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From: Commandant of the Marine Corps
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Subj: AVIATION TRAINING AND READINESS (T&R) PROGRAM MANUAL

Ref: (a) MCO 3500.14

Encl: (1) Aviation T&R Program Manual

1. Purpose. To revise policies regarding the training of Marine Corps aircrews, Unmanned Aircraft System (UAS) operators, Marine Command and Control System (MACCS) operators, Meteorological and Oceanographic (METOC) personnel, Aviation Operations Specialists (AOS), Aircraft Rescue and Fire Fighting (ARFF) specialists and Expeditionary Airfield (EAF) technicians per the reference.

2. Cancellation. NAVMC 3500.14B.

3. Scope. Significant revisions are as follows:

a. All chapters have been revised to include the addition of a new Chapter 8, Marine Sierra Hotel Aviation Readiness Program (M-SHARP).

b. Emphasis on relevancy between the Aviation T&R Program and the six functions of Marine Aviation.

c. Core Model definition revision.

d. Clarification of the role of Core Model Minimum Requirement (CMMR) in unit training.

e. Expansion of Aviation Career Progression Model (ACPM) into two phases.

f. Revision of T&R Manual template and format.

g. Chapter 7 (Aviation Training Readiness) provides policy to unit commanders on readiness reporting in the Department of Defense Readiness Reporting System - Marine Corps (DRRS-MC) and the Marine Corps Aviation Current Readiness (CR) Improvement Program.

4. Information. Recommended changes to this Manual are invited, and may be submitted via the chain of command to: Commanding General (CG), Training and Education Command (TECOM), Aviation Training Division (ATD) using standard Naval correspondence or the Automated Message Handling System plain language address: CG TECOM ATD.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

5. Reserve Applicability. This Manual is applicable to the Marine Corps Total Force.

6. Certification. Reviewed and approved this date.

R. C. FOX
By direction

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CHAPTER 1

UNIT TRAINING AND READINESS UNIT REQUIREMENTS

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CHAPTER 1

UNIT

1.0 TRAINING AND READINESS REQUIREMENTS. The Marine Aviation Training and Readiness (T&R) Program provides the Marine Air-Ground Task Force (MAGTF) commander with an Aviation Combat Element (ACE) capable of executing the six functions of Marine Aviation. The T&R Program is the fundamental tool used by commanders to construct, attain, and maintain effective training programs. The standards established in this program are validated by subject matter experts to maximize combat capabilities for assigned METs while conserving resources. These standards describe and define unit capabilities and requirements necessary to maintain proficiency in mission skills and combat leadership. Training events are based on specific requirements and performance standards to ensure a common base of training and depth of combat capability.

1.1 MISSION. Support the MAGTF commander by….

1.2 TABLE OF ORGANIZATION (T/O). Communities with more than one T/O will provide a table for each and note those units and subunits assigned to each.

1.2.1 Table of Organization:

UNIT	
T/O ########	
16 A/C*	
Crew Composition	Total(s)
Crew Position 1	XX
Crew Position 2	XX
Crew Position 3	XX

* Equipment is not reflected for aviation ground communities.

1.2.2 Subordinate Unit(s) Table of Organization (T/O):

UNIT (-)		DETACHMENT		RESERVE UNI	
T/O #####		T/O #####		T/O #####	
12 A/C*		4 A/C*		Unit 6 A/C*	
Crew Composition	Number	Crew Composition	Number	Crew Composition	Number
Crew Position 1	XX	Crew Position 1	XX	Crew Position 1	XX
Crew Position 2	XX	Crew Position 2	XX	Crew Position 2	XX
Crew Position 3	XX	Crew Position 3	XX	Crew Position 3	XX

* Equipment is not reflected for aviation ground communities.

