a unit T&R is to provide the commander with a continual evaluation and logical progression of unit readiness using collective training standards (CTS) similar to MPSs found in the MCCRES.

The construction of unit T&R syllabi will as much as possible follow the structure found in the individual T&R syllabus structure. Each aviation community will develop a unit T&R syllabus that will reside as the final chapter in that community's T&R manual. Once signed the unit T&R will replace the appropriate portions of the applicable MCCRES order. The proposed Unit T&R syllabi will be broken into phases as delineated below.

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[6]Ibid.

[7]Commanding General, Marine Corps Combat Development Center, Marine Corps Order 3500.14G, *Marine Corps Training and Readiness Manual,* vol. 1, *Administrative (Draft Admin. Manual Chapter 9)* (Quantico, VA: Marine Corps Training and Education Command, February 2003), 3.

1. Combat Capable Training will be considered 1000 series events that include basic unit skills and unit missions.

2. Combat Ready Training is 2000 series events that include unit core competencies and critical unit skills and missions.

3. Combat Qualification Training will be considered 3000 series events that include advanced training in core capabilities.

4. Full Combat Qualification Training is 4000 series events and is reserved for Core Plus events that include large-scale, integrated mission events; events having unique mission taskings; events having a low probability of execution in combat; and relatively high-risk events.

5. Instructor qualifications will not be included in the unit T&R.

6. Special Skills and Qualifications will be 6000 series events that contain special skills and qualifications. These special skills and qualifications are not prerequisite to combat qualifications or the ability to function as a combat qualified unit, but are those for which a certain number of trained individuals or units must be maintained to accomplish special missions or tasks.[8]

Marine Corps Combat Readiness Evaluation System (MCCRES)

In March 1976, MCCRES was developed to provide timely and accurate determination of the combat readiness of Marine units. MCCRES standards are published as Marine Corps Orders (12 volumes) in the 3501 Series. MCCRES is a system comprised of four interdependent yet distinct components. Two of those components will be addressed in this monograph.

The first component of the MCCRES is the MPSs. MPSs are mission-oriented training standards that establish minimum acceptable performance criteria for units. MPS's are organized into separate volumes by unit type and form the basis for much of the T&R Program.

[8]Ibid.

The second component of the MCCRES is the Mission Performance Evaluation System and is the component most identified with the MCCRES. The primary purpose of the MCCRES system is to evaluate combat readiness and provide training feedback both up and down the chain of command.[9] MCCRES standards are predicated on doctrine, equipment, and force structure necessary to support mission accomplishment.

There are three essential aspects associated with the effective use of the MCCRES system as a unit training management tool. MPSs must accurately reflect contemporary mission and their essential tasks. Evaluators must be properly qualified and submit objective observations of the exercise. The validity of the information contained in a MCCRES exercise is dependent on the effectiveness and uniformity of the exercise techniques that are utilized.

MPS are critical not only for an effective evaluation, but also to the entire T&R process because MPS are used in the T&R manuals to define standards for training. Accordingly MPS must:

1. Reflect wartime missions

2. Correspond to published doctrine or approved/accepted operational tasks and procedures

3. Be objective/measurable

4. Define the performance criteria for the trainer/evaluator

5. Be simple to use

Components of MPS include:

Tasks: Each MPS will consist of two or more tasks that describe criteria that must be performed to successfully accomplish the MPS.

[9]Commanding General, Marine Corps Combat Development Center, Marine Corps Order 3501.5 (with changes 1-9): *Marine Corps Combat Readiness Evaluation System (MCCRES),* vol.2, *Fixed-Wing Squadrons,* 2.

Conditions: Provides a description of the environment under which each task is to be performed.

Standards: A detailed description of the performance criteria that must be accomplished for each task to be successfully completed.

Evaluator Instructions: Administrative instructions to aid in the evaluation of tasks.

Key Indicators: Detailed explanation or amplification of performance criteria provided to assist the trainer/evaluator.[10]

The MCCRES order (MCO 3501.1C) describes in great detail on how to conduct a MCCRES evaluation. It also gives guidance as to who should be considered as qualified evaluators. Overall the MCCRES evaluates TacAir squadrons in fifteen to twenty general and aircraft-specific mission areas. These mission areas include briefing and debriefing, aerial refueling, coordinated strike, carrier qualifications, squadron disaster reaction, aircrew knowledge examination, and aircraft surge capabilities. The MCCRES evaluates tactical readiness in a manner similar to the Air Force ORI and the NATO TACEVAL. However, the MCCRES fails to address operational readiness.

The third component of the MCCRES is the reporting process. Critical to an evaluation process is providing timely feedback to the commander, so corrections and improvements can be made. The reporting process also provides leaders in the chain of command an accurate assessment of unit readiness for contingency planning and resource allocation.

Commanding General Inspection (CGI)

Marine Corps inspections reinforce the importance of combat readiness, evaluate the critical areas essential for mission performance, and enhance the ability of a unit to prepare for and to perform its assigned mission. The Commanding General Inspection (CGI) primarily

[10]Ibid., 6.

addresses the administrative and functional areas of readiness of both Marine Corps TacAir squadrons and Marine Aircraft Groups (MAGs). The intent of the CGI is to evaluate a unit's "deployability" capability and readiness every two years. [11]

The main area of the CGI that impacts operational readiness is the inspection of the embarkation functional area. The embarkation portion of the CGI is very detailed and the checklist used in conjunction with the inspection gives good guidance to embarkation personnel for the maintenance of the unit's embarkation program. This inspection is critical because it inspects the building blocks that allow Marine units to rapidly deploy. The CGI does not, however, require movement of unit equipment to airports of embarkation (APOEs), seaports of embarkation (SPOEs), or actually deploy to test readiness.

Marine Aviation Weapons and Tactics Squadron-One (MAWTS-1)

The Marine Corps Aviation Weapons and Tactics Training Program (WTTP)was designed to increase the combat readiness of aviation units. MAWTS-1 was commissioned to implement this program and has the mission to provide standardized advanced tactical training and certification of unit instructor qualifications that support the T&R Program.[12]

MAWTS-1 supports individual and unit combat readiness by training officer and enlisted instructors to manage unit aviation training programs and by developing aviation supplementary courses that support the WTTP and T&R programs. The main course of instruction for MAWTS-1 is the Weapons and Tactics Instructor (WTI) course, which "trains the trainers." WTI has evolved from an aviation centric functional course to include MAGTF integration and joint asset integration and training.

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[11]Commanding General 2D Marine Aircraft Wing. Wing Order P5041.1Z*: Standing Operating Procedures for Commanding General's Inspection Program (with changes 1 & 2),*(Cherry Point, NC: Marine Corps Air Station 2D Marine Aircraft Wing, 22 May 2000), 1-3.

[12]Commanding General, Marine Corps Combat Development Center,Marine Corps Order 3500.12C, *Marine Corps Aviation Weapons and Tactics Training Program (Short Title: WTTP)* (Quantico, VA: Marine Corps Training and Education Command, 25 January 2002), 1.

