DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
3000 MARINE CORPS PENTAGON
WASHINGTON, DC 20350-3000

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NAVMC 3500.14E

From: Commandant of the Marine Corps
To: Distribution list

Subj: AVIATION TRAINING AND READINESS PROGRAM MANUAL

Ref: (a) MCO 3500.14

Encl: (1) Aviation T&R Program Manual

1. Purpose. Per reference (a), enclosure (1) provides revised standards and regulations regarding the training of aircrews, unmanned aircraft system operators, Marine command and control system operators, airfield emergency services specialists, and meteorological and oceanographic Marines.

2. Cancellation. NAVMC 3500.14D.

3. Scope. Highlights of major training and readiness (T&R) planning considerations included in this program are as follows:

a. Chapter 1. Revised to align readiness standards and terminology with forthcoming changes to readiness reporting directives.

b. Chapter 2

(1) Changed optimal time in an operational squadron for first tour assignments from three years to four years for Marine expeditionary unit (MEU) deploying squadrons and three years for non-MEU deploying squadrons.

(2) Added expansive detail to rules and metrics concerning the electronic aviation training form.

(3) Re-tooled metrics for event requirements, event proficiency, proficiency advisories, skill proficiency, chain updating, and mirroring.

c. Chapter 3

(1) Revised various rules by type aircraft concerning minimum altitudes / minimum maneuvering altitude restrictions based on updates to related directives.

(2) Changed authority to embark passengers in non-crash attenuating seats from wing commanding general to the first O-6 commander within the supporting squadron's chain of command.

(3) Updated night external lighting rules both inside and outside of special use airspace to align with Federal Aviation Regulations.

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d. Chapter 4. Revised to include administrative updates to the aviator production process.

e. Chapter 5. Introduced the concept of a readiness review to be conducted in advance of T&R working groups, hosted by Deputy Commandant for Aviation.

f. Chapter 6. The focus of change for this chapter was to ensure that formatting and content provide the template to aid in transforming the process of building a T&R manual via Microsoft software to an automated process provided by the Marine Sierra Hotel Aviation Readiness Program, a capability expected to deploy in 2nd Quarter, Fiscal Year-21.

4. Information. Commanding General (CG), Training and Education Command (TECOM) will update this T&R Manual as necessary to provide current and relevant training standards to commanders. All questions pertaining to the Marine Aviation T&R Program should be directed to: CG, TECOM, Policy and Standards Division (C 466), 1019 Elliot Road, Quantico, Virginia 22134.

5. Command. This manual is applicable to the Marine Corps Total Force.

6. Certification. Reviewed and approved this date.

LEWIS A. CRAPAROTTA
Commanding General,
Training and Education Command

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From: Commandant of the Marine Corps
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Subj: AVIATION TRAINING AND READINESS PROGRAM MANUAL

Ref: (a) MCO 3500.14

Encl: (1) New Appendix A
(2) New Appendix B

1. Situation. To transmit new appendices to the basic Manual.

2. Mission. Changes to Appendices A and B reflect updates to enable the implementation of Marine Sierra Hotel Aviation Readiness Program Training and Readiness (T&R) Builder.

3. Execution. Remove and replace Appendices A and B with the corresponding enclosures.

4. Information. These changes will transform building of an aviation T&R manual from Microsoft software to an automated T&R Builder software.

5. Filing Instructions. This Change Transmittal will be filed immediately following the signature page of the basic Manual.

6. Certification. Reviewed and approved this date.

K. M. IIAMS
Commanding General
Training and Education Command
By direction

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CHAPTER 1

AVIATION TRAINING AND READINESS PROGRAM

	PARAGRAPH	PAGE
AVIATION T&R PROGRAM	1.0	1-3
PROGRAM MANUAL OVERVIEW	1.1	1-3
AVIATION T&R PROGRAM AND UNIT READINESS	1.2	1-3
T&R PROGRAM ADMINISTRATION	1.3	1-5
EXTERNAL POLICY	1.4	1-6
AVIATION TRAINING COMMUNITIES	1.5	1-8

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CHAPTER 1

AVIATION TRAINING AND READINESS PROGRAM

1.0 AVIATION T&R PROGRAM

1. The Marine aviation training and readiness (T&R) program provides the Marine air-ground task force (MAGTF) commander with an aviation combat element (ACE) capable of executing the six functions of Marine aviation. The T&R program is the fundamental tool used by commanders to construct, attain, and maintain effective training programs and is the foundation for the aviation training system (ATS). This manual, complemented by the ATS Order (MCO 3710.6_), provides policy and procedures for development and standardization of all USMC aviation T&R manuals and integrated training across all Marine aviation.

2. The standards established in this program are validated by subject matter experts (SME) and approved by the Commandant of the Marine Corps to maximize combat capabilities for assigned mission essential tasks (MET) while conserving resources. Training events are based upon specific requirements and performance standards to ensure a common base of training and depth of combat capability.

3. The Marine aviation T&R program develops unit warfighting capabilities by providing commanders standardized programs of instruction (POI) for training by community. This T&R program is based on unit training management (UTM) principles and performance standards and designed to ensure units attain and maintain proficiency in core/mission skills and combat leadership.

4. The sponsor of this publication is Commanding General (CG), Training and Education Command (TECOM), Policy and Standards Division (PSD), Aviation Standards Branch (ASB). References to the sponsor throughout this publication will be listed as TECOM ASB.

1.1 PROGRAM MANUAL OVERVIEW. This manual provides aviation communities with the requisite standards and regulations regarding the training of aircrew, aviation ground communities, and unmanned aircraft system (UAS) personnel.

1. Chapter 2. Provides overarching policy for individual and unit training including requirements, performance standards, readiness reporting, combat leadership, ATS, Marine sierra hotel aviation readiness program (M-SHARP), and aviation career progression model (ACPM). A thorough understanding and familiarity of this chapter is essential to building a relevant community T&R manual.

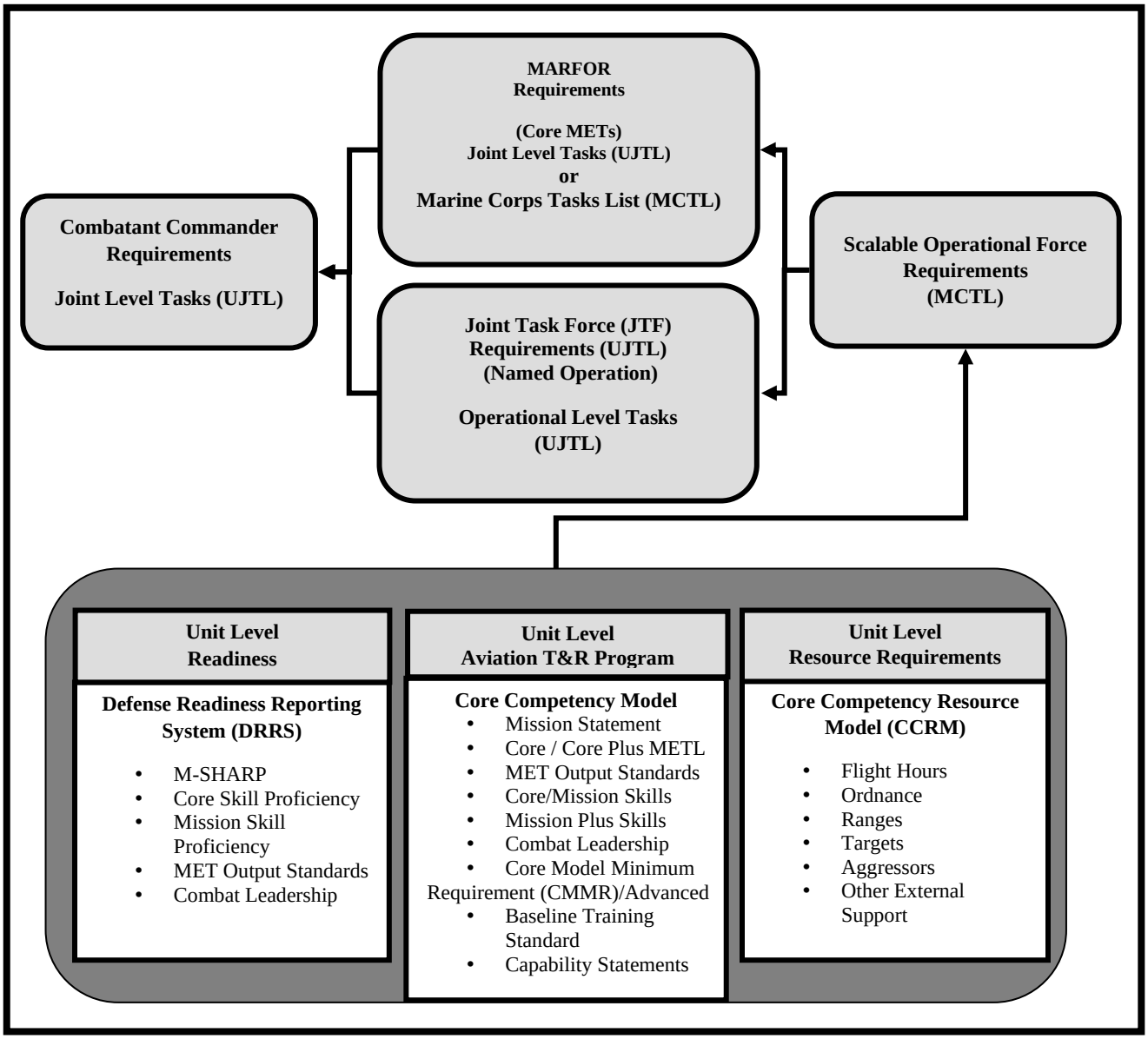
2. Chapter 3. This chapter focuses on rules of conduct and policy for aircrew training and must be thoroughly referenced during the construct and review of aircrew T&R manuals.

3. Chapter 4. Provides overarching policy for core introduction training requirements and standards. The bulk of this chapter pertains to aircrew fleet replacement squadron (FRS) training, the Naval aviation production process (NAPP), and the aviator production plan.

4. Chapter 5. This chapter lists roles and responsibilities of various agencies that contribute to the creation, maintenance, and sustainment of community T&R manuals. It outlines the process for facilitating T&R working groups to include the staffing of a community T&R manual to final production.

5. Chapter 6. This chapter provides a model for building, maintaining, and sustaining a community T&R manual. It provides the procedures, steps, and directions for writing chapters 1, 2 and subsequent chapters of a T&R manual and provides a generic template to build from for each chapter.

1.2 AVIATION T&R PROGRAM AND UNIT READINESS. The aviation T&R program implements a comprehensive, capabilities-based training system that provides combat capable crews and leaders to MAGTF and combatant commanders. The unit level aviation T&R program core model below is the centerpiece of the foundation upon which warfighting capabilities are built. Note that unit level readiness and resource requirements also provide essential elements that contribute to the development of warfighting capabilities.



1.2.1 Readiness and Resources. The following elements form the nexus of establishing readiness metrics for Marine aviation.

1. Defense Readiness Reporting System – Marine Corps (DRRS-MC). Reporting is based on unit capability to accomplish specific tasks within an established mission essential task list (METL) providing a common baseline for unit readiness reporting. Each MET has one or more associated output standards that are the key performance measures used as reporting criteria in DRRS-MC.

2. Marine Corps Task List (MCTL). A comprehensive list of Marine Corps tasks (MCT), doctrinally based, and designed to support current and future MET development.

3. Mission Essential Task (MET). A task selected by a force commander from the MCTL deemed essential to mission accomplishment. A MET refers to a capability for which a unit was organized or designed to perform. Most units have several tasks for which they were organized or designed and for which they train. Aviation communities will report readiness using the METL construct drawing from the MCTs documented in the MCTL approved by Deputy Commandant for Combat Development and Integration (MCO 3500.110_, Policy for MET Development, Review, Approval, Publication and Maintenance).

4. Mission Essential Task List (METL). A list of tasks considered essential to the accomplishment of core, assigned or anticipated missions. The METL uses the common language of the universal joint task list (UJTL), universal naval task list (UNTL), MCTL and T&R manuals in terms of task, condition and standard. The METL is the commander's tool for maintaining focus on mission accomplishment and forms the foundation upon which readiness reporting is made (See MCO 3500.110_)

1.2.2 Mission Statement. The mission statement is a concise description of the purpose of a unit and its role in support of the MAGTF. It serves as the basis for establishing the number of required billets and equipment (See MCO 5311.1_).

1.2.3 Core Model Minimum Requirement (CMMR). The CMMR is an objective readiness metric approved by Deputy Commandant for Aviation (DC AVN) to meet the output standards defined within each MET. This metric is outlined further in the unit training section per Chapter 2.

1.2.4 Mission Essential Task (MET) Assessment Phase (7000). The purpose of this phase is to:

1. Assess CMMR representative crews during the execution of the unit's specified METs in order to ensure standardization and combat readiness.

2. Fulfill the requirements of a Marine Corps combat readiness evaluation (MCCRE) as specified in MCO 3501.1_, Marine Corps Combat Readiness Evaluation.

3. Sample unit templates for conducting the 7000 Phase are provided as Appendix C.

1.2.5 Marine-Sierra Hotel Aviation Readiness Program (M-SHARP). This program provides the training management system for scheduling and logging T&R events, comparing logged data to community readiness metrics, and formatting readiness data.

1.2.6 Resources. The core competency resource model (CCRM) is a qualitative analytical tool (model) that displays external resources required to attain and maintain training/combat proficiency. This tool objectively captures and displays the required external resources for readiness. External resources are defined as those not organic to the unit (e.g. flight hours, simulator hours, academic hours, ordnance, ranges, targets, external loads, helicopter support teams (HST), and aggressor air). The flight hour module of CCRM was primarily developed for use at the Deputy Commandant for Aviation (DC AVN) level as a flying hour program budgetary support tool and was accredited by the Chief of Naval Operations and the Commandant of the Marine Corps. At the unit level, it may complement the sortie based training program (SBTP) by assisting units in the identification of flight hour resources needed to train the unit to core competency.

1.3 T&R PROGRAM ADMINISTRATION. The aviation T&R program applies to all Marine aircraft wings (MAW), Marine aircraft groups (MAG), Marine air control groups (MACG), select communities assigned to the Marine wing support squadrons (MWSS), Marine Corps air stations/facilities, and Marine divisions (MARDIV) Marine littoral regiments (MLR), littoral anti-air battalions (LAAB), intel battalions (for meteorological and oceanographic (METOC)). The TECOM ASB maintains administrative oversight of T&R manuals. A complete list of aviation T&R manuals is available online with a common access card (CAC) at https://vcepub.tecom.usmc.mil/sites/directorates/psd/asb/default.aspx

The T&R program consists of the following documents:

1. MCO 3500.14. The Aviation Training and Readiness Program Order assigns responsibilities and establishes USMC policy, procedures and direction regarding the training of aviation personnel.

2. NAVMC 3500.14. The Aviation Training and Readiness Program Manual (this manual) provides policy, standardization and procedures for community aviation T&R manuals. Signature authority is CG TECOM, by direction of the Commandant of the Marine Corps.

3. NAVMC 3500.XX Series. Aviation T&R manuals containing individual training programs for applicable military occupational specialties (MOS) within a community. These manuals are reviewed and updated on a triennial basis. More frequent reviews may occur at the discretion of the applicable community. Aviation T&R manuals must comply with the program manual and may contain policy unique to a community/military occupational specialty (MOS. Signature authority is CG TECOM, by direction of the Commandant of the Marine Corps.

1.4 EXTERNAL POLICY. Aviation training requirements listed in other applicable publications shall be adhered to, including:

1. MCO 1200.17_ Military Occupational Specialties Manual (MOS Manual). Identifies and codifies the personnel skill requirements for the human resources development process to build and maintain personnel inventory to meet the needs of the force.

2. CNAFINST M-3710.7_ NATOPS (Naval Air Training and Operating Procedures Standardization Program) General Flight and Operating Instructions. Specifies Naval aviation training requirements, instrument ratings/qualifications, Naval aviation survival training program, etc.).

3. NAVAIR 00-80T-112 NATOPS Instrument Flight Manual. Provides guidance and standardization for instrument flight evaluators and aircrews on criteria for evaluating the instrument flying abilities and proficiency of aircrew members and conducting NATOPS instrument flight evaluations.

4. NAVAIR 00-80T-114 NATOPS Air Traffic Control Manual. This manual standardizes ground and flight procedures but does not include tactical doctrine. It contains information on administrative and operational procedures for Navy and Marine Corps air traffic control facilities (ATCFs) and fleet area control and surveillance facilities (FACSFACs), and applies on a worldwide basis.

5. MCO 3500.109_ Weapons and Tactics Training Program (WTTP). The WTTP supports training programs by providing instructor and academic standardization for T&R syllabi. As the manager of the WTTP for the Marine Corps, Marine Aviation Weapons and Tactics Squadron One (MAWTS-1) produces standardized courseware to support community T&R syllabi as well as the maintenance of syllabi for advanced instructor designations, to include the Weapons and Tactics Instructor Course.

6. MCO 3500.110_ Policy and Guidance for METL Development, Review, Approval, Publication and Maintenance. This order provides policy and procedures for METL development, review, approval, publication and maintenance for units, installations, and organizations.

7. MCO 3501.1_ Marine Corps Combat Readiness Evaluation (MCCRE). Provides policy for evaluation of units.

8. MCO 3710.6_ Marine Corps Aviation Training System Order. Provides policy, guidance, and responsibilities for the implementation of the ATS.

9. MCO 5311.1_ Total Force Structure Process (TFSP). This order establishes DC, CD&I as the total force structure owner and defines the policy, procedures, roles, responsibilities, and integration points across the enterprise for the management of the TFSP.

10. OPNAVINST 1542.7 Crew Resource Management Program. Specifies crew resource management (CRM) training requirements (applicable to flight units only).

11. Doctrinal Publications. Marine Corps doctrinal publications, specific, Marine Corps warfighting publications (MCWP) and Marine Corps interim publications (MCIP), contain the doctrine and tactics, techniques and procedures (TTPs) utilized by the Marine Corps in the prosecution of war or other assigned missions.

12. MCRP 3-0A Unit Training Management Guide. Provides background on the philosophy, principles, and policies of the Marine Corps training management system. It also provides guidance on how to develop, support and evaluate training plans.

13. Maneuver Description Guide (MDG) (Flying Units Only). A supplemental NATOPS manual that is used to further define procedural aspects of NATOPS maneuvers which are required for standardized and effective execution in all regimes of flight. Policy and procedures are contained in MCO 3710.8_, USMC NATOPS.

14. MCO 3125.1_ Marine Corps Flying Hour Program (FHP) Management. Outlines the Marine Corps flying hour program goals and requirements.

15. NAVMC 1553.1_ Systems Approach To Training (SAT) Users Guide. Establishes the procedures and business rules for the application of the SAT process to formal school curriculum development. The SAT is the primary source of information for instructional program development and management for Marine Corps formal learning centers (FLC) and formal courses of instruction collocated at other military service schools.

16. MCO 1553.2_ Management of Marine Corps Formal Schools and Training Detachments. This order publishes management policies and procedures for all Marine Corps formal schools, training centers and formal courses of instruction collocated with other military Service schools.

17. MCO 1553.3_ Unit Training Management Guide. This order establishes a Marine Corps-wide unit training management and evaluation process. Provides policy that all elements of the Total Force will adhere to when developing, conducting, and evaluating training for wartime missions.

18. MCO 1553.6_ Development, Management, and Acquisition of Interactive Courseware (ICW) for Marine Corps Instruction. This order establishes policy, prescribes requirements, and assigns responsibilities for the development, management, and acquisition of ICW for Marine Corps instructional programs.

19. MCO 3500.26_ Universal Naval Task List (UNTL). A single source document that combines the Navy tactical task list (NTTL) and the MCTL. The UNTL's tactical level of war tasks are written utilizing the common language and task hierarchy of the UJTL. The UNTL is architecturally linked to the UJTL.

20. MCO 3000.13_ Marine Corps Readiness Reporting SOP. Promulgates policies and procedures for reporting readiness on Marine Corps organizations.

21. NAVAIR 00-80T-115 U.S. Marine Corps Expeditionary Airfields and Marine Corps Air Stations NATOPS Manual. This manual prescribes minimum airfield operating instructions and procedures applicable to forward operating bases (FOBS) and expeditionary airfields (EAF) in support of naval aircraft operations.

22. NAVAIR 00-80R-14 NATOPS Aircraft Rescue Firefighting and Rescue Manual. Contains firefighting doctrine, procedures, references and information for use by those involved in aircraft rescue, fire prevention, and firefighting response operations. It contains organizational, training and readiness requirements for air stations and aviation facilities ashore.

23. MCO 3710.8_ United States Marine Corps Naval Air Training and Operating Procedures Standardization (NATOPS) Program. Amplifies policy and procedural guidance in administering the NATOPS program within Marine Corps aviation.

1.5 AVIATION TRAINING COMMUNITIES. Aviation communities are subdivided into four categories as depicted below:

Tactical Manned Flight Communities		
Aircraft	**Unit**	
Fixed Wing		
AV-8B	VMA	
TAV-8B	VMAT	
FA-18A++/C	VMFA	
FA-18D	VMFA(AW)	
KC-130T/J	VMGR	
F-35B/C	VMFA	
Rotary Wing		
AH-1Z	HMLA	
UH-1Y	HMLA	
CH-53E/K	HMH	
Tiltrotor		
MV-22B	VMM	
Unmanned Aerial Systems		
Aircraft	**Squadrons**	
Group 1 and 2 UAS (sUAS)	MEF Units	
RQ-21A	VMU	
MQ-9	VMU	
Operational Support Aircraft, Adversary Support, and Executive Transport		
Operational Support	**Aircraft**	**Unit**
	UC-12F/M/W	VMR Det
	C-20G	VMR Det
	UC-40	VMR-1
	UC-35C/D	VMR Det
Adversary Support	**Aircraft**	**Squadron**
	F-5F/N	VMFT-401
Executive Transport	**Aircraft**	**Squadron**
	VH-3D	HMX-1
	VH-60N	HMX-1
	VH-92A	HMX-1
	MV-22B	HMX-1

Tactical Aviation Ground Communities	
Community	**Unit**
Tactical Air Command Center (TACC)	MTACS
Marine Air Traffic Control (MATC)	MACS
Meteorological and Oceanographic (METOC)	MACS and Intel Bn
Tactical Air Operations Center (TAOC)	MACS
Direct Air Support Center (DASC)	MASS
Low Altitude Air Defense (LAAD)	LAAD Bn
Expeditionary Firefighting and Rescue (EFR)	AGS Department
Expeditionary Airfield (EAF) Services	MWSS
Aviation Operations Specialist (AOS)	MAG

CHAPTER 2

TRAINING POLICIES

	PARAGRAPH	PAGE
TRAINING POLICY	2.0	2-3
INDIVIDUAL TRAINING	2.1	2-4
UNIT TRAINING	2.2	2-5
STANDARDIZING INSTRUCTOR DESIGNATIONS	2.3	2-6
UNIT READINESS REPORTING	2.4	2-6
TRAINING PROFICIENCY	2.5	2-7
TRAINING PREREQUISITES	2.6	2-10
EVENT REQUIREMENTS	2.7	2-10
T&R EVENT EVALUATION	2.8	2-11
SIMULATOR POLICY	2.9	2-12
ACADEMIC TRAINING	2.10	2-13
AVIATION CAREER PROGRESSION MODEL (ACPM)	2.11	2-13
CERTIFICATION, QUALIFICATION, DESIGNATION (CQD) EXECUTION	2.12	2-14
FLIGHT LEADERSHIP	2.13	2-15
SYLLABUS TRAINING EXCEPTIONS	2.14	2-19
DEVIATIONS FROM T&R PROGRAM POLICY	2.15	2-20
RECORDS MANAGEMENT	2.16	2-21
MARINE SIERRA HOTEL AVIATION READINESS PROGRAM (M-SHARP)	2.17	2-21
M-SHARP ADMINISTRATION	2.18	2-23

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2.0 TRAINING POLICY

2.0.1 Purpose. To provide policy for unit and individual training to include requirements, performance standards, readiness reporting, and management of training records.

2.0.2 Core Model. The core model is the basic foundation and standardized format by which aviation T&Rs are constructed. It provides the capability of quantifying both unit and individual training requirements and a measure of readiness. This is accomplished by linking unit mission statements, METs, proficiency requirements and combat leadership. It is skill progression based and is founded on unit training management edicts contained in MCO 1553.3_ and related aviation-unique mandates.

CORE MODEL PHASE CONSTRUCTION

PHASE	EVENTS	TERM	DEFINITION
1000	0001-1999	Core Introduction	Fundamental system/equipment operation familiarization, initial individual or crew procedures, and initial exposure to future core training. Includes aircrew-specific refresher, series conversion, and transition training (at the completion of this phase, individuals are normally assigned to operational units). Aviation ground personnel receive all 1000 Phase training at their respective MOS formal schools. For fleet replacement squadron (FRS) training see Chapter 4.
2000	2000-2999	Core	Fundamental, environmental, or conditional capabilities required to perform basic functions. These basic functions serve as tactical enablers to progress to more complex mission skills.
3000	3000-3999	Mission	Advanced skills required to execute unit METs. These skills focus on crew coordination, integration with external agencies, and draw upon the knowledge and abilities developed during core training.
4000	4000-4499	Core Plus	Skill training associated with low probability of execution and/or theater-specific operations. Although core plus training events may provide valuable training opportunities, they are not considered essential to achieve unit core competency.
4500	4500-4999	Mission Plus	Advanced skills required to execute mission plus unit METs that may be theater-specific or have a low likelihood of occurrence. Although mission plus training events may provide valuable training opportunities, they are not considered essential to achieve unit core competency.
5000	5000-5999	Instructor Training	Instructor training events required to obtain instructor designations.
6000	6000-6999	Requirements, Certifications, Qualifications, and Designations (RCQD)	Training events required by other directives, events that lead to specific certifications, qualifications, and/or designations, and other events requiring tracking. Examples include flying squadron emergency procedures monthly exams, quarterly evaluations, and school codes.
7000	7000-7999	MET	MET training to fulfill the requirements of a Marine Corps combat readiness evaluation.
8000	8000-8999	ACPM	Training events to enhance professional understanding of Marine aviation, the MAGTF and additional training as provided by MAWTS-1.
9000	9000-9999	Reserved	For internal use by M-SHARP for version control.

2.0.3 Concepts and Programs. Marine aviation training incorporates the following concepts and programs:

1. Syllabus. All T&R events for an MOS or in unique situations, by crew position within a community.

2. Subject Matter Expert (SME) defined Standards. Syllabus sponsors who have extensive, recent operational experience in their community and focus on providing the goal, requirements and performance standards for events.

3. Command Oversight and Responsibility. Each level of command shall monitor subordinate commands, ensure timely delivery and equitable distribution of training resources and personnel, and ensure safe execution of training plans within the allotted time to train.

4. Marine Corps Aviation Training System (ATS) Mission. To facilitate the execution and evolution of an integrated training system incorporating simulation devices and academic instruction and facilities, to assist with defining procurement and modification requirements through the training management process (TMP), and to assist with flight leadership program (FLP) execution and coordination of training support across Marine aviation that produces a properly trained ACE for the MAGTF. Training system integration ensures the currency and relevance

of training devices via concurrency management (CCM); integrating and managing training information; and providing an effective forum for identification of the operating forces' training needs and issues via the TMP.

5. Flight Leadership Program (FLP) Standardization. Each MAW's ATS structure will support the MAW CG in implementing the FLP. Local Marine aviation training system sites (MATSS) will utilize available infrastructure and inherent processes to support improvements in the quality of flight leadership training, ensure standardization, and facilitate evaluation. Details of this program are outlined in paragraph 2.14.

6. Risk Management. The process of risk mitigation includes risk assessment, risk decision making, and implementation of effective risk controls. T&R requirements and NATOPS procedures are examples of controls developed to mitigate hazards identified over decades of operational experience. Application of these controls is crucial. Leadership emphasis on risk mitigation and aviation fundamentals during all aspects of training is required in developing and fostering a climate that promotes flight discipline and adherence to established procedures and requirements. Risk management and mitigation must be institutionalized at all levels and throughout the training syllabus.

7. Safety Investigation Report Oversight. Aviation Standards Branch action officers for manned and unmanned aircraft shall review safety investigation reports and collaborate with MAWTS-1 syllabus sponsors to determine if a change to the applicable T&R manual is warranted as a result of a mishap.

2.0.4 Meteorological and Oceanographic (METOC). There are varying pieces of METOC equipment within the METOC community, with an accompanying array of policies, procedures and concepts of operation. Employment of METOC equipment and/or sensors is managed at multiple levels of command within the MAGTF, both from the ACE and the ground combat element. Due to the wide variance of capabilities and limitations across METOC equipment platforms, some policies in this manual may not apply. As such, METOC syllabus sponsors shall ensure T&R manuals adhere to all applicable policies and are authorized to exclude policy that does not apply to the METOC equipment in question, in consideration of its unique mission and capability.

2.0.5 First Tour Assignments

1. Naval aviators (NA), Naval flight officers (NFO), UAS officers, and enlisted aircrew shall be assigned to an operational squadron for a minimum of two years, optimally four years for Marine expeditionary unit (MEU) deploying squadrons, and three years for non-MEU deploying squadrons after completing Core Introduction Phase training. Commands shall not assign the previously listed aeronautically designated personnel outside the squadron unless such assignment is a T&R syllabus requirement.

2. The approval authority for deviations from first tour assignment policy is Manpower and Reserve Affairs (M&RA) (codes MMOA and MMEA). Requests for deviation from this policy shall be requested via AMHS message to M&RA via the operational chain of command with info notification to TECOM ASB and the syllabus sponsor.

2.1 INDIVIDUAL TRAINING

2.1.1 Individual Training Philosophy. Mastery of skills and leadership in the 2000 through 6000 phase events serve as building blocks for training. Training programs are based on increasingly challenging events, with the requirement for periodic revalidation of proficiency. Definitions of the following terms are provided to aid in understanding the building block approach of individual training:

1. Event. A flight or ground training evolution defined or required by individual POI within a syllabus. Analogous to syllabus event.

2. Stage. An administrative group of events. Stages and skills may have the same naming convention and a stage name may be used in multiple phases.

3. Phase. A phase is an administrative group of stages. Each phase is numbered in increments of one thousand.

4. Skill. A demonstrated and evaluated ability that is developed or enhanced through training. Individuals are trained to skill proficiency through targeted POI, providing proficient crews to accomplish unit assigned METs.

2.1.2 POI Assignment. A POI is a training track assigned to a Marine based on their proficiency in a skill. All Marines must be assigned to a POI for each syllabus. POIs are manually assigned in M-SHARP by the unit administrator. The following POIs can be assigned:

1. Basic (B). All personnel are assigned the B-POI when they begin training in a syllabus (e.g. pilot, crew chief, etc.). They remain in the B-POI throughout their career unless one of the below POIs are required. All T&R events are automatically assigned the B-POI in M-SHARP.

2. Refresher (R). Marines are assigned to the R-POI when they have not performed their primary MOS duties within a period of time as specified by the community or this manual.

3. Conversion (C). Personnel are assigned to the C-POI when they change from one aircraft model or weapons system to another. Examples include UH-1 to CH-53 or FA-18 to F-35 per the applicable T&R.

4. Series Conversion (S). Personnel are assigned to the S-POI when they change from an aircraft or weapons system series within the same model. Assignment of this POI will be made in accordance with the applicable T&R. Examples include KC-130T to KC-130J, CH-53E to CH-53K, and F-35A/C to F-35B.

5. Transition (T). Personnel are assigned to the T-POI when they change type of aircraft or weapon systems. The T-POI is only used when a sub-set of the B-POI events are required. When all events are required, use the B-POI.

6. Contract Instructor (CI). This POI is constructed to accommodate syllabus requirements of contractor instructors.

7. Maintain (M). This training track is automatically assigned to personnel upon demonstration of individual skill proficiency. The requirement to demonstrate skill proficiency more than once is established by the community (see guidance below) and is reflected by events in the skill having an assigned proficiency period. Proficiency period is an amount of time (expressed in calendar days) between each demonstration of event proficiency.

Note: See Chapter 4 for additional POIs that are assigned to 1000 Phase training at the fleet replacement squadron (FRS) (modified refresher, safe for solo, foreign, etc.).

2.2 UNIT TRAINING

2.2.1 Unit Training Plans. Units shall use the CMMR and should use the core model training standard (CMTS) as a reference point to design, implement and evaluate training plans. The MCTP 8-10A provides an overview of planning processes and development of training plans. The ability of a unit to execute the training plan is contingent on its instructor base. Units must balance the requirements of training and maintaining an instructor base with the requirements to train and maintain replacement crew(s) within time constraints and asset availability without over-tasking maintenance and supply.

2.2.2 Core Model Minimum Requirement (CMMR) / Advanced Training Standards

1. CMMR / advanced training standards are an objective readiness metric approved by DC AVN to meet the output standards defined per MET. This metric identifies the crew composition and minimum crew qualifications, designations, and/or training required to execute the MET output standards.

2. Units can be expected to perform a critical role in a mission or operation plan (OPLAN) and normally requires external MAGTF support. See MCO 3000.13 (Marine Corps Readiness Reporting SOP) for additional guidance.

3. Crew composition is determined by community and details the required skill proficiency of each member. Each crew must include a minimum of one crewmember who is mission skill proficient (MSP) or mission plus skill proficient (MPSP).

2.2.3 Baseline Training Standard

1. The baseline training standard normally equates to approximately 70 percent of CMMR. This number can vary based upon mathematical computation of whole numbers. For example, if the CMMR is 2 the baseline would become 1. Additionally, if the CMMR is 7 the actual baseline would be 4.9 but the community may choose between 5 or 4.

2. Baseline training standard depicts the level of readiness expected from a unit sustained through core training at home station. See MCO 3000.13 for additional guidance.

3. Crew composition is determined by community and details the required skill proficiency of each member. Each crew must include a minimum of one crewmember who is MSP or MPSP.

2.2.4 Core Model Training Standard (CMTS). The CMTS metrics are established by the community. It defines the desired number of individuals trained by syllabus for core skill proficiency (CSP), MSP, core plus skill proficiency (CPSP), MPSP, and instructors. The CMTS is the optimal training objective and must be equal to or greater than CMMR. The CMTS is used for internal unit planning, not for readiness reporting.

2.2.5 Tactical Aircrew/MACCS Integration Training. Aviation command and control (AC2) often requires external syllabus support for both aircrew and Marine aviation command and control system (MACCS) skill progression and proficiency. Tactical aircrew and MACCS personnel shall actively collaborate to create training opportunities. Exercising C2 functions and information exchanges are necessary for airspace battle management training and to increase application of airpower efficiency. Coordinated events maximize the training leveraged from each occurrence for both aircrew and aviation ground communities.

2.2.6 Emergency Procedures. All aircrew shall complete a monthly emergency procedures examination and a quarterly emergency procedures simulator review. If the community lacks a simulator or one is not available, the command shall substitute with an appropriate cockpit-cabin drill for the emergency procedures simulator review. The monthly emergency procedures examination expiration period is set to 30-days end-of-month (EOM) and the quarterly emergency procedures simulator review expiration period is set to 90-days EOM.

2.2.7 Combat Leadership for Aviation Ground Communities. The goal of the combat leadership program is to enable a Marine to employ their section, agency, or unit as a cohesive team in accomplishing unit MET(s). Examples include operations officer, detachment commander, or detachment chief. Once a Marine is designated by the CO as a combat leader and counted toward the CMMR, they cannot be used towards any other CMMR requirement.

2.2.8 Standardized Functional Check Flight (FCF) Policy

1. Wing FCF SOPs. All wing SOPs shall incorporate standardized FCF procedures that include the preflight planning and execution of FCFs. Oversight for standardization across all wings is under the cognizance of DC AVN.

2. Functional Check Pilot (FCP) Designation. Aviation flying communities shall implement standardized FCP syllabi in individual T&R manuals. Standardized FCP workup/evaluation events shall be delineated in individual T&R manuals under the 6000 Phase. At a minimum, the FCP certification event shall be evaluated. FCP designation requires successful completion of a community standardized program and a designation letter from the CO.

3. Functional Check Enlisted Aircrew. Should a T/M/S require enlisted aircrew to perform duties as a member of a FCF, then a qualification or designation for that crew position is required. Events shall be delineated in the 6000 Phase. Additionally, the syllabi shall be structured in accordance with directives and guidelines established in the COMNAVAIRFORINST 4790 Naval Aviation Maintenance Program and wing SOPs. Efforts should be made to not duplicate 4790 requirements.

2.3 STANDARDIZING INSTRUCTOR DESIGNATIONS. Instructor designations are assigned to personnel based on the requirements outlined in their assigned syllabus. Types of instructors fall into two categories: standardized and unique.

1. Standardized. Standardized instructor requirements are derived from external directives (i.e. the MAWTS-1 Course Catalog, MAWTS-1 C3 Course Catalog, NATOPS, and others). Minimum requirements will be repeated within the syllabus, also pointing the instructor trainee/evaluator to the appropriate directive. Examples of standardized instructors include night systems instructor (NSI), terrain flight instructor (TERFI), NATOPS instructor, basic instructor, and senior instructor.

