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From: Commandant of the Marine Corps
To: Distribution List

Subj: AVIATION TRAINING AND READINESS (T&R) MANUAL, ADMINISTRATIVE (SHORT TITLE: T&R MANUAL, ADMINISTRATIVE)

Encl: (1) LOCATOR SHEET

1. Purpose. To revise training standards, regulations and policies regarding the training of Marine Corps aircrews and Command and Control personnel.

2. Cancellation. MCO P3500.14F.

3. Summary of Revision. Each chapter of this revision was substantially changed to incorporate the approved findings and recommendations of the T&R Manual, Administrative conference of June, 2001. This Order prescribes a unique template to provide the aviation commander with standardized programs of instruction. As such, this Order deviates from the Five Paragraph Order Format directed by MCO 5215.1H.

4. Reserve Applicability. This Manual is applicable to the Marine Corps Reserve.

5. Certification. Reviewed and approved this date.

EDWARD HANLON, JR.
By direction

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RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of Person Incorporated Change

CONTENTS

CHAPTER

1	CORE COMPETENCY
2	UNIT TRAINING
3	INDIVIDUAL TRAINING
4	TRAINING POLICIES
5	TRAINING RULES OF CONDUCT
6	MISSION AND INSTRUCTOR DESIGNATION/QUALIFICATIONS
7	SYLLABUS STRUCTURE
8	REPLACEMENT AIRCREW TRAINING
9	TRAINING MANAGEMENT

APPENDIX

A	T/M/S CORE COMPETENCIES
B	GLOSSARY OF TERMS
C	LIST OF ACRONYMS/CODE DESIGNATIONS
D	CONDUCT OF A CONFERENCE
E	AIRCREW/MACCS PERFORMANCE RECORDS
F	FORMAT FOR FRS CLASS DATE REPORT AND CAPACITY ESTIMATE
G	FORMAT FOR FRS MONTHLY REPLACEMENT AIRCREW STATUS REPORT
H	USMC FAA LETTERS OF EXEMPTION FOR NVD OPERATIONS

CHAPTER 1

CORE COMPETENCY

	PARAGRAPH	PAGE
PURPOSE.	100	1-3
CORE COMPETENCY.	101	1-4
CORE CAPABILITY.	102	1-4
CORE SKILLS.	103	1-4
COMBAT READINESS CYCLE.	104	1-5
APPLICABILITY	105	1-6
CHANGES TO THE MANUAL.	106	1-6

FIGURE

1-1	COMBAT READINESS CYCLE	1-6

CHAPTER 1

CORE COMPETENCY

100. PURPOSE

1. The purpose of the Marine Aviation Training and Readiness (T&R) program is to provide the commander with standardized programs of instruction for all aviation personnel. The goal is to develop unit WARFIGHTING capabilities, not to measure the proficiency of individuals. Syllabi are based on specific performance standards designed to ensure proficiency in core competencies.

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

ORDER	TITLE
MCO P3500.14	Administrative
Fixed Wing	
MCO 3500.44	AV-8B
MCO P3500.45	EA-6B
MCO P3500.46	F/A-18
MCO P3500.47	KC-130
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 Tactical Tiltrotor
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	Weather
MCO P3500.67	Airfield Emergency Services
MCO P3500.37	Tactical Air Control Party
MCO P3500.71	Aviation Operations Specialist

3. 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 any and all of its stated missions. The T&R program provides the fundamental tools for commanders to build and maintain unit combat readiness. The commander uses these tools to develop a training plan that supports the unit's stated mission.

101. CORE COMPETENCY

1. Core competency serves as the foundation of the T&R program. Core competencies are those core capabilities and skills that support the Mission Essential Task List (METL). Individual T&R manuals contain the unit level core competencies for each aircraft and MACCS agency in the Marine Corps. Marine Corps System Approach to Training (SAT) and Unit Training Management (UTM) Principles delineated in MCRP 3-0A and 3-0B shall be utilized when developing and updating T&R manuals.

2. The relative significance of core competencies is derived from a unit's mission statement and METL, its expected role as part of a Joint Task Force in real world contingencies, and the primary functions of its Type/Model/Series (T/M/S) aircraft or agency. These core competencies help to shape a unit's combat training program. Unit core capabilities reflect contingency/combat-sustained operations and directly relate to the type and number of sorties that will be flown. The core capability for each T/M/S squadron and agency is described in Appendix A and individual T&R manuals and denotes the minimum core requirements for a unit to be a core capable unit.

102. CORE CAPABILITY. Core capability is the minimum level of performance a unit must be capable of sustaining during extended contingency/combat operations.

103. CORE SKILLS. Core skills are individual skills that support a unit's METL. Core skills are general task areas, further subdivided into like events and are normally delineated as 100-300 level T&R stage titles. Individuals must gain and maintain proficiency in core skills in order to execute the unit core capability. Core skills are introduced in FRS and entry-level school training. Core skill

training continues in a tiered approach through the Full Combat Qualification phase. Each T&R syllabus shall emphasize proficiency in core skills while de-emphasizing those skills that have a high risk and low probability of execution. Skills that have a high risk/low probability of execution, or are theater specific, are considered “core plus” and shall be de-emphasized in individual syllabi. Mastery of core skills results in highly trained personnel who contribute to the unit's overall WARFIGHTING capability. Proficiency in core skills (200-300 level events) enables a combat unit to accomplish its assigned mission. Each community shall validate and update its core skills during each syllabus review. Note: The Aviation definition of core and core plus skills is different from that used in the Ground T&R Manuals. In the Ground T&R Manuals core skills are defined as Entry Level Skills through MOS producing schools. Core plus are those skills taught in the operating forces.

104. COMBAT READINESS CYCLE

1. The combat readiness cycle is a building block approach to training. It is based on core competencies. The combat readiness cycle progresses from individual T&R syllabus core skills training to a unit's potential participation in a contingency or actual combat. The combat readiness cycle (figure 1-1) demonstrates the relationship of unit METLs to unit combat readiness. Individual and unit core skill training leads to unit proficiency and the ability to accomplish the unit's stated mission. Unit proficiency is evaluated through the T&R program or the Marine Corps Combat Readiness Evaluation System (MCCRES). The end product of the combat readiness cycle is a unit that will perform the same core competencies in combat that it has trained to in peacetime.

2. A critical part of the combat readiness cycle is unit evaluation. T&R syllabus events relate to T&R Collective Training Standards (CTS) or MCCRES Mission Performance Standards (MPS). Unit Individual Training Standards (ITS) and CTS are inextricably linked and their revision cycles must coincide to provide an accurate measure of combat readiness. Unit ITS and CTS should be concurrently reviewed and updated to the greatest extent possible.

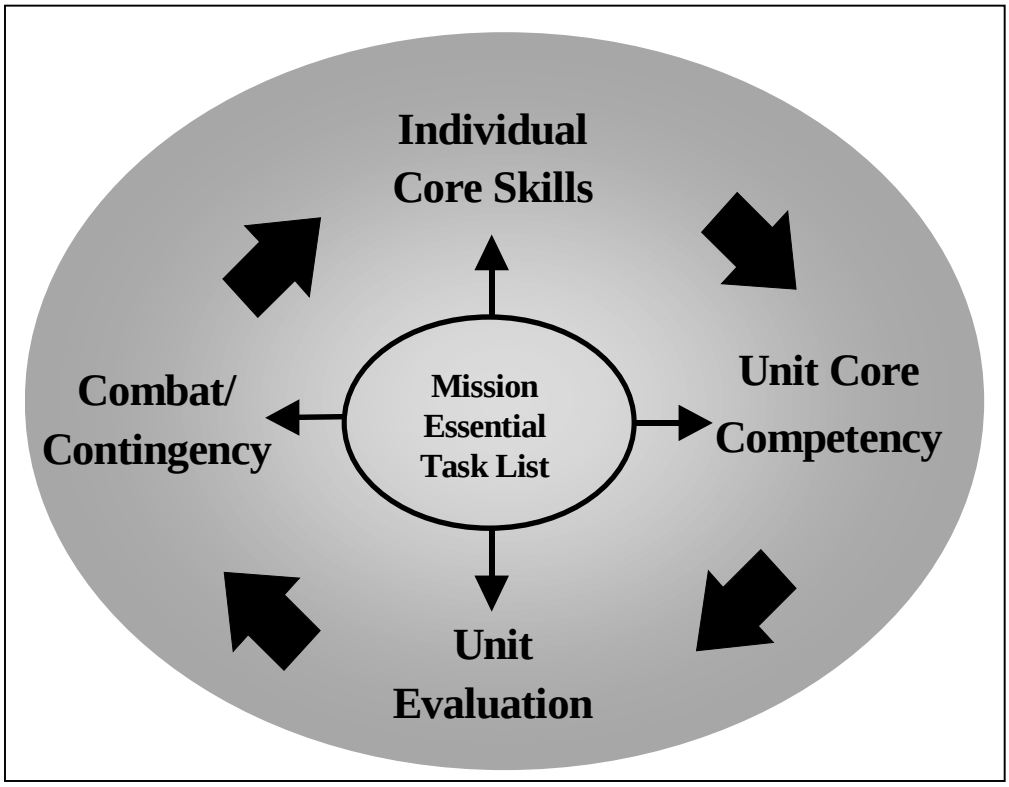

Figure 1-1.--Combat Readiness Cycle.

105. APPLICABILITY. The instructions and syllabi in this manual apply to both active and reserve Marine aviation and Marine air command and control units.

106. CHANGES TO THE MANUAL. Units may make proposed changes to this manual at a T&R Manual Syllabus Review conference or via correspondence (Appendix D).

CHAPTER 2

UNIT TRAINING

	PARAGRAPH	PAGE
UNIT TRAINING PHILOSOPHY.	200	2-3
UNIT TRAINING STANDARDS	201	2-3
UNIT TRAINING PROGRAMS.	202	2-4
UNIT TRAINING PLANS	203	2-5
UNIT READINESS.	204	2-5
UNIT READINESS REPORTING.	205	2-5

FIGURES

2-1	NOTIONAL FIXED WING SQUADRON TRAINING PROGRESSION MODEL	2-6
2-2	NOTIONAL ROTARY WING SQUADRON TRAINING PROGRESSION MODEL	2-7
2-3	NOTIONAL AIR CONTROL TRAINING PROGRESSION MODEL.	2-8

CHAPTER 2

UNIT TRAINING

200. UNIT TRAINING PHILOSOPHY

1. The only acceptable standard for a Marine squadron/battalion is to deploy in a combat ready status, perform as a coherent unit in battle, and return from any conflict victorious. Unit training plans must emphasize core competencies, unit cohesion, and combat readiness. It is incumbent upon every aviation community to develop training syllabi and plans maximizing unit combat potential.

2. Individual training serves as the building block for overall unit readiness. However, unit training will never be compromised for the training of a select few individuals. Commanding officers will ensure that this training philosophy is implemented. Unit training must predominate and squadrons must tailor their training plans to ensure unit combat readiness.

201. UNIT TRAINING STANDARDS

1. METLs serve as the foundation for the development of unit evaluation programs by facilitating development of T&R CTS or MCCRES MPS. Community mission statements and METLs shall be updated at the Aviation T&R Manual Administrative Conference. CG TECOM (C4610) shall submit appropriate Mission Statement and METL change requests with a T/O Change Request (TOCR) to MCCDC, Total Force Structure Division, and shall coordinate changes of the appropriate MCWP with Doctrine Division.

2. To maintain congruity in aviation and ground T&R programs, CG TECOM (C4610) is coordinating an update to the aviation unit evaluation mechanism. Efforts are underway to incorporate CTS into aviation T&R manuals. The goal of this effort is to replace MCCRES MPS with T&R CTS and utilize the T&R as the unit evaluation mechanism. Like MPS, CTS are criteria that specify mission and functional area unit proficiency standards for combat, combat support, and combat service support units.

a. The effort to replace MCCRES MPS with T&R manual CTS is in the development phase. The concept is to create separate unit chapters in all aviation T&R manuals which contain unit CTS in the form of unit events. CTS will be derived and implemented into T&R manuals using existing unit MCCRES MPS as a baseline. MCCRE, or unit T&R evaluation, will be an event in the future, completed by the individual unit or higher headquarters. Unit evaluation will be standardized in T&R manuals, not in a separate document. CG TECOM (C4610) plans to cancel unit MCCRES orders as respective unit CTS chapters are approved. Until unit T&R CTS are formally approved, MCCRES shall be utilized as the aviation unit evaluation standard.

3. Unit T&R CTS and MCCRES MPS are derived from METLs and directly relate to unit core competencies and individual core skills. These critical skills are the same skills that are clearly defined in individual T&R syllabi.

4. The T&R syllabus review conference will ensure that individual core skills and unit core competencies are emphasized. T&R-mandated skills will be formally documented in T&R manuals produced at the conclusion of each conference. These skills will become the individual building blocks that allow the squadron/battalion to achieve combat readiness.

202. UNIT TRAINING PROGRAMS

1. Unit training programs must emphasize squadron qualifications and the overall combat readiness of the unit. Each community shall maintain a standardized unit training progression model.

2. This model must depict the logical progression of qualifications within a unit. At the base of each model should be those qualifications an individual reports to the unit with (accession qualifications) after completion of the Fleet Replacement Squadron (FRS) or MOS-qualifying school. The highest tier of the progression model will contain those qualifications held by only the most experienced personnel within a unit. Aviation communities will develop significantly different unit training models. The number of qualifications contained within the models should be community dependent.

3. The first tier (Combat Capable phase) concentrates on the basic skills in the respective fleet replacement squadrons and basic MOS schools. At the completion of tier one, crewmembers are assigned to tactical units.

4. The second tier (Combat Ready phase) will contain those skills and qualifications that are normally obtained within the first year of assignment to an aviation unit. This tier should take the individual who has completed initial MOS skills training and develop proficiencies in core skills. With successful completion of the second tier, unit personnel move to the combat qualification phase.

5. The third tier (Combat Qualification phase) contains qualifications that are normally made available to fairly experienced personnel. Progression to training at this level will hinge on performance at the combat ready phase. This tier should move an individual from proficiency to flight leadership, supervisory control, and field leadership positions. With successful completion of the Combat Qualification phase, unit personnel can concentrate on Full Combat Qualification.

6. The fourth tier (Full Combat Qualification phase) is composed of highly capable (experienced) personnel within a unit. The personnel being trained in this phase are those who the commanding officer has determined are capable of leading/directing flights of numerous aircraft in a complex wartime scenario. Full Combat qualified personnel are the most experienced in a squadron. They are expected to display, on a daily basis, the maturity and tactical acumen commensurate with this status.

7. Amplification

a. The Weapons and Tactics Training Program (WTTP) supports the combat readiness cycle by providing instructor and academic standardization for the T&R syllabus. As the manager of the WTTP for the Marine Corps, Marine Aviation Weapons and Tactics Squadron One (MAWTS-1) produces standardized courseware to support individual type/model/series T&R syllabi as well as maintaining syllabi for advanced instructor designations, to include the Weapons and Tactics Instructor Course.

b. Instructor qualifications shall be balanced with unit needs and mission requirements. It is not an efficient use of resources to produce an exaggerated number of instructors. 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 (2-3 years).

c. The squadron training progression models (figures 2-1 through 2-3) used in this chapter serve only as an example. They are used to expand on the concept of "the training model." Progression of qualifications, tiering of qualifications and minimum number of individuals necessary to hold these qualifications at the unit level should be discussed at every syllabus review.

203. UNIT TRAINING PLANS. The squadron training progression model provides training officers with a valuable tool to develop training plans. With a clear progression of qualifications delineated, and an emphasis on the qualification of Combat Capable and Combat Ready personnel, training officers have the ability to

produce viable training plans. Units will use the model as a point of departure to generate weekly, monthly, quarterly and annual training plans.

204. UNIT READINESS

1. With a renewed emphasis on core competency, a formal unit evaluation is a formidable test of any unit. It provides an efficient method of determining combat readiness at a specific point in time. It also provides a tangible report for squadron/battalion commanders to measure the unit's combat readiness and the efficiency of its training plans.

2. Commanding officers may obtain a daily sketch of their combat readiness by reviewing the training progression model. If a squadron/battalion commander does not have the personnel onboard to maintain combat readiness, he must refocus his training to achieve that objective.

3. The average Combat Readiness Percentage (CRP) of on-hand personnel is not an adequate or accurate measure of a unit's overall readiness. The number of "combat ready" crews available compared to the aircrews assigned by T/O provides a more accurate description of combat readiness. This percentage of combat ready aircrew or crew-served ground units determines the combat readiness status level.

205. UNIT READINESS REPORTING. During unit readiness reporting periods, commanding officers should report the status of readiness and training per the current edition of the Marine Corps Status of Readiness and Training System (SORTS) Manual, MCO P3000.13.

