CHAPTER 1

AVIATION TRAINING AND READINESS PROGRAM

(Interim Approved 1 March 2005 – CH-53 PAX Limitation & Low Altitude Training with Embarked Troops)

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CHAPTER 1

AVIATION TRAINING AND READINESS PROGRAM

100. PURPOSE

1. The Marine Aviation Training and Readiness (T&R) program develops unit warfighting capabilities by providing commanders with standardized programs of instruction for training all aviation aircrew, Marine Air Command and Control System (MACCS) operators, Airfield Emergency Services and Meteorological and Oceanographic (METOC) personnel through community T&R syllabi. These syllabi are based on specific performance standards designed to ensure units maintain proficiency in core skills and combat leadership.

2. An effective T&R Program is the first step in providing the Marine Air-Ground Task Force (MAGTF) Commander with an Aviation Combat Element (ACE) capable of accomplishing its stated missions. The T&R program is the fundamental tool used by commanders to construct and maintain effective training programs. This order provides policy for development and standardization of all USMC Aviation T&R manuals.

101. AVIATION TRAINING AND READINESS MODELS. Readiness models are used to help standardize T&R program methodology and to provide a direct link between aviation training readiness, requirements, and resources. The two models currently in use are the Core Competency Model and the Unit Core Competency Resource Model (CCRM).

1. Core Competency Model. The foundation of every T&R program is the Commandant of the Marine Corps approved core competency model. The core competency model, or simply “Core Model,” establishes the basic structure around which each T&R program is created.

a. The core model, contained in the opening chapters of each specific T&R manual, links community Mission Statements, Mission Essential Task Lists (METL), Core Capability Statements, Core Skill Proficiency and Combat Leadership requirements. Community T&R manuals are periodically reviewed and updated to ensure each of the areas above are mutually supporting, Core Skill Proficiency and Combat Leadership requirements are realistic, and training standards support the unit mission. All community T&R Manuals follow the core competency model structure but the requirements and metrics housed within the structure are tailored to the specific needs of the community.

b. A Core Competent Unit (CCU) meets unit mission requirements as established within the community core model. In accordance with the community core model, a CCU maintains a minimum number of core skill proficient crews and combat leaders, and meets unit proficiency standards in accordance with the unit T&R Program.

2. Unit Core Competency Resource Model (CCRM). The Marine Corps CCRM directly links the T&R program with USMC flying hour and readiness reporting (SORTS) programs. The CCRM, accredited by the Commandant of the Marine Corps, generates annual sortie and flight hour requirements (broken down by training, support, and operational category) for maintaining selected T-Level readiness ratings for each tactical aviation squadron. Each community’s CCRM reflects the core model as defined in its T&R manual. The Deputy Commandant for Aviation utilizes the CCRM as the primary input to the Navy’s budgeting document known as the OP-20. Operational squadrons use CCRM data to develop sortie requirements used for developing sortie based training plans and estimating T-Level readiness rating outputs. The CCRM is maintained by TECOM/ATB and DC AVN/APP. A complete description of the CCRM can be found in the current edition of MCO 3125.1 (Flying Hour Program Management).

102. SIGNIFICANCE OF MARINE AVIATION T&R PROGRAM

1. In addition to providing standardized training tools, a goal of the T&R program is to implement a comprehensive, capabilities-based training system. This system shows support to MAGTF and Combatant Commanders via METL linkages. The Marine Corps Aviation T&R Program, Core Competency Model, and Unit Core Competency Resource Model are designed to align with Department of Defense, Joint, and USMC training and readiness requirements and guidelines. The significance of the Marine Aviation T&R Program is shown in Figure 1-1.

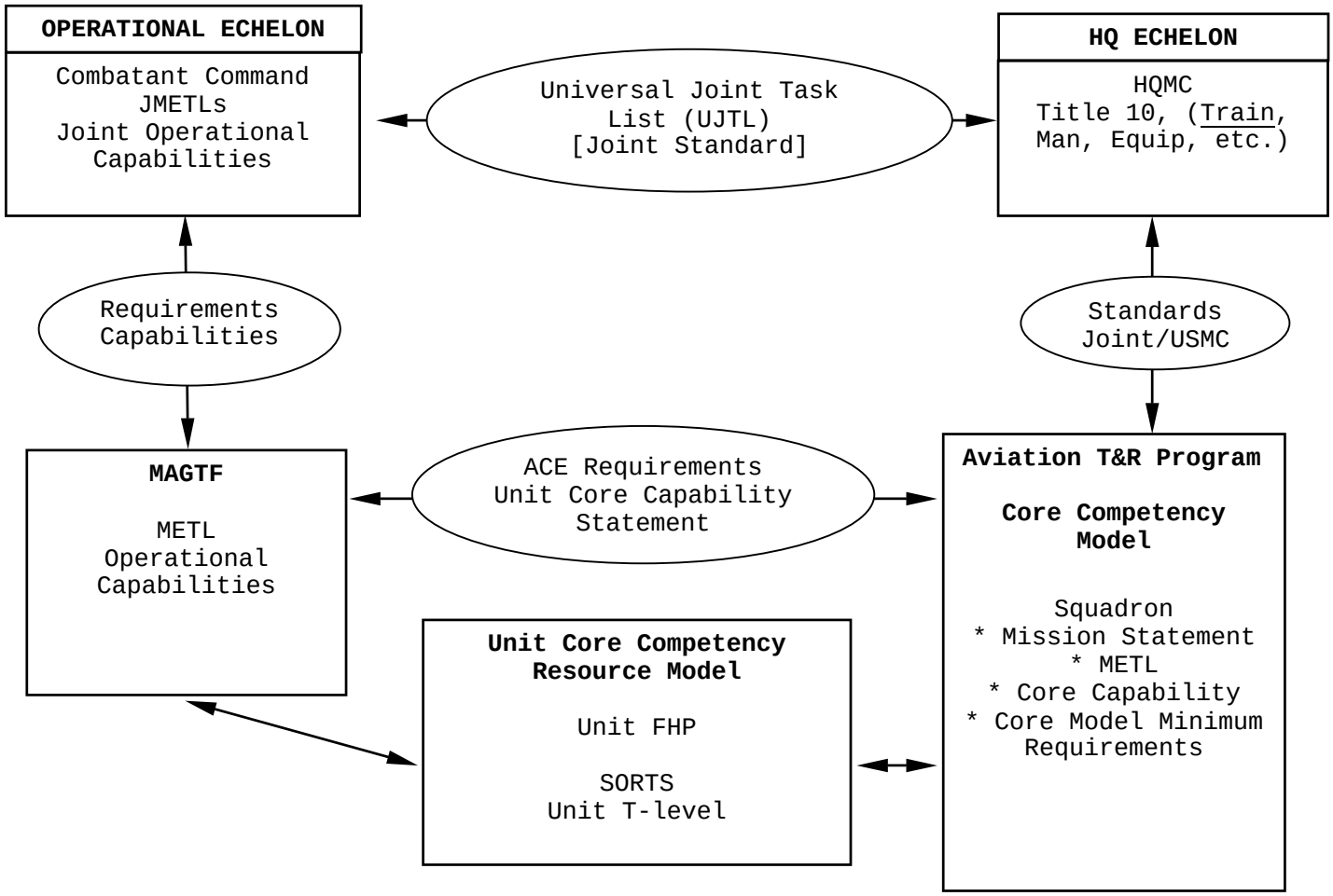

Figure 1-1.--Significance of T&R Program/Core Competency Model.

103. MISSION STATEMENT/MISSION ESSENTIAL TASK LIST. Unit mission statements/METLs describe the organization, mission and tasks, concepts of organization and employment, and administrative and logistical capabilities of a Marine Corps unit. The unit METL is a standardized list of tasks a unit must be capable of performing in order to accomplish the unit mission. Unit mission statements and METLs are derived from MAGTF ACE operational requirements. Each unit METL is linked to its T&R using a matrix that reflects support of the METL via core skills. Tactical aviation unit METLs utilize Universal Joint Task List (UJTL) lexicon as the standard to facilitate joint interoperability.

104. CORE CAPABILITY. Unit core capability is a standardized measure of performance that a MAGTF commander should expect during sustained contingency/combat operations. Combat flight squadrons define core capability in terms of a daily, sustained sortie rate in support of the METL; other aviation

units define core capability in terms of daily, sustained operational coverage in support of the METL. The core capability for each Type/Model/Series (T/M/S) squadron and agency is described in individual T&R manuals.

105. CORE SKILLS. Core skills are specific mission-related task areas that support a community's METL. Individuals must gain and maintain proficiency in core skills in order to execute the unit core capability. Core skills consist of like T&R events and are normally delineated as T&R stage titles. Core skills are introduced in FRS and entry-level school training. Core skill training continues in a tiered approach through all phases of a T&R syllabus.

1. Fleet units shall emphasize proficiency in 200-300 level core skills. Mastery of 200-300 level core skills results in highly trained personnel who contribute to the unit's overall warfighting capability and enables a combat unit to accomplish its assigned mission.

2. Skills that have a high risk, low probability of execution, or are theater specific are considered "core plus" skills. Core plus training is not considered essential to achieve unit core competency.

3. Unit core skill proficiency is defined in terms of minimum numbers of crews required to be proficient in each core skill. Individual proficiency in a core skill requires an individual to attain and maintain proficiency per squadron T&R requirements.

106. COMBAT LEADERSHIP. Effective combat leadership is a requirement for any unit to accomplish its mission; leaders play an integral role in combat/contingency planning and execution. Tactical leadership training is accomplished in part through T&R syllabi. Unit competency in leadership is defined in terms of minimum numbers of required tactical leaders certified per T&R standards and designated by unit commanding officers.

107. TRAINING PROGRAM STRUCTURE. T&R programs are designed to build and maintain both individual and unit proficiency in core skills. Aviation T&R programs utilize a tiered progression of increasingly challenging training events. Individuals are required to follow applicable T&R Programs of Instruction (POI) per paragraph 202 of this Manual.

1. T&R syllabi shall be structured per Chapter 2 of this Manual and contain four general tiers (or phases) of training.

a. The first tier, (100 level or "core skill introduction" phase) contains basic platform/system employment training and introduces core skills in the respective Fleet Replacement Squadrons (FRS) and basic MOS schools. At the completion of this phase, individuals are assigned to tactical units.

b. The second tier (200 level or "core skill basic" phase) contains basic core skill training essential to wartime employment of the unit platform/system. This phase should move an individual from basic understanding of core skills to proficiency in basic core skills. Individuals should normally complete this phase of training within the first year of assignment to a fleet aviation unit.

c. The third tier (300 level or "core skill advanced" phase) contains advanced core skill training. This phase should move an individual from proficiency in basic core skills to proficiency in more advanced/complex core skills. Crews proficient in this phase of training should be capable of planning/leading/directing flights of numerous aircraft in a contingency operation.

d. The fourth tier (400 level or core plus phase) contains skill training a community may accomplish, but is not required for unit core competency attainment. Skills contained in this level are associated with high risk, low probability of execution, and/or are theater specific. This phase of training allows additional unit training flexibility.

2. Individual T&R syllabi contain two additional T&R levels designed to facilitate unit training management and standardize instructor and tactical leadership certification.

a. The fifth level (500 level or instructor training) contains instructor workup and certification syllabus events.

b. The sixth level (600 level or requirements, qualifications, and designations tracking codes) contains tracking codes and events originally designed to facilitate training management. This level also provides community standardization for tactical leadership certification.

108. COMBAT READINESS CYCLE

1. The Combat Readiness Cycle (figure 1-2) is a building block approach to training based upon the core model. Individual core skill training forms the foundation of a unit's training program. Unit core competency is evaluated through the unit T&R program or the Marine Corps Combat Readiness Evaluation System (MCCRES). Unit training/evaluation programs are centered around and driven by unit METLs. The end product of the Combat Readiness Cycle is a unit that will be able to perform its METL in combat.

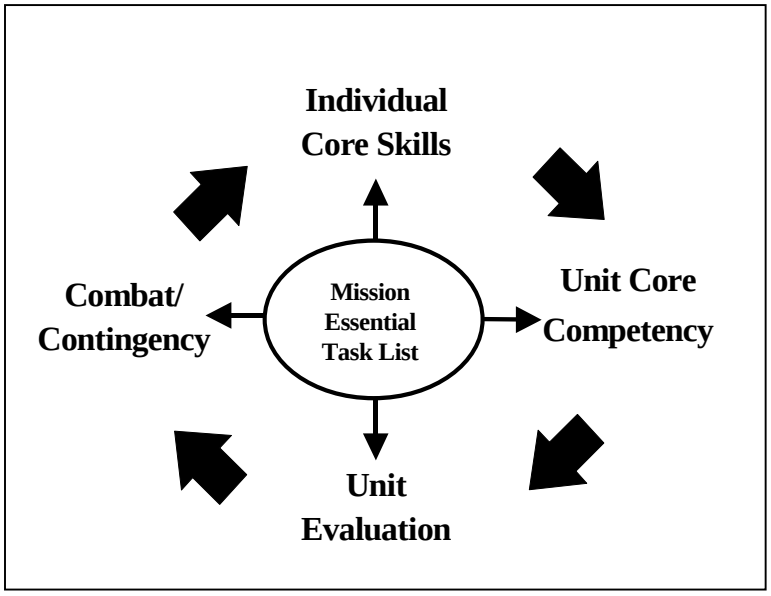

Figure 1-2.--Combat Readiness Cycle.

109. APPLICABILITY. The instructions and syllabi in this Manual apply to both active and reserve Marine aviation units.

1. Deviations from T&R Manual Policy. CG TECOM ATB is the approval authority for deviations from T&R policy delineated in this Manual and individual aviation T&R manuals. Requests for T&R manual policy deviation shall be requested via message traffic to CG TECOM QUANTICO VA ATB and info syllabus sponsor. During contingency/combat operations, MAGTF or wing commanders may deviate from aviation T&R training policies at their discretion.

110. CHANGES TO THE MANUAL. Units may make proposed changes to this Manual per Appendix D.

CHAPTER 2

SYLLABUS STRUCTURE

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CHAPTER 2

SYLLABUS STRUCTURE

200. INTRODUCTION. This chapter provides the structure and organization for the construction of individual training syllabi. This structure provides the standardization of format for aircrew, MACCS, and aviation ground personnel for flight and non-flight events. The intent is to maximize the full combat capabilities of a weapons system and its crew through standardized training syllabi. Each T&R chapter contains a single aircraft/community crewmember syllabus.

1. T&R reviews provide the forum to recommend updates to community T&R manuals. Community Subject Matter Expert (SME) input is critical to the T&R review process. Community SMEs shall be familiar with this chapter and shall have prepared command positions on conference agenda items prior to attending a T&R review. At T&R reviews, command SMEs may provide T&R update recommendations; however, designated command voting representatives determine final T&R update recommendations per Appendix D of this Manual.

201. TRAINING PHASES

1. T&R syllabi shall be constructed using a tiered progression of increasingly challenging training events. T&R events shall be divided into phases as delineated below. Similar event types (normally core skills) shall be subdivided into stages within each phase. Community SMEs shall update/construct T&R syllabi per the following guidelines:

a. Core Skill Introduction Training. 100 series events. This phase of training normally includes system/equipment operation familiarization, initial crew procedures, and initial exposure to core skills. CNATRA and Navy/Marine Fleet FRSs conduct Pilot/NFO training. Unless otherwise specified in individual T&R Manuals, CNATRA, FRSs, and/or the aircrew’s operational unit conduct enlisted aircrew training. Entry-level MOS schools and/or the crewmember's first operational unit conduct aviation ground unit and MACCS personnel training. The syllabus sponsor will determine Combat Readiness Percentage (CRP) weighting for each event. Pilot/NFO CNATRA training will normally equate to 25 percent CRP. Upon completion, an individual shall be at 60 percent CRP. Core Skill Introduction phase = 60 percent CRP.

b. Core Skill Basic Training. 200 series events. This phase contains basic core skill training essential to wartime employment of the unit platform/system. This phase should move an individual from basic understanding of core skills to proficiency in basic core skills. Individuals should normally complete this phase of training within the first year of assignment to a fleet aviation unit. Units will normally train aircrews through this phase prior to overseas assignment. Assignment of CRP values should fall within the range of 0.30 - 1.00 per event. CRP weighting shall reflect the hierarchical nature of core competencies. Upon completion, an individual will be at 75 percent CRP (Core Skill Basic phase = 15 percent CRP).

c. Core Skill Advanced Training. 300 series events. This phase contains advanced core skill training. This phase should move an individual from proficiency in basic core skills to proficiency in more advanced/complex core skills. Crews proficient in this phase of training should be capable of planning/leading/directing flights of numerous aircraft in a contingency operation. Assignment of CRP values should fall within the range of 0.50 - 1.00 per event. CRP weighting shall reflect the hierarchical nature of core competencies. Upon

completion, an individual will be at 95 percent CRP (Core Skill Advanced phase = 20 percent CRP).

d. Core Plus Training. 400 series events. This phase contains skill training a community may accomplish. Although Core Plus Training events may provide valuable training opportunities, they are not measured as part of unit SORTS reporting. Skills contained in this level are associated with high risk, low probability of execution, and/or are theater specific. This phase of training allows additional unit training flexibility. Assignment of CRP values should not be less than 0.25 per event. Upon completion, an individual will be at l00 percent CRP (Core Plus Phase = 5 percent CRP).

2. Individual T&R syllabi contain two additional T&R levels designed to facilitate unit training management and standardize instructor and combat leadership certification.

a. The fifth level (500 level or instructor training) contains instructor workup and certification syllabus events.

b. The sixth level (600 level or requirements, qualifications, and designations tracking codes) contains tracking codes and events originally designed to facilitate training management. This level also provides community standardization for combat leadership certification.

3. Support and Administrative Aircraft

a. Core Skill Introduction Training. Training including simulators (if applicable and available), day and night familiarization, instrument and navigation, initial exposure to core skills, and stage/NATOPS checks (as applicable). Upon completion, an individual will be at 60 percent CRP.

b. Core Skill Basic Training. Training including advanced familiarization, instruments and navigation, additional mission specific requirements, and review/NATOPS checks (as applicable). Upon completion, an individual will be at 75 percent CRP.

c. Core Skill Advanced Training. Training including advanced mission specific requirements and review checks (as applicable). Training completes the requirements for proficiency in all areas of operational missions. Upon completion, an individual will be at 95 percent CRP.

d. Core Plus Training. Other training that may be accomplished that is not required for proficiency primary missions. Upon completion, an individual will be at 100 percent CRP.

4. Instructor Training. Instructor certification syllabus events will be in the 500 level. Instructor training includes Instructor Under Training (IUT) POIs, ACTI, ACMI, NSI, and others. These events will be clearly delineated in each T/M/S aircraft or MACCS agency syllabus. T&R syllabi shall refer to the MAWTS-1 course catalog for instructor event requirements delineated in the MAWTS-1 course catalog. 500 level events shall not have CRP credit assigned.

5. Requirements, Qualifications and Designations Tracking Codes/Events. 600 level codes are utilized for training management purposes. This level may contain codes to track and manage qualifications and designations applicable to the community. Flight leadership designation requirements shall be implemented in the 600 level per Chapter 5 of this Manual. Codes may be established to monitor proficiency/ currency of community specific requirements; i.e. dropping specific types of ordnance, strategic air refueling, arctic weather events, etc. This level may

contain events not associated with core skill proficiency such as NATOPS evaluations, instrument evaluations, etc. 600 level events shall not have CRP credit assigned.

202. PROGRAMS OF INSTRUCTION (POI). An individual syllabus provides for Basic, Transition, Conversion, and Refresher personnel. Transition, Conversion and Refresher syllabi may have fewer required training events than basic POIs to account for previous experience. Transition/Conversion POIs contain appropriate basic POI training events that an average Transition/Conversion individual is required to complete to attain individual CSP in all T&R Core Skills. SMEs shall validate/update POIs at T&R conferences. POI definitions follow:

1. Basic. The standard instruction prescribed for newly designated personnel. This is defined as the first tour or Replacement Aircrew (RAC) syllabus. Newly designated personnel shall follow the entire POI as prescribed per individual T&R manuals.

2. Transition. Syllabus instruction designed for personnel changing aircraft/MACCS agency types. Marine Corps aircraft types include the following: FW jet, VSTOL jet, RW, FW transport, and tiltrotor. Marine Corps MACCS unit types include: TACC, TAOC, DASC, LAAD, and ATC.

3. Conversion. Syllabus instruction provided for personnel converting from one model aircraft/system to another within the specific aircraft/unit type described above.

a. Model Conversion. The instruction provided for personnel converting from one model aircraft/system to another within the specific aircraft/unit type described above; e.g., CH-46 to CH-53.

b. Series Conversion. Personnel who are current in type and a particular model of aircraft/system shall undergo this POI when assigned to fly/operate a new series that has significantly different aircraft or weapons systems characteristics; e.g., KC-130F to KC-130J.

4. Refresher. This POI is to be completed by personnel returning to an operational force billet, who have previously been assigned to the basic POI of that MOS syllabus. Refresher syllabi normally have fewer required fleet (200-400 level) training events than basic POIs to account for previous experience. Refresher POIs contain appropriate basic POI training events an average experienced individual is required to complete to regain and to maintain individual CSP in all T&R Core Skills. Pilots and NFOs who have not flown their model aircraft within a prescribed time interval shall be assigned FRS Refresher training per paragraph 604. Aviation FRS Refresher programs include Refresher, Modified Refresher, and Safe-For-Solo programs.

5. Instructor. This POI is to be completed by qualified personnel prior to designation as an instructor in a particular stage of training; i.e., ACTI, ACMI, NSI, LATI, TERFI, etc.

203. SYLLABUS FORMAT AND CONTENT. Each syllabus shall use the following sample numbering system and content guidance for standardization:

1. Paragraph Order and Title

X00. UNIT CORE COMPETENCY

X01-X09. PROGRAMS OF INSTRUCTION

X10-X19. GROUND/ACADEMIC TRAINING

X20-X29. FLIGHT/SIMULATOR/EVENT TRAINING

X30-X39. EVENT PERFORMANCE REQUIREMENTS

X40-X49. INSTRUCTOR TRAINING EVENT PERFORMANCE REQUIREMENTS

X50-X59. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

X60-X69. TRAINING RESOURCE REQUIREMENTS

2. Paragraph Contents. The following paragraphs provide guidance for the information and format included in each T&R syllabus. Formatting examples are provided in *italics.*

a. Paragraph 100. UNIT CORE COMPETENCY. Unit Core Competency entails not only the requirements contained in Core Model tables but the entire process. Paragraphs found in the Unit Core Competency section shall contain the applicable unit mission statement, METL, appropriate T/O information, core capability statement, Core Model Minimum Requirements (CMMR), and supporting tables such as METL/Core Skill matrix and qualification/designation tables. Aviation and MACCS T&Rs shall contain CMMR. Other aviation unit T&Rs are not required to maintain CMMR, but shall contain unit mission statement, METL, T/O information, METL/Core Skill matrix, and appropriate qualification and designation tables. Unit core competency paragraphs shall be formatted as follows:

100. (Aircraft T/M/S or System) CORE COMPETENCY.

1. Mission

2. Mission Essential Task List

3. Table of Organization

4. Core Capability Statement

5. METL/Core Skill Matrix

6. Core Model Minimum Requirements. (If Required)

a. Unit Core Skill Proficiency Requirements

(1) Events Required to Attain Individual Core Skill Proficiency

(2) Events Required to Maintain Individual Core Skill Proficiency

b. Combat Leadership Requirements

7. Qualifications And Designations Tables

(1) Mission Statement. The unit mission statement is normally a brief description of a unit's tactical capabilities. The T&R unit mission statement, combined with the METL, describes the unit mission and tasks.

(a) Aviation T&Rs shall format mission statements as follows:

1. Mission. Support the MAGTF Commander by (provide general mission description; e. g. destroying surface targets and enemy aircraft), day or night under all weather conditions during expeditionary, joint or combined operations.

(2) Mission Essential Task List (METL). The unit Mission Essential Task List is a standardized list of tasks a unit must be able to accomplish during combat/contingency operations.

(a) Tactical aviation unit METL format shall utilize Tactical Level Task (TA) numbering and verbiage contained in CJCSM 3500.04, Universal Joint Task List (UJTL). Mission Essential Tasks (METs) shall not be prioritized and shall appear in order as listed in the UJTL. Sub-bullets may be added under UJTL TA METs to clarify unit tasks. Unit METLs, considered essential to accomplish the unit mission but not contained in the UJTL, may be added as appropriate.

(b) Community mission statements and METLs shall be reviewed and updated as necessary at individual T&R manual conferences. CG TECOM ATB shall submit appropriate Mission Statement/METL change requests to CG MCCDC (EFDC) in order to align aviation unit mission statements/METLs in MCCDC publications (Unit Tables of Organization, appropriate MCWPs, etc.)

(c) Tactical aviation unit T&Rs shall format the unit METL as follows:

2. Mission Essential Task List

a. (UJTL TA 1.1.4) Conduct Sea and Air Deployment Operations
- *Maintain the capability to deploy and operate from aircraft carriers, advanced bases, and expeditionary airfields.*
- *Maintain the capability to conduct extended range operations employing aerial refueling.*

b. (UJTL TA 3.2.1) Conduct Fire Support
- *Conduct OAAW.*
- *Conduct OAS.*

c. (UJTL TA 3.2.2) Conduct Close Air Support
- *Conduct escort of friendly ground forces.*
- *Conduct Assault Support Escort.*

d. (UJTL TA 3.2.3) Conduct Interdiction Operations
- *Conduct armed reconnaissance.*
- *Conduct Strike Coordination and Reconnaissance.*

e. (UJTL TA 3.2.4) Conduct Joint Suppression of Enemy Air Defenses

f. (UJTL TA 3.2.8) Conduct Air to Air Operations
- *Intercept and destroy enemy aircraft in conjunction with ground or airborne Fighter control under all weather conditions.*
- *Conduct self escort and escort of friendly aircraft and ground forces.*

(3) Table of Organization (T/O) Information. Unit T/O information shall be derived from the current T/O and include authorized organizational structure (number of aircraft/systems) and personnel strength (number of personnel by T&R MOS). Unit T/O information shall be formatted as follows:

3. Table of Organization. Refer to Table of Organization #XXXX managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for (aircraft T/M/S or

system) units. As of this publication date, (aircraft T/M/S or system) units are authorized:

Squadron
XX aircraft
XX Pilots/XX Crew Chiefs

Detachment
XX aircraft
XX Pilots/XX Crew Chiefs

(4) Core Capability. Unit core capability statements shall reflect the minimum level of performance a unit must be capable of sustaining during extended contingency/combat operations. Units that provide standardized detachments shall list appropriate detachment capabilities. Tactical aviation units shall state core capability in terms of a daily, sustained sortie rate; other units define core capability in terms of daily, sustained operational coverage. Daily, sustained sortie rates shall be obtained from the 70 percent FMC sustained sortie rate table in the current version of the MAGTF Planner’s Reference Manual (as of this publication date, MSTP Pamphlet 5-0.3). Average sortie duration shall be obtained from MCO P3125.1. Tactical aviation unit T&Rs shall format unit core capability statements as per the following example:

4. Core Capability. A core capable squadron is able to sustain 23 sorties (4 aircraft detachment is able to sustain 8 sorties) on a daily basis during contingency/combat operations. The above sortie rates are based on 1.4 hour average sortie duration and assumes ≥ 70 percent FMC aircraft and ≥ 90 percent T/O aircrew on hand. If unit FMC aircraft < 70 percent or T/O aircrew < 90 percent, core capability will be degraded by a like percentage. A core capable squadron/detachment is able to accomplish all tasks designated in the unit METL from a main base, expeditionary base, and/or carrier/amphibious platform (as appropriate per aircraft/system).