MCO 3500.12C directs MAWTS-1 to provide subject matter experts at Marine Corps and joint aviation conferences and T&R Program reviews. MAWTS-1 is tasked to review Marine Corps and joint aviation doctrinal publications to ensure that Marine aviation tactics and courses of instruction are current, integrated, and interoperable. MAWTS-1, if requested, can also assist squadrons in training and preparing for MCCRES evaluations. MAWTS-1 instructors are allowed to act as advisors to MCCRES evaluators, but are prohibited by MCO 3500.12C, from serving as MCCRES evaluators.[13]

While MCO 3500.12C focuses MAWTS-1 at the tactical level, MAWTS-1 has paid attention to the operation level of war. The WTI course has evolved to include joint integration as part of the curriculum and flight syllabus. MAWTS-1 has also added courses that address the operational level that include MAGTF and Joint Scheme of Maneuver, Senior Watch Officers (SWO) Course, ACE Battlestaff Officers Course. The importance of expanding Marine Corps aviation training at the operational level has been recognized at MAWTS-1, but this recognition needs to be expanded to Marine aviation as a whole to include modifications to readiness, training, and evaluation systems.

Combined Arms Exercise (CAX) Program

The Combined Arms Exercise (CAX) Program is the Marine Corps' primary vehicle for combined-arms and MAGTF integration training. The CAX Program utilizes the building block approach to training for combined-arms warfare. Units must be effective at combined arms warfare before they can take the next steps to utilize maneuver warfare to its full potential and conduct joint integration training.

The CAX goals, as specified in MCO 3500.11E (Marine Corps CAX Program), are to conduct force deployment, planning, and execution (FDP&E) for essential warfighting

[13]Ibid., 5.

capabilities in an expeditionary environment. These essential capabilities to be exercised at CAX include deployment operations, intelligence operations, combined-arms operations, NBC operations, aviation operations, air and ground maneuver operations, and sustainment operations. The MAGTF is challenged at CAX to exercise command and control (C2) to ensure the integration and synchronization of all four MAGTF elements in a combined arms battle space.[14]

MCO 3500.11E states that the ACE will conduct operations in the execution of the MAGTF commander's plan; and conduct supporting operations within the MAGTF. ACE CAX goals include:

1. Plan, develop, and manage an Air Tasking Order (ATO) and ACE operations order in support of the MAGTF concept of operations.

2. Employ an ACE battle staff and Marine Aviation Command and Control System (MACCS) to ensure the effective coordination and employment of aviation assets.

3. Conduct comprehensive logistics and CSS planning to ensure ACE sustainment during tactical operations.

Navy/Marine Corps TacAir Integration Plan

One of the biggest issues in Naval and Marine Corps aviation today is the TacAir Integration Plan. On 14 August 2002, the Secretary of the Navy (SECNAV), Commandant of the Marine Corps (CMC), and the Chief of Naval Operations (CNO) signed a Navy-Marine Corps TacAir Integration Memorandum of Understanding (MOU). The parties to the TacAir MOU agreed, in order to achieve greater combat capability and better utilization of resources, to begin the process of achieving integration of naval TacAir.

[14]Commanding General, Marine Corps Combat Development Center, Marine Corps Order 3500.11E, *Marine Corps Combined Arms Exercise (CAX) Program* (Quantico, VA: Marine Corps Training and Education Command, 21 November 2001), 2.

In order to implement the SECNAV's MOU on TacAir integration, the Deputy Chief of Naval Operations for Warfare Requirements and Programs and the USMC Deputy Commandant for Aviation, signed a Memorandum of Agreement (MOA) on 16 August 2002. The MOA directs that Marine Corps TacAir squadrons will be integrated into Navy carrier air wings and Navy squadrons will be integrated into Marine Aircraft Wings.[15] There are currently four USMC F/A-18C squadrons deploying with Navy carrier air wings, and four more will be integrated in the next four years. That leaves the six F-18D squadrons not committed to integration in the next four years. Two F-18D squadrons will be integrated after transitioning to the Joint Strike Fighter (JSF). Starting in 2004, three Navy Strike Fighter Squadrons will integrate into Marine expeditionary operations.[16]

In the next four years, all (8) USMC F/A-18C squadrons will be integrated with the Navy, six F/A-18D squadrons will be supporting USMC expeditionary operations (UDP), four EA-6B squadrons will be supporting tasking from CJCS/SECDEF, and seven AV-8B squadrons will provide six-plane detachments to eight Marine Expeditionary Units (MEUs) annually. This does not include any potential additional tasking associated with operations in Afghanistan, Iraq, or Korea. This will have to be a significant consideration in any operational readiness evaluation system that is developed.

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[15]Deputy Commandant for Aviation, *Memorandum of Agreement Between Deputy Chief of Naval Operations (Warfare Requirements and Programs) and Deputy Commandant for Aviation, United States Marine Corps: Department of the Navy Tactical Aircraft Integration* (Washington, DC: Aviation Plans and Policy, HQMC, 16 August 2002), 1.

[16]Major K. J. Killea, *Information Paper: TacAir Integration* (Washington, DC: Aviation Plans and Policies, HQMC, 2002), 1.

This chapter contains an introduction to several Marine Corps programs and systems. Each of these programs and systems evaluates a portion or contributes to readiness. The information presented in this chapter forms a base of reference for the analysis of allied and sister service systems in chapters 4 and 5.

CHAPTER 4: NON-MARINE CORPS PROGRAMS / SYSTEMS

This chapter contains an introduction to three allied and sister service systems in order to identify concepts that can potentially improve USMC operational readiness evaluations systems. The three non-USMC systems are the Navy's carrier air wing (CVW) predeployment workup cycle, the U.S. Air Forces' Air Expeditionary Wing (AEW) certification process and Operational Readiness Inspection (ORI), and the North Atlantic Treaty Organization (NATO) Tactical Evaluation (TACEVAL) program. Specific NATO readiness standards and procedures will not be included in order to avoid classifying this monograph.

U.S. Navy System

The US Navy (USN) has a tactical training program similar to the Marine T&R Program called the Strike Fighter Training Program (SFTP). The SFTP was designed to provide for standardized and enhanced training. The USN does not have a stand-alone operational evaluation system. Operational readiness is tied directly to aircraft carrier availability and the carrier battle group (CVBG) deployment cycle.

Portions of operational readiness are trained to and evaluated during the CVW and CVBG work up cycle. The majority of the beginning portion of both the CVW/CVBG workup cycles is dedicated to functional area training. The first part of the workup cycle that relates to operational readiness is the Competitive Training Unit Exercise (COMPTUEX). COMPTUEX focuses on CVW and CVBG integration and upon completion, the CVW is capable of "blue water"[1] operations and is deployable.[2]

[1]Blue water operations are flight operations where no land emergency divert airfields are available for aircrew due to the carrier's distance away from shore.

[2]Major K. J. Killea, telephone interviews and electronic mail by author, Ft. Leavenworth, KS, 18 February 2003 to April 2003.

The CVW normally deploys to Naval Air Station (NAS) Fallon, Nevada, where the Naval Strike and Air Warfare Center (NSAWC) facilitates CVW integration training following COMPTUEX. CVW integration training starts with tactical skill and mission commander training and progresses to CVW integration training. The CVW conducts strike operations and close air support (CAS) training using joint and NATO procedures and attempts to integrate forward air controllers (FAC) from NATO, the MEU(SOC) that will be deploying during the same time period, and MEU and Battle Group SEALS.[3] The CVW also conducts training in traditional joint mission areas of combat search and rescue (CSAR), urban CAS, counter-mobile target (TBM), and time critical targeting.