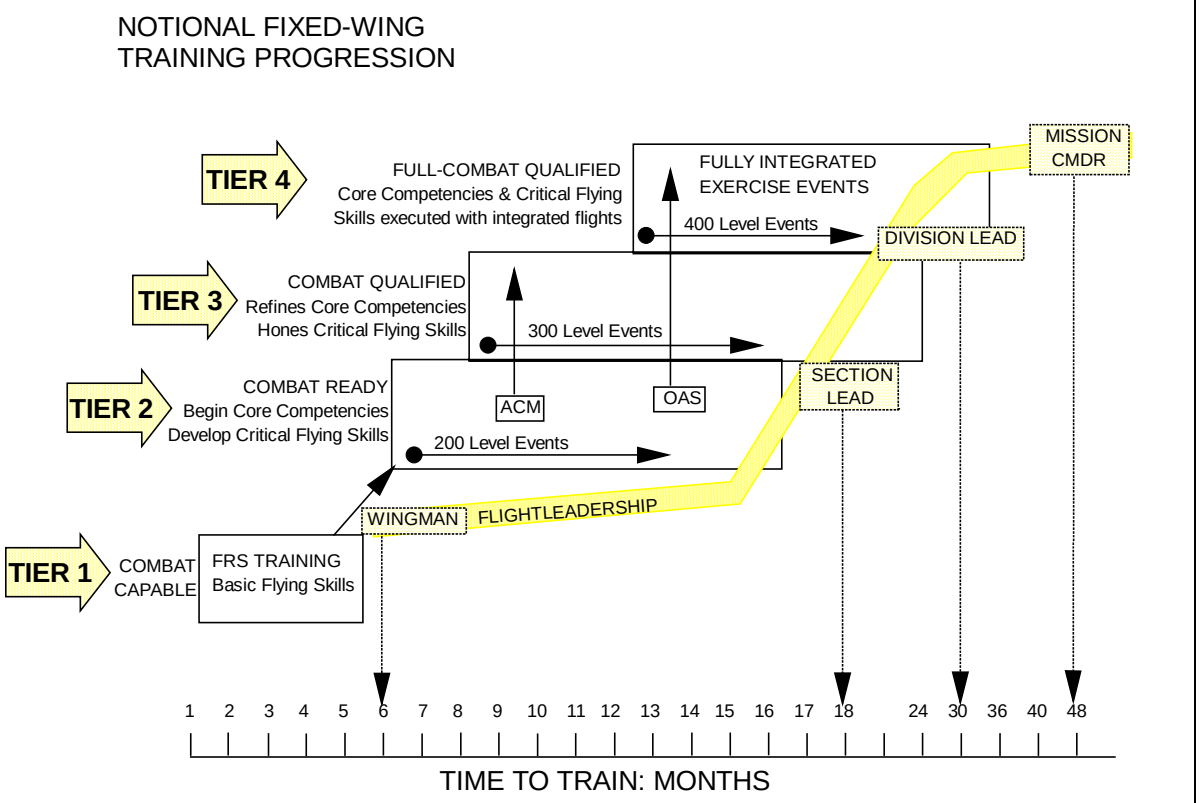

Figure 2-1.--Notional Fixed Wing Squadron Training Progression Model.

NOTIONAL ROTARY-WING
TRAINING PROGRESSION

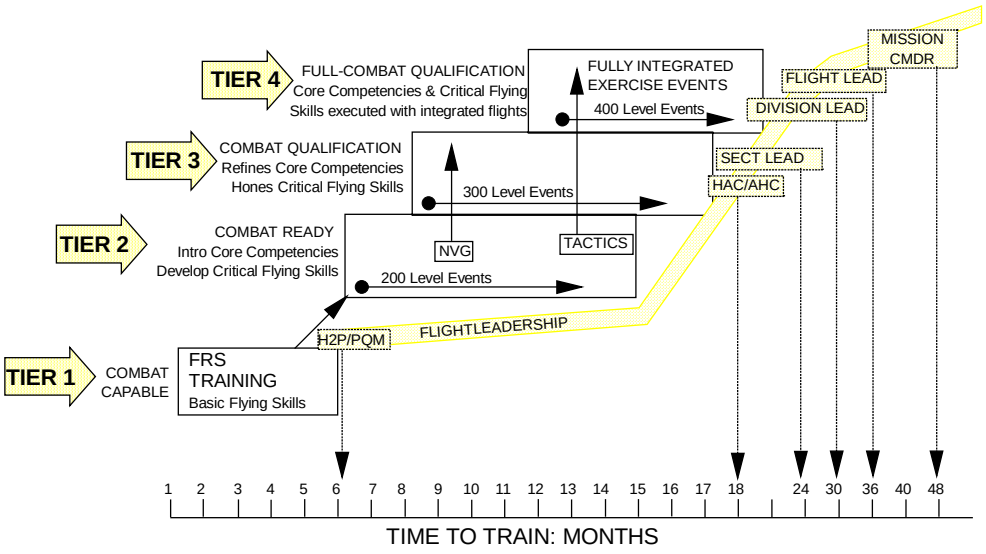

Figure 2-2.--Notional Rotary Wing Squadron Training Progression Model.

NOTIONAL AIR CONTROL
TRAINING PROGRESSION

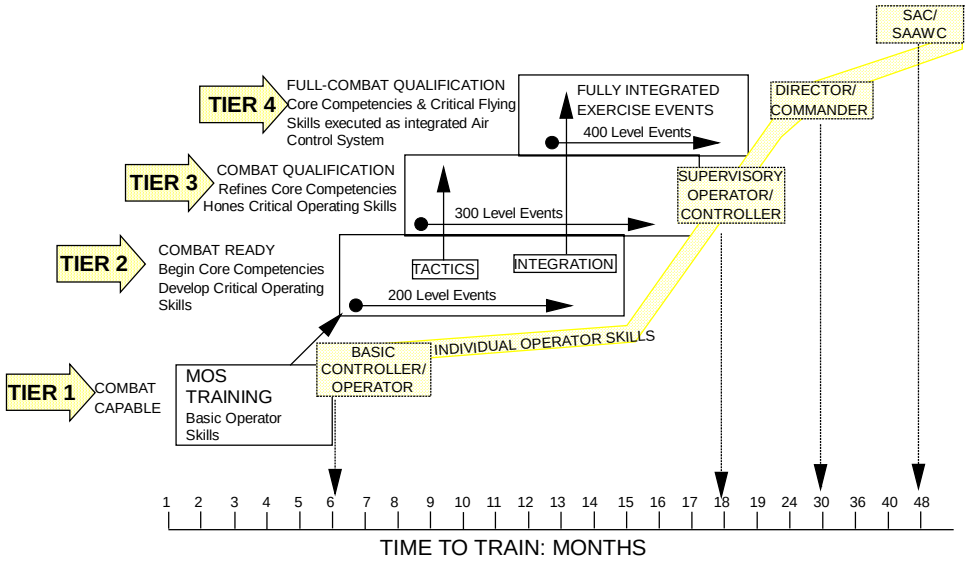

Figure 2-3.--Notional Air Control Training Progression Model.

CHAPTER 3

INDIVIDUAL TRAINING

	PARAGRAPH	PAGE
INDIVIDUAL TRAINING PHILOSOPHY.	300	3-3
INDIVIDUAL TRAINING STANDARDS	301	3-3
INDIVIDUAL TRAINING PROGRAMS.	302	3-3
INDIVIDUAL TRAINING PLANS	303	3-3
INDIVIDUAL READINESS.	304	3-3
INDIVIDUAL READINESS REPORTING.	305	3-4

CHAPTER 3

INDIVIDUAL TRAINING

300. INDIVIDUAL TRAINING PHILOSOPHY. Training Marines to perform as an integral aviation unit in combat lies at the heart of the T&R program. Unit readiness and individual readiness are directly related. Individual training and the mastery of individual core skills (100-300 level events) serve as the building blocks for unit combat readiness. A Marine's ability to perform those critical skills required in combat is essential. Chapter 7 outlines the structure for an individual training program based upon a logical progression of increasingly challenging events, with the requirement for periodic revalidation of skill proficiency. T&R manuals define the skills to be accomplished under specified conditions for each community.

301. INDIVIDUAL TRAINING STANDARDS (ITS)

1. ITS shall be developed from CTS and core skills in the form of individual training events.

2. Collective and individual T&R standards must be congruent in all respects. The combat readiness cycle will be broken if collective and individual T&R standards do not match.

3. ITS shall be clearly defined for every T&R event. Individual events shall be structured (event goals, requirements, performance standards, etc.) per chapter 7 of this Manual.

302. INDIVIDUAL TRAINING PROGRAMS

1. Individual training programs shall be clearly defined by T&R syllabi. T&R manuals describe individual training programs for aviation personnel.

2. Training programs outlined in community T&R syllabi shall employ a building block approach. Personnel should be scheduled to complete T&R events in sequential order to the greatest extent possible. Omission of, or skipping prerequisite events shall be avoided. This does not preclude the waiving of flights in accordance with paragraph 405.

3. Individual qualification progression should be in accordance with the unit training progression model.

303. INDIVIDUAL TRAINING PLANS. Training plans for aviation-related personnel shall be incorporated into unit training plans. Unit 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.

304. INDIVIDUAL READINESS

1. Individual readiness of aviation personnel is measured by Combat Readiness Percentage (CRP). The structure of individual training programs and a discussion of CRP are covered further in Chapters 7 and 9.

2. 200 and 300 series events require displayed performance of core skills. These events shall carry a majority of the CRP credit in all volumes of T&R manuals. These skills will reflect a refly interval based upon the perishability of the skill attained, their significance, and relative impact on unit combat readiness.

305. INDIVIDUAL READINESS REPORTING. Individual readiness will be reported via the Naval Flight Record Subsystem (NAVFLIRS) interface.

CHAPTER 4

TRAINING POLICIES

	PARAGRAPH	PAGE
TRAINING POLICY	400	4-3
UNIT TRAINING POLICIES	401	4-3
INDIVIDUAL TRAINING POLICIES	402	4-4
GROUND TRAINING POLICIES	403	4-5
SYLLABUS TRAINING POLICIES	404	4-6
SYLLABUS TRAINING EXCEPTIONS	405	4-6
SIMULATOR POLICY	406	4-7
ASSIGNMENT OF FIRST TOUR NAVAL AVIATORS, NAVAL FLIGHT OFFICERS, AND MACCS PERSONNEL	407	4-7

CHAPTER 4

TRAINING POLICIES

400. TRAINING POLICY

1. Commanders shall ensure that all tactical training is conducted to unit T&R or MCCRES standards. Commanders at all levels are responsible for effective aviation training. The conduct of training in a professional manner consistent with Marine Corps standards cannot be overemphasized.

2. Commanders must be cognizant of the numerous factors affecting unit training on a daily basis. Factors that all commanders must address include, but are not limited to:

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 all formal aviation courses must enhance the war fighting capabilities of the unit.

4. Risk Management. Operational Risk Management (ORM) is a process to aid commanders in accomplishing their missions while protecting the force. Commanders, leaders, maintainers, planners and schedulers should integrate risk assessment in the decision-making process and implement hazard controls to eliminate risk or reduce it to an acceptable level. T&R conference attendees shall utilize the ORM process and principles during all syllabus conferences.

401. 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. Units required to operate from aviation decks 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 in accordance with their respective T&R syllabus. Personnel should consult the NWPs, LHA/LPH/LHD, CV, LSO, and 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. 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. Commanders shall manage LSO training by referencing MCO 1540.32. 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 VFR conditions.

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 well-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. MISTEX's 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 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.

402. 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 should 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 within the individual's NATOPS training jacket.

403. GROUND TRAINING POLICIES

1. Each unit shall conduct specific aviation/MACCS agency 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 the individual T&R syllabi. Each Type/Model/Series chapter of the MAWTS-1 Course Catalog contains a detailed academic curriculum designed to facilitate T&R Phase/Stage progression. This curriculum should 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, MCCRES Manuals, 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 and functions.

404. SYLLABUS TRAINING POLICIES

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

2. Newly designated aircrew and MACCS personnel will follow the entire/basic POI as prescribed in T&R manuals. All other aircrew and MACCS personnel shall follow Transition (T), Conversion (C), Refresher (R), instructor, or other POI as delineated in individual T&R manuals. Syllabus qualified aircrew and MACCS personnel will periodically complete appropriate syllabus events to maintain tactical proficiency. T/C/R POIs exist to train aircrew and MACCS 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. Upon completion of FRS training, Modified Refresher aircrew will complete Refresher POIs unless delineated otherwise in individual T&Rs. T/C/R syllabi refly/proficiency updating and CRP credit shall be computed as delineated in Chapter 9.

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. Aircrew and MACCS personnel performance shall be evaluated and documented for all combat capable events. All initial events in the Combat Ready, Combat Qualification and Full Combat Qualification phases shall be documented in Aircrew Performance Records/MACCS Performance Records using community specific T&R Syllabus Evaluation forms (delineated in Appendix D, Para 5). An “E-coded” event is required to be documented again via training forms each time that event is completed.

405. SYLLABUS TRAINING EXCEPTIONS. The completion of a specific number of flights or training periods may not necessarily qualify an individual in a particular area of training. Commanders should evaluate the performance and previous experience of personnel to make an accurate appraisal of the individual's performance and to identify his training requirements. Commanding officers may waive portions of an experienced and qualified trainee's flight/training requirements. A request for T&R policy deviation is not required in such cases. 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. Commanders may not waive a syllabus event or stage simply because the command lacks logistic support or training assets, nor should waived requirements be less than those required by

NATOPS. CRP credit will not be given and event proficiency status will not be updated for waived events unless event updating procedures delineated in paragraph 901.2.b.(2) are followed. See Appendix B for definition of waived syllabus events.

406. 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.

407. ASSIGNMENT OF FIRST TOUR 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 a squadron for a minimum of 2 years (optimally 3 years) after attaining Combat Capable status. All newly designated NAs and NFOs shall be assigned to operational squadrons; newly designated CCs should be assigned to operational squadrons. Commands shall not assign NAs/NFOs/CCs outside the squadron unless such assignment is a requirement to complete the Combat Ready syllabus. 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 (C4610) via message.

CHAPTER 5

AVIATION TRAINING RULES OF CONDUCT (ROC)

	PARAGRAPH	PAGE
GENERAL AVIATION ROC	500	5-3
ROC FOR LOW ALTITUDE FLIGHT	501	5-3
ROC FOR NIGHT OPERATIONS	502	5-9
ROC FOR AIR COMBAT MANEUVERING (ACM), DEFENSIVE MEASURES (DM), DEFENSIVE AIR COMBAT TACTICS (DACT), AND DEFENSIVE COMBAT MEASURES (DCM)	503	5-16

CHAPTER 5

AVIATION TRAINING ROC

500. 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 Tactics (DACT). Individual T&R manuals contain training syllabi and flight objectives for these programs.

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. Units shall emphasize proficiency training in core competencies. 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 effect a loss of CRP. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date.

f. During contingency/combat operations, MAGTF or Wing commanders may waive training ROC restrictions.

501. 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 properly 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 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 members 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. Additionally, aircrew may use other training areas designated by the appropriate wing/MAGTF commander.

(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.

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: Flight below 500 feet AGL for HUD equipped aircraft and below 1000 feet AGL for non-HUD equipped aircraft. Non-LAT training is limited to 500 feet AGL minimum altitude for HUD equipped aircraft and 1000 feet AGL minimum altitude for non-HUD equipped aircraft.

b. Aerial delivery conducted by KC-130 aircraft is excluded from the LAT definition. Minimum altitudes listed apply and shall only be utilized during the execution of the actual aerial delivery final run-in profiles.

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 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. The minimum dive delivery recovery altitude for aided night deliveries in Low Light Level (LLL) conditions or for unaided night deliveries is 1,000 feet AGL.

d. For initial qualification, a LATI is required in the aircraft/flight. The LATI chase aircraft is not part of the LAT formation. Dual-piloted aircraft shall have a designated LATI occupying a pilot seat on each aircraft conducting initial LAT qualification.

e. FW NS LAT. NS LAT operations shall only be conducted during High Light Level (HLL) conditions. FW Pilots shall be LAT and NS/NS LOW qualified; other FW aircrew shall be LAT and NS/NS LOW qualified as delineated in individual T&R

Manuals. Prior to commencing NS LOW qualification training, non-NS LOW qualified pilots shall be NSQ HI and require supervision of an NSI.

f. FW LAT Currency and Minimum Altitudes. Minimum altitudes for fixed-wing aircraft are 300 feet AGL for HUD equipped and 500 feet AGL for non-HUD equipped aircraft. Day LAT shall not update NVG LAT currency requirements. NVG 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 AGL for HUD equipped and 500 feet AGL for non-HUD equipped aircraft.

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

(a) In a formation where sections have a minimum of 1 nautical mile 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 - HUD Equipped A/C 500’ AGL – non-HUD equipped A/C	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 (300 feet AGL for HUD equipped and 500 feet AGL for non-HUD equipped aircraft) shall be submitted in message format to HQMC via operational chain of command (To CMC WASHINGTON DC//APP//; Info CG TECOM QUANTICO VA//C4610//). 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 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 Minimum Altitude Capability (MAC). This altitude, below CL, 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 nautical mile 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.