(5) METL/Core Skill Matrix. Core skills are specific, mission related task areas (capabilities) that support a unit's METL. This matrix provides the link between the unit training program and its METL by graphically depicting how each core skill directly supports the unit METL. At least one core skill must support each MET. Community SMEs shall determine which core skills support which METs and mark the matrix as appropriate. Unit METL/Core Skill Matrices shall be formatted as follows:

5. METL/Core Skill Matrix. Unit core skills directly support the unit METL as follows:

	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
MET A						X				
MET B			X				X			X
MET C	X	X	X	X	X				X	X
MET D	X			X					X	X
MET E	X	X	X		X				X	X
MET F	X	X		X						
MET G		X			X		X			
MET H	X			X	X				X	X
MET I								X		
MET J									X	X

(6) Core Model Minimum Requirement (CMMR). CMMRs reflect the ability of a unit to perform its core capability. Unit CMMR is defined in terms of aggregate unit crew Core Skill Proficiency (CSP) and combat leadership requirements. Unit CMMR is reflected in core model tables (Minimum Unit Core Skill Proficiency Requirements, Minimum Combat Leadership Requirements).

(a) Community SMEs shall validate/update core skills for all applicable MOSs during T&R syllabus reviews. Core skills are general task areas that support a unit's METL. Core skills are subdivided into like events and are normally delineated as T&R stage titles.

(b) Unit CSP shall be defined in terms of numbers of individuals or crews required to be proficient in each core skill. Individual core skill proficiency shall be based on T&R event requirements an individual must initially complete, and T&R event requirements an individual must maintain proficiency in (per paragraph 700) for each core skill.

(c) Unit combat leadership requirements shall be defined in terms of number of tactical leaders required to execute the unit mission/METL. Individuals count towards this requirement when the individual is designated in writing by the commanding officer. Unit instructor designation requirements shall not be listed in CMMR paragraphs, but shall be listed in the qualifications and designations paragraphs.

(d) SMEs shall determine community CMMR (CSP and Combat Leadership) at T&R syllabus reviews. CMMR requirements for all applicable MOSs shall be derived from the unit core capability.

(e) CSP event requirements shall be derived from 200-300 level core skill T&R events. Community SMEs shall consider event refly, chaining, and R-coding information when determining unit CSP requirements. Events required to maintain CSP should normally be R-coded (Refresher POI) events. Events required to maintain CSP should normally chain events required to attain CSP. For example, a community T/O authorizes 12 aircraft and 19 aircrew. The community core capability states the unit must sustain 24 sorties daily. Community SMEs consider the above information coupled with operational experience to determine minimum unit CSP and leadership requirements for unit combat/contingency operations. The community determines that the minimum number of section leads required to sustain 27 daily sorties is 9.

(f) Unit CMMR shall be listed by T&R MOS. In addition, communities employing crew served platforms shall define standard crew composition and delineate unit CSP in terms numbers of crews required to be proficient in each core skill. Units employing crewed platforms shall list unit CMMR in the first chapter of the unit T&R manual. Appropriate CMMR by MOS may be listed in subsequent chapters; such tables shall reflect information from the unit master CMMR table. Units that provide standardized detachments shall list appropriate detachment CMMR. Tactical aviation and MACCS squadrons shall format unit CMMR as follows:

6. Core Model Minimum Requirements (CMMR). Squadron core competency is measured in terms of CMMR or the minimum numbers of core skill proficient crews and minimum numbers of flight leaders per paragraphs a. and b. below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each core skill (Unit CSP). The standard (aircraft model) crew consists of 2 pilots and one crew chief. In order to be considered proficient in a core skill (individual CSP), an individual must attain and maintain proficiency in core skill events as delineated in paragraphs (1) and (2) below.

(Aircraft T/M/S or System) Unit CSP Requirements									
Core Skill	*SQDN PILOTS*	*SQDN Crew Chiefs*	*SQDN Crews*	*SQDN (Minus 1 DET) PILOTS*	*SQDN (Minus 1 DET) Crew Chiefs*	*SQDN (Minus 1 DET) Crews*	*DET PILOTS*	*DET Crew Chiefs*	*DET Crews*
CS1	*24*	*12*	*12*	*16*	*8*	*8*	*8*	*4*	*4*
CS2	*24*	*12*	*12*	*16*	*8*	*8*	*8*	*4*	*4*
CS3	*24*	*12*	*12*	*16*	*8*	*8*	*8*	*4*	*4*
CS4	*24*	*12*	*12*	*16*	*8*	*8*	*8*	*4*	*4*
CS5	*16*	*12*	*12*	*8*	*8*	*8*	*8*	*4*	*4*
CS6	*12*	*NA*	*12*	*8*	*NA*	*4*	*4*	*NA*	*2*
CS7	*18*	*9*	*9*	*10*	*5*	*5*	*8*	*4*	*4*
CS8	*16*	*12*	*8*	*8*	*8*	*4*	*4*	*4*	*2*
CS9	*16*	*12*	*8*	*8*	*8*	*4*	*4*	*4*	*2*
CS10	*24*	*12*	*12*	*16*	*8*	*8*	*8*	*4*	*4*

(1) Events Required to Attain Individual CSP. To initially attain CSP, an individual must successfully complete all of the T&R events listed in the chart below for that core skill:

Pilot	*CS1*	*CS2*	*CS3*	*CS4*	*CS5*	*CS6*	*CS7*	*CS8*	*CS9*	*CS10*
T&R event requirements to attain CSP (by MOS)	*220* *221* *222* *223* *224* *225* *226* *227* *228* *320* *321* *322*	*270* *271* *272*	*260* *261* *262* *360*	*250* *251* *252* *350* *352*	*202* *203*	*230* *231* *232* *233* *234* *235* *236*	*240* *241* *242* *243* *244* *245* *331* *333* *334*	*209* *210* *211* *212* *213* *214*	*204* *205* *206* *207* *208*	*200* *201*

(2) Events Required to Maintain Individual CSP. To maintain CSP, an individual must maintain proficiency in all of the T&R events listed in the chart below for that core skill.

Pilot	*CS1*	*CS2*	*CS3*	*CS4*	*CS5*	*CS6*	*CS7*	*CS8*	*CS9*	*CS10*
T&R event requirements to maintain CSP (by MOS)	*220* *222* *225* *227* *228* *320* *322*	*271* *272*	*261* *360*	*251* *252* *352*	*203*	*230* *233* *235* *236*	*241* *243* *245* *333* *334*	*210* *211* *213* *214*	*205* *207* *208*	*201*

b. Minimum Combat Leader Requirements. At a minimum, in order to be considered Core Competent, a unit must possess the following numbers of aircrew with the listed leadership designations.

DESIGNATION	*SQDN PILOTS*	*SQDN PILOTS (Minus 1 Det)*	*DET PILOTS*
HAC	*16*	*12*	*4*
SEC LDR	*9*	*6*	*3*
DIV LDR	*6*	*4*	*2*
FLT LDR	*5*	*3*	*2*
AMC	*4*	*3*	*1*

(7) Qualifications and Designations Tables. The purpose of these tables is to clarify and consolidate unit qualification/designation requirements. All standardized community qualifications and designations shall be listed in these tables. T&R events required to be completed for initial attainment of qualifications/designations shall be delineated. T&R events required to be re-completed for re-qualifications shall also be delineated. Unit instructor designation requirements shall be listed in qualifications and designations paragraphs. Qualifications and designations tables shall be formatted as follows:

7. Qualifications And Designations Tables. The tables below delineate T&R events required to be completed to attain initial qualifications, to re-qualify, and to attain designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification.

Qualification (Tracking Code)	Initial Event Qualification Requirements
NATOPS (600E)	IAW OPNAV 3710.7 and an annual qualification letter signed by the commanding officer.
Instrument (601E)	IAW OPNAV 3710.7 and an annual qualification letter signed by the commanding officer.
QUAL 1 (610E)	S204(R), 205(R), 206, 207, 208E(R)
DAY CQ (613E)	613E(R)
NIGHT CQ (614E)	614E(R)
QUAL 2 (616E)	S230(R), S231, 230, 231, 232, 233(R), 234, 235, 236(R), S240, S241(R), 242, 243(R), 244(R), 245E
QUAL 3 (621E)	S209, 210, 211(R), 212, 213(R), 214E
QUAL 4 (622E)	410, 411, 412E
QUAL 5 (619E)	380, 381(R), 382(R), 383, 384, 385(R), 386, 387E
QUAL 6 (623E)	390(R), 391E
Designation (Tracking Code)	Designation Requirements
PMCF (631E)	IAW OPNAV 3710.7 and an annual designation letter signed by the commanding officer.
SECT LD (649E)	640E, 641E, 642E, 643E, 644E, 645E, 646E, 647E, 648E, 649E(R). The IUT shall be complete with all 200 and 300 level sorties prior to beginning section lead workup.
DIV LEAD (659E)	650E, 651E, 652E, 653E, 659E(R).
MSSN CDR (679E)	670E, 671E, 679E(R).
LAT(I) (681E)	IAW the MAWTS-1 Course Catalog.
ACT(I) (688E)	
TOPGUN (696)	
MDTC (697)	
NS(I) (698E)	
WTI (699)	

a. Instructor Requirements. A unit should possess the following numbers of aircrew with the listed instructor designations IAW MCO 3500.12C (WTTP):

INSTRUCTOR DESIGNATION	*SQDN PILOTS*	*SQDN PILOTS (Minus 1 Det)*	*DET PILOTS*	*SQDN C/C(A/O)*	*SQDN C/C(A/O) (Minus 1 Det)*	*DET C/C(A/O)*
ARI	*4*	*3*	*1*	*-*	*-*	*-*
TERFI	*6*	*4*	*2*	*5*	*3*	*2*
DMI	*3*	*2*	*1*	*3*	*2*	*1*
NSI	*5*	*4*	*1*	*5*	*4*	*1*
AGI	*NA*	*-*	*-*	*4*	*3*	*1*
WTI	*3*	*2*	*1*	*3*	*2*	*1*

(8) Training Progression Models. Training progression models provide community recommended core skill, qualification, and designation attainment timelines for the average crewmember. Communities shall develop training progression information for each MOS. Multiple training progression models by MOS should be implemented for multi-crewed aircraft/systems. Training progression models shall be placed at the end of paragraph 100 in the T&R chapter of each respective MOS. See paragraph 700 for additional training progression model information.

b. Programs of Instruction (POI)

(1) Paragraph X01. PROGRAMS OF INSTRUCTION. This paragraph contains an outline of the basic POI (also list other applicable programs that require full basic POI training; i.e. Transition). The paragraph includes the length of time for each phase/course of instruction required for personnel to complete the POI.

(2) Paragraphs X02-X09. These paragraphs list other POIs requiring variations of the basic POI. Syllabus sponsors should list POIs that differ from the basic POI in the following order: Transition; Conversion; Series Conversion; Refresher; Instructor Under Training.

(3) SMEs should write paragraphs X02-X09 in the following format example:

WEEKS	*COURSE/PHASE*	*ACTIVITY*
1	*Ground/Academic Training*	*Training Squadron*
2	*Simulator Training*	*Training Squadron*
3-6	*Core Skill Introduction Training*	*Training Squadron*
7-11	*Core Skill Basic Training*	*Tactical Squadron*

c. Ground/Academic Training

(1) Paragraph X10. GROUND/ACADEMIC TRAINING COURSES OF INSTRUCTION. This paragraph should contain a listing of all formal and informal ground/academic courses of instruction necessary for completion of the syllabus. Where applicable, include the following statement: “Utilize academic courseware as outlined in the appropriate Type/Model/Series chapter of the MAWTS-1 Course Catalog.”

(2) Paragraphs X11-X19. These paragraphs describe associated ground instruction. Training references should list procedures, scoring criteria, and aircraft/system operation.

d. Flight/Simulator/Event Training

(l) Paragraph X20. FLIGHT/SIMULATOR/EVENT TRAINING. The four phases of instruction divide the basic training program into the following areas:

X20.1. Core Skill Introduction Training

X20.2. Core Skill Basic Training

X20.3. Core Skill Advanced Training

X20.4. Core Plus Training

(2) SMEs shall divide each phase into stages of similar event instruction shown in the following format:

STAGE	*FLIGHTS/EVENTS*	*HOURS*	*PERCENT*
Familiarization	*3*	*4*	*1.5*
Instrument	*2*	*3*	*1.0*
Other stages	*34*	*38*	*57.5*
	39	*45*	*60.0*

(3) Use paragraphs X21-X29 for the Transition, Conversion, Refresher, Instructor Under Training, and other POIs.

e. Event Performance Requirements

(1) Paragraph X30. EVENT PERFORMANCE REQUIREMENTS. This paragraph should introduce the event performance requirements portion of the syllabus and denote general syllabus administrative notes.

X30. EVENT PERFORMANCE REQUIREMENTS

1. General

a. List policies, notes, and guidelines applicable to all T&R events.

(2) Paragraph X31-X39. These paragraphs shall contain all the event performance requirements for phases and stages previously listed in paragraphs X20-X29. These paragraphs include the instructions necessary to complete the syllabi. Each stage will list a series of detailed event descriptions expressed in terms of performance requirements.

(3) SMEs shall use the following blocks of training code numbers to designate events:

Core Skill Introduction	100-199
Core Skill Basic	200-299
Core Skill Advanced	300-399
Core Plus	400-499
Instructor Training	500-599
Requirements, Qualifications, and Designations	600-699

(4) A unique numeric three-digit training code shall be assigned to each syllabus event. The first digit of the event training code should begin with the appropriate phase series number (Core skill introduction events = 1XX; Core skill basic events = 2XX; etc.). The following format shall be used to develop the syllabus:

X31. (NAME OF PHASE) TRAINING

1. General

a. List policies, notes, and guidelines applicable to phase events.

2. Stage Title. Core skills are normally subdivided into like events and delineated as T&R stage titles. When applicable, stage titles shall be the same as the core skill (Example – Terrain Flight). Stage titles/Core Skills should follow standardized terminology established in Appendix B.

a. Purpose. Describe the stage function.

b. General

(1) State administrative notes.

(2) List stage prerequisites.

(3) Denote the level of performance desired by the end of the stage if the specific flights/events do not describe the required level of performance.

c. Crew Requirements. State which crewmembers are required. Specific crew requirements may be identified in individual events if appropriate.

d. Ground/Academic Training. List ground instruction required in this stage. Where applicable, include the following statement: "Utilize academic courseware as outlined in the appropriate Type/Model/Series chapter of the MAWTS-1 Course Catalog."

e. Flight and Simulator Event Training (X Events, X.X Hours)

(List all stage events per the below format)

1/	2/	3/	4/	5/	6/
FAM-300	2.0	T,C,SC,R,MR	E	1	KC-130 (N)

Goal. State the terminal learning objectives.

Requirement. List specific tasks for the event; indicate what the crew/individual must accomplish.

Performance Standards. Describe measurable level of proficiency for that event.

Prerequisite. List any requirements that must be completed prior to commencing event training.

Ordnance. List the amount and type of ordnance required to complete this event, if applicable.

External Syllabus Support. List additional training resource requirements and/or external support required to complete the event, i.e., for CAS; FAC or FAC(A) with X number of

mortar/arty/rockets for marking; 2 V 1-1 dissimilar F/W adversary F/A-18/F-5; specific range requirements, etc.

NOTES: 1/ Use Appendix B (when applicable) to determine event acronym.

2/ Projected event duration. Furnished as a planning tool.

3/ Program of instruction denotes the applicable program: T = Transition, C = Conversion, SC = Series Conversion, R = Refresher, MR = Modified Refresher. (B = Basic is understood).

4/ An “E” indicates an evaluated event.

5/ List the number and type of aircraft required for the completion of this event. (For simulator periods, list the type of trainer.)

6/ Conditions: A = aircraft, S = simulator, A/S = Aircraft preferred/simulator optional, S/A = Simulator preferred/aircraft optional, N = Flown at night, NS = Flown at night utilizing available night systems, ( ) = optional.

(a) Prerequisites. A prerequisite is a requirement that must be successfully completed prior to commencing training in a syllabus event/stage of training. Event prerequisites shall not be omitted or skipped (unless a training exception is granted by the commanding officer per paragraph 305). Prerequisites are annotated in the prerequisite section of individual events/stages. If a prerequisite is a T&R event, the prerequisite event must have been previously completed (proficiency in the prerequisite event is not required). In addition, night and night optional events may further refine the prerequisites required depending on environmental conditions.

(b) Night Optional. Night optional prerequisite conditions may exist for night optional T&R events and are annotated with parentheses around them [e.g. (200)] or with “DAY” after them (e.g. 200 DAY). A prerequisite annotated with parentheses must be previously completed only if the scheduled night optional T&R event is actually flown at night. A prerequisite annotated with “DAY” must be previously completed only if the scheduled night optional T&R event is actually flown during the day. As an example, if 230 is a night-optional event and its prerequisites are listed as “220, (221), 222 DAY,” the following applies:

(1) If the 230 is flown during the day, the prerequisites that apply are 220 and 222 only.

(2) If the 230 is flown during the night, the prerequisites that apply are 220 and 221 only.

(c) Light Level Optional. Prerequisite codes annotated with parentheses and “HLL” after them [e.g. (200 HLL)] must be previously completed if the T&R event is flown using night systems during high light level conditions. Prerequisite codes annotated with parentheses and “LLL” after them [e.g. (200 LLL)] must be previously completed if the T&R event is flown using night systems during low light level conditions. As an example, if 240 is a night-optional event and its prerequisites are listed as “230, (231 HLL), (232 LLL),” the following applies:

(1) If the 240 is flown during HLL conditions, the prerequisites that apply are 230 and 231 only.

(2) If the 240 is flown during LLL conditions, the prerequisites that apply are 230 and 232 only.

f. Instructor Training Event Performance Requirements

(l) Paragraph X40. INSTRUCTOR TRAINING EVENT PERFORMANCE REQUIREMENTS. This paragraph may list the instructor training stage administration notes.

(2) Paragraphs X4l-X49. These paragraphs shall include a description of each event or refer to the appropriate chapter of the MAWTS-1 Course Catalog.

(3) Use the 500-599 block of training codes to designate specific Instructor Training stages/events. The MAWTS-1 Course Catalog shall be referenced for instructor workup and certification events.

g. Requirements, Qualifications and Designations

(l) Paragraph X50. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS (RQD) EVENT PERFORMANCE REQUIREMENTS. This paragraph may list the RQD stage administration notes.

(2) Paragraphs X5l-X59. These paragraphs shall include a description of each stage/event.

(3) Use the 600-699 block of training codes to designate specific RQD stages/tracking codes/events. For tactical flight units, qualifications and designations be assigned corresponding tracking codes, however the currently authorized automated training management system does not require them for qualification or designation tracking purposes.

h. Training Resource Requirements

(1) Paragraph X60. ORDNANCE REQUIREMENTS. These paragraphs shall list the ordnance type and quantity, including artillery, naval surface fire and mortars, to achieve qualification in each phase of training. When units cannot obtain specific ordnance, they may use the best substitute. Communities shall thoroughly review and update training ordnance requirements to reflect an annual ordnance training requirement. Platforms requiring individual ordnance training proficiency shall establish annual ordnance requirements for a standard individual. Crew served platforms shall establish annual ordnance training requirements for a standard crew.

(2) Paragraphs X61-X69. (Other Training Resource) REQUIREMENTS. These paragraphs list critical training resources required to achieve T&R training requirements (e.g. ranges, adversary support, tanker support, etc). Crew served platforms should list resource requirements in terms of annual requirements per crew, and annual requirements per unit (based on platform T/O or T/E). Communities should use objective methodologies based on T&R requirements to determine resource requirements. Objectively defining and identifying aviation training resource requirements will assist operational and HQ agencies in defining aviation training resource requirements.

(3) Sorties required for annual training requirements will be generated by MCO P3125.1 (Flight Hour Program) and individual T/M/S T&Rs.

3. Required Matrices/Tables

a. Syllabus Matrix. SMEs shall update syllabus event information during T&R conferences using the format shown in figure 2-1.

(1) Refly factors reflect the maximum time between syllabus events where the unit can expect the average aircrew to maintain an acceptable level of proficiency. Refly factors shall be delineated in days. An asterisk (*) indicates the event has no refly interval. Events with no refly interval normally indicate a one time training requirement and should not have CRP value attached.

(2) Guidelines to establish CRP values are delineated in paragraph 201.

(3) SMEs shall update all T&R syllabus POIs in accordance with the definitions listed in paragraph 202. Community SMEs shall coordinate update of event refly, chaining, and R-coding with unit core skill proficiency requirements. 200-300 level events required to maintain core skill proficiency should normally be R-coded (Refresher) events and should normally chain 200-300 level events required to attain core skill proficiency.

AIRCRAFT: XXXX MOS: 75XX CREW POSITION: PILOT

STAGE	TRNG CODE	FLT HRS	REFLY INTERVAL	CRP	T	C	R	E	COND. & REMARKS
SLAT	390	1.5	*	-	X	X	X		S/A
LAT	391	1.7	90	0.25	X		X		
	392	1.7	90	0.50	X		X		
	393	1.7	90	0.50	X	X	X	X	
CORE PLUS TRAINING									
SFAM	400	1.5	90	0.50	X	X	X		S
FAM	401	1.7	90	1.00	X	X		X	
SEAF	410	1.5	90	0.20	X	X	X		S
EAF	411	1.5	90	0.40	X			X	
	412	1.5	90	0.40	X	X	X	X	N
SFCLP	413	1.5	90	0.75	X				S

Figure 2-1.--MOS 75XX Syllabus Matrix.

b. T&R Chaining Tables. SMEs shall update T&R chaining tables during T&R reviews using the format shown in figure 2-2. Event chaining allows for the completion of more complex and/or advanced events using the same skills to update proficiency status of events. Only events in a sequence entailing demonstration of equivalent skills shall be chained.

(1) When a T&R event is logged, the proficiency dates of other T&R events (usually lower in number) may be updated. The T&R code that is logged is known as the “chaining code,” and the updated codes are “chained codes.” Chained codes are not always updated when a chaining code is logged. Specific rules determine which events may be updated (see Chapter 7, event proficiency updating rules).

(2) Conditional Chaining. The following environmental conditions further specify which T&R codes are chain-updated. These conditions shall be annotated in T&R chaining matrices when appropriate.

(a) Night Optional. Chained codes annotated with parentheses around them, e.g. (200), are only chain-updated if the chaining code is flown at night.

(b) Night Systems Optional. Chained codes annotated with parentheses and “NS” after them, e.g. (200 NS), are only chain-updated if the chaining code is flown using night systems.

(c) Light Level Optional. Chained codes annotated with parentheses and “HLL” after them, e.g. (200 HLL), are only chain-updated if the chaining code is flown using night systems during a high light level period. Chained codes annotated with parentheses and “LLL” after them, e.g. (200 LLL), are only chain-updated if the chaining code is flown using night systems during a low light level period.

Example 1:

	Event	Events Updated
TERF	220	
	221	220
	222	220, 221

This is a very simple case where the chaining updates from TERF-222 to TERF-220; e.g., if TERF-222 is completed, it updates 221 and 220 (assuming 221 and 220 indicate ‘Proficient’). 220, 221 and 222 are daylight TERF events. The skills required in 221 and 222 are equivalent skills to lower sequence events and completion of 221 and 222 updates lower sequence event proficiency.

Example 2:

	Event	Events Updated
CAL	220	
	221	220
	222	220,(221 NS)
	223	220,(221 NS),(222 LLL)

This is a different case where chaining codes may not update all chained codes; 220 is a daylight CAL event; 221 is an NS CAL event and 222/223 are (NS) CAL events. If CAL-223 is completed, it always updates 220. However, 221 will only be updated when 223 is flown using night systems (NS specific skills), and 222 will only be updated when 223 is flown in LLL conditions (light level specific).

EVENT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
FAM	200	
CAL	210	200
NAV	300	200,(201)
AG	310	200,201,300
NVG	320	200, (201 NS), (202 LLL)
CQ	400	200,201,320

Figure 2-2.--MOS 75XX Event Update Chaining.

c. Syllabus Event Conversion Matrix. SMEs shall develop syllabus event conversion matrix(ces) for all applicable MOSs during T&R reviews using the format shown in figure 2-3. The syllabus event conversion matrix is used to convert T&R syllabus event proficiency status of the previous T&R syllabus into event proficiency status of the current T&R for individuals.

d. T&R Syllabus Evaluation Forms. SMEs shall develop evaluation forms for all events contained in their T&R syllabus. These are the only authorized evaluation forms for use within the specific aircraft/MACCS community. T&R syllabus evaluation forms shall be placed in T&R manuals or maintained by the syllabus sponsor. If the syllabus sponsor maintains T&R syllabus evaluation forms, the syllabus sponsor shall ensure electronic copies are made available to fleet units.

OLD STAGE	OLD TRNG CODE	NEW STAGE	NEW TRNG CODE
300 LEVEL			
LAT	308	LAT	207
	309		208E
SAA	310	SACM	330
AA	311	ACM	333
	312		332
	313		335
	314		334
SAS	330	SBAS	330
AS	330	BAS	322
	331		323
	332		322
	333		324
CAS	340	CAS	351
	341		352
DAS	350		
	351	AI	371
	352		372
SASWD	360		
ASWD	360	ACM	430
	361		430
	362	ASWD	562-564

Figure 2-3.—-MOS 75XX Syllabus Event Conversion Matrix.

CHAPTER 3

TRAINING POLICIES

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CHAPTER 3

TRAINING POLICIES

300. TRAINING POLICY

1. Commanders shall ensure that all tactical training is conducted to meet unit Core Model Minimum Requirements (CMMR).

2. Commanders must be cognizant of the numerous factors affecting unit training to include:

a. Efficiency. Time and resources expended are measurements for training efficiency. Commanders must ensure that all training increases combat readiness. Unit personnel shall thoroughly plan and effectively execute training to maximize the return on their time and effort.

b. Individual Differences. Commanders must recognize the differences inherent in each individual and should mold flexible training programs to accommodate those differences.

c. Decentralization of Training. The lowest echelon possible shall be responsible for conducting training. Each senior level of command must monitor subordinate commands to ensure safe and efficient training requirements.

3. Commanders shall provide personnel the opportunities to attend formal and operational level courses of instruction as required by this Manual. Attendance at formal aviation courses enhances the warfighting capabilities of the unit.

4. Risk Management. T&R conference attendees shall consider the ORM process and principles during all syllabus conferences.

301. UNIT TRAINING POLICIES

1. Unit training is the cornerstone of combat success. The following areas of unit training require proficiency to ensure combat readiness. The squadron/battalion, as an entity, must meet certain minimum standards and levels of proficiency to enable mission completion in these critical areas.

a. Carrier Qualification. When required to operate from aviation decks, units shall maintain both day and night shipboard qualification. When aviation decks are not available, these units shall maintain ship skills by staying current with Field Carrier Landing Practice (FCLP) in accordance with their respective T&R syllabus. Personnel should consult the NWPs, LHA/LHD, CV, LSO, individual aircraft NATOPS manuals, and current NAVAIR instructions to ensure appropriate training of personnel for shipboard operations.

b. Fixed Wing Expeditionary Airfield (EAF)/Forward Site Training and Qualification. Fixed wing tactical squadrons shall qualify on an available EAF/forward site, or on a runway configured for EAF/forward site operations when required. Each aircraft wing and fixed wing tactical group shall assign a Landing Signal Officer (LSO)/Landing Site Supervisor (LSS) to monitor the EAF/forward site training and qualification program. KC-130 operations do not require an LSO/LSS. The LSO will maintain data on available EAFs/forward sites and air stations where EAF/forward site operations are available. EAF/forward site training should

incorporate Expeditionary Air Traffic Control capabilities of the MATC Detachment, or MATC Mobile Team participation whenever feasible.

c. LSO Qualification. Commanding officers shall designate field-qualified LSOs per the LSO NATOPS and assign them at the squadron and group level to control FCLP periods. If possible, the LSO shall be field EAF-qualified. A VSTOL LSS should serve as a supervisor for VSTOL operations from all forward sites. LSOs/LSSs shall brief all aircrew on current launch and recovery publications prior to EAF/forward site training. Aircrews shall be FCLP/forward site qualified prior to EAF/forward site operations and day EAF/forward site qualified prior to night qualification. During EAF/forward site qualification, all pattern work will be flown under VMC.

d. Missile/PGM Training. Commanders shall ensure those aircrews participating in live fire exercises have demonstrated proficiency in their weapons system. All naval aviators and naval flight officers assigned to a squadron should fire at least one of each applicable missile/PGM during a three-year period. Commanders shall assign a qualified and experienced officer to control all missile firing exercises. All missile firing exercises should include Marine air controller participation.

e. MACCS Integrated System Training. All elements of the MACCS shall maintain the capability to effectively function as part of an integrated airspace command and control system. In that large exercises may not always offer sufficient training opportunity for all crew members, and in many cases do not offer sufficient latitude to refine capability upon arrival, the MACCS should conduct MACCS Integrated System Training Exercises (MISTEX) on a regular basis to qualify units and personnel per their respective T&R syllabus. MISTEXs should focus on the establishment of necessary communications and datalinks between MACCS agencies, and incorporate sufficient simulation and Master Scenario Events List (MSEL) items to exercise and analyze system integration, crew coordination, and critical information flow wherever possible. Tactical Digital Information Link (TADIL) capable agencies should conduct frequent “Link” training exercises to maintain proficiency.

f. Surface-to-Air Missile Training. Stinger gunners assigned to an active battalion or squadron in the operating forces should fire at least one surface-to-air missile during a three-year period. Commanders shall ensure those members participating in live missile firing exercises have completed appropriate T&R prerequisites as outlined in the applicable syllabus. Commanders shall assign a qualified and experienced officer to control all missile-firing exercises. All missile firings should be conducted under conditions which closely simulate actual conditions expected to be encountered in the tactical environment (within applicable safety and range constraints), and include the participation of other elements of the MACCS whenever possible.