2. Syllabus Unique. Syllabus unique instructor requirements are defined by the community. These instructors and associated requirements are not mandated by external directives. Examples of syllabus unique instructors include fleet replacement squadron instructor (FRSI), contract instructor (CI), and basic instructor pilot (BIP).

2.4 UNIT READINESS REPORTING

2.4.1 Reporting Responsibility. Commanding officers (CO) report the status of unit readiness and training through the Defense Readiness Reporting System-Marine Corps (DRRS-MC). DRRS-MC is governed by the HQMC Plans, Policy, and Operations (PP&O) Readiness Branch, in accordance with policy and procedures established by MCO

3000.13 (Marine Corps Readiness Reporting SOP). Chapter 1 of each T&R manual provides the foundation and data that influences readiness reporting.

2.4.2 CMMR and Readiness

1. Aviation Flying Units. The CMMR (the number of formed crews capable of performing the MET standard) is a measure of MSP and combat leadership for DRRS-MC, given 90 percent or better crew manning.

2. Aviation Ground Communities. The CMMR reflects the breakdown of MET requirements into crews, training standards by crew position, and combat leaders. The CMMR is the minimum requirement to fulfill unit METs.

3. Individuals may be in an attain status for some skills and a maintain status for other skills at the same time for a given syllabus assignment.

2.5 TRAINING PROFICIENCY

2.5.1 Event Requirements

1. Sequencing. Personnel should be scheduled to complete T&R events of a skill in sequential order whenever practicable.

2. When an event is demonstrated as proficient, it shall be logged in M-SHARP by entering the appropriate event code. M-SHARP automatically updates the event proficiency date to reflect the event completion date.

3. Multiple Event Logging. There may be opportunities to train multiple events during a training evolution. Units are encouraged to take advantage of complex training opportunities which allow for multiple events to be trained concurrently.

2.5.2 Event Proficiency. Event proficiency is defined as successful completion of the performance standard as defined by the T&R. Event performance standards may not be waived or modified.

1. Never Been Attempted (NBA). Individuals attain event proficiency the first time under the guidance of a qualified instructor. M-SHARP validation will flag any crewmember with an NBA event scheduled and no instructor selected.

2. Incomplete. Individuals attain event proficiency by successfully completing the event performance standard or those performance standards not completed previously at the discretion and under the guidance of a qualified instructor. In M-SHARP, validation will flag any crewmember with an incomplete event scheduled and no instructor selected.

3. Proficient. All events with a proficiency period assigned must be re-demonstrated within the time constraint.

4. Regain Proficiency. Individuals regain event proficiency by successfully demonstrating the event's performance standard.

a. In single seat aircraft proficiency may be regained with a proficient individual in the flight. Communities may prescribe more specific requirements per their T&R manual on a case-by-case basis, e.g. stating that a flight lead or instructor is required.

b. For crewed aircraft a proficient aircrew person must be in the flight for combat leadership events and must be within the aircraft for non-combat leadership events. NOTE - By exception: there are special requirements for regaining skill proficiency contained in Chapter 3.

c. The crew position of the proficient individual is up to the discretion of the CO in accordance with risk management.

2.5.3 Proficiency Advisories

1. For crewmembers who have lost proficiency in an event, an instructor or electronic aviation training form (EATF) is not required if they are scheduled with a like-crewmember who is proficient in the event (e.g. proficient pilot with non-proficient pilot or proficient crew chief with non-proficient crew chief). M-SHARP schedule validation will flag any crewmember that is not proficient in the scheduled events to facilitate the unit's ORM.

2. In cases where a crewmember is not proficient in an event and the event requires an instructor for the crewmember to regain proficiency, M-SHARP schedule validation will flag the schedule if an instructor has not been designated for the event.

2.5.4 Skill Proficiency

SKILL Proficiency	
Skill LEVEL	**Description**
Core Skill Proficiency (CSP)	CSP is a measure of training completion for 2000 Phase events. CSP is attained by executing all events listed in the attain table for each core skill. The individual must be simultaneously proficient in all events within that core skill to attain CSP. CSP may contain 2000, 6000, and 8000 Phase events.
Mission Skill Proficiency (MSP)	MSP is a measure of training completion for 3000 Phase events. MSP is attained by executing all events listed in the attain table for each mission skill. The individual must be simultaneously proficient in all events within that mission skill to attain MSP. MSP is directly related to training readiness. MSP may contain 2000, 3000, 6000, and 8000 phase events.
Core Plus Proficiency (CPP)	CPP is an administrative collective term used to describe proficiency in the 4000 Phase of instruction. Specific training proficiency (by crew member) in the 4000 Phase shall be by CPSP and MPSP.
Core Plus Skill Proficiency (CPSP)	CPSP is a measure of training completion for 4000 Phase Skill events (4000-4499). CPSP is attained by executing all events listed in the attain table for each core plus skill. The individual must be simultaneously proficient in all events within that core plus skill to attain CPSP. CPSP may contain 2000, 3000, 4000, 6000, and 8000 phase events as required.
Mission Plus Skill Proficiency (MPSP)	MPSP is a measure of training completion for 4500 Phase mission plus skill events (4500-4999). MPSP is attained by executing all events listed in the attain table for each mission plus skill. The individual must be simultaneously proficient in all events within that mission plus skill to attain MPSP. MPSP may contain 2000, 3000, 4000, 4500, 6000, and 8000 phase events as required.

1. Attaining Skill Proficiency. Marines attain skill proficiency for each skill by demonstrating proficiency in all the events assigned to the skill. The events are identified in the T&R syllabus matrix.

2. Maintaining Skill Proficiency. Once skill proficiency is attained, skill proficiency is maintained by retaining concurrent proficiency in all the events that have a proficiency period.

3. Regaining Skill Proficiency. A skill is no longer proficient once any event with a proficiency period becomes 'not proficient.' To regain skill proficiency, individuals must re-demonstrate proficiency for every event not proficient in that skill.

4. Individuals may be in an attain status for some skills and a maintain status for other skills at the same time for a given syllabus assignment.

5. Unit. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing event(s) with instructors from another like unit; if not feasible, proficiency shall be regained by completing event(s) with another instructor. If a unit has only one instructor and another instructor is not available, instructor proficiency shall be regained with another aircraft commander or as designated by the CO.

6. Aviation ground communities shall require a minimum of one event with a proficiency period in each mission skill.

2.5.5 Chain Updating

1. Chaining provides a means for events that are more complex to update proficiency of other events with the same/similar requirements. This process is community dependent and specific rules determine which events will be updated.

2. Guidance

a. During a T&R working group (WG), SMEs will identify events that chain other events with equivalent skills by noting them in the T&R syllabus matrix. Chain updating events without a proficiency period (* events) is not necessary because these events never lose proficiency.

b. Only those events that are proficient are updated via chaining.

c. Delinquent, NBA, or incomplete events shall not be updated in chaining.

d. Chain updating does not occur when an event is logged as waived or deferred.

3. Considerations

a. All aspects of an event should be considered when determining chaining. Event conditions, type and number of devices, requirements, performance standards, ordnance requirements, etc., must be considered when determining equivalent skills and subsequent chaining.

b. Communities should be careful not to 'over' or 'under' chain T&R events. A single event should not chain a large number of events unless such a chaining event specifies equivalent skill requirements in all of the chained events.

c. Conditional Chaining. Conditional chaining is identified via the use of a tilde (~). Events may be chained depending upon:

(1) Device. Used to define when an event can only be chained when the event is performed in a specific device (Aircraft/Simulator/Live), e.g. 2703~A, 2703~L.

(2) Environmental. Used to define when an event can only be chained when the event is performed in a specific light level, e.g. 2703~D, 2703~HLL, 2703~(NS).

(3) 'Or' chaining. Chains an event based on a specific condition 'or' a different event based on a different condition, e.g. 2703~GAU-16 or 2704~GAU-17 may be defined in the manual. 'Or' chaining occurs by manually updating (i.e. logging) the specific codes identified until the 'Or' chaining becomes available in M-SHARP with a future update.

(4) Ordnance. Used to define when an event can only be chained when the event is performed with specific ordnance. Ordnance updating occurs by manually updating (i.e. logging) the specific codes identified. Ordnance updating will become available in future M-SHARP updates.

2.5.6. Mirroring. Mirroring establishes event equivalency between different syllabi and grants proficiency no matter the current proficiency status. It is determined by community. For example, an individual is assigned the AH-1W (original syllabus) and AH-1Z (new syllabus) pilot syllabi and the AH-1W is set to mirror to the AH-1Z. The individual will be granted proficiency in every mirrored AH-1Z T&R event that is proficient in the AH-1W and will continue to do so every time a new AH-1W proficiency is established. M-SHARP automatically "grants" event proficiency when the individual is assigned to both syllabi.

2.5.7 POI Updating. POI updating occurs when all events in a skill are complete. Specific rules for each POI follows:

1. Conversion (C) POI

a. When all C-events in a skill are completed, all remaining events in that skill are updated. The individual must be simultaneously proficient in all C-events within the skill to attain proficiency.

b. All remaining events are updated regardless of their proficiency status.

2. Series Conversion (S) POI

a. When all S-events in a skill are completed, all remaining events in that skill are updated. The individual must be simultaneously proficient in all S-coded events within the skill to attain proficiency.

b. All remaining events are updated regardless of their proficiency status.

3. Transition (T) POI

a. When all T-events in a skill are completed, all remaining events in that skill are updated. The individual must be simultaneously proficient in all T-events within the skill to attain proficiency.

b. All remaining events are updated regardless of their proficiency status.

2.6 TRAINING PREREQUISITES

1. Phases, stages, and events may have prerequisites that are required as a prior condition and shall be completed prior to commencing the subject training, unless it has been waived, deferred, or subject to the commander's risk assessment process (paragraph 2.17 below). Prerequisites may have conditions as defined below:

a. Type. A prerequisite type may be an event, certification, qualification, designation, stage, or phase.

b. Environmental. Used to define the environmental condition when an event prerequisite applies; the event is performed in a specific light level, e.g. 2703~D, 2703~HLL, 2703~(NS).

2. All prerequisites should be listed for an event.

2.7 EVENT REQUIREMENTS

2.7.1 Conditional Settings. Conditional settings provide the community a means to establish conditional criteria on certain parts of a T&R event.

2.7.2 Environmental

1. Environmental conditions establish the specific environmental options allowable for a given event. Environmental settings are defined in the matrix below:

Code	Environmental Condition
D	Shall be conducted during day.
N	Shall be conducted at night, aided or unaided.
(N)	May be conducted day or night. If at night, aided or unaided.
NS	Shall be conducted at night aided under High Light Level or Low Light Level.
HLL	Shall be conducted at night aided under High Light Level conditions.
LLL	Shall be conducted at night aided under Low Light Level conditions.
(NS)	May be conducted day or night. If at night, aided under HLL or LLL.
(HLL)	May be conducted day or night. If at night, aided under HLL.
(LLL)	May be conducted day or night. If at night, aided under LLL.
N*	Shall be conducted at night unaided.
(N*)	May be conducted day or night. If at night, shall be flown unaided.
D/NS	Shall be conducted only in the simulator during day and night aided.

2. Environmental Condition Settings. In addition to every T&R event header requiring an environmental condition, the following elements of a T&R event may have environmental condition settings:

a. Chained events (D/NS does not apply).

b. Prerequisite events (D/NS does not apply)

2.7.3 Device. Device conditions establish the specific device options allowable for a given event. Device settings are defined in the matrix below:

DEVICE	
Symbol	**Meaning**
A	Must be conducted in the Aircraft.
A/S	Aircraft preferred/Simulator acceptable.
S	Conducted in Simulator.
S/A	Simulator preferred/Aircraft acceptable.
L	Conducted using Unit T/E equipment.
L/S	Live preferred/simulator acceptable.
S/L	Simulator preferred/live acceptable.
G	Ground/academic training.
GE	Ground event requiring evaluation

2.7.4 Weapon and Ordnance Types

1. Weapon type conditions establish specific criteria to be met for an event's prerequisite(s) or chain updating.

a. Prerequisite. Identifies when different prerequisite T&R events are required for a specific event, based on scheduled/logged weapons type. An example is when a 3000 Phase event may be performed with any available weapon option (e.g. GAU-17, GAU-21 or M240D), but the prerequisite is based on the weapon type scheduled.

b. Chain Updating. Identifies when different T&R events may be chain updated based on the logged weapons type. An example is when a 3000 Phase event may be performed with any available weapon type option (e.g. GAU-17, GAU-21 or M240D), but the chained event(s) is based on the logged weapon type.

2. Ordnance type conditions establish specific criteria to be met for an event's prerequisite(s) or chain updating.

a. Prerequisite. Identifies when different prerequisite T&R events are required for a specific event, based on scheduled ordnance. An example is when a 3000 Phase event may be performed with any available ordnance type option (e.g. JDAM, GBU, AGM), but the prerequisite is based on the scheduled ordnance.

b. Chain Updating. Identifies when different T&R events may be chain updated based on logged ordnance type expenditure. An example is when a 3000 Phase event may be performed with any available ordnance type option (e.g. JDAM, GBU, AGM), but the chained event(s) is based on the logged ordnance type expenditure.

2.8 T&R EVENT EVALUATION

2.8.1 Electronic Aviation Training Forms (EATF). The EATF is the standardized document for T&R evaluation for all Marine aviation and is generated by M-SHARP.

1. All communities subject to this Manual are required to use the EATF.
2. T&R event data on the EATF is derived from each signed syllabus.
3. EATF details include:
   a. Data specific to the logged event (i.e. flight events include aircraft, event, and T&R data).
   b. T&R event:
      (1) Goal
      (2) Prerequisite(s)
      (3) Requirement(s)
      (4) Performance Standard(s)
   c. Reason Codes and Comments (available for any requirement and performance standard which can be rated).
   d. Indicators for "Proficiency" and "Needs Additional Training."

e. Comments (Overview, Plan/Brief, Execution, and Comments).

4. EATFs are automatically generated by M-SHARP when:

a. An event is logged the first time.

b. A delinquent event in the refresher POI is logged.

c. An I-event is logged.

5. Academic events (Device type "G") will not generate an EATF.

6. Requests for EATF deletion and unlock/return are considered on a case-by-case basis. The request ticket shall contain the following information: instructor, trainee, T&R event and date. Authorization/endorsement shall be sent via email by OpsO, XO or CO to the fleet support representative, indicating the reason and any amplifying comments.

2.8.2 Reason Codes. These codes provide the instructor/evaluator a means to indicate a specific reason(s) why requirements or performance standards were graded within the EATF. They are:

1. Syllabus specific i.e. pilot, crew chief etc.

2. Captured in paragraph 2.24 in the applicable syllabus chapter.

2.8.3 I-Events

1. I-coding is an administrative entry in a T&R manual. It is a special code indicating when a community has determined an event requires an EATF every time executed. For example, this could include documentation of NATOPS and instrument evaluations, combat leadership requirements, or employment of selected ordnance and unique occurrences. If used, it is incorporated into the event header and the syllabus matrix.

2. I-events require an instructor and automatically generate an EATF.

3. For aviation ground units – where the performance standard requires evaluation, the trainee must meet the requirement by 80 percent or better. If the trainee is graded, it is an evaluated event and therefore I-coded.

4. Events determined to be unsatisfactory shall be logged as UNSAT and will generate an EATF.

2.8.4 E-Events. E-events are 7000 Phase events providing commanders unit level evaluation of METs. They are automatically considered I-coded as they require formal evaluation every time performed.

2.9 SIMULATOR POLICY

1. All T&R manuals shall maximize the use of simulation in the T&R development process. Particular emphasis should be placed upon the capabilities and/or limitations of a community's simulation capability in the selection of the device utilized to execute/complete an event. If the community possesses a simulator with the capability of executing the goal and requirement of an event as well as the means of evaluating the performance standard, then it shall be conducted in the simulator or, at a minimum, be listed as simulator preferred (see Chapter 6 for device coding). To exploit emerging capabilities, network training capabilities should be considered for inclusion in T&R manuals.

2. Annual instrument and NATOPS evaluations shall be completed in the simulator to the maximum extent possible.

3. Events designated as training device preferred may be conducted on the operational system only if the training device is not available, or is assessed by the supported community instructor flight leadership standardization evaluators (FLSE) that the training device is not sufficient to achieve the mission performance standards.

4. Training device event briefs shall be identical, both procedurally and in content, to aircraft/operational system event briefs. The length of the brief should be based upon the event to be conducted and content to be covered.

5. Community T&R manuals shall delineate maximum intervals between prerequisite events conducted in training devices and events conducted in aircraft/operational systems. This interval shall be no greater than the proficiency period for the primary event.

6. The MATSS OIC shall notify the MAW commanding general when training devices will be non-event capable (NEC) for greater than five working days. The MAW commanding general shall notify HQMC DC AVN [Info CG TECOM PSD and the procurement agency (e.g. NAVAIR and/or MARCORSYSCOM)] by AMHS message via the

applicable chain of command when aware that training devices will be NEC for greater than six months due to operational system configuration changes, or when, in the commanding general's judgment, the configuration of the training device has had an adverse effect on the wing's ability to train. Refer to the ATS order for information on NEC devices.

2.10 ACADEMIC TRAINING

1. Academic training shall support individual and unit training requirements outlined in community T&Rs.

2. The MAWTS-1 Course Catalog, MAWTS-1 C3 Course Catalog and other formal schools training catalogs contain detailed academic instruction designed to facilitate T&R progression.

2.11 AVIATION CAREER PROGRESSION MODEL (ACPM). The ACPM is a formalized training program which prepares the ACE to employ forces in operational environments. It is divided into Phase I and Phase II.

2.11.1 ACPM PHASE I. The training continuum for Phase I consists of two distinct, tailored POIs; one each for aviators/UAS Crews (UASC) and AC2 personnel.

1. Aviators/UAS Crews

a. Purpose. To enhance professional understanding of Marine aviation and the MAGTF and to ensure aviators and UASC possess the requisite skills to fill battle command and battle staff positions in support of the ACE and the MAGTF in a joint environment.

b. Academic training requirements will be embedded in all aviation T&R manuals within the progressive training phases to include the 2000, 3000 and 6000 phases of training. Commanding officers shall ensure the requisite ACPM training requirements have been met prior to designating flight leaders.

c. Chapter 6 provides direction on specific ACPM training requirements and how courseware is to be embedded within training phases.

2. Aviation Command and Control (AC2)

a. Purpose. To enhance professional understanding of Marine aviation and the MAGTF and to provide MOS 72XX/59XX personnel with a knowledge of doctrine and tactics, techniques and procedures (TTPs) of AC2. The content of the MACCS ACPM is maintained in the MAWTS-1 C3 Course Catalog.

b. All AC2 personnel assigned to the operating forces shall complete ACPM training requirements as prescribed in the applicable community T&R manual and the MAWTS-1 C3 Course Catalog.

2.11.2 ACPM PHASE II. There are two components to ACPM Phase II; TACC University and the Operations Officer/Chief Training Course.

1. TACC University. The mission of the TACC University is to provide ACE commanders with a cadre of trained professionals to serve as part of the ACE commander's battlestaff. The curriculum is designed to provide training which is lean, on-time, with billet-specific systems and TTPs. This training culminates in a capstone event, such as a MACCS integrated systems training exercise (MISTEX).

2. Operations Officer/Chief Training Course

a. It is vital to have standardized training for operations officers and chiefs. The goal of the course is to provide training for operations officers and operations chiefs that prepares them for one of the most important billets in their unit. Operations personnel at the squadron and group level must fully understand the requirements and directives that apply to the daily running and future planning of squadron operations. In addition, this course provides coordination, SOP guidance, and operational synchronization to operations personnel.

b. Wings shall host courses which encompass USMC-wide requirements and specific procedures for local operations. The TECOM ASB and DC AVN will help maintain the standardized POI and its course material; the wings should attempt to dedicate resources to host the course annually to the maximum extent possible.

c. Attendees shall include representatives from TECOM ASB, DC AVN Cunningham Group (CG) and DC AVN flight hour coordinator.

d. Recommended course material includes the following:

(1) Training and readiness program

(2) M-SHARP

(3) DRRS-MC

(4) Flight hour program and sortie based training program (SBTP)

(5) Aviation training system

(6) Aviation logistics and ordnance

(7) Flight ops SOP

(8) OPLAN / TPFDD brief

(9) Logistics

(10) TEEP / MCCRE

(11) Exercise sourcing / manning

(12) MCTIMS / training

(13) Future ops SOP

(14) Budgeting / fiscal / C2RAM

(15) MAWTS-1: WTTP/fleet support/WTI

(16) Applicable CGIP Tabs

2.11.3 ACPM Administration

1. T&R syllabus sponsors shall ensure all ACPM training requirements are integrated into each T&R manual. This process will occur at a minimum during the conduct of a T&R working group or as new ACPM training requirements evolve through the T&R manual change process.

2. The MAWTS-1 Academics department will maintain all ACPM courseware and a corresponding question bank on the Marine Corps Aviation Learning Management System at https://mcalms.usmc.mil.

2.12 CERTIFICATION, QUALIFICATION, DESIGNATION (CQD) EXECUTION

2.12.1 Each CQD is required to have a minimum of one T&R event, stage, phase, skill, certification, qualification, or designation as a prerequisite for eligibility to be awarded the subject CQD.

2.12.2 Certification. A certification refers to the formal endorsement of having attained a specialized skill. The evaluation process is conducted in accordance with the certification event(s) by a designated instructor or authorized personnel (i.e. information assurance technician as a computer technician after passing the A+ certification exam). A certification letter will be presented in accordance with the community T&R. Certifications may require a proficiency period.

2.12.3 Qualifications. Qualifications are awarded to individuals based on demonstration of proficiency in a specific skill set. Each qualification must be assigned one or more requirements; at least one requirement must have a proficiency period assigned. When all qualification requirements are completed and proficient, the individual may be granted the respective qualification by the CO or in the case of aviation ground communities, as directed in the community T&R manual. An individual's qualification status may be either "Qualified" or "Not Qualified." Under exceptional circumstances, an event may be waived or deferred per Paragraph 2.15 below.

1. Not Qualified Status. When an individual becomes "not proficient" in any of the qualification requirements, the qualification status automatically reverts to "Not Qualified."

2. Re-Qualification. Individuals must demonstrate proficiency in all not proficient requirement(s) to regain a lost qualification. Upon completion, the qualification status automatically updates to "Qualified."

2.12.4 Designations. Designations are awarded based on the proficiency of the required events, stages, skills, certifications, qualifications, or other designations. They may also be categorized as Instructor, Combat Leadership, or Flight Leadership. Each designation must be assigned one or more requirements. Although not required,

communities may choose to assign requirements with a proficiency period. When all training requirements are completed, the respective designation may be granted by the CO or in accordance with the community T&R. Designations are command specific and remain in effect until removed for cause, loss of proficiency in a requirement or when transferred to another command. Community T&Rs may stipulate re-designation criteria. If not, re-designation is at the CO's discretion. Under exceptional circumstances, an event may be waived or deferred per Paragraph 2.15 below.

2.12.5 Documentation

1. In addition to CNAF M-3710 requirements, all individual CQD shall be documented in performance records and aircrew performance records (PR/APR).

2. Commanding officers or designated representatives, in accordance with community T&Rs, shall issue CQD letters.

3. After the CQD letter has been signed, the original letter will be presented to the individual, a copy will be included in section 4 of the PR/APR, and M-SHARP will be updated.

2.13 FLIGHT LEADERSHIP

2.13.1 Flight Leadership Program (FLP) Execution

1. The flight leadership program is governed by this manual, executed through community T&R POIs, and implemented under the oversight of wing commanding generals and the Commanding Officer of MAWTS-1.

2. Each MAWTS-1 T/M/S division head will be assigned as the model manager for specific T/M/S aircraft.

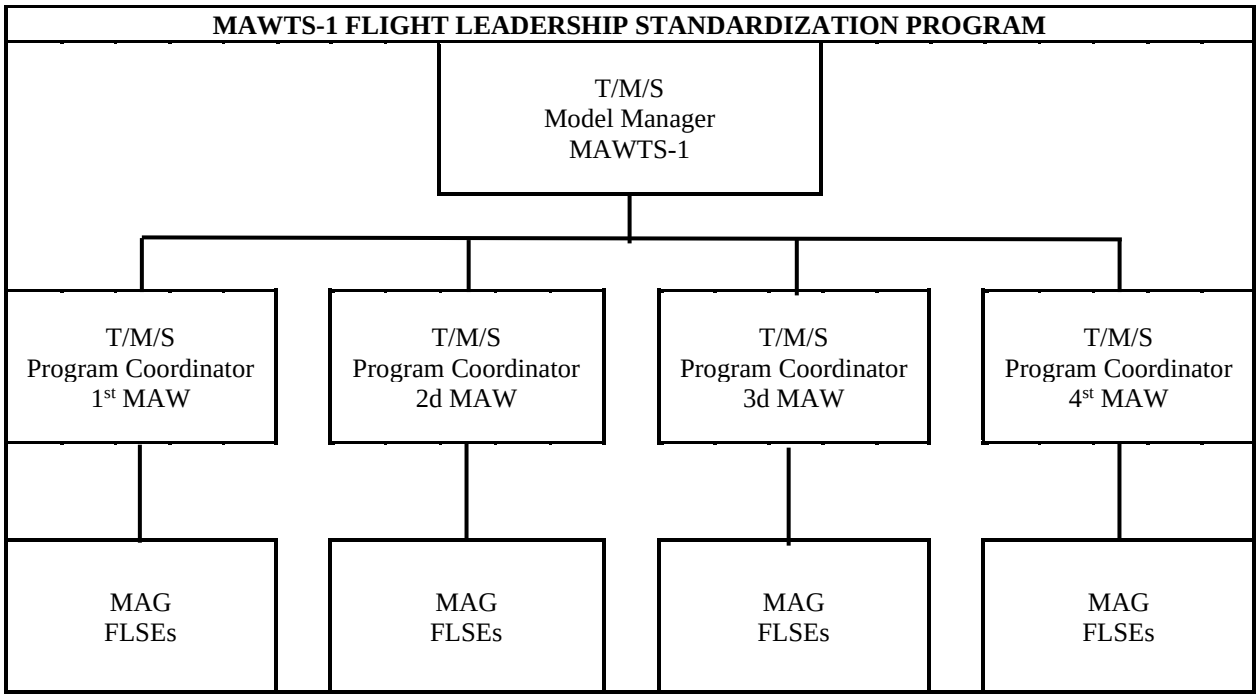
3. Wing commanding generals shall designate a weapons tactics instructor (WTI) graduate as a program coordinator for each T/M/S aircraft within the wing.

2.13.2 Implementation and Support

1. Each Marine aircraft wing's ATS structure will support the wing CG in implementing the flight leadership program. The MATSS will support improvements in the quality of flight leadership training, ensure standardization, and facilitate evaluation. Close cooperation between the operating forces and ATS entities is the foundation of the single integrated aviation training system envisioned for Marine aviation.

2. As MATSS infrastructure and staffing resources become available to support the FLP, program coordinator responsibilities for each T/M/S will be transferred to the appropriate MATSS site.

3. MARFOR CGs, DC AVN (APP and APW), and CG TECOM (PSD and MAWTS-1) shall support the wing CGs in implementing the flight leadership program.



2.13.3 T/M/S Flight Leadership Model Manager. The T/M/S model manager is that Marine Aviator or NFO responsible for management of the flight leadership program across all wings for a specific T/M/S. The T/M/S model manager shall ensure FLSE and flight leader standardization issues are addressed at the appropriate level and shall coordinate proposed changes per Chapter 5. The respective MAWTS-1 T/M/S division head will serve as the model manager.

2.13.4 T/M/S Flight Leadership Program Coordinator. The wing T/M/S program coordinator is an NA or NFO who is responsible for management of the flight leadership program within their T/M/S for their respective wing. Wing T/M/S program coordinators shall provide input to the T/M/S Model Manager on standardization issues and recommended changes to the program. The program coordinator is responsible for the certification of FLSEs of their particular aircraft types within their Wing. Additionally, the program coordinator is responsible for annual standardization training.

2.13.5 Flight Leadership Standardization Evaluators (FLSE)

1. A MAG designated T/M/S FLSE is an NA or NFO responsible for implementing the community flight leadership POI at the unit level.

2. MAWTS-1 instructors are authorized to perform FLSE functions as requested.

3. FLSEs provide input to the program coordinator/model manager on standardization issues and recommended changes to the program.

4. The number of FLSEs should reflect the required number to accomplish effective MAG/squadron training and shall be strictly controlled by MAG COs. As a guideline, MAG COs should designate two FLSEs per squadron under his command (e.g., a MAG with four squadrons would typically designate eight FLSEs within the MAG). This estimate should, in no way, limit MAG COs from designating additional FLSEs. MAG commanders ultimately retain the flexibility to designate the number of FLSEs required for mission accomplishment.

5. All FLSEs shall complete annual standardization training per the community T&R with one of the following individuals:

a. Model manager/program coordinator (same T/M/S).

b. FLSE inside the wing (same T/M/S).

c. FLSE outside the wing (to be funded by the requesting unit).

6. Flight leadership standardization evaluator POI. The FLSE POI will be published by MAWTS-1 via the FLSE Program Guide.

2.13.6 Flight Leadership POIs

1. Flight communities shall implement standardized flight leadership POIs for the following designations: section leader, division leader, flight leader, mission commander/air mission commander, and refueling area commander. Prospective flight leads are required to successfully complete all events in the community flight leadership POI as a prerequisite to the respective flight leadership designation. Upon successful completion of the POI, the prospective flight lead may be designated in writing by the unit CO.

2. Flight leadership POIs shall be delineated in the 6000 Phase of each respective T/M/S community T&R manual.

3. Aviators shall log the respective flight leadership proficiency tracking code when they lead a flight.

4. Communities with approved multi-simulator tactical environment networked virtual training systems shall maximize the use of these simulators for conducting flight leadership T&R events.

5. Flight leadership POIs shall ensure aircrew are trained and evaluated in the skills and missions that the aircrew will be expected to lead once designated.

6. Flight leadership POIs shall include both core and mission skill events. These events shall encompass the conditions that are specified in each community core METL.

7. Flight leadership POIs shall specify appropriate administrative and tactical flight leader requirements as stated in SOPs (e.g., NORDO approach, system malfunctions, non-standard departures/recoveries, etc.).

8. Community flight leadership POIs shall delineate academic requirements that include self-paced readings, chalk talks, and lectures applicable to the respective flight leadership designation. Flight leader academic requirements should include the following:

a. Flight lead mission planning considerations.

b. Flight leader application of TTPs.

c. Risk management (RM) and crew resource management (CRM).

d. Standard operating procedures (SOP).

e. ACPM training requirements.

9. Simulator training shall be incorporated into the flight leadership POIs to the maximum extent practical. Simulator training requirements vary among aviation units based on simulator capabilities, physical location, and training needs. Flight leadership POIs shall include simulator training requirements that reflect current simulator facility capabilities and training goals.

10. Flight leadership POIs shall delineate prerequisites appropriate to the respective flight leadership designation. Flight leadership prerequisites shall state whether the requirement applies to commencement of the flight leadership POI, certification event or designation.

11. At a minimum, prerequisites must ensure that the prospective flight lead has demonstrated proficiency in all events that he could be expected to lead.

12. Communities shall delineate appropriate qualification and designation prerequisites.

13. Completion of 2000 and 3000 phases shall be a prerequisite to commencing the section leader POI. Exceptions shall be delineated in the community section lead POI.

14. Community aircraft commander designations shall be a prerequisite to commencing the section leader POI.

15. The last event performed in each T&R flight leader POI shall be a flight event.

16. Communities shall establish flight leadership tracking codes in the 6000 Phase which are intended to be used as a tool for ORM and training management purposes.

17. Communities shall R-code POI events required to regain flight leadership proficiency.

18. Flight leadership events and their respective prerequisites shall not be waived for the basic POI. Previously designated aircrew may request a waiver per paragraph 2.15 below.

19. Community flight leadership POI event requirement and performance standard descriptions shall be commensurate with flight leadership criteria. Flight event descriptions shall include event requirement accomplishment criteria to determine whether the prospective flight lead completed the event. The prospective flight lead shall use the performance standards to debrief the flight. The following shall be considered when developing flight leadership POI event requirement and performance standard descriptions:

a. Flight Leadership (FL) Requirements

(1) Plan, brief, lead, and debrief events.

(2) Understand the community T&R and Aviation T&R Program Manual and execute T&R policy.

(3) Incorporate ORM and CRM in all levels of training.

b. FL Performance Standards

(1) Maintain situational awareness.

(2) Make sound administrative and tactical decisions.

(3) Safely lead and control aircraft within flight.

(4) Adhere to SOPs.

(5) Demonstrate sound tactical execution.

(6) Respond to unplanned circumstances.

(7) Communicate intentions to the flight.

(8) Accurately recall/reconstruct event and debrief learning points.

2.13.7 Flight Leadership Evaluations

1. A FLSE from a different unit shall evaluate the required number (minimum of 1) of flight leadership POI events as specified in each community POI. Flight leadership POI events evaluated by a FLSE where performance is evaluated as 'unsatisfactory' must be rescheduled and successfully completed with a FLSE.

2. FLSE certification of prospective flight leaders for deployed units or locations where a FLSE from a different unit is not available to conduct the certification may be conducted by an internal FLSE with a minimum of MAG/MAGTF commander level of approval.

2.13.8 Fixed Wing Evaluation Requirements

Individuals evaluating a prospective flight lead during flight leadership POI events should normally be of the same crew position and community for the prospective flight lead. Mission commander evaluations, and others as specified within each community, may be conducted by a pilot or NFO of the same community. The designations in the table below are required in order to evaluate prospective fixed wing (FW) flight leads (unless otherwise stated in the community POI):

FIXED WING FLIGHT LEAD EVALUATION REQUIREMENTS	
Prospective Flight Lead	**Minimum Qualification to Evaluate**
Section Leader	Division Leader
Division Leader	Mission Commander (Division Lead KC-130)
Refueling Area Commander	Refueling Area Commander
Mission Commander	Mission Commander

2.13.9 Rotary Wing and Tiltrotor Flight Leadership Evaluation Requirements. Individuals evaluating a prospective flight lead during flight leadership POI events should normally be of the same crew position and community for the prospective flight lead. Air mission commander (AMC) evaluations and others, as specified within each community, may be conducted by a pilot of another model/series community. For example, a UH-1Y AMC may evaluate a prospective CH-53E AMC. The designations in the table below are required in order to evaluate

prospective flight leads (unless otherwise stated in the community POI). Rotary wing and tiltrotor air mission commanders (AMC) may be certified by FLSEs from different assault support models.

ROTARY WING FLIGHT LEAD EVALUATION REQUIREMENTS	
Prospective Flight Lead	**Minimum Qualification to Evaluate**
Section Leader	Division Leader
Division Leader	Flight Leader
Flight Leader	Flight Leader
Air Mission Commander	Air Mission Commander

2.13.10 Flight Leadership Re-Designation. Flight leadership re-designation criteria for aircrew that do not require core introduction refresher training is at the discretion of the CO. For aircrew who require core introduction refresher training per paragraph 4.5.1, the minimum re-designation requirement for flight leader positions is successful completion of the R-coded flight leader POI events.

2.14 SYLLABUS TRAINING EXCEPTIONS

2.14.1 General

1. Training exceptions are granted by the CO, unless another approval level is identified, under three categories: waiving events, deferring events, or overriding prerequisites.

2. Logging an event as waived or deferred will update the proficiency date in the individual's training record within M-SHARP. Waivers and deferrals are considered administrative entries and will be signified by a "W" or "D" following the logged date (i.e., 02/25/17W or 06/01/18D).

2.14.2 Waived Event Logging

1. Under exceptional circumstances, an event may be determined to be not required. Waivers shall be documented in a letter signed by the CO and placed in the PR/APR. The letter shall include the reason for the waiver.

2. If granted, the event is logged in M-SHARP as waived and remains in effect until transfer or the proficiency period expires, whichever occurs first. Upon transfer, M-SHARP will remove the logged waiver date. Commanders shall review waivers for incoming personnel and if validated, sign a new waiver to be placed in the PR/APR, and log the event in M-SHARP as waived.

2.14.3 Deferred Event Logging

1. Events may be deferred for lack of logistical support or resource shortfalls. The expiration date of a deferral shall be set by the CO and shall be set to the shortest period necessary to span the shortfall.

2. Deferrals shall be documented in a letter signed by the CO and placed in the PR/APR. The letter shall include the logistical support or resource shortfall and the expiration date of the deferral.

3. If granted, the event is logged in M-SHARP as deferred. Upon transfer or expiration, M-SHARP will remove the logged deferral date.

2.14.4 Overriding Prerequisites

1. The approval for overriding a prerequisite is a flight schedule, ground schedule, or aviation ground training plan signed by the CO.

2. Overriding prerequisites is an outcome of the risk management process (RMP) and does not result in the logging of events as waived in M-SHARP. The RMP determines if overriding event prerequisites for scheduled training poses an unacceptable safety risk. If it does not, training can be conducted with prerequisites not being proficient within the rules set forth per paragraph 2.14.5.3 below.

2.14.5 Rules for Training Exceptions

1. Waive or defer 1000 Phase events is defined in Chapter 4.

2. Waive or Defer 2000 – 8000 Phase events:

   a. Cannot waive or defer:

(1) All events in a stage, skill or POI.