The CWW and CVBG workup cycle ends with a FLEETEX or JTFEX in order to conduct final integration training with joint assets from outside the CVBG. NSAWC conducts and evaluates the workup cycle, but it is not a true MCCRES-style evaluation. Each event in the workup cycle is evaluated by NSAWC personnel, but the feedback is not an outside evaluation but rather a training evolution to produce a combat ready CVW and CVBG.[4]

U.S. Air Force System

The United States Air Force (USAF) has organized the majority of its force into ten Aerospace Expeditionary Forces (AEFs): two dedicated on-call Aerospace Expeditionary Wings (AEW); five Lead Mobility Wings (LMWs); and required Air Operations Center (AOC) and Command and Control (C2) elements. AEFs and the on-call AEWs provide composite of capabilities from which force packages are developed and tailored to meet scheduled and

[3]Naval Strike and Air Warfare Center (NSAWC), *Air Wing Training at Fallon* (Fallon, NV: NSAWC, 2002), 2.

[4]Ibid., 3.

contingency mission requirements.[5] The AOC and C2 elements provide the operational level C2 required for AEW and joint mission accomplishment.

Each AEF is paired with another AEF during a deployment cycle for a total of to 10 fighter and bomber squadrons, and 4 airlift and air-refueling squadrons for a total of approximately 400 aircraft. The on-call AEW has a total of 3 fighter and attack squadrons, 3 bomber squadrons, and 2 airlift and air refueling squadrons for a total of approximately 120 aircraft. The two AEFs average about 45,000 personnel, and the AEWs average about 4,200 personnel.

The AEF and AEW operate in a fifteen-month cycle which includes a certification prior to a ninety-day deployment or deployment eligibility window. AOC, C2, air traffic control, airfield management, and other combat support elements are not included in the AEF or AEW, but are identified to deploy with these forces nine weeks prior to the deployment window.[6] All aspects of the C2 and combat support functions are evaluated as part of the total package during the certification process.

The AEF and AEW certification includes evaluations of unit readiness, proper positioning of air mobility assets, time-phased force and deployment data (TPFDD) development, base support planning, and installation deployment plans. Base support and installation deployment plans provide the procedural deployment details and direct specific actions at predetermined milestones for contingency planning. These milestones can vary depending upon the amount of advance notice given by a prepare to deploy order (PTDO), warning order, alert order, or execute order.[7] These plans include a coordinated effort between AEF and AEW units

[5]Secretary of the Air Force, Air Force Instruction 10-400: *Aerospace Expeditionary Force Planning* (16 October 2002), 2 [document on-line]; available from http://www.e-publishing.af.mil; Internet; accessed on 8 November 2002.

[6]Maj Garrett, *Bullet Background Paper on AEF Certification* (19 September 2002), 6 [document on-line]; available from http://aefcenter.acc.af.mil; Internet.

[7]Ibid., 6.

and supporting organizations to expedite the planning and execution of rapid contingency deployments.

ORI are separate, non-AEF inspections designed to evaluate a unit's ability to respond and adapt to a contingency scenario. The phases of ORI evaluate two separate and distinct areas of a unit's tactical and operational capability. In most cases, PhasesI and II of an ORI are conducted "back-to-back" during a single inspection event. The scores of each phase are combined for an overall ORI grade.

Phase I of the ORI is the initial response phase that evaluates a unit's ability to transition from normal peacetime operations into a contingency posture.[8] Units demonstrate their ability to deploy to an overseas location, forward-operating location, or deployed operating location. Major areas of evaluation include the time it takes to commence initial flight operations, aircraft maintenance operations, ordnance operations, and supply operations. The deployed unit is evaluated on its ability to establish appropriate reliable communications capabilities and force protection measures to accomplish mission requirements. ORI Phase I contains elements at the tactical and operational level of war and evaluates the following subareas:

1. Command and Control
2. Deployment Processing
3. Aircraft Generation
4. Aircraft Deployment
5. Aircraft Regeneration after Deployment
6. Force Protection Implementation

[8]Secretary of the Air Force, Air Force Instruction 10-201, *ACC SUP 1, Addendum A: Operational Readiness Inspection (ORI)--Fighter/Attack Aircraft* (Air Combat Command, 17 September 2001), 4 [document on-line]; available from http://www.e-publishing.af.mil; Internet; accessed on 8 November 2002), 4.

Phase II is the employment phase and, like Phase I, contains elements at both the tactical and operational levels of war. ORI Phase II evaluates three major subareas:

1. Employment

2. Mission Support

3. Ability to Survive and Operate (ATSO)

Phase II employment subareas include C2, maintenance, and operations. Squadron mission management evaluates the accuracy, timeliness, and adequacy of the unit's ability to receive and disseminate tasking directives. The unit commanders and personnel are tested on their familiarity with applicable plans, their ability to analyze ATOs and assign missions, and their ability to coordinate actions between internal and external agencies. Detailed, thorough evaluations of both the Operations and Maintenance Departments are conducted during tactical mission operations.

The ORI evaluates higher headquarters and joint enablers independently in areas that include alert recall, Wing Operations Center, battle and contingency support staff actions, weather support, base communications, and information functions. These units are evaluated on their readiness and capability to support rapid mobilization of base resources, to support subordinate unit deployment, and to deploy initial communications and information services.[9]

The Air Force Exercise Program (AFEP) is designed to enhance combat readiness and improve crisis response.[10] Normally exercises are designed, conducted, and evaluated under "no-fault" conditions in order for units to gain confidence and to ensure that problems are identified. Units are given the "opportunity to fail" while ensuring overall safety. To the maximum extent possible, logistics, support, and force protection requirements are fully integrated with operational

[9]Ibid., 15-16.

[10]Secretary of the Air Force, Air Force Instruction 10-204, *Readiness Exercises and After-Action Reporting Program* (Air Combat Command: 12 July 2002, accessed on 8 November 2002), 4 [document on-line]; available from http://www.e-publishing.af.mil; Internet.

requirements during these exercises.[11] Air Combat Command (ACC) active duty units must participate in deployment exercise semi-annually.[12]

NATO TACEVAL

The North Atlantic Treaty Organization (NATO) developed a military structure to create and maintain the military capabilities to conduct Article-5 (NATO member attacked) and non-Article 5 Crisis Response Operations (CRO.)[13] With nineteen countries (current number) as members, NATO had to create an integrated military structure that established performance, interoperability, equipment standards, standard operating procedures, support obligations, and a framework for common language, terminology, and doctrine. In order to ensure that these diverse forces were trained to operate and fight together, NATO developed training, exercise, and evaluation criteria.

There are three main NATO manuals that pertain specifically to NATO TacAir units. These manuals are *BI-SC Force Standards*, Volume III, *Standards for Air Forces; Supreme Headquarters Allied Powers Europe (SHAPE) Allied Commander Europe (ACE) Forces Standards*, Volume VI, *SHAPE Tactical Evaluation Manual (STEM);* and *Headquarters Allied Air Forces Northern Europe (AIRNORTH) AIRNORTH TACEVAL SOPS*. All three manuals, with the strategic end state in mind, focus on the operational and tactical levels of war. At the operational level of war, these manuals concentrate on the types of forces required for different missions and their integration into NATO air forces. At the tactical level of war, these manuals give specific performance criteria and equipment standards for different type units and airframes.

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[11]Ibid., 5.

[12]Secretary of the Air Force, Air Force Instruction 10-403, *Deployment Planning and Execution* [document on-line] (Air Combat Command: 9 March 2001, accessed on 8 November 2002), 2; available from http://www.e-publishing.af.mil; Internet.

[13]Supreme Allied Commander, Supreme Headquarters Allied Powers Europe, *BI-SC Force Standards*, vol. 3, *Standards for Air Forces* (Brussels, Belgium: North Atlantic Treaty Organization, 9 April 2002), 1-3.