302. INDIVIDUAL TRAINING POLICIES

1. Commanders shall implement training plans to qualify aircrew/MACCS personnel for their assigned duties. Completion of the appropriate instructions listed below, and the applicable community syllabus are sufficient to meet minimum training requirements.

a. Schools. Information concerning formal and informal MOS schools can be found in MCO P1500.12, Marine Corps Formal Schools Catalog; MCO P3500.12, Marine Corps Aviation Weapons and Tactics Training Program; Navy Formal Schools Manual; Catalog of Navy Training Courses (CANTRAC); CNATRAINST P1550.1; COMTRALANT and COMTRAPAC 1500 series directives and other commands' course catalogs.

b. Ejection Seat. Squadrons shall conduct ejection seat training in accordance with the current edition of OPNAVINST 3710.7.

c. Emergency Procedures. All aircrew and LAAD gunners shall complete a monthly review of emergency procedures. Simulators should be used. If the community lacks a simulator or one is not available, the command shall substitute appropriate examinations or cockpit drills for the emergency procedures review.

d. Flight Physiology/Water Survival Training. All aircrew shall maintain currency in flight physiology and water survival training as contained in OPNAVINST 3710.7.

e. Survival, Evasion, Resistance, and Escape (SERE). All aircrew shall attend SERE training in accordance with DOD Directive 1300.7 and Joint Pub 3-50.3 (Joint Doctrine for Evasion & Recovery).

f. Crew Resource Management (CRM) Training. Commanders shall ensure their squadrons conduct annual CRM training (classroom and check flight) in accordance with the OPNAVINST 1542.7 series for each aircrew member. Squadron CRM facilitators shall follow the approved syllabus for each type/model aircraft as prescribed by the CRM Curriculum Model Manager. CRM instructors and squadron facilitators shall be trained and designated in accordance with OPNAVINST 1542.7. The squadron NATOPS officer shall record this training in NATOPS training jackets.

303. GROUND TRAINING POLICIES

1. Each unit shall conduct specific ground training for technical and tactical subjects which complement the respective training syllabus. Crewmembers shall complete supplemental courses of instruction prior to event training as outlined in individual T&R syllabi. Each T/M/S chapter of the MAWTS-1 Course Catalog contains a detailed academic curriculum designed to facilitate T&R Phase/Stage progression. This curriculum shall be used to support T&R flight syllabi. Units shall instruct courses in the following areas:

a. Technical Subjects. This includes aircraft/weapon systems, maintenance systems, ordnance manuals, and MACC agencies.

b. Tactical Subjects. This includes tactical manuals, T&R policies, ANTTPs, NWPs, NBC defense, ordnance delivery/effectiveness, weapons platform/effectiveness publications, mission planning and briefing.

c. Instrument Flight and Navigation. This includes special equipment, computers, FLIP publications, OPNAV instructions, DR navigation, and map reading.

d. Safety/NATOPS. Safety training requirements exist to familiarize all personnel with methods of hazard detection and the avenues available for reporting their existence to appropriate authorities. Continuous training relating to safety, publications, aircraft mishap briefs, aviation physiology survival equipment, pre-mishap plans, OPREP reporting, NATOPS publications, and systems manuals will increase a unit's safety awareness and improve overall personnel readiness.

e. Intelligence. Threat situation, aircraft recognition, map reading, charts, aerial photographs, enemy aircraft and aerial tactics, enemy anti-air weapons, intelligence reports, enemy electronic warfare capability, and enemy chemical, biological and radiological capability shall be studied regularly at the squadron level.

f. Air Control. This includes the mission, capabilities, limitations, and functions of each of the elements of the MACCS. Instruction should incorporate principles and guidelines associated with the employment of the MACCS, and the specific procedures associated with the control of aircraft and missiles. Air Control training for aircrew should emphasize the interaction between the command and control system and particular aviation platforms performing specific missions, and the interrelationships between the specific core competencies of the applicable T/M/S and the associated command and control procedures, systems and functions.

304. SYLLABUS TRAINING POLICIES

1. Commanders shall conduct operational training according to the syllabi in individual T&R Manuals.

2. Newly designated personnel will follow the entire/basic POI as prescribed in T&R manuals. All other personnel shall follow Transition (T), Conversion (C), Refresher (R), instructor, or other POI as delineated in individual T&R manuals. T/C/R POIs exist to train personnel with previous tactical experience applicable to T&R syllabi. T/C/R POIs may contain fewer events than basic POIs and shall be designed to standardize syllabi that accounts for previous experience as applicable. Community specific POIs, such as Series Conversion (SC) shall be delineated in individual T&R manuals. See Chapter 6 for aircrew FRS Refresher training policy. T/C/R syllabi refly/proficiency updating and CRP credit shall be computed as delineated in Chapter 7.

3. T&R Syllabus Evaluation. Establishment of standardized evaluation procedures provides commanders with an effective management tool for improving training and for monitoring the progress of their personnel.

a. Syllabus sponsors shall develop training/evaluation forms for documenting performance. Instructors shall use common training forms encompassing the training objectives for that stage of training.

b. Performance shall be evaluated and documented for all core skill introduction events. All initial events in the Core Skill Basic, Core Skill Advanced and Core Plus phases shall be documented in Aircrew Performance Records/MACCS Performance Records using community specific T&R Syllabus Evaluation forms (delineated in Chapter 2, T&R syllabus evaluation forms). An “E-coded” event is required to be documented again via training forms each time that event is completed.

305. SYLLABUS TRAINING EXCEPTIONS. Waiver or deferral of T&R events shall be avoided to the greatest extent possible. Waiving or deferring syllabus events or prerequisites shall only be authorized by unit commanding officers when, in his judgment, a training exception is warranted. Paragraph 600.1.b policy applies for core skill introduction training event deferrals/waivers. NATOPS and OPNAV requirements shall not be deferred or waived. Waived and deferred events/prerequisites shall be annotated in section 3 of individual APRs/MPRs. Waiving or deferring events of a stage does not require a request for T&R policy deviation. Waiver or deferral of complete stages of training requires authorization from CG TECOM ATB via message.

1. Waived Events. Commanding officers may waive portions of an experienced trainee's flight/training requirements. Individuals are not required to complete waived events during the event’s refly interval. Events may only be waived for individuals in Transition, Conversion, or Refresher POIs. To ensure a unit does not waive complete stages of training, the trainee should, at a minimum, complete the R-coded events or check flight/evaluated event in each stage. For waived

events, CRP credit shall be credited and event proficiency status shall be updated IAW procedures delineated in Chapter 7.

2. Deferred Events. Commanding officers may defer events when a lack of logistic support or training assets does not allow event completion in a timely manner. Deferred events are temporary training exceptions, and deferred events shall be completed when logistic support or training assets become available. CRP shall not be accrued and event proficiency status shall not be updated for deferred events. The NATOPS or Training Officer shall annotate deferred events in the APR/MPR until the event is successfully completed.

3. Waived Prerequisites. Commanding officers may waive prerequisites when, in his judgment, the prerequisite waiver does not pose an unacceptable safety risk. Prerequisites may only be waived for Transition, Conversion, or Refresher POIs. Prerequisites shall not be deferred.

306. SIMULATOR POLICY

1. Simulators provide the capability to develop and hone those critical skills required for professional development within an MOS. The development of simulator training events for each T&R syllabus will help maintain valuable combat resources while reducing training costs.

2. Simulators shall be utilized to the maximum extent possible to support each phase of training within each T/M/S agency T&R syllabus. Where simulators are not available, commanders may authorize the simulator events to be waived or flown in the aircraft as required. The assignment of T&R events to the simulator will be based upon simulator fidelity and capability that closely matches that of the actual event. Appropriate CRP credit will be assigned to those simulator events. If available, annual instrument and NATOPS evaluations should be completed in the simulator under the supervision of an appropriately designated evaluator.

3. To accomplish this process, all events will be listed as: Simulator only; Flight only; Simulator preferred, flight optional; Flight preferred, simulator optional. Commanders at all levels of command should allocate simulators the same status and attention they provide to flight events.

307. ASSIGNMENT OF FIRST TOUR NAVAL AVIATORS, NAVAL FLIGHT OFFICERS, AND MACCS PERSONNEL. All newly designated Naval Aviators (NA), Naval Flight Officers (NFO), and Crew Chiefs (CC), shall be assigned to an operational squadron for a minimum of 2 years (optimally 3 years) after completing Core Skill Introduction phase training. Commands shall not assign NAs/NFOs/CCs outside the squadron unless such assignment is a T&R syllabus requirement. All MACCS personnel completing entry level MOS school shall be assigned to an operational squadron/battalion relative to that MOS for a minimum of 2 years. Requests for deviations from this policy shall be submitted to CG TECOM ATB via message.

CHAPTER 4

AVIATION TRAINING RULES OF CONDUCT (ROC)

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CHAPTER 4

AVIATION TRAINING RULES OF CONDUCT (ROC)

400. GENERAL AVIATION ROC

1. General

a. Purpose. To standardize ROC for Fixed Wing (FW), Rotary Wing (RW), and Tiltrotor aircraft training events.

b. Scope. This section contains the overall policies, responsibilities, and training criteria for Low Altitude, Night Systems (NS) and Air Combat Maneuvering (ACM) programs to include Low Altitude Tactics (LAT), Terrain Flight (TERF), Tiltrotor Low Altitude Training (VLAT), FW ACM, DEFTAC, Defensive Combat Measures (DCM), Defensive Measures (DM), and Defensive Air Combat Maneuvering (DACM). Individual T&R manuals contain training syllabi and flight objectives for these programs. Training ROC are applicable during peacetime training evolutions and are not intended to restrict contingency/combat operations.

c. Authority. Authority and responsibility for ROC rests with CMC (DC AVN), CG MCCDC and Force Commanders.

d. Safety. Commanders shall conduct training in accordance with the guidelines of this chapter and OPNAVINST 3710.7.

e. Definitions

(1) Proficiency. Proficiency is a measure of achievement of a specific skill. Refly factors establish the maximum time between demonstration of those particular skills. Combat Readiness Percentage (CRP) and Mission Readiness Percentage (MRP) are measurements of “demonstrated proficiency.” If an aircrew exceeds the refly factor for a particular event, the individual loses CRP/MRP for that particular event. To regain proficiency, an individual shall complete the delinquent event with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with instructors from a like unit. If not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another aircraft commander or as designated by his commanding officer.

(2) 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 CRP/MRP. For example, currency determines minimum altitudes in ROC based upon the most recent low altitude fly date.

2. CH-53 Passenger Restrictions. When CH-53D/E aircraft are used to transport passengers, the maximum allowable load is 24. Authority to deviate from this 24-passenger restriction for operational necessity is vested in the MAGTF commander.

401. ROC FOR LOW ALTITUDE FLIGHT

1. General

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

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

c. Safety. The low altitude regime places the highest demands on aircrew skill and judgment, and as such requires stringent ROC to ensure safe event completion. Squadron commanders shall ensure that aircrew conducting LAT/TERF/VLAT training are qualified. Unscheduled LAT/TERF/VLAT is strictly prohibited.

d. Definitions

(1) Comfort Level (CL). CL is the lowest altitude at which aircrew can accommodate task loading and maintain safe terrain clearance. A perceptual concept, CL concedes individual differences and is never a hard altitude. It 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.

e. Weather Minimums. Low altitude weather minimums are as follows:

Flight		Ceiling/Visibility
TERF		1,000 Ft AGL/3 NM
LAT		3,000 Ft AGL/5 NM
VLAT	Conversion Mode (= 60 nacelle)	1,000 Ft AGL/3 NM
	Airplane Mode	1,000 Ft AGL/5 NM

f. Low Altitude Flight Qualification, Proficiency, and Currency

(1) Low Altitude Qualifications. Aircrew achieve LAT/TERF/VLAT 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 TERF/LAT/VLAT instructor.

(2) Low Altitude Proficiency. When qualified aircrew lose proficiency in a particular syllabus flight, they may regain proficiency by satisfactorily demonstrating those skills required of that particular syllabus flight to a Low Altitude Tactics Instructor (LATI), Terrain Flight Instructor (TERFI) or Tiltrotor Low Altitude Training Instructor (VLATI).

(3) Low Altitude Flight Currency. Currency intervals relate to flight exposure involving a specific skill and are divided into time intervals. 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 on one sortie; the individual may update currency after flying one circuit of a LAT/TERF/VLAT course. 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.

g. Low Altitude Flight Training Areas

(1) Pilots shall conduct low altitude flight in restricted airspace, MOAs, 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.

h. Night Low Altitude Flight. Night low altitude flight (LAT/TERF/VLAT) without NVGs is prohibited. Aircrew must be day LAT/TERF/VLAT qualified and current as well as appropriately Night System Qualified (NSQ) prior to commencing night low altitude training.

i. LAT/TERF/VLAT training with embarked troops. Low altitude flight poses increased operational risk. The transport of troops during TERF, VLAT and LAT training is authorized subject to the following restrictions:

(1) All aircrew are qualified, proficient and current per this order and the respective T/M/S T&R Manual.

(2) Aircrew shall utilize TERF/VLAT/LAT areas or routes specifically authorized in the respective MAW and MAG operations SOPs.

(3) The aircraft have the requisite power margin as specified in respective MAW, MAG and squadron operations SOPs.

(4) Authorization for the specific TERF/VLAT/LAT training event has been approved by the MAGTF commander. For training events conducted during MAWTS-1 WTI classes, approval authority is CG TECOM.

(5) Waiver authority for any of the restrictions listed in paragraph 410.1.i is vested in the MEF CG.

2. FW LAT

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

b. Aerial delivery, from the IP to the DZ, conducted by KC-130 aircraft is excluded from the LAT definition. IP to DZ constitutes the terminal environment; minimum altitudes listed in the KC-130 ANTTP apply.

c. FW Ordnance Delivery Minimum Recovery Altitudes. FW ordnance delivery for the sole purpose of refining delivery skills is excluded from the 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.

d. For initial qualification, a LATI is required in the aircraft/flight.

e. FW NS LAT. See paragraph 402.4.a.

f. FW LAT Currency and Minimum Altitudes. The minimum altitude for FW aircraft LAT training is 300 feet AGL. Day LAT shall not update NS LAT currency requirements. NS LAT shall update day LAT currency requirements. The following minimum altitude restrictions based on currency interval apply:

(1) Single Aircraft and Section. CL but no lower than 300 feet.

(2) Division/Strike Formation. CL but no lower than 500 feet AGL.

(a) In a formation where sections have a minimum of 1 nm nose to tail separation, the flight lead should consider each section as a separate section for altitude criteria.

CL, BUT NO LOWER THAN:

LAT Event	1-30 Days Currency Interval	Over 30 Days Currency Interval
Single or Section	300’ AGL	500’ AGL
Division	500’ AGL	500’ AGL
Aerial Refueling	500’ AGL	1,500’ AGL

g. 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 APP; Info CG TECOM ATB). Requested training events, altitudes and applicable time periods for the waiver should be identified.

(1) **When authorized by HQMC, the following FW LAT minimum altitude restrictions based on currency interval apply:**

(a) Single Aircraft

1 CL but no lower than 200 feet AGL.

2 Minimum Altitude Capability (MAC). MAC but no lower than 100 feet AGL (200 ft AGL for KC-130 aircraft) when pilot is current and chased by a current LATI on an approved low altitude course. Night MAC Training is restricted to no lower than 200 feet AGL.

3 MAC 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 (200 feet AGL for KC-130 aircraft).

(b) Section

1 CL but no lower than 200 feet AGL.

2 MAC not authorized.

(c) Division/Strike Formation

1 CL but no lower than 500 feet AGL.

2 MAC not authorized.

3 In a formation where sections have a minimum of 1 nm nose to tail separation, the flight lead should consider each section as a separate section for altitude criteria.

When authorized by HQMC: CL, BUT NO LOWER THAN:

LAT Event	1-15 Days Currency Interval	16-30 Days Currency Interval	30^{+} Days Currency Interval
Single Aircraft	200′ AGL/MAC	300′ AGL	500′ AGL
Section	200′ AGL	300′ AGL	500′ AGL
Division	500′ AGL	500′ AGL	500′ AGL
Aerial Refueling	500′ AGL	500′ AGL	1,500′ AGL

3. RW TERF

a. TERF Flight. TERF is RW flight conducted during day or night, VMC, when the intent is to fly below 200 ft AGL. This Manual excludes missions performed on an ordnance delivery range for the sole purpose of refining delivery skills from the TERF definition. Low Level, Contour, and Nap Of the Earth (NOE) compose the basic TERF regimes. 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) NOE Flight. NOE 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.

b. Aircrew Requirements. To ensure full lookout coverage capability in helicopters possessing a cabin section (CH-46, CH-53, UH-1N), an aerial gunner/observer shall be assigned as part of the aircrew for all TERF missions. The aircraft commander shall ensure a thorough mission brief is conducted with all aircrew. Emphasis should be placed on lookout doctrine, obstacle clearance, ICS radio procedures, and emergencies.

c. TERF Currency and Minimum Altitudes

(1) After 30 days, pilots shall regain currency by flying an NOE flight with a 30-day current PQM. If a 30-day current PQM is not available, the pilots shall regain currency by performing low level flight followed by contour flight prior to NOE flight.

(2) Minimum TERF altitude for CH-46/CH-53 is 50 feet AGL.

(3) The following currency/minimum altitude/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	10-50’ AGL (40 knots or less)	Not authorized

4. VLAT

a. Tiltrotor Low Altitude Training. VLAT is flight conducted during day or night, VMC, where the intent is to conduct low altitude training below 300 feet AGL in order to develop terrain avoidance skills. Low level and contour flight profiles compose the VLAT regimes.

(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).

(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.

b. VLAT Training Concepts

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

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

c. Tiltrotor Minimum Altitudes. All VLAT below 200 feet AGL shall be conducted in a VTOL/Conversion mode configuration of ≥ 60 nacelle in accordance with the following:

(1) Airplane Mode. CL but no lower than 200 feet AGL.

(2) Conversion Mode. CL but no lower than 50 feet AGL.

d. VLAT Currency and Minimum Altitudes

(1) After 30 days, pilots shall regain currency by flying a VLAT flight with a 30-day current TAC. If a 30-day current TAC is not available, the pilots shall regain currency by performing low level flight prior to contour flight.

(2) Upon successful completion of a minimum of three legs on a VLAT circuit at the appropriate currency interval altitude, the aircrew is considered current and may continue VLAT at the 1-30 day currency interval.

(3) The following minimum altitude restrictions based on currency interval apply:

CL, BUT NO LOWER THAN:

VLAT Event	1-30 Days Currency Interval	Over 30 Days Currency Interval
Airplane Mode	200’ AGL	300’ AGL
Conversion Mode	50’ AGL	150’ AGL
Aerial Refueling Receivers	500’ AGL	1500’ AGL

402. ROC FOR NIGHT OPERATIONS

1. General

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

b. Scope. This section stipulates training criteria and ROC peculiar to FW, RW and tilt-rotor aircraft night operations.

c. Authority. CG, MCCDC tasks the Commanding Officer, MAWTS-1 with developing night aviation training courses (both ground and flight), establishing standards and presenting said courses in support of operating units. MAWTS-1 shall develop

standardized tactics and techniques for the integration of Night Vision Devices (NVDs) (includes Forward Looking Infrared [FLIR], Night Vision Goggles [NVGs], etc.) for specific T/M/S aircraft.

d. Safety. Squadrons will conduct night operations within the guidelines of this Chapter and OPNAVINST 3710.7. Commanders shall ensure aircrew conducting night training are properly qualified and appropriate flight leadership is represented within the flight.

e. Illumination. The approved method for deriving illumination requirements for night operations is the Solar/Lunar Almanac Program (SLAP). This program does 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.

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

g. Night Systems (NS) Qualifications and Currency

(1) 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 SAR Instructors (NSSI), or Night Systems Familiarization Instructor (NSFI).

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

2. Night External Lighting Rules

a. FW Night External Lighting. Aircraft external lighting shall comply with existing FAA rules except as modified in FAA Exemption No. 8028 (see Appendix G). Aircraft incandescent external lighting shall be at the highest intensity consistent with NVG compatibility unless the FAA grants specific FAA waivers to solely use IR external lighting.

(1) Single aircraft operations. Navigation lights on and anti-collision lights on.

(2) Multi-aircraft operations

(a) Flights of up to four aircraft shall use lighting compatible with NVD operations. The last aircraft in the flight shall fly with navigation lights on, formation lights as desired, and anti-collision lights on. Anti-collision light shall be incandescent when outside of restricted airspace.

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

(3) Within approved special use airspace or military training routes, the aircrew may secure the anti-collision lights if they pose a hazard.

(4) The FAA regulation to see and avoid shall take priority over NVG tactics training.

b. Helicopter and Tiltrotor External Lighting. Aircraft external lighting shall comply with existing FAA rules except as modified in FAA Exemption No. 8028. The airspace covered by the exemption is defined as that airspace within reasonable proximity to Marine Corps Air Stations and other such civilian and military air facilities at which NVD operations are normally conducted and are also pursuant to paragraphs 3-7 of the original FAA Exemption No. 5978A and shall include the following:

(1) Single aircraft operations

(a) Navigation/position lights on and at the highest intensity consistent with NVD compatibility and anti-collision lights on.

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

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

(2) Multi-aircraft operations

(a) Outside Restricted Areas. Flights of up to four aircraft are permitted and shall have:

1 Navigation/position lights on the highest intensity compatible with NVD operations and ambient conditions for lead through the dash three aircraft.

2 The last aircraft in the flight shall have anti-collision and navigation/position lights on and at an appropriate setting for existing ambient conditions and will be visible to non-participating aircraft.

3 All functional, visible formation and blade tip lighting on and at the highest intensity compatible with NVD operations for all aircraft in the flight.

4 Use of IR lighting is at the discretion of the aircraft commander/flight leader. This does not preclude the requirement for visible navigation and anti-collision lights as described above.

(b) Outside Restricted Areas but in airspace covered by the FAA Exemption. Flights of up to four aircraft are permitted and shall have:

1 Navigation/position and anti-collision lights may be secured for lead through the dash three aircraft.

2 All functional, visible formation and blade tip lighting on and at the highest intensity compatible with NVD operations for all aircraft in the flight.

3 The last aircraft in the flight shall have anti-collision and navigation/position lights on and at an appropriate setting for existing ambient conditions and visible to non-participating aircraft.

4 Use of IR lighting is at the discretion of the aircraft commander/flight leader. This does not preclude the requirement for visible navigation and anti-collision lights as described above.

5 All aircrew shall be familiar with the requirements of the FAA exemption as stated in Appendix G.

(c) Within Restricted Areas. When operating in restricted areas with NVDs, flights shall operate as follows:

1 Lead to but not including the last aircraft may have navigation/position and anti-collision lights secured.

2 All functional, formation and blade tip lighting on and at the highest intensity compatible with NVD operations for all aircraft in the flight.

3 The last aircraft in each flight shall have anti-collision lights on and navigation/position lights on and at the highest intensity compatible with NVD operations.

4 Regardless of the number of aircraft in the flight, separation between lead aircraft and the last aircraft in the flight shall not exceed 1 nm.

5 These requirements should not prevent securing of external lights due to adverse lighting effects on NVDs during VLAT, TERF, landing, or hovering flight.

6 When NVD-only operations are conducted in restricted airspace (no unaided participating aircraft) IR anti-collision lights may replace visible anti-collision lights at the discretion of the aircraft commander/flight leader. This only applies when the flight lead/aircraft commander is assured that the flight has exclusive use of the airspace.

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

(3) FAA regulations to see and avoid shall take priority over NVD tactical training. Modification, taping or “cat-eyeing” of external lighting is not authorized.

3. RW Night Operations

a. 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 in addition to the crew chief for NVG flights, except as detailed per individual T&R manuals.

(3) All pilots flying NVG HLL flights shall fly with a designated NSI/NSFI unless both the pilot and copilot are NSQ HLL. 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 pilots shall fly NVG LLL flights with a designated NSI unless both the pilot and copilot are NSQ LLL. All enlisted aircrew flying NVG LLL shall fly with a designated 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 402 of this Order.

(5) 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 NVG CQ. Since landing to an NVD compatible deck cannot always be assured, unaided recoveries remain a valid requirement (Core Plus).

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

c. NVG Equipment Requirements

(1) Aircrew shall conduct NVG operations only in NVG compatible aircraft. Squadrons shall not procure or manufacture NVG light kits.

(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.

d. 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 AN/AVS-9 with the CBR/AR-5.

e. NVG Training Without Troops. NVD training/operations are subject to the following restrictions:

(1) Minimum aircrew for all helicopters during HLL shall include HAC/PQM, and HLL qualified co-pilot, crew chief and aerial observer.

(2) Minimum aircrew for all helicopters during LLL shall include HAC/AHC/UHC, and LLL qualified co-pilot, crew chief and aerial observer.

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

f. NVG Training With Troops

(1) Flights with embarked troops in HLL conditions are subject to the following criteria:

(a) Minimum aircrew as defined in paragraph 402.3.a(2).

(b) The pilot and copilot shall be NSQ HLL per the appropriate T&R syllabus and must have flown one hour of NVG time within the last 30 days.

(c) Crew chiefs and aerial gunners/observers shall be NSQ HLL per the appropriate T&R syllabus and have flown one hour of NVG time within the last 30 days.

(2) NVG operations with embarked troops in the LLL range are subject to the following criteria:

(a) Minimum aircrew as defined in paragraph 402.3.a.(2).

(b) The pilot and copilot shall be designated 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.

(c) Crew chiefs and aerial gunners/observers shall be NSQ LLL per the appropriate T&R syllabus and have flown one hour of NVG time (HLL or LLL) within the last 30 days.

g. NVG Carrier Qualification (NVGCQ)

(1) NVGCQ shall be delineated in respective T/M/S syllabi.

(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) Unaided night CQs will be chained to aided CQs.

4. FW Night Operations

a. 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: Night Vision Devices, NVG compatible cockpit lighting, Heads Up Display (HUD), inertial navigation systems, moving map, radar altimeter, and anti-collision lights.

(2) FW NS LAT altitude restrictions and currency requirements are the same as day LAT restrictions and requirements.

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

(4) FA-18/AV-8 aircrew conducting FW NS LAT operations shall be LAT and NS Low qualified. Non-NSQ Low NAs/NFOs shall be NSQ HI prior to NSQ Low training and require supervision of an NSI flight lead during NSQ Low training.

(5) KC-130 aircrew conducting FW NS LAT operations shall be NSQ (KC-130F/R/T) or NSQ per the appropriate light level (KC-130J) and require the supervision of an NSI occupying the pilot seat during initial NS LAT training.

b. Non-LAT FW NS Training

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

(2) NAs/NFOs who are not NSQ/NSQ HI require an NSI in the flight. For EA-6 aircraft, NS qualification requirements apply to front seat aircrew.