1.3 SIX FUNCTIONS OF MARINE AVIATION

SIX FUNCTIONS OF MARINE AVIATION		
FUNCTION	ABBREVIATION	DESCRIPTION
Offensive Air Support	**OAS**	OAS involves air operations that are conducted against enemy installations, facilities, and personnel in order to directly assist in the attainment of MAGTF objectives by destroying enemy resources or isolating enemy military forces. Its primary support of the warfighting functions is to provide fires and force protection through CAS and DAS.
Assault Support	**ASPT**	ASPT contributes to the warfighting functions of maneuver and logistics. Maneuver warfare demands rapid, flexible maneuverability to achieve a decision. Assault support uses aircraft to provide tactical mobility and logistic support to the MAGTF for the movement of high priority personnel and cargo within the immediate area of operations (or the evacuation of personnel and cargo).
Anti-Air Warfare	**AAW**	AAW is the actions used to destroy or reduce the enemy air and missile threat to an acceptable level The primary purpose of AAW is to gain and maintain whatever degree of air superiority is required; this permits the conduct of operations without prohibitive interference by opposing air and missile forces. AAW's other purpose is force protection.
Electronic Warfare	**EW**	EW is any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. EW supports the warfighting functions of fires, command and control, and intelligence through the three major subdivisions: electronic attack, electronic protection, and electronic warfare support.
Control of Aircraft & Missiles	**CoA&M**	The control of aircraft and missiles supports the warfighting function of Command and Control. The ACE commander maintains centralized command, while control is decentralized and executed through the Marine Air Command and Control System (MACCS). CoA&M integrates the other five functions of Marine Aviation by providing the commander with the ability to exercise Command and Control authority over Marine Aviation assets.
Air Reconnaissance	**AerRec**	AerRec employs visual observation and/or sensors in aerial vehicles to acquire intelligence information. It supports the intelligence warfighting function and is employed tactically, operationally, and strategically. The three types of air reconnaissance are visual, multi-sensor imagery, and electronic.

1.4 ABBREVIATIONS. Shading indicates Core Plus Skills. If Core Plus Skills do not apply, do not include that section in the table.

UNIT	
CORE/MISSION/CORE PLUS SKILL ABBREVIATIONS	
CORE SKILLS (2000 Phase)	
CS-1	CORE SKILL 1
CS-2	CORE SKILL 2
CS-3	CORE SKILL 3
CS-4	CORE SKILL 4
CS-5	CORE SKILL 5
CS-6	CORE SKILL 6
MISSION SKILLS (3000 Phase)	
MS-1	MISSION SKILL 1
MS-2	MISSION SKILL 2
MS-3	MISSION SKILL 3
MS-4	MISSION SKILL 4
CORE PLUS (4000 Phase)	
CORE PLUS SKILLS	
CPS-1	CORE PLUS SKILL 1
CPS-2	CORE PLUS SKILL 2
CPS-3	CORE PLUS SKILL 3
MISSION PLUS SKILLS	
MPS-1	MISSION PLUS SKILL 1
MPS-2	MISSION PLUS SKILL 2

1.5 MISSION ESSENTIAL TASK LIST (METL). The METL is a list of specified tasks a specific unit is designed to perform. Core METs are drawn from the Marine Corps Task List (MCTL), are standardized by type unit, and are used for unit readiness. Core Plus METs are additional METs that are theater specific and/or have a low likelihood of occurrence. Core Plus METs may be included in readiness reporting when contained within an Assigned Mission METL. An Assigned Mission METL consists of only the selected METs (drawn from the MCTL, Core, or Core Plus METs) necessary for that Assigned Mission.

The unit METL consists of Mission Essential Tasks (METs). Shading indicates Core Plus METs. If Core Plus METs do not apply, do not include that section in the table.

UNIT		
MISSION ESSENTIAL TASK LIST (METL)		
CORE		
MET	ABBREVIATION	MCT DESCRIPTION
MCT X.X.X.XX	ABC	Exact MCT Title
MCT X.X.X.X.XX	DEF	Exact MCT Title
MCT X.X	GHI	Exact MCT Title
MCT X.X.X	JKL	Exact MCT Title
CORE PLUS		
MET	ABBREVIATION	MCT DESCRIPTION
MCT XX.X.X	MNO	Exact MCT Title
MCT X.X.XX	PQR	Exact MCT Title

1.6 MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION. Shading indicates Core Plus METs. If Core Plus METs do not apply, do not include that section in the table.

UNIT							
MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION							
MET	ABBREVIATION	SIX FUNCTIONS OF MARINE AVIATION					
		OAS	ASPT	AAW	EW	CoA&M	AerRec
MCT X.X.X.XX	ABC	X		X			X
MCT X.X.X.X.XX	DEF		X				X
MCT X.X	GHI			X			
MCT X.X.X	JKL	X	X				
CORE PLUS							
MCT XX.X.X	MNO			X			
MCT X.X.XX	PQR				X	X	

1.7 MISSION ESSENTIAL TASKS (MET) OUTPUT STANDARDS. Communities that do not have Core Plus METs will not include a Core Plus section in this table.