(2) All required events for a CQD.

(3) Any event that requires a FLSE.

(4) Any flight leadership event.

(5) Any event that is a flight leadership prerequisite.

(6) NATOPS and OPNAV requirements unless authorized by the specific publication.

(7) Any ACPM event.

(8) Cannot waive, but may defer, events which have never been completed when the individual is assigned to the B POI. This restriction does not apply once the event has been logged as proficient or if the individual is assigned to the R, S, C, or T POI.

b. A single event within a skill may be waived or deferred by the CO.

c. Multiple events within a skill may be waived and/or deferred with authorization from CG TECOM, ASB.

3. Overriding prerequisites as part of the RMP:

a. Cannot override prerequisites for a flight leadership event.

b. Cannot override any flight leadership event.

c. Cannot override more than one non-proficient prerequisite for an individual who is gaining proficiency in a skill the first time (see para 2.15 below Deviations From T&R Program Manual Policy for exceptions).

4. Expiration of Waivers and Deferrals:

a. Logged waivers remain in effect until transfer or the proficiency period expires, whichever comes first. When an individual temporarily transfers from the unit to a unit's detachment (HMLA-269 to HMLA-269 DET A) or the temporary transfer is ended, the waiver will not expire.

b. Logged deferrals remain in effect until transferred or the date specified, whichever comes first. When an individual temporarily transfers from a unit to a unit's detachment (MACS-2 to MACS-2 TAOC DET) or the temporary transfer is ended, the deferral will not expire.

c. Events logged as waived are subject to chain updating. When it occurs, the proficiency date continues to display the "W" indicator.

d. Events logged as deferred are not subject to chain updating.

2.15 DEVIATIONS FROM T&R PROGRAM POLICY

1. For any situation or circumstance (waivers/deferrals) that will result in a deviation from this manual or a T&R manual, TECOM is the approval authority.

2. Requests for T&R policy deviation shall be requested via AMHS message to CG TECOM PSD via the operational chain of command up to the MAW level (squadron/unit, MAG/MACG, MAW), MARDIV level (MLR/LAAB) with info notification to the MEF, MARFOR, and the syllabus sponsor.

a. All requests must be endorsed by the applicable MAW/MARDIV. In exceptional cases, endorsement may be deemed to be required from the applicable MARFOR and/or DC AVN, as determined in collaboration with the applicable MAW and TECOM ASB.

b. Requests shall include the purpose and justification for the deviation. For requests on behalf of an individual, provide the applicable qualifications, designations, and flight hours in type.

3. For time-sensitive requests, chain of command endorsement(s) may be obtained by e-mail or telephone. If received by either method, the endorsement(s) will be included as references in the follow-up deviation request message.

4. Example. A change to the Aviation T&R Program Manual mandates that all NSQ sorties be flown with an NSI. However, the current version of some T&R manuals state that only five of the nine NSQ sorties must be flown with

an NSI. In this case, the applicable communities request and are granted a T&R deviation to continue night systems training per the current T&R manuals until they updated.

5. Contingency/Combat Operations. The MAGTF or MAW commanders may deviate from aviation T&R training policies at their discretion.

2.16 RECORDS MANAGEMENT. Units shall maintain performance records for all assigned individuals undergoing aviation T&R syllabi training.

1. Flying units shall utilize APR folders.

2. Aviation ground communities shall use PR folders as prescribed by the individual communities in coordination with the syllabus sponsor.

3. Performance records shall be audited and updated when:

a. An individual initially reports to a unit.

b. Annually within 30 days of birthday.

c. An individual transfers from a unit. The transferring unit shall ensure the CO (or authorized agent) signs the audit page certifying the PR is complete and accurate.

4. Performance records shall consist of at least four parts with the following sections:

a. Section One - Administrative information. This section shall contain:

(1) Privacy act statement.

(2) Record of audit.

(3) Undergraduate aviation training information.

(4) Aviation related civilian education/training.

(5) Additional administrative information, as appropriate.

b. Section Two - Core introduction training. For Marine Corps formal schools or joint training units, commanders shall ensure the performance records contain complete section 2 information prior to transfer. When core introduction events are not completed, the receiving unit shall reconcile those events in accordance with the community T&R manual.

c. Section Three - Squadron training. This section shall contain:

(1) Event evaluation forms. Evaluation forms shall be retained on a permanent basis to note performance trends.

(2) Academic/ground school training. Documentation for all required aviation academic/ground training and formal courses completed.

(3) M-SHARP transfer data summary. When transferring, a current hardcopy report for the individual shall be included in this section.

(4) Aircraft weapons qualifications.

(5) Licenses, certificates, etc.

d. Section Four - Individual training requirements. This section shall contain:

(1) All command certification, qualification, and designation letters.

(2) Formal schools completion certificates.

2.17 MARINE SIERRA HOTEL AVIATION READINESS PROGRAM (M-SHARP)

1. The DC AVN and CG, TECOM require all aviation flying and ground communities to plan, schedule, log, track, and manage their training and readiness requirements within M-SHARP.

2. The following units are required to use M-SHARP:

a. All units and agencies that are directed to comply with this manual, to include aircrew, unmanned aircraft system operators, Marine command and control system operators and maintainers, airfield emergency services specialists, and meteorological and oceanographic Marines.

b. All higher headquarters (HHQ) units (MAG, MAW, MARFOR, TECOM, Marine Corps installations (MCI) are encouraged to use M-SHARP for planning and scheduling of applicable training and readiness requirements.

3. M-SHARP provides the following primary functions:

a. Training management

b. Risk management

c. T&R management and enforcement

d. Flight hour management

e. Readiness management

2.17.1 M-SHARP Unit Requirements

1. All units identified in paragraph 2.17.2 above shall:

a. Assign the following key responsibilities within the unit:

(1) Unit Administration. Appoint an M-SHARP Implementation Officer (MIO) from within the Operations/WTTP/Training Department who will be responsible for the overall management of the unit's M-SHARP program. At least one NCO or higher that is assigned to the operations/WTTP/training department shall be assigned the M-SHARP unit administrator. They manage user accounts and training records for the unit, as well as assisting the M-SHARP implementation officer.

(2) Record Training. Use M-SHARP to enter all training (academic, ground and flight) via the ground events or flight events modules.

(3) Training Data Integrity. Maintain integrity of M-SHARP data to ensure commanders are provided accurate unit training and readiness information. The system accuracy status (SAS) process is established to provide HHQ elements with information about the accuracy of individual unit data and the health of each unit's M-SHARP program. The SAS is measured and tracked using the 5 color-coded progression levels per MCO 3125.1.

(4) Flight Scheduling. Utilize M-SHARP as the only program to create and validate a daily flight schedule.

2. M-SHARP Training Requirements

a. Training is offered regularly by M-SHARP fleet support representatives (FSR). Training requests should be submitted via the contact information provided in paragraph 2.19 below.

b. Personnel requiring unit administrator level access to M-SHARP (operations/training chiefs) are required to attend the M-SHARP Administrator Course before administrator permissions will be granted. The M-SHARP Administrator Course completion certification shall be filed and maintained by the individual and unit for inspection purposes.

c. User Account and Training Record. This follows an individual as they are transferred from unit to unit. Individuals may be assigned one or both, dependent on their duties and responsibilities.

(1) User Account. Provides individuals access to the M-SHARP application via CAC. The ability to access functionality within the application is controlled via role assignments (i.e. permissions) and are dependent on the needs of the individual based on their duties and responsibilities within the unit.

(2) Training Record. The training record is used to link an individual with a T&R syllabus for scheduling, logging, and reporting. Having only a training record within M-SHARP will NOT provide access to the M-SHARP application.

2.18 M-SHARP ADMINISTRATION

1. Aviation Standards Branch is responsible for M-SHARP program management, to include contract and administrative oversight.

2. Submit all M-SHARP support requests (e.g. bugs, support, feature, or training requests) via the current M-SHARP support ticketing system.

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CHAPTER 3

RULES OF CONDUCT

	PARAGRAPH	PAGE
GENERAL AVIATION ROC	3.0	3-3
ROC FOR LOW ALTITUDE FLIGHT	3.1	3-3
FW LAT	3.2	3-5
FW LAT CURRENCY AND MINIMUM ALTITUDES	3.3	3-5
RW TERF	3.4	3-6
TILTROTOR LAT	3.5	3-7
GENERAL ROC FOR NIGHT OPERATIONS	3.6	3-7
FW NIGHT EXTERNAL LIGHTING RULES	3.7	3-8
RW AND TILTROTOR EXTERNAL LIGHTING RULES	3.8	3-9
RW NIGHT OPERATIONS	3.9	3-10
FW NIGHT OPERATIONS	3.10	3-11
TILTROTOR NIGHT OPERATIONS	3.11	3-12
ROC FOR AIR COMBAT MANEUVERING (ACM)	3.12	3-13
ROC FOR FORWARD AIR CONTROL (AIRBORNE) OPERATIONS [FAC(A)]	3.13	3-14

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CHAPTER 3 - RULES OF CONDUCT

3.0 GENERAL AVIATION ROC

3.0.1 Purpose. This chapter contains policy for the following flight programs. The CG, TECOM tasks the Commanding Officer, MAWTS-1 with developing training courses and establishing criteria for instructor certification for these programs:

1. Low Altitude, including:

   a. FW low altitude tactics (LAT).

   b. RW terrain flight (TERF).

   c. Tiltrotor LAT.

2. Night operations and night systems (NS) for RW, FW, and Tiltrotor.

3. Air combat maneuvering (ACM) including:

   a. FW ACM and defensive tactics (DT).

   b. RW defensive measures (DM) and defensive air combat maneuvering (DACM).

   c. Tiltrotor defensive combat maneuvers (DCM).

4. Forward air control (airborne) [FAC(A)].

3.0.2 Authority. Authority and responsibility for rules of conduct (ROC) rests with CMC (DC AVN), CG, TECOM, and force commanders. Training ROC are applicable during peacetime training evolutions and are not intended to restrict contingency/combat operations or combat rehearsals.

3.0.3 Safety

1. Commanders shall conduct training in accordance with the guidelines of this chapter and CNAF M-3710.7.

2. Policy for the transportation of passengers aboard assault support rotorcraft equipped with crash attenuating seats (UH-1Y, MV-22B, CH-53E/K) is as follows:

   a. Unless operating in accordance with an authorized waiver, the maximum number of embarked passengers will be limited only by the number of crash attenuating seats available for passengers and proper weight and power/balance considerations.

   b. Authority to embark passengers in non-crash attenuating seats will be vested with the first O-6 commander within the supporting squadron's chain of command. The request by the supported unit must contain the written authorization from the first O-6 commander in the supported unit's chain of command.

3.0.4 Currency. Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of proficiency. For example, currency determines minimum altitudes in ROC based upon the most recent low altitude fly date.

3.1 ROC FOR LOW ALTITUDE FLIGHT

3.1.1 General

1. Purpose. To standardize ROC for low altitude flight programs.

2. Scope. T&R manuals contain community specific policies, responsibilities, training syllabi and flight objectives for FW, RW, and tiltrotor aircraft participating in LAT and TERF. This section stipulates the training criteria and the ROC peculiar to the three types of low altitude flight.

3. Safety. The low altitude regime places high demands on aircrew skill and judgment requiring stringent ROC to ensure safe event completion.

   a. Squadron commanders shall ensure that aircrew conducting LAT/TERF training are in compliance with appropriate T&R ROC.

b. Unscheduled LAT/TERF is strictly prohibited.

3.1.2 Definitions

1. Comfort Level (CL). This is the lowest altitude where aircrew can accommodate task loading and maintain safe terrain clearance. CL is a perceptual concept that concedes individual differences and is never a hard altitude. CL will vary according to terrain, aircrew skill, currency, and degree of training in the low altitude environment.

2. Climb to Cope. Aircrew will employ climb to cope when situational awareness or mission performance is degraded. The climb to cope may be executed as an adjustment for CL or as a response to a "knock it off" call. Training may resume once all aircrew are confident that continued safe operations are assured.

3. Knock It Off (KIO). When a dangerous loss of situational awareness is recognized or a potentially hazardous circumstance develops, any crewmember shall call for a KIO without delay. The response to a KIO call will be an immediate wings level controlled climb to briefed altitude and discontinuation of training until the cause for the KIO has been adequately addressed and all aircrew concur on a course of action.

4. Terminate. To cease the current maneuver, crewmembers shall use the term "terminate." The response to "terminate" shall be an immediate discontinuation of maneuvering and leveling off at present or briefed altitude.

5. Minimum Altitude Capability (MAC). This is flown as a defensive response to engagement by a threat and during speed rush baseline training. At this level, aircrew focuses entirely on terrain clearance tasks. The minimum FW MAC training event altitude is 100 feet AGL when the pilot is current and chased by a current low altitude instructor (LATI) on an approved low altitude course. Single aircraft night MAC training is limited to 200 feet AGL. Night MAC training is not authorized for section or division/strike flights.

6. Minimum Safe Altitude (MSA). An altitude that provides 500 feet of clearance above the highest obstacle within 5 nm either side of course line or planned course deviation for that leg of the route. MSA shall be briefed for all LAT training.

7. Emergency Safe Altitude (ESA). An altitude that provides 1000 feet of clearance above the highest obstacle within 25nm either side of course line for the entire route. ESA shall be briefed for all LAT training.

3.1.3 Weather Minimums

Low altitude weather minimums are depicted as follows:

Flight	Ceiling/Visibility
TERF	1,000ft AGL/3 NM
LAT	3,000ft AGL/5 NM
MV-22 LAT in Conv Mode	1,000ft AGL/3 NM

3.1.4 Low Altitude Flight Qualification, Proficiency, and Currency

1. Low Altitude Qualifications. Aircrew achieve FW LAT/Tiltrotor LAT/TERF qualification by completing the stage of training or specified events as delineated in individual T&R syllabi. Non-qualified aircrew require supervision of a FW LAT/Tiltrotor LAT/TERF instructor.

2. Low Altitude Proficiency

a. When FW LAT/Tiltrotor LAT/TERF qualified aircrew lose proficiency in a particular FW LAT/Tiltrotor LAT/TERF flight event, they may regain proficiency in that flight event by satisfactorily demonstrating those skills required of that particular syllabus flight event to a LATI or terrain flight instructor (TERFI).

b. In cases where there are no proficient LATIs/TERFIs available, two non-proficient LATIs/TERFIs may fly together in order to regain proficiency (See paragraph 2.6.4, Skill Proficiency).

3. Low Altitude Flight Currency

a. Currency Intervals are the measure of time since the last event demanding that specific skill. When aircrew exceed a currency interval, the aircrew must abide by the minimum altitudes commensurate with their particular currency interval. Aircrew may update the currency interval and corresponding minimum altitudes during a single sortie; the individual may update currency after flying an appropriate segment of a FW LAT/Tiltrotor LAT/TERF route.

b. In aircraft requiring two or more aircrew for the briefed mission, the most restrictive aircrew's currency interval applies to the aircraft. In flights of two or more aircraft, the most restrictive aircrew currency interval applies to the flight.

3.1.5 Low Altitude Flight Training Areas

1. Pilots shall conduct low altitude flight in restricted airspace, military operating areas (MOA), and on published military training routes. Wing/MAGTF commanders may designate other low altitude training areas.

2. Low altitude training areas should be suitable for the aircraft to perform training in dive recovery, three dimensional maneuvers and three-dimensional defensive maneuvers against simulated air-to-air, SAM, and AAA threats. Although not required, the optimum terrain should also allow training in terrain masking, indirect terrain masking, and ridgeline crossings.

3. The area should be free of vertical obstacles that constitute a danger to the free navigation required of low altitude training.

3.1.6 Night Low Altitude Flight . Night low altitude flight (FW LAT/Tiltrotor LAT/TERF) without night visioin devices (NVD) is prohibited. Aircrew must be day FW LAT/Tiltrotor LAT/TERF qualified prior to commencing night low altitude training.

3.1.7 FW LAT/Tiltrotor LAT/TERF Training with Embarked Troops. Low altitude flight poses increased operational risk. The transport of troops during FW LAT/Tiltrotor LAT/TERF training is authorized subject to the following restrictions:

1. All aircrew are qualified and proficient per this manual and the respective T/M/S T&R manual.

2. Minimum altitudes will be dictated by aircrew currency.

3. Aircrew shall utilize FW LAT/Tiltrotor LAT/TERF areas or routes as specified in respective MAW and MAG operations SOPs.

4. The aircraft has the requisite power margin as specified in respective MAW, MAG and squadron operations SOPs.

5. Authorization for the specific FW LAT/Tiltrotor LAT/TERF training event has been approved by the MAGTF commander. For training events conducted during MAWTS-1 WTI classes, approval authority is CG TECOM Policy and Standards Division (PSD), TECOM ASB.

6. Waiver authority for any of the above restrictions is vested in the MEF CG.

3.2 FW LAT

1. The term FW LAT applies where the briefed intent is to conduct tactical flight when terrain avoidance is a significant factor. FW LAT is further defined as intent to fly below 500 feet AGL.

2. F-5 Adversary Missions and LAT Restrictions. Due to fixed wing adversary missions in rotary wing T&R manuals, the F-5 T&R manual requires a FW LAT qualification and LATI syllabus. The minimum altitude for the F-5 in a FW LAT environment shall be 500 feet AGL.

3. FW Ordnance Delivery Minimum Recovery Altitudes. FW ordnance delivery for the sole purpose of refining delivery skills is excluded from the FW LAT definition. The minimum dive delivery recovery altitude will be the applicable TACMAN NATIP altitude as defined for the specific ordnance being employed. The minimum altitude will be the result of an appropriate release altitude that accounts for the highest altitude as required for fragmentation avoidance, terrain clearance and fuse arming time.

4. FW Initial Qualification. A LATI is required in the aircraft/flight.

5. FW NS LAT. See paragraph 3.10.1.

3.3 FW LAT CURRENCY AND MINIMUM ALTITUDES

3.3.1 The minimum altitude for FW LAT training is 300 feet AGL. Day LAT shall not update NS LAT currency requirements. NS LAT may update day LAT currency requirements. The following minimum altitude restrictions based on currency interval apply:

3.3.2 Single Aircraft and Section. CL but no lower than 300 feet AGL.

3.3.3

1. For KC-130 operations, IP to DZ/ALZ constitutes the terminal environment; minimum altitudes listed in the KC-130 Air NTTP apply.

2. Minimum altitude for KC-130 air-to-air refueling is 500' AGL. This does not constitute LAT.

3.3.4 Division/Strike Formation. CL but no lower than 500 feet AGL. In a formation where sections have a minimum of 1 nm separation, the flight lead should consider each section as a separate section for altitude criteria. The table below provides specifics:

LAT EVENT	1-30 DAYS CURRENCY INTERVAL	OVER 30 DAYS CURRENCY INTERVAL
Single or Section	300' AGL	500' AGL
Division	500' AGL	500' AGL

3.3.5 FW LAT Minimum Altitude Waivers. Requests to fly LAT training events lower than the FW LAT minimum altitudes delineated above shall be submitted in message format to HQMC via operational chain of command (To CMC WASHINGTON DC AVN APP; Info CG TECOM PSD). Requested training events, altitudes and applicable time periods for the waiver should be identified. When authorized by DC AVN the following FW LAT minimum altitude restrictions based on currency interval apply:

WHEN BY AUTHORIZED DC AVN: CL BUT NO LOWER THAN	
LAT Event	**1-15 Days Currency Interval**
Single Aircraft	200' AGL
Section	200' AGL
Division	500' AGL

3.4 RW TERF

3.4.1 TERF Flight. This is RW flight conducted during day or night, VMC, when the intent is to fly at or below 200 ft AGL and/or within 200 ft of terrain. Low level, contour, and nap of the earth (NOE) compose the basic TERF regimes. Missions performed on an ordnance delivery range for the sole purpose of refining delivery skills does not constitute TERF. Confined area landings (CALs) training does not constitute TERF from the IP to the LZ.

1. Low Level Flight. Flight conducted at a selected altitude to minimize or avoid enemy detection or observation. Aircrews pre-select the route that generally consists of straight-line navigation, constant airspeed and constant altitude (MSL).

2. Contour Flight. Contour flight conforms generally to the elevations of the earth. Contour flight takes advantage of available cover and concealment to avoid enemy observation or detection of the aircraft. The pilot varies airspeed and altitude as vegetation and obstacles dictate.

3. Nap of the Earth (NOE) Flight. This is flight conducted as close to the earth's surface as vegetation and obstacles permit while generally following the contours of the earth's surface. The pilot varies airspeed and altitude as influenced by terrain, weather, ambient light, and the enemy situation.

3.4.2 Aircrew Requirements. To ensure full lookout coverage capability in helicopters possessing a cabin section (CH-53E/K, UH-1Y), minimum aircrew for all TERF flights shall be a pilot, copilot, crew chief, and aerial gunner/observer. The aircraft commander shall ensure a thorough mission brief is conducted with all aircrew. Emphasize lookout doctrine, obstacle clearance, ICS calls, radio procedures, and emergencies.

3.4.3 TERF Currency and Minimum Altitudes

1. Minimum TERF altitude for CH-53E/K is 50 feet AGL.

2. Minimum TERF altitude for AH-1Z/UH-1Y is 10 feet AGL.

3. The following minimum altitude and airspeed restrictions based on currency apply:

COMFORT LEVEL, BUT NO LOWER THAN:		
TERF Event	**1-30 Days Currency Interval**	**Over 30 Days Currency Interval**
Low Level	100’ AGL	150’ AGL
Contour	50’ AGL	100’ AGL
NOE	10’ AGL (40 knots or less)	(Authorized after Para 3.4.3.6 requirements are met.)

4. Refer to Paragraph 3.1.4.3 for low altitude flight currency involving two or more aircrew.

5. After 30 days, CH-53E/K pilots shall regain currency by performing low level flight prior to conducting contour flight.

6. After 30 days, AH-1Z/UH-1Y pilots shall regain currency by flying an NOE flight with a 30-day current PQM. If a 30-day current PQM is unavailable, the pilots shall regain currency by performing low level flight followed by contour flight prior to NOE flight.

3.5 TILTROTOR LAT. Tiltrotor LAT is flight conducted during day or night, VMC, where the briefed intent is to conduct tactical flight where terrain avoidance is a significant factor. Tiltrotor LAT is further defined as intent to fly at/or below 500’ AGL in order to develop terrain avoidance skills. Assault landing zone operations are excluded from the LAT definition. Tiltrotor LAT is composed of both low level and contour flight profiles, and can be accomplished in airplane (APLN) and CONV (Nacelle settings greater than or equal to 60 degrees) modes.

3.5.1 Low Level Flight. Flight conducted at a selected altitude to minimize or avoid enemy detection or observation. Aircrews pre-select a route that generally consists of straight-line navigation, constant airspeed and constant altitude (MSL).

3.5.2 Contour Flight. Contour flight conforms generally to the elevations of the earth. Contour flight takes advantage of available cover and concealment to avoid enemy detection or observation of the aircraft. The pilot varies airspeed and altitude as vegetation and obstacles dictate.

3.5.3 Tiltrotor LAT Currency and Minimum Altitudes

Minimum altitudes are set by currency and are subdivided into two intervals, 0-30 days and 31+ days. Following successful completion of a 50 nautical mile segment on an approved LAT route at the 31+ day currency interval altitude, the aircrew may continue LAT at the 0-30 day currency interval. The following minimum altitude restrictions based on currency interval apply in the table below: Day LAT shall not update NS LAT currency requirements. NS LAT may update day LAT currency requirements. Currency for NS LAT is not further defined by illumination level.

CL, BUT NO LOWER THAN:

LAT Currency and Minimum Altitudes (AGL)

Flight Mode	**0-30 Days**		**31+ Days**	
	Day/HLL	**LLL**	**Day/HLL**	**LLL**
APLN	200’	300’[1]	500’	500’
CONV	50’	100’	200’	200’

[1] In LLL conditions, 200’ AGL in APLN mode is authorized for a 0-30 day LAT current crew along an approved route segment of 50 nm or less. Descent to 200' AGL under these circumstances shall be commenced from a wings level attitude. Once established at the lower altitude, the aircraft is limited to 30° angle of bank with no single turn exceeding 60° of heading change. Prior to flying a route segment at 200’ AGL in LLL conditions, the segment shall be screened to ensure that there are no obstructions in excess of 100’AGL for three nautical miles either side of the route width.

3.6 GENERAL ROC FOR NIGHT OPERATIONS

3.6.1 General

1. Purpose. To standardize the training rules for FW, RW and tiltrotor aircraft conducting night operations training.

2. Scope. This section stipulates training criteria and ROC peculiar to FW, RW and tiltrotor aircraft night operations.

3. Safety. Squadrons will conduct night operations within the guidelines of this chapter and CNAF M-3710.7. Commanders shall ensure aircrew conducting night training are properly qualified and appropriate flight leadership is represented within the flight.

3.6.2 Illumination. The approved methods for deriving illumination requirements for night operations are the solar/lunar almanac program (SLAP) and solar/lunar almanac calculations (SLAC) within M-SHARP, and the sun moon (SUMO) tool. These programs do not factor in the effects of cloud cover, humidity, haze, dust, effects of low moon angle, terrain, and shadows. These effects may degrade forecast illumination. Sound judgment must temper decisions to fly under less than optimal conditions. Illumination levels are defined as:

1. High Light Level (HLL): Illumination .0022 LUX or above.

2. Low Light Level (LLL): Illumination below .0022 LUX.

3.6.3 NVD Operations. Aircrew shall only utilize NAVAIR approved NVDs for specific T/M/S NAVAIR NVD restrictions as applicable to T/M/S and NVD model/type shall be adhered to. For night vision goggle (NVG) operations, squadrons shall establish an NVG eye lane as described in the MAWTS-1 NVD Manual or use the ANV-2020 (Hoffman 20/20 box) to assess NVG performance prior to every NVG flight.

3.6.4 Night Systems (NS) Qualifications. Aircrew achieve NS qualifications by completing the stage of training or specified events as delineated in individual T&R syllabi and Chapter 6 of this manual. Non-qualified aircrew require supervision of a Night Systems Instructor (NSI), Night Systems Familiarization Instructor (NSFI) or equivalent.

3.6.5 Night Systems (NS) Proficiency

1. When NS qualified aircrew lose proficiency in a NS flight that is required for NS qualification they revert to not NS qualified per paragraph 2.13.3.1 and must regain proficiency in that event by satisfactorily demonstrating those skills required of that event to a NSI, night systems familiarization instructor (NSFI) or equivalent.

2. Aircrew who are still NS qualified but lose proficiency in any other NS event may regain proficiency by flying with another pilot that is NS qualified and proficient in that NS flight event per their respective T/M/S T&R manual.

3.6.6 Night Currency. No pilot shall sign for an aircraft for a night flight (NS or unaided) without having flown that model aircraft within the previous 15 days.

3.6.7 NVG Flight Time

1. Aircrew shall record applicable NVG flight information via M-SHARP. Operations personnel shall log aircrew NVG time within the aviator's flight logbooks (OPNAV 3760/1) in the following manner:

a. Rotary/Tilt-rotor pilots: Total NVG time/NVG LLL in the special crew time column.

b. Fixed wing pilots (with exception of KC-130): Total NVG Time/NVG LLL in the special crew time column.

c. KC-130 pilots: Total NVG Time/NVG LLL in the carrier landings column.

d. All other crewmember/non-crewmembers: Total NVG time in the "ACT" instrument time column, NVG LLL time in the "SIMS" instrument time column.

2. For rotary/tiltrotor/fixed wing pilots, the annotation for NVG/night systems time shall be separated as "Total NVG/NVG LLL" time. For example, if a flight consisted of 3.0 total NVG hours and 1.5 hours of that time was LLL, the entry would be "3.0/1.5."

3.7 FW NIGHT EXTERNAL LIGHTING RULES

3.7.1 FW Night External Lighting

All aircrew shall become familiar with Part 91.209 of the federal aviation regulations (FAR) in its entirety. Aircraft external lighting shall comply with existing FAA regulations and approved FAA exemptions.

3.7.2 Single Aircraft Operations. When required, navigation/position lights shall be set to the highest intensity consistent with NVD compatibility and anti-collision light(s) shall be set to on.

3.7.3 Multi-aircraft Operations

1. Mission commanders and pilots in command (PIC) need to make appropriate risk decisions to maintain FAR see and avoid principles in various airspace with non-participatory and civilian non-NVD equipped aircraft during aided formation flying.

2. Consideration must be given regarding use of overt lighting, aircraft separation and whether or not to dissolve the flight (e.g. fly section or single ship) or rendezvous enroute to maintain the formation's visibility to other non-participatory and civilian non-NVD equipped aircraft. Consult FAR §91.209(b) for policy concerning use of anti-collision lights and CNAF M-3710.7 for rules concerning aircraft lighting configuration to include NVD operations.

3. All flight members shall be briefed on the lighting configuration of each aircraft in the flight before they conduct separation and rejoin.

4. Flights outside CONUS shall obtain approval from the airspace controlling authority prior to conducting training with any aircraft lighting secured.

5. The FAR requirement to see and avoid shall take priority over NVD tactical training. When conducting NVD operations, aircrew should be aware that most civilian aircraft will not be able to see and avoid NVD light configured aircraft.

3.8 RW AND TILTROTOR EXTERNAL LIGHTING RULES

3.8.1 RW and Tiltrotor External Lighting. All aircrew shall become familiar with Part 91.209 of the FAR and FAA Exemption 8028 in their entirety. Aircraft external lighting shall comply with existing FAA regulations and approved FAA exemptions.

3.8.2 FAA Exemption 8028. FAA Exemption 8028 allows the DoN to conduct U.S. Marine Corps aircraft NVD flight training operations outside special use airspace without lighted position lights. Consult FAA Exemption 8028 for conditions and limitations regarding training operations.

3.8.3 Single Aircraft Operations

1. When required, navigation/position lights shall be set to the highest intensity consistent with NVD compatibility and anti-collision light(s) shall be set to on.

2. When conducting ground hover or during terminal level of landing at designated training areas, anti-collision light(s) and/or navigation/position lights may be turned off if they interfere with safe flight operations.

3. When operating in Class D airspace, controller permission is required prior to securing lights during hover or terminal phase of landing.

3.8.4 Multi-aircraft Operations. Mission commanders and PICs need to make appropriate risk decisions to maintain FAR see and avoid principles in various airspace with non-participatory and civilian non-NVD equipped aircraft during aided formation flying. Consideration is required regarding use of overt lighting, aircraft separation and whether or not to dissolve the flight (e.g. fly section or single ship) or rendezvous enroute to maintain the formation's visibility to other non-participatory and civilian non-NVD equipped aircraft.

1. Outside Special Use Airspace. Flights of up to four aircraft are permitted and shall comply with the rules per Part 91.209 of the FAR and FAA Exemption 8028. FAR requirements to see and avoid shall take priority over NVD tactical training. When conducting NVD operations, aircrew should be aware that most civilian aircraft will not be able to see and avoid NVD light configured aircraft.

2. Within Special Use Airspace. For operations in special use airspace with NVDs, consult CNAF M-3710-7. Flights outside CONUS shall obtain approval from the airspace controlling authority prior to conducting training with any aircraft lighting secured.

3.9 RW NIGHT OPERATIONS

3.9.1 Night Training Policies

1. On unaided night flights, NSQ aircrew may wear and temporarily utilize NVGs to enhance situational awareness, terrain avoidance, and safety. The flight will be conducted under unaided flight rules. NVG use shall be noted on the flight schedule.

2. To ensure full lookout coverage in helicopters possessing a cabin section, there shall be an aerial gunner/observer (AGO) in addition to the crew chief for NVG flights, except as detailed per individual T&R manuals.

a. Aerial observers who obtain the designation of NSI from MAWTS-1 may perform in the capacity of a crew chief in cases where minimum crew requirements dictate at least one crew chief.

b. The NSI designation demonstrates the aerial observer's ability to perform in the manner of a crew chief during both HLL and LLL operations. Individual T&R manuals will dictate specific individual mission set crew requirements.

3.9.2 NVG HLL/LLL Flights

1. All aircrew shall be NSQ HLL per appropriate T&R syllabus prior to commencing LLL syllabus training.

2. All pilots flying NVG HLL flights shall fly with a NSI/NSFI unless both the pilot and copilot are NSQ HLL. All pilots shall fly NVG LLL flights with a NSI unless both the pilot and copilot are NSQ LLL.

3. All enlisted aircrew flying NVG HLL flights shall fly with a designated NSI/NSSI/NSFI unless both the crew chief and the AGO are NSQ HLL. All enlisted aircrew flying NVG LLL shall fly with a NSI/NSSI unless both the crew chief and the AGO are NSQ LLL.

4. Night TERF operations without NVGs are prohibited. NVG TERF flights shall be conducted in approved areas or on routes using maps updated with current hazards. Night TERF operations must meet the requirements set forth in Paragraph 3.4 of this manual.

3.9.3 Night Carrier Qualifications. All T/M/S aircraft T&R manuals shall require the capability to operate unaided on ships. In recognition of the safety and increased situational awareness afforded by the use of NVDs, unaided CQ is not a prerequisite to NVD CQ. Since landing to an NVD compatible deck cannot always be assured, unaided recoveries remain a valid requirement. Initial unaided CQ training shall be accomplished under HLL conditions. Requalification and proficiency training may be accomplished under any light level condition.

3.9.4 Night Currency. Prior to conducting night shipboard operations with passengers aboard, the pilot and copilot shall be night CQ and have conducted a minimum of two night shipboard landings each within the last 30 days. All other crewmembers shall be night CQ and have one night shipboard flight within the last 30 days.

3.9.5 NVG Equipment Requirements

1. Aircrew shall conduct NVG operations only in NVG compatible aircraft.

2. Aircrew members shall possess an operational standard issue flashlight with an NVG compatible lens on every NVG flight.

3. Aircraft shall have an operational spotlight on all NVG sorties. The IR spotlight is not a substitute for ambient illumination.

3.9.6 NBC Training. For NBC flight training, aircrew are authorized to wear full NBC protective equipment subject to the following restrictions:

1. For night operations, only the CBR/AR-5 eye/respiratory protective system is authorized for in-flight use.

2. Initial NBC training syllabi shall be complete per T&R T/M/S syllabi.

3. All aircrew shall be NSQ appropriate for the ambient conditions. When using the CBR/AR-5 during NVG training flights, one pilot and one aircrew must remain unmasked due to the restricted field of view when using NVGs with the CBR/AR-5.

3.9.7 NVG Training Without Troops. For NVD training/operations the following restrictions apply:

1. HLL Conditions. Minimum aircrew shall include NSQ HLL pilot, co-pilot, crew chief and AGO.

2. LLL Conditions. Minimum aircrew shall include NSQ LLL pilot, co-pilot, crew chief and AGO.

3. All aircrew shall be NSQ HLL per appropriate T&R syllabus prior to commencing LLL syllabus training.

3.9.8 NVG Training With Embarked Troops

1. HLL conditions with Embarked Troops

a. Minimum crew shall be a pilot, copilot, crew chief and an AGO.

b. All crewmembers shall be NSQ HLL per the appropriate T&R syllabus and must have flown one hour of NVG time within the last 30 days.

2. LLL Conditions with Embarked Troops

a. Minimum aircrew as defined in Paragraph 3.9.8.1.a.

b. All crewmembers shall be NSQ (HLL and LLL) per the appropriate T&R syllabus and have flown one hour of NVG time (HLL or LLL) within the last 30 days.

3.9.9 NVG Carrier Qualification (NVG CQ)

1. NVG CQ shall be delineated in respective T/M/S syllabi. Initial NS CQ training shall be accomplished under HLL conditions. Requalification and proficiency training may be accomplished under any light level condition.

2. All participants shall have a thorough understanding of LHA/LHD NATOPS and fleet/ship specific NVG procedures as well as other applicable directives and procedures. Aircrew shall brief, understand, and comply with these directives and procedures.

3. The pilot under instruction (PUI) and/or crew chief/AGO under instruction shall be NSQ HLL.

4. Initial NVG CQs shall be flown with a NSI.

5. Unaided night CQs will be chained to aided CQs.

3.10 FW NIGHT OPERATIONS

3.10.1 FW NS LAT Training

1. The following equipment is required and shall be operable for FW NS LAT training missions unless the MAGTF/MAG commander grants a waiver: NVDs, heads up display (HUD) / helmet mounted display (HMD), inertial navigation systems, moving map, radar altimeter, and anti-collision lights.

2. The FW NS LAT altitude restrictions, currency and proficiency requirements are the same as day LAT restrictions and requirements.

3. FW NS LAT operations shall only be conducted during HLL conditions.

4. F-35/FA-18/AV-8/KC-130J aircrew conducting FW NS LAT operations shall be LAT and NSQ Low qualified. Non-NSQ Low aircrew shall be NSQ HI prior to NSQ Low training and require supervision of an NSI flight lead or equivalent during NSQ Low training.

3.10.2 Non-LAT FW NS Training

1. FW night flights are limited to 1,000 feet AGL minimum when operating without NVDs.

2. Aircrew who are not NSQ/NSQ HI require an NSI, or equivalent, in the flight.

3. Pilots who are NSQ, NSQ HI, or NSQ Low may operate down to minimum altitudes of 500’ AGL in HLL conditions and 1000’ AGL (500’ AGL in the KC-130J) in LLL conditions.