(3) Pilots who are NSQ/NSQ HI/NSQ Low may operate down to the minimum altitudes as follows:

	HLL	LLL	Qualification required (or NSI required in flight.)
FA-18, AV-8, EA-6B	500’ AGL	1000’ AGL	NSQ HI or NSQ Low
KC-130F/R/T	500’ AGL	1000’ AGL	NSQ
KC-130J	500’ AGL	1000’ AGL	NSQ per light level condition

(4) KC-130 altitude restrictions above apply except for aerial delivery and TLZ missions from IP inbound. IP to DZ/LZ constitutes the terminal environment; minimum altitudes listed in the KC-130 ANTTP apply.

c. During unaided flights, NSQ aircrew not at the controls may wear and temporarily utilize helmet mounted NVGs to enhance situational awareness, terrain avoidance and safety. NVG use by authorized aircrew shall be noted on the flight schedule. Aircrew not at the controls may use NVDs in the handheld mode to enhance situational awareness. Squadrons shall not procure or manufacture NVG light kits.

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

e. The use of NVGs 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 environs as well. NAVAIR NVD restrictions applicable to T/M/S and NVG model/type shall be adhered to.

5. Tiltrotor Night Operations

a. 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 aerial gunner/observer 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 unless the aircrew are NSQ for the predicted light level.

b. Night Currency and Proficiency

(1) Prior to conducting night shipboard operations with passengers aboard, the pilot and copilot shall be night carrier qualified and will 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 particular syllabus flight, they may regain proficiency by satisfactorily demonstrating those skills required of that particular syllabus flight to an NSI.

c. 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.

d. 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 aerial gunners/observers 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 aerial gunners/observers shall be NSQ LLL.

e. NVD Carrier Qualification (NVDCQ)

(1) NVDCQ shall be delineated in respective T/M/S syllabi.

(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) Unaided night CQs will be chained to aided CQs.

403. ROC FOR ACM, DEFTAC, DM, DACM, and DCM

1. General

a. Purpose. To standardize ROC for aircraft conducting ACM/DEFTAC/DM/DACM/DCM training. The rules set forth herein and in OPNAVINST 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.

b. Scope. ACM/DEFTAC/DM/DACM/DCM training is designed to develop the high level of skill required to combat the current and future threat. OPNAVINST 3710.7 and the Aviation T&R Program contains the overall policies, responsibilities, training syllabi, and flight objectives for ACM/DEFTAC/DM/DACM/DCM.

c. Authority. CG, MCCDC tasks the Commanding Officer, MAWTS-1 with developing training courses (both ground and flight), establishing standards and presenting said courses in support of operating units. Appropriate T&R syllabi contain MAWTS-1 course topics, USMC standards of performance, and criteria for instructor certification. Authority and responsibility for overall supervision of ACM/DEFTAC/DM/DACM/DCM training rests with operational commanders.

d. Safety. Squadrons conducting ACM/DEFTAC/DM/DACM/DCM will operate within the guidelines of this chapter, OPNAVINST 3710.7, and applicable MAWTS-1 publications. Squadrons should conduct FW ACM/DEFTAC training under radar control when available. Commanders shall ensure aircrew conducting ACM/DEFTAC/DM/DACT/DCM training are properly qualified and appropriate flight leadership is represented within the flight. Unscheduled ACM/DEFTAC/DM/DACM/DCM is strictly prohibited.

e. ACM/DEFTAC/DM/DACM/DCM 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 ACTI/DM/DEFTAC/RWDACM/DCM instructor.

f. ACM/DEFTAC/DM/DACM/DCM Training Areas

(1) Training shall only be conducted in designated warning areas, restricted areas, Military Operating Areas (MOAs), appropriate blocks of controlled airspace as assigned by Air Traffic Control (ATC), or in other designated areas where safe separation from non-participants can be maintained.

(2) At a minimum, designated ACM/DEFTAC/DM/DACM/DCM 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 Federal Aviation Administration (FAA) or host nation agreement.

(3) When authorized by Force commanders, subordinate commanders may designate ACM/DEFTAC/DM/DACM/DCM training areas and establish procedures to ensure aircrew and flights entering these areas are aware of all other flights operating therein.

(4) ACM/DEFTAC/DM/DACM/DCM aircrew should use instrumented air combat ranges such as the Navy/Marine Tactical Aircrew Combat Training System (TACTS) or the Air Force Air Combat Maneuvering Instrumentation (ACMI) as much as possible.

(5) ACM/DEFTAC/DM/DACM/DCM 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.

2. FW Air Combat Maneuvering. Aircrew participating in ACM/DEFTAC will conform to the following flight guidelines:

a. FW v FW

(1) When all crewmembers of a flight are ACM/DEFTAC qualified, the flight does not require an Air Combat Tactics Instructor (ACTI), a Defensive Tactics Instructor (DEFTACI), or an Adversary Tactics Instructor (ATI)/Adversary Tactics Qualified pilot (AT).

(2) A non-ACM qualified NA may participate in ACM/DEFTAC training provided his flight leader is an ACTI/DEFTACI. In the case of 1 V 1 dissimilar ACM, the adversary must be an ACTI/ATI/AT (USMC) or designated ACM instructor.

(3) A non-ACM/DEFTAC qualified NA/NFO of a crew concept aircraft may participate in ACM/DEFTAC training, provided at least one other aircrew in the same aircraft is designated an ACTI/DEFTACI.

(4) In the case of 1 V 1 dissimilar DEFTAC training with a non-qualified NA and/or NFO, the adversary pilot must be an ACTI/ATI/AT or ACM Flight Lead/Section Lead.

b. FW v RW or Tiltrotor. Aircrew of FW aircraft engaged in RW or tilt-rotor attack shall be ACM and LAT qualified. Slow speed, high AOA maneuvering below 10,000 ft AGL is prohibited by FW aircraft. Direct over-flight of adversary aircraft by the FW aircraft is prohibited. Supersonic flight is not authorized. Minimum FW altitude is 500 ft AGL.

c. Per OPNAVINST 3710.7, the following maneuvers are not considered ACM training:

(1) Snapshot drills (Gun Weave, Weapons Weave).

(2) Tail Chase (Heat to Guns drills).

(3) Forward Quarter Missile Defenses terminated at the merge.

(4) Air Intercepts performed per applicable portions of the T&R Manual.

(5) Aerobatic maneuvers per NATOPS manuals on scheduled training flights approved by competent authority.

3. DM and DACM. RW assault aircrew conducting DM and RW attack and utility aircrew conducting DACM will conform to the following flight guidelines. These training rules, along with the applicable T/M/S T&R syllabi and the MAWTS-1 DM and DACT guides delineate the responsibilities and flight objectives for this training.

a. 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). Additionally, two RWDACM qualified pilots may fly RWDACM sorties for training and proficiency.

b. 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.

c. A non-DM/DACM qualified pilot may participate in DM/DACM training provided the aircraft commander is a designated DMI/DACMI. A non-DM qualified aircrew

serving in the cabin section may participate in DM training provided the other aircrew serving in the cabin section is a designated DMI.

d. DM and DACM shall be conducted in day VMC in accordance with OPNAV 3710.7.

e. Pilots of FW aircraft participating in DM/DACM shall be LAT and ACM qualified. Aircrew of RW aircraft conducting DM/DACM shall be TERF qualified and proficient.

f. All DM/DACM participants must be aware of their particular aircraft's performance capabilities and limitations. Operational power checks or predictions (e.g. PFPS HOPS tool) should be conducted to assist in this awareness as required.

g. Minimum RW altitude for DM and DACM against a FW or RW threat is 100 ft AGL. Minimum RW altitude for DM against a ground-based threat is 50 ft AGL. Minimum FW altitude for DM and DACM will be in accordance with OPNAVINST 3710.7.

h. 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. Minimum aircraft separation during pre-briefed tail chase maneuvers in DACM is 200 ft.

4. DCM

a. DCM consists of four types of events:

(1) Introduction of Aircraft Survivability Equipment (ASE).

(2) 2 Tiltrotor v a ground threat.

(3) 2 Tiltrotor v 1 RW.

(4) 2 Tiltrotor v 1 FW.

b. DCM Aircrew Requirements

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

(2) Minimum crew requirements shall be IAW the applicable T&R syllabus.

(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.

c. Minimum tiltrotor altitude is 200 ft AGL.

CHAPTER 5

MISSION AND INSTRUCTOR DESIGNATION/QUALIFICATIONS

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CHAPTER 5

MISSION AND INSTRUCTOR DESIGNATION/QUALIFICATIONS

500. GENERAL DESIGNATIONS/QUALIFICATIONS

1. Designations/Qualifications. All designation and qualification requirements shall be delineated in individual T&R manuals. Commanders shall issue a designation/qualification letter for all mission designations, instructor designations and qualifications to the individual upon occasion of original designation/qualification. Designation and qualification letter copies shall be included in section three of individual aircrew NATOPS jackets and APRs/MPRs. An individual is officially designated or qualified when the individual is certified as having successfully completed designation/qualification requirements and is issued an appropriate designation/qualification letter signed by the unit commanding officer.

a. Designation. A designation is a status assigned to an individual based on leadership ability. A designation is a command specific, one-time occurrence and remains in effect until removed for cause. Specific designation requirements shall be delineated in individual T&R manuals.

(1) Flight Leadership Designations. Aviation communities shall implement community standardized flight leadership workup and evaluation events in individual aviation T&R manuals for all designations listed below. Standardized flight leadership workup/evaluation events shall be delineated in individual T&R manuals under REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS. Flight leadership events shall be E-coded events and will not have CRP value attached. Upon successful completion of a flight leadership evaluation event, commanding officers may issue an appropriate designation letter. Flight leadership re-designation criteria for aircrew that do not require Refresher training is at the discretion of the commanding officer. For aircrew who require Refresher training (aircrew returning to the fleet, time out of type: single control aircraft - 365 days; dual control aircraft - 485 days), the minimum re-designation requirement for flight leader positions below is successful completion of the associated T&R flight leadership evaluation event. Minimum flight leadership re-designation requirement waivers shall be approved by MAG/MEU commanding officers.

(a) Section Leader. A designated Naval Aviator able to lead and direct a flight of two aircraft.

(b) Division Leader. A designated Naval Aviator able to lead and direct a flight of three or more aircraft.

(c) Flight Leader (RW only). A designated Naval Aviator able to lead and direct a flight of five or more aircraft.

(d) Mission Commander/AMC. A designated Naval Aviator or Naval Flight Officer able to lead and direct a mission. The Mission Commander is responsible for all phases of a mission except for those aspects of safety of flight directly related to the physical control of an aircraft and fall within the prerogatives of the pilot in command.

(e) Strategic Refueling Area Commander (RAC) (KC-130 only). A Strategic RAC is a qualified Naval Aviator able to plan and lead a long range ferry of tactical aircraft involving aerial refueling from KC-130s. The Strategic RAC is responsible for all refueling phases of the mission to include airspace

coordination, flight planning, tanker and receiver fuel planning, path finding and emergency procedures.

(f) Tactical Refueling Area Commander (KC-130 only). A Tactical RAC is a qualified section or division leader able to plan and lead an aerial refueling mission of two or more KC-130s on a static orbit tanker track with multiple receiver aircraft.

(2) Instructor Designation. An instructor designation is a designation assigned to aircrew based on ability to conduct ground and/or airborne instruction of a core skill or mission area. Instructor designations are designed to enhance standardization and safety while training unqualified personnel in specific skills. Instructor designation/re-designation requirements shall be delineated in the MAWTS-1 Course Catalog and individual T&R manuals.

(3) MACCS/Airfield Service/METOC/UAV Designations. Ground aviation communities shall implement community standardized leadership evaluation events in individual aviation T&R manuals for all applicable designations. Communities may implement standardized leadership workup events for leadership designations in individual T&R manuals. Standardized leadership events shall be delineated in individual T&R manuals. Leadership evaluation events shall be “E-coded” events and will not have CRP attached. Upon successful completion of a leadership evaluation event, commanding officers may issue an appropriate designation letter.

b. Qualification. A qualification is a status assigned to personnel based on demonstration of proficiency in a specific skill. Specific criteria to achieve qualifications shall be delineated in individual T&R manuals. Upon successful completion of qualification criteria, commanding officers may issue an appropriate qualification letter. Individuals do not lose a qualification as a function of refly factor for individual events. Loss of proficiency (delinquent refly factor) for all associated qualification events (events with measurable refly factor; ‘*’ refly factor events excluded) constitutes loss of that qualification. Re-qualification requires demonstration of proficiency. Re-qualification shall be achieved by successfully re-completing all R-coded events associated with the respective qualification (unless waived per paragraph 305).

c. Certification. The evaluation process of an aircrew/crewmember during a syllabus event(s) by a designated instructor or authorized personnel for the purpose of ascertaining proficiency as a prerequisite to qualification or designation.

501. LOW ALTITUDE FLIGHT QUALIFICATIONS AND DESIGNATIONS

1. FW Qualifications and Designations

a. Low Altitude Tactics (LAT) Qualified. An aircrew certified as having completed the LAT qualification syllabus specified in the appropriate T&R syllabus.

b. Low Altitude Tactics Instructor (LATI). A Naval Aviator (NA) or EA-6B Naval Flight Officer (NFO) certified by a squadron WTI or MAWTS-1 instructor as having completed the MAWTS-1 Low Altitude Tactics Instructor Course. MAWTS-1 publishes the requirements and POI for LATI in the MAWTS-1 Course Catalog.

2. RW Qualifications and Designations

a. Terrain Flight (TERF) Qualified. An aircrew certified as having completed required TERF events in the appropriate T&R syllabus.

b. Terrain Flight Instructor (TERFI). A NA certified by a TERFI as having completed the Terrain Flight Instructor Course. The requirements and POI for TERFI are contained in the appropriate T&R syllabus or the MAWTS-1 Course Catalog.

c. Crew Chief Terrain Flight Instructor (CCTERFI). A crew chief certified by a CCTERFI as having completed the Terrain Flight Instructor Course.

3. Tiltrotor Qualifications and Designations

a. Tiltrotor Low Altitude Training (VLAT) Qualified. A pilot or aircrew certified as having completed the required VLAT events in the appropriate T&R syllabus.

b. Tiltrotor Low Altitude Training Instructor (VLATI). A NA certified by a VLATI as having completed the VLATI syllabus. The requirements and POI for VLATI are contained in the appropriate T&R syllabus and the MAWTS-1 Course Catalog.

c. Crew Chief Tiltrotor Low Altitude Training Instructor (CCVLATI). A crew chief certified by a CCVLATI as having completed the VLATI course.

502. NIGHT OPERATIONS QUALIFICATIONS AND DESIGNATIONS

1. FW Qualifications and Designations

a. Night Systems Qualified (NSQ). An aircrew certified as having completed the NSQ syllabus per the appropriate T&R syllabus. The aircrew is qualified to operate NS during training operations.

b. Night Systems Qualified High/Low Altitude NSQ HI/Low). The following qualifications apply to FW aircraft that have NSQ HI and NSQ Low qualifications delineated in T&R syllabi.

(1) Night Systems Qualified High Altitude (NSQ HI). A NA/NFO certified as having completed the T&R prescribed NSQ HI syllabus under the supervision of a squadron NSI. The aircrew is qualified to operate NS during non-LAT operations.

(2) Night Systems Qualified Low Altitude (NSQ Low). A NA/NFO certified as having completed the T&R prescribed NSQ Low syllabus prescribed for NS LAT training under the supervision of a squadron NSI flight lead. The aircrew is qualified to operate NS during LAT operations.

c. Night Systems Qualified High/Low Light Level (NSQ HLL/NSQ LLL). The following qualifications apply to KC-130 aircraft that have NSQ HLL and NSQ LLL qualifications delineated in the T&R syllabi.

(1) Night Systems Qualified High Light Level (NSQ HLL). An aircrew member certified as having completed the T&R prescribed NSQ HLL syllabus under the supervision of a squadron NSI. The aircrew is qualified to operate NS in HLL conditions.

(2) Night Systems Qualified Low Light Level (NSQ LLL). An aircrew member certified as having completed the T&R prescribed NSQ LLL syllabus under the supervision of a squadron NSI. The aircrew is qualified to operate NS in LLL conditions.

d. Night Systems Instructor (NSI). A NA/NFO certified by a MAWTS-1 instructor as having completed the NSI Course in the MAWTS-1 Course Catalog. The NSI is qualified to instruct in all phases of FW night system training except core skill introduction. MAWTS-1 publishes the requirements and POI for NSI in the MAWTS-1 Course Catalog.

e. Night Systems Familiarization Instructor (NSFI). A NA/NFO certified by the FRS as having completed the NSFI Course.

2. RW Qualifications and Designations

a. Night Systems Qualified (NSQ)

(1) High Light Level (HLL). An aircrew certified as having completed the events for NSQ HLL per the appropriate T&R syllabus. The aircrew is qualified to transport troops in HLL.

(2) Low Light Level (LLL). An aircrew certified as having completed the required events for NSQ per the appropriate T&R syllabus. The aircrew is qualified to transport troops in LLL or HLL.

b. Night Systems Familiarization Instructor (NSFI). A NA certified by an NSI as having completed the NSFI Course in the MAWTS-1 Course Catalog. An NSFI is a FRS instructor only.

c. Night Systems SAR Instructor (NSSI). A NA certified by an NSI as having completed the NSSI Course in the MAWTS-1 Course Catalog. Previously certified NSIs can be designated an NSSI at the discretion of the squadron commanding officer.

d. Night Systems Instructor (NSI). A NA certified by a MAWTS-1 instructor as having completed the NSI Course in the MAWTS-1 Course Catalog. The NSI is qualified to instruct in all phases of RW night system training.

e. Crew Chief Night Systems Familiarization Instructor (CCNSFI). A crew chief certified by a CCNSI as having completed the CCNSFI Course in the MAWTS-1 Course Catalog. A CCNSFI is a FRS Instructor only.

f. Crew Chief Night Systems SAR Instructor (CCNSSI). A crew chief certified by a CCNSI as having completed the CCNSSI Course in the MAWTS-1 Course Catalog. Previously certified CCNSIs can be designated a CCNSSI at the discretion of the squadron commanding officer.

g. Crew Chief Night Systems Instructor (CCNSI). A crew chief certified by a MAWTS-1 Crew Chief Instructor as having completed the CCNSI Course in the MAWTS-1 Course Catalog.

3. Tiltrotor Qualifications and Designations

a. Night Systems Qualified (NSQ)

(1) High Light Level (HLL). A pilot or aircrew certified as having completed the required events for NSQ HLL per the appropriate T&R syllabus. The crewmember is embarked troops HLL qualified.

(2) Low Light Level (LLL). A pilot or aircrew certified as having completed the required events for NSQ LLL per the appropriate T&R syllabus. The crewmember is embarked troops HLL and LLL qualified.

b. Night Systems Instructor (NSI). A NA certified by a MAWTS-1 instructor as having completed the NSI Course in the MAWTS-1 Course Catalog. The NSI is qualified to instruct in all phases of tiltrotor night systems training.

c. Crew Chief Night Systems Instructor (CCNSI). A crew chief certified by a MAWTS-1 Crew Chief Instructor as having completed the CCNSI Course in the MAWTS-1 Course Catalog.

503. ACM QUALIFICATIONS AND DESIGNATIONS

1. FW Qualifications and Designations

a. ACM/DEFTAC Qualified. A NA/NFO certified as having completed the appropriate air-to-air events within the appropriate T&R syllabus. The issued qualification letter shall differentiate whether the individual is ACM qualified or DEFTAC qualified.

b. ACM Flight Leader. A NA who is ACM or DEFTAC qualified and is designated to brief, lead, and debrief an ACM/DEFTAC mission.

c. Air Combat Tactics Instructor (ACTI). A NA/NFO certified by a MAWTS-1 instructor as having completed the MAWTS-1 ACTI Course.

d. Defensive Tactics Instructor (DEFTACI). A NA/NFO certified by a MAWTS-1 instructor as completing the MAWTS-1 DEFTACI Course.

e. Adversary Tactics Qualified (ATQ). A NA or USAF exchange officer authorized or assigned to fly with VMFT-401, certified as having completed all adversary tactics events within the appropriate T&R syllabus. The qualification is applicable to VMFT-401 only.

f. Adversary Tactics Instructor (ATI). A NA or USAF exchange officer authorized or assigned to fly with VMFT-401, certified by a squadron ATI as having completed the ATI Course. The designation is applicable to VMFAT-401 only.

504. RW DM/DACM QUALIFICATIONS AND DESIGNATIONS

1. Defensive Measures (DM) Qualified. An aircrew certified as having completed the DM syllabus within the appropriate T&R syllabus.

2. Defensive Measures Instructor (DMI). A NA certified by a MAWTS-1 instructor as having completed the MAWTS-1 DMI Course.

3. Crew Chief Defensive Measures Instructor (CCDMI). A crew chief certified by a MAWTS-1 instructor as having completed the DMI Course.

4. Defensive Air Combat Maneuvering (DACM) Qualified. A NA certified as having completed the DACM syllabus within the appropriate T&R syllabus.

5. RW Defensive Air Combat Maneuvering (RWDACM) Qualified. A NA certified as having completed the RWDACM syllabus within the appropriate T&R syllabus.

6. Defensive Air Combat Maneuvering Instructor (DACMI). A NA certified by a MAWTS-1 instructor as having completed the MAWTS-1 RW RWDACMI course.

7. Crew Chief Defensive Air Combat Maneuvering Instructor (CCDACMI). A crew chief certified by a MAWTS-1 Instructor as having completed MAWTS-1 RW CCDACMI course.

505. DCM QUALIFICATIONS AND DESIGNATIONS

1. Defensive Combat Maneuvers (DCM) Qualified. A pilot or aircrew certified as having completed the DCM syllabus within the appropriate T&R syllabus.

2. Defensive Combat Maneuvers Instructor (DCMI). A NA certified by a MAWTS-1 Instructor as having completed the MAWTS-1 DCMI Course.

3. Crew Chief Defensive Combat Maneuvers Instructor (CCDCMI). A crew chief certified by a MAWTS-1 Instructor as having completed the DCMI Course.

506. MARINE AIR COMMAND AND CONTROL QUALIFICATIONS AND DESIGNATIONS

1. TACC

a. Current Operations Section

(1) Current Operations Officer (COPS) Qualified. A Marine officer certified as having completed the required COPS events of the appropriate T&R syllabus.

(2) Senior Watch Officer (SWO) Qualified. A Marine officer certified as having completed the required SWO events of the appropriate T&R syllabus.

(3) Close Battle Coordinator (CBC) Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed the required CBC training events of the appropriate T&R syllabus. The officer shall be certified by a SAC or designated CBC.

(4) Deep Battle Coordinator (DBC) Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed the required DBC training events of the appropriate T&R syllabus. The officer shall be certified by a SAC or designated DBC.

(5) Air Defense Coordinator (ADC) Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed the required ADC training events of the appropriate T&R syllabus. The MACCS Officer shall be certified by a SAC or designated ADC.

(6) Air Battle Analyst (ABA) Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed the required ABA training events of the appropriate T&R syllabus. The officer shall be certified by a SAC or designated ABA.

(7) Search and Rescue Coordinator (SRC) Officer Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed the required SRC training events of the appropriate T&R syllabus or having completed the Joint Personnel Recovery Agency's PR.101 and PR.103. The officer shall be certified by a SAC or a designated SRC.

(8) Senior Air Coordinator (SAC). A Marine officer certified as having completed the required SAC training events of the appropriate T&R syllabus. The SAC shall be certified by a designated SAC or a MAWTS-1 TACC Instructor.

(9) Airspace Coordination Officer (ACO). A Marine officer certified as having completed the required ACO training events of the appropriate T&R syllabus.

(10) Ground Watch Officer (GWO). A Marine officer certified as having completed the required GWO training events of the appropriate T&R syllabus.

(11) Track Data Coordinator (TDC). A Marine officer certified as having completed the required TDC training events of the appropriate T&R syllabus.

b. Future Operations Section

(1) Future Operations Officer (FOPS) Qualified. A Marine officer certified as having completed the required FOPS events of the appropriate T&R syllabus. The officer shall be certified and FOPS qualified by the wing commander.

(2) ATO Development Officer (ATODO) Qualified. A Marine officer (MOS 99XX/72XX/75XX) certified as having completed the required ATODO training events of the appropriate T&R syllabus. The officer shall be certified by the wing G3 and ATODO qualified by the wing battle staff trainer.

(3) ATO Production Officer (ATOPRO) Qualified. A Marine Officer (MOS 72XX/75XX) certified as having completed the required ATOPRO training events of the appropriate T&R syllabus. The officer shall be certified by the wing G3 and ATOPRO qualified by the wing battle staff trainer.

(4) ATO Plans Officer (ATOPLO) Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed the required ATOPLO training events of the appropriate T&R syllabus. The officer shall be certified by the wing G3 and ATOPLO qualified by the wing battle staff trainer.

(5) Orders Development Officer (ORDO) Qualified. A Marine officer (MOS 99XX/72XX/75XX) certified as having completed the required ORDO training events of the appropriate T&R syllabus. The officer shall be certified by the wing G3 and ORDO qualified by the wing battle staff trainer.

(6) Orders Development Planner (ORDP) Qualified. A Marine officer (MOS 99XX/72XX/75XX) certified as having completed the required ORDP training events of the appropriate T&R syllabus. The officer shall be certified by the wing G3 and ORDP qualified by the wing battle staff trainer.

(7) ATO/ACO Planner (AAP) Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed required AAP training events of the appropriate T&R syllabus. The officer shall be certified by the wing G3 and AAP qualified by the wing battle staff trainer.

(8) ATO Mission Planner (ATOMP) Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed the required ATOMP training events of the appropriate T&R syllabus. The officer shall be certified by the wing G3 and ATOMP qualified by the wing battle staff trainer.

c. Future Plans Section

(1) Future Plans Officer (FPNO) Qualified. A Marine officer (MOS 72XX/75XX) certified as having completed the required FPNO training events of the appropriate T&R syllabus. The officer shall be certified by the wing G3 and FPNO qualified by the wing battle staff trainer.

2. DASC

a. Senior Air Director (SAD) Qualified. An Air Support Control Officer (7208) certified as having completed the required SAD events of the appropriate T&R syllabus. A DASC WTI or the MAWTS-1 DASC instructor shall certify the Air Support Control Officer.

b. Tactical Air Director (TAD) Qualified. An Air Support Control Officer (7208) or Air Support Operations Operator (7242) certified as having completed the required TAD events of the appropriate T&R syllabus. A DASC SAD, a DASC WTI or the MAWTS-1 DASC instructor shall certify the crewmember.

c. Helicopter Director (HD) Qualified. An Air Support Control Officer (7208) or Air Support Operations Operator (7242) certified as having completed the required HD events of the appropriate T&R syllabus. A DASC SAD, a DASC WTI or the MAWTS-1 DASC instructor shall certify the crewmember.

d. DASC Crew Chief (CC) Qualified. An Air Support Operations Operator (7242) certified as having completed required DASC-CC events of the appropriate T&R syllabus. A DASC SAD, DASC WTI, or MAWTS-1 DASC instructor/chief shall certify the Air Support Operations Operator.

e. Air Support Radio Net Operator (RNO) Qualified. An Air Support Operations Operator (7242) certified as having completed the required RNO events of the appropriate T&R syllabus. A DASC CC or DASC WTI or MAWTS-1 DASC instructor/chief shall certify the Air Support Operations Operator.

3. LAAD

a. LAAD Team Leader Qualified. A LAAD Gunner certified as having completed the required events of the appropriate T&R syllabus. Any graduate of the LAAD Advanced Tactics and Employment Course, the unit WTI, or the MAWTS-1 LAAD staff shall certify LAAD Team Leaders.

b. LAAD Section Leader/Platoon Sergeant Qualified. A LAAD section leader/platoon sergeant certified as having completed the required events of the appropriate T&R syllabus. The unit WTI or the MAWTS-1 staff LAAD Section shall certify Leaders/Platoon Sergeants.

c. LAAD Platoon Commander Qualified. A LAAD Platoon Commander certified as having completed the required events of the appropriate T&R syllabus. The unit WTI or the MAWTS-1 staff shall certify LAAD Officers.