BI-SC Force Standards, Volume III, *Standards for Air Forces,* sets operational standards, capability requirements, and performance criteria for NATO nations' air forces. The aim of *BI-SC Force Standards*, Volume III, *Standards for Air Forces,* is to establish a common foundation for the operational training and employment.[14] Updated in April 2002, the focus has changed to the increased need for deployable and sustainable forces ready to respond effectively to the full range of required missions. *BI-SC Force Standards,* Volume III, *Standards for Air Forces,* identifies seven essential operational capabilities (EOCs). They are timely force availability; effective intelligence; effective engagement; deployability and mobility; effective command; control, communication; sustainability and logistics; and survivability and force protection.

NATO divides its air forces into the two categories of in-place forces (IPF) and a pool of deployable forces (DF(A.)) IPF and DF(A) have graduated readiness levels to provide flexibility in meeting operational requirements. The NATO readiness definition is important to understand when assessing the DF(A) standards in terms of actual deployment time and force closure. NATO defines unit readiness as the period of time measured from an initiation order to the moment when the unit is ready to perform its task from its peacetime location (permanent or forward deployed) or ready for deployment. Due to anticipated delays in strategic lift and the variable transit time, NATO's readiness definition does not include the time to move to and within the operations area and the time required to be ready to commence operations once deployed.[15]

NATO readiness categories define the maximum time a headquarters or unit has to be "ready" (within X days) to deploy. DF(A) and IPF(A) can be divided into three groups based on their readiness categories. The three readiness levels (groups) are: high readiness forces (air) (HRF(A)) (all forces available within X days), forces at lower readiness (air) (FLR(A)) (all forces

[14]Ibid., 1-2.

[15]Ibid., 1-5.

available from X days to Y days), and long-term built-up forces (air) (LTBF(A)) (all forces available after greater than Y days).

NATO nations “declare” forces as available to NATO force requirements. Declared forces have a designated readiness classification and standard to maintain. Air forces declared to NATO must possess the following balance of capabilities and characteristics:

1. Mobility and deployment. DF units must be capable of rapidly deploying to and operating from locations other than their main operating base (MOB) or peacetime location. Forces must be prepared to augment staffs with personnel that have expertise in the fields of deployment, bed-down, sustainment, and redeployment of land-based air assets.

2. Survivability. It is a fundamental military principle within NATO that units, including headquarters, must be able to operate, defend, and protectthemselves effectively against the prevailing threat. Force Protection covers the ability of military forces to operate, defend, and protect themselves in conventional and NBC environments. Survive-to-operate (STO) skills represents the vital third element of NATO’s air forces operational capability and must not be considered in isolation. Specific STO functions are defined as:

a. Active defense physical defense of the unit

b. Passive defense includes the functions of physical defense, protection of personnel and essential equipment, deception, dispersion, and all nuclear, biological, and chemical (NBC) defense aspects

c. Recuperation covers the measures necessary for a unit to recover from the effects of an enemy attack. Recuperation includes the functions of post-attack reconnaissance (PAR), explosive ordnance disposal (EOD), airfield damage repair (ADR), repair of aircraft operating surfaces (RAOS), and firefighting and casualty handling

d. Individual common core skills (ICCS) covers ground defense, individual NBC, first aid, and initial fire-fighting procedures

3. Logistic sustainability. Deployable forces must plan to deploy rapidly with everything needed for immediate employment.

4. Civil-military cooperation (CIMIC)

5. Communications information systems (CIS)

a. Ability to access the ATO and make inputs to the process

b. Internal communications within the deployed elements and, as required, their national rear-link communication

6. Battle damage repair (BDR). Units must possess the capability to restore operational capability rapidly under combat conditions

7. Standardization and interoperability. Nations must satisfy the following interoperability / standardization requirements:

a. Interoperability of communications systems and major weapons systems

b. Interchangeability of appropriate ammunition and primary combat supplies

c. Commonality of doctrine and procedures[16]

NATO directs that the evaluation and assessment of declared units must be made by means of an independent evaluation program. The TACEVAL is that program and is mainly focused at the unit's declared capability. The program contains several generic tools, such as operational evaluation (OPEVAL) and operational assessment (OPASSESS), all of which are both covered by the term TACEVAL. The TACEVAL presents a unit with an integrated operations, logistics, and STO scenario to demonstrate its declared capability, in a simulated contingency in either a conventional or NBC environment.[17] TACEVAL evaluators are given

[16]Ibid., 1-7 and 1-10.

[17]Supreme Allied Commander, Supreme Headquarters Allied Powers Europe,*ACE Forces Standards (AFS*), vol. 6, *SHAPE Tactical Evaluation Manual (STEM)* (Brussels, Belgium: North Atlantic Treaty Organization, 9 April 2002), 1-12.

specific directions on how to properly coordinate and conduct the evaluation. The evaluators conduct an objective, candid evaluation against very detailed criterion and standards.

The NATO TACEVAL is a very thorough process outlined in detailed documents that contain concrete and specific standards. The TACEVAL uses a logical, simple framework for NATO forces to understand their responsibilities. NATO forces are to focus their preparation on rapid deployment, sustainability, interoperability, standardization, and training with a balance between operations, logistics, and STO. NATO also encourages declared forces to train together and holds exercises to facilitate this integration.

Both Marine Corps and Non-Marine Corps programs and systems have been presented in chapters 3 and 4. Chapter 5 contains an analysis of these systems in the context of operational reach, agility, adaptability, integrated operations, and interoperability. Chapter 6 contains recommendations to improve USMC systems based on the analysis in chapter 5.

CHAPTER 5: ANALYSIS

Marine Aviation Documents

The *2002 NMS*, *Joint Perspective*, *MC Strategy 21*, and *EMW* provide a vision for the future. The *MACP* and *AIP* nest well under these concepts but can be improved. The *MACP* and *AIP* say the right words, but now Marine aviation needs to drill down to the details and further enhance ACE capabilities to back up the words. As the blueprint for Marine aviation, the *AIP* needs to recognize the operational level of war and use a framework that shows how Marine aviation programs produce the desired capabilities at that level, as well as the tactical level.

The first step in developing a common framework is to start with very precise definitions of some key terms. Core competency, core capability, mission essential task, and mission essential task list need to have a common USMC (and preferably joint) definition. MCRP 3-0A, *Unit Training Management Guide* (*UTM Guide*), has different definitions than the *T&R Administrative Manual.* The *MC Strategy 21* lists the Marine Corps' core competencies and, by the *T&R Administrative Manual* definition, several of the core competencies are really Marine Corps characteristics. Additionally, no Marine Corps document directs a methodology for developing these key terms. While this may seem like semantics, these key terms form the basis the UTM Program, T&R Program, MCCRES, readiness reporting, as well as doctrine and publications. The definition of these key terms needs to be precise, unambiguous, and simple.

Once these key terms are defined, Marine TacAir's roles and missions in the current operational environment can be analyzed to glean the key tasks (at the tactical and operational levels) required of each unit. These key tasks would then drive the development of appropriate performance standards (both individual and unit) through a deliberate methodology. These performance standards would provide an objective "yardstick" to measure individual and unit performance against and could tie directly into DRRS. The yardstick can then be used by an

operational readiness evaluation system that is well grounded in standards. The importance of developing this system is even more pressing with the TacAir MCCRES off-line.