4. KC-130 altitude restrictions above apply except for AD and ALZ missions from IP inbound. IP to DZ/ALZ constitutes the terminal environment; minimum altitudes listed in the KC-130 Air NTTP apply.

5. During unaided flights, NSQ aircrew not at the controls may use either helmet mounted or handheld NVDs to enhance situational awareness. NVD use by authorized aircrew shall be noted on the flight schedule. Squadrons shall not procure or manufacture NVD light kits.

6. When conducting NVD operations, all aircrew shall use NVDs unless crew duties dictate otherwise. In a flight of aircraft, all aircrew in the flight shall use NVDs unless crew duties dictate otherwise. Flights utilizing NVDs may support, or be supported by, non-NVD equipped aircraft provided they are briefed and flown as a separate flight. Helmet mounted NVDs shall be utilized unless crew duties dictate otherwise. When crew duties dictate, NVDs may be temporarily donned in the up position.

7. The use of NVDs for FW takeoffs and landings is authorized provided airfield lighting has been adjusted to the minimum level consistent with flight safety. Consideration must be made for lighting conditions in the local operating environment. NAVAIR NVD restrictions applicable to T/M/S and NVD model/type shall be observed.

3.11 TILTROTOR NIGHT OPERATIONS

3.11.1 Night Training Policies

1. On unaided night flights, NSQ crewmembers may wear and temporarily utilize NVGs to enhance situational awareness, terrain avoidance, and safety. The flight will be conducted under unaided flight rules. NVD use by authorized crewmembers shall be noted on the flight schedule.

2. The requirement for an AGO in the cabin section in addition to the crew chief for NVD flights is as specified in MV-22 T&R chapters.

3. Crewmembers shall fly NVD events with a designated and proficient NSI (or NSFI for 1000 Phase training) unless the aircrew are NSQ for the predicted light level.

3.11.2 Night Currency and Proficiency Requirements

1. Prior to conducting night shipboard operations with passengers aboard, the pilot and copilot shall be night carrier qualified and shall have conducted a minimum of two night aided shipboard landings each within the previous 30 days. All other aircrew shall be night carrier qualified.

2. When qualified aircrew lose proficiency in a Night Systems LAT sortie, they may regain proficiency by satisfactorily demonstrating those skills required of that particular syllabus flight to an NSI.

3.11.3 NVD Training Without Troops. For initial and refresher training, the copilot, crew chief and aerial gunner/observers shall be NSQ HLL per the appropriate MV-22 syllabus prior to flying in LLL conditions.

3.11.4 NVD Training With Troops

1. Flights with embarked troops in HLL are subject to the following criteria:

   a. Minimum crew IAW the applicable MV-22 syllabus.

   b. The pilot and copilot shall be designated NSQ HLL and must have flown at least one hour of NVD time within the last 30 days.

   c. Crew chiefs and AGOs shall be NSQ HLL.

2. NVD operations with embarked troops in LLL conditions are subject to the following criteria:

   a. Minimum crew IAW the applicable MV-22 syllabus.

   b. The pilot and copilot shall be designated NSQ (HLL and LLL) and must have flown at least one hour of NVD time (HLL or LLL) within the previous 30 days.

   c. Crew chiefs and AGOs shall be NSQ LLL.

3.11.5 NVD Carrier Qualification (NVD CQ)

1. NVD CQ shall be delineated in respective T/M/S syllabi. Initial Night Systems Carrier Qualification training shall be accomplished under HLL conditions.

2. All participants shall have a thorough understanding of LHA/LHD NATOPS and fleet/ship specific NVD procedures as well as other applicable directives and procedures. Crewmembers shall brief, understand, and comply with these directives and procedures.

3. The PUI shall be NSQ HLL.

4. Initial NVD CQ shall be flown with a NSI.

5. Unaided night CQs will be chained to aided CQs.

3.12 ROC FOR AIR COMBAT MANEUVERING (ACM)

3.12.1 General

1. Purpose. To standardize ROC for aircraft conducting ACM training. For the purpose of brevity, ACM will be used herein to refer to ACM, DM, DACM, and DCM. The rules set forth herein and in CNAF M-3710.7 are minimum requirements. Commanders should promulgate supplementary directives to delineate syllabus contents, proficiency levels required, communications procedures, safety precautions, and other applicable areas of concern. Responsibility for the safe and efficient implementation of realistic combat training rests with all levels of command. KC-130 DEFTAC per CNAF M-3710.7 does not constitute ACM (Paragraph 3.12.2), however ACM ROC, with the exception of altitude restrictions apply.

2. Scope. ACM training is designed to develop the high level of skill required to combat the current and future threat. CNAF M-3710.7 and this manual contain the overall policies, responsibilities, training syllabi, and flight objectives for ACM.

3. Safety. Squadrons conducting ACM will operate within the guidelines of this chapter, CNAF M-3710.7, and applicable MAWTS-1 publications. Squadrons should conduct FW ACM training under radar control when available. Commanders shall ensure aircrew conducting ACM training are properly qualified and appropriate flight leadership is represented within the flight. ACM that was not briefed prior to the flight is strictly prohibited.

3.12.2 Definitions. CNAF M-3710.7 defines ACM as well as maneuvers not considered to be ACM. Additionally, level, turn circle drills are not considered ACM training.

3.12.3 ACM Qualifications. Aircrew achieve qualification by completing the stage of training or specified events as delineated in individual T&R syllabi and Chapter 6 of this manual. Non-qualified aircrew require supervision of a FAI/MDTC/ACTI/ATI/DT/DACM/DCM instructor or equivalent, hereafter referred to as an ACM instructor (ACMI).

3.12.4 ACM Training Areas

1. Training shall only be conducted in designated warning areas, restricted areas, MOAs, appropriate blocks of controlled airspace as assigned by air traffic control or in other designated areas where safe separation from non-participants can be maintained.

2. At a minimum, designated ACM training areas shall be clear of federal airways, control zones, and other areas of air traffic congestion, unless established pursuant to a letter of agreement with the FAA or host nation agreement.

3. When authorized by force commanders, subordinate commanders may designate ACM training areas and establish procedures to ensure aircrew and flights entering these areas are aware of all other flights operating therein.

4. ACM aircrew should use instrumented air combat ranges such as the Navy/Marine tactical combat training system (TCTS) as much as possible.

5. ACM training flights entering special use airspace will request, from the appropriate controlling agency, advisory information on all other flights operating in the same area. Flights will use RADAR flight following when practical.

3.12.5 FW ACM. Aircrew participating in ACM will conform to the following flight guidelines:

1. FW v FW

   a. When all crewmembers of a flight are ACM qualified, the flight does not require an air combat maneuvering instructor (ACMI).

   b. A non-ACM qualified pilot may participate in ACM training provided his flight leader is an ACMI.

   c. In the case of 1 V 1 dissimilar ACM, the adversary must be an ACMI.

   d. A non-ACM qualified aircrew of a crewed aircraft may participate in ACM training, provided at least one other aircrew in the same aircraft is designated an ACMI.

2. FW v RW, Tiltrotor or KC-130

a. Aircrew of FW aircraft engaged in RW, tilt-rotor or KC-130 attack shall be ACM and LAT qualified.

b. Direct over-flight of RW aircraft by FW aircraft is prohibited.

3.12.6 RW DM and DACM. RW assault aircrew conducting DM and RW attack and utility aircrew conducting DACM will conform to the following flight guidelines.

1. When all aircrew of a flight are DM/DACM qualified, the flight does not require a defensive measures instructor (DMI)/defensive air combat maneuvering instructor (DACMI).

2. To ensure full lookout coverage capability in RW aircraft possessing a cabin section, there shall be an aerial gunner/observer in the cabin section in addition to the crew chief.

3. A non-DM/DACM qualified pilot may participate in DM/DACM training provided the aircraft commander is a designated DMI/DACMI. A non-DM/DACM qualified aircrew serving in the cabin section may participate in DM/DACM training provided the other aircrew serving in the cabin section is a designated DMI/DACMI.

4. Aircrew of RW aircraft conducting DM/DACM shall be TERF qualified.

5. All DM/DACM participants must be aware of their particular aircraft's performance capabilities and limitations. Approved T/M/S planning tools such as joint mission planning software (JMPS) or the air vehicle performance (AVP) planning tool shall be used to predict performance. Operational power checks should be conducted to assist in this awareness as required.

6. Hard deck shall be briefed before DM/DACM training events and shall be no lower than 100' AGL. All DM/DACM line numbers shall be initiated no lower than 200' above the hard deck. Minimum RW altitude for DM against a ground-based threat is 50 ft AGL.

7. For DM, the friendly element will initiate maneuvering line numbers no closer than 200 ft between friendly aircraft. Upon first indication of the bandit the friendly element will maneuver to maintain at least 500 ft of separation from all aircraft during the engagement, including aircraft within the same element.

8. For DACM, the adversary (bandit) will initiate maneuvering line numbers.

3.12.7 TR DCM. Aircrew conducting DCM will conform to the following flight guidelines.

1. When all crewmembers of a flight are DCM qualified, the flight does not require a DCMI.

2. Aircrew of TR aircraft conducting DCM shall be LAT qualified.

3. A non-DCM qualified pilot may participate in DCM training, provided the tiltrotor aircraft commander is a designated DCMI. A non-DCM qualified aircrew serving in the cabin section may participate in DCM training, provided the other aircrew serving in the cabin section is a designated DCMI.

4. Minimum tiltrotor altitude is 200 ft AGL APLN Mode and 100 ft AGL CONV mode.

3.13 ROC FOR FORWARD AIR CONTROL (AIRBORNE) OPERATIONS [FAC(A)]

3.13.1 General

1. Purpose. To standardize the training rules for all USMC aircraft conducting FAC(A) training and ensure compliance with the most recent version of the joint fire support executive steering committee (JFS ESC) Action Plan Memorandum of Agreement 2004-02 Joint Forward Air Controller (Airborne), hereafter referred to as the JFAC(A) MOA.

2. Scope. This section stipulates training criteria and ROC peculiar to FAC(A) operations.

3. Safety. Squadrons conducting FAC(A) operations shall operate within the guidelines of this chapter. Commanders shall ensure aircrew conducting FAC(A) training are properly qualified and appropriate flight leadership is represented within the flight.

3.13.2 FAC(A) Qualifications . Aircrew achieve the FAC(A) qualification by completing individual T&R syllabus requirements in addition to fulfilling the requirements of the current JFAC(A) MOA. Aircrew undergoing initial or refresher FAC(A) qualification training require supervision of a FAC(A) instructor [FAC(A)I].

3.13.3 Supervision of Unqualified Individuals. The supervising FAC(A)I shall be in the same section/flight element as the unqualified aircrew and in position to supervise the training operation. The supervising FAC(A)I shall also have sufficient communications to ABORT an attacking aircraft or CHECK FIRE supporting arms if required for safety.

3.13.4 Simulator Usage. Simulator usage for currency and proficiency will be in accordance with the JFAC(A) MOA, current USMC FAC(A) Aircraft Simulator Accreditation letter, and individual T/M/S T&R manuals.

3.13.5 JFAC(A) MOA**.** Units conducting FAC(A) training shall comply with requirements of the current JFAC(A) MOA.

3.13.6 FAC(A) Documentation

1. Units shall maintain aircrew FAC(A) qualification letters, FAC(A)I designation letters, FAC(A) EATFs, and FAC(A) academic training courses completed in APRs per Chapter 2.

2. Units shall maintain a FAC(A) logbook in M-SHARP for all aircrew conducting FAC(A) training. This logbook shall be used to record all controls, associated control tasks, and CAS mission profiles (CMP) as delineated by the current JFAC(A) MOA.

CHAPTER 4

AVIATION FLYING SQUADRON TRAINING

CORE INTRODUCTION TRAINING

	PARAGRAPH	PAGE
CORE INTRODUCTION/FRS TRAINING OVERVIEW	4.0	4-3
AIRCREW CORE INTRODUCTION PRODUCTION PROCESS	4.1	4-4
FRS TRAINING CAPACITY	4.2	4-7
FRS TRAINING REQUIREMENTS	4.3	4-8
AVIATIOR PRODUCTION PLAN	4.4	4-9
AIRCREW CORE INTRODUCTION REFRESHER TRAINING	4.5	4-10
ASSESSMENT AND REPORTING	4.6	4-11

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CHAPTER 4 - AVIATION FLYING SQUADRON TRAINING

CORE INTRODUCTION TRAINING

4.0 CORE INTRODUCTION/FRS TRAINING OVERVIEW

4.0.1 Definitions

1. Core Introduction training consists of 1000 Phase T&R training.

a. Core Introduction Basic POI. This training includes system/equipment operation familiarization, initial crew procedures, and initial exposure to core introduction events.

b. Core Introduction Refresher POI. This POI includes fundamental aircraft/system re-familiarization training.

(1) Core Introduction Modified Refresher POI. This POI is a subset of the Refresher POI.

(2) Core Introduction Safe for Solo POI. This POI is a subset of the Refresher POI.

c. Core Introduction Series Conversion POI. This POI includes fundamental training required to fly/operate a new model/series aircraft/system that has significantly different aircraft or weapons systems characteristics.

d. Core Introduction Transition POI. This POI includes fundamental training required to fly/operate a new type aircraft/system.

e. Core Introduction Foreign POI. This training includes system/equipment operation familiarization, initial crew procedures, and initial exposure to core introduction events for the foreign student.

f. Core Introduction Other Service POI. This training includes system/equipment operation familiarization, initial crew procedures, and initial exposure to core introduction events for the student from another service (Air Force and Navy for MV-22B).

2. Marine Corps fleet replacement squadrons (FRS), aviation training units (ATU), transition training units (TTU), fleet replacement detachments (FRD), aviation ground formal schools, civilian aviation schools, and CMC-designated operational commands conduct core introduction training per community T&R manuals.

3. Personnel should be scheduled to complete 1000 Phase T&R events in sequential order to the greatest extent possible.

4. Commands responsible for overseeing core introduction training shall provide a training environment where other billet responsibilities do not detract from that training.

5. Aviation Production Management (APM), a section within Training Command (TRNGCMD) G-3, is responsible for the management and oversight of USMC aviation production.

4.0.2 Core Introduction Training Waivers/Deferrals

4.0.2.1 Waived Syllabus Events

1. The CO of an FRS/core introduction training unit may waive one event total, when, in the CO's judgment, the previous experience or performance of an individual satisfies the requirement of the event.

- Shall not waive any event for initial accession personnel assigned to the "B" POI.
- Waiving multiple events for any POI shall be submitted via AMHS message to CG TECOM PSD for review and authorization.

2. Waivers shall be documented in a letter signed by the CO and placed in the PR/APR. The letter shall include the reason for the waiver.

4.0.2.2 Deferred Syllabus Events

1. The CO of an FRS/core introduction training unit may defer one event for a student when, in the CO's judgment, a lack of a logistic support or training assets requires temporary exemption.

2. Gaining operational units must complete deferred training events in strict compliance with T&R event requirements.

3. Deferring multiple events or stages shall be submitted via AMHS message to CG TECOM PSD for review and authorization.

4. Deferrals shall be documented in a letter signed by the CO and placed in the PR/APR. The letter shall include the logistical support or resource shortfall and the expiration date of the deferral.

4.0.2.3 Syllabus deviation approval authority

Syllabus deviations not covered above shall be submitted via AMHS message to CG TECOM PSD for review and authorization.

NOTE

The remaining paragraphs of this chapter pertain only to aircrew (remaining chapter policy is not applicable to aviation ground personnel).

4.1 AIRCREW CORE INTRODUCTION PRODUCTION PROCESS

4.1.1 Annual Core Introduction Production Cycle

1. Training Capacity. Training squadrons calculate and submit estimated annual training capacities (via WebbPPF) for subsequent fiscal years to APM, Training Command (CG TRNGCMD) NLT 30 June. CG TRNGCMD G-3 validates training capacity estimates.

2. Training Requirements. CG TRNGCMD G-3 consolidates all Marine Corps annual core introduction training requirements from appropriate agencies and submits them to DC Aviation Manpower and Support (ASM) and the Office of the Chief of Naval Operations (OPNAV N98) NLT 15 July. OPNAV publishes Navy and Marine Corps aviation training production requirements in the Naval aviation training requirements letter (TRL).

3. Aviator Production Plan. Chief of Naval Aviation Training (CNATRA), FRSs, CG TRNGCMD G-3, OPNAV, and BUPERS work together to develop the integrated production plan (IPP) which defines the planned monthly input and output for every phase of Naval aviator (NA) and enlisted aircrew production, aviation pre-flight introduction (API) through FRS. The IPP is released approximately 1 October and is updated once during the fiscal year.

4. Execution. The training units execute core introduction training IAW the IPP throughout the fiscal year.

5. Assessment. CNATRA, CG TRNGCMD G-3, and Task Groups (Tactical, NFO, Rotary, Multi-Engine, Primary, Accessions, and enlisted aircrew) conduct analysis of how the production process at each phase of NA training is progressing via monthly, quarterly, and semi-annual meetings and conferences throughout the year.

4.1.2 Naval Aviation Production Process

1. The Naval Aviation Production Process (NAPP) is a Chief of Naval Operations (CNO) initiated program designed to improve the process of producing first tour NAs, Naval flight officers (NFO), and Naval aircrew (NAC) by targeting extended time-to-train (TTT) and identifying and removing barriers to production. NAPP is established and defined in OPNAVINST 3500.31 and in the NAPP SOP.

2. CG TRNGCMD G-3 NAPP Representation. CG TRNGCMD G-3 shall remain actively engaged in the NAPP providing USMC representation in all task groups (TGs). CG TRNGCMD G-3 provides a unified USMC position to Commander, Naval Air Forces (CNAF) and CNATRA regarding NAPP issues.

3. Wing NAPP Representation. Respective wing commanders shall appoint an officer as the wing NAPP representative to serve as a liaison between CG TRNGCMD G-3 and the FRS and to serve in the production planning factor (PPF) validation/approval chain.

4. Squadron NAPP Representation. Each FRS or designated core introduction training unit will appoint both an officer and an enlisted aircrew (as appropriate) as squadron NAPP Representatives. Squadron NAPP representatives are responsible for: NAPP integrated production data repository (NIPDR) inputs; PPF development and submission; representation at monthly TG meetings and semi-annual production alignment conferences (PAC); and other issues relating to the NAPP.

5. NAPP Analyst Representation. Designated units shall incorporate contract NAPP analysts (as appropriate) into the production process. Specifically, NAPP analysts will support their respective FRS COs in the following:

a. Command PPF annual validation and submission.

b. Command annual flight hour budget planning, monthly allocation, and variance analysis.

c. Command Barriers to production analysis and submission.

d. Command PAC alignment load sheets and IPP generation submissions in accordance with the TRL and TG guidance.

e. Maintain and update current Marine Corps training information management system MCTIMS databases for assigned FRS.

f. Command metric generation and variance analysis.

g. Provide command analysis and recommendations regarding NAPP NIPDR charts and cost-wise metrics.

h. Coordinate with appropriate facility personnel for NAPP briefs.

i. Compile any necessary briefing products in the appropriate format for NAPP briefs.

j. Develop Command production plans, NAPP centric briefs and resource entitlements submissions.

k. Provide HQMC, TECOM PSD, Training Command, Wing, MAG, CNAF, and CNATRA with supporting NAPP centric analysis.

l. Ensure approved POI changes are updated in NIPDR for accurate WEB PPF calculations.

6. The Naval Aviation Production Team (NAPT) is chartered by CNAF and chaired by CNATRA to oversee NAPP efforts that cover the entire process from “street to fleet.” The NAPT consists of all stakeholders that contribute to the production of NAs and NAC; stakeholders include Navy Headquarters representatives, OPNAV, CG TRNGCMD G-3, MATSGs, and TGs representing each aviation community (primary, rotary, multi-engine, tactical, NFO, and NAC). The FRSs play a key role in the NAPT as members of their respective TGs.

4.1.3 Command Relationships

1. DC AVN allocates aircraft, material, and personnel to meet current and anticipated long range USMC training requirements. CMC (MMOA-2) will staff FRS flight instructor billets per the PPF. The optimum tour for a flight instructor is 36 months. CMC (MMOA-2) regards all tour lengths shorter than 24 months as an exception to this policy.

2. CG TECOM is responsible for managing training and education requirements of the Total Force.

a. CG TRNGCMD G-3 is responsible for managing core introduction training policy, tasking FRSs with training requirements, coordinating class schedules and seats in MCTIMS and monitoring core introduction training progression. CG TRNGCMD is the approval authority for FRS training. Operational units shall submit requests for core introduction training by message. CG TRNGCMD G-3 serves as an advocate for FRSs, aviation ground/MACCS schools, and DC AVN designated operational commands conducting core introduction training. As such, FRSs have been granted DIRLAUTH with CG TRNGCMD G-3 regarding all training matters.

b. MATSGs support CG TRNGCMD G-3 by locally monitoring issues affecting USMC aviation training and providing face-to-face liaison with CNATRA under the direction of CG TRNGCMD. Responsibilities include promoting Marine Corps aviation interests as representatives to CNATRA, monitoring CNATRA production to meet FRS requirements, and acting as the conduit for FRS inputs to CNATRA curriculum review boards.

3. MARFOR commanders support CG TECOM PSD and CG TRNGCMD G-3 for core introduction training.

4. Wing commanders have OPCON of subordinate FRSs and are responsible directly to their respective MARFOR commanders for execution of core introduction training responsibilities.

a. Wing commanders are responsible for ensuring FRSs and designated operational commands under their authority receive the necessary support and assets to accomplish their training mission.

b. Wing commanders shall not task FRSs with flights/requirements that do not contribute to student training. Examples of these types of flights include the following: demonstration flights, staff flight time, static displays, VIP/administrative/logistic flights, and certain wing FRAGs. Any additional tasking that could impact an FRS's ability to make its annual training mission shall be requested via AMHS message to CG TRNGCMD G-3.

5. Group commanders shall provide FRSs with local maintenance and supply support on an equal basis with co-located operational squadrons.

a. Commands responsible for overseeing core introduction training shall provide a training environment where other billet responsibilities do not detract from that training. Individuals undergoing 1000 Phase training should not be assigned unit T/O billet responsibilities or collateral duties until such training is complete.

b. Commanders of operational squadrons conducting core introduction training shall balance 1000 Phase training responsibilities with operational responsibilities. Core introduction training will normally receive priority during peacetime operations.

c. DC AVN designated training units authorized to conduct aircrew core introduction training are as follows per the table below:

<table>
<tr><th colspan="4">USMC Squadrons / Units authorized to Conduct Core Introduction Training</th></tr>
<tr><th colspan="2">Rotary Wing and Tilt Rotor
Fleet Replacement Squadrons (FRS)</th><th colspan="2">Fixed Wing
Fleet Replacement Squadrons (FRS)</th></tr>
<tr><th>SQUADRON</th><th>T/M/S</th><th>SQUADRON</th><th>T/M/S</th></tr>
<tr><td rowspan="2">HMLAT-303</td><td>AH-1Z</td><td>VMFAT-501</td><td rowspan="2">F-35B</td></tr>
<tr><td>UH-1Y</td><td>VMFAT-502</td></tr>
<tr><td rowspan="2">HMHT-302</td><td>CH-53E</td><td rowspan="2">VMFAT-101</td><td>FA-18C</td></tr>
<tr><td>CH-53K</td><td>FA-18D</td></tr>
<tr><td>VMMT-204</td><td>MV-22B</td><td rowspan="2">VMAT-203</td><td>TAV-8B</td></tr>
<tr><td colspan="2" rowspan="2"></td><td>AV-8B</td></tr>
<tr><td>VFA-125 (Navy)</td><td>F-35C</td></tr>
<tr><td colspan="2">Tactical or Reserve Fixed Wing Squadrons authorized to conduct Core Introduction Training</td><td colspan="2" rowspan="2"></td></tr>
<tr><th>SQUADRON</th><th>T/M/S</th></tr>
<tr><td>KC-130 FRD</td><td>KC-130J</td><td colspan="2" rowspan="2">Other Rotary Wing and Tilt Rotor Squadrons authorized to conduct Core Introduction Training</td></tr>
<tr><td>VMGR-234</td><td>KC-130J</td></tr>
<tr><td rowspan="2">VMGR-452</td><td>KC-130T</td><td rowspan="3">HMX-1</td><td>VH-3D</td></tr>
<tr><td>KC-130J</td><td>VH-60N</td></tr>
<tr><td>VMFAT-401</td><td>F-5</td><td>VH-92A</td></tr>
<tr><td colspan="2">Unmanned Aerial Systems (UAS) Squadrons authorized to conduct Core Introduction Training</td><td>MV-22B Ref / Mod Ref</td></tr>
<tr><td>MAG-14 RQ-21 FRD</td><td>RQ-21</td><td>VMX-1</td><td>CH-53K</td></tr>
<tr><td>USAF</td><td>MQ-9A</td><td colspan="2"></td></tr>
<tr><td colspan="4">Note: All OSA personnel conduct Core Introduction Training at DC AVN approved contract approved locations.</td></tr>
</table>

6. Operational Support Airlift (OSA) Core Introduction Training

a. DC AVN has approved command aircraft crew training (CACT) for contract simulator instructor (CSI) training.

b. The syllabus sponsor shall not approve CACT CSI personnel to conduct Model NATOPS evaluations. Marine Corps OSA aircrew NATOPS and instrument flight evaluations may be administered by Marine Corps OSA unit NIs /ANIs in CACT simulators supported by CSI operators, as long as the evaluees have completed all required training, and the NATOPS open and closed book examinations prior to executing the NATOPS or instrument evaluation.

4.2 FRS TRAINING CAPACITY

Proper management of Marine Corps aviation production requires that CG TRNGCMD G-3 continually reconcile FRS training requirements with FRS training capacity. Total training capacity of a squadron is calculated in terms of total numbers of basic POI students a squadron can train per year, plus additional refresher, transition, conversion, and NATOPS qualifications (CAT II through IV). CG TRNGCMD G-3 utilizes PPFs to calculate training capacity at an FRS.

4.2.1 Production Planning Factors (PPF)

PPFs calculate capacity based on actual unit training days available, instructor manning and availability, daily aircraft availability, and simulator availability. The PPF system can also calculate backwards to facilitate identification of resource requirements in terms of instructors, aircraft, simulators, and flight hours needed to accomplish annual training requirements. PPFs provide the individual FRS, the wing commander and HQMC with a more detailed program planning and resource requirement determination process.

4.2.2 Reporting Instructions

1. OPNAVINST 3500.31 governs the utilization of PPFs with the exception of USMC planning assumption values. USMC FRSs shall use the table below when submitting annual calculations:

USMC FRS PPF Planning Values

Planned Annual Training/Fly Days	198 Days/Yr
Average Instructor Workday	8 Hrs/Day
Average Aircraft Workday	12 Hrs/Day
Pilot & NFO Instructor Availability	66 Percent
Flight Overhead Rates (Percent)	OPNAV ltr 3500 Ser N882B
Schedule Efficiency Index (Peacetime)	100 percent

2. FRS NAPP representatives shall submit squadron PPFs annually through their USMC chain of command to CG TRNGCMD G-3 no later than 30 June. Submissions shall cover a three year period.

3. Marine Corps FRSs will utilize PPFs as a source document to identify current and projected training requirement shortfalls to wing (resource sponsor), CG TRNGCMD G-3 (FRS advocate), and CMC (resource provider).

4. CG TRNGCMD G-3 shall provide validation and approval of Marine Corps FRS PPF submissions.

4.3 FRS TRAINING REQUIREMENTS

1. Marine Corps aviation production requirements are developed based on fleet requirements and are independent of FRS capacities.

2. CG TRNGCMD G-3 is responsible for consolidating MPP-30, ASM, MMOA-2, Marine Corps security cooperation group (MCSCG), and 4th MAW inputs and submitting annual USMC FRS training requirements to OPNAV per MCO 1520.29.

3. OPNAV consolidates all Navy and Marine Corps aviation training requirements in the annually released (NLT 30 September) training requirements letter (TRL). The TRL provides an eight year outlook and serves three primary purposes:

a. As a long term budget planning document for OPNAV to ensure effective budget planning and resource allocation during the development of resource sponsors program objective memorandums (POM) or program reviews (PR).

b. Provides an updated production requirement for the execution year. Adjustments are necessary due to the dynamic nature of the pilot, flight officer and enlisted aircrew end strength requirement.

c. Provides the USMC Fleet requirement to the NAPP. The fleet requirement is the foundation for development of the IPP.

4. The annual pilot training requirement (PTR), NFO training requirement (NFOTR) and aircrew training requirement (ACTR) are grouped by types of students (listed below), indicating the source where the student came from. The category listed in parenthesis correlates the type of student to the training syllabus length. Training requirements for each type are obtained from the agencies listed.

a. Initial Accession. Initial accession (Category I) aviator and NAC production requirements are generated by MPP-30 based upon the existing authorized strength report (ASR)/grade adjusted recapitulation (GAR) and the year-group-steady-state (YGSS) model.

b. Transition/Conversion. Transition/conversion (Category II) aviator and NAC production requirements are generated by ASM-2 based on needs of the fleet or as directed by HQMC (DC AVN). Candidates submit applications for NA/NFO Transition training per MCO 1331.2, transition/conversion Training for NAs and NFOs.

c. Refresher. Refresher (Category III) aviator production requirements are generated by MMOA-2 based on planned assignments and time out of the cockpit.

d. Modified Refresher. Modified refresher (Category IV) aviator production requirements are generated by MMOA-2 based on planned assignments and time out of the cockpit.

e. Safe-for-Solo Programs. Safe-for-Solo programs (USN Category V) pilot production requirements are generated by MMOA-2 based on planned assignments and time out of the cockpit.

f. Foreign. Foreign aircrew are based on foreign military sales (FMS) requirements. Foreign student POI requirements may be anything from a Category I to a Category V, but are usually classified as a Category V on the TRL for tracking purposes. Annual training requirements are generated by the MCSCG under CG TECOM.

5. CG 4th MAW shall submit an estimate of FRS training requirements by T/M/S and POI for the next 3 fiscal years to CG TRNGCMD G-3 twice per year in conjunction with TRL submissions.

6. FRS production requirements are programmed by CG TRNGCMD G-3 and submitted to OPNAV via the TRL. FRS flight hours are derived from the annual TRL, syllabus flight hours, and overhead data. CG TRNGCMD APM shall ensure OPNAV has accurate syllabus flight hours and overhead data to compute FRS flight hour requirements. Flight hour management is the responsibility of the respective wing commanders.

7. Assigning flight hours for CAT III and IV refresher training requires both MMOA input and the application of historical usage data. To correctly project required flight hours, FRS COs will provide updated historical usage data to CG TRNGCMD APM as required.

4.4 AVIATOR PRODUCTION PLAN

4.4.1 Fleet Replacement Squadron Summit (FRS Summit)

1. The purpose of the FRS Summit is to provide Marine Corps FRSs a forum to address training issues and raise awareness of all participants to issues impacting Marine Corps aviation training. It is an opportunity for Marine Corps aviation to address their barriers to production prior to the PAC.

2. Attendees should include the CO, operations representatives, and NAPP analysts for each FRS or equivalent training unit that produces Marine Corps aviators, the MATSGs, HQMC agencies, MAGs, wings, OPNAV, and senior Marines from CNATRA and CNATT.

3. CG TRNGCMD G-3 hosts two FRS Summits each year prior to the PAC hosted by CNATRA.

a. The focus of the FRS Summit is to assess current fiscal year aviation production, confirm plans to meet the next fiscal year's aviation production requirements, address training issues impacting aviation production, develop or modify mitigation strategies, and solidify an overall Marine Corps aviation production course of action before attending the PAC.

b. Prior to the FRS Summit, FRSs will use the next fiscal year's training production requirements to develop a fiscal year load plan and any training requirement conflicts with FRS capacity will be documented and prepared for brief at the FRS Summit.

4. Results of the FRS Summit are released by CG TRNGCMD G-3 in an after action message which lists issues and mitigation strategies and identifies tasks for specific agencies.

4.4.2 Production Alignment Conference (PAC)

1. CNATRA hosts a PAC twice per year. The PAC provides a forum for CG TRNGCMD G-3, FRS, TG (Primary, Tactical, Rotary, Multi-Engine, NFO, and enlisted aircrew), CNATRA production managers, HQMC, CNAF, CNAL, and BUPERS representatives to assess and resolve IPP issues or discrepancies.

2. Attendees include the NAPP analysts from each FRS, CNATRA and CNATT staff, and representatives from CG TRNGCMD G-3, MATSGs, HQMC, CNAF, CNAL, OPNAV, and BUPERS. FRS COs, executive officers, and operations officers along with USMC manpower representatives are highly encouraged to attend.

3. The focus of the PAC is to assess current fiscal year aviation production, coordinate as TGs on plans to make up any current year shortfalls/meet the next fiscal year's aviation production requirements, and to finalize the FRS level integrated production plan.

a. Prior to the PAC, TG and FRS production managers develop a draft of the FRS-level IPP which is submitted to CNATRA. The intent is for CNATRA to have enough time to develop an initial draft of the entire IPP before the PAC.

b. During the PAC, issue resolution and changes to the higher levels of the IPP may occur. Any changes can take time to reconcile down through API, so the IPP may or may not be completed during the PAC.

4. The result of the PAC is a finalized IPP that is published by CNATRA on its website.

4.4.3 Marine Corps Training Information Management System (MCTIMS)

1. MCTIMS is a web-based training management system that consolidates the functions of and replaces the training requirements and resource management system (TRRMS) and by-name-assignment (BNA). It is the user interface that allows all training schools to program dates to respective classes and seats.

2. Manpower/training managers at all levels in the Marine Corps can log into MCTIMS, look up courses and dates, and assign Marines to training seats in order to generate orders. If a course is funded by TECOM Financial Management (FM), name assignment in MCTIMS must be completed before appropriation data can be requested. Course seat management, including schedule building and name assignment, can be accessed via the student registrar menu in MCTIMS. All schoolhouses that train Marine Corps students are required to use student registrar per MCO 1553.2. For setting up access to the student registrar or for assistance using it, contact TECOM Formal Schools Quota Management Requirements Branch (C 466) at 703-784-3071 or DSN 278-0071.

3. Per the automated inspection report system AIRS checklist, each FRS or equivalent Marine Corps training unit is responsible for maintaining a MCTIMS account and shall appoint a MCTIMS account manager to build and update the unit's schedule. The subsequent fiscal year's class schedules are due into MCTIMS NLT 31 July each year. Class schedules are subject to change and dates can be updated in MCTIMS at any time, but preliminary schedules must be entered by 31 July for manpower/training managers to be able to assign students and generate orders in September for October classes. Once the official IPP is released after the fall PAC, MCTIMS managers shall ensure class schedules in MCTIMS are updated to match the IPP.

4. Refresher students shall be registered in MCTIMS by their sponsoring unit (e.g. MMOA or MAG) in order to be scheduled for training. Prioritization of available class seats is the responsibility of the gaining MAG or MAW. Any requests to add class seats shall be made through CG TRNGCMD G-3 copy to DC AVN, ASM-52. FRSs shall ensure that all students are registered in MCTIMS prior to start and that the student's status is updated to reflect the completion of their training when applicable.

4.5 AIRCREW CORE INTRODUCTION REFRESHER TRAINING

1. Pilots and NFOs who have not flown the model aircraft within the prescribed time intervals defined in the table below shall complete the appropriate core introduction refresher training program.

2. DC AVN designated FRSs and operational commands shall conduct core introduction refresher training; such training shall be specified in individual T&R manuals. Upon completion of core introduction refresher training, pilots and NFOs are normally assigned to the Refresher POI conducted at the tactical squadron.

3. Pilots and NFOs who have been selected for transition/model conversion/series conversion shall be assigned to the appropriate basic, transition, or series conversion POI per Chapter 2 of the applicable T&R manual, regardless of time out of cockpit.

4.5.1 Aircrew Core Introduction Refresher Training Programs

4.5.1.1 Full Refresher Programs

Full refresher programs (CAT III syllabi) consist of appropriate ground school, simulator and training events, plus a NATOPS check in model.

4.5.1.2 Modified Refresher (MR) Programs

MR Programs (CAT IV syllabi) consist of appropriate ground school/simulator training plus 10 hours of flight time and a NATOPS check in model. CG TECOM ASB will consider additional training for individuals in this program on a case-by-case basis when requested by the unit commander.

4.5.1.3 Safe-for-Solo Programs

1. Safe-for-Solo programs (CAT V) apply only to single-piloted aircraft pilots and consist of ground school, simulator training plus a NATOPS check in model.

2. Commands may request core introduction refresher training for aircrew not covered by the previous refresher training programs. Requesting units should make requests to CG TRNGCMD G-3 via the chain of command and should include at a minimum the reasons for the refresher training, time out of model/type, periods of availability, and type training desired.

3. CG 4th MAW may request authorization via MCTIMS for FRS instructors to designate and annually certify 4th MAW squadron instructor pilots to provide appropriate refresher training for SMCR aircrew on a case-by-case basis. CG 4th MAW shall coordinate such requests with HQMC [DC AVN (ASM)] and CG TRNGCMD G-3 via message.