(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

502. 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. NVD operations shall only be conducted in VMC.

e. Illumination. The only approved methods for deriving illumination requirements for night operations are the Solar/Lunar Almanac Program (SLAP) Light Level Planning Calendar program and/or the light level planning function in TAMPS. These programs do not factor in the effects of cloud cover, humidity, haze, dust, effects of low moon angle, terrain, and shadows. These effects may degrade

forecast illumination. Sound judgment must temper decisions to fly under less than optimal conditions. Illumination levels are defined as:

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

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

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 flying.

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) 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. 5978. 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. 5978. 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 H.

(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, 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 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 the 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 LLL 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) AH-1W aircrew should have the NVGs bore sighted to the helmet for use with the helmet sighting system.

(4) All aircrew flying NVG HLL flights shall fly with a qualified NSI/NSFI unless both the pilot and copilot are NSQ HLL. All aircrew shall fly NVG LLL flights with a qualified NSI unless both the pilot and copilot are NSQ LLL.

(5) 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 501 of this order.

(6) Night Carrier Qualifications. All T/M/S aircraft shall require the capability to operate unaided on naval ships. In recognition of the safety and

increased situational awareness afforded by the use of NVDs, unaided CQ is not of necessity a prerequisite to NVG CQ. Since landing to an NVD compatible deck cannot always be assured, unaided recoveries remain a valid requirement.

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. Squadrons should install IR filters. 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 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) Both pilots shall be NSQ. When using the 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-6 with the AR-5.

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

(1) Minimum aircrew for AH-1 NVD operations shall include AHC and PQM. Minimum aircrew for all other helicopters shall include HAC/PQM, H2P, crew chief, and qualified observer.

(2) For initial and refresher training the copilot shall be NSQ HLL, and be NVG proficient per the appropriate T&R syllabus prior to flying in LLL. Crew chiefs and aerial gunners/observers shall be NSQ HLL and be NVG proficient per appropriate T&R syllabus prior to flying in LLL.

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 502.3.a(2).

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

(c) Crew chiefs and aerial gunners/observers shall be NSQ HLL per the appropriate T&R syllabus and have one T&R NVG sortie 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 502.3.a(2).

(b) The pilot and copilot shall be designated NSQ (HLL and LLL) per the appropriate T&R syllabus and one T&R NVG sortie (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 one T&R NVG sortie (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 LPH/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 shall be NSQ HLL.

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

4. FW Night Operations

a. FW NS LAT

(1) The following equipment (if equipped) shall be operable for FW NS LAT training missions unless the MAGTF/wing commander grants a waiver: NVG compatible cockpit lighting, Heads Up Display (HUD), inertial navigation systems, digital 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. Pilots conducting FW NS LAT operations shall be LAT and NS/NS LOW qualified; other aircrew shall be LAT and NS/NS LOW qualified as delineated in individual T&R Manuals. Non-NSQ LOW pilots shall be NSQ HI and require supervision of an NSI during NSQ LOW training.

b. FW Night Training Illumination and Altitude Requirements

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

(2) FW NS flights are limited to 1,000 feet AGL minimum when operating in LLL conditions.

(3) At or above 1,000 feet AGL, pilots who are not NSQ/NSQ HI may operate in LLL conditions when an NSI is in the flight.

(4) At or above 1,000 feet AGL, pilots who are NSQ/NSQ HI may operate in any light level condition.

(5) Below 1,000 feet AGL, NAs/NFOs who are not NSQ/NSQ Low require an NSI flight lead.

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

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. Non-NSQ 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 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 and NVD proficient 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 1 NVD T&R sortie 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 1 NVD T&R sortie (HLL or LLL) within the previous 30 days.

(c) Crew chiefs and aerial gunners/observers shall be NSQ.

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 pilot under instruction shall be NSQ HLL.

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

503. ROC FOR ACM, DM, DACT, and DCM

1. General

a. Purpose. To standardize ROC for aircraft conducting ACM/DEFTAC/DM/DACT/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/DACT/DCM training is designed to develop the high level of skill required to combat the current and future threat. OPNAVINST 3710.7 and T&R Volumes contain the overall policies, responsibilities, training syllabi, and flight objectives for ACM/DEFTAC/DM/DACT/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 criterion for instructor certification. Authority and responsibility for overall supervision of ACM/DEFTAC/DM/DACT/DCM training rests with operational commanders.

d. Safety. Squadrons conducting ACM/DEFTAC/DM/DACT/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/DACT/DCM is strictly prohibited.

e. ACM/DEFTAC/DM/DACT/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/RWDACT/DCM instructor.

f. ACM/DEFTAC/DM/DACT/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/DACT/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/DACT/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/DACT/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/DACT/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.

(6) RADAR monitoring/vectoring from GCI, AIC or a TACTS/ACMI range is a requirement during flights operating on assigned separate frequencies. Regardless of range area or controlling agency used, the “see and avoid” rules for VMC flight apply.

g. ACM/DEFTAC/DM/DACT/DCM Flight Briefs

(1) ACM training rules delineated in OPNAVINST 3710.7 shall be briefed as appropriate.

(2) ACM/DEFTAC/DM/DACT/DCM participants shall conduct face-to-face briefs. Force commanders may authorize subordinate commanders to waive face-to-face brief requirements as outlined below.

(a) As a minimum, one individual from each participating unit shall attend a face-to-face brief.

(b) For units not co-located, a pre-exercise brief, memorandum of understanding, message or telephone brief may satisfy the face-to-face briefing requirement. The flight leaders shall conduct the telephone brief. All applicable training rules shall be covered during the telephone brief. The flight leaders receiving the telephone brief for composite or joint force training will brief all other participating aircrew prior to their flights.

(c) Flight leaders shall cover departure/spin recovery procedures during the preflight brief of all FW ACM/DEFTAC/DCM training missions.

(3) Altitude separation for intercept portions of training missions shall be established. Aircrew shall establish altitude deconfliction measures by 10 nm of the merge without situational awareness of the aircraft/formation being intercepted.

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/DEFTAC qualified NA/NFO of a crew concept aircraft may participate in ACM training, provided at least one other aircrew in the same aircraft is a designated ACTI/DEFTACI. A non-ACM/DEFTAC qualified NA may participate in ACM/DEFTAC training provided his flight leader is an ACTI/DEFTACI. In the case of one versus one dissimilar ACM, the adversary pilot must be an ACTI/ATI/AT (USMC) or qualified ACM Instructor.

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. No direct over-flight of adversary aircraft by the FW aircraft. 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 DACT. RW assault aircrew conducting DM and RW attack and utility aircrew conducting DACT 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/DACT qualified, the flight does not require a Defensive Measures Instructor (DMI)/Defensive Air Combat Tactics Instructor (DACTI).

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/DACT qualified pilot may participate in DM/DACT training provided the aircraft commander is a designated DMI/DACTI. 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 DACT shall be conducted in day VMC conditions. The following weather minimums apply:

(1) FW v RW: 3000/5 with a definable horizon. DM/DACT v FW shall not be conducted through an under/overcast.

(2) RW v RW: 1000/3.

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

f. All DM/DACT 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. CH-46 and CH-53 flights conducting DM shall not conduct zoom climbs, vertical maneuvering to gain altitude advantage, or jinks.

h. CH-46 and CH-53 flights conducting FW or RW DM are limited to one tacform turn pre-merge and one tacform maneuver post-merge. The command "cover" may be added to any formation maneuver to tell the tactical wingman to break horizontal plane with the tactical lead by either increasing or decreasing altitude. The commands "dig," "pinch," and "resume" may also be added to adjust flight separation.

i. Minimum RW altitude for DM and DACT 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 DACT will be in accordance with OPNAVINST 3710.7.

j. No slow speed, high AOA maneuvering below 10,000 feet by FW.

k. No direct over-flight of helicopters by FW.

l. No supersonic flight is authorized.

m. Always assume the other aircraft does not see you.

n. 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 DACT is 200 ft.

o. Maintain trend for forward quarter head-on pass (TCAs greater than 135 degrees); if no trend exists, give way to the right to create a left-to-left pass; broadcast intentions if in doubt and exaggerate giving way.

p. No lead turns that will cause lost sight.

q. Flares as part of a guns defense/distraction are prohibited.

r. Immediately broadcast and acknowledge "lost sight." Engagement will be "terminated" until sight is regained.

s. No close range helicopter engagement will involve more than one 360-degree turn by the adversary aircraft.

t. No erratic or excessive climbing maneuvers to counter an adversary's altitude coverage.

u. Astern gun attacks will be broken off by 500 ft lateral separation.

v. DM/DACT communications requirements:

(1) Aircraft shall have two way radio communication, ICS and monitor guard.

(2) 1 v 1 events shall have a common frequency.

(3) Single radio aircraft 2 v 1 or more may use a discrete frequency if each is under radar control/separate controllers/SAD supervision and monitoring both, or each flight is under positive radar control by separate RTOs on a TACTS range.

(4) Multiple radio aircraft may conduct up to 2 v 2, monitoring a common frequency, without GCI/TACTS requirements.

(5) Flights larger than 2 v 2 must have a common frequency unless using GCI/TACTS with a SAD/RTO on both frequencies.

(6) Any aircrew or controller observing a dangerous situation shall immediately call “knock it off” or “terminate” IAW OPNAVINST 3710.7.

(7) NORDO aircraft will rock wings and establish 1 g level flight.

w. DM/DACT shall be terminated when:

(1) Any training rule is violated.

(2) “KIO” or “terminate” is called.

(3) A dangerous situation develops/loss of SA.

(4) Any out of control flight situation develops.

(5) A participant reaches bingo fuel.

(6) Briefed learning objectives are met.

(7) An interloper enters the training area.

(8) When an aircraft rocks its wings.

(9) Adversary aircraft has executed 360 degrees of turn.

x. All DM/DACT participants have the responsibility to call “terminate” during DM/DACT training engagements when a dangerous or rapidly deteriorating situation is recognized.

y. “Terminate” is used to cease maneuvering for individual elements of engagements within an overall exercise. “KIO” is used to cease maneuvering for all elements of an exercise.

z. A “fight’s on” call initiates all line numbers.

4. DCM

a. DCM consists 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 6

MISSION AND INSTRUCTOR DESIGNATION/QUALIFICATIONS

	PARAGRAPH	PAGE
GENERAL DESIGNATIONS/QUALIFICATIONS	600	6-3
LOW ALTITUDE FLIGHT QUALIFICATIONS AND DESIGNATIONS	601	6-4
NIGHT OPERATIONS QUALIFICATIONS AND DESIGNATIONS	602	6-5
ACM QUALIFICATIONS AND DESIGNATIONS	603	6-6
RW DM/DACT QUALIFICATIONS AND DESIGNATIONS	604	6-7
DCM QUALIFICATIONS AND DESIGNATIONS	605	6-7
MARINE AIR COMMAND AND CONTROL QUALIFICATIONS AND DESIGNATIONS	606	6-7
SUPPORTING ARMS QUALIFICATIONS AND DESIGNATIONS	607	6-11
ENLISTED FW AIRCREW DESIGNATIONS	608	6-11
WEAPONS AND TACTICS OFFICER (WTO)	609	6-11
RW AERIAL GUNNERY	610	6-11

CHAPTER 6

MISSION AND INSTRUCTOR DESIGNATION/QUALIFICATIONS

600. 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 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 (600-level events). 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 that 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 qualified Naval Aviator able to lead and direct a flight of two aircraft.

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

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

(d) Mission Commander/AMC. A qualified 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.

(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/Weather/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. 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.

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.

601. 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.

602. 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.

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 flight lead. FW night systems high altitude is defined as flight at or above 1000' AGL.

(2) Night Systems Qualified Low Altitude (NSQ LOW). A NA/NFO certified as having completed the T&R prescribed NSQ LOW syllabus under the supervision of a squadron NSI flight lead.

c. 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 combat capable. MAWTS-1 publishes the requirements and POI for NSI in the MAWTS-1 Course Catalog.

d. 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.

603. 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.

604. RW DM/DACT 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 Tactics (DACT) qualified. A NA certified as having completed the DACT syllabus within the appropriate T&R syllabus.

5. DACT Flight Leader. A NA certified as having completed the DACT syllabus and is designated to brief, lead, and debrief a RW DACT mission.

6. Defensive Air Combat Tactics Instructor (DACTI). A NA certified by a MAWTS-1 instructor as having completed the MAWTS-1 RW RWDACTI course.

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

605. 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.

606. 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 as a CBC by a designated SAC and CBC qualified by the wing battle staff trainer.

(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 designated SAC and DBC qualified by the wing battle staff trainer.

(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 designated SAC and ADC qualified by the wing battle staff trainer.

(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 designated SAC and ABA qualified by the wing battle staff trainer.

(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. The officer shall be certified by a designated SAC and SRC qualified by the wing battle staff trainer.

(8) Senior Air Coordinator (SAC). A Marine officer certified as having completed the required SAC training events of the appropriate T&R syllabus.

(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 Combat Qualification phase 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 Combat Qualification phase of the appropriate T&R syllabus. A Combat Qualified 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 Combat Qualification phase of the appropriate T&R syllabus. A Combat Qualified 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 Combat Qualification phase of the appropriate T&R syllabus. A Combat Qualification DASC SAD, DASC WTI, DASC MEWTI or the 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 Combat Ready phase of the appropriate T&R syllabus. A Combat Qualification DASC CC, DASC MEWTI or the 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 Combat Qualification phase 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 should 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 Combat Qualification phase of the appropriate T&R syllabus. The unit WTI or the MAWTS-1 staff LAAD Section should certify Leaders/Plt Sgts.

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

4. TAOC

a. Senior Air Director (SAD) Qualified. An Air Defense Control Officer (7210) certified as having completed the required events of the Combat Qualification phase of the appropriate T&R syllabus. A TAOC WTI or the MAWTS-1 TAOC instructor shall certify Air Defense Officers.

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

e. Tactical Air Traffic Controller (TATC) Qualified. An Air Defense Controller certified as having completed the required TATC events of the Combat Ready phase of the appropriate T&R syllabus. A Combat Qualification TAOC SAD, TAOC WTI or the MAWTS-1 TAOC instructor shall certify Air Defense Controllers.

f. Missile Controller (MC) Qualified. An Air Defense Controller certified as having completed the required MC events of the Combat Qualification phase of the appropriate T&R syllabus. A Combat Qualification TAOC SAD, TAOC WTI or the MAWTS-1 TAOC instructor shall certify Air Defense Controllers.

g. Air Intercept Controller (AIC) Qualified. An Air Defense Control Officer (7210) certified as having completed the required events of the Combat Ready Phase and special qualification phase of the appropriate T&R syllabus. An Air Defense Controller (7236) certified as having completed the required events of the Combat Ready Phase only. A Combat Qualified TAOC SAD, TAOC WTI or a MAWTS-1 TAOC instructor shall certify Air Defense Controllers (7210/7236).

h. Marine Division Tactics Instructor (MDTI). An Air Defense Control Officer (7210) or Tactical Air Defense Controller (7236) certified by a MAWTS-1 TAOC Instructor as having completed the MAWTS-1 Marine Division Tactics Course (MDTC) or Navy Fighter Weapons School (TOPGUN) syllabus.

i. Sector Air Defense Commander (SADC). A MACCS Officer (72XX) certified as having completed the required SADC OPS events of the Combat Qualification and Full Combat Qualification phases of the appropriate T&R syllabus. A qualified SADC shall certify Air Defense Control Officers.

j. Sector Anti Air Warfare Coordinator (SAAWC) Qualified. A MACCS Officer (72XX) certified as having completed the required SAAWC events of the Combat Qualification and Full Combat Qualification phases of the appropriate T&R syllabus.

The officer shall be certified by a qualified SAAWC and designated by the control group commanding officer.

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 certify Watch Officers.

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

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

607. 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.

608. 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.

609. WEAPONS AND TACTICS OFFICER (WTO). A NA/NFO certified by a MAWTS-1 instructor as having completed the WTO course.

610. RW AERIAL GUNNERY (AG)

1. AG Qualified. An 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 7

SYLLABUS STRUCTURE

	PARAGRAPH	PAGE
INTRODUCTION	700	7-3
TRAINING PHASES	701	7-3
PROGRAMS OF INSTRUCTION (POI)	702	7-4
SYLLABUS FORMAT AND CONTENT	703	7-5

FIGURES

7-1	MOS 75XX REFLY INTERVAL, COMBAT READINESS PERCENTAGE	7-10
7-2	MOS 75XX FLIGHT UPDATE CHAINING	7-11

CHAPTER 7

SYLLABUS STRUCTURE

700. INTRODUCTION. This chapter provides the structure and organization for the construction of individual training syllabi. This structure provides the standardization of format for aircrew and MACCS 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. Commonality of structure promotes the synergistic effect of platform and aircrew/MACCS agencies and operators that provides a MAGTF commander with the maximum combat capability available. Syllabi should be streamlined to emphasize core competencies and concentrate on combat ready training. Each individual T&R chapter contains a single aircraft/community crewmember syllabus.