The Marine Corps needs to evaluate all of its training systems because the TacAir MCCRES is out of date and was not designed for the new joint environment. An effective system would have linkages from UTM to T&R to MCCRES, to CGI, to UJTL, to DDRS, and back. The USMC needs to find the right balance between individual, unit, MAGTF integration; ACE functional training; and joint functional training in an integrated, linked system. With the increase in training requirements due to joint integration, it is critical that linkages within the training systems be reestablished to avoid needless duplication of effort or any unforeseen holes in the system.

Table 1 contains a summary of how each readiness evaluation system compared to the established operational readiness evaluation criteria. A "+" means that the readiness evaluation system adequately tests and evaluates the designated criterion. A "-" means that the readiness evaluation system does not adequately test and evaluate the designated criterion. A "+ / -" in the same block means that the readiness and evaluation system partially tests and evaluates the designated criterion.

Table 1. Operational Readiness Evaluation System Analysis

	MCCRES	**Unit T&R**	**USN**	**USAF**	**NATO**
Operational Reach	-	-	-	+	+
Agility	-	-	-	+	+
Adaptability	+	+ / -	+	+ / -	+
Integrated Operations	+ / -	+ / -	+ / -	+ / -	+
Interoperability	+ / -	+ / -	+ / -	+	+

MCCRES

The MCCRES does a good job of focusing on USMC standards and MAGTF integration, and is still valid framework for readiness evaluation at the tactical level. The MCCRES focuses on tactical missions and capabilities. Due to the additional joint training requirements and the necessity to integrate at the operational level of war, the Marine Corps needs to either update the MCCRES, develop a new system, or both.

At the operational level, the MCCRES does not enhance operational reach. It does not adequately address agility and only addresses MAGTF integration and interoperability. Units do have to be adaptable when undergoing a MCCRES and STO are not adequately addressed. There is also no evaluation overall team performance to include supporting units during the MCCRES. Another flaw in the MCCRES system is that there is no mechanism in place for an ACE evaluation. The 2D MAW has exercised the ACE and XTACC in the past; but there are no formal standards, organization, or training for this training evolution.

Unit T&R

The unit T&R has a strong potential for use as the tactical evaluation system. The advantage of the unit T&R over the MCCRES is that it is complementary and integrated as a single program with the individual T&R. The unit T&R would be easier to update and train to current missions. It focuses training and provides continuous feedback to the commander.

Without significantly changing the concept, the unit T&R it has limitations as for its applicability to operational readiness. In the current proposal, the unit T&R does not adequately address agility, interoperability, or integrated operations. Integrated operations and interoperability could be worked into the unit T&R concept, but agility would require significant changes to the program. There is also nothing in the unit T&R concept that enhances operational reach.

The unit T&R has the potential to be an outstanding tactical evaluation system that drives internal Marine Corps standards. The unit T&R could set the level of unit training requires before deploying in support of joint tasking, before going OPCON to a MEU, or before integrating into a CVW. Another program or system would be required to properly evaluate operational readiness.

CGI

The CGI is a good inspection for administrative and functional areas. The CGI has the potential to be expanded to include elements for the evaluation of operational readiness as part of a larger system, but is not an appropriate vehicle for an overall evaluation of operational readiness.

The embarkation portion of the CGI is very detailed and gives very good guidance for embarkation program. CGI should have an increased role in operational readiness evaluation. The CGI embarkation inspection could be expanded for the squadron to actually deploy to demonstrate a rapid deployment and immediate employment capability or to include moving squadron personnel and equipment to aerial ports of debarkation (APODs) and seaports of debarkation (SPODs). The embarkation portion of the inspection should be done semi-annually and deployment exercised, in conjunction with planned deployments, on an annual basis.

CAX

MCO 3500.11E, *Combined-Arms Exercise Program (CAX)*, outlines a system where the CAX serves as both a vehicle for tactical skill development and MAGTF integration. TacAir training at the CAX consists primarily of close air support training, live ordnance training, C2 integration training, and MAGTF integration training. The CAX has the potential to include elements for the evaluation of operational readiness but any substantial increase in operational readiness training or evaluation will require a significant change in the CAX Program. The CAX

is an outstanding combined-arms training evolution and while the Marine Corps needs to expand joint training, combined arms competency cannot be sacrificed. If the Marine Corpsexpands operational readiness training, the Marine Corps must institutionally decide on the future role of CAX in that effort.

MCORES

The Marine Corps has the option to develop a new Marine Corps Operational Readiness Evaluation System (MCORES). This system would focus primarily at the operational level of war and be similar to Phase I of the ORI. The MCCRES or unit T&R would be the Marine Corps' tactical evaluation system, and the MCORES would overlay and integrate with that system. As with the MCCRES or unit T&R, TECOM would administer the program, and the MAW CGs would conduct the execution of the program. While not conducting the evaluation, MAWTS-1 expertise could be used to develop operational expertise.

MCORES could be used to develop capabilities for enhancing operational reach, integrated operations, and interoperability. MCORES would require a deployment, so agility would be evaluated as would as well as adaptability. MCORES would evaluate operations at the ACE level and rate the overall team effort. The ACE, squadrons, MWSS, MALS, MWSG, and air station personnel would all be evaluated during a MCORES evaluation.

MCORES would operate under the "no fault" premise, much like the Air Force exercise program. This will allow the Marine Corps to gain experience and confidence in rapid deployment, immediate employment, and integrated operations. The expertise and knowledge gained from MCORES would allow the Marine Corps to improve its systems and produce the capability desired by CMC, CJCS, and SECDEF.

The current depth of experience gained during Operations Enduring Freedom and Iraqi Freedom could allow the Marine Corps to deliberately develop MCORES for implementation in

two to three years. This would allow lessons learned from these operations to be fully integrated in the program and allow the program to be incorporated into the budgeting cycle. With the high current and near-term OPTEMPO, full implementation of MCORES in two to three years would also allow the OPTEMPO to stabilize before the program begins.

Navy Systems

The Navy CVW and CVBG workup cycles are not a true MCCRES type of evaluations. They are more training evolutions to produce a combat ready CVW-CVBG team prior to deployment than an evaluation. Nothing in the CVW or CVBG workup cycles truly enhance operational reach or agility, but the training conducted by NSAWC does evaluate adaptability, integrated operations, and interoperability.

Air Force Systems

Due to the limited number of USMC TacAir assets and the balance between rapid deployability and readiness, the AEF and AEW certification concept does not work well with the Marine Corps MAW. The ORI, however, is a good model that can be used to develop a Marine Corps operational readiness evaluation system.

The ORI Phase I enhances and evaluates operational reach and agility. The ORI also tests and evaluates adaptability, integrated operations, and interoperability. What the ORI does better than the Marine Corps systems is that it evaluates the squadron and all supporting units as a package and also conducts ACE level training.

Phase II of the ORI is the tactical portion of the evaluation. The MCCRES (when updated) has as solid of a tactical evaluation framework, but the ORI does a much better job of integrating STO operations and mission management tools. The Marine Corps systems would benefit from the same focus on STO and mission management tools to include squadron C2 capabilities and Theater Battle Management Core System (TBMCS) capabilities.

NATO TACEVAL

The NATO TACEVAL is an ideal system for joint forces. JFCOM should develop this for joint evaluations. The TACEVAL conducts a detailed tactical level evaluation and does a very good job of integration at the operational level. The TACEVAL scenarios also enhance operational reach, agility, adaptability, integrated operations, and interoperability. While this is an excellent operational evaluation system, it is too big and comprehensive for the USMC to execute with current force structure, but parts of the NATO system could be folded into a Marine Corps system. An operational readiness evaluation system, such as the TACEVAL, is a system the USMC would plug into rather than run by itself.