Aircrew Returning from:	Time out of Model:	Training Required:	Training Conducted at:
DUAL-PILOTED ACFT DIFDEN or DIFOP (Out of Type)	< 485 days	Per T/M/S T&R Manual	Tactical Unit
	486-730 days	Modified Refresher CAT IV	FRS [1]
	> 730 days	Refresher CAT III	FRS [1]
SINGLE-PILOTED ACFT DIFDEN or DIFOP (Out of Type)	< 365 days	Per T/M/S T&R Manual	Tactical Unit
	> 365 days but < 485 days	Safe-for-Solo (Pilots Only)	FRS [1]
	486-730 days	Modified Refresher CAT IV	FRS [1]
	> 730 days	Refresher CAT III	FRS [1]
DIFOP (In Type)[2]	< 485 days	Per T/M/S T&R Manual	Tactical Unit
	> 485 days	Modified Refresher CAT IV	FRS [1]

[1] Or CMC designated operational command authorized to conduct 1000 Phase Refresher training.

[2] e.g. MOS 7523 NATC T-45 instructor returning to fly an F/A-18; MOS 7565 NATC TH-57 instructor returning to an AH-1 billet; MOS 7557 NATC T-44 instructor returning to fly a KC-130.

NOTE

CG TECOM ASB is approval authority for deviations from above matrix.

4.6 ASSESSMENT AND REPORTING

Proper management of Marine Corps aviation resources requires that CG TRNGCOM APM continually evaluate FRS training requirements and resources to make short range and long-range adjustments to maintain a balance between requirements and capacity.

4.6.1 FRS Reporting

1. Many unforeseeable factors affect the training requirements and capacity during the execution of the annual NA/NFO training plan via the IPP. The monthly FRS planning and reporting cycle allows adjustments to maintain alignment of training requirements and capacity.

a. Assessments of actual training production compared to the IPP are conducted via teleconference, VTC, or face-to-face briefs monthly. The system utilized to capture monthly data and generate cockpit charts for briefing and assessment is the NAPP NIPDR. The NIPDR cockpit charts are a useful tool in evaluating FRS production performance and capability.

b. Each FRS or equivalent training unit is responsible for submitting unit production data into NIPDR by the 8th of each month. CNATRA will then generate cockpit charts from the data for briefs later in the month. For Joint FRS reporting - FRSs that train both Navy and Marine Corps students will report both Navy and Marine Corps student numbers into NIPDR each month.

(1) Pools. The FRS reports two pools to NIPDR: preload (PL) and students-in-training (SIT). The FRS PL is an entitlement (6 weeks) defined as the number of CAT I winged pilots and NFOs that have not commenced their FRS class. PL includes personnel conducting PCS moves, training enroute (SERE, etc.), and at the FRS awaiting class start.

(2) The SIT pool includes all students who have started a POI. A POI includes any ground training.

c. Task Group (TG) meetings take place monthly via teleconference, VTC, or face-to-face meetings. Task Groups include the Commodore in charge, TG production managers, and all FRS operations and NAPP analyst representatives and equivalent training units associated with the TG. The focus of the meetings is to assess current production to date, identify any problems associated with meeting fiscal year training requirements, develop mitigation strategies, update long term plans, and prepare for the NAPT meeting later in the month.

(1) TG Tactical (TGTAC)/TG Naval Flight Officer (TGNFO). The TGTAC includes all Navy and Marine Corps units associated with jet aircraft pilot production. TGNFO is directly associated with jet training units and attends the same meetings, but has a separate training wing and commodore in CNATRA.

(2) TG Rotary. The TG Rotary includes all Navy and Marine Corps units associated with rotary wing as well as intermediate level flight training for tiltrotor pilots.

(3) Multi-Engine TG (METG). The METG includes all Navy, Marine Corps, and Air Force units associated with multi-engine fixed wing pilot production and tiltrotor pilot production.

(4) Primary Production TG (PPTG). The PPTG includes all Navy and Marine Corps units associated with primary pilot flight training production.

(5) TG Naval Aircrew (TGNAC). The TGNAC includes all Navy and Marine Corps units associated with aircrew production.

(6) TG Accessions. The TG accessions include all Navy and Marine Corps units associated with API and IFS flight training production. This TG is mostly used by the Navy since USMC students are processed via MATSG-21.

d. The NAPT (described in 4.1.2 paragraph 6) meets quarterly via VTC with a teleconference dial-in capability. The quarterly meeting focuses on assessing current production to date, informing CNATRA and CNAF on problems associated with meeting fiscal year training requirements, describing mitigation strategies, and updating long term plans. CG TRNGCMD G-3 attends the NAPT to represent Marine Corps FRSs and Marine Corps aviation interests. MATSGs, FRSs, and HQMC agencies are welcome to attend. There are two separate NAPT meetings:

(1) NAPT (TW). The training wing NAPT focuses on production issues within the TW's. TRNGCMD G-3 APM attends this meeting to represent USMC production requirements within the TW's. FRS NAPP analysts and a uniformed FRS operations representative should attend if available.

(2) NAPT (FRS). The FRS NAPT focuses on production issues at the FRS level. FRS COs should brief CNATRA during this VTC.

4.6.2 Attrition/Training Delay Notification

FRSs and equivalent training units training Marine aircrew are responsible for notifying CG TRNGCMD G-3 of RAC attrition/delay issues that occur. CG TRNGCMD G-3 needs to be informed of any student attrition or delays due to medical, legal, or performance issues. Notification shall be accomplished through the comments section in the monthly NIPDR submissions and discussion in TG meetings.

4.6.3 Mishap Notification

1. FRSs and equivalent training units are responsible for notifying CG TRNGCMD G-3 of any mishaps that occur involving replacement aircrew (RAC) or impacting training production. The following PLAs shall be included on OPREP3s and MDRs: CG TECOM QUANTICO VA G3; CG TECOM PSD.

2. Neither TECOM PSD nor TRNGCMD G-3 have a permanent ASO billet on its T/O. However, Aviation Standards Branch action officers shall review safety investigation reports for all phases of training and will coordinate with CG TRNGCMD G-3 concerning any likelihood of impact on training production.

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CHAPTER 5

AVIATION T&R ADMINISTRATION

	PARAGRAPH	PAGE
PURPOSE	5.0	5-3
SYLLABUS SPONSOR	5.1	5-3
T&R MANUAL DIRECTORY	5.2	5-3
T&R CHANGES	5.3	5-4
READINESS REVIW PROCEDURES	5.4	5-6
T&R WORKING GROUP PROCEDURES AND RESPONSIBILITIES	5.5	5-6
T&R WORKING GROUP MATRIX	5.6	5-11
T&R INTERIM CHANGES	5.7	5-11
T&R INTERIM CHANGE MATRIX	5.8	5-12
ADMINISTRATIVE CHANGE	5.9	5-12
RECORD OF ADMINISTRATIVE CHANGES (TEMPLATE)		5-13

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CHAPTER 5 - AVIATION T&R ADMINISTRATION

5.0 PURPOSE. To provide a process for developing, updating, and staffing T&R manuals.

5.1 SYLLABUS SPONSOR

A syllabus sponsor is a unit responsible for coordinating T&R changes on behalf of the applicable community in cooperation with CG TECOM ASB. Syllabus sponsors shall maintain close liaison with their respective communities. CG TECOM assigns syllabus sponsors and syllabus sponsor responsibilities.

5.2 T&R MANUAL DIRECTORY

Aviation T&R manuals are produced as Navy Marine Corps (NAVMC) Publications. The table below contains a list of T&R syllabus sponsors:

AVIATION TRAINING AND READINESS (T&R) Syllabus Sponsors		
CATEGORY	**AVIATION T&R MANUALS**	**SPONSOR**
Policy and Procedures		
Aviation T&R Program (Overarching Policy)	MCO 3500.14	TECOM ASB
Aviation T&R Program Manual (Procedures)	NAVMC 3500.14	TECOM ASB
Tactical Fixed Wing		
AV-8B	NAVMC 3500.51	MAWTS-1
FA-18A/B/C/D	NAVMC 3500.50	MAWTS-1
KC-130T	NAVMC 3500.52	MAWTS-1
KC-130J	NAVMC 3500.53	MAWTS-1
F-35B/C	NAVMC 3500.118	MAWTS-1
Tactical Tiltrotor		
MV-22B	NAVMC 3500.11	MAWTS-1
CMV-22B	NAVMC 3500.127	DC AVN
Tactical Rotary Wing		
CH-53E	NAVMC 3500.47	MAWTS-1
CH-53K	NAVMC 3500.129	MAWTS-1
UH-1Y	NAVMC 3500.20	MAWTS-1
AH-1Z	NAVMC 3500.104	MAWTS-1
Tactical UAS Communities		
RQ-21A	NAVMC 3500.122	MAWTS-1
MQ-9A	NAVMC 3500.128	MAWTS-1
SUAS T&R Manual	NAVMC 3500.107	MARSOC
Support Aircraft		
C-40A	NAVMC 3500.XX	VMR-1 Fort Worth
UC-12W	NAVMC 3500.102	VMR Belle Chasse
UC-35	NAVMC 3500.92	VMR Det Andrews
C-20	NAVMC 3500.93	MCAF Kaneohe Bay, HI
F-5E/N	NAVMC 3500.83	VMFT-401

Tactical Aviation Ground Communities		
Tactical Air Command Center (TACC)	NAVMC 3500.53	MAWTS-1
Tactical Air Operations Center (TAOC)	NAVMC 3500.119	MAWTS-1
Marine Air Traffic Control (MATC)	NAVMC 3500.94	MAWTS-1
Direct Air Support Center (DASC)	NAVMC 3500.120	MAWTS-1
Low Altitude Air Defense (LAAD)	NAVMC 3500.57	MAWTS-1
Meteorological Oceanographic (METOC)	NAVMC 3500.38	MAWTS-1
Expeditionary Airfield Services	NAVMC 3500.113	MATSG-21, AMS-23, NAS PENSACOLA
Expeditionary Firefighting and Rescue (EFR)	NAVMC 3500.114	MARCORDET, GOODFELLOW, SAN ANGELO, TX
EAF/ARFF Officer	NAVMC 3500.115	MAWTS-1
Aviation Operations Specialist (AOS)	NAVMC 3500.96	MAWTS-1
MACCS Maintenance	NAVMC 3500.128	MAWTS-1

For an up-to-date listing of T&R manuals, the TECOM ASB website is listed at the following URL: https://vcepub.tecom.usmc.mil/sites/directorates/psd/asb/default.aspx

5.3 T&R CHANGES

5.3.1 T&R Working Groups (WG)

1. The T&R WG may be conducted as an in-person forum or in a virtual forum to comprehensively revise a T&R manual and results in the production of a new version (e.g. NAVMC 3500.XX"B"). Formal WGs normally convene on a triennial schedule. However, they may be convened as needed or when higher headquarters directs.

2. During April of the fiscal year, TECOM Policy and Standards Division calls for input to a draft MARADMIN that includes T&R WGs to be scheduled for the upcoming fiscal year. The MARADMIN ensures that funding is provided for voting members for in-person WGs. Requests for WGs conducted in-person that are out-of-cycle and not accounted for in the MARADMIN may not be funded.

3. Optimally, T&R WGs and training management team (TMT) WGs should be conducted back-to-back in the interest of fiscal efficiencies.

5.3.2 Readiness Reviews (RR)

1. Per MARADMIN 547/19 (CANCELLATION OF MCO 5311.6, ADVOCATE AND PROPONENT ASSIGNMENTS AND RESPONSIBILITIES) Deputy Commandant for Combat Development and Integration has primary responsibility for all Marine Corps Force Development. Deputy Commandant for Aviation provides subject matter advocacy in his respective field. As such, DC AVN is the approval authority for the applicable core and core plus mission essential tasks (METL), along with associated conditions and standards.

2. In advance of the WG, a RR shall be conducted by DC AVN. The purpose of the RR is as follows:

a. Review METs and output standards to determine if they meet DC AVN's intent; revise and update as required.

b. Review mission statements and critical MOSs to determine if they meet DC AVN's intent; revise and update as required.

c. Prepare a precept directing the applicable community to revise the T&R manual in accordance with prescribed requirements, parameters and expectations.

d. Prepare a unit readiness Chapter 1 for the applicable community.

3. T&R RRs are normally conducted 60 days in advance of the WG. They are conducted to the greatest extent in a in-person environment, supplemented by virtual means as required.

5.3.3 T&R Pre-Working Groups (PWG) (Optional)

1. In advance of the WG, a PWG may be conducted at the discretion of the community. The purpose of the PWG is to provide an additional planning venue to facilitate successful completion of the follow-on WG. For example, the MACCS Maintenance T&R Manual is composed of 14 chapters and requires detailed in-depth analysis and coordination.

2. There are no required deliverables. Timing of the PWG is at the discretion of the community.

3. PWGs are normally conducted via virtual means (i.e., Defense Collaboration Services, teleconference, video teleconference, etc.).

5.3.4 Interim T&R Changes

1. An interim change is a change to an existing T&R manual occurring between or out-of-cycle of the triennial schedule. This type of change is more limited in scope as compared to a WG. T&R interim changes are normally staffed and adjudicated via electronic means and produce changes to T&R manuals as follows: NAVMC 3500.XXA, "Ch 1".

2. Examples of interim changes include:

a. As a result of changes to readiness reporting directives, Chapter 1 of the CH-53E T&R Manual was revised to address critical military occupational specialties, adjustment to the worksheet personnel standard, and an adjustment to the worksheet equipment standard. The revised T&R manual was designated "NAVMC 3500.47C Ch 1."

b. The AV-8B community determined that an air defense flight leader designation be added to the combat/flight leadership table. This proposal included the addition of two academic events, one simulator event, and three aircraft events. The revised T&R manual was designated "NAVMC 3500.51B Ch 1."

5.3.5 Administrative Changes

1. An administrative change is an expedient means to make minor corrections, additions or clarifications. These changes shall not involve safety of flight or changes to policy.

2. This type of change is considered on a case-by-case basis and is not formally staffed to the Total Force or DC AVN for concurrence nor to CG, TECOM for signature.

3. An example of an interim administrative change would include the discovery of mistakes in chaining or contradictory information between the narrative of an event and the matrix, with follow-up corrections and clarification provided.

5.4 READINESS REVIEW PROCEDURES

5.4.1 TECOM ASB Responsibilities

1. Date(s). Coordinate with participants; DC AVN (Readiness and applicable T/M/S sponsor), syllabus sponsor, MARFORs, (MCCDC CD&I and MARFORCOM Readiness if changes to the METL are anticipated) to determine availability and establish date(s) and times. Duration of the RR varies and generally depends on the amount of revision being proposed.

2. Announcement Message. This is a joint DC AVN /CG TECOM ASB message that is comprehensive in nature as it announces both the RR and the follow-on WG. It will be sent to appropriate commands in the community within the chain of command beginning with the MARFORS, to include MAWTS-1 with an information copy to CG MCCDC (CDI CDD, CDI MID, and CDI TFS). The following elements shall be addressed.

a. Announce the purpose of the RR, including convening location/date, required participants, and deliverables.

b. Announce the purpose of the WG, including convening location/date, required participants, and deliverables.

3. Tasks to be conducted at the RR

a. Review the mission statement and compare to the Total Force Structure Division (TFSD) version (include FRS if applicable).

b. Review T/O and update table in Chapter 1 as necessary (including FRS). Review critical MOSs with M&RA and DC AVN Aviation Sustainment Branch (DC AVN ASB) representatives and adjust as necessary.

c. Review METL. If changes to the METs are anticipated then a representative from CD&I shall be consulted. Changes are then incorporated into the applicable Chapter 1.

d. Review and update output standards as required.

e. Produce a DC AVN precept and a draft unit readiness Chapter 1.

5.4.2 DC AVN Responsibilities (DC AVN CG Readiness). Results of the RR, the WG precept and a draft Chapter 1 shall be released via AMHS by DC AVN. The message should be released as soon as practicable but no later than 30 days prior to the WG.

5.4.3 Small Unmanned Aircraft Systems (Group 1 UAS) T&R Manuals - Syllabus Sponsor and TECOM ASB Responsibilities

In the case of Group 1 UAS T&R manuals, TECOM ASB and the syllabus sponsor will task organize as required to ensure the tasks per paragraph 5.4.1.2 below are accomplished.

5. 5 T&R WORKING GROUP PROCEDURES AND RESPONSIBILITIES

5.5.1 Syllabus Sponsor and TECOM ASB

1. WG Date. Coordinate a date. The WG occurs approximately 60 days after the readiness review. Duration is normally 3 to 5 days. This date and associated administrative particulars shall be included in the readiness review announcement message per paragraph 5.4.2 above.

2. Working Group Agenda Message. If a formal list of agenda items is required as determined by the syllabus sponsor, consolidate agenda items and release a message to MARFORs/MCIs as required, MAWTS-1, DC AVN, and all appropriate commands operating/implementing the applicable syllabus. TECOM ASB will release the agenda items message 30 days before the convening date of the WG.

5.5.2 TECOM ASB

1. Working Group Funding. CG TECOM ASB shall provide appropriation funding data to voting representatives per MCO P7100.8. Additional WG representatives are encouraged to attend, but must be unit funded.

2. Intelligence battalions are encouraged to fund METOC personnel to attend T&R WGs.

5.5.3 Syllabus Sponsor. Review policy, procedures and rules as applicable, as follows:

1. Conduct of T&R Working Group

Program Manual brief

What is directed by DC AVN and TECOM

Core model brief

T&R rules and M-SHARP implementation - (prerequisite, chaining, POI updating, attain, maintain tables)

Determine tasks to be completed and assign who is to complete them with due dates.

Review importance of matrix vs narrative reconciliation.

Review of agenda items.

2. Review of Chapter 1

Core skills &/or CMTS

Mission skills & CMMR

Core plus (skills & missions) MET to core/mission/core plus matrix

Combat leadership & CMMR

Instructor & CMMR

Resource requirements as applicable

MET 7000 Phase

3. Review of the Core Model

POIs

Flight leadership

Training progression model

Attain rules

Maintain rules

Prerequisite rules

POI updating rules

Chaining rules

Requirements, certifications, qualifications, and designations

Syllabus matrix

Attain & maintain tables

Ordnance matrix

EATF review

5.5.3 Commands Providing Working Group Voting Representatives

1. Nominate voting representatives per the following table to TECOM ASB via message to CG TECOM PSD or via email to the TECOM ASB point of contact NLT 45 days prior to the WG. Higher level commands are authorized to select a representative from their subordinate units if desired.

2. Other commands, to include appropriate schools, are encouraged to send SMEs as non-voting working group members. Working group representatives shall be experienced in the day-to-day supervision of the applicable aviation training program being reviewed

3. DC Aviation is requested to provide a readiness SME and a community/platform SME.

4. Submit agenda items to the syllabus sponsor in "item, discussion, recommendation" format via message no later than 45 days prior to the WG convening date.

5. All attendees shall be familiar with agenda items and review the applicable T&R syllabus prior to the WG. Voting members shall staff agenda items and have established command positions prior to attending a WG. As front-end agenda staffing facilitates the T&R update process, syllabus sponsors should not accept additional agenda items during T&R WGs.

5.5.4 Voting Member Procedures

1. Any WG attendee may recommend a specific position; however, it is the voting representatives listed below that decide on the content to be recommended for command approval.

VOTING MEMBERSHIP				
AVIATION TACTICAL FLYING				
TECOM (ASB)	MARFORCOM	MARFORPAC	MARFORRES	
1ST MAW	2D MAW	3D MAW	4TH MAW	
AVIATION OPERATIONAL SUPPORT AIRCRAFT				
TECOM (ASB)	MARFORCOM	MARFORPAC	MARFORRES	
MCIPAC	MCI WEST	MCI EAST		
GROUP 1 UAS				
TECOM (ASB)	MARFORCOM	MARFORPAC	MARFORRES	
MARSOC	1st MARDIV	2D MARDIV	3D MARDIV	4th MARDIV
AVIATION GROUND				
TECOM (ASB)	MARFORCOM (II MEF – METOC)	MARFORPAC (I & III MEF – METOC)	MARFORRES	
1ST MAW	2D MAW	3D MAW	4TH MAW	
MARDIV (MLR/LAAB)				
ATC/ARFF/EAF/METOC/AOS require the below membership in addition to the Aviation Ground reps				
MCI EAST	MCI WEST		MCI PAC	

2. At the WG, voting members and attendees shall complete, at a minimum the following tasks:

a. Review, discuss and vote on agenda items.

b. Review/validate/modify the following:

(1) Programs of instruction

(2) Phase/stage/event information

(3) Training resource requirements

(4) Required T&R matrices/tables

(5) EATFs

c. Ensure the respective T&R manual is formatted in compliance with Chapter 6 of this manual.

d. Coordinate syllabus requirements with other aircraft/aviation ground communities, as required.

3. T&R Working Group Outline and Schedule of Events Model. This model serves as a guide and template for the conduct of a T&R WG. It may be tailored as required to meet the needs of the applicable community.

Activity
Day 1
Welcome – Provide a synopsis of MAB, OAG and TMT pertinent issues
Program Manual
Core Model
Attain/Maintain
Prerequisites
Chaining
External Resources
Goals of T&R review
Agenda items – Review, discuss, vote
Assignment of breakout groups (as needed).
Day 2
Construction of new stages or events
Concentration on event specific requirements
Ground/Academic
POI assignment
Equipment (aircraft/PEIs/simulator)
Mirror codes
Certifications/Qualifications/Designations
Events:
Goal
Requirement
Performance Standard
Prerequisite
Instructor
Ordnance
Ranges
External syllabus support
Chaining
Day 3-5
Continuation of day 2 activities until complete
How to review T&R (syllabus matrix against event narrative)
Assignment of deliverables with specific due date(s)
Out-brief
Summary message that serves as a record of proceedings that addresses key issues discussed during the conference, and list of attendees (Required for aviation ground communities).

5.5.5 Post Working Group Responsibilities

1. Syllabus Sponsor

a. Submit the draft T&R manual to CG TECOM ASB in the format prescribed in Chapter 6 of this manual. The syllabus sponsor is responsible for all content (text and tables), to include accuracy and reconciliation between the T&R matrices and the event descriptions to ensure alignment.

b. Provide a summary of changes in either PowerPoint or Word. This summary of changes will become a part of the staffing package to facilitate concurrence of the draft T&R manual by the MARFORS and DC AVN, and approval by CG TECOM.

d. Coordinate with CG TECOM ASB to prepare a request for MARFOR concurrence for the completed draft T&R manual.

2. TECOM ASB

a. Upon receipt of the draft T&R manual from the syllabus sponsor, conduct a quality assurance check to ensure the draft complies with the provisions of this manual, particularly Chapters 2 and 6.

b. Staff the draft to M-SHARP representatives prior to release to the MARFORS for concurrence.

c. Submit MARFOR concurrence request message. MARFORS will concur or not concur with justification via message within 30 days upon receipt of the message.

d. Forward the consolidated MARFOR comments, the draft T&R manual and any other documentation to DC AVN via message. DC AVN is requested to respond within 30 days upon receipt of a TECOM ASB request for T&R manual concurrence.

e. Attach DC AVN and MARFOR comments and forward the draft T&R manual to CG TECOM for signature. Unresolved issues shall be forwarded, with a recommended course of action by TECOM ASB, to CG, TECOM for decision and signature.

f. When the NAVMC T&R manual is signed by CG TECOM, release a message announcing that the NAVMC has been signed. Post the NAVMC to the CG TECOM ASB website. Coordinate with CMC (ARDE) to coordinate posting to the HQMC website.

3. Voting Members. T&R voting representatives shall brief their respective commands on post WG results.

4. MARFORs. Consolidate comments from subordinate units and provide concurrence to CG TECOM ASB via message NLT 30 days from receiving a request.

5. CMC (DC AVN). Review the proposed draft T&R Manual and provide concurrence to CG TECOM ASB via message NLT 30 days after receipt of draft T&R manual from TECOM ASB.

6. Oversight. TECOM ASB will maintain contact with syllabus sponsors to ensure the timeline for the process outlined for post working group responsibilities is closely adhered to in order to provide updated T&R manuals to the Total Force as soon as practicable.

5.6 T&R WORKING GROUP MATRIX. The table below outlines and summarizes WG milestones and tasks. All references to "ASB" reflect TECOM ASB:

READINESS REVIEW	**Unit(s)Tasks**	**By-Date**
Release Convening Message	DC AVN & ASB (ASB releases joint msg.)	NLT 60 days prior Readiness Review
Release Report of Results to include precept, draft Chapter 1	DC AVN with ASB in support	NLT 30 days prior to WG
Working Group	**Unit(s)Tasks**	**By-Date**
Coordinate Date & Release Convening Msg	Syllabus Sponsor ASB (releases msg in conjunction with Readiness Review announcement)	In coordination with release of Readiness Review announcement
Nominate Voting Reps to ASB via msg.	Voting Commands (MARFORS MAWS etc.)	NLT 45 days prior to Working Group
Submit Agenda Items to Syllabus Sponsor	All Units (As Desired)	NLT 45 days prior to Working Group
Publish Agenda Items	Syllabus Sponsor ASB (releases msg)	NLT 30 days prior to Working Group
Post-Working Group Requirement	**Unit(s)**	**By-Date**
Provide Smooth Draft T&R Manual To ASB	Syllabus Sponsor	ASAP after Working Group completion
Working Group Report msg.	Syllabus Sponsor ASB (releases msg.)	NLT 30 days after Working Group completion or when draft T&R is complete
Provide Concurrence with T&R draft to ASB	MARFORS	NLT 30 days after receipt of draft T&R manual.
Forward MARFOR Comments to DC AVN	ASB	ASAP after MARFOR concurrence
Provide Concurrence with T&R draft to ASB	DC AVN	NLT 30 days after receipt of draft T&R manual ASB.
Administrative Review	ASB	ASAP Upon MARFOR & DC AVN Concurrence
Obtain CG TECOM Signature & Publish as NAVMC	ASB	ASAP Upon DC AVN Concurrence

5.7 T&R INTERIM CHANGES

1. Units may recommend T&R changes outside of the triennial cycle via a T&R interim change. Units shall submit proposed changes in message format via the respective MAW/MARDIV (MLR/LAAB) to the syllabus sponsor. Correspondence must include rationale for the change.

2. The syllabus sponsor shall review and forward the proposed change recommendations to all units in the respective community and CG TECOM ASB within 5 working days of receipt of the correspondence. If the proposed change requires coordination with another community, the originating syllabus sponsor shall also submit it to the appropriate related syllabus sponsor.

3. All units concerned shall submit their comments and recommendations to the syllabus sponsor, via the respective parent command/MAW/MARDIV (MLR/LAAB), within 30 days of the date of the syllabus sponsor's request for comments.

4. The syllabus sponsor shall:

a. Consolidate comments and provide CG TECOM ASB a smooth draft of proposed T&R changes (include update of the T&R event matrix.).

b. Coordinate with CG TECOM ASB to release a T&R change recommendation message to the MARFORs and DC AVN within 45 days of the date of the syllabus sponsor's request for comments. CG TECOM ASB releases the message.

5. MARFORS and DC AVN shall review the proposed T&R change and concur or non-concur with justification to CG TECOM ASB within 30 days respectively of the syllabus change recommendation message release. Unresolved issues shall be forwarded by TECOM ASB with a recommended course of action to CG, TECOM for decision and signature as a NAVMC change.

6. When the NAVMC change is signed, CG TECOM ASB shall release a message announcing the NAVMC has been changed. CG TECOM ASB shall post the NAVMC change to the CG TECOM ASB website and coordinate with CMC (ARDE) to post the change to the HQMC website.

7. Oversight. TECOM ASB will maintain contact with syllabus sponsors to ensure the timeline for the process outlined for T&R manual interim changes is closely adhered to in order to provide updated T&R manuals to the Total Force as soon as practicable.

5.8 T&R INTERIM CHANGE MATRIX. The table below outlines and summarizes T&R interim change milestones and tasks:

Task	Unit	By-Date
Request for T&R change by msg to syllabus sponsor via MAW/MARDIV	Unit that requests T&R Change	NA
Forward proposed change to all applicable units for review/comment.	Syllabus Sponsor	NLT 5 days after receipt of change request
Submit comments to syllabus sponsor	All units concerned	NLT 30 days after request for comments
Consolidate comments & provide ASB a smooth draft of proposed changes.	Syllabus Sponsor	NLT 45 days after request for comments
Release T&R Change Recommendation msg.	TECOM ASB	NLT 45 days after request for comments
Review Proposed Change & Provide Concurrence/Non-Concurrence with justification	MARFORS DC AVN	NLT 30 days after release of change recommendation msg
Administrative Review	TECOM ASB	ASAP Upon MARFOR & DC AVN concurrence
Obtain CG TECOM Signature & Publish as NAVMC Change "1" etc.	TECOM ASB	ASAP

5.9 ADMINISTRATIVE CHANGE

1. Any unit in the applicable community may identify the need for an administrative change. This type of change shall not involve safety of flight or changes to policy per paragraph 5.3.5 above. The unit discovering the need for an administrative change shall contact the applicable syllabus sponsor with details of the recommended change.

2. The syllabus sponsor will coordinate with TECOM ASB to confirm that the change should be implemented. If implemented, the change will be incorporated into the applicable T&R manual as follows:

a. A message to the community will be drafted by TECOM ASB in collaboration with the syllabus sponsor, outlining what changes have been made along with rationale for the change(s).

b. Coincident with the change message, the subject T&R manual will be annotated with a record of administrative changes form. This form captures the change number, a description of the change(s), affected chapters and page numbers, and the date time group of the message.

c. A copy of the message will be inserted with the record of administrative change(s).

3. A template of the record of administrative change is provided at the end of this chapter.

5.10 APPLICABILITY

When a T&R manual update or change is approved for use, the approved version of the manual becomes the training standard for all applicable units. Changes shall be uploaded into M-SHARP as soon as possible and will be announced via message.

RECORD OF ADMINISTRATIVE CHANGES (TEMPLATE)

Log completed change action as indicated.

Admin Change Number	Description	Chapter(s)	Page Number(s)	Message Date-Time-Group
1	Add Tail Gunnery Stage	3	3-41 to 3-42	CG TECOM PSD 080227Z FEB XX

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CHAPTER 6

T&R MANUAL STRUCTURE

GENERAL BACKGROUND AND REQUIREMENTS

	PARAGRAPH	PAGE
PURPOSE	6.0	6-3
GENERAL	6.1	6-3
STRUCTURE AND CONTENTS	6.2	6-3
UNIT REQUIREMENTS	6.3	6-3
CREWMEMBER SYLLABUS T&R REQUIREMENTS	6.4	6-6

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CHAPTER 6 - T&R MANUAL STRUCTURE

GENERAL BACKGROUND AND REQUIREMENTS

6.0 PURPOSE. The purpose of this chapter is to provide guidance on the development and revision of community aviation T&R manuals. Community T&Rs shall adhere to the policy, content, sequence, and format requirements delineated in this manual.

6.1 GENERAL

1. The development or revision of a T&R manual is a time-intensive and complex process. Factors to consider when determining T&R requirements include unit and individual syllabi, event complexity, environmental conditions, POI assignment, prerequisites, chaining, and proficiency period. Routine T&R WG procedures are to first review and/or revise unit training requirements, then do the same with individual training requirements. SMEs should conduct a detailed revision of individual T&R requirements summarized in matrices throughout each T&R chapter. After revisions are completed, T&R matrices should be compared to unit CMMR and CMTS so that T&R adjustments can be made as needed.

2. Aviation T&R manuals shall consist of at least two chapters. The first chapter of every T&R manual delineates unit T&R information. The second and subsequent chapters delineate individual T&R requirements for each applicable MOS/crew position within the community.

3. T&R syllabi within a community may be interrelated/dependent (particularly for crewed platforms/systems) and should be developed in concert whenever possible. The number of chapters depends on the number of MOSs/crew positions. For example, a CH-53 T&R manual has 3 MOS/crew positions and therefore will have 4 chapters in noted order: (1) CH-53 Training and Readiness Unit Requirements; (2) Pilot; (3) Crew Chief; and (4) Aerial Observer.

6.2 STRUCTURE AND CONTENTS

6.2 STRUCTURE AND CONTENTS. This chapter consists of 2 sections and 2 appendices as follows:

1. Section 1, Instructions for Building Chapter 1.

2. Section 2, Instructions for Building Syllabus Chapters.

3. Templates for chapters are provided as Appendix A (Chapter 1) and Appendix B (Chapter 2).

SECTION 1, INSTRUCTIONS FOR BUILDING CHAPTER 1

6. 3 UNIT REQUIREMENTS

1. This section delineates Chapter 1 training and readiness unit requirements (refer to Appendix A for a Sample Chapter 1).

2. Chapter 1 shall contain the information in the order listed below:

Chapter 1 Paragraphs and Numbering	
Paragraph Number	**Paragraph Name**
1.0	TRAINING AND READINESS REQUIREMENTS
1.1	MISSION
1.2	TABLE OF ORGANIZATION (T/O)
1.3	MISSION ESSENTIAL TASK LIST (METL)
1.4	MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION
1.5	MET TO CORE/MISSION/CORE PLUS/MISSION PLUS SKILL MATRIX
1.6	MISSION ESSENTIAL TASKS (MET) OUTPUT STANDARDS
1.7	CORE MODEL MINIMUM REQUIREMENTS (CMMR) / ADVANCED AND BASELINE TRAINING STANDARDS FOR READINESS REPORTING (DRRS-MC)
1.8	CORE MODEL TRAINING STANDARD (CMTS)
1.9	INSTRUCTOR DESIGNATIONS
1.10	CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (CQD)
APPENDIX A – MET WORKSHEETS	
APPENDIX B – ACRONYMS	
APPENDIX C – EXTERNAL RESOURCES	
APPENDIX D – T&R REPORTS	
NOTE: At a minimum, each T&R chapter shall include above paragraphs in the order listed. It is understood that some communities may need to expound on information; therefore, as long as the paragraphs appear in proper sequence, other paragraphs may be inserted. Just ensure all paragraphs are numbered sequentially.	

1.0 TRAINING AND READINESS REQUIREMENTS. A standardized paragraph that defines the goal of Marine aviation and the corresponding role in expeditionary maneuver warfare. This paragraph is updated by TECOM ASB and DC AVN CG at the direction of either CG, TECOM or DC AVN.

1.1 MISSION. This statement must mirror the wording in the mission statement as maintained by HQMC TFSD. It contains the required capabilities the unit is expected to provide the gaining force commander during combat or contingency operations. Aviation ground communities may define the capability of each sub-unit in subparagraphs below the mission statement. The mission paragraph will be reviewed and updated only at the readiness review as coordinated by DC AVN CG, M&RA, TFSD and MCCDC CD&I.

1.2 TABLE OF ORGANIZATION (T/O)

1. Unit T/O information shall be derived from the current T/O managed by TFSD. The section shall list authorized billet structure by MOS, critical MOSs and organizational structure.

2. T/M/S Communities. Include number of aircraft and T/O; include FRS structure. If applicable, standardized detachments shall also be listed. When detachments are defined, there should be a related squadron (-); i.e. the sum of aircraft between the squadron (-) and the detachment will equal the squadron aircraft T/O for each detachment option.

3. Aviation Ground Communities. At a minimum, include total personnel for each unit and subunit per the T/O table.

4. The T/O shall only be updated at the readiness review by DC AVN CG and representatives from DC ASB and M&RA.

1.3 MISSION ESSENTIAL TASK LIST (METL). The METL is a standardized approved list of specified tasks a unit is designed or organized to perform, drawn from the Marine Corps Task List (MCTL) and are standardized by type unit. Information for this table is determined during the readiness review. This paragraph shall be updated only at the readiness review by DC AVN CG. Recommendations by the fleet shall be submitted to the syllabus sponsor prior to the readiness review for review and approval by DC AVN CG in coordination with MCCDC CD&I.

1.4 MET TO SIX FUNCTIONS OF MARINE AVIATION. This table depicts the relationship between the community-specific METS to the six functions of Marine aviation. This paragraph will be updated at the readiness review.

1.5 MET TO CORE/MISSION/CORE PLUS/MISSION PLUS SKILL MATRIX. Provides a correlation between the MCTs and each core/mission/core plus/mission plus skill required to perform the MCT. All skills defined in the syllabus chapters must be represented in this table. An "X" in a block does not represent that all events in that skill must be completed as a prerequisite for mission skills - a minimum of one event can constitute a relationship. It also depicts the relationship between a MET and each core/mission/core plus/mission plus skill associated with the MET for readiness reporting and resource allocation purposes. There may be multiple relationships for the core and core plus skills; there should normally be a one-to-one relationship between the MET and corresponding mission and mission plus skills. For aviation ground communities there may be a one-to-many relationship between METs and skills. This matrix may be updated at either the readiness review or the WG if changes have been made to the METs or 2000-4000 skills.

1.6 MET OUTPUT STANDARDS. This table lists the core METL output standards as follows:

1. Core METL Output Standards. The required level of performance a unit must be capable of sustaining during contingency/combat operations by MET to be considered MET-ready.

2. Aviation Ground Output Standards. These are measured as collective output, vice number of sorties, as defined in the MET worksheet.

3. This paragraph will be updated at the readiness review. Changes to the output standards shall be approved by DC AVN CG.