701. TRAINING PHASES

1. Tactical Aircraft/MACCS. T&R syllabi will be broken into phases as delineated below. Similar event types (normally Core Skills) will be divided into stages within each phase.

a. Combat Capable Training. 100 series events. CNATRA and Navy/Marine Fleet Readiness Squadrons (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. Combat Capable training includes system/equipment operation familiarization, initial crew procedures, and initial exposure to core competencies. The syllabus sponsor will determine 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 (Combat Capable phase = 60 percent CRP).

b. Combat Ready Training. 200 series training events raise the skill level of aircrew/MACCS personnel and introduce them to all of their core competencies. 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 (Combat Ready phase = 15 percent CRP).

c. Combat Qualification Training. 300 series events include advanced training in core competencies. 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 (Combat Qualification phase = 20 percent CRP).

d. Full Combat Qualification Training. 400 series events are reserved for Core Plus events that warrant unit training. Such events include: large scale, integrated mission events; events having unique mission taskings; events having a low probability of execution in combat; relatively high-risk events. Assignment of CRP values should never be less than 0.25 per event. CRP weighting shall reflect the hierarchical nature of core competencies. Upon completion, an individual will be at l00 percent CRP (Full Combat Qualification Phase = 5 percent CRP).

2. Support and Administrative Aircraft

a. Mission Capable Training. Training including simulators (if applicable and available), day and night familiarization, instrument and navigation, initial exposure to core competencies, and stage/NATOPS checks (as applicable). Upon completion, an individual will be at 60 percent Mission Readiness Percentage (MRP).

b. Mission Ready 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 MRP.

c. Mission Qualification Training. Training including advanced mission specific requirements and review checks (as applicable). Upon completion, an individual will be at 95 percent MRP.

d. Full-Mission Qualification Training. Training completing the requirements for proficiency in all areas of operational missions. Upon completion, an individual will be at 100 percent MRP.

3. Instructor Training. Instructor qualification syllabus events will be in the 500 series. Instructor training includes IUT POIs, ACTI, ACMI, NSI, and others. These events will be clearly delineated in each T/M/S aircraft or MACCS agency syllabus. 500 level events shall not have CRP credit assigned.

4. Requirements, Qualifications and Designations. 600 level codes may be used as tracking codes or delineate associated events. Refly interval may be established for events where proficiency tracking is desired, i.e. dropping a specific type of live ordnance, strategic air refueling, NATOPS evaluations, instrument evaluations, arctic weather events, etc. 600 level events shall not have CRP credit assigned. Syllabus sponsors shall ensure all applicable qualifications and designations identified in the Aviation Administrative T&R Manual and individual T&R manuals are assigned a corresponding tracking code for automated aviation system functionality purposes.

702. PROGRAMS OF INSTRUCTION (POI). An individual syllabus provides for Basic, Transition, Conversion, and Refresher aircrew/MACCS personnel. Subject Matter Experts shall validate/update POIs at T&R conferences. POI definitions follow:

1. Basic. The standard instruction prescribed for newly designated aircrew/MACCS personnel to achieve Full Combat qualification. This is defined as the first tour or Replacement Aircrew (RAC) syllabus. Newly designated aircrew and MACCS personnel shall follow the entire POI as prescribed per individual T&R Manuals.

2. Transition. Syllabus instruction designed for aircrew/MACCS 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

a. Model Conversion. The instruction provided for aircrew/MACCS 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. Aircrew/MACCS 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. The POI to be completed by aircrew/MACCS personnel who have not flown/operated the model aircraft/system within the previous 485 days. Aviation Refresher programs include Refresher, Modified Refresher, and Safe-For-Solo programs. Chapter 8 outlines refresher programs.

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

703. SYLLABUS FORMAT AND CONTENT. Each syllabus in Aviation T&R Manuals shall use the following sample numbering system and content guidance for T&R Manual standardization.

1. Paragraph Order and Title

X00. MISSION STATEMENT, CORE COMPETENCY SKILLS

X01-X09. PROGRAMS OF INSTRUCTION

X10-X19. GROUND/ACADEMIC TRAINING

X20-X29. FLIGHT/SIMULATOR/EVENT TRAINING

X30-X39. GROUND/FLIGHT/SIMULATOR/EVENT PERFORMANCE REQUIREMENTS

X40-X49. INSTRUCTOR UNDER TRAINING FLIGHT/SIMULATOR/EVENT PERFORMANCE REQUIREMENTS

X50-X59. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

X60-X69. ORDNANCE REQUIREMENTS

2. Paragraph Contents. The following paragraphs provide guidance for the information and format included in each T&R syllabus.

a. Paragraph X00. Mission Statement, Core Competency Skills. This paragraph contains the applicable T/M/S unit mission statement, METL, and appropriate T/O information. Squadron core capability information, core competency skills, required skills (events) to gain and maintain core competency, and required designations to maintain core competency shall be delineated in this paragraph. Supporting matrices, such as qualification matrices (outlining events required for all initial qualifications and re-qualifications) and designation matrices should be included in this paragraph.

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 aircrew/MACCS personnel to achieve Full Combat qualification.

(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) Subject matter experts should write paragraphs X00-X09 in the following format example:

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground/Academic Training	Training Squadron
2	Simulator Training	Training Squadron
3-6	Combat Capable Training	Training Squadron
7-11	Combat Ready 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:

(a) Tactical Unit

X20.1. Combat Capable Training

X20.2. Combat Ready Training

X20.3. Combat Qualification Training

X20.4. Full Combat Qualification Training

(b) Support and Administrative Units

X20.1. Mission Capable Training

X20.2. Mission Ready Training

X20.3. Mission Qualification Training

X20.4. Full-Mission Qualification Training

(2) Subject matter experts should 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/Simulator Performance Requirements

(1) Paragraph X30. EVENT/SIMULATOR PERFORMANCE REQUIREMENTS. This paragraph should introduce the event/simulator performance requirements portion of the syllabus and list any peculiar administrative notes.

(2) Paragraph X31-X39. These paragraphs shall contain all the event/simulator performance requirements for 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 flight/simulator/event descriptions expressed in terms of performance requirements.

(3) Subject matter experts shall use the following blocks of training code numbers to designate flights/events:

Combat/Mission Capable	100-199
Combat/Mission Ready	200-299
Combat/Mission Qualification	300-399
Full Combat/Mission Qualification	400-499
Instructor Under 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 (Combat Capable events = 1XX; Combat Ready events = 2XX; etc.). The following format shall be used to develop the syllabus:

X33. COMBAT/MISSION QUALIFICATION TRAINING

1. Stage Title. All flight events/simulator periods shall follow standardized terminology established in Appendix B.

a. Purpose. Describe the stage's 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 Flights/Events, X.X Hours)

1/	2/	3/	4/	5/	6/
FAM-300	2.0	T,C,SC,R	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 core competency.

Prerequisite. List any tasks to be completed prior to this event.

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

External Syllabus Support. List the 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, etc.

NOTES: 1/ Use Appendix B 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; utilize available night systems, ( ) = optional.

f. Instructor Under Training Flight/Simulator Performance Requirements

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

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

(3) Use the 500-599 block of training codes to designate specific Instructor Under Training stages/events.

g. Requirements, Qualifications and Designations

(l) Paragraph X50. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS (RQD) FLIGHT/SIMULATOR/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, all qualifications and designations shall be assigned corresponding tracking codes for automated aviation system functionality purposes.

h. Ordnance Requirements

(1) Paragraph X60. ORDNANCE REQUIREMENTS

(2) Ordnance Requirements. Paragraphs X60-X69. 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.

i. Refly Interval, Combat Readiness Percentage. Subject matter experts shall update event information during T&R conferences using the format shown in figure 7-1.

(1) Refly factors reflect the maximum time between syllabus events where the unit can expect the average personnel 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. Guidelines to establish CRP values are delineated in paragraph 701.

j. Flight Update Chaining. Subject matter experts shall update T&R chaining during T&R conferences using the format shown in figure 7-2.

(1) There is no requirement to repeat every event in a syllabus to maintain proficiency. T&R syllabi may be structured where lower stage events “chain” to higher stage events. This structuring allows for the completion of more complex and/or advanced events using the same skills to update proficiency status in prerequisite events.

(2) T&R syllabi are developed in a sequenced set of training events, each of which may be a prerequisite to the next. Each syllabus uses this hierarchical prerequisite relationship by the coding structure to preclude the requirement to refly each event in a syllabus, and record the retention of proficiency in the skills acquired/updated. Advanced events in a sequence may update the refly date of certain previously completed events. Only events in a sequence requiring demonstration of equivalent skills should be chained. The completion of each event in the syllabus may update at least one lower numbered event.

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
TERF	220	
	221	220
	222	220

This is a different case where certain advanced events do not update preceding ones; e.g., if TERF-222 is completed, it updates 220 (assuming 220 indicates 'Proficient'); however, 221 will not be updated. 220 and 222 are daylight TERF events; 221 is an NVD TERF event. The skills required in 221 and 222 are equivalent skills required in 220; however, because 222 is a daylight TERF event and 221 is an NVD TERF event, 222 should not chain to 221 because different skills are involved (NVD specific skills).

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	
FULL COMBAT QUALIFICATION 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
SCQ	416	1.5	90	0.75	X	X	X		S

Figure 7-1.--MOS 75XX Refly Interval, Combat Readiness Percentage.

PILOT 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
CQ	400	200,201,320

Figure 7-2.--MOS 75XX Flight Update Chaining.

CHAPTER 8

REPLACEMENT AIRCREW TRAINING

	PARAGRAPH	PAGE
FLEET READINESS SQUADRONS	800	8-3
NAVAL AVIATOR PRODUCTION PROCESS (NAPP).	801	8-4
FRS PLANNING AND REPORTING	802	8-5
TRANSITION/CONVERSION TRAINING	803	8-7
REFRESHER TRAINING	804	8-8
BY NAME ASSIGNMENT	805	8-9

FIGURE

8-1	REFRESHER TRAINING MATRIX	8-10

CHAPTER 8

REPLACEMENT AIRCREW TRAINING

800. FLEET READINESS SQUADRONS

1. General. Marine Corps Fleet Replacement Squadrons (FRS) and formal MACCS schools shall conduct syllabus training per individual T&R manuals.

2. FRS Operations. An FRS designated by the CMC shall conduct combat capable 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 FRS's under their authority receive the necessary support and assets specified to carry out their mission.

a. Requirements. CG TECOM (C4610) is responsible for establishing FRS training policy and requirements, assigning FRS quotas, monitoring FRS training progression, and approving assignments to training. C4610 shall consolidate and submit annual FRS Flight Hour Program 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 (C4610) 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 the 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 (C4610) 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 D/CS Aviation.

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

(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 for various categories are generated by CG TECOM (C466) (Coalition and Special Warfare Branch) based upon Foreign Military Sales (FMS) requirements.

e. Assignment. CG TECOM (C4610) is the approval authority for FRS training. Units should make requests for training by message or 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) will treat all tour lengths shorter than 24 months as an exception to this policy.

g. FRS Waivers/Deferments

(1) Waived FRS Syllabus Events. A commanding officer may waive an event, when in his judgment, the previous experience or performance of an individual satisfies the requirement of the particular event. Waived events are not required to be completed. Waivers for multiple events or complete stages of training shall be submitted via naval message to CG TECOM (C4610) for review and authorization.

(2) Deferred FRS Syllabus Events. A commanding officer may defer FRS events to fleet 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 (C4610). Gaining fleet units must complete deferred training events, in strict compliance with appropriate Combat Capable Qualification requirements. The FRS NATOPS Officer shall annotate all deferred events in the aircrew performance record (APR)/MACCS performance record (MPR) prior to the individual's transfer.

h. 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 (C4610), may conduct replacement aircrew training.

801. NAVAL AVIATOR PRODUCTION PROCESS (NAPP)

1. In Oct 97, CNO initiated the Naval Aviation Production Process Review (NAPPR) 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 the barriers to improvement. The Naval Aviator Production Team (NAPT) chartered three Cross-Functional Teams (CFT) to oversee NAPP efforts that cover the entire process from "street to fleet." CFT-3 monitors FRS production and identifies barriers to training to improve FRS efficiency and effectiveness.

a. NAPP Representation. Each FRS shall appoint an officer as the NAPP Representative, 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 (C4610), CMC [DC AVN (ASM)], FRS, and OPNAV N789.

b. Cockpit charts. A new reporting system integral to the NAPP initiative is the cockpit charts that summarize performance measures that best describe an FRS's training readiness. The management of cockpit charts is governed by OPNAVINST 3500.31F and shall be submitted electronically to OPNAV N789, ASM, and CG TECOM (C4610) by the 10th of each month for the preceding month. For example, March's cockpit charts shall be submitted by 10 April. If the appropriate aircraft data is

not available by the time the cockpit charts are due, it is acceptable to use the preceding month's aircraft maintenance data.

c. Production Planning Factors (PPFs). Identification of FRS resourcing 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. PPFs should be maintained by the FRS and reviewed annually to ensure the most up-to-date information is available. To facilitate an annual review, CNAL/CNAP organizes annual PPF workshops for their respective USN/USMC FRSs. Marine FRS NAPP representatives should attend the workshops.

802. 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 (C4610) estimate of FRS training capacity, (2) FRS class date report and capacity estimate, and (3) CG TECOM (C4610) publication of the NA/NFO Training Plan.

(1) CG, MCCDC Estimate of FRS Training Capacity. Annually on 30 January, CG TECOM (C4610) publishes an estimate of USMC FRS training capacities for the next fiscal year. CG TECOM (C4610) 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 (C4610) determines RAC equivalents 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 RAC equivalent (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 (NACs), CG TECOM (C4610) 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 reflys. 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 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 (C4610) 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 (C4610) 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 readiness 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 (C4610) will determine FRS class start dates. If the estimate of training capacity differs from the CG TECOM (C4610) 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 (C4610), the FRS squadron 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 (C4610) NA/NFO Training Plan. Annually on 15 July, CG TECOM (C4610) 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. 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. However, those FRSs that have not been supplied with the cockpit charts shall use the Monthly Replacement Aircrew Status report (MRACS). FRS cockpit charts shall be forwarded electronically to CG TECOM (C4610) via MAW G-3 by the 10th of each month for the proceeding month. MRACS reports shall be submitted by naval message to CG TRNGCOM QUANTICO VA//C4610// and CG XX MAW//G-3// by the 10th of the following month; i.e., June report is due 10 July in the format shown in appendix G.

(1) Pools. The FRS squadron shall report a student in a pooled status when he will not begin ground school within 5 days. Moreover, the FRS squadron shall report students who have completed ground school and who will not commence the simulator/aircraft-flying syllabus within 5 days.

(2) Delayed Flying Status (DFS). The FRS squadron shall report students who have commenced the simulator/aircraft flying portion of the FRS syllabus, but who have progressed at an average of less than 2 simulator/ aircraft flights per week since beginning flying.

(3) Joint FRS Reporting. The applicable Marine Aviation Training Support Group (MATSG) shall forward the monthly NAPP cockpit charts or submit MRACS reports for Marine students in joint FRSs.

2. Flight Hour Funding. FRS flight hours are programmed by CG TECOM (C4610) 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. The CG, 4th MAW shall annually submit an estimate of FRS training requirements by T/M/S and POI for the next 3 fiscal years on 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 (C4610).

803. TRANSITION/CONVERSION TRAINING

1. Transition/Conversion training includes aircrew and MACCS 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 aircrew/MACCS 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 aircrew/MACCS 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, Hawk Missile Det, DASC, LAAD, and ATC.

b. Conversion

(1) Model Conversion (C). The instruction provided for aircrew/MACCS 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). Aircrew/MACCS 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.

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 (C4610).

4. Aircrew/MACCS personnel selected or assigned to Transition/Conversion training shall follow the appropriate POI as outlined in the respective aircraft T&R syllabus. CG TECOM (C4610) shall designate the training squadron/unit to conduct this training.

804. REFRESHER TRAINING

1. Refresher POIs are prescribed for aircrew/MACCS crews who have not flown/operated the model aircraft/system within the previous 485 days (see figure 8-1). MRF programs consist of ground school/simulator training as appropriate plus 10 hours of flight time and a NATOPS check in model. CG TECOM (C4610) will consider additional training for individuals in this program on a case-by-case basis when requested by the unit commander. Due to differing backgrounds and assignments of aircrew/MACCS personnel, the following Refresher program criteria apply:

2. Aircrew returning to an FMF DIFOP billet, having previously held that MOS, having flown their type but not model aircraft within the past 485 days shall receive a Modified Refresher Program (MRF) from the 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 FMF billet; MOS 7557 NATC T-44 instructor returning to fly a KC-130.)

3. Aircrew 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 a MRF.

4. Pilots assigned to “Single Control Aircraft” and who have been DIFDEN or DIFOP (out of type) longer than 365 days but less than or equal to 485 days will receive FRS Ground School, simulator training and a safe-for-solo check flight. Pilots and NFOs who have been DIFDEN or DIFOP (out of type) for 486-730 days will receive a MRF program.