One of the most intriguing NATO concepts is its tiered readiness standards. The US military currently has a tiered deployability and readiness categories similar to NATO but it is not formally recognized. There are, unofficially, three types of US forces: deployable forces (DF), in-place forces (IPF), and forward-deployed forces (FDF). Within each of these types of forces there are readiness categories, of which only a few (i.e., DRF-1, USMC Air Alert Battalion, etc.) of these are formally recognized.[1]

Carrier battle groups, amphibious ready groups with Marine Expeditionary Units, and units in Bosnia, Kosovo, and Kuwait are examples of FDF. Forces stationed in Germany, Japan, and Korea (garrisoned units) are IPF. Army division ready brigades (DRF1), the Marine Air Alert Battalion, and most continental US-based Marine units are DF. These forces give the SECDEF a wide range of capabilities and options but none of these options, is a coherently trained joint force.

The US military also has an unofficial tiered readiness system. Many Army DRF-2/3 units, units returning from unit-deployment rotations (Bosnia, Japan, Saudi Arabia, Northern and Southern Watch), and CVBG/ARGs that just returned from deployment experience high

[1]Ibid., 1-4--1-6.

personnel turnover, equipment rework, and an extended training buildup period to regain high combat readiness. An operational commitment generally ties up three units in a cycle: one unit on deployment, one unit in a training buildup period, and one unit that is reorganizing. These units are not equal in readiness, and while the level of inequity varies, the cycle is routine. A US military system that recognizes this cycle and then develops an alert system to rapidly bring the lower readiness forces up to standard would provide great benefit to the joint force.

Operational Reach

NATO TACEVAL and ORI are good systems that evaluate elements at the operational level of war that will enhance operational reach. They provide a balanced evaluation of operations, logistics, and STO. Marine aviation is proceeding in the right direction with expeditionary logistic concepts. The Marine Corps needs to develop an operational readiness evaluation system to test and exploit these new concepts to increase operational reach. Organizing, training, and equipping for rapid deployment can also potentially increase operational reach.

Agility

NATO TACEVAL and ORI have procedures that test and evaluate agility. The *MACP* and *AIP* are focused in the right direction, but there are no concrete standards and processes to support and achieve increased agility. The *AIP's* heavy emphasis on new expeditionary sustainment concepts and rapid deployment will potentially increase operational reach and agility. While the concepts and intent are sound, there is a disconnect between the *AIP* concepts and the programs which guide and support execution. Rapid deployment can be increased by a coordinated effort between HQMC departments, the Department of the Navy (DON), the MAWs, and Marine Corps bases and air stations to develop an effective rapid deployment system.

Adaptability

The USMC is a versatile force that must be adaptable. FDF and HRF that utilize a wide variety of deployment, basing, and employment options mandate that Marine TacAir be adaptable. Marine TacAir is good at force tailoring and is very flexible. The most glaring weakness for adaptability is in STO operations. This is a Marine Corps and Naval aviation issue, not just Marine TacAir. In order to effectively combat this weakness, the Marine Corps needs to make an institutional decision to increase STO capabilities.

Integrated Operations

NATO TACEVAL is the only system that truly evaluates integrated operations. The MCCRES is focused at the Marine Corps. USMC TACAIR must be capable of joint integrated operations or it may not be able to support MAGTF to extent necessary in combat. The Marine Corps inherently operates at the joint level, and integrated operations falls right in the middle of the Marine Corps' lane. Marine aviation just needs to further develop its joint enabler capability to seize opportunities for the future.

Interoperability

The NATO TACEVAL is the best system to evaluate interoperability. While the other systems are not as good at this as the TACEVAL, the increased requirement and attention on interoperability is improving service efforts. The Marine Corps needs to develop an operational evaluation system where it can ensure it is interoperable with joint and coalition forces as technology and systems change.

TacAir Integration

TacAir integration poses significant challenges for an operational readiness system. The CVW workup cycle takes up a great deal of time and presents the challenge of how to integrate USMC operational readiness with Navy readiness. As the JSF comes closer to being operational,

this may become less of an issue but for the next five to eight years, it will remain a serious issue. The Marine Corps is going to have to determine what operational readiness training needs to be done before a unit is assigned to CVW, and this will determine the USMC internal standard. Another issue to be resolved is what requirements will be placed on USN squadrons joining USMC MAWs. As TacAir integration proceeds, the USMC and USN will have to what is the right balance for the future.

Operations Enduring Freedom and Iraqi Freedom

Operations Enduring Freedom and Iraqi Freedom have provided Marine TacAir with a wealth of practical experience through a variety of methods in deploying, basing, and employing in diverse, quasi-austere environments. There have been many lessons learned and innovations made to make these operations successful. These experiences, if properly captured and applied, provide a tremendous opportunity to intelligently and expeditiously chart a course for the future. Key lessons learned in regards to agility, deployability, integrated operations, interoperability, and adaptability need to be captured and applied for future operations. OPTEMPO considerations resulting from these operations must be considered when developing a new operational readiness evaluation system.

Overall

Marine TacAir must get back to the basics of no-compromise training standards, solid training programs, and candid, thorough tactical and operational evaluation systems. Not having well-defined training standards and effective evaluation is not acceptable. Marine Corps, Navy, Air Force, and NATO operational readiness systems have been researched and the Marine Corps can use this analysis to modify or develop its own tactical and operational evaluation systems. The development of an operational evaluation system is not transformation but seizing an opportunity that is in the middle of the Marine Corps' expeditionary lane.

CHAPTER 6: RECOMMENDATIONS

Recommendations in this chapter will include some reality-based assumptions and goals:

1. Although there is money for transformation, any recommendation that requires a substantial amount of money will be more difficult to enact than one that is fiscally realistic.

2. Any recommendation must minimize an increase in structure. The Marine Corps has only a finite amount of structure, and there is great competition for structure among quality programs. If recommendations are to be enacted in the short term, big structure changes need to be avoided.

3. This monograph will try to integrate recommendations into existing systems and structures (as much as feasible), so the recommendations represent an improvement vice an additional tasking.

4. Use holistic approach with recommendations to include recommendations as towho would supervise the system, what the reporting requirements would be, and how this would fit into the readiness reporting system (if appropriate).

5. FAS Test: must pass at multiple levels squadron, MAG, MAW, MC, joint, coalition.

a. Feasibility: the capability to accomplish the mission in terms of available time, space, and resources.

b. Acceptability: The advantage gained must outweigh/justify the cost in resources.

c. Suitability: It must accomplish the mission and comply with the Commander's guidance.

6. Focus on increasing operational reach, agility, adaptability, integrated operations, and interoperability.

7. Integrate the lessons learned from Operations Enduring Freedom and Iraqi Freedom.

The first step in creating an operational readiness evaluation system is to develop common, precise USMC and Marine aviation definitions of core competency, core capability, mission essential task, and mission essential task list. The T&R Administrative Manual contains philosophical discussions on these key elements, but does not go into sufficient detail for standardization and a solid base for the entire Marine Corps T&R. The *UTM Guide* provides direction on how to develop METLs and this same methodology needs to be used in the T&R Administrative Manual. While this may seem like semantics, these key terms form the basis the UTM, T&R, MCCRES, readiness reporting, as well as doctrine and publications. The definition of these key terms needs to be precise, unambiguous, and simple.