1.7.1 Flying Squadrons:

UNIT			
CORE MET OUTPUT STANDARDS 16/12/4/6 Aircraft			
MET	ABBREVIATION	MAXIMUM DAILY SORTIES [1]	MAXIMUM SORTIES PER MET
MCT X.X.X.XX	ABC	12/9/3/3	12/9/3/3
MCT X.X.X.X.XX	DEF		12/9/3/3
MCT X.X	GHI		12/9/3/3
MCT X.X.X	JKL		12/9/3/3
CORE PLUS MET OUTPUT STANDARDS			
MET	ABBREVIATION	MAXIMUM DAILY SORTIES [2]	MAXIMUM SORTIES PER MET
MCT XX.X.X	MNO	9/6/3/3	9/6/3/3
MCT X.X.XX	PQR		9/6/3/3

Note[1]: A Unit is able to execute maximum daily sorties (ie., 12/9/3/3) total overall sorties on a sustained daily basis during contingency/combat operations. Based on historical flight hour data, average sortie duration is 1.7 hours for the Unit.

Note[2]: In the Core Plus METS the first number represents the number of crews the unit is expected to train at all times in order to retain a cadre of capability within the unit. The second number represents the number of MET capable crews the unit must train if that MET becomes required within an Assigned Mission/Directed Mission Set.

1.7.2 Aviation Ground Communities:

UNIT			
CORE MET OUTPUT STANDARDS			
MET	ABBREVIATION	OUTPUT STANDARD[1]	CREWS FORMED
MCT X.X.X.XX	ABC	Exact wording from MCT	
MCT X.X.X.XX	DEF	Exact wording from MCT	
MCT X.X	GHI	Exact wording from MCT	
MCT X.X.X	JKL	Exact wording from MCT	
CORE PLUS MET OUTPUT STANDARDS			
MET	ABBREVIATION	OUTPUT STANDARD	CREWS FORMED
MCT X.X.X	MNO	Exact wording from MCT	
MCT X.X.XX	PQR	Exact wording from MCT	

Note 1: MCT output standards are based on 24-hour continuous contingency/ combat operations.

1.8 MET TO CORE/MISSION/CORE PLUS SKILL MATRIX. Provides a pictorial view of the relationship between the Core MCT (Marine Corps Task) and each Core/Mission/Core Plus skill associated with the MCT. Shading indicates Core Plus. Communities that do not have Core/Mission Plus skills directly supporting a MET will not include a Core Plus section in this table.

UNIT															
MISSION ESSENTIAL TASK (MET) to CORE/MISSION/CORE PLUS SKILL MATRIX															
MET	CORE SKILLS 2000 Phase						MISSION SKILLS 3000 Phase				CORE PLUS 4000 Phase				
											CORE PLUS SKILLS			MISSION PLUS SKILLS	
	CS-1	CS-2	CS-3	CS-4	CS-5	CS-6	MS-1	MS-2	MS-3	MS-4	CPS-1	CPS-2	CPS-3	MPS-1	MPS-2
MCT X.X.X.XX (ABC)	X			X	X		X						X		
MCT X.X.X.X.XX (DEF)	X	X	X	X				X			X		X		
MCT X.X (GHI)	X	X	X	X		X			X			X	X		
MCT X.X.X (JKL)	X	X	X	X	X					X					
CORE PLUS															
MCT XX.X.X (MNO)	X		X	X	X						X	X	X	X	
MCT X.X.XX (PQR)	X	X									X				X

1.9 CORE MODEL MINIMUM REQUIREMENT (CMMR) SKILLS PROFICIENCY REQUIREMENTS. The CMMR is the minimum number of aircrew, per crew position, to be trained per stage of flight as detailed below.