5. Aircrew destined for PCS to the 1st MAW may receive a MRF upon approval by CG TECOM (C4610). The CG, 1st MAW may request other tactical jet training for inbound pilots or NFOs from CMC (MMOA).

6. Commands may request Refresher training for aircrew not covered by the previous refresher training programs. Requesting units should make requests to CG TECOM (C4610) 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.

7. CG, 4th MAW may request authorization from CG TECOM (C4610) to designate selected Reserve squadrons to provide appropriate training for SMCR aircrew on a case-by-case basis.

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

9. Training units shall provide formal Refresher training equivalent to 60 percent CRP. Tactical units shall fly sorties corresponding to a level of training beyond 60 percent CRP. Individual communities design a Refresher syllabus to decrease repetition of sorties in which Refresher pilots have already qualified. However, Refresher pilots who did not initially qualify in a particular stage shall complete all the ground school, simulator and flight instruction for that stage.

10. Training squadrons/elements shall conduct Refresher training. 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, CH-46, and UH-1N aircraft in exceptional situations.

11. A CMC-designated FMF unit shall provide formal Refresher training equivalent to 60 percent CRP for MACCS personnel. Individual units will conduct training beyond 60 percent CRP.

805. BY NAME ASSIGNMENT (BNA). BNA is the Marine Corps' sole source of training allocation and execution data. MCO 1553.7 requires use of BNA. 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 MCCDC (TRNGCOM C475), 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.

REFRESHER TRAINING MATRIX

Aircrew Returning from:	Time out of Model:	Training Required:	Training Conducted at:
DUAL CONTROL ACFT	≤ 485 days	Per T/M/S T&R Manual	Tactical Unit
DIFDEN or **DIFOP** (Out of Type)	486-730 days	Modified Refresher CAT IV	FRS
	> 730 days	Refresher CAT III	FRS
SINGLE CONTROL ACFT	≤ 365 days	Per T/M/S T&R Manual	Tactical Unit
DIFDEN or **DIFOP** (Out of Type)	> 365 days but ≤ 485 days	Pilots only - FRS ground school, simulators and safe-for-solo check	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 8-1.--Refresher Training Matrix.

CG TECOM (C4610) is approval authority for deviations from above matrix.

CHAPTER 9

TRAINING MANAGEMENT

	PARAGRAPH	PAGE
TRAINING RECORDING	900	9-3
SYLLABUS EVENT STATUS RECORDING	901	9-3
CRP	902	9-5
REPORTS	903	9-5
AUTOMATED TRAINING MANAGEMENT SYSTEMS	904	9-5

FIGURES

9-1	EXAMPLE OF SYLLABUS EVENT STATUS RECORD	9-7
9-2	EXAMPLE OF T&R TRANSFER DATA SHEET	9-8

CHAPTER 9

TRAINING MANAGEMENT

900. TRAINING RECORDING

1. 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. Syllabus event status records shall be maintained as delineated in this chapter.

2. 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.

901. SYLLABUS EVENT STATUS RECORDING

1. Syllabus event status records track aircrew/MACCS personnel T&R syllabus proficiency. At a minimum, syllabus event tracking records shall include the proficiency status of each syllabus event and cumulative CRP by individual.

2. Event Proficiency Status. Syllabus event status records shall indicate 'Proficient,' 'Delinquent' or 'Incomplete' for each event. A Proficient status is indicated upon successful completion or update of an event; Proficient status is valid through the refly factor interval. A Delinquent status is indicated when the event is not updated within the refly factor interval for that event. An Incomplete status is indicated when an event has never been successfully completed by an individual or updated via T/C stage completion.

a. Utilization of a "Grease Board" type syllabus event tracking record similar to figure 9-1 is encouraged. Use of proficiency status tracking symbology to assist with training management is authorized. All symbology must ultimately indicate Proficient, Delinquent, or Incomplete. For example, a green symbol may indicate, 'Proficient – greater than 60 days refly interval remaining'; a yellow symbol may indicate, 'Proficient – less than 60 days refly interval remaining'; an orange symbol may indicate, 'Proficient – less than 30 days refly interval remaining.' All three symbols indicate event status is Proficient.

b. Skill Retention. Aircrew/MACCS personnel must maintain proficiency in all Core Skill areas to ensure combat skill retention. Proficiency maintenance is accomplished through event updating. When an event is updated, the refly factor for that event is renewed the date the event was updated. Proficiency for updated events is valid through the refly factor interval. An event shall be updated when it is: (1) Successfully completed, (2) Chained within the refly factor interval, or (3) Updated via T/C/R stage completion.

Example: An event has a refly factor of 90, and that event is updated on Julian date X100. A Proficient status shall be indicated for that event through Julian date X190.

(1) Syllabus Event Update Chaining. T&R syllabi may be structured where lower numbered events "chain" to higher numbered events.

(a) Successful completion of advanced events shall update chained events specified in individual T&R chapters (per paragraph 703.2.j) that have been previously completed and a proficient status is indicated.

(b) Delinquent or incomplete events shall not be updated through chaining.

(2) Transition/Conversion/Refresher (T/C/R) Syllabi Event Updating. T/C/R POIs are standardized syllabi that account for previous experience. Because T/C/R syllabi contain fewer events than basic POIs, T/C/R syllabi have unique updating procedures. Proficiency status updating for individuals following T/C/R syllabi shall be as follows:

(a) Transition/Conversion (T/C) POIs. All events in a stage shall be updated the date all T/C POI specified events of that stage are completed. Series Conversion POIs are included in this category.

(b) Refresher (R) POIs. All previously completed stage events shall be updated the date all R POI specified events of that stage are completed. Events that have not been previously completed shall not be updated and should be completed in addition to R POI events. Modified Refresher POIs are included in this category.

(c) Upon completion of a stage delineated in T/C/R POI, CRP and proficiency status will be computed using established proficiency refly and chaining updating principles for that stage.

Example: An aircrew completes the Modified Refresher syllabus at an FRS. That aircrew receives 60% CRP value upon completion of the Modified Refresher syllabus. The aircrew is assigned to a tactical unit where he follows the refresher (R) POI. The Refresher Combat Ready (200 series) stage Air-to-Ground (AG) POI contains three events, while the Basic Combat Ready stage contains eight AG events. The aircrew is required to complete the three 200 level R-coded AG events and any 200 level AG events not previously completed. CRP value and proficiency status is computed as normal for those events. Upon completion of all three 200 level R-coded AG events, proficiency status is updated for all previously completed 200 level AG events (proficiency status updated the date the third R-coded event is completed). Normal proficiency refly updating and chaining principles are now used to compute aircrew CRP and proficiency status for 200 level AG events.

(3) Event updating for personnel with previous experience. At the discretion of the commanding officer, update of events for personnel who have previously completed entire stages of events, but are delinquent in events of a stage(s), may be accomplished per Refresher POI updating procedures in paragraph 901.2.b.(2).(b).

902. CRP

1. CRP shall be computed and tracked for each crewmember assigned to a unit. CRP is computed as the sum of event CRP values each individual maintains a 'Proficient' status in (to hundredths of a percent).

903. REPORTS

1. During unit readiness reporting periods, commanding officers shall report the status of readiness and training per the current edition of the Marine Corps Status of Readiness and Training System (SORTS) Manual, MCO P3000.13.

2. When personnel transfer, the unit responsible for recording syllabus training shall enclose a report of training in the APR/MACCS Performance Record. This report will be termed a "T&R Transfer Data Sheet." At a minimum, T&R Transfer Data Sheet reports shall include all syllabus training codes with corresponding event completion/update dates valid at date of transfer. Figure 9-2 is an example of a T&R Transfer Data Sheet.

904. AUTOMATED TRAINING MANAGEMENT SYSTEMS

1. MCCDC and DC AVN are reviewing aviation automated training management system policy. Until policy is decided, aviation ground units may utilize Aviation Training and Readiness Information Management System (ATRIMS - Aviation Ground version), and aviation flight units may utilize Squadron Assistance Risk Assessment (SARA) as tools to perform training management functions. Efforts are underway by CG TECOM (C4610) to standardize automated training management system (SARA/ATRIMS) syllabus event status tracking, recording and reporting.

2. For flight operations, the basic source documents for SARA are NAVFLIRS and NALCOMIS. Details for the utilization of NAVFLIRS and NALCOMIS are contained in OPNAVINST 3710.7.

3. ATRIMS. Units may 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 (C4610) 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 (C4610).

4. SARA. Aviation flight units may utilize SARA to accomplish automated training management functions.

a. Aviation flight units are highly encouraged to utilize SARA for training management, scheduling, and Operational Risk Management (ORM) functions. HQMC (DC AVN) and CG TECOM (C4610) are pursuing courses of action to standardize and automate SARA functionality. Fleet recommendations to improve SARA functionality are highly desired. SARA input should be directed to Aviation Training Branch, CG TECOM (C4610).

b. CG TECOM (C4610) and DC AVN (SD) currently manage the SARA program. SARA POC and assistance information:

CG TECOM (C4610): DSN 278-4053/4054
http://www.tecom.usmc.mil/atb/

DC AVN (SD): DSN 224-1202/3164/2423/1077
http://www.hqmc.usmc.mil/safety.nsf

Boeing:
SARA help line toll free): (314) 234-7272
Email: sara.support@boeing.com
SARA web site: https://citis.boeing.com

03/30/96	Grease Board Status Report for HMM-XXX											
13:18:40	Syllabus CH-46E MOS: 7562 Version A Start CRP: 60 DS: 3											
Event	SFAM	FAM	CAL	CAL	CAL	EXT	FORM	STERF	TERF	TERF	TERF	TERF
Code	200	201	211	212	213	221	231	241	242	243	244	245
CRP	0.5O	O.5O	0.5O	0.5O	0.5O	0.5O	0.5O	0.5O	0.5O	0.5O	0.5O	0.5O
Refly	180	180	180	180	180	365	180	180	180	180	180	365
REGAN, K. J.	6090	6094	6110	6109	6110	6235	6234	6235	6235	6235	6234	6235
BUSH, G. W..	6125	6145	6146	6134	6146	6235	6234	6235	6235	6235	6234	6235
JOHNSON, D. K.	6125	6188	6190	6177	6190	6303	6296	6303	6303	6303	6296	6303
CARNEY, R. A.	6200	6188	6190	6188	6190	6250	6245	6250	6250	6250	6245	6250
TILL, J. M.	6184	6199	6205	6200	6205	6291	6288	6291	6291	6291	6288	6291
DOERR, D. R.	6200	6224	6225	6222	6225	6235	6233	6235	6235	6235	6233	6235
ELLIS, D. A.	6143	6155	6160	6144	6160	6303	6297	6303	6303	6303	6297	6303
OAKES, H. A.	6143	6155	6180	6144	6180	6235	6233	6235	6235	6235	6233	6235
SHAW, S. C.	6090	6095	6180	6134	6180	6227	6245	6250	6250	6250	6245	6250
SANDERSON, W. A.	6167	6168	6188	6177	6188	6233	6297	6303	6303	6303	6297	6303
FLORES, E. F.	6143	6150	6188	6143	6188	6235	6232	6235	6235	6235	6232	6235
ROBINSON, M. L.	6167	6167	6170	6167	6170	6235	6232	6235	6235	6235	6232	6235
NOTE	JULIAN DATEs INDICATE LAST TIME EVENT WAS COMPLETED/UPDATED											

Figure 9-1.--Example of Syllabus Event Status Record.

09/13/01	T&R Transfer Data Sheet
14:22:19	
UNIT NAME	HMM-XXX SYLLABUS CH-46E A
CREWMEMBER	JOHNSON, D. K. SSN 867-53-0900
TOTAL TIME	3275.3 MODEL TIME 2710.1
TOTAL NVG TIME	150.4 NVG LLL TIME 87.4
Designations:	Sect Ldr 9054, Div Ldr 9085, Flt Ldr 9104, AMC 9154, NSI 9097, DMI 9127
Qualifications:	NSQ HLL 9014, NSQ LLL 9017, TERFQ 9005, DMQ 9025

REQUIREMENTS		DATE	REQUIREMENTS		DATE	REQUIREMENTS		DATE
SFAM	200	1095	CQ	272	1070	HIE	361	1090
FAM	201	1096	SAG	280	1114	HIE	362	1107
FAM	202	1097	AG	281	1115	HIE	363	1233
SCAL	210	1095	SNVG	300	1195	HIE	364	1134
CAL	211	1250	NVG	301	1204	HIE	365	1188
CAL	212	1250	NVG	302	1250	STAC	370	1150
CAL	213	1098	NVG	303	1250	TAC	371	1250
SEXT	220	1095	NVG	304	1250	TAC	372	1250
EXT	221	1188	SNVG	310	1207	SDM	400	1125
SFORM	230	1105	NVG	311	1250	DM	401	1191
FORM	231	1250	NVG	312	1250	DM	402	1191
STERF	240	1110	SNVG	313	1208	SNBC	410	1090
TERF	241	1250	NVG	314	1209	NBC	411	1105
TERF	242	1250	NVG	315	1250	CQ	420	1200
TERF	243	1250	NVG	316	1250	CQ	421	1200
TERF	244	1250	SAG	320	1060	CQ	422	1200
TERF	245	1115	AG	321	1145	CQ	423	1200
SNVG	250	1150	SEW	330	1107	HIE	430	1225
NVG	251	1250	EW	331		STAC	440	1166
NVG	252	1250	SDM	340	1166	TAC	441	1250
NVG	253	1250	DM	341	1199	TAC	442	1250
NVG	254	1175	SMAT	350	1125	TAC	443	1250
SNBC	260	1090	MAT	351	1177	STAC	444	1199
NBC	261	1105	MAT	352	1167	TAC	445	1250
SCQ	270	1020	MAT	353	1177	TAC	446	1250
CQ	271	1070	SHIE	360	1050	TAC	447	1250

NOTE	JULIAN DATES INDICATE LAST TIME EVENT WAS COMPLETED/UPDATED

Figure 9-2.--Example of T&R Transfer Data Sheet.

APPENDIX A

T/M/S CORE COMPETENCIES

1. Appendix A information will be formatted as follows:

UNIT - A/C T/M/S or AGENCY

CORE COMPETENCY

1. **MISSION** (Mission statement as developed at T&R Administrative conference and reflected on the unit T/O).

2. **MISSION ESSENTIAL TASK LIST (METL)** (METLs as developed at T&R Administrative conference and reflected on the unit T/O).

3. **CORE CAPABILITY**

a. A core capable unit is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% PAA, T/E, 90% in reporting status and 90% T/O on hand in all MOS's. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable unit is able to surge beyond its core capability is situational dependent (core capability as developed at T&R Administrative conference and reflected on the unit T/O).

b. Unit core capability.

c. Detachment core capability (If applicable).

MARINE ATTACK SQUADRON - AV-8B

CORE COMPETENCY

1. **MISSION.** Attack and destroy surface targets under day and night meteorological conditions and to escort rotary wing aircraft.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Conduct Close Air Support.

b. Conduct armed reconnaissance and interdiction operations.

c. Conduct armed escort of R/W operations.

d. Conduct air defense operations within capability of aircraft.

e. Maintain capability to operate from amphibious shipping and CVs.

f. Maintain capability to operate from expeditionary airfields and remote tactical landing sites.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% Primary Authorized Allowance (PAA), 90% in reporting status and 90% T/O on hand in all MOS's. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to sortie four sections of mission capable radar/night attack capable aircraft crewed by NSQ pilots. Within one hour of landing, sortie two more sections, same criteria. A squadron minus must be capable of utilizing up to ten of its daily sorties flying section air-to-air missions.

c. A core capable detachment is able to sortie one night capable and one day capable section, and within one hour of landing, repeat same. Perform the above from a main base, appropriate sized expeditionary bases, and/or from amphibious platforms. All of the above sorties can be flown in any mix necessary while performing any OAS mission (CAS, DAS, ARMED RECCE). Helo escort in an appropriate air-to-air role (E.G., EDATF, Point Defense, Self/Helo Escort). A detachment must be capable of flying all of its minimum eight sorties in this role.

MARINE ELECTRONIC WARFARE SQUADRON EA-6B

CORE COMPETENCY

1. **MISSION**. Conduct airborne EW Support of FMF operations.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Conduct Airborne Electronic Attack (EA) and Electronic Support (ES) operations.

b. Conduct airborne EA operations for Electronic Protection (EP) training of FMF units.

c. Process and provide mission data from tape recording obtained on EW missions for updating and maintaining on Electronic Order Of Battle (EOB).

d. Maintain the capability of operating from advanced bases and expeditionary airfields.

e. Maintain the capability to operate during night and instrument flight conditions.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% PAA, 90% in reporting status and 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron will, over a 24-hour period, provide six sorties of mission capable aircraft with the following capabilities:

(1) Must be able to be flown either day or night.

(2) Four sorties can be flown in section or division.

(3) Four sorties will be capable of providing EW in support of Deep Air Support, Close Air Support, or Electronic Surveillance.