A methodology for developing the tactical and operational standards needs to be established and must answer the question: Is this methodology driven by desired capabilities, current unit capabilities, current weapon system capabilities, desired effects, or another criterion? By establishing a methodology for determining standards, a solid base can be created for the T&R Program that will ensure Marine TacAir units are trained and evaluated on appropriate standards.

The second step is to develop a standardized unit T&R for both tactical and operational readiness to integrate into the current T&R program and once established, cancel the MCCRES. One advantage of this system is that it will focus training and can be linked to a unit's deployment workup cycle. Having the unit T&R integrated with the individual T&R will allow it to be updated in a timely manner, so units can use the system to train to current missions with the latest equipment and modifications. A unit T&R with a refly currency will provide continuous feedback to the commander and could be tied to the readiness reporting system.

Training and Education Command (TECOM) should remain the administrator of the system, so there is standardization across all elements of the Marine Corps. TECOM is in a good position for oversight of the system, be the honest broker in any disagreements, and have the final authority over the administration of the system. The MAW Commanding General (CG) should

be responsible for the execution of the system, to include evaluations, and be required to report monthly to the Marine Forces Commander, CG TECOM, DCA, and JFCOM. This report should be linked directly with the readiness reporting system. As such, the readiness reporting system should be a combination of unit training and individual training. All unit T&R evaluations should be entered in MCTEEP to ensure adequate resources are available, taskings are deconflicted, and there is visibility on evaluated events at multiple levels of command.

Unit T&R syllabi should be broken into phases as shown in figure 1 and as delineated below. Similar type events (normal core capabilities) should be divided into stages within each phase.

1. Combat Capable Training. 1000 series events. This series contains basic internal squadron skills and capabilities, as well as basic unit collective skills. The 1000 series is the building blocks for the rest of the Unit T&R.

a. Mission management

b. Carrier qualifications (CQ), expeditionary airfield operations, forward operating base (FBO) operations

c. Force protection and STO operations

d. Surge operations

2. Combat Ready Training. 2000 series events. The 2000 series is USMC integration training.

a. MAGTF integration training. CAX

b. MEU/MEB integration and reinforcement training (exercises)

c. Force protection and STO training

3. Combat Qualification Training. 3000 series. The 3000 series is designed to develop air functional integration skills.

a. Mission commander/strike leader training

b. Red / Maple Flag

c. MAG, MAW training exercises. HORNET'S NEST / CAROLINA COMBAT

d. Initial joint enabler training

*Unit T&R 1000–3000 series events are Marine aviation's "quality control" and specified events will be required to be completed prior to executing operational commitments or CHOP to CVW/MEU.

4. Full Combat Qualification Training. 4000 MCCORES series events. Joint/coalition integration. JFACC / joint enabler training

a. Large-scale/NATO exercises

(1) DYNAMIC MIX, UFL, COBRA GOLD, PITCH BLACK

(2) JTFEX, National Training Center (NTC)

b. JFCOM experiments

*4000 series events should be used to test new expeditionary support package concepts in an effort to increase operational reach

5. Special Skills and Qualifications. 6000 series events will contain special skills and qualifications. These special skills and qualifications are not prerequisite to combat qualifications or the ability to function as a combat qualified unit, but are those for which a certain number of trained individuals or units must be maintained to accomplish special missions or tasks.

a. S-3/4 TPFDD and deployment training.

b. TACC / XTACC Battle Staff.

c. TBMCS / C2PC.

d. Liaison officer training (to be completed prior to attaining section or division leader qualification.)

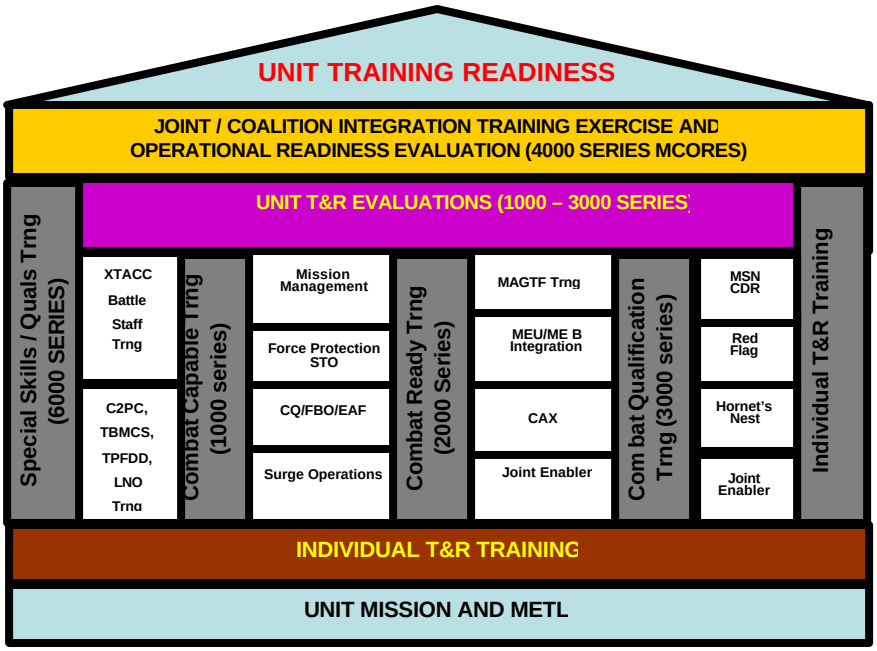

Figure 1. Unit Training Readiness

The 4000 series events of the unit T&R would be a new system called the Marine Corps Operational Readiness Evaluation System (MCORES) that will facilitate the evaluation of operational readiness. Phase I of the MCORES is similar to Phase I of the ORI, and is the evaluated phase. The goal of Phase I is to increase operational reach. Agility, adaptability, integrated operations, and interoperability will all be evaluated in this phase.

Phase I MCORES: areas evaluated:

1. Command and control--initial connectivity, leadership, and integration
2. Deployment procedures and execution
3. Aircraft generation for deployment
4. Aircraft deployment (execution)
5. Regeneration after deployment (close the force, immediate employment)
6. Force Protection

7. Joint integration for deployment and immediate employment

Phase II MCORES: This phase is similar to the Air Force Exercise Program where units use the exercise as a training evolution. The goals and areas of concentration for Phase II ORI will be:

1. ACE training as Marine Corps component ACE or as JFACC

2. Joint integration for employment (tactical and operational levels)

3. Tactical employment--design broad exercise objectives so units can focus on individual or unit training depending upon what is required by the squadron/unit (joint/coalition, night systems, precision and heavy weapons, air-to-air, low-altitude tactics)

4. Mission Support: internal squadron evaluation including integration into higher headquarters

5. STO: integrated into the exercise scenario

Phase II of MCORES allows units to work through the scenario challenges and are "allowed to fail" while gaining valuable experience in the joint integration and interoperability arenas. The 2D MAW and 3D MAW could execute one of these exercises every other year, but out of sequence from one another. The 1st MAW could execute MCORES every three years, because it only has two MAGs (only one FW) and already has a high exercise tempo. In order to ensure that experience is captured and spread across the USMC and across FW/RW communities, one unit or TMS from each MAG participate in this exercise. If this is not possible, liaison officers should be gained from that MAG in order to obtain experience. Once complete, the MAW CG should brief the MARFOR, TECOM, DCA, the Marine Air Board (MAB), and any other appropriate agencies, so the lessons learned can be quickly assimilated at the execution, policy, and acquisition levels. Money and OPTEMPO could be saved in MCORES if it is combined with existing exercises, such as UFL, Pitch Black, or NATO exercises. In order to

prepare for the capability directed by higher headquarters, it is preferable to deploy overseas, but this creates obvious strategic lift and funding issues.