4. TAOC

a. Senior Air Director (SAD) Qualified. An Air Defense Controller (7210/7236) certified as having completed the required events of the appropriate T&R syllabus. A TAOC SAD or the MAWTS-1 TAOC instructor shall certify Air Defense Controllers.

b. Senior Weapons Director (SWD) Qualified. An Air Defense Controller (7210/7236) certified as having completed the required SWD events of the appropriate T&R syllabus. A TAOC SAD or the TAOC WTI instructor shall certify Air Defense Controllers.

c. Senior Traffic Director (STD) Qualified. An Air Defense Controller (7210/7236) certified as having completed the required STD events of the appropriate T&R syllabus. A TAOC SAD or the TAOC WTI instructor shall certify Air Defense Controllers.

d. Surveillance Identification Director (SID) Qualified. An Air Defense Controller (7210/7236) certified as having completed the required SID events of the appropriate T&R syllabus. A TAOC SAD or the TAOC WTI instructor shall certify Air Defense Controllers.

e. Missile Controller (MC) Qualified. An Air Defense Controller (7210/7236) certified as having completed the required MC events of the appropriate T&R syllabus. A TAOC SAD or the TAOC WTI instructor shall certify Air Defense Controllers.

f. Air Intercept Controller (AIC) Qualified. An Air Defense Controller (7210/7236) certified as having completed the required events of the appropriate T&R syllabus. A TAOC SAD, TAOC WTI, or the MAWTS-1 TAOC instructor shall certify Air Defense Controllers.

g. Air Intercept Controller Instructor (AICI) Qualified. An Air Defense Controller (7210/7236) certified as having completed the required events of the

appropriate T&R syllabus. A TAOC SAD, TAOC WTI, or the MAWTS-1 TAOC Instructor shall certify Air Defense Controllers.

h. Sector Air Defense Commander (SADC). An Air Defense Control Officer (7210) certified as having completed the SADC OPS events of the appropriate T&R syllabus. A SADC OPS shall certify Air Defense Control Officers.

i. Sector Anti Air Warfare Coordinator (SAAWC). A MACCS Officer (72XX) certified as having completed the required SAAWC events of the appropriate T&R syllabus. A SAAWC shall certify the MACCS Officer and the MACG CO shall designate the MACCS Officer as a SAWWC.

5. ATC

a. Watch Commander. A Marine officer certified as having completed the required events of the appropriate T&R syllabus. The Detachment Commander shall designate Watch Commanders.

b. Tower Watch Supervisor. An enlisted Marine certified as having completed the required events of the appropriate T&R syllabus. The Detachment Commander shall designate Tower Watch Supervisors.

c. Radar Watch Supervisor. An enlisted Marine certified as having completed the required events of the appropriate T&R syllabus. The Detachment Commander shall designate Radar Watch Supervisors.

507. MARINE METEOROLOGICAL AND OCEANOGRAPHIC (METOC) SERVICE QUALIFICATIONS AND DESIGNATIONS

1. Apprentice METOC Analyst

a. Apprentice METOC Analyst (AMA) Qualified. An enlisted Marine certified as having completed the required AMA Familiarization (FAM) and Apprentice Certification Process (ACP) events.

b. Forecast Support Qualified (FSQ). An enlisted Marine certified as having completed the required FSC Events.

c. Lead METOC Apprentice (LMA) Designated. An enlisted Marine certified as having completed the required events of the METOC T&R syllabus.

2. Journeyman METOC Analyst

a. Journeyman METOC Analyst (JMA) Qualified. An enlisted Marine certified as having completed the required AMA Familiarization (FAM) and Journeyman Certification Process (JCP) events.

b. Formal Schools Instructor (FSI) Qualified. An enlisted Marine certified as having completed the required events of the METOC T&R syllabus for training in a formal school environment.

c. METOC Analyst Instructor (MAI) Qualified. An enlisted Marine certified as having completed the required events of the METOC T&R syllabus for conducting unit level training events.

d. METOC Section Leader (MSL) Designated. An enlisted Marine certified as having completed the required events of the METOC T&R syllabus for leading a METOC section.

3. Master METOC Analyst

a. Master METOC Analyst (MMA) Qualified. An enlisted Marine certified as having completed the required events of the METOC T&R syllabus.

b. METOC Chief Designation (MCD) Designated. An enlisted Marine certified as having completed the required events of the METOC T&R syllabus for management of a METOC Unit.

508. SUPPORTING ARMS QUALIFICATIONS AND DESIGNATIONS

1. FAC(A) Qualified. A NA/NFO certified as having completed the FAC(A) requirements in the appropriate T&R syllabus under the supervision of a respective FAC(A)I.

2. TAC(A) Qualified. A NA/NFO certified as having completed the TAC(A) requirements in the appropriate T&R syllabus under the supervision of a respective TAC(A)I.

3. FAC(A) Instructor - FAC(A)I. A NA/NFO certified by a MAWTS-1 instructor as having completed the FAC(A) instructor course. MAWTS-1 publishes the requirements and POI for FAC(A)I in the MAWTS-1 Course Catalog.

4. TAC(A) Instructor - TAC(A)I. A NA/NFO certified by a MAWTS-1 instructor as having completed the TAC(A) instructor course. MAWTS-1 publishes the requirements and POI for TAC(A)I in the MAWTS-1 Course Catalog.

509. ENLISTED FW AIRCREW DESIGNATIONS

1. Enlisted Night Systems Instructor. A flight engineer, navigator or loadmaster certified by a MAWTS-1 instructor as having completed the MAWTS-1 Night Systems Instructor course.

2. Enlisted Instructor. A flight engineer, navigator or loadmaster certified by the squadron NATOPS officer as having completed the appropriate T&R Instructor Syllabus.

510. WEAPONS AND TACTICS INSTRUCTORS

1. Weapons and Tactics Instructor (WTI). A NA/NFO certified by a MAWTS-1 instructor as having completed the WTI course.

2. Weapons and Tactics Crew Chief Instructor (WTCCI). A crew chief certified by a MAWTS-1 instructor as having completed the WTI course.

511. RW AERIAL GUNNERY (AG)

1. AG Qualified. Aircrew certified as having completed the required AG events in the appropriate T&R syllabus.

2. AG Instructor (AGI). A crew chief or aerial gunner certified by a WTCCI as having completed the AG Instructor Course.

CHAPTER 6

CORE SKILL INTRODUCTION TRAINING

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6-1 AIRCREW REFRESHER TRAINING MATRIX 6-10

CHAPTER 6

CORE SKILL INTRODUCTION TRAINING

600. CORE SKILL INTRODUCTION TRAINING

1. Marine Corps Fleet Replacement Squadrons (FRS) and aviation ground/MACCS schools shall conduct core skill introduction training per individual T&R manuals.

a. Core skill introduction training includes system/equipment operation familiarization, initial crew procedures, and initial exposure to core skills. CNATRA and FRSs conduct Pilot/NFO training. CNATRA, FRSs, and/or operational units conduct enlisted aircrew training unless otherwise specified in individual T&R manuals. Entry-level MOS schools and/or the crewmember's first operational unit conduct aviation ground unit and MACCS personnel training. Core skill introduction training shall equal 60 percent CRP.

b. Core Skill Introduction Training Waivers/Deferments

(1) Waived Syllabus Events. A commanding officer of an FRS/core skill introduction training unit may waive an event when in his judgment the previous experience or performance of an individual satisfies the requirement of the particular event. Events may only be waived for individuals in Transition, Conversion, or Refresher POIs. Basic T&R events shall not be waived. Waived events must be annotated in the APR/MPR. Waivers for multiple events or complete stages of training shall be submitted via DMS message to CG TECOM (ATB) for review and authorization.

(2) Deferred Syllabus Events. A commanding officer of an FRS/core skill introduction training unit may defer events to operational units when in his judgment a lack of a logistic support or training assets requires temporary exemption. Deferral of multiple events and/or complete stages of training require authorization from CG TECOM ATB. Gaining operational units must complete deferred training events in strict compliance with T&R event requirements. Training or NATOPS Officers shall annotate all deferred events in the APR/MPR prior to the individual’s transfer.

2. FRS Operations. An FRS designated by the CMC shall conduct training for Basic, Transition, Conversion, and Refresher replacement aircrew. CMC will allocate FRS aircraft, material, and personnel to meet current and anticipated long range USMC training requirements. Respective wing commanders are responsible for ensuring FRSs under their authority receive the necessary support and assets specified to accomplish their mission.

a. Requirements. CG TECOM (ATB) is responsible for establishing FRS training policy and requirements, assigning FRS quotas, monitoring FRS training progression, and approving assignments to training. ATB shall consolidate and submit annual FRS Flight Hour Program (FHP) requirements to OPNAV N789.

b. OPCON. The respective wing commander has OPCON of subordinate FRSs. The wing commander is responsible directly to the MARFOR commander for execution of Replacement Aircrew (RAC) training responsibilities. The MARFOR commander supports CG TECOM (ATB) for RAC training.

(1) Tasking. Operational 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.

(2) Logistics Support. Group commanders shall provide FRSs with local maintenance and supply support on an equal basis with collocated operational squadrons.

c. Coordination. All RAC training issues shall be coordinated through the appropriate MAW.

d. Production Management. CG TECOM (ATB) is tasked to provide overall RAC production management. Annual Pilot Training Requirement (PTR), Naval Flight Officer Training Requirement (NFOTR) and Aircrew Training Requirement (ACTR) are obtained from the following agencies for the following categories:

(1) Basic. Basic (Category I) annual production requirements are generated by MPP based upon the existing ASR/GAR manpower model.

(2) Transition. Transition (Category I) annual production requirements are generated by ASM through an annual transition/conversion board or as directed by HQMC (DC AVN).

(3) Conversion. Conversion (Category II) annual production requirements are generated by ASM through an annual transition/conversion board or as directed by DC AVN.

(4) Refresher. Refresher (Category III) annual production requirements are generated by MMOA based upon planned assignments and time out of the cockpit.

(5) Modified Refresher. Modified Refresher (Category IV) annual production requirements are generated by MMOA based upon planned assignments and time out of the cockpit.

(6) Foreign. Foreign aircrew annual training requirements are generated by CG TECOM (C466) (Security Cooperation Education and Training Center) based upon Foreign Military Sales (FMS) requirements.

e. Assignment. CG TECOM (ATB) is the approval authority for FRS training. Units should make requests for training by message or official letter.

f. Staffing. CMC (MMOA-2) will staff FRS flight instructor billets to the ASR. 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.

g. Support and Administrative Aircraft. The FRS shall conduct all aircrew training through initial NATOPS designation, if one is available. If an FRS is not available, a local unit, designated by CG TECOM ATB, may conduct RAC training.

601. NAVAL AVIATOR PRODUCTION PROCESS (NAPP)

1. NAPP is a CNO initiated program designed to focus on improving the process of producing first tour Naval Aviators (NA) and Naval Flight Officers (NFO), targeting extended Time-To-Train (TTT) and barriers to improvement. The Naval Aviation Production Team (NAPT) chartered Task Groups (TGs) to oversee NAPP efforts that cover the entire process from “street to fleet.” A TG represents each aviation community (initial accession, rotary, maritime, tactical, NFO, and enlisted aircrew).

a. NAPP Representation. Each FRS shall appoint an officer and an enlisted aircrewman (if appropriate) as NAPP Representatives, responsible for cockpit chart/PPF development and submission and other issues relating to the NAPP. Additionally, respective wing commanders shall appoint an officer as the Wing NAPP

Representative to serve as a liaison between CG TECOM (ATB), CMC [DC AVN (ASM)], FRS, and OPNAV N789.

b. Cockpit charts. Cockpit charts are a reporting system integral to the NAPP initiative, which summarize performance measures and describe an FRS's production efficiency and effectiveness. OPNAVINST 3500.31G governs the management of cockpit charts.

c. Production Planning Factors (PPFs). Identification of FRS resources relative to the training requirement is a crucial link in the NAPP. PPFs help facilitate identification of resource requirements in terms of instructors, aircraft, simulators, and flight hours needed to accomplish the annual FRS student training throughput. OPNAVINST 3500.31G governs the management of PPFs.

602. FRS PLANNING AND REPORTING

1. Proper management of Marine Corps aviation resources requires that MCCDC continually evaluate FRS training requirements and resources to make long range and short range adjustments to maintain a balance between requirements and capability. To this end, two distinct but related recurring planning and reporting cycles, annual and monthly, support the USMC FRS training management process.

a. Annual FRS Planning and Reporting. The annual FRS planning and reporting cycle determines long range FRS training management. This cycle consists of three phases: (1) CG TECOM (ATB) estimate of FRS training capacity, (2) FRS class date report and capacity estimate, and (3) CG TECOM (ATB) publication of the NA/NFO Training Plan.

(1) CG MCCDC Estimate of FRS Training Capacity. Annually on 31 July, CG TECOM ATB publishes an estimate of USMC FRS training capacities for the next fiscal year. CG TECOM ATB expresses this estimate in "RAC Equivalents" (RE) and bases it on the following: total flight hours per RE, average aircraft assigned, and planned aircraft utilization factor.

(a) RAC Equivalents. CG TECOM (ATB) determines RE by computing the total T&R syllabus hours, including instructor aircraft hours for multi-plane flights for each Program of Instruction (POI). POIs are Basic (B), Transition (T), Conversion (C), Refresher (R), Modified Refresher (MRF), and Instructor Under Training (IUT). The corresponding total T&R syllabus hours, divided by the total T&R syllabus hours for the basic syllabus yield a RAC factor (RF); this number is a decimal less than or equal to 1. The RAC factor, when multiplied by the number of students to train, yields the RE. For example:

Aircraft T/M/S:	CH-XX
T&R basic syllabus hours:	60
T&R basic syllabus hours for flights requiring a separate instructor aircraft:	40
Total basic syllabus hours:	100
T&R refresher syllabus hours:	30
T&R refresher syllabus hours for flights requiring a separate instructor aircraft:	25
Total refresher syllabus hours:	55
CH-XX refresher RAC factor: 55/100 =	.55

For Naval Flight Officers (NFOs) and Naval Aircrew (NAC), CG TECOM (ATB) computes RAC factors in a similar manner - as a decimal fraction of the basic pilot syllabus using only those NFO/NAC flights that cannot be accomplished concurrently with a student pilot syllabus flight.

(b) Total Flight Hours per RAC Equivalent. The sum of the T&R total basic syllabus hours and an overhead factor (usually 20 percent of the syllabus hours) define the total flight hours per RAC equivalent. The overhead factor is a "cost of doing business" included to allow for required flights to conduct FRS training. Overhead flights include the following: IUT flights, incomplete flights, instructor NATOPS/instrument certifications, warm-up flights, post maintenance flights, ferry flights, and student syllabus refly. In the previous example, the total flight hours per RAC equivalent would be 100 + (100 x .20) = 120 hours.

(c) Average Aircraft Assigned. Average aircraft assigned is the average number of aircraft expected to be in an "A" status for the year.

(d) Planned Aircraft Utilization Factor. The planned aircraft utilization factor is the number of hours a squadron plans to fly each aircraft per month, based on historical data, parts, and maintenance personnel available. WSPD or OP-20 limited utilization factors are not applicable.

(e) FRS Training Capacity. CG TECOM (ATB) determines the FRS training capacity estimate by taking the product of the average aircraft assigned, the monthly utilization factor, 12 months, and dividing this product by the total flight hours per RAC equivalent. If the FRS average number of aircraft assigned is 10, and the planned utilization factor is 30 hours, and using 12 months, the product is 3600 (10 x 30 x 12). Dividing 3600 by the total flight hours per RAC equivalent (i.e., 120 hours from paragraph (b) above) yields the FRS training capacity of 30 RE (3600/120 = 30). Using this example, if the annual basic training requirement is 26 students, the squadron would have a remaining capacity of 4 RE for Transition, Conversion, and Refresher training (30-26 = 4). Assuming no Transition or Conversion training requirements existed for the year, one could determine the Refresher training capacity by dividing the remaining RE capacity (4) by the Refresher RAC factor (.55 from paragraph (a) above), to obtain 7.3 Refresher students (4/.55 = 7.3).

(f) The CG TECOM (ATB) estimate of FRS training capacity for the next fiscal year will use the current T&R syllabus for all computations. Hours per RAC equivalent, RAC factors, average aircraft assigned, utilization factors, and overhead factors will be provided to show the basis for the computations.

(2) FRS Class Date Report and Capacity Estimate. Fleet replacement squadrons shall report through the MAW chain of command desired class start dates and an estimate of training capacity for the next fiscal year by 15 March. CG TECOM (ATB) will determine FRS class start dates. If the estimate of training capacity differs from the CG TECOM (ATB) estimate, the FRS squadron shall provide via the MAW chain of command the basis for the squadron computations along with an explanation of any special limiting factors such as instructor shortages, airfield repair, depot level maintenance schedules, funding ceilings, or simulator problems. If more than one factor impinges on the FRS capacity computed by CG TECOM (ATB), the FRS shall provide a separate limiting capacity for each factor, in isolation, to provide a clear indication of the deficient resources. In addition, each report shall contain anticipated average aircraft available, utilization factor, instructors assigned, and IUT requirements for the following year. Appendix F contains the format for this report.

(3) CG TECOM ATB NA/NFO Training Plan. Annually on 15 July, CG TECOM (ATB) will publish the NA/NFO training plan for the next fiscal year. The plan will provide quota assignments, class loading, modifications (if any) to training policy for the next fiscal year, and realignments (if any) of assets to support FRS training requirements for the next fiscal year.

b. Monthly FRS Planning and Reporting. Many unforeseeable factors affect the training requirements and capacity during the execution of the annual NA/NFO Training Plan via the Integrated Production Plan (IPP). The monthly FRS planning

and reporting cycle allows adjustments to maintain alignment of training requirements and capacity. The NAPP cockpit charts are a useful tool in evaluating FRS production performance and capability, and are the primary method of FRS reporting.

(1) Pools. The FRS reports two pools to NIPDR. The Pre-FRS Pool is an entitlement (8 weeks) defined as the number of CAT I winged pilots and NFOs that have not commenced their FRS class. This includes personnel conducting PCS moves, training en route (SERE, etc), and at the FRS awaiting class start. The FRS Pool is reported as Students In Training (SIT). This measures the number of CAT I pilots/NFOs who should be onboard during a given portion of training in order to meet fleet requirements versus the number actually onboard.

(2) Joint FRS Reporting. The applicable Navy FRS will report total numbers for monthly NAPP cockpit charts and report Marine student numbers for monthly updates of the IPP.

2. Flight Hour Funding. FRS flight hours are programmed by CG TECOM (ATB) and are based upon the annual training requirements expressed in RAC equivalents. The consolidated training requirements for each T/M/S are submitted to OPNAV N789 along with the programmed flight hours per RAC equivalent. Flight hour management is the responsibility of the respective wing commanders.

3. CG, 4th MAW Training Requirements. The FRS squadrons shall conduct Transition, Conversion, and Refresher training for 4th MAW aircrews. CG 4th MAW shall annually submit an estimate of FRS training requirements by T/M/S and POI for the next 3 fiscal years by 10 December. CG 4th MAW may request FRS instructors to designate and annually certify their own squadron instructor pilots to conduct on site training for Reserve aircrews. CG 4th MAW shall coordinate this request with HQMC [DC AVN (ASM)] and CG TECOM (ATB).

603. TRANSITION/CONVERSION TRAINING

1. Transition/Conversion training includes personnel who have been offered the opportunity to request Transition/Conversion training in other types/models of aircraft and command and control systems. Further, the needs of the service have required forced Transition/Conversion of some personnel from one aircraft type/model or command and control system to another. Candidates should submit applications for NA/NFO Transition/Conversion training per MCO 1331.2, Transition/Conversion Training For Marine Naval Aviators and Naval Flight Officers.

2. Transition/Conversion Definitions

a. Transition (T). Syllabus instruction designed for personnel changing aircraft/MACCS agency types. Marine Corps aircraft types include the following: Fixed Wing jet, VSTOL jet, Rotary Wing, Fixed Wing Transport, and Tiltrotor. Marine Corps MACCS unit types include: TACC, TAOC, DASC, LAAD, UAV and MATC.

b. Conversion

(1) Model Conversion (C). The instruction provided for personnel converting from one model aircraft/system to another within the specific aircraft/unit type described above; e.g., CH-46 to CH-53.

(2) Series Conversion (SC). Personnel who are current in type and a particular model of aircraft/system shall undergo this POI when assigned tofly/operate a new series that has significantly different aircraft or weapons systems characteristics; e.g., KC-130F to KC-130J.

3. Transition or Conversion training for all aircrew, including members of the Selected Marine Corps Reserve (SMCR), will be approved by CMC [DC AVN (ASM)]. DC AVN (ASM) shall coordinate proposed Transition and Conversion FRS training requirements with CG TECOM (ATB).

4. Personnel selected or assigned to Transition/Conversion training shall follow the appropriate POI as outlined in the respective aircraft T&R syllabus. CG TECOM (ATB) shall designate the training squadron/unit to conduct this training.

604. REFRESHER TRAINING

1. Refresher POIs are prescribed for personnel returning to an operating force billet who have been previously assigned to the Basic POI of that MOS. Refresher POIs shall be developed by community SMEs and delineated in individual T&R manuals. Refresher syllabi are intended to reduce the amount of required training events to account for previous experience.

a. Aircrew returning to an operational force DIFOP billet, who have previously been assigned to the basic POI of that MOS, shall be assigned to Refresher POI. Pilots and NFOs shall be assigned FRS Refresher training per paragraph 3 below. Upon completion of FRS Refresher training, pilots and NFOs shall follow the Refresher POI conducted at the tactical squadron. Experienced pilots and NFOs (completed at least one fleet tour in an operational unit) returning to an operational force DIFOP billet, who have not flown for an extended period of time but not long enough to require FRS Refresher training, shall follow the Refresher POI conducted at the tactical squadron.

b. MACCS and aviation ground personnel returning to an operational force billet, who have previously been assigned to the basic POI of that MOS, but are no longer proficient per the individual T&R, shall be assigned to Refresher POI.

2. Tactical units shall conduct Refresher training beyond 60 percent CRP. Individuals undergoing Refresher POIs are required to complete “R” coded T&R events (200+ level events). In addition, individuals undergoing Refresher POIs are required to complete Basic POI syllabus events that the individual has never previously completed.

3. FRS Refresher Training

a. FRS Refresher training is prescribed for pilots and NFOs returning to a DIFOP operating force billet, who have previously been assigned to the Basic POI of that MOS but have not flown the model aircraft within the time intervals defined below (also see figure 6-1). Training squadrons/elements shall conduct FRS Refresher training; such training shall be specified in individual T&R manuals and shall be equivalent to 60 percent CRP.

b. If a training squadron is not available, a CMC-designated tactical squadron or another service training unit will conduct Refresher training. The CMC may designate HMX-1 as a Refresher training squadron for CH-53 and CH-46 aircraft in exceptional situations.

c. Commands responsible for overseeing Refresher training shall provide a training environment where other billet responsibilities do not detract from that training.

d. Commands may request FRS Refresher training for aircrew not covered by the previous Refresher training programs. Requesting units should make requests to CG TECOM ATB via the chain of command and should include at a minimum: reasons for the Refresher training, time out of model/type, periods of availability and type training desired.

e. CG 4th MAW may request authorization from CG TECOM (ATB) to designate selected Reserve squadrons to provide appropriate Refresher training for SMCR aircrew on a case-by-case basis.

f. Aircrew FRS Refresher Training Programs. Upon completion of FRS Refresher training, units shall assign aircrew to the Refresher POI.

(1) Full Refresher Programs. Full Refresher programs, or USN CAT III syllabi, consist of appropriate ground school, simulator and training events. Pilots and NFOs returning to a DIFOP billet, who have been DIFDEN or DIFOP (out of type) for greater than 730 days shall receive Refresher/CAT III training.

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

(a) Pilots and NFOs returning to a DIFOP billet, having previously held an MOS, having flown their type but not model aircraft within the past 485 days shall receive MRF or CAT IV training at an FRS. (Examples of this type of Refresher training are: 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.)

(b) Pilots and NFOs assigned to “Dual Control Aircraft” who have been DIFDEN or DIFOP (out of type) longer than 485 days but less than or equal to 730 days will receive MRF or CAT IV training at an FRS.

(c) Pilots and NFOs assigned to “Single Control Aircraft” who have been DIFDEN or DIFOP (out of type) for 486-730 days will receive a MRF program.

(d) Pilots and NFOs destined for PCS to 1st MAW may receive a MRF upon approval by CG TECOM (ATB). CG 1st MAW may request other tactical jet training for inbound pilots or NFOs from CMC (MMOA).

(3) Safe-for-Solo Programs. Safe-for-Solo programs (USN CAT V) apply only to pilots and consist of ground school, simulator training and a Safe-for-Solo check flight. Pilots assigned to “Single Control Aircraft” who have been DIFDEN or DIFOP (out of type) longer than 365 days but less than or equal to 485 days shall receive Safe-for-Solo training at an FRS.

605. BY NAME ASSIGNMENT (BNA). BNA is the Marine Corps sole source of training allocation and execution data. MCO 1553.7 requires use of BNA by all formal schools. The data is extremely important in the TIP/TQM process as well as the budgeting process. All schoolhouses that train Marines are required to use BNA. Contact CG TECOM (C4611) (Formal Schools Training Branch), DSN 278-3251 or Comm (703) 784-3251 to obtain access to BNA, a copy of the BNA User’s Manual, and other BNA assistance.

AIRCREW REFRESHER TRAINING MATRIX

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

Figure 6-1.--Aircrew Refresher Training Matrix.

CG TECOM (ATB) is approval authority for deviations from above matrix.

CHAPTER 7

TRAINING MANAGEMENT

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CHAPTER 7

TRAINING MANAGEMENT

700. INDIVIDUAL TRAINING MANAGEMENT

1. Individual Training Philosophy. Individual training and the mastery of individual core skills (200-300 level events) serve as the building blocks for unit combat readiness. Individual training programs are based upon a logical progression of increasingly challenging events, with the requirement for periodic revalidation of individual skill proficiency. Individual training requirements shall be clearly defined and structured (event goals, requirements, performance standards, etc.) per Chapter 2 of this Manual.

2. Training Progression Models. Training progression models graphically depict the notional progression of individuals in terms of core skill, qualification, and designation attainment within a unit. Each community shall maintain a standardized training progression model in its respective community T&R manual. Aviation communities will develop significantly different unit training models, as the number of core skills, qualifications, and designations contained within the models are community dependent. Training progression models (figures 7-1 through 7-3) used in this chapter serve only as examples.

3. Individual Training Programs. Personnel shall train to the appropriate T&R Program of Instruction (POI) described in paragraph 202 of this Manual. Personnel should be scheduled to complete 100 – 300 T&R events in sequential order to the greatest extent possible. Prerequisites shall not be skipped and waiving of events shall only be authorized by the unit commanding officer (in accordance with paragraph 305).

4. Individual Training Plans. Training plans for aviation personnel shall be incorporated into unit training plans. Unit training officers should use the training progression model as a baseline to manage individual training plans. Training officers shall provide personnel with an estimated schedule of upcoming training events to the maximum extent possible. Effective training management allows unit personnel enough lead-time to adequately plan for all upcoming evolutions. The USMC approved automated training management system shall be used to track and manage individual CSP, qualifications, and designations.

5. Individual Proficiency Management. Proficiency dates for each T&R code must be maintained for each crewmember in the unit. The proficiency date for an event is the most recent date that event was last completed or updated. A proficient status is valid from the proficiency date through the refly factor interval. Event proficiency status is either “Proficient,” “Delinquent,” or “Incomplete.” Since proficiency status may change from day to day, measurement of proficiency status must be accomplished for a specific date, or “reference date.” An Incomplete status indicates an event that has never been successfully completed or updated via T/C stage completion (no proficiency date). A Proficient status indicates that the number of days between the proficiency date and the reference date (usually “today”) must be equal to or less than the refly interval. A Delinquent status indicates that the number of days between the proficiency date and the reference date (usually “today”) exceeds the refly interval. Note: When scheduling, the reference date used to produce proficiency status should be the date of the schedule, usually “tomorrow” or “Monday.” Aircrews update a delinquent event by reflying that event with a current and proficient crewman/flight lead.

6. Event Proficiency Updating. Event proficiency dates shall be updated when an event is: (1) Successfully completed, (2) Updated via chaining, or (3) Updated via POI updating. Event proficiency updating applies to 200+ level events.

a. Chaining. When a T&R event is logged, the proficiency dates of other T&R events (usually lower in number) may be updated. A T&R code that is logged is known as the chaining code, and the updated codes are chained codes. Chained codes are not always updated when a chaining code is logged. Specific rules may determine when codes are updated via conditional chaining (see Chapter 2).

b. Basic POI Chaining. The chaining matrix from the T&R determines which events may be updated, but only those events that are already proficient are chain-updated. Delinquent or incomplete events shall not be updated.

c. POI Updating. POI updating is applicable only to T/C/R POIs.