1.7 CORE MODEL MINIMUM REQUIREMENT (CMMR) / ADVANCED AND BASELINE TRAINING STANDARDS FOR READINESS REPORTING (DRRS-MC). This table provides crew composition and training requirements based on the following definitions and edicts:

1. CMMR is an objective readiness metric approved by DC AVN to meet the minimum aircrew qualifications, designations, and/or training required to execute the MET output standards defined within each MET. This metric identifies the required number of crews and composition of each crew per MET, as well as the total number of combat leaders required by the unit. With the advent of DRRS-MC, CMMR shall use the advanced training standard.

2. The advanced training standard is defined as CMMR and it defines the T-1 level of training required to execute the output standards. The advanced training standard is identified in the CMMR Table and is also included in Appendix A (MET Worksheets) and M-SHARP reports (Appendix D).

3. The baseline training standard is normally defined as approximately 70 percent of CMMR and it defines the T-2 level of training required to execute the output standards. The baseline training standard is identified in the CMMR Table and is also included in Appendix A (MET Worksheets) and M-SHARP reports (Appendix D).

4. Crew composition is determined by community and details the required designations, qualifications and/or skill proficiency of each member. Each crew must include a minimum of one crewmember who is MSP or MPSP.

5. Tactical aviation community T&Rs shall delineate CMMR. Operational support airlift community T&Rs may be required to delineate CMMR depending on mission requirements but shall adhere to the remainder of unit T&R structure requirements.

6. The CMMR for combat leadership is defined in terms of minimum numbers of tactical leaders required to execute the unit METL and is delineated in the respective model/series specific T&R manual. The combat leadership metric is applicable to the entire unit readiness assessment and is not tied specifically to individual METs. Individuals count towards this requirement upon designation in writing by the CO. Combat leadership does not have a baseline calculation, it remains a constant to execute the output standards.

7. If a unit falls short of the baseline training standard, commanders shall refocus their training, or if unable to self-correct, request assistance from higher headquarters to meet the requirement. Units should always strive to attain CMMR.

8. The CMMR, baseline training standard, and capability statements (those statements contained in the MET worksheets) shall be reviewed at the readiness review, but final updates shall be accomplished at the WG.

1.8 CORE MODEL TRAINING STANDARD (CMTS). An objective optimum training standard by crew position that reflects the number of individuals trained to CSP/MSP/CPSP/MPSP and the number of instructors required to execute the training plan. The CMTS is for internal squadron planning only and is not utilized for readiness reporting. The numbers are determined by individual communities. CMTS may apply to 2000-6000 phase events. The CMTS for instructors is defined in terms of the requirement to train the cadre of core/mission/core plus/mission plus skill proficient crews and combat leaders every year. Use of the CMTS is optional for aviation ground units. In the FRS, the CMTS is limited to the 5000 and 6000 phases only. The CMTS shall be reviewed at the readiness review and updated at the WG.

1.9 INSTRUCTOR DESIGNATIONS. This table provides the instructor requirements and objectively defines the desired number of instructors by crew position required to train crews. For T/M/S communities that have a FRS, a separate table for the applicable FRS instructor requirements will be provided. This paragraph shall be reviewed at the readiness review and updated at the WG.

1.10 CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (CQD). This table provides the crew composition breakdown and specifies the certifications, qualifications, and designations (includes functional check pilot) for each. For T/M/S communities that have an FRS, a separate table for the applicable CQD requirements will be provided. This paragraph shall be reviewed at the readiness review and updated at the WG.

APPENDIX A MET WORKSHEETS. The MET worksheets per community. These worksheets will assist in importing requirements into task master for readiness reporting. The worksheet defines the conditions and standards for the execution of each MET. With the advent of the change to DRRS-MC the following items have been included in the MET Worksheet: advanced training standard (CMMR), advanced capability statement, baseline training standard, and baseline capability statement.

APPENDIX B ACRONYMS. Community T&Rs shall contain standard abbreviations as set forth in each manual.

APPENDIX C EXTERNAL RESOURCES. This section addresses any external critical training resources required (e.g., adversary support, tanker support, etc.). Training resources for MACG units may entail simulation support, aviation live fly requirements for position training and combined arms exercises. This section is optional depending upon community requirements. R6-6ange Types matrix will be included for "shooters."

APPENDIX D T&R REPORTS. Provides a listing of the specific T&R manual reports available within M-SHARP.

SECTION 2: INSTRUCTIONS FOR BUILDING THE SYLLABUS CHAPTERS (2, 3, 4, etc.)

6.4 CREWMEMBER SYLLABUS T&R REQUIREMENTS

1. This section delineates crewmember training requirements for MOS/crew positions in the applicable community. Each community T&R will contain at least one chapter delineating requirements for crewmember training.

2. Aviation Ground Communities – specific considerations. Crewmembers typically train to multiple crew positions. Therefore, a single chapter may be composed of one primary MOS with more than one position to reflect the training requirement of each position and the resultant training progression of that MOS.

3. Set-up:

Font – Times New Roman 10 font size (Tables may be in 8 or 6 font size, if required)

1" Margin left and right

1" Top & Bottom: Header - NAVMC 3500.XX; Footer - Chapter and page. Numbering convention and spacing:

The numbering convention utilized will be down to the third level as shown in example below:

2.2.3 (The first number will be the Chapter; in this example it would be Chapter 2)

4. Each crewmember syllabus T&R chapter shall contain paragraphs listed below:

Chapter 2 Paragraphs and Numbering	
Paragraph Number	Paragraph Name
2.0	CREWMEMBER SYLLABUS T&R REQUIREMENTS
2.1	TRAINING PROGRESSION MODEL
2.2	PROGRAMS OF INSTRUCTION (POI)
2.3	PROFICIENCY AND CURRENCY
2.4	CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS (CQD) TABLES
2.5	SYLLABUS NOTES
2.6	CORE INTRODUCTION PHASE
2.7	CORE INTRODUCTION STAGES
2.8	CORE PHASE
2.9	CORE STAGES
2.10	MISSION PHASE
2.11	MISSION STAGES
2.12	CORE PLUS PHASE
2.13	CORE PLUS STAGES
2.14	MISSION PLUS PHASE
2.15	MISSION PLUS STAGES
2.16	INSTRUCTOR TRAINING PHASE
2.17	INSTRUCTOR TRAINING STAGES
2.18	REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RCQD) PHASE
2.19	REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS STAGES
2.20	MET ASSESSMENT PHASE
2.21	MET ASSESSMENT STAGE
2.22	AVIATION CAREER PROGRESSION MODEL (ACPM) PHASE
2.23	ACPM STAGE
2.24	ELECTRONIC AIRCREW TRAINING FORM (EATF) REASON CODES
2.25	T&R SYLLABUS MATRICES

THE INFORMATION THAT FOLLOWS REFLECTS THE FACTORS AND ELEMENTS TO BE CONSIDERED WHEN CONSTRUCTING PARAGRAPHS 2.0 THROUGH 2.5 OF INDIVIDUAL SYLLABUS CHAPTERS:

2.0 CREWMEMBER SYLLABUS T&R REQUIREMENTS. The first paragraph of each MOS/crew position chapter is TECOM ASB-provided and is the same for all T&R manuals. It provides the goal of the chapter.

2.1 TRAINING PROGRESSION MODEL. A training progression model graphically depicts community recommended progression for the minimum to maximum time to train for crewmembers in terms of core, mission core plus and mission plus skills, certifications, qualifications and designations. Communities shall develop a training progression model for each MOS T&R chapter. This table reflects the minimum to maximum time-to-train and is depicted in months. See example located in Appendix B.

2.2 PROGRAMS OF INSTRUCTION. This paragraph outlines POIs that are established for the applicable community and depicts the average time-to-train for the 1000-3000 Phases. The time-to-train for the phases of instruction within the POI shall be depicted in weeks for each phase.

2.3 PROFICIENCY AND CURRENCY. The following rules apply when updating/developing POI assignment for each event in the T&R matrix tables at the end of the chapter.

1. Refresher, Modified Refresher and Safe for Solo POI Rules

   a. R POI

      (1) All events that require proficiency to be re-demonstrated shall be assigned to the R POI.

      (2) All R POI events shall be assigned a proficiency period.

b. MR and SS POIs

(1) All events assigned to the MR and SS POIs shall also be assigned to the R-POI.

(2) The proficiency period shall be aligned per Chapter 4 guidelines for the MR and SS POIs.

c. Phase Specific rules

(1) 1000 Phase

(a) Event proficiency periods should be equal to but shall not exceed the total number of days 'Out of Model' (flying communities) defined in the Chapter 4 aircrew refresher training matrix. Aviation ground shall define the period as needed.

(b) Add proficiency periods to all R, MR and SS events.

(c) Add a 1000 Phase event that mirrors every 1000 Phase R event.

(d) Fleet replacement squadrons (FRS), fleet replacement detachments (FRD), and training units should enter the mirror code for refresher aircrew upon arrival to the FRS, FRD or training unit. The proficiency date for the mirroring event will correspond to that Marine's last fleet flight (or training event for aviation ground) 1000 Phase R, MR and SS events will mirror this date.

(e) Mirrored 1000 Phase R, MR and SS events exceeding proficiency periods will indicate not proficient (red).

(f) Mirrored 1000 Phase refresher events not exceeding proficiency periods will indicate proficient (green).

(g) Compliance with the steps listed above ensure that the associated M-SHARP report displays to the training officer those 1000 Phase R, MR, and SS events that have been refreshed and those that still need to be refreshed.

(2) The process for assigning proficiency periods for 2000-8000 phase events should consider the days defined in the Chapter 4 aircrew refresher training matrix but may exceed those guidelines when the community determines that the level of skill proficiency will not be adversely affected by doing so.

(3) For aviation ground, unless guidance is provided by formal directive (CNAF, APM, etc.), individual communities determine the threshold days for refresher assignment. Proficiency periods may be shorter but cannot exceed the threshold.

2. Attain/Maintain Rules for Skills (2000-4000 Phase events)

a. The T&R matrix "skill" column establishes which event(s) constitute a skill.

b. A skill may include events from multiple stages and/or phases.

c. When a skill in the C, S, or T POI has event(s) assigned to it from another skill, at least one event within that skill shall be assigned to the corresponding C, S, or T POI. For example, when an event(s) in the C, S or T POI from the NS LLL core skill are assigned to the FAC(A) mission skill, at least one event within the FAC(A) skill shall be assigned to the corresponding C, S, or T POI.

d. The "POI" column in the T&R matrix indicates which event(s) must be proficient to attain, and then maintain, skill proficiency.

e. All 2000-4000 phase events shall be represented/listed in at least one skill.

f. All events assigned to the M-POI shall also be assigned to the R-POI. However, not all events assigned to the R-POI are required to be assigned to the M-POI.

g. All R-POI events not assigned to the M-POI shall be chained by event(s) assigned to the M-POI for that skill (intra-skill chaining). The chaining event has an equal or shorter proficiency period than the chained event.

h. The "M-POI" column shall contain at least one event for each skill.

i. To attain individual skill proficiency, an individual must be simultaneously proficient in all events listed for the skill. Once a skill is attained, the individual automatically enters the maintain status.

j. Events in one skill may chain update other events in another skill (inter-skill chaining).

k. Higher phase events such as a mission skill event can chain entire core skills. Chaining complexity varies.

Note

Communities shall consider the entire T&R to include event complexity, event conditions (day, night, ATC non-radar, or severe weather), R-coding, event chaining, event proficiency period, etc. when determining skill maintain requirements.

3. Events within a skill that are NOT CHAINED by event(s) in the M-POI for that skill:

a. Shall be assigned an asterisk (*) for the proficiency period, or…

b. Shall be assigned to the M-POI, or…

c. Shall be assigned to another skill.

4. Skill Currency. An additional control measure associated with date last flown (CNAF M-3710.7_ and wing SOPs). Appendix B contains a template for skill currency within the Proficiency and Currency paragraph.

2.4 CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS (CQD) TABLES

1. All CQD requirements and specific criteria to achieve them shall be delineated in community T&R manuals. Commanders may issue certification, qualification or designation letters when individual personnel complete applicable training requirements. A copy of these letters shall be included in section 4 of performance records per Chapter 2. Only after successfully completing requirements and being issued a letter signed by the CO will an individual be considered certified, qualified or designated.

2. Definitions of certifications, qualifications and designations are listed per paragraph 2.12. However, additional factors to consider are as follows:

a. Designation Criteria. Designation criteria, to include any workup, shall be evaluated and may be delineated in the 6000 Phase but shall be listed under the designations portion of the CQD table, as applicable. Community T&Rs may stipulate additional criteria for re-designation, but designation is at the discretion of the CO.

b. Instructor Designations. Instructor designations are assigned to personnel based on ability to conduct ground academics, position, and/or airborne instruction. Instructor designations are designed to enhance standardization and safety while training personnel in specific skills. T&R instructor designation/re-designation requirements should be consistent with and may reference instructor requirements listed in the MAWTS-1 Course Catalog, MAWTS-1 C3 Course Catalog, NATOPS, and other applicable directives. Criteria is detailed in the 5000 Phase (Instructor Training) or can be prescribed by a formal course.

3. Each CQD requires a minimum of one of the following: a T&R event, stage, phase, skill, certification, qualification, or designation, to be listed as a required event in the CQD table.

2.5 SYLLABUS NOTES. This paragraph should include all notes, policies, and guidelines applicable to the syllabus. Essential information pertaining to the entire syllabus should be explained in detail in this paragraph. See Appendix B for examples of essential information.

T&R SYLLABUS STRUCTURE (PARA 2.6 CORE INTRODUCTION PHASE THROUGH 2.25 T&R SYLLABUS MATRICES; (1000 THROUGH 8000 PHASES). THIS SECTION PROVIDES BACKGROUND AND DISCUSSION ON THE FACTORS AND ELEMENTS TO BE CONSIDERED FOR THESE PARAGRAPH NUMBERS WHEN CONSTRUCTING CREW POSITION CHAPTERS:

1. Aviation T&R manuals contain syllabi that apply to a specified aviation community. A T&R syllabus refers to all training and readiness events for a PMOS, or in unique situations by crew position, within a community. Example: An aircrew syllabus exists for each crew position within each aircraft. For the FA-18D, there are two syllabi defined - the pilot and the WSO. Because T&R manuals are generally separated by aircraft model, all syllabi that apply to the FA-18 model aircraft (FA-18A Pilot, FA-18C Pilot, FA-18D Pilot and FA-18D WSO) will be contained in the F/A-18 T&R Manual. For aviation ground - within the Direct Air Support Center Community T&R Manual, Chapter 7 details the 7242 syllabus.

2. T&R syllabi are constructed based on increasingly challenging training events. T&R syllabi are divided into phases, which are subdivided into stages and events.

3. Community SMEs shall update/construct T&R syllabi per the following guidelines:

a. Phase Structure. A phase is an administrative group of stages. Events in the same phase share the same first digit and are organized as described below.

(1) Core Introduction Phase (1000). Fundamental system/equipment operation familiarization, initial individual or crew procedures, and initial exposure to future core training. This phase may include aircrew specific POI training. CNATRA, FRSs, formal learning centers (FLC), and/or operational units conduct core introduction training. At the completion of this phase, individuals are normally assigned to operational units.

(2) Core Phase (2000). The purpose of this phase is to train the individual to perform the basic functions of their job. These basic functions lay the foundation for progressing to more complex mission skill sets.

(3) Mission Phase (3000). Training in this phase involves advanced skill training and develops an individual to be part of mission level crews and leaders. Individuals should be capable of planning, managing, conducting mission essential tasks, leading crews, and leading multiple aircraft flights in contingency operations.

(4) Core Plus Phase (4000). This phase contains skill training associated with a low probability of execution and/or theater specific operations. Although core plus training events may provide valuable training opportunities, they are not essential to achieve unit core competency. Core plus training is conducted at the discretion of operational commanders and allows unit training flexibility.

(5) Mission Plus Phase (4500). This phase contains mission training associated with low probability of execution and/or theater specific operations. Although mission plus training events may provide valuable training opportunities, they are not essential to achieve unit core competency. Mission plus training is conducted at the discretion of operational commanders and allows unit training flexibility.

(6) Instructor Training (5000). This phase contains instructor workup and evaluation events.

(7) Requirements, Certifications, Qualifications, and Designations (RCQD) Phase (6000). This phase contains all other syllabus events and special interest tracking codes that do not neatly ‘fit’ into the above phases and is designed to facilitate training management. Examples include:

(a) Qualification workup and evaluation.

(b) Designation workup and evaluation.

(c) Standardized combat/flight leadership workup and evaluation events.

(d) Requirements mandated by other directives/programs, such as NATOPS, instrument evaluations, and certifications.

(e) Formal schools.

(f) Operational/administrative events required prior to qualification or designation.

(8) Mission Essential Task (7000). The purpose of this phase is to:

(a) Assess CMMR representative crews during the execution of the unit's specified METs to ensure standardization and combat readiness.

(b) Fulfill the requirements of a Marine Corps combat readiness evaluation (MCCRE) as specified in MCO 3501.1_, Marine Corps Combat Readiness Evaluation.

(c) Events in this phase are E-coded to indicate they are associated with unit level evaluations.

(9) Aviation Career Progression Model (ACPM) (8000). Events as determined by MAWTS in coordination with DC AVN to enhance professional understanding of Marine aviation and the MAGTF.

(10) For Future Use (9000)

b. Stage. Stages are an administrative group of events named by a common attribute. Examples of stages could include low altitude training (LAT), equipment (EQUIP), and applied meteorological science (AMS). Stage names may be used in multiple phases and have the same name as a skill. The stage prefix is limited to 15-characters.

c. Event. The basic building block of training in Marine aviation is an event. An event delineates specific tasks/performance steps that must be successfully performed. An event is a unique measurable action designed to contribute a specified, quantifiable result to the accomplishment of a goal.

(1) Each event is assigned a unique four-digit numeric training code (e.g., 2014) that can only be used once within a syllabus. Events are displayed along with the stage prefix (e.g., TERF-2014). Several terms are often used interchangeably to refer to an event (e.g., 'event,' 'training event,' 'T&R code,' 'training code,' etc.).

(2) Event completion is predicated upon demonstrated proficiency. When supervising individual events, unit instructors/leaders shall ensure trainees demonstrate proficiency per the defined standards prior to logging successful completion. Evaluating individual proficiency in an event normally requires both objective and subjective assessments. When an individual accomplishes the requirements of an event per the performance standards, the event is logged as complete via M-SHARP. Once logged, the individual's proficiency date is automatically updated.

(3) If all the criteria to perform an event cannot be completed, the individual will not log the event as complete or proficient and the proficiency status for that event remains unchanged. Flying communities shall log an aircraft or simulator event 'Incomplete' via the flight logger when all criteria are not met.

T&R SYLLABUS STRUCTURE FOR PHASES AND SUBSEQUENT STAGES (PARA 2.6 CORE INTRODUCTION PHASE THROUGH 2.25) (1000 THROUGH 8000 PHASES) (CONTINUED) – PROVIDED HERE ARE DETAILS CONCERNING THE CONSTRUCTION OF PHASES, STAGES, AND INDIVIDUAL EVENTS

NAME OF PHASE

1. Purpose. Required. Describe end-state training being accomplished in this phase.

2. General. The following stages are included in the Core Introduction Phase of training.

STAGE
FORM
LAT
TERF

3. Admin Notes. As applicable. Include administrative notes, policies, guidelines, and other amplifying pertinent phase information.

4. Prerequisites. As applicable. Options include events, hours, phases, stages, skills, and CQDs required to be completed prior to beginning training in the phase. This field is displayed in table form as depicted in Appendix B.

NAME OF STAGE (Use the title (100-character limit) and stage abbreviation (15-character limit) listed in "stages" from the Phase Overview table above)

1. Purpose. Required. Describe the end state of the stage to include level of performance.

2. General. As applicable. Provide general information concerning the stage.

3. Admin Notes. As applicable. Include administrative notes, policies, guidelines, ACPM and other amplifying pertinent stage information. May include crew requirements, instructor requirements, and specify academic instruction required in the stage. For tactical T/M/S communities, ACPM training events will be listed for the 2000, 3000 and 6000 Phases; and, where applicable, include the following statement:

"Utilize academic courseware as outlined in the appropriate Type/Model/Series chapter of the MAWTS-1 Course Catalog."

4. Prerequisites. As applicable. Options include events, hours, phases, stages, skills, and CQDs required to be completed prior to beginning training in the stage. This field is displayed in table form as depicted in Appendix B.

5. Crew Requirements. As applicable. If a minimum crew requirement applies to all events in a stage, it should be listed here.

EVENT FORMAT. Events contain two main parts – a header and body. The notes below describe how entries are to be developed. Event information shall be consistent with and summarized in each T&R syllabus matrix.
Event Header. Written in bold font.

1/	2/	3/	4/	5/	6/	7/	8/	9/
CAL-2100	**1.5**	**365**	**B R S C M**	**I**	**(NS)**	**A/S**	**2**	**AH-1Z**

Number	Section	Inches from Margin	Notes
1	Prefix & and Event code	0	0 to 1" – Prefix limited to 6 letters
2	Time (Flight, Sim, Acad)	1.0	
3	Proficiency Period	1.5	Expressed in days
4	Program of Instruction	2.0	Includes Basic
5	EATF Mandatory	3.0	Formal Evaluation required
6	Condition	3.5	D,N,NS etc.
7	Device	4.0	A, S, A/S, S/A, G, L, L/S, S/L
8	Number	4.5	Number of Aircraft or Simulators
9	Equipment	5.0	T/M/S or type Simulator

Note

For aviation ground - as an alternate method, list the number and type of equipment required for in the equipment section of each event.

EVENT HEADER INFORMATION:

Stage Abbreviation – Event Code. Required. Stage abbreviations in the abbreviations table or standard abbreviations shall be used, as applicable (15-character limit). A unique numeric four-digit training code shall be assigned to each event. The first digit of the event code shall begin with the appropriate phase series number (core introduction events = 1XXX; core events = 2XXX; etc.). The second digit of a T&R code refers to the stage. The third and fourth digits refer to the individual events within a stage, in sequence.

Time. Required. This should reflect the average time to execute the event requirement (actual time to execute the event may vary). Transit time may be added to the event duration. Projected event durations should be listed in applicable columns in the T&R syllabus matrix (flight, live, simulator, etc.) and is stated in hours to the tenths decimal place.

Proficiency Period. Required. Proficiency period is the maximum time between displaying event proficiency and is delineated in days. If an event is a one-time training requirement, an asterisk (*) will be used to indicate there is no proficiency period.

Programs of Instruction (POI). Required. See the example templates in Appendix B.

Evaluation. As required. Refers to I-coding, a special code indicating when a community has determined an event requires an EATF every time executed. See Chapter 2, paragraph 2.8.3.

Condition. Required. See the example template in Appendix B. Indicates the environmental condition under which the event will be performed.

Device. Required. See example template in Appendix B.

Number. As applicable. List the number of aircraft, system, simulator, or other device(s)/major end items (MEIs) required for the completion of the event.

Equipment. As applicable. List the type of device/MEI required for the completion of the event. For simulator events, list the specific type(s) of trainers.

Body. The contents of the body are outlined below:

First level	Goal, Requirement, Performance Standard shall be underlined and left justified. In "Page Layout" choose "Spacing" – select 6 pt "Before and After." "Line Spacing" – choose "Single"
Second level	Discuss, Demonstrate, Introduce, etc., shall be indented at .50". There is no requirement to underline. In "Page Layout" choose "Spacing" – select 0 pt "Before and After." "Line Spacing" – choose "Single"
Third and subsequent levels	All subsequent levels shall be indented at .50" for each level. There is no requirement to underline. In "Page Layout" choose "Spacing" – select 0 pt "Before and After." "Line Spacing" – choose "Single"

SFORM-1430 2.0 * B T AF CI I (NS) S 2 FFS or FTD TEN+

EVENT BODY INFORMATION:

Goal. Required. State the terminal learning objective.

Requirement
Required. For T/M/S Communities. List specific tasks for the event; the list of tasks may be formatted to meet the needs of the applicable community. For example, the terms Introduce, Demonstrate, Practice etc. may be used.

Required. For aviation ground communities. List the specific tasks for the event; indicate what the individual must accomplish. For aviation ground communities this includes a condition and performance steps; for example:
"Requirement." (condition) Given a warning order, site diagram, and applicable references:
(performance steps)

1. Determine equipment density list based on site diagram
2. Identify total crews and personnel required to support the mission.
3. Etc.

Performance Standard. Required. Describe measurable level of proficiency for the event. It must be observable or measurable and shall specify the quantity and/or quality of the performance.

Equipment. Aviation ground communities only.

Crew Requirement. As applicable.

Instructor. Required. Only events with a device code G do not require an instructor. List instructors authorized to train the event.

Prerequisite. As applicable. Phases, stages, and events may have prerequisites that are required as a prior condition and shall be completed prior to commencing the subject training, unless it has been waived or deferred. A prerequisite may be any event, stage, phase, certification, qualification, or designation. Prerequisites complement and enhance the building block approach to training. Communities may use any combination or number of these prerequisites to tailor training as appropriate.

Conditional Prerequisites. Conditional prerequisites are designed for events, stages or phases that are subject to varying conditions. Those conditions can be device, environmental or ordnance. The tilde (~) symbol is used for the word "if" to identify a conditional prerequisite. Conditional prerequisites are subdivided as follows:

Automated Conditional Prerequisites. Those prerequisites that are automatically validated in M-SHARP.

Device Prerequisite. For events with device options, prerequisites may be specified by device type. For example, if a T&R code 2123 can be conducted in a simulator or in an aircraft, 2123 may have no prerequisite if conducted in the simulator, but if conducted in the aircraft prerequisites may apply. Events may be refined depending on conditions as follows.

Automated Device Prerequisite Examples	
Conditional Prerequisite	**MEANING**
2430 ~ A	Training code 2430 becomes a prerequisite if flown in the aircraft
2430 ~ S	Training code 2430 becomes a prerequisite if flown in the simulator

Environmental Condition Prerequisites. Conditional prerequisites are designed for events, stages or phases that are subject to varying conditions. Those conditions can be day or night. Conditional prerequisites are subdivided as follows:

Automated Conditional Prerequisite Examples	
Day, Night, and Night Systems	
Conditional Prerequisite	**Meaning**
2430 ~ D	Training code 2430 becomes a prerequisite if flown during day
2430 ~ N	Training code 2430 becomes a prerequisite if flown during night
2430 ~ N*	Training code 2430 becomes a prerequisite if flown during night unaided
2430 ~ NS	Training code 2430 becomes a prerequisite if flown with Night Systems
2430 ~ HLL	Training code 2430 becomes a prerequisite if flown under High Light Level conditions
2430 ~ LLL	Training code 2430 becomes a prerequisite if flown under Low Light Level conditions

Ordnance and Configuration Requirement Prerequisites. These prerequisites are designed for events, stages or phases that are subject to varying ordnance or configuration requirements. Those conditions can be ordnance or specific configuration, e.g., fuel tank, GUA-21 or AAR-47. The prerequisites are subdivided as follows:

Non-Automated Conditional Prerequisite Examples	
Ordnance	
Conditional Prerequisite	**MEANING**
2430 ~ .50 Cal Ball	Training code 2430 becomes a prerequisite if flown utilizing a specific ordnance
2430 ~ AAR-47v2	Training code 2430 becomes a prerequisite if flown utilizing a specific configuration requirement

Certification Prerequisite. For aviation ground only. A certification that must be completed prior to completing another training requirement is a certification prerequisite. For example, a LAAD platoon commander certification is normally a prerequisite to commencing battery/battalion training.

External Resource Requirements. Types of external resources are listed below.

Ordnance. As applicable. Ordnance shall be specified in a table format to identify primary ordnance requirements and quantity with allowable substitutes if applicable.

Range Type. List all range/target capabilities required to complete the event, if applicable. Range/target capability acronyms, derived from a standard list, shall be used. The standard list of range/target capabilities are tailored for each community.

Target. List all range/target capabilities required to complete the event, if applicable. Range/target capability acronyms, derived from a standard list, shall be used. The standard list of range/target capabilities are tailored for each community.

Fuel. Aviation ground communities.

Reference. Required for aviation ground communities. State references that are required or support accomplishment of the event.

Other. A list of additional training resources not addressed in other categories above.

2.20 MET ASSESSMENT PHASE (7000 PHASE) AND MET ASSESSMENT STAGE (2.21). See Appendix C.

2.22 AVIATION CAREER PROGRESSION MODEL (ACPM) PHASE AND ACPM STAGE (2.23) . See example in Appendix B.

2.24 EATF REASON CODES. See example in Appendix B.

2.25 T&R SYLLABUS MATRICES. The template for these matrices are tailored to a limited degree to meet the needs of the community, but remain compatible for M-SHARP use. These matrices are a consolidation of all elements/data fields that contribute to the make-up of phases, stages, skills, and events. They are a wrap-up of all previously listed information to serve as a comprehensive illustration to assist operations personnel in developing training plans. This tool is used by M-SHARP to facilitate the upload of syllabi. The matrices are maintained in Excel format and will be exported to Word once the applicable T&R manual is approved for publication. The Excel template is available for review on the TECOM ASB SharePoint site.

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CHAPTER 1

APPENDIX A – SAMPLE UNIT TRAINING AND READINESS UNIT REQUIREMENTS

	PARAGRAPH	PAGE
TRAINING AND READINESS REQUIREMENTS	1.0	X-X
MISSION	1.1	X-X
TABLE OF ORGANIZATION (T/O)	1.2	X-X
MISSION ESSENTIAL TASK LIST (METL)	1.3	X-X
MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION MATRIX	1.4	X-X
MET TO CORE/MISSION/CORE PLUS SKILL MATRIX	1.5	X-X
MISSION ESSENTIAL TASK (MET) OUTPUT STANDARDS	1.6	X-X
CORE MODEL MINIMUM REQUIREMENTS (CMMR) / ADVANCED AND BASELINE TRAINING STANDARDS FOR READINESS REPORTING (DRRS-MC)	1.7	X-X
CORE MODEL TRAINING STANDARD (CMTS)	1.8	X-X
INSTRUCTOR DESIGNATIONS	1.9	X-X
CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (CQD)	1.10	X-X
APPENDIX A MET WORKSHEETS	A-1	
APPENDIX B ACRONYMS	B-1	
APPENDIX C EXTERNAL RESOURCES	C-1	
APPENDIX D T&R REPORTS	D-1	

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CHAPTER 1

UNIT TRAINING AND READINESS UNIT REQUIREMENTS

1.0 TRAINING AND READINESS REQUIREMENTS. The goal of Marine aviation is to attain and maintain combat readiness to support expeditionary maneuver warfare while conserving resources. The standards established in this program are validated by subject matter experts to maximize combat capabilities for assigned METs. These standards describe and define unit capabilities and requirements necessary to maintain proficiency in mission skills and combat leadership. Training events are based on specific requirements and performance standards to ensure a common base of training and depth of combat capability.

1.1 MISSION

1.1.1 Tactical and Reserve Squadron/Unit. Support the MAGTF commander by……...

1.1.2 Fleet Replacement Squadron/Unit/FRD. Conduct core introduction ……..

1.2 TABLE OF ORGANIZATION (T/O). Refer to table of organization (T/O) managed by Total Force Structure Division, MCCDC, for current authorized organizational structure and personnel strength for squadron/unit. As of this publication date, a squadron/unit is authorized:

1.2.1 Tactical and Reserve Squadron/Unit

UH-1Y				
TABLE OF ORGANIZATION T/O				
	Aircraft	**UH-1Y Pilot**	**UH-1Y Crew Chief**	**UH-1Y Aerial Observer**
SQD (12)	12	30	25	19
SQD (-)(8)	8	20	17	12
DET (4)	4	10	8	6

CRITICAL MOSs			
MOS Description	Primary MOS	Billet and/or MOS Description	Secondary MOS
Avionics Technician	7566	Maintenance Control (Safe-for-flight)	6012
Helicopter Mechanic	6113	Weapons and Tactics Instructor	7577

RULE	**P1**	**P2**	**P3**	**P4**
Personnel Strength	≥90%	80-89%	70-79%	≤70%
Critical MOS	>85%	75-84%	65-74%	≤65%

Critical MOS - Those specialties that directly affect the unit's ability to undertake its mission and appear as either Primary or Billet MOS on a unit T/O. Definition per MCO 3000.13. MOS shortages shall be reported by the squadron via DRRS-MC.

1.2.2 Fleet Replacement Squadron/Unit/FRD

1.3 MISSION ESSENTIAL TASK LIST (METL). The METL is comprised of specified capabilities-based mission essential tasks (METs) which a unit is designed to execute. METs are drawn from the Marine Corps task list (MCTL), are standardized by type unit, and defined as core or core plus METs. Core METs are those tasks that a unit is expected to execute at all times, and are the only METs used in reporting the training level (T-Level) for the core mission (C-Level) in the Defense Readiness Reporting System – Marine Corps (DRRS-MC). Core plus METs identify additional capabilities to support missions or plans which are limited in scope, theater specific, or have a lower probability of execution. Core plus METs may be included in readiness reporting when contained within an assigned mission METL. An assigned mission METL consists of only selected METs (drawn from core and core plus METs) necessary to conduct the assigned mission. MCO 3000.13 provides additional information on readiness reporting.

UH-1Y		
MISSION ESSENTIAL TASK LIST (METL)		
MET	**ABBR**	**DESCRIPTION**
CORE METs		
MCT 3.2.3.1.1	CAS	Conduct Close Air Support
MCT 3.2.5.4	FAC(A)	Conduct Forward Air Control (Airborne)
CORE PLUS METs		
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations from Expeditionary Sea-Based Sites

1.4 MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION. As Aviation Ground units provide universal impact across all six functions of Marine Aviation, this table is optional for the Aviation Ground community.

UH-1Y							
MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION							
MET	**ABBR**	**SIX FUNCTIONS OF MARINE AVIATION**					
		OAS	**ASPT**	**AAW**	**EW**	**CoA&M**	**AerRec**
CORE METs							
MCT 1.3.4.1	**CAT**		X				
MCT 3.2.5.4	**FAC(A)**	X	X				
CORE PLUS METs							
MCT 1.3.3.3.1	**SEA**	X	X	X		X	X

1.5 MET TO CORE/MISSION/CORE PLUS SKILL MATRIX. Depicts the relationship between a MET and each core/mission/core plus/mission plus skill associated with the MET for readiness reporting and resource allocation purposes. There should normally be a one-to-one relationship between the MET and a corresponding mission skill. Shading indicates core plus.

UH-1Y

MET TO CORE/MISSION/CORE PLUS/MISSION PLUS SKILL MATRIX

	METs		MCT 1.3.4.1 CAT	MCT 3.2.3.1.1 CAS	MCT 3.2.3.1.2.3 SCAR	MCT 3.2.5.4 FAC(A)	MCT 6.2.1.1 TRAP	MCT 6.1.1.11 ESC	MCT 6.2.2 AE		MCT 1.3.3.3.1 SEA	MCT 1.3.4.1.1 RIE	MCT 4.3.4 AD	MCT 5.3.2.7.3 TAC(A)	MCT 5.3.2.7.4 AC2
CORE SKILLS	TERF	**CORE METs**		X	X	X	X	X	X	**CORE PLUS METs**					X
	TCT		X	X	X	X	X	X	X			X	X	X	X
	REC			X	X	X	X	X	X			X	X	X	X
	CAT		X				X		X			X	X		X
	FCLP										X				
	SWD		X	X	X	X	X	X	X			X	X		X
	ANSQ		X	X	X	X	X	X	X		X	X	X	X	X
	FAM		X	X	X	X	X	X	X		X	X	X	X	X
	EXP		X				X		X				X		
MISSION SKILLS	CAT		X									X			
	CAS			X											
	SCAR				X										
	FAC(A)					X								X	
	TRAP						X								
	ESC							X							
	AE								X						
CORE PLUS SKILLS	ESC						X	X							
	CAT		X				X								
	AD												X		
	EW			X	X		X	X							
	CAS			X		X	X							X	
	SCAR				X										
	DACM			X	X		X	X			X				
	CBRN		X	X	X	X	X	X	X		X	X	X	X	X
MISSION PLUS SKILLS	SEA										X				
	RIE											X			
	AD												X		
	TAC(A)													X	
	AC2														X

1.6 MISSION ESSENTIAL TASK (MET) OUTPUT STANDARDS. The following MET output standards are the required level of performance a squadron/unit must be capable of sustaining during contingency/combat operations by MET to be considered MET-ready. Output standards will be demonstrated through the incorporation of unit training events. A core capable squadron/unit can sustain the number of sorties listed below on a daily basis during contingency/combat operations. The sortie rates are variable, based (for example in this illustration on a 1.5-hour average sortie duration). It assumes >70% mission capable (MC) with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET and >90% T/O aircrew on hand. If unit MC aircraft is <70% or T/O aircrew <90%, core capability will be degraded by a like percentage.

Note: Many T/M/S communities include examples of daily execution i.e. "6 turn 6" or "4 turn 4 turn 4" as historical reference for sortie generation.