(4) Two sorties will be capable of providing EW in support of Area Defense and War-at-Sea.

(5) Will perform these missions from a main base or an appropriate size expeditionary airfield.

MARINE FIGHTER ATTACK SQUADRON – F/A-18A/C

CORE COMPETENCY

1. **MISSION**. Intercept and destroy enemy aircraft under all-weather conditions, and attack and destroy surface targets.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Intercept and destroy enemy aircraft in conjunction with ground or airborne fighter control under all weather conditions.

b. Attack and destroy surface targets, day and night under all weather conditions, utilizing all types of conventional and advanced weapons compatible with assigned aircraft.

c. Conduct self escort and escort of friendly aircraft under all weather conditions.

d. Maintain the capability to deploy and operate from aircraft carriers, advanced bases, and expeditionary airfields.

e. Maintain the capability to conduct extended range operations employing aerial refueling.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, > assuming 100% PAA, > 90% in reporting status, and > 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to sortie two divisions of mission capable aircraft in day/night OAS or AAW within six hours of frag order with the following imbedded capabilities:

(1) SEAD and HVAA escort as required for each division.

(2) Night capable for operations as appropriate by series.

(3) Operate from a main base, appropriate sized EAF, advanced base, or aircraft carrier.

(4) Employ PGMs and air-to-air missiles as appropriate by series.

(5) Provide self escort.

c. Within four hours of landing, sortie one division, same criteria.

MARINE FIGHTER ATTACK SQUADRON – F/A-18D

CORE COMPETENCY

1. **MISSION**. Attack and destroy surface targets, day or night under all weather conditions; conduct multi-sensor imagery reconnaissance; provide supporting arms coordination; intercept and destroy enemy aircraft under all weather conditions.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Attack and destroy surface targets, day and night under all weather conditions, utilizing all types of compatible conventional and advanced weapons.

b. Conduct multi-sensor imagery, visual reconnaissance, and provide Battle Damage Assessment.

c. Provide day and night supporting arms coordination.

d. Conduct self escort and escort of friendly aircraft.

e. Intercept and destroy enemy aircraft in conjunction with ground or airborne fighter control under all weather conditions.

f. Maintain the capability to deploy and operate from advanced bases and expeditionary airfields.

g. Maintain the capability to conduct extended range operations employing aerial refueling.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations assuming 100% PAA, > 90% in reporting status, and > 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to sortie two divisions of mission capable aircraft in day/night OAS or AAW within six hours of frag order with the following imbedded capabilities:

(1) SEAD and HVAA escort as required for each division.

(2) Night capable.

(3) Operate from a main base, appropriate sized EAF or advanced base.

(4) Employ PGMs and air-to-air missiles.

(5) Provide self escort.

c. Be able to sortie four sections in FAC(A) role in lieu of other missions.

d. Within four hours of landing, sortie one division or two FAC(A) sections, same criteria.

MARINE AERIAL REFUELING SQUADRON - KC-130

CORE COMPETENCY

1. **MISSION**. Provide aerial refueling service in support of air operations; Provide assault air transport for personnel, equipment, and supplies, and conduct such other air operations as may be directed.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Provide tactical and long range aerial refueling.

b. Provide rapid ground refueling service to aircraft and vehicles.

c. Provide assault air transport for air landed troops, supplies and equipment.

d. Provide air delivered troops, supplies and equipment.

e. Provide airborne platform for the airborne DASC command post.

f. Within the capability of the aircraft, operate under day/night, all weather conditions, with or without airborne, surface or ground controllers.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% PAA, 90% in reporting status and 90% T/O on hand in all MOS's. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to sortie two divisions of three aircraft each of mission capable aerial refueling aircraft or three sections of mission capable assault support aircraft. Within four hours of landing, the squadron will sortie two more sections of mission capable aerial refueling aircraft or two more sections of mission capable assault support aircraft. A core capable squadron will perform the above from either a main base location or appropriate sized expeditionary airfield. All aircraft are capable of aerial and rapid ground refueling, assault support and two platforms will be ASE equipped.

MARINE LIGHT ATTACK SQUADRON - AH-1W

CORE COMPETENCY

1. **MISSION.** Provide offensive air support, utility support, armed escort and airborne supporting arms coordination during Naval expeditionary operations or joint and combined operations.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Provide fire support and security for forward and rear area forces against point and anti-armor forces.

b. Provide armed and visual reconnaissance.

c. Conduct combined arms coordination and control operations.

d. Conduct anti-helicopter operations and point or limited area air defense from threat fixed wing aircraft.

e. Provide armed escort.

f. Maintain capability to operate from amphibious shipping and forward operating bases.

g. Support Tactical Recovery of Aircraft and Personnel (TRAP) operations.

h. Maintain the capability to operate from amphibious shipping, other floating bases, and Forward Operating Bases (FOBs).

i. Maintain the capability to operate at night, in adverse weather, and under instrument flight conditions at extended ranges.

j. Maintain self-defense capability from ground-to-air and air-to-air threats.

k. Perform organizational maintenance on assigned aircraft in all environmental conditions.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% PAA, 90% in reporting status and 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to sortie three, four plane divisions of which three sections are HLL mission capable and three sections LLL. Perform the above from a main base, appropriate sized expeditionary base, and/or amphibious platforms. All of the above sorties are able to be flown in any mix of sections necessary while performing R/W CAS, Armed Recce, Escort or FAC(A).

c. A core capable detachment is able to sortie two sections of LLL mission capable aircraft. Perform the above from a main base, appropriate sized expeditionary base, and/or from amphibious platforms. All of the above sorties can be flown in any mix of sections necessary while performing R/W CAS, Armed Recce, Escort or FAC(A).

MARINE LIGHT ATTACK SQUADRON - UH-1N

CORE COMPETENCY

1. **MISSION.** Provide offensive air support, utility support, armed escort and airborne supporting arms coordination during Naval expeditionary operations of joint and combined operations.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Provide an airborne command and control platform for command elements and assault support operations.

b. Control, coordinate and provide terminal guidance for supporting arms and tactical air control.

c. Provide combat assault transport of troops, supplies and equipment.

d. Provide TRAP capability.

e. Provide armed and visual reconnaissance.

f. Provide fire support and maintain a self-defense capability from ground to air and air-to-air threats.

g. Conduct assault support for evacuation operations and other maritime special operations.

h. Maintain capability to operate from amphibious shipping and forward operating bases.

i. Operate at night, in adverse weather and under instrument flight conditions at extended ranges.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% PAA, 90% in reporting status and 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to sortie one, four plane division of which one section is HLL mission capable and one section is LLL. Perform the above from a main base, appropriate sized expeditionary base, and/or from amphibious platforms. All of the above sorties are able to be flown in any mix of sections necessary while performing small team insert/extract, Command and Control SAC(A), FAC(A), SAC(A), and armed tactics.

c. A core capable detachment is able to conduct small team insert/extract, Command and Control SAC(A), FAC(A), SAC(A), and armed tactics. Sortie one mission capable aircraft in LLL conditions twice during a 24-hour period. Perform the above from a main base, appropriate sized expeditionary base, and/or from amphibious platforms.

MARINE MEDIUM HELICOPTER SQUADRON - CH-46E

CORE COMPETENCY

1. **MISSION.** Provide assault support transport of combat troops, supplies and equipment during expeditionary, joint or combined operations.

2. **MISSION ESSENTIAL TASK LIST**

a. Provide assault support transport of combat troops.

b. Provide assault support transport of supplies and equipment.

c. Provide support for evacuation operations.

d. Conduct assault support for maritime special operations.

e. Provide support for mobile Forward Arming and Refueling Points (FARPS).

f. Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.

g. Augment local Search and Rescue (SAR) assets, Provide support for casualty evacuation operations.

h. Maintain capability to operate from amphibious shipping, other floating bases, and Forward Operating Bases (FOBs).

i. Maintain the capability to operate at night, in adverse weather, and under instrument flight conditions at extended ranges.

j. Maintain self-defense capability from ground-to-air and air-to-air threats.

k. Perform organizational maintenance on assigned aircraft in all environmental conditions.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% PAA, 90% in reporting status and 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to sortie two, three plane divisions of mission capable aircraft crewed by HLL qualified aircrew. Within four hours of landing, sortie two more sections, same criteria. If required, substitute two sections of mission capable aircraft crewed by LLL qualified aircrew in place of two, three plane divisions. Within three months of a known deployment date, be able to sortie four sections of mission capable aircraft crewed by LLL qualified aircrew. Within four hours of landing, sortie two more sections HLL qualified.

MARINE HEAVY HELICOPTER SQUADRON - CH-53E

CORE COMPETENCY

1. **MISSION**. Provide assault support transport of heavy weapons, equipment and supplies during expeditionary, joint or combined operations.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Provide assault transport of heavy weapons, equipment and supplies.

b. Provide assault transport of combat troops.

c. Conduct assault support for evacuation operations.

d. Conduct assault support for maritime special operations.

e. Provide support for mobile Forward Arming and Refueling Points (FARPs).

f. Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.

g. Provide support for casualty evacuation operations.

h. Maintain capability to operate from amphibious shipping, other floating bases, and forward operating bases (FOBs).

i. Operate at night, in adverse weather, and under instrument flight conditions.

j. Maintain the capability to deploy and conduct extended range operations employing aerial refueling.

k. Maintain self-defense capability from ground-to-air and air-to-air threats.

l. Perform organizational maintenance on assigned aircraft in all environmental conditions.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% PAA, 90% in reporting status and 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent. Reserve squadron capability, based on eight plane PAA, is proportionately less.

b. A core capable squadron is able to sortie four sections HLL or four sections LLL with ability to conduct long-range raid (to include aerial refueling), NVG TERF external/internal combat resupply, NVG combined arty raid/air movement from expeditionary and amphibious platforms.

c. A core capable detachment is able to sortie two sections LLL capable of conducting NVG long-range raid (to include aerial refueling), NVG TERF external/internal combat resupply, NVG combined arty raid/air movement from expeditionary and amphibious platforms.

MARINE HEAVY HELICOPTER SQUADRON - CH-53D

CORE COMPETENCY

1. **MISSION.** Provide assault support transport of heavy weapons, supplies and equipment during expeditionary, joint or combined operations.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Provide assault transport of combat troops.

b. Provide assault transport of supplies and equipment.

c. Conduct assault support for evacuation operations.

d. Conduct assault support for maritime special operations.

e. Provide support for mobile Forward Arming and Refueling Points (FARPs).

f. Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.

g. Provide support for casualty evacuation operations.

h. Maintain capability to operate from amphibious shipping, other floating bases, and forward operating bases (FOBs).

i. Operate at night, in adverse weather, and under instrument flight conditions at extended ranges.

j. Maintain self-defense capability from ground-to-air and air-to-air threats.

l. Perform organizational maintenance on assigned aircraft in all environmental conditions.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 100% PAA, 90% in reporting status and 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to sortie two sections HLL or one section LLL to conduct: long range raid/reinforcement, external/internal combat resupply, combined arty raid/air movement from expeditionary and amphibious platforms.

MARINE MEDIUM TILTROTOR SQUADRON – MV-22B

CORE COMPETENCY

1. **MISSION**. Provide those applicable tasks of the assault support function of Marine Aviation across the spectrum of expeditionary operations in support of the MAGTF.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Conduct long range combat assault transport in support of ship-to-objective maneuver and subsequent operations ashore.

b. Maintain the capability to self deploy and conduct extended range operations utilizing aerial refueling.

c. Conduct assault support for the execution of TRAP.

d. Conduct assault support for air evacuation operations and other special maritime operations.

e. Maintain the capability to conduct assault support operations from amphibious shipping and forward operating bases.

f. Maintain a self-defense capability from ground-to-air and air-to-air threats.

g. Operate at night, in adverse weather, and under instrument flight conditions at extended ranges.

h. Perform organizational maintenance on assigned aircraft in all environmental conditions.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming 100% PAA, 90% in reporting status and 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. Within a 24-hour period, a core capable squadron is able to sortie a four plane division twice (or a flight of eight once) of mission capable aircraft crewed by NSQ aircrew on any Mission Essential Task (MET) in a medium threat environment.

MARINE TACTICAL AIR COMMAND SQUADRON, TACTICAL AIR COMMAND CENTER (TACC)

CORE COMPETENCY

1. **MISSION.** Function as the senior MAGTF air Command and Control agency and serve as the operational command post for the ACE commander and his battle staff.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Maintain and disseminate information on the enemy and friendly situation, including the aviation and ground combat information essential to the air effort.

b. Plan and coordinate the employment of ACE communications electronics information networks and means.

c. Manage employment of all aircraft and surface-to-air weapons, and sensors within, or in support of, the MAGTF area of operations.

d. Coordinate air operations between the MACCS and air Command and Control agencies external to the MAGTF, to include other services and host nation agencies.

e. Develop and promulgate air operations plans and orders, to include the MAGTF Air Tasking Order (ATO).

f. Analyze and evaluate the results of MAGTF air operations.

g. Disseminate air defense warning conditions and weapons control status to all major elements of the MAGTF.

h. Provide pertinent emission control information within the area of operations.

i. Coordinate information flow within the ACE battle staff to facilitate efficient planning and execution of MAGTF aviation operations.

j. Plan and supervise airspace coordination.

k. Support MAGTF expeditionary operations.

l. Conduct combat operations in an NBC environment.

3. **TACC CORE CAPABILITIES**

a. Current Operations Section (COS). A core capable TACC COS is capable of performing the functions of command and direction, interface coordination, close/deep battle coordination, air defense coordination, and intelligence processing and dissemination. A minimum of two core capable COS crews are required to sustain and perform those functions during contingency/combat operations, assuming that all crew positions are manned and supporting MOSs are at 80%. Sufficient TADIL, voice, tactical data networks, intelligence systems, or ATO subsystem capability should exist to support operational requirements. If all crew positions are not filled, those critical functions performed by that position will be degraded. The notional COS core capable crew of the baseline TACC consists of 60 personnel. This baseline organization is scaleable to meet operational requirements.

b. Future Operations Section (FOS). A core capable TACC FOS plans for and allocates available air assets by promulgating an ATO and other related planning documents within a theater-delineated timeline. One core capable FOS crew is required to sustain and perform contingency/combat operations. While not structured for two crews, the planning, decision, and execution timeline may require the shifting of personnel to meet critical events during the day. If all crew positions are not filled, critical functions performed by that position will be degraded. The notional FOS core capable crew of the baseline TACC consists of 44 personnel. This baseline organization is scaleable to meet operational requirements.

c. Future Plans Section (FPS). A core capable TACC FPS is responsible to the ACE G-3 for aviation planning in support of the next MEF mission change. One core capable future plans section is required to sustain and perform contingency/combat operations. While not structured for two crews, the planning, decision, and execution timeline may require the shifting of personnel to meet critical events during the day. If all crew positions are not filled, critical functions performed by that position will be degraded. The notional future plans section core capable crew of the baseline TACC consists of 44 personnel. This baseline organization is scaleable to meet operational requirements.

MARINE AIR CONTROL SQUADRON, TACTICAL AIR OPERATIONS CENTER (TAOC)

CORE COMPETENCY

1. **MISSION.** Detect, identify and control the intercept of hostile aircraft and missiles and to provide navigational assistance to friendly aircraft in the accomplishment of support missions.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.

b. Conduct air surveillance.

c. Conduct combat airspace management.

d. Control surface and airborne weapons systems.

e. Conduct air and theater missile defense weapons systems management.

f. Integrate with MAGTF, joint, and combined airspace command and control systems.

g. Conduct combat operations in an NBC environment.

3. **TAOC CORE CAPABILITY**. A core capable TAOC provides command, traffic, weapons, surveillance and Sector Air Defense Facility (SADF) sections, and is able to sustain minimum performance on a daily basis during sustained contingency/combat operations. The extent to which a core capable TAOC is able to conduct extended operations or simultaneous TAOC and EW/C operations is manning-level dependent.

MARINE AIR CONTROL SQUADRON, MARINE AIR TRAFFIC CONTROL DETACHMENT (MATCD)

CORE COMPETENCY

1. **MISSION**. Conduct operations in support of Marine Corps Air Stations (MCAS), MAGTFs, joint and coalition operations, and integrate into the Marine Air Command and Control System (MACCS), Integrated Air Defense System (IADS) whenever possible.

2. **MISSION ESSENTIAL TASKS (METL)**

a. Provide tower, radar/non-radar approach, departure, and enroute air traffic control services within assigned airspace.

b. Provide precision and non-precision Navigational Aids (NAVAIDS) and Automatic Carrier Landing System (ACLS) approach services.

c. Integrate, display, and disseminate appropriate information to the designated Joint Forces Air Component Commander (JFACC), Airspace Control Authority (ACA), Area Air Defense Commander (AADC), and adjacent agencies such as the Tactical Air Command Center (TACC), Tactical Air Operation Center (TAOC), Direct Air Support Center (DASC), and Ground Based Air Defense (GBAD) units and coordinate the activation of the Base Defense Zone (BDZ) as part of the IADS.

d. Provide combat and civil airspace management, control, and surveillance.

e. Provide ATC liaison personnel to coordinate ATC related issues between the MACCS and national/international civil ATC systems.

f. Develop, implement, and validate radar and non-radar IFR Terminal Instrument Procedures (TERPS) for use at pre-established and expeditionary airfields and integrate required ATC services into the existing civil/military national/international ATC architectures.

g. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.

h. Conduct MATC combat operations in an NBC environment.