(1) Transition and Conversion POI Updating. Event updating occurs by T&R stages. When all T/C/SC events in a stage are successfully completed, all remaining events in that stage are updated regardless of their proficiency status (Proficient, Incomplete And Delinquent chained events are all updated).

(2) Refresher POI Updating. Event updating occurs by T&R stages. When all R events in a stage are successfully completed, all remaining events in that stage that are proficient or delinquent are updated. Incomplete events are not updated and must be completed in addition to R events. Modified Refresher POIs are included in this category. See paragraph 604.

(3) Event Updating For Individuals With Previous Experience. Experienced aircrew (completed at least one fleet tour in an operational unit) who have not flown for an extended period of time, but not long enough to require Refresher training, shall follow the Refresher POI updating procedures.

7. Qualification and Designation Management. Training officers should utilize training progression models as a baseline for scheduling individual qualification and designation training. All individual qualifications and designations are command-specific and respective letters shall be maintained in section three of APRs/MPRs.

a. Qualifications. All qualifications shall be assigned 1 or more T&R events related to that qualification, known as qualification events. The individual proficiency status of these qualification events are used to determine qualification status. An individual’s qualification status may be either “Qualified” or “Not Qualified” for a given qualification.

(1) Loss of Qualifications. If an individual that was once granted a qualification goes delinquent in all associated qualification events, the qualification is lost and qualification status automatically reverts to “Not Qualified.”

(2) Re-qualification. To regain a lost qual, the individual must successfully re-complete all qualification events that are R-coded. Upon completion of all R-coded qualification events, qualification status automatically reverts back to “Qualified.” Re-Qualifications regained in this manner require no additional documentation.

b. Designations. Designation policy is delineated in Chapter 5.

8. Combat Readiness Percentage (CRP). CRP shall be tracked for each crewmember assigned to a unit. CRP is computed as the sum of event CRP values that each individual maintains a proficient status in, to a hundredth of a percent.

701. UNIT TRAINING MANAGEMENT

1. Unit Training Programs

a. Units shall train to achieve Core Model Minimum Requirements (CMMR). If a unit falls short of CMMR, squadron/battalion commanders must refocus unit training to achieve CMMR.

b. Units shall train to achieve T&R required qualifications and designations that support core competency requirements.

c. The Weapons and Tactics Training Program (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.

d. Instructor designations shall be balanced with unit needs and mission requirements. The number of instructors (WTI, ACTI, LATI, TERFI, NSI, etc.) produced shall be strictly controlled and must significantly increase a unit's ability to train for combat over the long term.

2. Unit Training Standards

a. Unit training standards are criteria that specify mission and functional area unit tasks and proficiency standards for combat, combat support, and combat service support units. Unit training standards consist of Collective Training Standards (CTS) or Mission Performance Standards (MPS). MPS are delineated in Marine Corps Combat Readiness Evaluation System (MCCRES) manuals. MCCDC plans to incorporate CTS into T&R manuals in the future. Unit training standards are derived from unit METLs and directly relate to unit core competencies.

b. T&R CTS (when approved) or the MCCRES may be utilized as the aviation unit evaluation standard. To maintain congruity in aviation and ground T&R programs, CG TECOM is coordinating an update to the aviation unit evaluation mechanism. The goal is to replace MCCRES MPS with T&R CTS and utilize the T&R as a single source unit training and evaluation mechanism. The implementation concept is to create a separate chapter in all aviation T&R manuals which contains unit CTS in the form of unit events. Unit T&R evaluation will be an event in the future, completed by the individual unit or higher headquarters. CG TECOM (ATB) plans to cancel unit MCCRES orders as respective unit CTS chapters are approved.

c. Individual and unit training standards are inextricably linked and should be concurrently reviewed and updated.

3. Unit Training Plans. The unit Core Competency Model provides training officers with the foundation to develop training plans. With clear unit training requirements delineated, training officers have the ability to produce viable training plans. Units should use the model as a point of departure to generate weekly, monthly, quarterly and annual training plans.

4. Unit CMMR Management. Designated unit training officers shall track unit CMMR if the authorized training management software for flying units provides a CMMR tracking capability. CG TECOM (ATB) is developing a custom report to provide CMMR

tracking. If a unit falls short of CMMR, operations officers must refocus unit training to achieve CMMR.

702. UNIT READINESS REPORTING

1. During unit readiness reporting periods, commanding officers report the status of readiness and training per the current edition of the Marine Corps SORTS Manual, MCO P3000.13.

2. Department of Defense Directive Number 7730.65 of June 3, 2002 directed the DoD to establish “a capabilities-based, adaptive, near real-time readiness reporting system.” The Marine Aviation Campaign Plan 2002 (MACP 2002) directed that aviation readiness reporting transition from an average individual readiness method to a unit readiness construct. CG TECOM ATB has developed a model for reporting training readiness that will satisfy both the DoD Directive and the MACP vision that more clearly demonstrates the link between Mission Essential Tasks (METs), core skill proficiency (capabilities), and aviation unit readiness. This aviation T-level reporting model uses the T&R core model as its foundation. The model evaluates unit training readiness based upon the core model premise of crew attainment and maintenance of proficiency in community-determined core skills. The method reports unit capabilities in the context of three distinct but related readiness sets. These sets are Core Skill Proficiency (CSP), Combat Leadership, and Unit Proficiency and are evaluated based upon standards set forth within this document and the MCCDC approved community T&R core model tables. The proposed readiness reporting concept has been approved by DC AVN and is sufficiently mature for implementation in the near future. Software necessary to automate the proposed readiness reporting construct is under development.

703. TRAINING RECORDING

1. NVG Flight Time. Aircrew shall record NVG flight information via Naval Flight Record Subsystem (NAVFLIRS) and Naval Aviation Logistics Command Management Information System (NALCOMIS) per OPNAVINST 3710.7. Operations personnel shall log pilot NVG time in the “special crew” time column of the Aviator Log Book. NVG time logged in the “special crew” time column shall be separated as total NVG time and 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.” NFO NVG time shall be similarly recorded in the First Pilot time column. Helicopter CC and Aerial Observer NVG time shall be logged in the Instrument time column using the “ACT” column for total NVG time and the “SIM” column for NVG LLL time. NVG total flight time shall be carried over each fiscal year, as is total pilot time.

2. Aircrew/MACCS Performance Records. Squadron operations personnel shall maintain aircrew/MACCS Performance Records and syllabus event status records for all aircrew/MACCS personnel assigned to their unit. Refer to Appendix E for maintenance of performance records.

704. AUTOMATED TRAINING MANAGEMENT. The use of automated training management systems greatly enhances the accuracy and relevance of training management information, which makes training management and operational risk management more effective at the unit level.

1. Aviation Units. The authorized training management software for flying units is version 5.X of SARA (Squadron Assistance/Risk Assessment). Previous versions of SARA are not authorized, since only version 5.X provides standardization, proper execution of training management tasks, proper enforcement of rules governing

Marine Aviation, and automated reports. Refer to the ATB website for the most current version of SARA.

a. Degree of Usage. Tactical aviation flight units and detachments shall use SARA 5.X as the primary method of performing the following functions:

(1) Daily logging of NAVFLIR information using the NALCOMIS Interface (compatible with both legacy and optimized NALCOMIS). When aircrew fly with another squadron, manual logging will be necessary.

(2) Writing, validating, and printing a flight schedule, including simulator events and duties. Squadron personnel authorized to approve the daily flight schedule should review the SARA-produced Error Log prior to granting approval. SARA-produced “Tell Pilot” messages should be supplied to the ODO and incorporated into aircrew briefs as appropriate.

(3) Maintaining individual proficiency, CRP, qualifications, designations, and hour/flight time information for all crewmembers in the unit.

(4) Producing reports that track individual aircrew proficiency, CRP, qualifications, designations, and hour/flight time information.

2. Data Maintenance Procedures. The degree to which SARA enhances squadron-level training management and ORM is directly dependent on the accuracy of the squadron’s data. It is imperative that units develop habits that are conducive to proper maintenance of training management data.

a. Qualifications and Designations. Manual entry of qualifications or designations shall be accomplished only after the qualification or designation has been officially granted in writing by the commanding officer (the software will not automatically grant qualifications or designations upon successful completion of all qualification or designation events). When qualifications and designations are granted, squadrons should incorporate the updating of SARA into their normal routine of updating APRs.

b. Monthly Audit. At a minimum, squadrons shall have three separate copies of logged training management data: NALCOMIS, SARA, and aircrew logbooks. Using SARA to validate logbooks and MIFARS is a critical link to ensuring all three remain accurate. The Logbook Viewer should be used when MIFARS and logbooks are closed out and/or validated by aircrew and operations personnel.

c. Corrections to Logged Data. Editing of incorrectly logged data shall be accomplished in NALCOMIS, not SARA, since the SARA database will automatically be updated with those same changes on the next-day NALCOMIS download.

d. Backup. The unit’s database should be backed up at least weekly to a location other than the primary use SARA computer.

3. Transfer of Aircrew. Units shall provide aircrew checking out of a squadron an electronic copy of the SARA-produced export file. Units shall also include hardcopy reports of the individual’s training management information in the individual’s APR.

4. SARA Program Sponsor Contact Information

CG TECOM (C4610—Aviation Training Branch)
DSN: 278-4053/4054
Commercial: (703) 784-4053/4054

Web Page: http://www.tecom.usmc.mil/atb

Boeing Help Desk
Toll free: (877) 671-7272
Email: sara.support@boeing.com
Web Page: https://accessto.boeing.com (account required, call toll free number)

5. Automated Training Readiness Information Management System (ATRIMS). Aviation ground units utilize ATRIMS to accomplish automated training management functions.

a. The Marine Corps developed ATRIMS as a special purpose training management tool to automate management of T&R syllabi. ATRIMS constructs an automated database containing all data elements required to manage training. ATRIMS allows training activity recording and reporting.

b. CG TECOM ATB is the program sponsor for ATRIMS. Currently, ATRIMS (Aviation Ground) is the only valid version of ATRIMS for Aviation Ground Units. Units requesting modification to ATRIMS should forward requests via the chain of command to CG TECOM ATB.

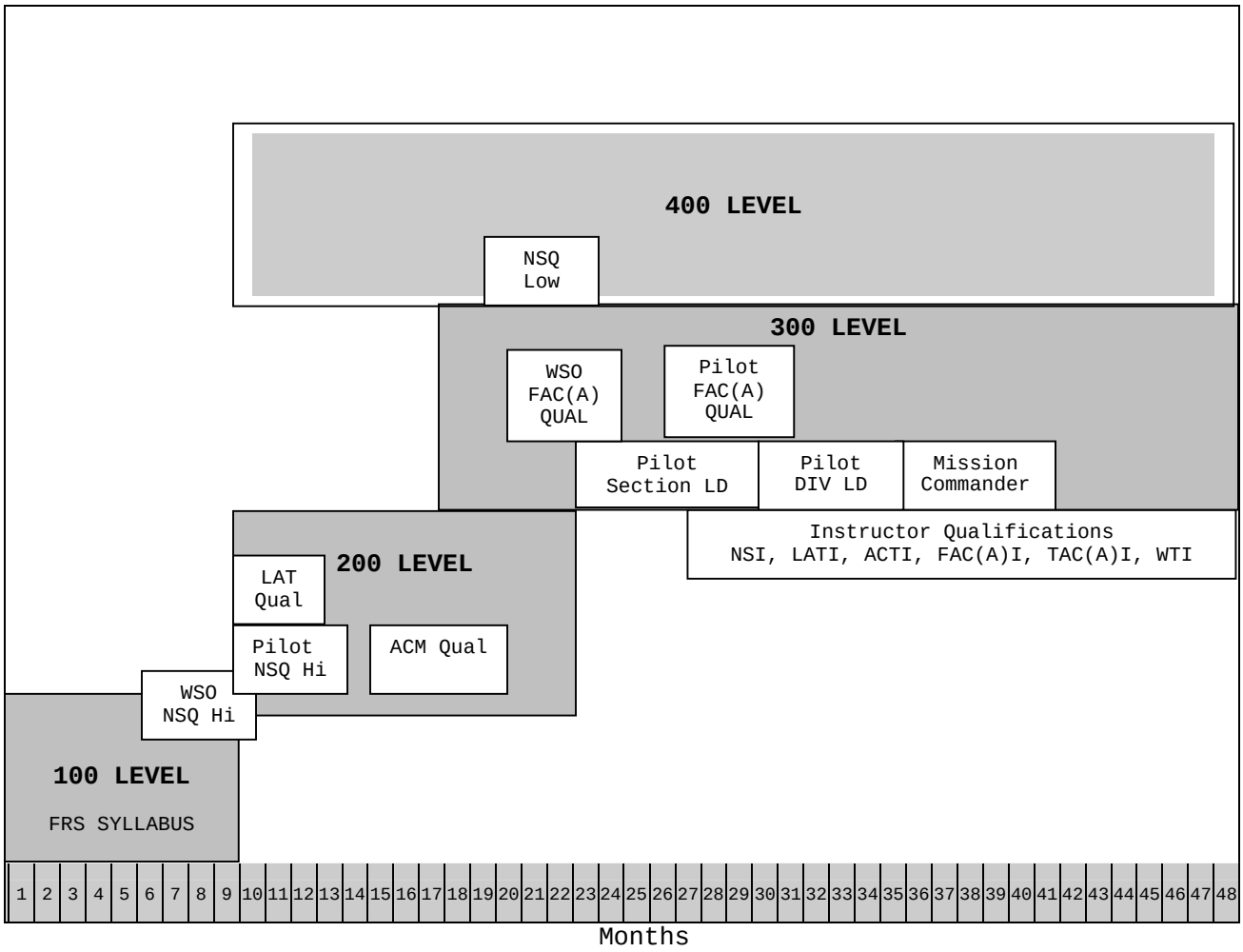

Figure 7-1.--Notional Fixed Wing Progression Model.

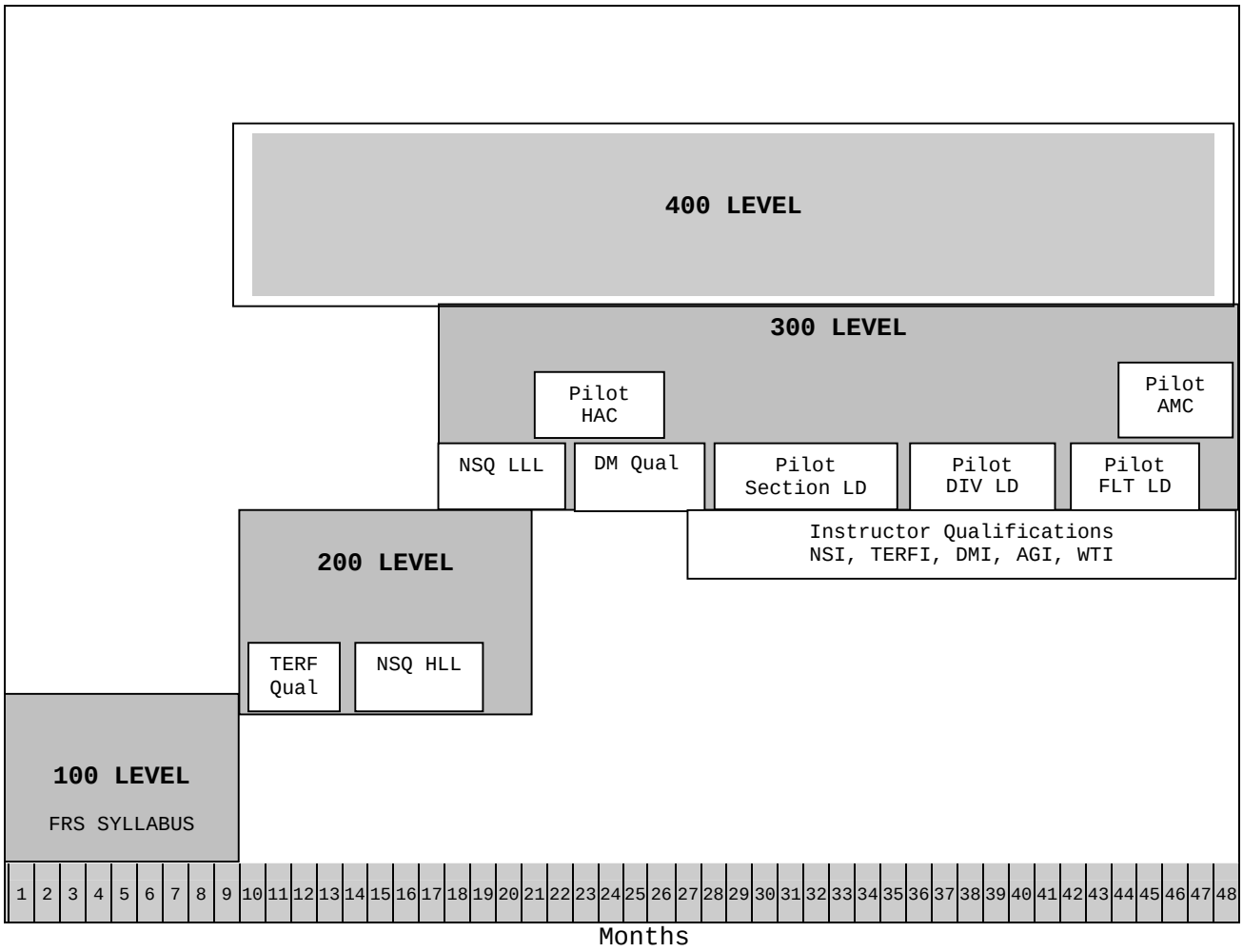

Figure 7-2.--Notional Rotary Wing Progression Model.

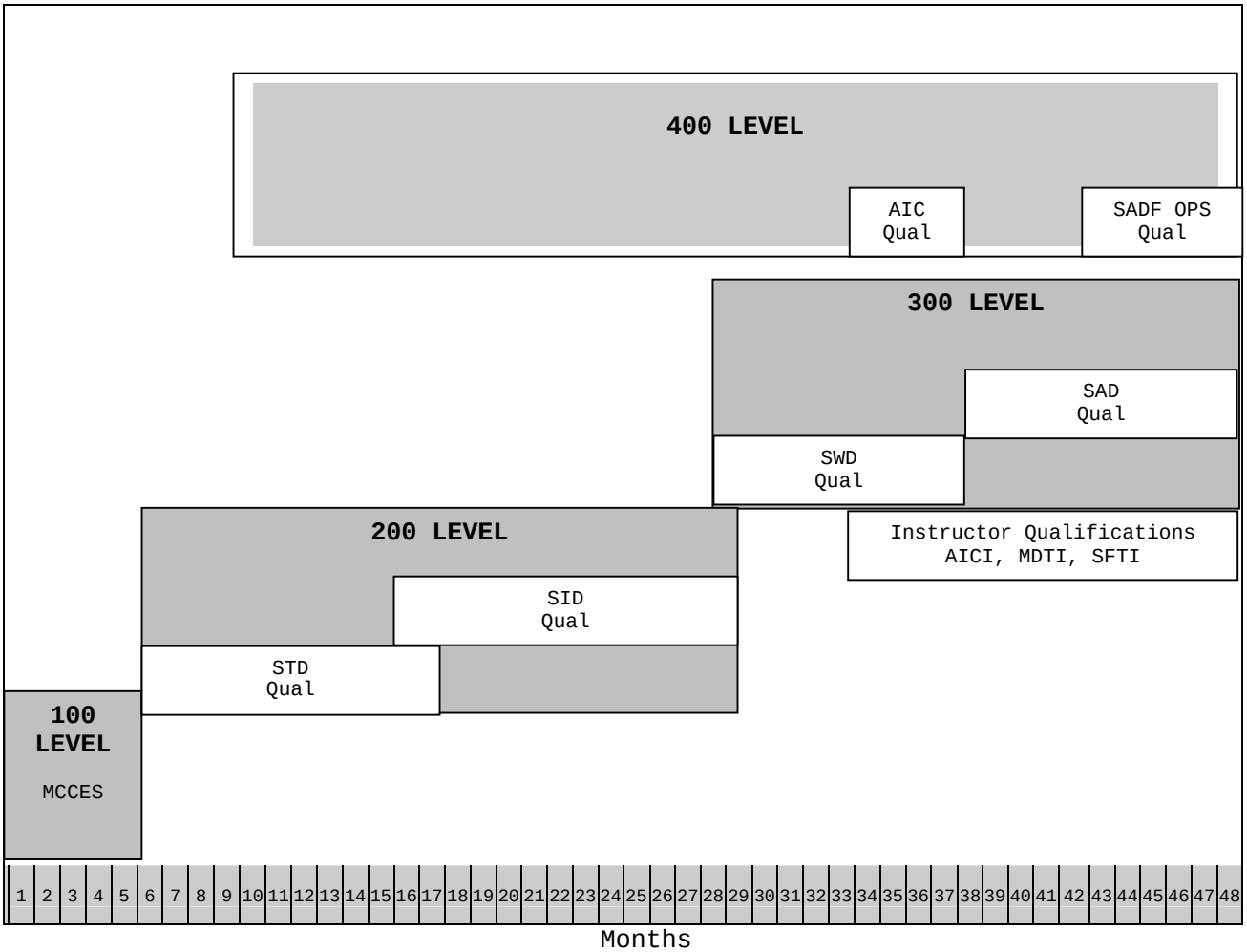

Figure 7-3.--Notional Air Control Progression Model.

APPENDIX A

INDEX OF T&R MANUALS

1. Aviation T&R syllabi are organized into a series of manuals published as Marine Corps orders as follows:

ORDER	TITLE
MCO P3500.14	Aviation T&R Program
Fixed Wing	
MCO 3500.44	AV-8B
MCO P3500.45	EA-6B
MCO 3500.46	F/A-18
MCO P3500.47	KC-130
MCO P3500.XX	KC-130J
Rotary Wing	
MCO 3500.48	AH-1
MCO P3500.49	UH-1
MCO P3500.50	CH-46
MCO P3500.51	CH-53
Tiltrotor	
MCO P3500.52	MV-22
MACCS	
MCO P3500.53	Tactical Air Command Center (TACC)
MCO P3500.54	Tactical Air Operation Center (TAOC)
MCO P3500.55	Air Traffic Control (ATC)
MCO P3500.56	Direct Air Support Center (DASC)
MCO P3500.57	Low Altitude Air Defense (LAAD)
MCO P3500.58	Unmanned Aerial Vehicle (UAV)
Support & Administrative Aircraft	
MCO P3500.59	C-9
MCO P3500.60	UC-12
MCO P3500.61	HH-46 (SAR)
MCO P3500.62	UH-1N (SAR)

MCO 3500.63	UC-35
MCO P3500.64	C-20
MCO P3500.65	F-5

Aviation Ground

MCO P3500.66	METOC
MCO P3500.67	Airfield Emergency Services
MCO P3500.37	Tactical Air Control Party
MCO P3500.71	Aviation Operations Specialist

APPENDIX B

GLOSSARY OF TERMS

ACM - Air Combat Maneuvering. Any flight that includes offensive tactics conducted with aircraft carrying air-to-air weapons or aircraft conducting defensive tactics. It does not include actual firing exercises or intercept missions.

AD - Aerial Delivery. Any flight in which aircraft release parachuting personnel, sensors, equipment or supplies (other than ordnance).

AIE – Alternate Insertion/Extraction. Any flight employing the various insertion and extraction techniques employed by the MV-22 i.e. SPIE, FASTROPE, Rappelling.

Aircrew - A collective term that applies to all categories of personnel in a flight status.

AG - Air-to-Ground. Any VMC/IMC flight designed to attack surface targets with conventional unguided ordnance.

AGO - An Aerial Gunner/Observer is an 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. Performing as a flight crewmember, the Aerial Gunner/Observer shall have a current flight physical, aviation physiology training, N5 water survival training, N7 HEEDS training, annual NATOPS evaluation and wear all flight equipment per the OPNAVINST 3710.7 series (see definition of Flight Crew in OPNAVINST 3710.7).

AMA – Apprentice METOC Analyst. An entry level Meteorological and Oceanographic (METOC) Services Marine who has received basic and intermediate training in METOC sciences. The AMA is responsible for conducting METOC sensing of surface and upper atmospheric elements and reporting of the elements. The AMA continues to hone proficiency in the core skills of analysis and forecasting of METOC parameters through supervised forecast product generation.

AMC – Air Mission Commander. An experienced aviator 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.

AMTI - Airborne Moving Target Indicator. Any flight designed to develop proficiency conducting day and night system ordnance deliveries on moving targets.

APH - Aerial Photography. Any flight designed to develop hand held camera proficiency.

APR - Aircrew Performance Record. The squadron training officer maintains the APR per Appendix E of this Manual.

AR - Aerial Refueling. Any flight designed to develop the ability of aircrews to perform tactical aerial refueling operations, day and night, to include helicopter in-flight refueling from a ship.

ASC(A) - Assault Support Coordinator (Airborne). An experienced aviator who operates from an aircraft to provide coordination and procedural control during assault support operations. The ASC(A) acts as an agency of the MACCS and is an airborne extension of the DASC or HDC.

ASTO - Advanced Systems Tactics and Ordnance. Any flight designed to develop proficiency conducting day, night IMC system tactics and ordnance deliveries using intra-cockpit aircraft weapon systems displays.

AWI - All Weather Intercept. Any single aircraft, air-to-air weapons systems intercept, commenced beyond visual range where weapons engagement does not depend on visual identification.

AWCAS - All Weather Close Air Support. Any systems ordnance flight flown in instrument or simulated instrument conditions.

AWT - Arctic Weather Training. Any flight designed to train for operations in an arctic environment.

Battlefield Illumination - Any flight designed to deliver aircraft parachute flares.

Brief - Conducted prior to a flight/event to discuss all aspects of the item or a discussion of the flight evolution as a whole.

CAL - Confined Area Landings. Any landing pattern work flown to sites or landing zones in which terrain/obstacle clearance techniques and cautions become the primary objective.

CASEVAC - Casualty Evacuation. Any flight designed to demonstrate casualty evacuation procedures.

CAT – Categories of Training. Conversion matrix for USN to USMC Program of Instruction (POI).

a. Category I (CAT I). This equates to Basic and Transition POIs.

b. Category II (CAT II). This equates to the Conversion POI.

c. Category III (CAT III). This equates to the Refresher POI.

d. Category IV (CAT IV). This equates to the Modified Refresher program (MRF).

e. Category V (CAT V). Other POIs not described above.

Certification - The evaluation process of an individual during a syllabus event(s) by a designated instructor or authorized personnel for the purpose of ascertaining proficiency as a prerequisite to qualification or designation.

CK - Check. Any event designed to objectively measure/evaluate aircrew performance according to established NATOPS evaluations.

Core Capability - Unit core capability is a standardized measure of performance that a MAGTF commander should expect during sustained contingency/combat operations. Combat flight squadrons define core capability in terms of a daily, sustained sortie rate in support of the METL; other aviation units define core capability in terms of daily, sustained operational coverage in support of the METL. The core capability for each Type/Model/Series (T/M/S) squadron and agency is described in individual T&R manuals.

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, core capability statement, Core Model Minimum Requirements, and supporting tables such as METL/Core Skill matrix and qualification/designation tables.

Core Competency Model - The foundation of every T&R program, the core competency model, or “Core Model” establishes the basic structure around which each T&R program is created. The core competency model, contained in the opening chapters of each specific T&R manual, links community Mission Statements, Mission Essential Task Lists, Core Capability Statements, Core Skill Proficiency Requirements and Combat Leadership Matrices.

Core Competency Resource Model (CCRM) - The Marine Corps Unit Core Competency Resource Model directly links the T&R program with USMC flying hour and readiness reporting (SORTS) programs. The CCRM, accredited by the Commandant of the Marine Corps, generates annual sortie and flight hour requirements (broken down by training, support and operational category) for maintaining selected T-Level readiness ratings for each tactical aviation squadron.

Core Model Minimum Requirement (CMMR) – The Community CMMR reflects the ability of a unit to perform its core capability. Unit CMMR is defined in terms of aggregate unit crew Core Skill Proficiency (CSP) and leadership requirements. Unit CMMR is reflected in core model tables (Minimum Unit Core Skill Proficiency Requirements, Minimum Combat Leadership Requirements).