UH-1Y															
MET OUTPUT STANDARDS															
	MET	**CORE METs**	MCT 1.3.4.1 CAT	MCT 3.2.3.1.1 CAS	MCT 3.2.3.1.2.3 SCAR	MCT 3.2.5.4 FAC(A)	MCT 6.2.1.1 TRAP	MCT 6.1.1.11 ESC	MCT 6.2.2 AE	**CORE PLUS METs**	MCT 1.3.3.3.1 SEA	MCT 1.3.4.1.1 RIE	MCT 4.3.4 AD	MCT 5.3.2.7.3 TAC(A)	MCT 5.3.2.7.4 AC2
OUTPUT STANDARD	**MAXIMUM SORTIES BY MET AND COMPOSITION // NUMBER OF IRCRAFT**														
	Sqd (12)	**CORE METs**	16	16	16	18	16	16	16	**CORE PLUS METs**	16	10	16	1	16
	Sqd (-) (8)		12	12	12	13	12	12	12		12	6	12	1	12
	Det (4)		4	4	4	5	4	4	4		4	4	4	1	4
	MAXIMUM DAILY SORTIES														
	Sqd (12)	16													
	Sqd (-) (8)	12													
	Det (4)	4													

FAC(A) sorties may be sourced by both UH and AH aircrew. The numbers shown are HMLA Squadron/Squadron (-)/Detachment totals.
A 12/8/4 plane Mission Capable HMLA(UH-1Y) Squadron/Squadron (-)/Detachment is able to execute 16/12/4 total overall sorties on a daily (24-hour period) basis during contingency/combat operations.

DASC		
MET OUTPUT STANDARDS		
AVIATION GROUND CORE METL OUTPUT STANDARDS		
MCT	**ABBR**	**NUMBER OF CREWS**
5.3.5.3.1	CAM	4 DASC 3 ASLT 3 ASE
5.3.5.3.3	IAS	4 DASC 3 ASLT

1.7 CORE MODEL MINIMUM REQUIREMENTS (CMMR) / ADVANCED AND BASELINE TRAINING STANDARDS FOR READINESS REPORTING (DRRS-MC). The paragraphs and tables below delineate the minimum pilot qualifications, designations, and/or training for the Advanced and Baseline Training Standards.

1.7.1 CMMR / Advanced Training Standard: The minimum pilot qualifications, designations, and/or training required to execute the MET output standards of paragraph 1.6. Units can be expected to perform a critical role in a mission or OPLAN and normally requires external MAGTF support.

1.7.2 Baseline Training Standard: The level of readiness expected from a unit sustained through core training at home station. Normally equates to approximately 70% of CMMR.

1.7.3 In the matrix below the first number in the "crews trained" columns reflect the CMMR or advanced training standard. The numbers in parentheses indicate the baseline training standard.

UH-1Y

CMMR / ADVANCED AND BASELINE READINESS REPORTING MATRIX

CREWS TRAINED			CREW POSITION				SHARED	MET
Det (4)	Sqd (-) (8)	Sqd (12)	AERIAL OBSERVER	CREW CHIEF	COPILOT	PILOT		
			CORE METs					
2(1)	6(4)	8(5)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	CAT, AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	CAT, UHC		MCT 1.3.4.1 CAT
2(1)	6(4)	8(5)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	CAS, AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	CAS, UHC		MCT 3.2.3.1.1 CAS
2(1)	6(4)	8(5)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	STK, UHC		MCT 3.2.3.1.2.3 SCAR
3(2)	7(4)	9(6)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	SCAR, UHC	AH-1Z	MCT 3.2.5.4 FAC(A)
2(1)	6(4)	8(5)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	FAC(A), FAC(A), UHC		MCT 6.2.1.1 TRAP
2(1)	6(4)	8(5)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ESC, AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	TRAP, UHC		MCT 6.1.1.11 ESC
2(1)	6(4)	8(5)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	ESC, UHC		MCT 6.2.2 AE
			CORE PLUS METs					
4(2)	8(5)	12(8)	ANSQ, CQ(D), CQ(N), CQ NVD	SEA, CQ(D), CQ(N), CQ NVD	ANSQ, CQ(D), CQ(N), CQ NVD	SEA, CQ(D), CQ(N), CQ NVD, UHC		MCT 1.3.3.3.1 SEA
2(1)	3(2)	5(3)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	RIE, UHC		MCT 1.3.4.1.1 RIE
2(1)	6(4)	8(5)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	AD, UHC		MCT 4.3.4 AD
1(1)	1(1)	1(1)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	TAC(A), UHC		MCT 5.3.2.7.3 TAC(A)
2(1)	6(4)	8(5)	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	AG M240D or AG GAU-17/A or AG GAU-21, ANSQ	ANSQ	AC2, UHC		MCT 5.3.2.7.4 AC2

UH-1Y						
CMMR/ADVANCED AND BASELINE READINESS REPORTING MATRIX						
DESIGNATION		**UHC**	**SL**	**DL**	**FL**	**AMC**
SHARED				AH-1Z	AH-1Z	AH-1Z
Sqd (12)	**PILOT**	6	6	6	5	3
	COPILOT					
	CREW CHIEF					
	AERIAL OBSERVER					
Sqd (-)(8)	**PILOT**	4	4	4	3	2
Sqd (4)	**PILOT**	2	2	2	2	1

Combat leadership is depicted as only one value (CMMR).

UH-1Y						
FLIGHT LEADERSHIP						
DESIGNATION		**UHC**	**SL**	**DL**	**FL**	**AMC**
SHARED				AH-1Z	AH-1Z	AH-1Z
Training Unit	**PILOT**	10	5	3	3	3

Notes – enter notes as required.

1.8 CORE MODEL TRAINING STANDARD (CMTS). The CMTS is the optimum training standard reflecting the number of aircrews trained to CSP/MSP and core plus proficiency, per crew position to execute each stage of flight as detailed below. The CMTS Matrix depicts the training goal and optimum depth of training desired for each squadron as they develop their squadron training plan. It is not utilized for readiness reporting (DRRS-MC) purposes. At a minimum, the CMTS shall enable a squadron to form CMMR crews for mission skills (and mission plus skills when required).

UH-1Y													
CORE MODEL TRAINING STANDARD (CMTS)													
SKILL	SHARED	Sqd (12)				Sqd (-) (8)				Det (4)			
		Pilot	Copilot	Crew Chief	Aerial Observer	Pilot	Copilot	Crew Chief	Aerial Observer	Pilot	Copilot	Crew Chief	Aerial Observer
CORE SKILLS (2000 Phase)													
TERF		12	12	12	12	8	8	8	8	4	4	4	4
REC		12	12	12	12	8	8	8	8	4	4	4	4
MISSION SKILLS (3000 Phase)													
CAT		11	11	11		7	7	7		3	3	3	
FAC(A)	AH-1Z	4				3				1			
ESC		11	11	11	11	7	7	7	7	3	3	3	3
CORE PLUS SKILLS (4000 Phase)													
CAT		2 (6)	1 (5)			1 (4)	1 (3)			1 (2)	1 (1)		
MISSION PLUS SKILLS (4500 Phase)													
TAC(A)		1(2)				1(1)				1 12)			

Note: For core plus mission and skills, the first number represents the number of individuals the squadron is expected to train at all times to retain a cadre of capability within the squadron. The second number represents the number of MET capable individuals the squadron should train if that MET becomes an assigned/directed mission set. For core plus skills the CO determines the number of aircrews to train. The CMTS is based upon the community's collective recommendation.

1.9 INSTRUCTOR DESIGNATIONS

1.9.1 Tactical and Reserve Unit

HMLA UH-1Y													
INSTRUCTOR TRAINING (5000 PHASE)													
DESIGNATION	SHARED	Sqd (12)				Sqd (-) (8)				Det (4)			
		Pilot	Copilot	Crew Chief	Aerial Observer	Pilot	Copilot	Crew Chief	Aerial Observer	Pilot	Copilot	Crew Chief	Aerial Observer
BIP		6				4				2			
TERF(I)		6		9		4		6		2		3	
WTO		6				4				2			
NSI		5		5		3		3		2		2	
WTI		3		3		2		2		1		1	
FAC(A)I	AH-1Z	2				1							
TAC(A)I		2											
DACM(I)		2		2		1		1					
FLSE		3				3				1			
AGI				7				4				2	

TAC(A): Per MAG
FLSEs are Designated by the Group CO

1.9.2 Fleet Replacement Squadron/Unit/FRD

FLEET REPLACEMENT SQUADRON HMLA UH-1Y					
INSTRUCTOR DESIGNATIONS					
DESIGNATION	**SHARED**	Pilot	Copilot	Crew Chief	Aerial Observer
FRSI		24		11	
BIP		24			
ARI		0			
NII		3			
FLSE		2			
TERFI		24		12	
DMI		0		0	
WTI		1		2	
NE		1		1	

Note - FLSEs are Designated by the Group CO
Note - NSIs may be used to fulfill NSFI requirement

1.10 CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (CQD)

1.10.1 Tactical and Reserve Squadron

HMLA UH-1Y										
CQD										
CREDENTIAL	**SHARED**	**Sqd (12)**			**Sqd** (-) (8)			**Det (4)**		
		Pilot	**Crew Chief**	**Aerial Observer**	**Pilot**	**Crew Chief**	**Aerial Observer**	**Pilot**	**Crew Chief**	**Aerial Observer**
CERTIFICATIONS										
CERT 1		6			4			2		
QUALIFICATIONS										
Qual 1		6			4			2		
DESIGNATIONS										
DES 1			7			4			2	

1.10.2 Fleet Replacement Squadron

HMLAT UH-1Y					
CQD					
CREDENTIAL	**SHARED**	Pilot	Copilot	Crew Chief	Aerial Observer
CERTIFICATIONS					
		12			
QUALIFICATIONS					
CERT 1		12			
DESIGNATIONS					
Qual 1	UH-1Y			6	

(WILL BE MARKED AS "APPENDIX A" IN THE APPLICABLE COMMUNITY T&R MANUAL)

T/M/S or Unit MET WORKSHEET

CORE

MCT 1.3.4.1 Conduct Combat Assault Transport

CORE Plus

MCT 1.3.3.3.1 Conduct Aviation Operations from Expeditionary Sea-Based Sites

MCT 1.3.4.1 Conduct Combat Assault Transport

Conditions:

C 1.3.2.1 Light

Light available to illuminate objects from natural or manmade sources. Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

C.1.3.2.3 Aviation Meteorological Conditions

Current weather/flight conditions affecting flight rules next 24 hours. Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

Standards:
{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Temp Sqdn (-) (8A/C)/Det (4 A/C) /Reserve Sqdn (6 A/C)}:

Personnel:
- 11/9/6/3/4 aircrews formed
- P-level of 2 or better.

Equipment:
- 70% mission capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/4/2 CH-53E aircraft)
- Operational support equipment fully supports MCT

Advanced Training Standard (CMMR):
- 11/9/6/3/4 crews NS LLL core skill proficient
- 11/9/6/3/4 crews GTR core skill proficient
- 11/9/6/3/4 crews aerial gunnery core skill proficient

Advanced Capability:
- Perform the basic requirements while executing an air assault using 5 or more assault support aircraft with integrated fires, escorts, and troops with squadron level planning in a medium threat environment within the last 12 months (or since reset from last deployment).

Baseline Training Standard (70% of CMMR):
- 7/6/4/2/2 crews NS LLL core skill proficient
- 7/6/4/2/2 crews GTR core skill proficient
- 7/6/4/2/2 crews aerial gunnery core skill proficient

Baseline Capability**:**
- Capable of supporting air assault in low threat environment.
- Capable of supporting long range raid in low threat environment.
- Conducted an air assault with integrated fires, escort, and troops, with squadron level planning in a low threat environment within the last 12 months (or since reset from last deployment.

Output Standards:
- 21/16/12/5/11 Sorties daily sustained during contingency/combat operations

(WILL BE MARKED AS “APPENDIX B” IN THE APPLICABLE COMMUNITY T&R MANUAL)

APPENDIX B - ACRONYMS

List of acronyms using the Short Name and Long Name e.g. APM - Aviation Program Manual

APPENDIX C - EXTERNAL RESOURCES

Range Requirements				
ABBR	**Long Name**	**Description**	**Category**	**Notes**
MOA	Military Operating Area	Per Flight Information Publications	CAT 1	
RSTD	Restricted Airspace	Per Flight Information Publications	CAT 1	
LAT	Low Altitude Training	Approved LAT course. Normally preferred over an MTR for dedicated LAT sorties.	CAT 1	
AA	Air-to-Air	Any airspace that can support BFM or ACM. May include Restricted Airspace, MOAs, or Warning Areas, for example.	CAT 1	For Intercepts/BVR, a minimum airspace of 40 nm is usually required.
TACTS	Tactical Air Combat Training System	TACTS range-capable. A sophisticated airspace tracking and display instrumentation system used primarily in ACM and threat WEZ recognition. All maneuvers are displayed real-time for a squadron Range Training Officer (RTO). All data is recorded to allow the aircrew to conduct post-mission analysis or "debriefs."	CAT II	TACTS usually includes ACM, NDBS, EW, NDWS, ARM, capabilities. Implies RSTD Airspace.

1. Communities may add additional information as needed.

(WILL BE MARKED AS “APPENDIX D” IN THE APPLICABLE COMMUNITY T&R MANUAL)

APPENDIX D - T&R REPORTS

Provide a list of the T&R Reports that are available in M-SHARP.

1. Ordnance Requirements

2. Readiness Supplement

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APPENDIX B – SAMPLE CHAPTER 2 CREWMEMBER SYLLABUS

CHAPTER 2

	PARAGRAPH	PAGE
CREWMEMBER SYLLABUS T&R REQUIREMENTS	2.0	X-X
TRAINING PROGRESSION MODEL	2.1	X-X
PROGRAMS OF INSTRUCTION (POI)	2.2	X-X
PROFICIENCY AND CURRENCY	2.3	X-X
CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS (CQD) TABLES	2.4	X-X
SYLLABUS NOTES	2.5	X-X
CORE INTRODUCTION PHASE	2.6	X-X
CORE INTRODUCTION STAGES	2.7	X-X
CORE PHASE	2.8	X-X
CORE STAGES	2.9	X-X
MISSION PHASE	2.10	X-X
MISSION STAGES	2-11	X-X
CORE PLUS PHASE	2.12	X-X
CORE PLUS STAGES	2.13	X-X
MISSION PLUS PHASE	2.14	X-X
MISSION PLUS STAGES	2.15	X-X
INSTRUCTOR TRAINING PHASE	2.16	X-X
INSTRUCTOR TRAINING STAGES	2.17	X-X
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RCQD) PHASE	2.18	X-X
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS STAGES	2.19	X-X
MET ASSESSMENT PHASE	2.20	X-X
MET ASSESSMENT STAGE	2.21	X-X
AVIATION CAREER PROGRESSION MODEL (ACPM) PHASE	2.22	X-X
ACPM STAGE	2.23	X-X
ELECTRONIC AIRCREW TRAINING FORM (EATF) REASON CODES	2.24	X-X
T&R SYLLABUS MATRICES	2.25	X-X

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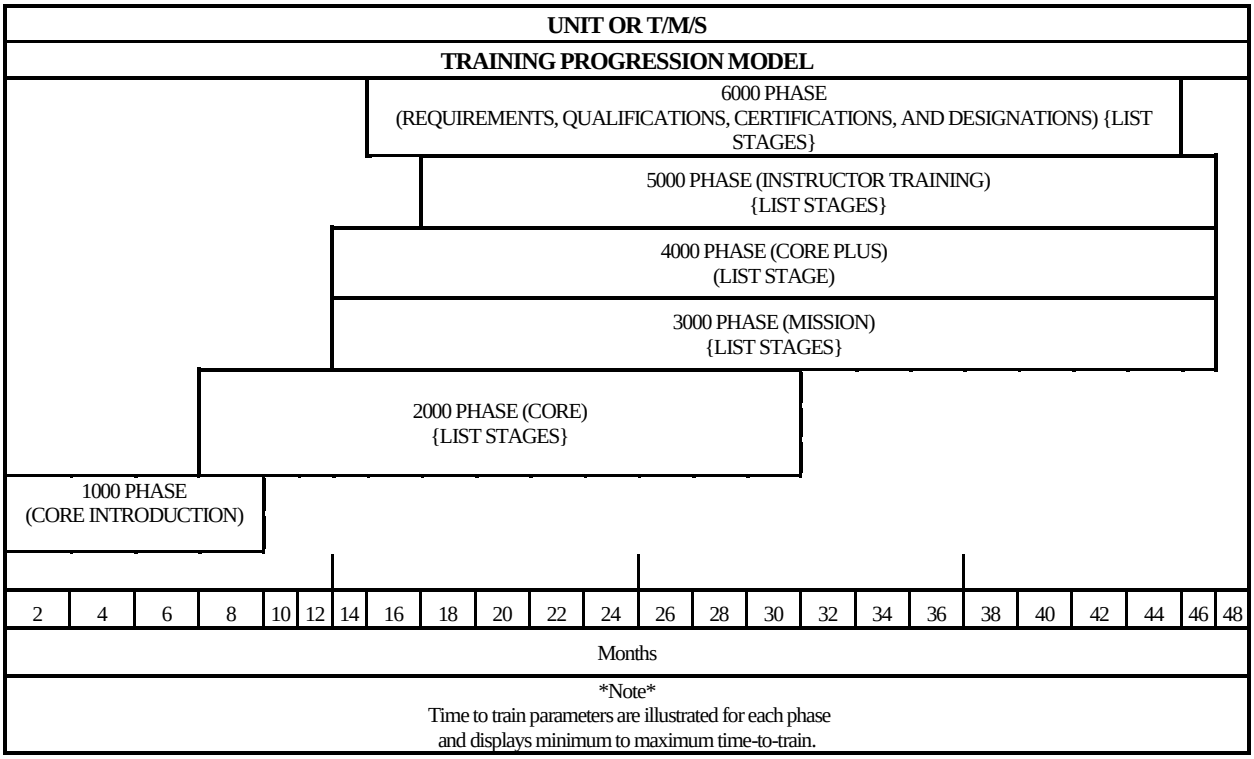
CHAPTER 2 - CREWMEMBER SYLLABUS

2.0 CREWMEMBER SYLLABUS T&R REQUIREMENTS. This T&R syllabus is based on specific goals and performance standards designed to ensure individual proficiency in core, mission and core plus skills. The goal of this chapter is to develop individual and unit warfighting capabilities.

2.1 TRAINING PROGRESSION MODEL. Represents the recommended training progression for the UNIT OR T/M/S Crewmember. This model represents minimum to maximum time to train and is normally expressed in Months.

Units should use the model as a guide to generate individual training plans. Below is a sample T/M/S template:



2.2 PROGRAMS OF INSTRUCTION (POI)

2.2.1 General. Represents the average POI time-to-train by phase. Note: Each POI built during the syllabus chapter requires a POI Table. These tables reflect the average time to train in weeks for selected phases of training.

2.2.2 Basic (B) POI. The basic crewmember shall execute or fly the entire syllabus.

BASIC POI		
WEEKS	**COURSE**	**PERFORMING ACTIVITY**
26	Core Introduction Training	FRS
15	Core Training	UNIT
8	Mission Training	UNIT

2.2.3 Flying Refresher (R) POI. The refresher shall execute or fly those events annotated with an R. Commanding officers/OICs will review the qualifications, previous experience, currency, and demonstrated ability of Refreshers with a view towards combining required flights.

REFRESHER POI		
WEEKS	COURSE	PERFORMING ACTIVITY
13	Core Introduction Training	FRS
5	Core Training	UNIT
4	Mission Training	UNIT

2.3 PROFICIENCY & CURRENCY

2.3.1 Event Proficiency. Event proficiency is defined as successful completion of the performance standard as determined by the instructor or evaluator. Event completion is predicated upon demonstrated proficiency. Once completed, it is logged in M-SHARP by entering the appropriate event code. M-SHARP automatically updates the event proficiency date to reflect the completion date.

2.3.2 Skill Proficiency. Proficiency is a measure of achievement of a specific skill. To attain individual skill proficiency, an individual must be simultaneously proficient in all events for that skill. Individuals may be attaining proficiency in some skills while maintaining proficiency in others.

Maintaining Skill Proficiency. Once attained, skill proficiency is maintained by executing those events which have a proficiency period (maintain events). Proficiency periods establish the maximum time between event demonstration. Should proficiency be lost in any maintain event, for a specific skill, that skill proficiency is temporarily lost. Skill proficiency can be re-attained by again demonstrating proficiency in the event(s) that are not proficient. For flying communities, an individual shall complete delinquent events with a proficient instructor, crewman/flight lead as delineated by the T/M/S syllabus sponsor (see Chapter 3 of the Program Manual on specific instructor requirements for low altitude flight, night systems, ACM, DM, DACM, DCM, FAC(A)).

Loss Of Individual Skill Proficiency. Should an individual lose proficiency in all maintain events in a skill, the individual will be assigned to the refresher POI for the skill. To regain skill proficiency, the individual must demonstrate proficiency in all R-events for the skill.

Loss of Unit Skill Proficiency. If an entire unit loses proficiency in an event, unit instructors shall regain proficiency by completing the event with an instructor from a like unit. If not feasible, the instructor shall regain proficiency by completing the event with another instructor. For flying communities, if a unit has only one instructor and cannot complete the event with an instructor from another unit, the instructor shall regain proficiency with another aircraft commander or as designated by the CO.

Proficiency Status. Proficiency is a "Yes/No" status by skill assigned to an individual. When an individual attains and maintains core skill proficiency (CSP), mission skill proficiency (MSP), core plus skill proficiency (CPSP), or mission plus skill proficiency (MPSP), the individual may count towards CMMR or CMTS.

2.3.3 Currency. Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill set and applies to all MOSs that must comply with NATOPS and OPNAV requirements. It is a measure of time since the last event demanding that specific skill set. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for aircrew individual type mission profiles can be found in Chapter 3.

2.4 CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATION (CQD) TABLES. The table below delineates T&R events required to be proficient or waived to attain CQD. Waiving of all required events leading to a CQD is not allowed. Each CQD requires a minimum of one of the following; a T&R event, stage, phase, skill, certification, qualification, or designation to be listed as a required event in the CQD table.

CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (CQD) CREWMEMBER	
CQD	**EVENTS**
DESIGNATION	
MDTC COURSE	XXXX,XXXX,XXXX
WTI COURSE	XXXX,XXXX,XXXX,XXXX
TERPS COURSE	XXXX,XXXX
CERTIFICATION	
A++ Technician	XXXX,XXXX,XXXX,XXXX
CPR Certification	XXXX,XXXX,XXXX
NETWORK + Certification	XXXX,XXXX,XXXX,XXXX
QUALIFICATION	
NATOPS	XXXX,XXXX,XXXX,XXXX
NSQ	XXXX,XXXX,XXXX
STANDARD INSTRUMENT	XXXX,XXXX,XXXX,XXXX
SPECIAL INSTRUMENT	XXXX,XXXX,XXXX,XXXX
CRM	XXXX,XXXX

2.5 SYLLABUS NOTES

2.5.1 All events, to include simulators, shall begin with a comprehensive brief with emphasis on administrative procedures, ORM, mission performance standards and aircrew expectations.

2.5.2 All flights shall terminate with a comprehensive debrief with emphasis on aircrew performance utilizing all evaluation techniques available.

2.5.3 An EATF is required for any initial event completed by a basic or refresher pilot, or as recommended by the squadron standardization board. If the CO has waived/deferred a syllabus sortie, the squadron training officer shall place a waiver/deferral letter in section 3 of the APR.

2.5.4 Event Conditions. Refer to the following table for required event conditions.

Code	Environmental Condition
D	Shall be conducted during day.
N	Shall be conducted at night, aided or unaided.
(N)	May be conducted day or night. If at night, aided or unaided.
NS	Shall be conducted at night aided under High Light Level or Low Light Level.
HLL	Shall be conducted at night aided under High Light Level conditions.
LLL	Shall be conducted at night aided under Low Light Level conditions.
(NS)	May be conducted day or night. If at night, aided under HLL or LLL.
(HLL)	May be conducted at night. If at night, aided under HLL.
(LLL)	May be conducted at night. If at night, aided under LLL.
N*	Shall be conducted at night unaided.
(N*)	May be conducted day or night. If at night, shall be flown unaided.
D/NS	Shall be conducted only in the simulator during day and night aided.

2.5.5 Environmental Condition Settings. In addition to every T&R event header requiring an environmental condition, the following elements of a T&R event may have environmental condition settings:

Chained events (D/NS does not apply).

Prerequisite events (D/NS does not apply)

2.5.6 Device matrix. Only include applicable rows.

DEVICE	
Symbol	**Meaning**
A	Must be conducted in the Aircraft.
A/S	Aircraft preferred/Simulator acceptable.
S	Conducted in Simulator.
S/A	Simulator preferred/Aircraft acceptable.
L	Conducted using Unit T/E equipment.
L/S	Live preferred/simulator acceptable.
S/L	Simulator preferred/live acceptable.
G	Ground/academic training.
GE	Non-Flight event requiring evaluation

2.5.7 Program of Instruction Matrix. Only include applicable rows and columns.

PROGRAM OF INSTRUCTION MATRIX			
Program of Instruction (POI)	**Symbol**	**Aviation Flying**	**Aviation Ground**
Basic	B	Initial MOS/Skill Training	Initial MOS Training
Transition*	T	Moving from one Type to another (Rotary-Wing to Fixed-Wing)	N/A
Conversion*	C	Moving from one Model to another (UH-1Y to CH-53E)	N/A
Series Conversion	S	Moving from one Series to another (KC-130T to KC-130J)	N/A
Refresher	R	DIFDEN to DIFOPS in same T/M/S	Return to community from non (MOS/Skill) associated tour
Maintain	M	All individuals who have attained CSP/MSP/CPP by initial POI assignment are re-assigned to the M POI to maintain proficiency.	
Modified Refresher	MR	FRS only – See Chapter 4 for specific assignment	N/A
Safe For Solo	SS	FRS only – See Chapter 4 for specific assignment	N/A
Contract Instructor	CI	Contract Instructor	Contract Instructor
Air Force	AF	Air Force student MV-22B	N/A
Air Force Instructor	CV	Air Force CV-22 Instructor to MV-22B Instructor	N/A
*Many communities will assign Transition and Conversion aircrew to the Basic POI.			

2.5.8 Event Terms. As required. Flight communities may use the below listed terms. Aviation ground communities will use verbs that best describe executable and measurable goals and performance steps. Taxonomies, such as Bloom, offer a list of verbs for various learning levels.

EVENT TERMS	
TERM	**DESCRIPTION**
Discuss	An explanation of systems, procedures, or maneuvers during the brief, in flight, or post flight. Student is responsible for knowledge of procedures.
Demonstrate	The description and performance of a particular maneuver/event by the instructor, observed by the PUI/student. The PUI/student is responsible for knowledge of the procedures prior to the demonstration of a required maneuver/student.
Introduce	The instructor may demonstrate a procedure or maneuver to a student, or may coach the PUI through the maneuver without demonstration. The PUI performs the procedures or maneuver with coaching as necessary. The PUI is responsible for knowledge of the procedures.
Practice	The performance of a maneuver or procedure by the PUI/student that may have been previously introduced in order to attain a specified level of performance.
Review	Demonstrated proficiency of a maneuver by the PUI/student.
Evaluate	Any flight designed to evaluate aircrew standardization that does not fit another category such as SARCK, HACCK, T2PCK, etc.

2.6 CORE INTRODUCTION PHASE

Purpose. The purpose of this phase is to instruct the copilot in MV-22 fundamentals and introduce mission elements. At the completion of this phase the PUI will be a NATOPS qualified T2P and rate the 7532 MOS as specified in RQD-6030.

General. As required.

CORE INTRODUCTION PHASE		
STAGE	**PARAGRAPH**	**PAGE NUMBER**
FORM	2.7.1	2-8
LAT	2.7.2	2-10

Admin Notes

Refer to the Aviation T&R Program Manual for the ACPM lectures required for this phase of training.

ROC will be per the T&R Program Manual.

All references to NTTP are directed to the NTTP 3.22.3 MV-22 (unclassified) unless otherwise noted.

Prerequisites

EVENTS					
And/Or	**T&R Code**	**Condition**	**Device**	**Ordnance**	**Config Req**
	0111	(N)	A/S		
	Note is displayed here				
And	0112	HLL	A		
Or					

2.7 CORE INTRODUCTION STAGES

2.7.1 Formation (FORM)

Purpose. To develop proficiency in cruise formation, rendezvous procedures, and execution of formation maneuvers. FOE: V-22 formation fundamentals in CONV and APLN flight.

General

At the completion of this stage, the PUI will be proficient at formation takeoffs and landings, section rendezvous, lead changes, formation maneuvers, and section IIMC procedures.

Section landings are not intended to be section CALs. CONV patterns will be used and the landing area will be an improved surface or large CAL site.

All SFORM flights should be conducted in a networked environment.

Admin Notes. Utilize academic courseware as outlined in the appropriate type/model/series chapter of the MAWTS-1 Course Catalog.

Prerequisites

EVENTS					
And/Or	**T&R Code**	**Condition**	**Device**	**Ordnance**	**Config Req**
	0191	(N)	A/S		
	Note is displayed here				
And	0330	HLL	A		
Or					

Crew Requirements. IP/PUI/(CC for aircraft events)

ACAD-1410 1.0 * B T AF CI G

Goal. FORM INTRO: To introduce the PUI to the training syllabus for the formation phase. The following will be discussed: FORM syllabus, performance standards, CONV and APLN Cruise position, APLN parade position, and conduct of FORM flights.

Requirements

Discuss
- Purpose of Formation
- Syllabus description
- Required readings
- Performance standards

Instructor

And/Or	Instructor Syllabus	Instructor Designation	Qualification	Condition
	MV-22 Pilot	FRSI	NSQ – HLL	HLL
Or				

Prerequisite

EVENTS					
And/Or	**T&R Code**	**Condition**	**Device**	**Ordnance**	**Config Req**
	1049	(N)	G		
	Note is displayed here				
And					
Or					

SFORM-1430 2.0 * B T AF CI I (NS) S 2 FFS

Goal. Introduce cruise formation during conversion and airplane modes and section landings.

Requirements

Discuss
- Cruise position and visual reference points
- Radius of turn principles
- Use of nacelles to control airspeed
- Closure rates
- Formation Transitions and Conversions
  - Nr settings (84-100%)
  - Nacelle rotation coordination/timing between aircraft

Nacelle rotation rates
Wingman responsibility for flight separation
Formation aborts and waveoffs
Loss of visual contact/rejoining of flight
Intra-flight communications and responsibilities

Emergencies. Discuss inter- and intra-cockpit comm/coordination during section emergencies

Performance Standards. Conduct all maneuvers IAW MV-22 Maneuver Description Guide (MDG).

Equipment. As applicable. (Use straight text bullets)

Instructor

And/Or	Instructor Syllabus	Instructor Designation	Qualification	Condition
	MV-22 Pilot	FRSI	NSQ – HLL	HLL
Or				

Prerequisite

EVENTS					
And/Or	**T&R Code**	**Condition**	**Device**	**Ordnance**	**Config Req**
	1410	(N)	S		
	Note is displayed here				
And					
Or					

FORM-1432 2.0 * B T AF D I D A 2 MV-22

Goal. Introduce formation flight and procedures in the aircraft.

Requirements

Discuss
Cruise position, Parade position, and visual reference points
Energy management as Lead/Wingman
Sun position in reference to lead aircraft
PF and PNF duties and callouts
Crew chief actions and callouts
Formation aborts and waveoffs

Introduce
Section STO
Section takeoff
Running/Carrier rendezvous

Performance Standards. Conduct all maneuvers IAW MV-22 Maneuver Description Guide (MDG) and NATOPS.

Instructor

And/Or	Instructor Syllabus	Instructor Designation	Qualification	Condition
	MV-22 Pilot	FRSI	NSQ – HLL	HLL
Or				

Prerequisites

EVENTS					
And/Or	**T&R Code**	**Condition**	**Device**	**Ordnance**	**Config Req**
	1332	(N)	A/S		
	Note is displayed here				
And	1431	HLL	A		
Or					

PARAGRAPHS 2.8 THROUGH 2.19 FOLLOW IN-KIND

2.20 MET ASSESSMENT PHASE (7000 PHASE) See Appendix C.

2.21 MET ASSESSMENT STAGE. See Appendix C.

2.22 AVIATION CAREER PROGRESSION MODEL (8000 PHASE)

2.22.1 Purpose. To enhance professional understanding of Marine aviation and the MAGTF and ensure individuals possess the requisite skills to fill battle command and battle staff positions in support of the ACE and the MAGTF in a joint environment. The focus of training in the aviation career progression model (ACPM) is on academic events in the following areas:

- Marine Air Command and Control System (MACCS)
- Aviation Ground Support
- Joint Air Operations
- ACE Battle Staff
- MAGTF
- Seabased Operations
- Combatant Commander Organizations

2.22.2 All tactical T/M/S T&R manuals have ACPM training requirements embedded within the progressive training phases, including the flight leadership POI. If not already completed prior to assignment to VMR-1 or a VMR det (UC-35, C-12, or C-20), pilots assigned to an OSA platform shall complete ACPM training requirements as outlined per their original T/M/S MOS T&R manual.

2.22.3 General. The ACPM is intended to be an integrated series of academic events contained within each phase of training. Accordingly, ACPM academic events are like any other academic event in that they serve as pre-requisites to selected flight events or stages.

2.23 AVIATION CAREER PROGRESSION MODEL STAGE

2.23.1 General

Several ACPM academic events are integrated as prerequisites for flight leadership syllabi.

ACPM academic events, along with their identifying prerequisite association with other training Phases/Stages are maintained by MAWTS-1.

2.24 ELECTRONIC AIRCREW TRAINING FORM (EATF) REASON CODES

Reason Code Category	Reason Code
Briefing	Brief Reason 1
	Brief Reason 2
	Brief Reason 3
CMS	CMS Reason 1
	CMS Reason 2

2.25 T&R SYLLABUS MATRICES

SKILL	STAGE	T&R CODE	GOAL DESCRIPTION	POI	PROF	ENVIRO COND	DEVICE	DEVICE QTY	HOURS	LINKED	NETWORK	TEN	TEN +	I-CODED	EOM	EVENT CONV
2000 PHASE - CORE SKILL BASIC																
FAM (2)	FAM (2)	2000	CH-53 GPS	B	*	(N)	G		1.0							2000
	FAM (2)	2100	SIM FAM, INSTR, EP	B, R	90	(N)	S/A	1	1.5	X					X	2100
	FAM (2)	2101	FAM, INSTR, EP	B, R, M	365	(N)	A	1	1.5							2105
CAL (2)	CAL (2)	2007	Desert Area Operations	B	*	(N)	G		1.0							2007
	CAL (2)	2008	Mountain Operations	B	365	(N)	GE		1.0							2008
	CAL (2)	2200	Mountain Area Landings x	B, R	*	D	S/A	1	1.0		X					2200
	CAL (2)	2211	Section CALS	B, R, M	365	D	A	2	1.5							2211

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APPENDIX C - MISSION ESSENTIAL TASK PHASE (7000)

2.20 MISSION ESSENTIAL TASK (MET) PHASE (7000)

2.20.1 Purpose

To assess CMMR representative crews during the execution of the unit's specified METs to ensure standardization and combat readiness.

To fulfill the requirements of a Marine Corps combat readiness evaluation (MCCRE) as specified in MCO 3501.1_, Marine Corps Combat Readiness Evaluation (MCCRE).

2.20.2 General

Prerequisite. Aircrew assessed during this phase shall be comprised of deploying personnel to the maximum extent practical.

Admin Notes

The proficiency period for conducting elements of the 7000 Phase shall be aligned with the frequency dictated per the MCCRE order.

The wing flight leadership standardization and evaluation (FLSE) cadre is the resource used to assess type/model/series units for MET capability per the MCCRE order (for aviation ground units, weapons tactics instructors are the resource used). The unit assessor will be designated at the wing level of the unit to be assessed.

Multiple events may be accomplished during the same sortie.

The example template for this phase is based on an HMLA squadron configuration and can be adapted for use by any aviation unit that is aligned under the provisions of this manual.

Results of the MCCRE assessment shall be published in the Marine Corps training information management system MCCRE module no later than 45 days after MCCRE completion.

2.20.3 Stage. The following stage is included in the mission essential task (MET) phase of training. Only METs required per the force generation order shall be evaluated.

PAR NO.	STAGE NAME
2.X.X	MISSION ESSENTIAL TASK (MET)

2.21 MISSION ESSENTIAL TASK (MET) STAGE

Purpose. To assess squadrons or detachments executing community specific MET(s) or MET preparatory events.

General

Prerequisite. If an event requires prerequisites in addition to those listed for the MET Phase, they will be covered in the individual event.

Crew Requirements

The participants required for the 7000 Phase are the evaluated unit and the assessor. The crew requirement is based on the specific event. The assessment shall be conducted from a crew position of the assessor's T/M/S. At the discretion of the assessor, observation of mission planning, briefing/debriefing, and execution from an OP may satisfy a portion of the assessment.

Respectively, the primary, alternate, and tertiary assessors shall be a MATSS representative, WTI (FLSE) from within the parent command designated by the owning wing, or MAWTS-1 representative. The number of crews evaluated will be based on a percentage required to deploy per the force generation order.

MET-7001 D/(NS) E 2 H-1

Goal. Conduct Aviation Operations for Expeditionary Shore-Based Sites.

Requirement. Demonstrate the ability to conduct Aviation Operations for Expeditionary Shore-Based sites.

Performance Standard. Conduct Aviation Operations for Expeditionary Shore-Based Sites per MCT 1.3.3.3.2 and the T/M/S specific T&R.

Prerequisite. Per applicable T&R event.