3. **DETACHMENT CORE CAPABILITIES**. The core capable detachment establishes continuous all weather ATC services at one expeditionary airfield, with an echelon capability, or provides these services at a pre-established airfield. Additionally, the core capable detachment is able to provide mobile ATC services at two forward operating bases. The detachment provides ATC personnel in accordance with the Fleet Assistance Program (FAP).

MARINE AIR SUPPORT SQUADRON, DIRECT AIR SUPPORT CENTER (DASC)

CORE COMPETENCY

1. **MISSION**. Process immediate air requests, integrate aircraft employment with other supporting arms, manage terminal control assets, and procedurally control aircraft operating in its area of responsibility.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Coordinate the execution of preplanned direct air support.

b. Receive, process, and coordinate requests for immediate direct air support.

c. Coordinate the execution of direct air support missions with other supporting arms.

d. Plan, install, operate and maintain communications to conduct direct air support operations.

e. Plan, install, operate and maintain an airborne DASC capability to conduct direct air support operations.

f. Conduct liaison to facilitate direct air support operations as necessary.

g. Maintain continuous DASC functions while displacing.

h. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.

i. Conduct combat operations in an NBC environment.

3. **DASC CORE CAPABILITY**. A core capable Marine Air Support Squadron is able to field a DASC with an airborne extension and air support elements capable of supporting the requirements of a single division Marine Expeditionary Force (MEF).

UNMANNED AERIAL VEHICLE SQUADRON (VMU) RQ-2B PIONEER

CORE COMPETENCY

1. **MISSION**. Conduct reconnaissance, surveillance, target acquisition, indirect fires adjustment, Battlefield Damage Assessment (BDA) and support the rear area security plan during expeditionary operations or joint and combined operations.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Conduct air reconnaissance.

b. Conduct observation of fires and indirect fires adjustment.

c. Conduct BDA.

d. Conduct rear area security surveillance.

e. Process and pass information by voice.

f. Receive raw imagery through remote receive stations.

g. Operate during day and night in VMC.

h. Conduct all modes of launch, control and recovery.

i. Operate from airfields and forward operating bases.

j. Maintain organic ground transportation of equipment.

k. Maintain organic single channel communication and support.

3. **VMU CORE CAPABILITIES**

a. A core capable squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations assuming at least 100% PAA, 90% in reporting status and 90% T/O on hand in all MOSs. If < 90%, core capability will be degraded by a like percentage. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A core capable squadron is able to conduct three single plane sorties in a 24 hour period. Perform the above from a forward operating base.

LOW ALTITUDE AIR DEFENSE (LAAD) BATTALION, SHORT RANGE AIR DEFENSE (SHORAD)

CORE COMPETENCY

1. **MISSION.** Conduct close-in, low altitude, missile defense operations in support of MAGTF, joint and coalition operations.

2. **MISSION ESSENTIAL TASK LIST**

a. Command and control the battalion.

b. Conduct direct support missions.

c. Conduct general support missions.

d. Conduct combat operations in a NBC environment

e. Plan and coordinate requirements for command, control, communications, computers, information, and intelligence (C4I2) integration within the MAGTF.

f. Conduct amphibious/expeditionary operations to include the capability to phase control ashore.

g. Provide 24-hour air defense for special tactical situations and task organizations.

3. **BATTALION CORE CAPABILITIES**

a. A core capable LAAD battalion is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 90% equipment/supply readiness and reporting status and 70% T/O on hand in all MOSs. If less than 70% T/O, core capability will be degraded by a like percent. The extent to which a core capable battalion is able to surge beyond its core capability is situational dependent.

b. A section is the smallest employable LAAD element. A core capable battalion is able to employ eleven sections of combat capable Avenger/MANPAD teams. A LAAD section is comprised of five Stinger teams (any combination of Avenger/MANPAD -- two Marines per team), two communicators, and one section leader. The typical Avenger section deploys with five Avengers. Each Avenger weapon system is equipped with a Forward Looking Infrared (FLIR), Laser Range Finder (LRF), eight ready Stinger missiles, and an M3P .50 cal machine gun with 250 rounds. This provides forty Stinger missiles and 1,425 .50 cal rounds per Avenger section. The typical MANPAD section deploys with thirty Stinger missiles and five thermal imaging sights (AN/PAS-18), providing limited night capability.

c. A core capable section can provide air defense for designated air defense priorities relative to the scope and size of each site (FARP, BDZ and MAGTF maneuver elements). Dependent on the supported MAGTF, joint, or coalition operation, appropriate command and control nodes will be employed.

MARINE WING COMMUNICATIONS SQUADRON (MWCS)

CORE COMPETENCY

1. **MISSION**. Provide expeditionary communications for the ACE of a MEF, including communications support of task-organized elements of a MAW.

2. **MISSION ESSENTIAL TASK LIST (METL)**

a. Assist in the system planning and engineering of ACE communications and install, operate and maintain expeditionary communications to support the Command and Control of the MEF ACE.

b. Provide operational systems control centers as required to coordinate communications functions internally and externally to the ace.

c. Provide maintenance support for ground-common communications equipment in the MAW.

d. Provide the digital backbone communications support for the ACE HQ, forward operating bases, and Marine Air Command And Control System (MACCS) agencies for up to two airfields per detachment. The MACCS agencies include the Tactical Air Command Center (TACC), Tactical Air Operations Center (TAOC), Direct Air Support Center (DASC), Early Warning/Control (EW/C) sites, Low Altitude Air Defense (LAAD) teams, and Marine Air Traffic Control Detachments (MATCD).

e. Provide tactical automated switching and telephone services for the ACE HQ and TACC.

f. Provide electronic message distribution for the ACE HQ, primary MACCS agencies and tenant units.

g. Provide external, Single-Channel Radio (SCR), Multi-Channel Radio (MCR), and radio retransmission communications support for ACE operations as required.

h. Provide deployed WAN and deployed LAN server support for the ACE HQ and primary MACCS agencies.

i. Provide the support cryptographic site for all ground-common and MACCS-assigned communications security equipment within the ACE.

3. **SQUADRON CORE CAPABILITIES**

a. A core capable MWCS squadron is able to sustain the following minimum performance on a daily basis during sustained contingency/combat operations, assuming at least 90% equipment/supply readiness and reporting status and 70% T/O on hand in all MOSs. If less than 70% T/O, core capability will be degraded by a like percent. The extent to which a core capable squadron is able to surge beyond its core capability is situational dependent.

b. A MWCS squadron is comprised of a headquarters and two detachments. Generally, each of the two detachments is a mirror of the other. However, equipment and personnel from one or both detachments can be task organized to support mission requirements. Generally, one detachment will support the ACE headquarters and the integration of the MACCS. The second detachment will connect the ACE headquarters with subordinate units (MAGs & MWSGs) located at other

airfields or forward operating bases. The detachments deploy small units of MUX, SCR and data communication teams to airfields, FOBs, and MACCS agency locations to support communication and information system connectivity requirements.

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, either as crew or non-crewmember.

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).

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). There is no USMC equivalent.

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.

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

Core Competency - Those critical flying skills and missions which can be realistically expected to be assigned in combat.

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).

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.

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:

Combat Capable	60 percent CRP
Combat Ready	75 percent CRP
Combat Qualification	95 percent CRP
Full Combat Qualification	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.

DACT - Defensive Air Combat Tactics. 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.

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.

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 NAVAID's.

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.

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.

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. Any tactical flight involving numerous divisions and including MACCS assets.

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

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

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

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

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

MRP - Mission Readiness Percentage. The percentage of a specific support/administrative aircraft syllabus in which personnel are “proficient.” Four basic categories divide MRPs into a total percentage of “proficiency” that personnel have demonstrated within their respective syllabi as shown below:

Mission Capable	60 percent MRP
Mission Ready	75 percent MRP
Mission Qualification	90 percent MRP
Full-Mission Qualification	100 percent MRP

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.

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 (Combat/Mission Capable, Combat/Mission Ready, Combat/Mission Qualification, Full Combat/Mission Qualification).

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.

Proficiency - Proficiency is a measure of achievement of a specific skill. Units shall emphasize proficiency training in core competencies. Refly factors establish the maximum time between demonstration of those particular skills. CRP/MRP is a measurement of “demonstrated proficiency.” If an aircrew member 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 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. Any flight resulting in a designation/qualification or requirement not counting toward CRP.

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 occurrence required by an individual syllabus.

a. 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.

b. Deferred Syllabus Event. A commanding officer may defer an event, when in his judgment, a lack of a logistic support or training asset requires a temporary exemption. CRP/MRP shall not be accrued for deferred events. The NATOPS Officer shall annotate all deferred events in the aircrew performance record (APR)/MACCS performance record (MPR) prior to the individual's transfer. A commanding officer may defer FRS events to fleet units. Deferral of multiple FRS events and/or complete stages of training require authorization from CG TECOM (C4610). Gaining fleet units must complete FRS deferred training events, in strict compliance with appropriate Combat Capable Qualification requirements. The FRS

NATOPS Officer shall annotate all deferred events in the aircrew performance record (APR)/MACCS performance record (MPR) prior to the individual's transfer.

c. Waived Syllabus Event. A commanding officer may waive an event, when in his judgment, the previous experience or performance of an individual satisfies the requirement of the particular event.

SYS - System Training. Any syllabus event in T&R Manual, Volume 5, requiring MACCS personnel to gain knowledge in the hardware/equipment/system that they operate.

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 tier is a level of training. Tactical unit training is composed of 4 Tiers, generally defined by the phases of the T&R syllabus. Tier 1 equals combat capable training; Tier 2 equals combat ready training, etc. (See Notional Training Models figures 2-1, 2-2, and 2-3)

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.

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
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
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 Tactics 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
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
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
DACT	Defensive Air Combat Tactics (R/W)
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
DACTI	Defensive Air Combat Tactics 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
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
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
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
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
MIN	Minimum
MINCOM	Minimum Communication
MITAC	Map Interpretation and Terrain Analysis Course
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
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
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
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

CONDUCT OF A CONFERENCE

1. SYLLABUS SPONSOR. A syllabus sponsor is a unit that administers the T&R syllabus for a MACCS agency/aircraft model. Syllabus sponsors convene syllabus review conferences and should maintain close liaison with community units, tactical squadrons and MAWTS-l. CG TECOM (C4610) generally assigns sponsorship to 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	Administrative	CG TECOM (C4610)
MCO P3500.44	AV-8B	VMAT-203
MCO P3500.45	EA-6B	MAG-14
MCO P3500.46	F/A-18A/C/D	VMFAT-101
MCO P3500.47	KC-130	VMGRT-253
MCO P3500.48	AH-1	HMT-303
MCO P3500.49	UH-1	HMT-303
MCO P3500.50	CH-46	HMMT-164
MCO P3500.51	CH/MH-53	HMT-302
MCO P3500.52	MV-22	VMMT-204
MCO P3500.53	TACC	MTACS-28, MCAS Cherry Point
MCO P3500.54	TAOC	MACS-2, MCAS Cherry Point
MCO P3500.55	MATC Det	MACS-1, MCAS Yuma
MCO P3500.56	DASC	MASS-3, MCB Camp Pendleton
MCO P3500.57	LAAD	3D LAAD BN, MCB Camp Pendleton

MCO P3500.58	UAV	VMU-2, MCAS Cherry Point
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	UH-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	Weather	Navy METOC Professional Development Center (NAVMETOCPRODEVCEN)
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 P3500.68	TACP	EWTG PAC, Coronado, CA
MCO P3500.71	Aviation Operations Specialist	AOS, NATSS-1 NAS Meridian, MS

Figure D-1.--Syllabus Sponsors.

2. SYLLABUS REVIEW PRE-CONFERENCE PROCEDURES

a. Purpose. To routinely update T&R syllabi for particular communities by conducting a conference. Syllabus review conference attendees propose revised personnel training for a specific aircraft model or MACCS agencies. Syllabus sponsors may convene a syllabus review conference at their discretion or when higher headquarters directs. Syllabus review conferences will normally convene on a triennial schedule. CG TECOM (C4610), COMMARFORLANT, COMMARFORPAC, COMARFORRES, Commanding Generals 1st, 2nd, 3rd and 4th MAW shall send 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 in the aircraft/MACCS community, MAWTS-1, and a representative from groups/wings, and any other appropriate staff officers. CG TECOM (C4610) invites DC AVN, COMCABEAST, COMCABWEST, and COMMARCORBASESPAC to send representatives. Members of the conference shall complete the following tasks:

(1) Evaluate the syllabus for effectiveness.

(2) Evaluate previous actions for effectiveness.

(3) Propose changes to the syllabi in format and structure.

(4) Incorporate approved T&R Manual syllabus coordination conference changes.

(5) Revalidate refly factors and event update chaining.

(6) Review and revalidate event evaluation systems.

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

b. Action

(1) Syllabus Sponsor. The syllabus sponsor shall coordinate with CG TECOM (C4610) to 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 (C4610) or the syllabus sponsor shall release this message 90 days before the proposed conference date. This message will include the conference convening location and date, announce the purpose, and request interested units to submit agenda items. Units shall submit agenda items to the syllabus sponsor (Item, Discussion, Recommendation format) NLT 45 days prior to the conference. The syllabus sponsor and CG TECOM (C4610) shall consolidate and forward agenda items to COMMARFORLANT, COMMARFORPAC, COMMARFORRES, Commanding Generals 1st, 2nd, 3rd and 4th MAW; COMMARCORBASESPAC; COMCABEAST and COMCABWEST (as appropriate); MAWTS-1, and all commands operating the model aircraft/system concerned.

(2) CG TECOM (C4610). Review and provide guidance to syllabus sponsor. Consolidate, reproduce, and distribute agenda items to voting members NLT 30 days prior to the subject conference. Provide the syllabus sponsor advance notification of the current projections of FRS tasking and capacity so conference attendees can review proposed FRS syllabus modifications. Attendees should review this for increased FRS tasking with associated increased resource requirements (aircraft, personnel, Flight Hour Program, and/or syllabus reductions).

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

3. SYLLABUS REVIEW CONFERENCE PROCEDURES

a. All conference attendees should be familiar with agenda items prior to the conference and should be able to brief their commands' position. Voting members should staff agenda items and have established positions. CG TECOM (C4610) discourages the syllabus sponsor from accepting additional agenda items. This front-end staffing will speed the process by which CG TECOM (C4610) updates these manuals.

b. At the conference, attendees shall review/update the applicable T&R syllabi. Subject Matter Experts shall format their respective T&R Manual syllabi per the examples listed in Chapter 7.

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

d. Action

(1) Syllabus Sponsor. The syllabus sponsor shall:

(a) Provide each attendee with a draft copy at the completion of the conference.

(b) Coordinate with CG TECOM (C4610) 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.

Syllabus sponsors shall coordinate release of an event conversion message to all applicable units.

(2) MARFORS. MARFORLANT, MARFORPAC, and MARFORRES shall consolidate comments from subordinate units and concur or non-concur with justification to CG TECOM (C4610) within 30 days of the conference completion date. In addition,

COMCABEAST, COMCABWEST, COMMARCORBASESJAPAN and COMMARCORBASESPAC shall consolidate comments from subordinate units and concur or non-concur with justification to CG TECOM (C4610) within 30 days of the conference completion date for Air Traffic Control (ATC), Weather, and Airfield Services T&R Manuals.

(3) CMC (DC AVN). CMC shall review the proposed syllabus and concur or non-concur with justification to CG TECOM (C4610) NLT 90 days after conference completion.

(4) CG, MCCDC

(a) CG TECOM (C4610) shall coordinate with the syllabus sponsor to prepare and release, within 10 working days, a conference report message to the MARFORs. CG TECOM (C4610) shall ensure electronic versions of draft syllabi are made available to requesting agencies.

(b) CG TECOM (C4610) shall attach MARFOR comments and forward the draft document to CMC (DC AVN), NLT 60 days after conference completion.

(c) CG TECOM (C4610) shall attach CMC and MARFOR comments and forward the draft document for CG, MCCDC approval. When approved by CG, MCCDC, the document becomes an INTERIM approved syllabus and CG TECOM (C4610) shall release a message announcing the syllabus is approved for use. CG TECOM (C4610) shall coordinate with CMC to coordinate publication and distribution of the document as an official Marine Corps order.