Core Skill - Core skills are specific mission-related task areas that support a community’s METL. Core skills consist of like T&R events and are normally delineated as T&R stage titles. Core skills are introduced in FRS and entry-level school training. Core skill training continues in a tiered approach through all phases of a T&R syllabus.

Collective Training Standards (CTS) - Criteria that specify mission and functional area unit proficiency standards for combat, combat support, and combat service support units. They include tasks, conditions, standards, evaluator instructions, and key indicators. CTS are found within collective (unit) training events found in T&R manuals. CTS are built upon Individual Training Standards (ITS).

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).

CPL - Cargo and Passenger Loading. Any fixed wing logistics flight required to carry passengers and/or cargo.

Crew Resource Management - Replaces Aircrew Coordination Training (ACT) term.

CREWMEMBER - A collective term that applies to all categories of personnel who operate an aircraft/system.

CRP - Combat Readiness Percentage. The percentage of a specific tactical aircraft/MACCS syllabus in which personnel are “proficient.” Four basic categories divide CRP into a total percentage of “proficiency” personnel have demonstrated within their respective syllabi as shown below:

Core Skill Introduction	60 percent CRP
Core Skill Basic	75 percent CRP
Core Skill Advanced	95 percent CRP
Core Plus	l00 percent CRP

CQ - Carrier Qualification. Any flight designed to demonstrate the aircrew's ability to conduct shipboard landing operations day or night.

CST - Combined Strike Tactics. Tactical training sorties in which several aircraft types join in a combined mission: Alpha Strike, Helo Assault, etc.

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 CRP. 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 5.

C2W - Command and Control Warfare. The integrated use of operational security, military deception, psychological operations, electronic warfare, and physical destruction, mutually supported by intelligence to deny information to, influence, or destroy adversary command and control capabilities while protecting friendly command and control capabilities against such action.

DACM - Defensive Air Combat Maneuvering. The maneuvering of attack or utility helicopters in response to an airborne threat.

DACT - Dissimilar Air Combat Tactics. Tactical training conducted between dissimilar aircraft models.

DCM – Defensive Combat Maneuvers. Flights in the MV-22 syllabus including the defensive tactics versus a ground, R/W and F/W threat.

Demonstration - The description and performance of a particular maneuver by the instructor, observed by the PUI. The PUI is responsible for knowledge of the procedures prior to the demonstration of a required maneuver.

DES - Desert Operations. Any flight designed to train for operations in a desert environment.

DEFTAC - Defensive Tactics. Those aircraft maneuvers performed by aircraft possessing no offensive armament. Performed as last ditch tactics when efforts to escape detection have failed.

Designation – A designation is a status assigned to an individual based on leadership ability. A designation is a command specific, one-time occurrence and remains in effect until removed for cause. Specific designation requirements shall be delineated in individual T&R manuals. Commanders shall issue a designation letter to the individual upon the occasion of original designation, with appropriate copies, for inclusion in the NATOPS jacket and APR/MPR.

DM - Defensive Measures. Flights in assault support helicopters utilizing defensive tactics versus airborne or ground-based threats.

Discuss - An explanation of systems, procedures, or maneuvers during the brief, in-flight, or post-flight.

EA - Electronic Attack. Any flight that actively disrupts threat or simulated threat surveillance and or signal electronics.

EAF - Expeditionary Airfield. Any flight designed to demonstrate aircrew ability to conduct day or night field arrestments and short field take-offs.

ES - Electronic Support. Any flight designed to gather electronic signal emissions.

ESA – Emergency Safe Altitude. An altitude that provides a minimum of 1000 ft clearance above the highest obstacle that is within 25 nm either side of course line.

EP - Electronic Protection. Any flight designed to counter enemy electronic warfare techniques.

ESC - Escort. Any flight designed to escort fixed wing or assault support (Helo, KC-130) aircraft against simulated air or surface threats.

EVAL - Any flight designed to evaluate aircrew standardization that does not fit another category such as SARCK, HACCK, T2PCK, etc.

EVENT – See syllabus event.

EW - Electronic Warfare. Any flight flown on a tactical EW range; e.g., Fallon, Pinecastle, or a tactical EW environment; i.e., war at sea.

EXT - External. Any flight in which a helicopter externally suspends and transports weights, cargo, vehicles, or aircraft.

FA - Flight Attendant Training. Any flight designed to demonstrate flight attendant procedures.

FAC(A) - Forward Air Controller (Airborne). 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.

FAM - Familiarization. Any event in which aircrew/MACCS personnel gain basic knowledge of aircraft flight or system characteristics, limitations, emergency procedures, and crew position responsibilities.

FBO - Forward Based Operations. Any F/W operations designed to train aircrews in ski jump, road and grass T/O and landings. FBO does not include shipboard operations.

FCLP - Field Carrier Landing Practice. Any flight designed to prepare aircrews for operation in an EAF or carrier environment using an optical landing system and/or LSO/LSE control.

FORM - Formation. 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.

FRAG - Fragmentary Order Mission. Any flight in support of a designated unit for tasked airlift missions.

FSI – Formal Schools Instructor. An experienced METOC Analyst who has completed the required events in the METOC T&R Manual. The FSI is responsible for the introduction and training of core schools in the METOC Formal Schools environment. The FSI works and coordinates with other DOD components on METOC training syllabi and techniques of instruction.

FSQ – Forecast Support Qualification. An Apprentice METOC Analyst (AMA) who has complete the FSQ event of the METOC T&R and has exhibited technical abilities in basic forecasting functions. The AMA who has the FSQ qualification is responsible for generation of routine forecast products.

HA - Helicopter Attack. Any flight designed to teach the fundamentals of and/or develop proficiency in any aspect of helicopter attack.

HIE - Helicopter Insertion/Extraction. Any flight demonstrating the various insertion and extraction techniques employed by rotary-wing aircraft i.e. SPIE, FASTROPE, Rappelling.

INST - Instruments. Any flight involving the aircrew's ability to execute aircraft maneuvers under instrument conditions while complying with IFR procedures and using installed NAVAIDs.

INT - Internal. Any flight in which a helicopter internally carries cargo, equipment, or weights.

IUT - Instructor Under Training. Any event designed to train an individual as an instructor.

Individual Core Skill Proficiency (CSP) - Individual core skill proficiency is based on T&R event requirements an individual must initially complete, and T&R event requirements an individual must maintain proficiency in (per paragraph 700) for each core skill.

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.

JMA – Journeyman METOC Analyst. A Journeyman METOC Analyst is responsible for forecasting of METOC parameters and for assessment of impacts on operations by METOC parameters. The JMA is responsible to the Master METOC Analyst, METOC Chief and METOC Officer for the conduct of METOC operations on the METOC watch.

LAT - Low Altitude Tactics. 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 tactics below 500 ft AGL.

LFE - Large Force Exercise. A flight involving numerous aircraft integrated into a tactical training scenario.

LMA – Lead METOC Apprentice. An experienced Apprentice METOC Analyst who can govern and mentor junior Apprentice METOC Analysts in the performance of the duties is assigned this designation. The LMA is accountable to the Journeyman/Master METOC Analyst for the sensing and reporting of current weather parameters by the personnel on watch.

MAC - Minimum Altitude Capable. That altitude below comfort level at which the pilot is capable of performing terrain clearance tasks only.

MAI – METOC Analyst Instructor. An experienced Journeyman or Master METOC Analyst who has in-depth knowledge of METOC services, flight forecasting, METOC impact assessment and techniques of military instruction. The MAI is responsible for conducting and initial evaluation the training events per the METOC T&R Manual.

MAT - Mountain Area Training. Any flight in which the aircrew perform low/pattern work in mountains, valleys, or canyons.

MCD – METOC Chief Designation. The Master Chief is an experienced METOC Analyst who has comprehensive knowledge of all aspects of operational METOC operations, administrative functions and METOC support coordination. The Master Chief is responsible to the METOC Officer or commanding officer on all METOC support operations.

MEDEVAC - Medical Evacuation. Any flight designed to demonstrate medical evacuation procedures.

Minimum Altitude - The lowest authorized altitude for a specific syllabus requirement.

MMA – Master METOC Analyst. The Master METOC Analyst is an experienced METOC Analyst who has comprehensive knowledge of all aspects of operational METOC operations. The Master METOC Analyst may be required to coordinate and implement METOC support in support of operations in the absence of the METOC Chief and METOC Officer.

MPR - MACCS Performance Record. The battalion training officer maintains the MPR per Appendix E of this Manual.

MSA – Minimum Safe Altitude. An altitude that provides a minimum of 500 feet clearance above the highest obstacle that is within 5 NM either side of course line.

MSL (versus MSL, Mean Sea Level) – METOC Section Lead. An experienced Journeyman or Master METOC Analyst whose technical expertise and professionalism are responsible for the safe conduct of all METOC operations during a section or watch. The MSL is responsible to the METOC Chief and/or METOC Officer in the conduct of his duties.

MSEL - Master Scenario Events List. A master list of milestones and/or significant events in an exercise.

NAPP - Naval Aviator Production Process. A CNO-initiated program to focus on improving the process of producing first tour NAs and NFOs. See paragraph 801.

NATOPS Jacket - The squadron NATOPS Officer maintains the aircrew NATOPS Flight Personnel Training/Qualification Jacket (NATOPS jacket) per OPNAVINST 3710.7.

NAV - Navigation. Any flight designated to develop aircrew ability to plan and execute navigation using aeronautical charts, visual checkpoints, RADAR, or electronic navigational systems.

NBC - Nuclear, Biological, and Chemical. Any flight designed to train for operations in an NBC environment.

NVD - Night Vision Device. An electro-optical device used to provide a visible image using the electromagnetic energy available at night.

NVG - Night Vision Goggles. Any day or night flight where helmet mounted, night imaging device flying techniques receive priority instruction.

OAAW Manager - Offensive Anti-Air Warfare Manager. Aircrew responsible for coordinating the attack of surface to air threats systems in support of close air support and armed reconnaissance mission.

OBS - Observer. An individual who has satisfied the aero medical and applicable T&R requirements and is designated in writing by the commanding officer (see definition of Flight Crew in OPNAVINST 3710.7).

OPS - Operations Training. Any syllabus event in MACCS T&R Manuals in which MACCS personnel develop proficiency in operating air control equipment in conjunction with external assets; i.e., aircraft, other agencies, etc.

Phase – A group of events delineating one of four T&R syllabus tiers (Core skill introduction, core skill basic, core skill advanced, core plus).

Point Defense - Actions to protect a defended vital area against an air-to-surface or surface-to-surface threat.

Practice - The performance of a maneuver or procedure by the PUI that may have been previously introduced in order to attain a specified level of performance.

Prerequisite – See syllabus event.

Proficiency - Proficiency is a measure of achievement of a specific skill. Refly factors establish the maximum time between demonstration of those particular skills. CRP is a measurement of "demonstrated proficiency." If an aircrew member exceeds the refly factor for a particular event, the individual loses CRP for that particular event. To regain proficiency, an individual shall complete the delinquent event with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with an instructor from a like unit. If this is not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another aircraft commander or as designated by his commanding officer.

PUI – Pilot Under Instruction.

QUAL – Qualification. A qualification is a status assigned to personnel based on demonstration of proficiency in a specific skill. Specific criteria to achieve qualifications shall be delineated in individual T&R manuals. Upon successful completion of qualification criteria, commanding officers may issue an appropriate qualification letter. Aircrew do not lose a qualification as a function of refly factor for individual events. Loss of proficiency (delinquent refly factor) for all associated qualification events (events with measurable refly factor; "*" refly factor events excluded) constitutes loss of that qualification. Re-qualification requires demonstration of proficiency. Specific re-qualification criteria shall be delineated in individual T&R manuals.

RGR - Rapid Ground Refueling. Ground method of providing fuel to an aircraft utilizing another aircraft in an austere location.

RECON - Reconnaissance. Any flight that includes the use of fixed-optical or electronic sensors.

Refly Factor - The maximum time between syllabus events requiring a specific skill wherein the unit can expect the average aircrew/MACCS personnel to maintain their acquired level of proficiency.

Review - Demonstrated proficiency of a maneuver by the PUI.

RQD - Requirements, Qualifications, Designations. Normally tracking codes that facilitate management of unit requirements/qualifications/designations.

SAR - Search and Rescue. Any flight designed to demonstrate search and rescue procedures and techniques.

SCAR - Strike Coordination and Reconnaissance. Any tasks conducted airborne and facilitating the coordination of strike aircraft through a TAI in a DAS scenario by providing targeting and threat information, and reconnaissance. Any OAS aircraft is capable of providing SCAR.

SIM - Simulator Training. Any syllabus requirement within a T&R manual where personnel develop proficiency through simulated training requiring no asset support; i.e., aircraft, other agencies, etc. external to the parent unit.

Stage – A group of similar T&R events (normally like Core Skill events) in numerical sequence within a Phase.

SWD – Special/Specific Weapons Delivery. Any flight designed to introduce or expose aircrews to the tactical employment of live weapons to include AIM-7, AIM-9, AIM-120, air-to-air guns, Hellfire, Stinger, TOW, JDAM, JSOW, Maverick, etc.

Syllabus Event - A flight or ground training evolution required by an individual syllabus.

a. Event Status. An Incomplete status indicates an event that has never been successfully completed or updated via T/C stage completion (no proficiency date). A proficient status indicates that the number of days between the proficiency date and the reference date must be equal to or less than the refly interval. A delinquent status indicates that the number of days between the proficiency date and the reference date (usually "today") exceeds the refly interval.

b. Delinquent Syllabus Event. An event is delinquent when the aircrew member exceeds the "refly factor" for that particular event. The aircrew may update the delinquent event by reflying that event with a current and proficient crewman/flight lead. Delinquent events are not updated through chaining.

c. Deferred Syllabus Event. An event that is delayed in the normal training progression cycle due to a lack of a logistic support or training assets. See paragraph 305 for deferred event policy detail. See paragraph 600 for Core Skill Introduction training deferral policy detail.

d. Waived Syllabus Event. An event that does not need to be completed by an experienced individual. See paragraph 305 for waived event policy detail. See paragraph 600 for Core Skill Introduction training Waiver policy detail.

e. Event prerequisite. A requirement that must be successfully completed prior to commencing training in that syllabus event. Event prerequisites shall not be omitted or skipped (except per paragraph 305).

SYS - System Training. Any syllabus event requiring MACCS personnel to gain knowledge in the hardware/equipment/system that they operate.

T&R Deviation – Divergence from accepted T&R policy. CG TECOM (ATB) is the approval authority for deviations from T&R policy.

TAC - Tactics. A syllabus flight including the conduct of a tactical mission using a defined threat scenario.

TAC(A) - Tactical Air Coordinator (Airborne). A flight designed to control and/or coordinate supporting arms and aircraft in the same battle area; requires TAC(A) to maintain strict coordination procedures with controlling agencies and supported units.

TERF - Terrain Flight. 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:

a. 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).

b. 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.

c. 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.

Tier - A level of training (see Phase).

TLZ - Temporary Landing Zone. A natural, semi-prepared or prefabricated strip with surface, slope, dimensions, load-bearing capacity, and clearance from obstructions sufficient to allow suitably trained crews to land and take off safely in good weather conditions.

Unit Core Skill Proficiency (CSP) - Unit CSP is defined in terms of numbers of individuals or crews required to be proficient in each core skill.

VIP - Very Important Person Mission. Any flight designed to demonstrate procedures for carrying VIP passengers.

VLAT – Tiltrotor Low Altitude Training. Any flight designed to develop proficiency in the tiltrotor low altitude environment. The term VLAT shall apply to tiltrotor operations conducted during day or night VMC where the briefed intent is to conduct low altitude training below 300 ft AGL.

VR - Visual Reconnaissance. Any VMC flight designed to locate targets, assess topography, or assess the enemy order of battle.

APPENDIX C

LIST OF ACRONYMS/CODE DESIGNATIONS

AA	Air-to-Air
AAA	Anti-Aircraft Artillery
AADC	Area Air Defense Commander
ACE	Aviation Combat Element
ACM	Air Combat Maneuvering
ACMI	Air Combat Maneuvering Instructor
ACQ	Acquisition
ACTI	Air Combat Tactics Instructor
ACWD	Advanced Conventional Weapons Delivery
AD	Aerial Delivery
ADC	Air Defense Coordinator
ADP	Aeronautical Designated Personnel
ADS	Aerial Delivery System
Adv	Advanced
AG	Air-to-Ground (Fixed wing)
AG	Aerial Gunnery (Rotary Wing)
AGO	Aerial Gunner/Observer
AGL	Above Ground Level
AHC	Attack Helicopter Commander
AIC	Air Intercept Controller
AIE	Alternate Insertion/Extraction
AMA	Apprentice METOC Analyst Qualified
AMC	Air Mission Commander
AIM	Air Intercept Missile
AMTI	Airborne Moving Target Indicator
AOA	Angle of Attack
APR	Aircrew Performance Record
APAM	Antipersonnel Anti-mechanized
APR	Aircrew Performance Record
AR	Aerial Refueling
ARIP	Aerial Refueling Initial Point
ARBS	Angle Rate Bombing System
ARCP	Air Refueling Control Point
ARNAV	Aerial Refueling Navigation
A/S	Aircraft preferred, simulator optional
ASC	Assault Support Coordinator or Air Support Coordinator (TACC)
ASE	Aircraft Survivability Equipment
ASM	Air-to-Surface Missile
ASR	Authorized Strength Report
ASTO	Advanced Systems Tactics Ordnance
ATQ	Adversary Tactics Qualified
ATC	Air Traffic Control
ATI	Adversary Tactics Instructor
ATM	Air Tasking Message
ATO	Air Tasking Order
ATRIMS	Aviation Training and Readiness Information Management System
ATSS	Aviation Training Support System
AV	Avionics
AVO	Advanced Visual Ordnance
AWACS	Airborne Warning and Control System
AWCAS	All Weather Close Air Support
AWI	All Weather Intercept
AWT	Artic Weather Training
B	Basic
BAM	Basic Aircraft Maneuvering
BARCAP	Barrier Combat Air Patrol

BARO	Barometric Bombing Mode
BCWD	Basic Conventional Weapons Delivery
BDA	Bomb Damage Assessment
BDU	Bomb Dummy Unit
BI	Battlefield Illumination
BIT	Built in Test
BMNT	Beginning Morning Nautical Twilight
BVR	Beyond Visual Range
C2W	Command and Control Warfare
C	Conversion
CAL	Confined Area Landing
CAP	Combat Air Patrol
CAS	Close Air Support
CASEVAC	Casualty Evacuation
CATM	Captive Air Training Missile
CC	Crew Chief
CCDACTI	Crew Chief Defensive Air Combat Maneuvering Instructor
CCDCMI	Crew Chief Defensive Combat Maneuvers Instructor
CCI	Crew Chief Instructor
CCNSI	Crew Chief Night Systems Instructor
CCNSSI	Crew Chief Night Systems SAR Instructor
CCIP	Continuously Computed Impact Point
CCRM	Core Competency Resource Model
CCTERFI	Crew Chief Terrain Flight Instructor
CCUI	Crew Chief Under Instruction
CDS	Container Delivery System
CEP	Circular Error Probable
CK or X	Check Flight
CL	Comfort Level
CMMR	Core Model Minimum Requirements
COL	Combat Offload
comm-out/comm-in	no communication/with communication
COMNAV or CNI	Communication, Navigation, Identification
COMOPTEVFOR	Commander Operational Test and Evaluation Forces
COMSEC	Communications Security
CONLABS	Conventional Low Altitude Bombing System
COT	Cockpit Orientation Trainer
CP	Copilot
CPT	Cockpit Procedures Trainer
CQ	Carrier Qualification
CRM	Crew Resource Management
CRP	Combat Readiness Percentage
CRRC	Combat Rubber Raiding Craft
CRT	Combat Rated Thrust
CST	Coordinated Strike Tactics
CTC	Climb to Cope
CTO	Conventional Takeoff
CTOL	Conventional Takeoff/Landing
CTS	Collective Training Standards
CV	Fixed Wing Aircraft Carrier
D	Day Only
DACM	Defensive Air Combat Maneuvering (RW)
DACT	Dissimilar Air Combat Tactics
DAS	Deep Air Support
DASC	Direct Air Support Center
DASC(A)	Direct Air Support Center Airborne
DCA	Defensive Counter Air
DACMI	Defensive Air Combat Maneuvering Instructor
DCM	Defensive Combat Maneuvers
DCMI	Defensive Combat Maneuvers Instructor
DECM	Defensive Electronic Countermeasures
DEFTAC	Defensive Tactics

DEFTACI	Defensive Tactics Instructor
DES	Desert Operations
DIFDEN	Duty in a Flying Status Flight Activity Denied
DIFOP	Duty in a Flying Status Involving Operational or Training Flights
DIV LDR	Division Leader
DL	Data Link
DM	Defensive Measures
DMI	Defensive Measures Instructor
DMT	Dual Mode Tracker
DR	Dead Reckoning
DWEST	Deep Water Environmental Survival Training
E	Evaluated
EA	Electronic Attack
EAF	Expeditionary Airfield
ECMO	Electronic Countermeasures Officer
EENT	End of Evening Nautical Twilight
EMCON	Emission Control
EP	Electronic Protection
ER/DL	Extended Range/Data Link
ERO	Engine Running On/Off Load
ES	Electronic Support
ESA	Emergency Safe Altitude
ESC	Escort
ESIM	Emergency Simulator
EVM	Evasive Maneuvering
EW	Electronic Warfare
EW/C	Early Warning and Control
EWCAS	Electronic Warfare (supported) Close Air Support
EWCT	Early Warning Control Team
EWSIM	Electronic Warfare Simulator
EXT	External
EXTWT	External Weights
FA	Flight Attendant
FAC	Forward Air Controller
FAC(A)	Forward Air Controller Airborne
FAE	Fuel Air Explosive
FAI	Flight Attendant Instructor
FAM	Familiarization
FAUI	Flight Attendant Under Instruction
FCF	Functional Check Flight
FCLP	Field Carrier Landing Practice
FCP	Functional Check Pilot
FE	Flight Engineer
FEI	Flight Engineer Instructor
FI	Fighter Intercept
FIREX	Firing Exercise
FLIP	Flight Information Publication
FLIR	Forward Looking Infrared
FM	Flight Mechanic
FORM	Formation
FRS	Fleet Readiness Squadron
FS	Front Seat
FSI	Forecast Support Qualified
FSQ	Forecast Support Qualified
FW	Fixed Wing
FWF	Fixed Wing Fragger (TACC)
FXP	Fleet Exercise Procedure
GCA	Ground Controlled Approach
GCI	Ground Controlled Intercept
GPS	Global Positioning System

H2P	Helicopter Second Pilot
HAC	Helicopter Aircraft Commander
HAHO	High Altitude High Opening
HALO	High Altitude Low Opening
HAR	Helicopter Aerial Refueling
HARM	High Speed Anti-radiation Missile
HCPT/HELO	Helicopter
HE	High Explosive or Heavy Equipment
HIE	Helicopter Insertion/Extraction
HIGE	Hover In Ground Effect
HILOFT	High Angle Loft Weapons Delivery
HOGE	Hover Out of Ground Effect
HOTAS	Hands on Throttle and Stick
HUD	Heads Up Display
I	Instructor
ICLS	Instrument Carrier Landing System
ICO	Interface Coordination Officer (TACC)
ICP	Instrument Check Pilot
ICS	Intercommunications
IFMT	In-flight Medical Technician
IFR	Instrument Flight Rules
ILM	Instructor Loadmaster
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
IMN	Indicated MACH Number
IN	Instructor NFO
INS	Inertial Navigation System
INST	Instruments
INT	Internal
INTWT	Internal Weights
INUT	Instructor NFO Under Training
IP	Instructor Pilot
IR	Infrared
IRA	Instructor Rescue Aircrew
IRCM	Infrared Countermeasures
ISD	Instructional Systems Development
ITO	Instrument Takeoff
IUT	Instructor Under Training
JATO	Jet Assisted Takeoff
JINTACS	Joint Interoperability Tactical Air Command System
JMA	Journeyman METOC Analyst Qualified
JMEMS	Joint Munitions Effectiveness Manual Series
KIO	Knock It Off
LAAD	Low Altitude Air Defense
LAAM	Light Anti-Aircraft Missile
LAT	Low Altitude Tactics
LATI	Low Altitude Tactics Instructor
LGB	Laser Guided Bomb
LHA	Landing Helicopter Amphibious Ship (Helicopter/VSTOL Carrier)
LHD	Landing Helicopter Ship (Helicopter/VSTOL Carrier)
LM	Loadmaster
LMA	Lead METOC Analyst Designated
LMUI	Loadmaster Under Instruction
LPH	Landing Platform Helicopter Ship (Helicopter/VSTOL Carrier)
LSE	Landing Signal Enlisted
LSO	Landing Signal Officer
LSS	Landing Site Supervisor
LST	Laser Spot Tracker

LUX	A measure of luminance
MAC	Minimum Altitude Capable
MACS	Marine Air Control Squadron
MACCS	Marine Air Command and Control System
MAG	Magnetic Degrees
MAI	METOC Analyst Instructor Qualified
MAT	Mountain Area Training
MATCALS	Marine Air Traffic Control and Landing System
MC	Missile Controller
MC	Mission Commander
MCAD	Marine Corps Administrative Detachment
MCCRES	Marine Corps Combat Readiness Evaluation System
MCD	METOC Chief Designated
MIN	Minimum
MINCOM	Minimum Communication
MITAC	Map Interpretation and Terrain Analysis Course
MMA	Master METOC Analyst Qualified
MMD	Moving Map Display
MOCA	Minimum Obstruction Clearance Altitude
MPD	Multipurpose Display
MPR	MACCS Performance Record
MPS	Mission Performance Standards
MRAALS	Marine Remote Area Approach and Landing System
MRE	Mean Range Error
MRP	Mission Readiness Percentage
MSA	Minimum Safe Altitude
MSL	Mean Sea Level or METOC Section Lead Designated
MTR	Military Training Route
N	Night Only
NAC	Naval Avionics Center
NAI	Named Area of Interest
NATOPS	Naval Air Training and Operating Procedures Standardization
NAV	Navigation or Navigator
NAVI	Navigator Instructor
NAVFLIRS	Naval Flight Record Subsystem
NBC	Nuclear, Biological, and Chemical
NFWS	Navy Fighter Weapons School
NFO	Naval Flight Officer
NSFS	Naval Surface Fire Support
NM	Nautical Mile
NOE	Nap of the Earth
NSI	Night Systems Instructor
NSFI	Night Systems FAM Instructor
NSQ	Night Systems Qualified
NSSI	Night Systems SAR Instructor
NVD	Night Vision Device
NVG	Night Vision Goggles
NVGCQ	Night Vision Goggle Carrier Qualification
NVGFCLP	Night Vision Goggle Field Carrier Landing Practice
O/W	Over Water
OAAW	Offensive Anti-Air Warfare
OAP	Offset-Aimpoint
OAS	Offensive Air Support
OCA	Offensive Counter Air
OCE	Officer Conducting Exercise
OFT	Operational Flight Trainer
OPSEC	Operational Security
P	Pilot
PA	Precautionary Approach
PMCF	Post Maintenance Check Flight