Instructor. Unit assessor designated by the responsible Wing of the assessed unit.

Ordnance Requirement. Per applicable T&R event.

Range/Target Requirement. Per applicable T&R event.

External Syllabus Support. Actual or simulated FARP.

Crew. Per applicable T&R event.

Reference. Per applicable T&R event.

MET-7002 D/(NS) E 2 H-1

Goal. Conduct Combat Assault Support.

Requirement. Demonstrate the ability to conduct Combat Assault Support.

Performance Standard. Conduct Combat Assault Support per MCT 1.3.4.1 and the T/M/S specific T&R.

Prerequisite. Per applicable T&R event.

Instructor. Unit assessor designated by the responsible Wing of the assessed unit.

Ordnance Requirement.

Range/Target Requirement.

External Syllabus Support. Actual or notional passengers or cargo.

Crew. Per applicable T&R event.

Reference. Per applicable T&R event.

APPENDIX D - SAMPLE T&R WORKING GROUP PRECEPT

From: Deputy Commandant for Aviation
To: Commanding General, Training and Education Command

Subj: AVIATION TRAINING AND READINESS WORKING GROUP PRECEPT

1. The Marine Corps continues to produce the world's finest aviators and combat flight leaders via a rigorous and refined training and readiness (T&R) program within each type/model/series (T/M/S) community.

2. In order to continue refining and optimizing the T&R program, the following aviation T&R precepts are directed for each T/M/S working group beginning in fiscal year 20XX.

a. A squadron / aircrew readiness briefing, for the applicable T/M/S, will be presented to all working group attendees to highlight any readiness, training, or other trends that will better inform T&R manual rewrite discussions or decisions.

b. Total flying events / flight hours in the draft T&R manual will be equal to, or less than the current T&R manual except by specifically identified requirement.

c. Converting flight events to simulator events will be considered for each stage of training where applicable and supportable given current simulator capabilities and capacities.

d. Simulator use will be considered for event re-fly currency requirements.

3. Questions or concerns pertaining to this precept will be directed to HQMC (APP).

DC AVN

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APPENDIX E - CORE COMPETENCY RESOURCE MODEL (CCRM) GUIDELINES

(At present, this Appendix applies only to Aviation Flying Units)

1. General. The core competency resource model (CCRM) identifies the external resources needed to attain and maintain a desired level of readiness for a unit. The CCRM, accredited by the Chief of Naval Operations and the Commandant of the Marine Corps was primarily developed as a flight hour model to support the flight hour program. It has been expanded and will include the following external resources: ordnance, indirect fire assets, ranges, targets, aggressor air, external loads, and ground assets (helicopter support teams, convoys, radar support etc.). At the HQMC level the CCRM is utilized as a budgetary tool to justify the specific resources needed to support a level of readiness based upon training requirements for each platform or community. At the unit level the adjusted core competency resource model (ACCRM) / sortie based training program (SBTP) is utilized to identify resources needed to train the unit during the execution year.

2. Core Competency Resource Model (CCRM)

a. The CCRM is a linear, bottom-up, qualitative model that identifies the resources required to attain and maintain a desired level of readiness based upon T&R core/mission skill proficiency (CSP/MSP) training requirements and the core model minimum requirement (CMMR) per unit. At the HQMC level it reflects a 12 month period (Oct-Sep) out of a normal 36 month tour for personnel. At the squadron/unit level the ACCRM/SBTP can be used to generate individual and unit requirements based upon CSP/MSP and CMMR.

b. Fixed inputs - Phases of Training. These inputs are incorporated into the models by Aviation Standards Branch (TECOM ASB). Inputs are derived from individual T/M/S T&R manuals and only change when there is a revision to the T&R manual (normally on a triennial basis). The phases of training include:

(1) Core/Mission/Core Plus events (2000-4000 phase). All core, mission, and core plus training events with corresponding proficiency periods.

(2) Instructor Training Events (5000 phase). These include events contained within T/M/S T&R and the MAWTS-1 Course Catalog (ASP). All work-up and certification events are included as well as flight hours/sorties required to train and designate a WTI at MAWTS-1 during the semi-annual courses.

(3) Combat/Flight Leadership Training (6000 phase). These include both the work-up and certification events required for combat/flight leadership designations.

(4) Requirements, Certifications, Qualifications, and Designations (6000 Phase). These include annual training requirements contained within CNAF M-3710.7, (NATOPS and instrument evaluations) and other requirements.

c. Fixed inputs – Individual Events. Inputs are incorporated into the models by TECOM ASB and are derived from individual T/M/S T&R manuals and only change when there is a revision to the T&R manual (normally on a triennial basis). Individual event resources required per event/occurrence include:

(1) Sortie duration – Established by DC AVN CG.

(2) Device - Includes flight in aircraft, simulator flight, or training device with proficiency period.

(3) Ordnance – Includes quantity and type with allowable substitutes.

(4) Ranges – Specific range requirements.

(5) Targets – Quantity and type of targets requirement.

(6) Indirect Fire Support – Quantity and type of indirect fire assets required.

(7) Aggressor Air – Quantity and type of aggressor air required.

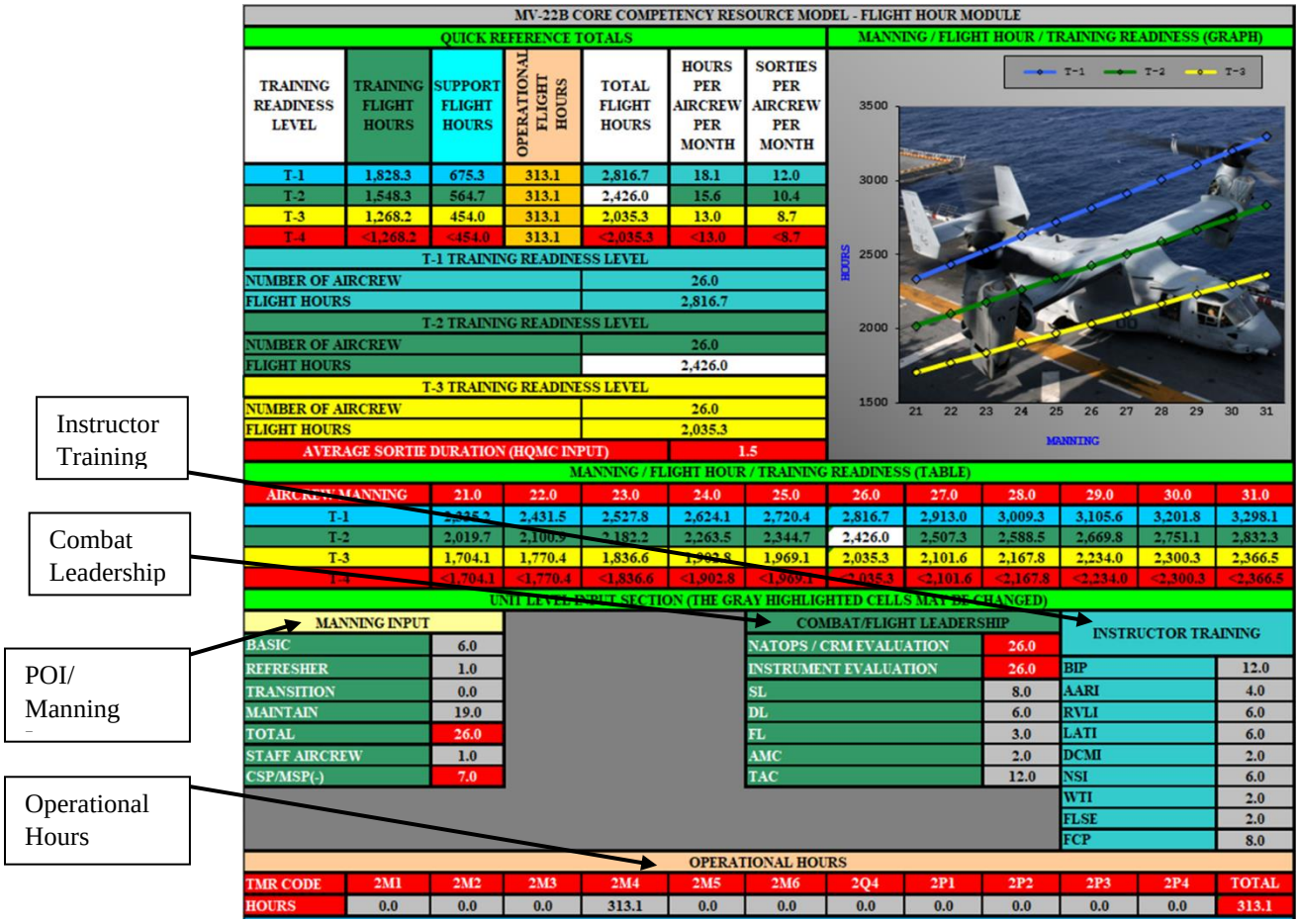
(8) External Load – Type and weight of external load required.

(9) Helicopter Support Team (HST) – Type of HST required.

(10) Convoy Support – Type of convoy support required.

(11) Other – Those other external (not organic to the unit) resources that are required to accomplish event training.

d. Variable Inputs. These inputs include the number and type of crewmembers assigned to various POIs, the number of crewmembers that will undergo instructor and combat/flight leadership training. Inputs are completed both at the HQMC level and the unit level. Inputs at the HQMC level will identify T/M/S resource requirements and, at the unit level, inputs may assist in developing individual unit or event training requirements. See the matrix below for sample input.



MV-22B CORE COMPETENCY RESOURCE MODEL - FLIGHT HOUR MODULE

QUICK REFERENCE TOTALS

TRAINING READINESS LEVEL	TRAINING FLIGHT HOURS	SUPPORT FLIGHT HOURS	OPERATIONAL FLIGHT HOURS	TOTAL FLIGHT HOURS	HOURS PER AIRCREW PER MONTH	SORTIES PER AIRCREW PER MONTH
T-1	1,828.3	675.3	313.1	2,816.7	18.1	12.0
T-2	1,548.3	564.7	313.1	2,426.0	15.6	10.4
T-3	1,268.2	454.0	313.1	2,035.3	13.0	8.7
T-4	<1,268.2	<454.0	313.1	<2,035.3	<13.0	<8.7

T-1 TRAINING READINESS LEVEL	
NUMBER OF AIRCREW	26.0
FLIGHT HOURS	2,816.7

T-2 TRAINING READINESS LEVEL	
NUMBER OF AIRCREW	26.0
FLIGHT HOURS	2,426.0

T-3 TRAINING READINESS LEVEL	
NUMBER OF AIRCREW	26.0
FLIGHT HOURS	2,035.3
AVERAGE SORTIE DURATION (HQMC INPUT)	1.5

MANNING / FLIGHT HOUR / TRAINING READINESS (GRAPH)

MANNING / FLIGHT HOUR / TRAINING READINESS (TABLE)

AIRCREW MANNING	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0	31.0
T-1	2,335.2	2,431.5	2,527.8	2,624.1	2,720.4	2,816.7	2,913.0	3,009.3	3,105.6	3,201.8	3,298.1
T-2	2,019.7	2,100.9	2,182.2	2,263.5	2,344.7	2,426.0	2,507.3	2,588.5	2,669.8	2,751.1	2,832.3
T-3	1,704.1	1,770.4	1,836.6	1,902.8	1,969.1	2,035.3	2,101.6	2,167.8	2,234.0	2,300.3	2,366.5
T-4	<1,704.1	<1,770.4	<1,836.6	<1,902.8	<1,969.1	<2,035.3	<2,101.6	<2,167.8	<2,234.0	<2,300.3	<2,366.5

UNIT LEVEL INPUT SECTION (THE GRAY HIGHLIGHTED CELLS MAY BE CHANGED)

MANNING INPUT	
BASIC	6.0
REFRESHER	1.0
TRANSITION	0.0
MAINTAIN	19.0
TOTAL	26.0
STAFF AIRCREW	1.0
CSP/MSP(-)	7.0

COMBAT/FLIGHT LEADERSHIP	
NATOPS / CRM EVALUATION	26.0
INSTRUMENT EVALUATION	26.0
SL	8.0
DL	6.0
FL	3.0
AMC	2.0
TAC	12.0

INSTRUCTOR TRAINING	
BIP	12.0
AARI	4.0
RVLI	6.0
LATI	6.0
DCMI	2.0
NSI	6.0
WTI	2.0
FLSE	2.0
FCP	8.0

OPERATIONAL HOURS

TMR CODE	2M1	2M2	2M3	2M4	2M5	2M6	2Q4	2P1	2P2	2P3	2P4	TOTAL
HOURS	0.0	0.0	0.0	313.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	313.1

APPENDIX F – CORRESPONDENCE GUIDELINES

1. General. There are several types of correspondence required to carry out the aviation T&R program. They include announcements, agenda items, requests for information and concurrence, results of working groups, requests for deviation from policy, requests for changes to T&R publications, and other unique circumstances.

2. The primary system of formal correspondence used is the automated message handling system (AMHS). This system provides documentation for record keeping and is used widely by the Marine aviation chain of command down to the squadron level.

3. Most types of correspondence generated are coordinated through TECOM Aviation Standards Branch (TECOM ASB). These include readiness review and working group announcements, requests for Total Force and DC AVN concurrence, and CG, TECOM signature approvals. These types of correspondence are coordinated with the syllabus sponsor and/or the action officer at DC AVN. Any questions should be directed to the applicable action officer at TECOM ASB.

4. For requests that relate to deviation from policy including waivers, deferrals or changes to T&R manuals, draft an email or AMHS message (in Word) that include the following:

a. What is being requested and how it will be implemented.

b. Why the request is being submitted.

c. When the request should be approved (in the case of time-sensitive issues).

d. Any background information that is germane.

e. Provide justification why the request should be approved. For example, in the case of deviation from policy requested for aircrew, include qualifications, designations, flight time, experience level etc. that have bearing on the approval. For changes to T&R manuals, ensure that justification includes how training will become more efficient, corrects an error, or enhances the training continuum.

5. All information to be included in the request will be coordinated through the applicable action officer at TECOM ASB and the syllabus sponsor. This coordination step does not imply that approval is imminent or can be expected. Rather, this step ensures that all information requirements have been met.

6. The action officer at TECOM ASB will then obtain a determination from the TECOM ASB Branch Head and communicate the results (approve, disapprove, or modify) via AMHS message after the chain of command endorsement(s) have been received.

7. Chain of command routing information for most requests is contained in Chapter 2, paragraph 2.16. Guidance for requests for Core Introduction training are contained in Chapter 4. For any unique circumstance contact the TECOM ASB action officer for guidance.

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APPENDIX G - GLOSSARY OF TERMS AND ACRONYMS

Advanced Systems Tactics and Ordnance (ASTO) - Any flight designed to develop proficiency conducting day, night IMC system tactics and ordnance deliveries using intra-cockpit aircraft weapon systems displays.

Air Delivery (AD) - Any flight in which aircraft release parachuting personnel, sensors, equipment or supplies (other than ordnance).

Aerial Gunner/Observer (AGO) - Individual who assists the crew chief in the cabin of a helicopter and has been thoroughly briefed by the aircraft commander on lookout doctrine, obstacle clearance calls, ICS utilization and emergencies.

Air-to-Air Refueling (AAR) - Any flight designed to develop the ability of aircrews to perform tactical AAR operations, day and night, to include helicopter in-flight refueling from a ship.

Air Combat Maneuvering (ACM) - See OPNAVINST 3710.7 for definition.

Air Delivered Ground Refueling - Ground method of providing fuel to an aircraft or vehicle utilizing another aircraft in an austere location.

Air Mission Commander (AMC) / Mission Commander (MC) - An experienced aviator or UAS commander who has in-depth knowledge of the MACCS, airspace management, fire support coordination, fixed and rotary wing operations and capabilities. The AMC is responsible for the accomplishment of the air mission.

Aircrew (AC) - A collective term that applies to all categories of personnel in a flight status. Analogous to crewmember.

Aircrew Performance Record (APR) – A standardized evaluation and training management tracking system for monitoring and recording the progress of personnel. See paragraph 218. Analogous to OPNAV 3760/32 NATOPS flight personnel training/qualification jacket.

Air-to-Ground (AG) - Any VMC/IMC flight designed to attack surface targets with conventional ordnance.

Alternate Insertion/Extraction (AIE) techniques- Any flight employing the various insertion and extraction techniques employed by the MV-22 (i.e. SPIE, FASTROPE, Rappelling.)

Battlefield Illumination (BI) - Any flight designed to deliver aircraft parachute flares.

Brief - Conducted prior to a flight/event to discuss all aspects of the brief item or a discussion of the evolution as a whole.

Cargo and Passenger Loading (CPL) - Any flight required to carry passengers and/or cargo.

Carrier Qualification (CQ) - Any flight designed to demonstrate the aircrew's ability to conduct shipboard landing operations day or night.

Casualty Evacuation (CASEVAC) - Any flight designed to demonstrate casualty evacuation procedures.

Categories of Training (CAT) - Conversion matrix for USN to USMC POI.

1. Category I (CAT I). This equates to the basic POI.

2. Category II (CAT II). This equates to the transition or conversion POI. Additionally, this can refer to a series conversion.

3. Category III (CAT III). This equates to the refresher POI.

4. Category IV (CAT IV). This equates to the modified refresher POI.

5. Category V (CAT V). Other POIs not described above including but not limited to safe-for-solo, NATOPS, and all foreign students (even if they execute a different category syllabus).

Certification - The evaluation process conducted via syllabus event(s) by a designated instructor or authorized personnel for the purpose of assessing individual skills as a prerequisite to qualification or designation.

For Aviation Ground Communities - A certification also serves as a "one-time" assessment of proficiency for a given skill or position that does not expire; specifics shall be noted in community T&Rs. Commanders or designated representatives shall issue certification letters.

Community – A collective term used to identify all aviation units and personnel associated with an individual Aviation T&R Manual (E.G. model aircraft, MACCS system, aviation ground MOS).

Confined Area Landings (CAL) - Any landing pattern work flown to sites or landing zones in which terrain/obstacle clearance techniques and cautions become the primary objective.

Core Capability - A unit-centered training readiness calculation that assists operations departments and COs in determining a percentage-adjusted MET output standard given crew manning constraints.

Core Competency - Unit core competency is a collective term that entails requirements, capabilities, and information delineated in the applicable unit mission statement, METL, appropriate T/O information, output standards, core model minimum requirements, and supporting tables such as METL/core skill matrix and qualification/designation tables.

Core Competency Resource Model (CCRM) - A qualitative analytical tool (model) that displays external resources required to attain and maintain unit proficiency. This tool objectively captures and displays the required external resources for a desired level of readiness. External resources are defined as those not organic to the unit.

Crew Resource Management (CRM) - Replaces Aircrew Coordination Training (ACT) term. CRM incorporates the use of specifically defined behavioral skills into all Navy/Marine Corps aviation operations. Standardized training strategies are used in such areas as academics, simulators, and flight training. Practicing CRM principles improves mission effectiveness and serves to prevent mishaps that result from poor crew coordination. See OPNAV Instruction 1542.7.

Currency - Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of proficiency. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for individual type mission profiles can be found in Chapter 3.

Defensive Air Combat Maneuvering (DACM) - The maneuvering of attack or utility helicopters in response to an airborne threat.

Defensive Combat Maneuvers (DCM) - Flights in the MV-22 syllabus including the defensive tactics versus airborne threats.

Defensive Measures (DM) - Flights in assault support helicopters utilizing defensive tactics versus airborne threats.

Defensive Tactics (DT) - Those aircraft maneuvers performed by aircraft possessing no offensive armament in response to airborne threats. Performed as last ditch tactics when efforts to escape detection have failed.

Deferral – A deferral is requested when a lack of logistical support or training assets prevents timely Event completion. Deferrals remain in effect for the proficiency period or current tour of duty, whichever is less. Deferrals may also be designated to remain in effect for a specified period of time.

Demonstrate - The description and performance of a particular maneuver/event by the instructor, observed by the PUI/student. The PUI/student is responsible for knowledge of the procedures prior to the demonstration of a required maneuver/student.

Designation – Designations are awarded based on demonstrated instructor or combat leadership proficiency. Each Designation must be assigned one or more requirements. Although not required, communities may choose to assign requirements with a proficiency period. When all training requirements are completed, the respective Designation may be granted by the CO or in accordance with the community T&R. Designations are command specific and remain in effect until removed for cause, loss of proficiency in a requirement or when transferred to another command. Community T&Rs may stipulate re-designation criteria. If not, re-designation is at the CO's discretion. Under exceptional circumstances, an event may be waived or deferred per paragraph 2.15.

Discuss - An explanation of systems, procedures, or maneuvers during the brief, in-flight/mission, or post-flight/mission.

Electronic Attack (EA) - That division of electronic warfare involving the use of electromagnetic energy, directed energy, or anti-radiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability and is considered a form of fires. EA includes: 1) actions taken to prevent or reduce an enemy's effective use of the electromagnetic spectrum, such as jamming and electromagnetic deception; and 2) employment of weapons that use either electromagnetic or directed energy as their primary destructive mechanism (lasers, radio frequency weapons, particle beams).

Electronic Protection (EP) - Division of electronic warfare involving passive and active means taken to protect personnel, facilities, and equipment from any effects of friendly or enemy employment of electronic warfare that degrade, neutralize, or destroy friendly combat capability.

Electronic Warfare (EW) - Any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. Also called EW. The three major subdivisions within electronic warfare are: electronic attack, electronic protection, and electronic warfare support.

Electronic Warfare Support (ES) - That division of electronic warfare involving actions tasked by, or under direct control of, an operational commander to search for, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic energy for the purpose of immediate threat recognition, targeting, planning and conduct of future operations.

Emergency Safe Altitude (ESA) - An altitude that provides a minimum of 1000 ft clearance above the highest obstacle that is within 25 nm either side of course line.

Escort (ESC) - Any flight designed to escort fixed wing or assault support (Helo, KC-130) aircraft against simulated air or surface threats.

Evaluate or Evaluation (EVAL) - Any flight or T&R event designed to evaluate aircrew standardization that does not fit another category such as SARCK, HACCK, T2PCK, etc.

Event – The basic building block of training in Marine aviation is an event. An event delineates specific tasks/performance steps that must be successfully performed. An event is a unique measurable action designed to contribute a specified, quantifiable result to the accomplishment of a goal.

Expeditionary Airfield (EAF) - Any flight designed to demonstrate aircrew ability to conduct day or night field arrestments and short field take-offs.

External (EXT) - Any flight in which a helicopter externally suspends and transports weights, cargo, vehicles, or aircraft.

Familiarization (FAM) - Any event in which aircrew gain basic knowledge of aircraft flight or system characteristics, limitations, emergency procedures, and crew position responsibilities.

Field Carrier Landing Practice (FCLP) - Any flight designed to prepare aircrews for operation in an EAF or carrier environment using an optical landing system and/or LSO/LSE control.

Formation (FORM) - Any flight designed to develop proficiency in basic section and/or division formation flying, day or night, and develop basic skills in tactical formations and maneuvering.

Forward Air Controller (Airborne) (FAC(A)) - A specially trained and qualified aviation officer who exercises control from the air of aircraft engaged in close air support of ground troops, as well as control of surface based supporting arms as required. The FAC(A) is normally an airborne extension of the tactical air control party.

Fragmentary Order Mission (FRAG) - Any flight in support of a designated unit for tasked airlift missions.

Instructor Under Training (IUT) - An individual undergoing instructor training. Events that are instructor focused are normally identified with the "IUT" prefix in the event code.

Instruments (INST) - Any flight involving the aircrew's ability to execute aircraft maneuvers under instrument conditions while complying with IFR procedures and using installed NAVAIDs.

Internal (INT) - Any flight in which a helicopter internally carries cargo, equipment, or weights.

Introduce - The instructor may demonstrate a procedure/maneuver to a student, or may coach the PUI/student through the procedure/maneuver without demonstration. The PUI/student performs the procedures/maneuver with coaching as necessary. The PUI/student is responsible for knowledge of the procedures.

Low Altitude Tactics (LAT) - Any flight designed to develop proficiency in low altitude tactics. The term LAT shall apply to tactical fixed wing operations conducted during day or night VMC where the briefed intent is to conduct low altitude flight below 500 ft AGL.

Master Scenario Events List (MSEL) - A master list of milestones and/or significant events in an exercise.

Medical Evacuation (MEDEVAC) - Any flight designed to demonstrate medical evacuation procedures.

Minimum Altitude (MA) - The lowest authorized altitude for a specific syllabus requirement.

Minimum Altitude Capable (MAC) - That altitude below comfort level at which the pilot is capable of performing terrain clearance tasks only.

Minimum Safe Altitude (MSA) - An altitude that provides a minimum of 500 feet clearance above the highest obstacle that is within 5 NM either side of course line or planned course deviation for that leg of the route. MSA shall be briefed for all LAT training.

NATOPS Jacket - The squadron NATOPS officer maintains the aircrew NATOPS flight personnel training/qualification jacket (NATOPS jacket) per OPNAVINST 3710.7.

Naval Aviation Production Process (NAPP) - A CNO-initiated program to focus on improving the process of producing first tour NAs and NFOs. See paragraph 801.

Navigation (NAV) - Any flight designated to develop aircrew ability to plan and execute navigation using aeronautical charts, visual checkpoints, RADAR, or electronic navigational systems.

Night Vision Device (NVD) - An electro-optical device used to provide a visible image using the electromagnetic energy available at night.

Night Vision Goggles (NVG) - Any night flight where helmet mounted, night imaging device flying techniques receive priority instruction.

Observer (OBS) - An individual who has satisfied the aero medical and applicable T&R requirements and is designated in writing by the CO (see definition of flight crew in OPNAVINST 3710.7).

Performance Record – See paragraph 2.17. Units shall maintain performance records for all assigned individuals undergoing aviation T&R syllabi training.

a. Flight units shall utilize aircrew performance record (APR) folders.

b. Aviation ground communities shall use performance records as prescribed by the individual communities in coordination with the syllabus sponsor.

Practice - The performance of a maneuver or procedure by the PUI/student that may have been previously introduced in order to attain a specified level of performance.

Proficiency - Proficiency is a measure of achievement expressed most commonly as event proficiency or skill proficiency.

a. Event proficiency. Event proficiency is defined as successful completion of the performance standards as defined by the T&R. (paragraph 2.6.2)

b. Skill proficiency. Marines attain skill proficiency for each skill by demonstrating proficiency in all the events assigned to the skill. (paragraph 2.6.4.1)

Reconnaissance (RECON) - Any flight that includes the use of fixed-optical or electronic sensors.

Review - Demonstrated proficiency of a maneuver by the PUI/student.

Search and Rescue (SAR) - Any flight designed to demonstrate search and rescue procedures and techniques.

Tactics (TAC) Flight - A syllabus flight including the conduct of a tactical mission using a defined threat scenario.

Terrain Flight (TERF) - Any helicopter event structured to occur below 200 ft AGL. Terrain flight employs terrain, vegetation, and man-made objects to degrade the enemy's ability to detect a helicopter. TERF includes the following basic flight techniques: low level, contour, and nap of the earth (NOE).

Threats - Air threat environments are categorized as follows:

1. Low Threat. An air threat environment that permits combat operations and support to continue without prohibitive interference. Associated tactics and techniques do not formally require extraordinary measures for preplanned or immediate support. Enhancements to target/objective engagement are effective communications, accurate target/objective identification, and re-attacks if applicable (limited only by aircraft time on-station and ordnance onboard).

2. Medium Threat. An air threat environment in which the specific aircraft performance and weapons systems capability allow acceptable exposure time to enemy air defenses. This air threat environment restricts the flexibility of tactics in the immediate target/objective area. It is an environment in which the enemy may have limited RADAR and/or electro-optical (EO) acquisition capability at medium range, but a fully integrated fire control system does not support the air defense system. Medium air threat environments normally allow medium altitude missions/attack deliveries with low probability of engagement by enemy air defenses.

3. High Threat. An air threat environment created by an opposing force possessing air defense combat power, including integrated fire control systems and electronic warfare (EW) capabilities that would seriously diminish the ability of friendly forces to provide necessary air support. This air threat environment might preclude missions such as immediate CAS, since the requirements for effective radio communications and coordination may not be possible. The high air threat environment may include, but is not limited to, command and control network; mobile and/or stationary surface-to-air missiles (SAMs); early warning radars; electronic warfare (EW); integrated (AAA) fire control systems; interceptor aircraft; and wartime reserve modes.

Weapons Training Officer (WTO) – A subject matter expert on aircraft weapons, systems, countermeasures and ordnance employment techniques.

ACRONYM LIST

Acronym	Definition
AAD	Active Air Defense
AC2	Aviation Command and Control
ACC	Aircrew Core Competency
ACE	Aviation Combat Elements
ACM	Air Combat Maneuvering
ACMI	Air Combat Maneuvering Instrumentation
ACTI	Air Combat Tactics Instructor
ACTR	Aircrew Training Requirement
AD	Air Delivery
ADGR	Aviation Delivered Ground Refueling
AESC	Aerial Escort
AF	Air Force
AGL	Air-Ground Level Altitudes
AGO	Aerial Gunner/observer
AI	Air Interdiction
AIE	Alternate Insertion/Extraction
AIPs	Actions-in-progress
ALZ	Assault Landing Zone
AMC	Air Mission Commander
AMS	Applied Meteorological Science
AMT	Attack Enemy Maritime Targets
ANI	Assistant NATOPS Instructor
AOS	Aviation Operations Specialist
APKWS	Advanced Precision Kill Weapon System
APM	Aviation Production Management
APP	Aviation Plans
APR	Aircrew Performance Record
AR	Armed Reconnaissance
ARFF	Aircraft Rescue Fire Fighting

ASB	TECOM Aviation Standards Branch
ASB	DC AVN Aviation Sustainment Branch
ASO	Aviation Safety Officer
ASPT	Assault Support
ASR	Authorized Strength Report
	Assault Support Request
ATC	Air Traffic Control
ATCFs	Air Traffic Control Facilities
ATI	Adversary Tactics Instructor
ATS	Aviation Training System
BI	Basic Instructor
BIP	Basic Instructor Pilot
BNA	By-name-assignment
C4611	Contact TECOM Formal Schools Training Branch
CACT	Command Aircraft Crew Training
CALs	Confined Area Landings
CAS	Close Air Support
CCM	Concurrency Management
CCRM	Core Competency Resource Model
CG	Commanding General
CI	Contract Instructor
CL	Comfort Level
CMMR	Core Model Minimum Requirement
CMTS	Core Model Training Standard
CNAF	Commander, Naval Air Forces
CNATRA	Chief Of Naval Aviation Training
CNO	Chief Of Naval Operations
CPP	Core Plus Proficiency
CPSP	Core Plus Skill Proficiency
CQ	Carrier Qualified
CRM	Crew Resource Management

CSI	Contract Simulator Instructor
CSP	Core Skill Proficiency
DACM	Defensive Air Combat Maneuvering
DACMI	Defensive Air Combat Maneuvering Instructor
DASC	Direct Air Support Center
DCM	Defensive Combat Maneuvers
DGSIT	Deploying Group System Integration Testing
DM	Defensive Measures
DMI	Defensive Measures Instructor
DRRS	Defense Readiness Reporting System
DT	Defensive Tactics
DTED	Digital Terrain Elevation Data
DTI	Defensive Tactics Instructor
DTM	Data Transfer Module
EAF	Expeditionary Airfields
EC	Event Capable
EOB	Enemy Order Of Battle
EQUIP	Equipment
ESA	Emergency Safe Altitude
EXP	Expeditionary Shore-based Sites
FAA	Federal Aviation Administration
FACSFACs	Facilities
FAI	Fighter Attack Instructor
FARP	Forward Arming And Refueling Point
FCF	Functional Check Flight
FCP	Functional Check Pilot
FHP	Flying Hour Program
FL	Flight Leadership
FLC	Formal Learning Centers
FLP	Flight Leadership Program
FLSE	Flight Leadership Standardization Evaluators

FM	Financial Management
FMC	Full Mission Capable
FMS	Foreign Military Sales
FOBS	Forward Operating Bases
FORM	Formation
FRS	Fleet Replacement Squadron
FRSI	Fleet Replacement Squadron Instructor
FRSS	Fleet Replacement Squadron Summit
GAR	Grade Adjusted Recapitulation
HHQ	Higher Headquarters
HLL	High Light Level
HST	Helicopter Support Teams
HUD	Heads Up Display
ICW	Interactive Courseware
IPP	Integrated Production Plan
IMT	International Military Training
KIO	Knock It Off
L2	Level 2
LAAB	Littoral Anti-Air Battalion
LAAD	Low Altitude Air Defense
LAN	Local Area Network
LAT	Low Altitude Tactics
LATI	Low Altitude Tactics Instructor
LLL	Low Light Level
MAC	Minimum Altitude Capability
MACCS	Marine Air Command And Control System
MACG	Marine Air Control Groups
MAG	Marine Aircraft Groups
MAGTF	Marine Air-ground Task Force
MAGTFTC	Marine Air Ground Task Force Training Command
MALS	Marine aviation Logistics Squadron

MATC	Marine Air Traffic Control
MATSS	Marine aviation Training System Sites
MAW	Marine Aircraft Wings
MC	Mission Capable
MCCRE	Marine Corps Combat Readiness Evaluation
MCIP	Marine Corps Interim Publications
MCT	Marine Corps Task
MCTIMS	Marine Corps Training Information Management System
MCTL	Marine Corps Task List
MCWP	Marine Corps Warfighting Publications
MDG	Maneuver Description Guide
MDTC	Marine Division Tactics Course
MEIs	Major End Items
MET	Mission Essential Tasks
METG	Multi-engine Task Group
METL	Mission Essential Task List
METOC	Meteorological And Oceanographic
METs	Mission Essential Tasks
MIO	M-SHARP Implementation Officer
MIR	Multi-sensor Imagery Reconnaissance
MISTEX	MACCS Integrated Systems Training Exercise
MMOA	Manpower Management Officer Assignment
MOAs	Military Operating Areas
MPS	Mission Performance Standards
MPSP	Mission Plus Skill Proficiency
MR	Modified Refresher
MSA	Minimum Safe Altitude
MSL	Mean Sea Level
MSP	Mission Skill Proficiency
MTESD	MAGTF Training And Education Standards Division
MTF	MACCS Training Form

MTR	Military Training Route
MWSS	Marine Wing Support Squadrons
NA	Naval Aviators
NAC	Naval Aircrew
NAPP	Naval Aviation Production Process
NAPT	Naval Aviation Production Team
NATOPS	Naval Air Training And Operating Procedures Standardization
NAVFLIR	Naval Flight Information Record
NAVMC	Navy Marine Corps
NBA	Never Been Attempted
NEC	Non-event Capable
NFO	Naval Flight Officers
NFOTR	NFO Training Requirement
NI	NATOPS Instructor
NIPDR	NAPP Integrated Production Data Repository
NMC	Non-mission Capable
NOE	Nap Of The Earth
NS	Night Systems
NSFI	Night Systems Familiarization Instructor
NSI	Night Systems Instructor
NTTL	Navy Tactical Task List
NTTP	Naval Tactics, Techniques, And Procedures
OAAW	Offensive Anti-air Warfare
ORM	Operational Risk Management
OSA	Operational Support Airlift
PAC	Production Alignment Conferences
PME	Professional Military Education
POI	Programs Of Instruction
POM	Program Objective Memorandums
PPF	Production Planning Factor
PPTG	Production Task Group

PR	Performance Records
PTR	Pilot Training Requirement
PUI	Pilot Under Instruction
PWG	Pre-working Groups
RCQD	Requirements, Certification, Qualification, Designation
ROC	Rules Of Conduct
SAR	Search And Rescue
SAS	System Accuracy Status
SAT	Systems Approach To Training
SBTP	Sortie Based Training Program
SCAR	Strike Coordination And Reconnaissance
SCETC	Security Cooperation Education And Training Center
SEAD	Suppression Of Enemy Air Defenses
SELF	Strategic Expeditionary Landing Field
SI	Senior Instructor
SIT	Students-in-training
SLAC	Solar/lunar Almanac Calculations
SLAP	Solar/lunar Almanac Program
SME	Subject Matter Expert
SOP	Standard Operating Procedures
SPIN	Synchronization Of Portable Installation
SPINS	Special Instructions
SS	Single Ship
	Safe-for-solo
SUMO	Sun Moon
TACC	Tactical Air Command Center
TAGS	Theater Air Ground System
TAOC	Tactical Air Operations Center
TCTS	Tactical Combat Training System
TECOM	Training And Education Command
TERF	Terrain Flight

TERFI	Terrain Flight Instructor
TFSP	Total Force Structure Process
TG	Task Group
	Tail Gunner
TGNAC	Task Group Naval Aircrew
TGNFO	Task Group Naval Flight Officer
TGTAC	Task Group Tactical
TMP	Training Management Process
TMT	Training Management Team
TRAP	Tactical Recovery Of Aircraft And Personnel
TRL	Training Requirements Letter
Trng Cmd	Training Command
TRRMS	Training Requirements And Resource Management System
TTP	Techniques And Procedures
TTU	Transition Training Units
UAS	Unmanned Aircraft System
UASC	UAS Crews
UJTL	Universal Joint Task List
UTM	Unit Training Management
WG	Working Groups
WTTP	Weapons and Tactics Training Program
YGSS	Year-Group-Steady-State