4. INTERIM CHANGES VIA CORRESPONDENCE

a. Organizations recommending changes shall submit proposed changes via message 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 (tactical aircraft and MACCS units only) and CG TECOM (C4610) 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 squadrons/battalions shall submit their comments and recommendations to the syllabus sponsor, via parent commands, within 30 days of the date of the syllabus sponsor's request for comments. MAWTS-1 shall submit directly to the syllabus sponsor. All comments and recommendations shall be submitted via message.

d. The syllabus sponsor shall consolidate comments and coordinate with CG TECOM (C4610) to release a syllabus 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 syllabus change and concur or non-concur with justification to CG TECOM (C4610) within 30 days of the syllabus change recommendation message release.

f. CG TECOM (C4610) shall attach CMC and MARFOR comments and forward the syllabus change recommendation for CG MCCDC approval. When approved by CG MCCDC, the syllabus change becomes an INTERIM approved syllabus change and CG TECOM (C4610) shall release a message announcing the syllabus change is in effect. CG TECOM (C4610) shall coordinate with CMC to coordinate publication and distribution of the syllabus change as an official Marine Corps order change. Syllabus sponsors shall coordinate release of an event conversion message to all applicable units.

g. With CG TECOM (C4610) approval, syllabus sponsors may hold syllabus review conferences via correspondence.

5. T&R SYLLABUS EVALUATION FORMS. Syllabus sponsors 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.

6. DEVIATIONS FROM T&R MANUAL POLICY. CG TECOM (C4610) is the approval authority for deviations from T&R policies of this and individual aviation T&R manuals. Requests for T&R manual policy deviation shall be requested via message traffic to CG TECOM (C4610). During contingency/combat operations, MAGTF or wing commanders may deviate from T&R training policies at their discretion.

APPENDIX E

AIRCREW/MACCS 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. Aircrew and MACCS personnel performance shall be evaluated and documented for all Combat Capable events. All initial events in the Combat Ready, Combat Qualification and Full Combat Qualification 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 Combat Capable 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 Combat Capable 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 also contain a record of all ground training courses completed as required in Chapter 4, and a record of aircraft weapons qualification (CEP), as applicable.

(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, Combat Capable Training. MCTFs of the Combat Capable phase of training shall be retained in this section for 2 years. A summary grade sheet showing the individual's event grades for the Combat Capable 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 combat capable events completed at non-Marine units with the T&R syllabus for the applicable MACCS unit. CG TECOM (C4610) directs commanding officer's 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 4, 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 (C4610) 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 (C4610) 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 (C4610) 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 POI's. 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 POI's. 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 [paragraph 802.1.a (1)(c) applies]. 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 [paragraph 802.1.a (1) (d) applies]. 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 using procedures outlined in paragraph 802.1.a (1) (e).

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

FORMAT FOR FRS MONTHLY REPLACEMENT AIRCREW STATUS REPORT

1. FRS/TMS/(NA/NFO/NAC). Identify FRS and specify type, model, series aircraft, and type aircrew.

2. RACS ON BD: B ( ), T ( ), C ( ), R ( ), MRF ( ), IUT ( ). Show the number of RACs in each category onboard as of the last day of the month. Include those RACs in pre-course/flight pool. Do not include those RACs listed as completions for the month, even if still onboard pending orders.

3. RACS IN POOL: B ( ), T ( ), C ( ), R ( ), MRF ( ), IUT ( ). Show number of RACs in each category in pre-course/flight pool as of the last day of the month. Paragraph 802.1.b(1) provides criteria for pool status.

4. RACS IN DFS: B ( ), T ( ), C ( ), R ( ), MRF ( ), IUT ( ). Show number of RACs in each category in a delayed flying status as of the last day of the month. Paragraph 802.1.b(2) provides criteria for delayed flying status.

5. COMPLETIONS THIS MONTH. List by grade, name, type (NA, NFO, etc.), category (B, T, etc.), number of weeks onboard/in training, combat readiness percentage (CRP) attained, and follow-on duty assignment. Date of last syllabus flight determines completion month.

6. FY COMPLETIONS: B ( ), T ( ), C ( ), R ( ), MRF ( ), IUT ( ). Show cumulative completions in each category as of the end of the month. Date of last syllabus flight determines completion year. Do not adjust at the end of the fiscal year to "pick-up" late completions for the ending fiscal year.

7. REMARKS. As required.

8. POC. CG TECOM (C4610) Aircrew Training Section, DSN 278-4022/4024, Comm (703) 784-4022/4024.

APPENDIX H

USMC FAA LETTERS OF EXEMPTION FOR NVD OPERATIONS

Exemption No. 5978

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20591

In the matter of the petition of THE DEPARTMENT OF THE NAVY for an exemption from Section 91.209(a) and (b) of the Federal Aviation Regulations	Regulatory Docket No. 27867

GRANT OF EXEMPTION

By letter dated July 19, 1994, Mr. J. T. Hill, Director, Safety Division, Department of the Navy, Headquarters United States Marine Corps, petitioned the Federal Aviation Administration (FAA) for an exemption from Section 91.209(a) and (b) of the Federal Aviation Regulations (FAR). This exemption would allow the Department of the Navy, specifically the United States Marine Corps (USMC), to conduct helicopter night flight military training operations without lighted aircraft position lights.

The petitioner seeks relief from Section 91.209(a) and (b), which states, in pertinent part, that during periods of darkness no person may:

(a) operate an aircraft unless it has lighted position lights; or

(b) park or move an aircraft in, or in dangerous proximity to, a night flight operations area of an airport unless the aircraft --

(1) is clearly illuminated;

(2) has lighted position lights; or

(3) is in an area which is marked by obstruction lights.

The petitioner supports its request with the following information:

ATP-94-607-E

The petitioner states that the USMC has a requirement to conduct night tactical training to include Special Operations using Night Vision Devices (NVD). Additionally, the petitioner states that position lights degrade cockpit instrument displays, outside visual cues and distract other pilots within the flight. The aircraft position lights need to be turned off to enhance safety when using NVD. Further, the request for exemption applies only to helicopter operations conducted outside of restricted airspace.

The petitioner advises that training will only be conducted along routes or within the geographic and altitude limits granted by the exemption or by prior coordination with local military air traffic agencies. Moreover, the aircraft external lighting will be reduced only to the extent necessary to contribute to training realism.

Additionally, to ensure an equivalent level of safety, the petitioner states, this exemption is limited to NVD flight training in U.S. Marine Corps helicopters.

A summary of the petition was published in the Federal Register on September 23, 1994, (59FR48930), for public comment. No comments were received.

The FAA's analysis/summary is as follows:

The FAA finds that an equivalent level of safety can be accomplished by limiting the herein authorized activity to helicopters; confining the operations to defined areas of low traffic density; by employing dedicated observers during these operations; and by advertising the petitioner's planned activities and operating areas to other users.

In consideration of the foregoing, I find that a grant of exemption, subject to certain conditions and limitations, is in the public interest. Accordingly, pursuant to the authority contained in Section 307(e) of the Federal Aviation Act of 1958, as amended, which has been delegated to me by the Administrator (14 CFR 11.53), the Department of the Navy, USMC, is hereby granted an exemption from the requirements of Section 91.209(a) and (b) of the FAR, for a period of 3 years, to the extent necessary to conduct helicopter night-vision flight device 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. Safety Observers.

a. An airborne training operation --

(1) shall be conducted in a flight of two or more helicopters with a dedicated observer on duty aboard each helicopter. The flight shall be conducted in such a manner as to enable the observers collectively to survey fully about the entire flight for nonparticipating aircraft.

(2) shall ensure that the last aircraft in each flight has its anticollision lights on and its position lights on at the highest intensity consistent with NVD compatibility.

(3) for tandem seated helicopters (AH-1W), shall ensure the last aircraft in each flight serves as an observation platform dedicated to surveillance for nonparticipating aircraft.

(4) shall be escorted by a properly lighted aircraft serving as an observation platform dedicated to surveillance for nonparticipating traffic.

b. Traffic notifications from the observer to the training flight shall be timely commensurate with the position and speed of the observed nonparticipating traffic.

c. When nonparticipating traffic is relevant, the pilot of each training flight aircraft shall light that aircraft's position lights and keep them lighted until the traffic is no longer a factor.

3. Airborne operations may not be conducted above 500 ft above the surface and must be contained within a prescribed and publicized area that --

a. is simply defined, e.g. 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.

4. During training in an urban environment, where altitudes greater than 500 ft are required, further coordination is required with the appropriate FAA region's Air Traffic Division and Flight Standards Division offices.

5. Ground (airport/staging area) operations in noncompliance with Section 91.209(b), of the FAR, may be conducted at locations where only the petitioner's aircraft are involved and suitable alternative measures for collision avoidance are instituted.

6. Each pilot who will conduct operations under this exemption must be thoroughly familiar with its provisions.

7. The petitioner shall advertise each approved training area, to operators at all airports within 50 miles of the area for 60 days preceding its initial use.

This exemption expires on January 31, 1997 unless sooner superseded or rescinded.

Issued in Washington, D.C., on October 19, 1994.

/s/ W. F. Price
Acting Director, Air Traffic
Rules and Procedures Service

Exemption No. 5978A

UNITED STATES OF AMERICA

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

WASHINGTON, DC 20591

* *

In the matter of the petition of *

THE DEPARTMENT OF THE NAVY *

for an exemption from * Regulatory Docket No. 227867

Section 91.209(a) and (b) of the *

Federal Aviation Regulation *

* *

GRANT OF EXEMPTION

By letter dated October 24, 1994, Mr. D. van Esselstyn, Director, Headquarters Marine Corps Safety Division, petitioned the Federal Aviation Administration (FAA) to amend its existing exemption (Exemption 5978) from 91.209(a) and (b) of the Federal Aviation Regulations (FAR). This exemption allows the Department of the Navy, specifically the United States Marine Corps (USMC), to conduct helicopter night flight military training operations without lighted aircraft position lights.

In its petition, the petitioner requested that certain conditions and limitations of Exemption 5978 be changed to clarify aircraft lighting requirements for Night Vision Device (NVD) flight operations. Specifically, the petitioner requests to conduct such flight operations with the last aircraft in the flight, with proper lighting, to serve as the observation platform and still function as part of the training mission.

The petitioner requires continuing relief from section 91.209 (a) and (b), which states, in pertinent part, that during periods of darkness no person may:

(a) operate an aircraft unless it has lighted position lights; or

(b) park or move an aircraft in, or in dangerous proximity to, a night flight operation area of an airport unless the aircraft--

(1) is clearly illuminated;

(2) has lighted position lights; or

(3) is in an area which is marked by obstruction lights.

The petitioner supports its request with the following information:

The petitioner asserts that current stated Safety Observer requirements for nonparticipating escort aircraft would severely tax unit training resources. Compliance within existing budgetary constraints to dedicate an extra aircraft for surveillance makes this virtually impossible. Also, that it is important to note that all aircraft in the night are responsible for avoidance of nonparticipating aircraft. This will be standard for all Marine Corps helicopters during NVD training flights.

The petitioner states that the USMC has a requirement to conduct night tactical training to include Special Operations using NVD. Additionally, the petitioner states that position lights degrade cockpit instrument displays, outside visual cues and distract other pilots within the flight. The aircraft position lights need to be turned off to enhance safety when using NVD. Further, the request for exemption applies only to helicopter operations conducted outside of restricted airspace. The petitioner advises that training will only be conducted along routes or within the geographic and altitude limits granted by the exemption or by prior coordination with local military air traffic agencies. Moreover, the aircraft external lighting will be reduce only to the extent necessary to contribute to training realism.

Additionally to ensure an equivalent level of safety, the petitioner states, this exemption is limited to NVD flight training in U. S. Marine Corps helicopters.

A summary of the initial petition was published in the Federal Register on September 23, 1994, (59FR48930), for public comment. No comments were received.

The FAA's analysis/summary is as follows:

The FAA finds that an equivalent level of safety can be accomplished by limiting the herein authorized activity to helicopters; confining the operations to defined areas of low traffic density; by employing dedicated observers during these operations; and by advertising the petitioner's planned activities and operating areas to other users.

In consideration of the forgoing, I find that a grant of exemption, subject to certain conditions and limitations, is in the public interest. Accordingly, pursuant to the authority contained in section 307(e) of the Federal Aviation Act of 1958, as amended, which has been delegated to me by the Administrator (14 CFR 11.53), the Department of the Navy, USMC, is here by granted an exemption from the requirements of section 91.209 (a) and (b) of the FAR to the extent necessary to conduct helicopter night vision flight device 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. Safety observers.

a. An airborne training operation--

(1) May be conducted in a flight of two or more helicopters with a dedicated observer on duty aboard each helicopter. The flight shall be conducted in such a manner as to enable the observers collectively to survey fully about the entire flight for nonparticipating aircraft; or

(2) Shall be escorted by a properly lighted aircraft serving as an observation platform dedicated to surveillance for nonparticipating aircraft.

b. Traffic notifications from the observer to the training flight shall be timely commensurate with the position and speed of the observed

nonparticipating traffic.

c. When nonparticipating traffic is relevant, the pilot of each training flight aircraft shall light that aircraft's position lights and keep them lighted until the traffic is no longer factor.

3. Airborne operations may not be conducted over 500 ft above the surface and must be contained within a prescribed publicized area that--

a. is simply defined, e.g. 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 Divisions offices.

4. During training in an urban environment, where altitudes greater than 500 ft are required, further coordination is required with the appropriate FAA region's Air Traffic Division and Flight Standards Division offices.

5. Ground (airport/staging area) operations in noncompliance with section 91.209(b) of the FAR, may be conducted at locations where only the petitioner's aircraft are involved and suitable alternative measures for collision avoidance are instituted.

6. Each pilot who will conduct operations under this exemption must be thoroughly familiar with its provisions.

7. The petitioner shall advertise each approved training area, to operators at all airports within 50 miles of the area for 60 days preceding its initial use.

This exemption expires on January 31, 1997 unless sooner superseded or rescinded.

Issued in Washington, DC., on October 28 1994.

Harold W. Becker

Acting Director, Air Traffic

Rules and Procedures Services

U.S. Department of Transportation
Federal Aviation Administration

Exemption No. 5978B

Regulatory docket No. 27867

January 24, 1997

Col. M.D. Hall
Department of the Navy
Headquarters United States Marine Corps
2 Navy Annex
Washington, DC 20380-1775

Dear Colonel Hall;

This is in response to your October 15, 1996, letter petitioning the Federal Aviation Administration (FAA) on behalf of the Department of the Navy (Navy) for an extension of exemption No. 5978, as amended. That exemption from § 91.209(a) and (b) of Title 14, Code of Federal Regulations (14 CFR) permits the Navy, specifically the United States Marine Corps, to conduct helicopter night-vision flight device training operations without lighted aircraft position lights.

In your petition, you indicate that the conditions and reasons regarding public interest and safety, presented in the original petition upon which the exemption was granted, remain unchanged.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Registry because the requested extension of the exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the Navy.

The FAA has determined that the justification for the issuance of Exemption No. 5978, as amended, remains valid with respect to this exemption.

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. § 40109, formerly § 307(e) of the Federal Aviation Act of 1958,as amended, delegated to me by the Administrator (14 CFR § 11.53), Exemption No. 5978, as amended, is hereby further amended by extending its January 31, 1997, termination date to January 31, 2000, unless sooner superseded or rescinded.

All other conditions and limitations of Exemptions No. 5978, as amended, remain the same. This letter shall be attached to, and is part of, Exemption No. 5978.

Sincerely

Thomas C. Accardi

Director, Flight Standards Service

Exemption No. 5978C

January 31, 2000 Regulatory Docket No. 27867

Col. Leif R. Larsen
Director, Safety Division
Department of the Navy
Headquarters United States Marine Corps
Washington, D.C. 20380-0001

Dear Colonel Larsen:

This is in response to your November 12, 1999, letter petitioning 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 Section 91.209(a) and (b) of Title 14, Code of Federal Regulations (14 CFR) permits the USMC to conduct helicopter night-vision flight device training operations without lighted aircraft position lights.

In your petition, you indicate that the conditions and reasons regarding public interest and safety, presented in the original petition upon which the exemption was granted, remain unchanged.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested extension the exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the USMC.

The FAA has determined that the justification for the issuance of Exemption No. 5978, as amended, remains valid with respect to this exemption. Please note that Amendment No. 91-248, Airworthiness Standards; Systems and Equipment Rules Based on European Joint Aviation Requirements; Final Rule (61 FR 5151, February 9, 1996, as corrected at 61 FR 7410, February 28, 1996), revised and redesignated Section 91.209. Therefore, the FAA has determined that the USMC requires relief from Section 91.209(a)(1) and (2). In addition, the reference to Section 91.209(b) in condition No. 5 should read Section 91.209(a)(2).

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. Sections 40113 and 44701, delegated to me by the Administrator (14 CFR Section 11.53), Exemption No. 5978, as amended, is hereby further amended by extending its January 31, 2000, termination date to January 31, 2003, unless sooner superseded or rescinded, and revising the reference to Section 91.209(b) in condition No. 5 to read Section 91.209(a)(2).

AFS-00-116-E

All other conditions and limitations of Exemption No. 5978, as amended, remain the same. This letter shall be attached to, and is a part of, Exemption No. 5978.

Sincerely,

/s/ Ava L. Mims
Acting Director, Flight Standards Service