PNAV	Proficiency Navigation
PNB	Power Nozzle Braking
POI	Program of Instruction
PQM	Pilot Qualified In-model
PTT	Partial Task Trainer
PUI	Pilot Under Instruction
PUP	Pull Up Point
QO	Qualified Observer
QOUI	Qualified Observer Under Instruction
R	Refresher Aircrew
RA	Rescue Aircrew
RAI	Rescue Aircrew Instructor
RAUI	Rescue Aircrew Under Instruction
RAC	Replacement Aircrew or Refueling Area Commander or Rescue Aircrew
RADAP	RADAR Approach
RADC	Regional Air Defense Commander
RADCON	Radiation Control
RADNAV	RADAR Navigation
RC	Rendezvous Controller
RCB	RADAR Controlled Bombing
RE	RAC Equivalent
RECON	Reconnaissance
RGR	Rapid Ground Refueling
RIO	RADAR Intercept Officer
RNO	Radio Net Operator
RO	RADAR Operator
ROC	Rules of Conduct
ROE	Rules of Engagement
RPM	Revolutions Per Minute
RQD	Requirements, Qualifications, Designations
RS	Rear Seat
RTI	RADAR Target Identification
RTO	Range Training Officer
RVL	Rolling Vertical Landing
RVTO	Rolling Vertical Takeoff
RVTOL	Rolling Vertical Takeoff/Landing
RW	Rotary Wing
RWDACM	Rotary Wing Defensive Air Combat Maneuvering
RWF	Rotary Wing Fragger (TACC)
RWS	Range While Search
S	Simulator
S/A	Simulator preferred, aircraft optional
SAC	Supporting Arms Coordination/Senior Air Coordinator
SAD	Senior Air Director
SADC	Sector Air Defense Commander
SADF	Sector Air Defense Facility
SAM	Surface to Air Missile
SAR	Search and Rescue
SARMT	SAR Medical Technican
SC	Senior Controller (ATC)
SCAR	Strike Coordinator and Reconnaissance
SERE	Survival, Evasion, Resistance, Escape
SID	Standard Instrument Departure
SID	Surveillance Identification Director (TAOC)
SLR	Side Looking RADAR
SLT	Simulated Laser Target
SLUT	Section Leader Under Training
SME	Subject Matter Expert
SO	Surveillance Operator
SOP	Standing Operating Procedure

SSSC	Surface, Subsurface, Surveillance, and Control
STD	Senior Traffic Director
STOL	Short Takeoff/Landing
SV	Simulator Visual
SWD	Special/Specific Weapons Delivery
SWD	Senior Weapons Director (TAOC)
SWO	Senior Watch Officer (TACC, DASC)
SYSNAV	System Navigation
SYSTAC	System Tactics
T	Transition
T2P	Transport Second Pilot or Tiltrotor Second Pilot
T3P	Transport Third Pilot
TAD	Tactical Air Director
TAI	Target Area of Interest
TAC	Tactics or Tiltrotor Aircraft Commander
TAC(A)	Tactical Air Coordinator (Airborne)
TACC	Tactical Air Command Center
TACP	Tactical Air Control Party
TACTS	Tactical Aircrew Combat Training System
TAOC	Tactical Air Operations Center
TATC	Tactical Air Traffic Controller
TAR	Tactical Aircraft Request
TARCAP	Target Combat Air Patrol
TC	Terrain Clearance
TCA	Track Crossing Angle
TCWD	Tactical Conventional Weapons Delivery
TEMP	Temperature
TERF	Terrain Flight
TLZ	Temporary Landing Zone
T/M/S	Type Model Series
TO	Tactical Officer (HAWK)
TOT	Time on Target
TPC	Transport Plane Commander
TR	Training Rules
TTT	Time to Target
TWS	Track While Scan
UFC	Up-Front Control
UHC	Utility Helicopter Commander
UTIL	Utility
VAD	Vital Area Defense
VDI	Visual Display Indicator
VFR	Visual Flight Rules
VID	Visual Identification
VL	Vertical Landing
VLAT	Tiltrotor Low Altitude Training
VMC	Visual Meteorological Conditions
VNSL	Variable Nozzle Slow Landing
VR	Visual Reconnaissance
VS	Velocity Search
VSTOL	Vertical Short Takeoff/Landing
VTO	Vertical Takeoff
VTR	Video Tape Recorder
W	Waived
WEO	Weapons Employment Officer
WST	Weapons System Trainer
WTACI	Weapons and Tactics Aircrew Instructor
WTI	Weapons and Tactics Instructor
WTT	Weapons Tactics Trainer

( ) Optional Condition

[ ] Minimum

APPENDIX D

T&R CHANGES

1. SYLLABUS SPONSOR. A syllabus sponsor is a unit that coordinates T&R changes. Syllabus sponsors should maintain close liaison with community units, tactical squadrons and MAWTS-l. CG TECOM (ATB) generally assigns sponsorship to MAWTS-1 or a training unit, but may designate a unit from the operating forces or supporting establishment for certain aircraft/systems. The following table contains a list of aviation T&R syllabus sponsors:

T&R MANUAL	COMMUNITY	SPONSOR
MCO P3500.14	Aviation T&R Program	CG TECOM (ATB)
MCO P3500.44	AV-8B	MAWTS-1
MCO P3500.45	EA-6B	MAWTS-1
MCO 3500.46	F/A-18A/C/D	MAWTS-1
MCO P3500.47	KC-130	MAWTS-1
MCO P3500.48	AH-1	MAWTS-1
MCO P3500.49	UH-1	MAWTS-1
MCO P3500.50	CH-46	MAWTS-1
MCO P3500.51	CH-53	MAWTS-1
MCO P3500.52	MV-22	VMMT-204
MCO P3500.53	TACC	MAWTS-1
MCO P3500.54	TAOC	MAWTS-1
MCO P3500.55	MATC Det	MAWTS-1
MCO P3500.56	DASC	MAWTS-1
MCO P3500.57	LAAD	MAWTS-1
MCO P3500.59	C-9	VMR-1, MCAS Cherry Point

MCO P3500.60	UC-12	VMR-1, MCAS Cherry Point
MCO P3500.61	HH-46 (SAR)	VMR-1, MCAS Cherry Point
MCO P3500.62	HH-1N (SAR)	H&HS SAR, MCAS Yuma
MCO P3500.63	UC-35	MASD New Orleans
MCO P3500.64	C-20	MCAF Kaneohe Bay, HI
MCO P3500.65	F-5E	VMFT-401
MCO P3500.66	METOC	MAWTS-1
MCO P3500.67	Airfield Emergency Services	EAF - NTTC MATSG (EAF) Pensacola, FL ARFF - DOD F&ES, San Angelo, TX ESO - MAWTS-1, MCAS Yuma, AZ
MCO P3500.37	TACP	EWTG PAC, Coronado, CA
MCO P3500.71	Aviation Operations Specialist	AOS, NATSS-1 NAS Meridian, MS
MCO P3500.73	KC-130J	MAWTS-1

2. T&R CHANGES

a. T&R Reviews. A T&R review is a forum to routinely review and comprehensively revise a T&R manual. T&R reviews are normally conducted via conference and produce a new version of the corresponding T&R manual (e.g. MCO P3500.XX"*B*"). T&R reviews may be held via correspondence with CG TECOM (ATB) approval. T&R reviews will normally convene on a triennial schedule. However, T&R reviews may be convened as appropriate or when higher headquarters directs.

b. Interim T&R changes. An interim T&R change is a change to an existing T&R effected between T&R reviews. T&R interim changes are normally done via correspondence and produce formal changes to existing T&R manuals (e.g. MCO P3500.XX, "*Ch 1*").

3. T&R REVIEW PRE-CONFERENCE PROCEDURES

a. Action

(1) Syllabus Sponsor. The syllabus sponsor shall coordinate with CG TECOM (ATB) to establish a T&R conference date and prepare the initial convening message to the appropriate commands employing the aircraft/system with an information copy to CMC (DC AVN) and MAWTS-l. CG TECOM (ATB) or the syllabus sponsor shall release this message 90 days before the proposed conference date. This message shall include the conference convening location/date, announce the purpose, and request interested units to submit agenda items. The syllabus sponsor shall consolidate agenda items and coordinate with CG TECOM (ATB) to release a conference agenda message to COMMARFORLANT, COMMARFORPAC, COMMARFORRES, Commanding Generals 1st, 2d, 3d and 4th MAW; COMMARCORBASESPAC; COMCABEAST and COMCABWEST (as appropriate); MAWTS-1, and all commands operating the model aircraft/system concerned.

(2) Fleet units. Authorized agencies shall nominate voting representatives to CG TECOM (ATB) via message NLT 45 days prior to the conference. Units shall submit agenda items to the syllabus sponsor (Item, Discussion, Recommendation format) via message NLT 45 days prior to the conference.

(3) CG TECOM (ATB). ATB shall provide guidance to syllabus sponsors. ATB shall ensure agenda items are distributed to voting members NLT 30 days prior to the subject conference.

b. Conference Funding. Organizations shall program funding requirements for conference attendance per MCO P7100.8 (Field Budget Guidance Manual).

4. T&R REVIEW CONFERENCE PROCEDURES

a. All conference attendees shall be familiar with agenda items prior to the conference. Voting members shall staff agenda items and have established command positions prior to attending a conference. As front-end agenda staffing facilitates the T&R update process, CG TECOM (ATB) discourages the syllabus sponsor from accepting additional agenda items during T&R conferences.

b. At the conference, attendees shall review the applicable T&R syllabi and provide change recommendations. SMEs shall format their respective T&R manual syllabi per the examples listed in Chapter 2. At a minimum, members of the conference shall complete the following tasks:

(1) Evaluate the syllabus for effectiveness.

(2) Propose changes to the syllabi in format and structure IAW Chapter 2. Review/validate/modify the following:

(a) Unit Core Competency Information (Mission Statement/METL/Core Capability/CMMR/Qualification & Designation tables/Training Progression Models)

(b) Programs of Instruction

(c) Syllabus/Phase/Stage information

(d) Syllabus events

(e) Training resource requirements

(f) Required T&R matrices/tables

(g) Syllabus event conversion matrix

(h) T&R syllabus evaluation forms

(3) Coordinate syllabus requirements with other aircraft/MACCS communities as required.

c. Conference attendees may recommend a specific position, but it is CG MCCDC, COMMARFORLANT, COMMARFORPAC, COMMARFORRES, Commanding Generals 1st, 2d, 3d and 4th MAW representatives who vote. This procedure ensures fair voting practices.

d. In addition to voting members above, COMCABEAST, COMCABWEST, and COMMARCORBASESJAPAN shall also provide voting members for Air Traffic Control (ATC), METOC, and Airfield Services T&R Manual reviews.

e. Action

(1) Syllabus Sponsor. The syllabus sponsor shall host the conference and ensure each attendee has access to a draft version of the T&R at the completion of the conference.

(2) CG TECOM (ATB). CG TECOM (ATB) shall provide conference guidance to the syllabus sponsor and facilitate T&R review procedures. ATB shall also ensure individual T&R manuals are developed/updated IAW the policies contained in this manual.

(3) CG TECOM ATB, COMMARFORLANT, COMMARFORPAC, COMARFORRES, Commanding Generals 1st, 2d, 3d and 4th MAW shall designate one voting member with experience in day-to-day supervision of aviation training programs to each conference. The conference attendees should include representatives from each squadron/battalion/MAG in the aircraft/MACCS community, MAWTS-1, and any other appropriate staff officers. CG TECOM (ATB) invites DC AVN, COMCABEAST, COMCABWEST, and COMMARCORBASESJAPAN to send representatives.

5. POST-CONFERENCE T&R REVIEW PROCEDURES

a. Action

(1) Syllabus Sponsor. The syllabus sponsor shall provide CG TECOM (ATB) a smooth, electronic version of the draft T&R manual within 10 working days of conference completion. The syllabus sponsor shall coordinate with CG TECOM (ATB) to prepare and release a conference report message to the MARFORs, within 10 working days of conference completion. Conference report messages shall delineate significant change recommendations and request MARFORs concur or non-concur with the draft T&R manual.

(2) MARFORS. MARFORLANT, MARFORPAC, and MARFORRES shall consolidate comments from subordinate units and concur or non-concur with justification to CG TECOM (ATB) via message within 45 days of the conference completion date.

(a) MARFOR/MAW command T&R review conference representatives shall brief their respective commands on post conference results.

(b) MAWs shall coordinate to resolve post conference contentious issues and forward positions on T&R issues to the respective MARFOR.

(c) Failure to respond to post conference deadlines indicates concurrence with T&R syllabus.

(3) CMC (DC AVN). CMC (DC AVN) shall review the proposed syllabus and concur or non-concur with justification to CG TECOM (ATB) via message NLT 90 days after conference completion.

(4) CG TECOM (ATB)

(a) CG TECOM (ATB) shall coordinate with the syllabus sponsor to prepare and release, within 10 working days, a conference report message. CG TECOM (ATB) shall ensure electronic versions of draft syllabi are made available to requesting agencies.

(b) CG TECOM (ATB) shall attach MARFOR comments and forward the draft document to CMC (DC AVN), NLT 60 days after conference completion. Unresolved issues shall be forwarded to CMC (DC AVN) for decision.

(c) Upon MARFOR and DC AVN concurrence, CG TECOM (ATB) shall release a message approving the T&R syllabus for interim use. CG TECOM (ATB) shall attach CMC and MARFOR comments and forward the document for CG MCCDC signature as an MCO. When the MCO is approved by CG MCCDC, CG TECOM (ATB) shall release a message announcing the Marine Corps Order has been approved (the MCO replaces the interim T&R syllabus). CG TECOM (ATB) shall coordinate with CMC to coordinate publication and distribution as appropriate.

6. T&R INTERIM CHANGES VIA CORRESPONDENCE

a. Organizations recommending T&R changes shall submit proposed changes in message format via the respective MAW to the syllabus sponsor. Correspondence must include rationale for the change.

b. The syllabus sponsor shall review and forward the proposed change recommendations to all squadrons/battalions in the aircraft/MACCS community, MAWTS-1 and CG TECOM (ATB) within 5 working days of receipt of the correspondence. If the proposed change requires coordination with another aircraft/MACCS community, the originating syllabus sponsor shall also submit it to the appropriate syllabus sponsor.

c. All community squadrons/battalions shall submit their comments and recommendations to the syllabus sponsor, via the respective parent command/MAW, within 30 days of the date of the syllabus sponsor's request for comments. MAWTS-1 shall submit directly to the syllabus sponsor if applicable. All comments and recommendations shall be submitted via message.

d. The syllabus sponsor shall consolidate comments and provide CG TECOM (ATB) a smooth draft of proposed T&R changes (include update of the T&R event conversion matrix if applicable). Syllabus sponsors shall provide CG TECOM (ATB) supporting message documentation from squadrons/battalions. Syllabus sponsors shall coordinate with CG TECOM (ATB) to release a T&R change recommendation message to the MARFORs and CMC (DC AVN) within 45 days of the date of the syllabus sponsor's request for comments.

e. CMC (DC AVN) and MARFORS shall review the proposed T&R change and concur or non-concur with justification to CG TECOM (ATB) within 30 days of the syllabus change recommendation message release. Unresolved issues shall be forwarded to CMC (DC AVN) for decision. Upon MARFOR and CMC concurrence, CG TECOM (ATB) shall release a message approving the T&R syllabus change for interim use.

f. CG TECOM (ATB) shall attach CMC and MARFOR comments and forward the change for CG MCCDC signature as an MCO change. When the MCO change is approved by CG MCCDC, CG TECOM (ATB) shall release a message announcing the MCO has been changed (the MCO change replaces the interim T&R syllabus change). CG TECOM (ATB) shall coordinate with CMC (ARD) to coordinate publication and distribution as appropriate.

7. 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. Units shall transition to the approved T&R syllabus as soon as practicable.

APPENDIX E

PERFORMANCE RECORDS

1. GENERAL. Establishment of standardized evaluation and training management tracking procedures provides commanders with an effective management tool for improving training and for monitoring the progress of their personnel.

2. T&R SYLLABUS RECORDS

a. Syllabus sponsors shall develop training/evaluation forms for documenting personnel performance. Instructors shall use common training forms encompassing the training objectives for that stage of training.

b. Personnel performance shall be evaluated and documented for all core skill introduction events. All initial events in the core skill basic, core skill advanced and core plus phases shall be documented using applicable training forms. An “E-coded” event is required to be documented again via training forms each time that event is completed.

c. Aviation Performance Record (APR). Aviation squadrons shall maintain Aircrew Training Forms (ATF) in the APR. The APR is a four-part folder that consists of the following sections with tabbed insertions:

(1) Section One, Initial Training. The squadron Aircrew Training Officer shall insert the CNATRA training review record in this section. This section will also contain a Privacy Act statement, record of audit, and procedures for closing out the APR when personnel transfer to other units. When an aircrew transfers from his present command where he was on DIFOP orders, the transferring unit shall accomplish the following:

(a) Screen all APR sections for content and accuracy.

(b) Update all T&R event data. Place a Transfer Data Sheet in section 3 of the APR.

(c) Include the most current T&R syllabus ATFs in section 3 of the APR.

(d) The commanding officer (or authorized agent) shall sign the audit page, certifying that the APR is complete and accurate.

(2) Section Two, FRS Training. The Aircrew Training Officer shall retain the ATFs for each flight in the core skill introduction phase of training in this section for 2 years. FRS units shall include a summary grade sheet showing the ADP's flight grades for each stage of the core skill introduction syllabus. The summary will use the same grade scale used at CNATRA and will include a record of deferred flights and commanding officer's comments on strengths and weaknesses of the ADP observed in training. For joint FRS units, the commanding officer of the respective MATSG will ensure the APR contains complete section 2 information prior to aircrew transfer.

(3) Section Three, Squadron Training. All ATFs for training conducted at the operational squadron shall be retained in this section. “E” coded flight training forms shall be permanently retained in this section to note aircrew performance trends. This section shall contain a record of all ground training courses completed as required in Chapter 3, and a record of aircraft weapons qualification (CEP), as applicable. All command qualification and designation letters shall be maintained in this section.

(4) Section Four, Individual Training Requirements/Miscellaneous. The Training Officer may use this section to retain any additional pertinent training

records; PFT, NBC, EST, individual weapons qualification, and shipboard fire fighting. This section is optional if records are retained elsewhere.

d. MACCS Performance Records. MACCS squadrons/battalions shall maintain Marine Controller Training Forms (MCTF) in the MACCS Performance Record (MPR). The MPR is a four-part folder that consists of the following sections with tabbed insertions:

(1) Section One, General Training. The squadron/battalion Training Officer shall insert a training review record in this section. This review record shall contain a listing of all schools/courses attended by the individual during their career; i.e., MCCES, NTTC, Command and Control Systems Course, and Weapons And Tactics Instructor Course. This section shall also contain a Privacy Act statement, record of audit, and procedures for closing out the MPR when personnel transfer. When individuals transfer from one operational unit to another, the new unit shall accomplish the following:

(a) Screen all MPR sections for content and accuracy.

(b) Place an ATRIMS Transfer Data Sheet in section 3 of the MPR.

(c) Include the most current T&R syllabus Marine Controller Training Forms in section 3 of the MPR.

(d) The commanding officer shall sign the audit page, certifying that the MPR is complete and accurate.

(2) Section Two, Core Skill Introduction Training. MCTFs of the core skill introduction phase of training shall be retained in this section for 2 years. A summary grade sheet showing the individual's event grades for the core skill introduction syllabus shall be included. The summary will use the same grade scale used at operational units and will include a record of deferred events and commanding officer's comments on strengths and weaknesses of the individual observed in training. For joint training units, the commanding officer of the respective Marine Corps Administrative Detachment (MCAD) will ensure the MPR contains complete section 2 information prior to MACCS personnel transfer. The unit training officer shall reconcile those core skill introduction events completed at non-Marine units with the T&R syllabus for the applicable MACCS unit. CG TECOM ATB directs commanding officers of the respective MCAD to ensure the senior Marine instructor within the joint training unit completes the syllabus reconciliation form prior to transfer of the individual.

(3) Section Three, Unit Training. All Marine controller training forms for training conducted at the operational unit shall be retained in this section. “E” coded event training forms shall be permanently retained in this section to note crewmember performance trends. This section shall also contain a record of all ground training courses completed as required in Chapter 3, and a record of weapons system/position qualifications, as applicable. A squadron/battalion may use a Qualification Bulletin to list current qualifications and designations.

(4) Section Four, Individual Training Requirements/Miscellaneous. The Training Officer may use this section to retain any additional pertinent training records; PFT, NBC, EST, individual weapons qualification, and shipboard fire fighting. This section is optional if records are retained elsewhere.

e. Unit responsible officers shall administratively handle the APR/MPR and secure it as the NATOPS Flight Personnel Training/Qualification Jacket.

f. Syllabus sponsors shall maintain copies of the evaluation/training forms and provide all like model squadrons/battalions with one master copy for their reproduction and use.

APPENDIX F

FORMAT FOR FRS CLASS DATE REPORT AND CAPACITY ESTIMATE

1. FRS/TMS. Identify FRS and specify type, model, and series (T/M/S) aircraft.

2. CLASS DATES. List class numbers and corresponding start dates. The FRS should plan class start dates for aircraft communities having standup ground school courses to allow sufficient student administrative/check-in time prior to commencement of training. For aircraft communities with Instructional Systems Development (ISD) programs, FRS squadrons should space class start dates to allow efficient use of training stations and necessary check-in time.

3. BASIC COMPUTATION FACTORS

(a) CG, MCCDC Estimate of Training Capacity (RE). Restate the training capacity in RAC equivalents (RE) which CG TECOM ATB provided estimate for the fiscal year.

(b) T&R Basic Syllabus Date/Flight Hours. State the date of the T&R syllabus used by the FRS in computations and corresponding student syllabus flight hours. If the figure differs from the CG TECOM ATB estimate, explain why in the remarks.

(c) T&R Basic Syllabus Instructor Flight Hours. Provide additional hours determined by the FRS that apply to flights requiring a separate instructor aircraft. If the figure differs from the CG TECOM ATB estimate, provide a list of the syllabus flights used in the remarks.

(d) Total T&R Basic Syllabus Hours. Sum of (b) and (c).

(e) Overhead Factor. Provide FRS determined overhead factor required to support syllabus training. If the overhead factor differs from the CG, MCCDC estimate, list the types of flights included in computing the overhead factor and show the contribution to student training of each.

(f) Total Flight Hours per RAC Equivalent. Sum of (d) and product of (d) and (e).

(g) RAC Factors for Pilot Syllabi. List the computed RAC factors for pilot T, C, R (to include Modified Refresher (MRF)), and IUT POIs. If a factor differs from the CG, MCCDC estimate, footnote and list T&R syllabus training codes used to compute the RAC factor.

(h) RAC Factors for NFO/NAC Syllabi. List the computed RAC factors for NFO/NAC B, T, C, R (to include Modified Refresher (MRF)), and IUT POIs. If a factor differs from the CG, MCCDC estimate, footnote and list T&R syllabus training codes used to compute the RAC factor. One determines NFO/NAC RAC factors by computing the basic pilot syllabus hours, using only those NFO/NAC syllabus flights that a student pilot cannot use concurrently.

(i) Average Aircraft Assigned. Provide anticipated average number of aircraft assigned during the next fiscal year. These projections do not include FREST aircraft. If the figure differs from the CG, MCCDC estimate, explain in the remarks.

(j) Planned Aircraft Utilization Factor. Show anticipated monthly aircraft utilization. If figure differs from the CG, MCCDC estimate by more than 5 percent, explain in the remarks.

4. COMPUTED TRAINING CAPACITY. Based on the above figures, provide FRS computed RAC Equivalent (RE) capacity.

5. OTHER TRAINING FACTORS. List any factors not covered which further limit or enhance the FRS's ability to achieve the CG, MCCDC estimated training capacity. Consider each as a separate factor as if the CG, MCCDC estimate specified all other resources and provide corresponding estimates of RAC equivalent capacities for each factor. Examples of limiting factors to be addressed in this paragraph include the following: flight hour funding, instructor/maintenance personnel availability/turnover, airfield repair, simulator problems, foreign training requirements, and non-syllabus tasking.

6. ESTIMATE OF ACTUAL TRAINING CAPACITY. Provide estimate of actual FRS training capacity. This figure will normally correspond to the computed training capacity in paragraph 3.d or, if additional limiting factors are present, the lowest of the capacities provided in paragraph 3.e. If the estimate of actual training capacity does not correspond to either of these, explain in the remarks.

7. PROJECTED AVERAGE INSTRUCTORS ASSIGNED. Show projected average instructors assigned to fly with the FRS for the next fiscal year. Include augments in proportion to their average availability to fly instructional flights on a daily basis.

8. PROJECTED IUT REQUIREMENT. Provide a projection of the requirement to train instructors during the next fiscal year.

9. REMARKS. As applicable.

10. POC. List point of contact with both DSN and commercial telephone numbers.

APPENDIX G

U.S. Department
of Transportation
Federal Aviation
Administration

800 Independence Ave., S.W.
Washington, D.C. 20591

APR 2003

Exemption No. 8028
Regulatory Docket No. FAA–2002–14119

Captain Keri May
Department of the Navy
Headquarters United States Marine Corps
2 Navy Annex
Washington, DC 20380–1775

Dear Captain May:

By undated letter filed December 12, 2002, and supplemental information dated February 10, 2003, you petitioned the Federal Aviation Administration (FAA) on behalf of the Department of the Navy, United States Marine Corps (USMC) for an extension of Exemption No. 5978, as amended. That exemption from § 91.209(a)(1) and (2) of Title 14, Code of Federal Regulations (14 CFR) expired January 31, 2003; therefore, the FAA is processing your request as a petition for a new exemption. The proposed exemption, if granted, would permit the USMC to conduct helicopter night-vision device flight training operations without lighted aircraft position lights.

The petitioner seeks relief from § 91.209(a)(1) and (2), which states, in pertinent part, that during periods of darkness no person may:

(a)(1 operate an aircraft unless it has lighted position lights; or

(a)(2) park or move an aircraft in, or in dangerous proximity to, a night flight operation area of an airport unless the aircraft—

(i) is clearly illuminated;

has lighted position lights; or

is in an area that is marked by obstruction lights

AFS–03–237–E

The FAA issued the USMC a grant of exemption in circumstances similar in all material respects to those presented in your current petition. In Grant of Exemption No. 5978, as amended (copy enclosed), the FAA found that a grant of exemption could provide a level of safety equivalent to that provided under the regulation. The FAA added that the USMC must (1) limit the operations conducted under the exemption to helicopters, (2) confine the operations to defined areas of low traffic density, (3) employ dedicated observers during these operations, and (4) notify other users of its planned activities and operating areas.

Having reviewed your reasons for requesting an exemption, I find that they do not differ materially from those presented by the USMC in the enclosed grant of exemption. In addition, I have determined that the reasons stated by the FAA for granting the enclosed exemption also apply to the situation you currently present.

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701 delegated to me by the Administrator, the Department of the Navy, United States Marine Corps, is granted an exemption from 14 CFR § 91.209(a)(1) and (2) to permit the USMC to conduct helicopter night-vision device flight training operations without lighted aircraft position lights, subject to the following conditions and limitations:

1 This exemption is limited to night-vision device flight training in USMC helicopters.

2. he USMC must conduct its airborne training operations—

   a. In a flight of two or more helicopters with a dedicated observer on duty aboard each helicopter. The flight must be conducted in a manner that enables the observers collectively to survey fully about the entire flight for nonparticipating aircraft; or

   b. While escorted by a properly lighted aircraft serving as an observation platform dedicated to surveillance for nonparticipating traffic.

3. The observers must provide the training flight with timely traffic notifications that relate the position and speed of the observed nonparticipating traffic.

4. When nonparticipating traffic is relevant, the pilot of each helicopter must light that aircraft's position lights and keep them lighted until the traffic is no longer a factor.

   The USMC must conduct its airborne training operations at or below 500 feet above the surface and must contain the operations within a prescribed and publicized area that—

a. Is simply defined (for example, the radius area of a point or location),

b. Is established in an area of low traffic density,

c. Is not within 4 nautical miles of any public use airport,

d. Does not infringe upon FAA-designated airspace areas, and

e. Has been coordinated with the appropriate FAA regional Air Traffic Division and Flight Standards Division offices.

6. During training in an urban environment that may require an altitude greater than 500 feet above the surface, the USMC must coordinate further with the appropriate FAA regional Air Traffic Division and Flight Standards Division offices.

7. The USMC may conduct ground operations in noncompliance with § 91.209(a)(2) at an airport or staging area where only USMC aircraft are involved and suitable alternative measures for collision avoidance are instituted.

8. Before conducting operations under this exemption, each pilot must be thoroughly familiarized with its provisions.

9. The USMC must disclose each approved training area to operators at all airports within 50 nautical miles of the area for 60 days before the area's initial use.

Please note that in an effort to allow the public to participate in tracking the FAA's rulemaking activities, we have transitioned to the Department of Transportation's online Docket Management System (DMS) at http://dms.dot.gov. This new docket system enables interested persons to submit requests to, view requests on, and download requests from the DMS to comply with 14 CFR § 11.63. Please submit future requests through the DMS.

This exemption terminates on April 30, 2005, unless sooner superseded or rescinded.

Sincerely,

Louis C. Cusimano
Acting Director, Flight Standards Service

Enclosure