The use of MCTEEP and effective unit training plans will enable a successful MCORES program. In addition to MCORES, the unit T&R can easily be molded to fit exercises into the unit's readiness cycle and deconflict with other taskings. This is especially important considering the current OPTEMPO resulting from Operations Enduring Freedom and Iraqi Freedom. Units can easily be flowed to ensure they participate in one 1000, 2000, and 3000 series events on an annual basis. Units would participate in a 4000 series exercise, at a minimum, once every two years. Funding for these exercises could come out of the normal deployment budget, but without a dedicated exercise program with a tie-in to the joint level, this could be difficult to establish.

The next program that can be modified to contribute to operational readiness is the CGI. The CGI has a great potential to increase unit operational reach, agility, and adaptability. The CGI embarkation inspection could be expanded to verify TPFDDS with squadron deployment plans. MAW CGIs could also test and evaluate deployability and immediate employment on an annual basis vice every two years. This could be done in conjunction with an exercise or training deployment. Adaptability could be tested through a STO scenario during the CGI. The Marine Corps and Marine aviation are not well prepared in this area, and it will take a significant institutional commitment to effectively run this program.

Marine aviation's rapid deployment capability needs to be more formally structured. There should be a declared deployability standard for all USMC aviation units. This monograph will propose two solutions for increasing Marine TacAir's capability for rapid deployment and immediate employment. The first is to establish a system where every Marine aviation unit has a defined deployability standard (category), similar to the NATO system, that they are working to achieve and against which to report their current readiness state. Throughout each unit's

reorganization, training, and deployment cycle their standard does not change, just their readiness state. The key here is that the all squadrons are training toward a defined standard or aim.

The second solution to increase agility is the development of an integrated air station support and installation deployment plans to provide the procedural deployment details and direct specific actions at predetermined milestones for contingency planning. These milestones can vary depending upon the amount of advance notice given bya prepare to deploy order (PTDO), warning order, alert order, or execute order.[2] The ability to maintain the balance between deployability and tactical and operational readiness needs to be maintained.

Table 2 gives one possible solution to the tiered deployability and readiness system. These standards are designed as a starting point for discussion and for the development of integrated readiness and deployment plans. Units do not change deployability categories (unless formally requested by their MAW) but report changes to their readiness category. For example, an F/A-18 squadron (VMFA(AW)-242 for this example) is designated as a category 4 squadron. This sets a twenty-one day deployability standard thatVMFA(AW)-242 is training to achieve (This assumes no-notice execute order to deploy with 100% of squadron assets. Twenty-one days is for maintenance considerations based on WSPD; while other areas of unit readiness are assumed to be ready to deploy on very short notice.) While in the training buildup phase, the VMFA(AW)-242 reports it capability through the readiness reporting system. At one point in this hypothetical situation, VMFA(AW)-242 reports category 6 readiness. With this declaration, the squadron can deploy core competent with 100% of its organic assets within 45 days. The idea is for VMFA(AW)-242 to continue to train toward its category 4 standard but report its true capability as it progresses toward that standard. This process will put credibility in the readiness reporting system and ensure “truth in advertising.”

[2]Secretary of the Air Force, Air Force Instruction 10-400, *Aerospace Expeditionary Force Planning*, 6.

Every Marine TacAir unit will have a declared deployability category and report readiness against that category. This is so that every unit trains to a common standard and is capable of being committed to a larger contingency. This is regardless of other operational tasking (unit deployments, Southern/Northern Watch, etc.) If the unit is unable to maintain its declared deployability category due to preparations for future operational tasking, the MAW can officially request a change to a realistic deployability category for that unit.

Table 2. Deployability and Readiness Categories for Marine TacAir Units

Category 1	Within 24 hrs[1]	HRF	Category 7	Within 60 days	HRF
Category 2	Within 4 days[2]	HRF	Category 8	Within 90 days	HRF
Category 3	Within 10 days[2]	HRF	Category 9	Within 180 days	LRF
Category 4	Within 21 days[3]	HRF	Category 10	> 180 days[5]	LTBF
Category 5	Within 30 days[4]	HRF			
Category 6	Within 45 days	HRF			

Notes:
1. An example of this category would be a squadron on alert to fly-in to support a MEU/MEB.
2. These would be alert conditions and periods of advanced readiness.
3. Normal squadron no-notice deployability readiness.
4. Periods of unit lower readiness, i.e., after post-deployment personnel turnover
5. Category 10 represents a major change in the unit. i.e. AV-8B squadron transitioning to the Joint Strike Fighter (JSF)

Forces in table 2 are declared as combat ready through the readiness reporting system. At the high end of HRF are squadrons and detachments preparing to deploy in support of FDF, IPF, or other contingency operations. At the lower end of HRF are most USMC squadrons during peacetime. The squadrons are in the combat readiness training cycle working up for scheduled operational commitments. Lower readiness forces (LRF) are forces that are in a training period

working toward HRF standards. These are squadrons that just returned from deployment and have had significant personnel turnover or aircraft getting modifications, upgrades, or rework, although with sufficient time and resources, can provide a surge capability for the USMC. Long term build-up forces (LTBF) forces are units undergoing a significant organizational change or equipment change (i.e., unit transitioning from AV-8B to the JSF).

This readiness structure gives CMC significant capabilities across a wide range of contingencies. The interaction between FDF, IPF, and the TacAir HRF will create new capabilities and options for force tailoring that were not previously available.

A second way to improve deployment is to develop air station support and installation deployment plans.[3] These plans define roles for all units when a contingency operation occurs. These deployment plans will be exercised during CGIs and MCORES evaluations. When a unit is getting an operational readiness evaluation, the supporting establishment is getting evaluated at the same time. MALS, ORD, SUPPLY, ALD, MWSS, and air station units are all evaluated as a team with the unit being evaluated.

Conclusion

While the MCCRES has served the Marine Corps well for the past twenty-five years, it is not an adequate operational readiness evaluation system in today's environment. The Commandant of the Marine Corps through *MC Strategy 21* and *EMW* has given Marines an imperative to critically analyze its systems that support operational and combat readiness training, deployment, and employment. Operations Enduring Freedom and Iraqi Freedom have provided Marine TacAir with a wealth of practical experience through a wide variety of methods in deploying, basing, and employing. This experience provides a tremendous opportunity to build on recent successes to intelligently and expeditiously chart the proper course for the future.

[3]LtCol R. Scott Pomarico, MCAS, Cherry Point, NC, numerous interviews by author, telephone conversations, electronic mail, Ft Leavenworth, KS, August 2000 to April 2003.

This monograph has evaluated Marine Corps combat readiness evaluation systems and three non-USMC operational readiness evaluation systems within the context of increasing operational reach using the concepts of agility and integrated operations and the characteristics of adaptability and interoperability. The hallmark of the Marine Corps has always been its training and standards. It is critical that Marine TacAir develop and implement a unit T&R syllabus, as soon as feasible, to maintain the Marine Corps' high standards. Using key points and structure from other existing operational readiness evaluation systems, this monograph has proposed recommendations to lead Marine TacAir into the future with relevant training and standards that includes the development of MCORES.

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