1.9.1 Flying Squadrons

UNIT			
CORE MODEL MINIMUM REQUIREMENTS (CMMR)			
CORE/MISSION/CORE PLUS SKILLS CREW POSITION PROFICIENCY REQUIREMENTS 16/12/4/6 Aircraft			
CORE SKILLS (2000 Phase)			
Core Skills	Crew Position 1	Crew Position 2	Crew Position 3
CS-1	16/12/8/10	8/6/4/5	8/6/4/5
CS-2	16/12/8/10	8/6/4/5	8/6/4/5
CS-3	16/12/8/10	8/6/4/5	N/A
CS-4	16/12/8/10	8/6/4/5	8/6/4/5
CS-5	16/12/8/10	N/A	8/6/4/5
CS-6	16/12/8/10	8/6/4/5	8/6/4/5
MISSION SKILLS (3000 Phase)			
Mission Skills	Crew Position 1	Crew Position 2	Crew Position 3
MS-1	12/10/8/8	6/5/4/4	6/5/4/4
MS-2	12/10/8/8	6/5/4/4	6/5/4/4
MS-3	12/10/8/8	6/5/4/4	6/5/4/4
MS-4	12/10/8/8	6/5/4/4	6/5/4/4
CORE PLUS (4000 Phase)			
CORE PLUS SKILL			
Core Plus Skill	Crew Position 1	Crew Position 2	Crew Position 3
CPS-1	6/4/2/2	3/2/1/1	3/2/1/1
CPS-2	6/4/2/2	3/2/1/1	3/2/1/1
CPS-3	6/4/2/2	3/2/1/1	3/2/1/1
MISSION PLUS SKILL			
Mission Plus Skill	Crew Position 1	Crew Position 2	Crew Position 3
MPS-1	8/4/2/2	4/2/1/1	4/2/1/1
MPS-2	8/4/2/2	4/2/1/1	4/2/1/1

1.9.2 Aviation Ground Communities

UNIT				
CORE MODEL MINIMUM REQUIREMENTS (CMMR)				
CORE/MISSION/CORE PLUS SKILLS CREW POSITION PROFICIENCY REQUIREMENTS Unit/Subunit 1/ Subunit 2/ Subunit X [1,2]				
CORE SKILLS (2000 Phase)				
Core Skills [3]	Crew Position 1/MOS	Crew Position 2/MOS	Crew Position 3/MOS	Total Crews[4]
CS-1	24/12/0	0/0/0	0/0/0	
CS-2	0/0/0	24/12/0	0/0/0	
CS-3	0/0/0	0/0/0	24/12/0	
MISSION SKILLS (3000 Phase)				
Mission Skills [3]	Crew Position 1/MOS	Crew Position 2/MOS	Crew Position 3/MOS	Total Crews
MS-1	24/12/0	24/12/0	24/12/0	12/6/0
MS-2	72/36/12	36/18/6	18/9/0	12/6/0
MS-3	10/5/0	5/3/0	0/0/0	12/6/0
MS-4	0/0/0	0/0/0	6/3/1	
CORE PLUS (4000 Phase)				
CORE PLUS SKILL				
Core Plus Skill [3]	Crew Position 1/MOS	Crew Position 2/MOS	Crew Position 3/MOS	Total Crews
CPS-1	0/0/0	10/5/0	0/0/0	
CPS-2	8/4/2	0/0/0	1/0/0	
CPS-3	0/0/0	0/0/0	12/6/3	
MISSION PLUS SKILL				
Mission Plus Skill [3]	Crew Position 1/MOS	Crew Position 2/MOS	Crew Position 3/MOS	Total Crews
MPS-1	0/0/0	0/0/0	0/0/0	0/0/0
MPS-3	0/0/0	0/0/0	0/0/0	0/0/0

Note 1: Equipment is not reflected here for aviation ground communities. Equipment is reflected as needed in each event header as device type.

Note 2: Aviation ground communities shall reflect each unit and subunit. Crew position totals will be reflected in the order each unit and subunit are noted. For example: If a community has a Squadron/Detachment/Team, then the total would reflect totals under each crew position for each core skill as #/#/#.

Note 3: All communities will have core and mission skills. However, core plus and mission plus skills are included as applicable.

Note 4: Marine Aviation C2 communities account for crews only at the mission/mission plus skill levels.

1.10 READINESS REPORTING. The paragraphs and tables below delineate the minimum aircrew qualifications and designations required to contribute to unit readiness. Chapter 7 of the Aviation T&R Program Manual provides additional guidance and a detailed description of readiness reporting using the Defense Readiness Reporting System - Marine Corps (DRRS-MC) and the Current Readiness program.

1.10.1 Combat Leadership requirements for readiness reporting are per paragraph 1.12.

1.10.2 Crew requirements for specific missions may be balanced by the experience level of the crew and are at the discretion of the commanding officer. For readiness reporting purposes, the table delineates the minimum crew definition qualifications and designations as well as the number of crews required per MET.

The number of crews formed using the below minimum standards per crew capture the readiness capability of a squadron to perform the MET sortie under all light levels and will be compared to the Crew CMMR requirement when reporting readiness. In the Core Plus METS the first number represents the number of crews the unit is expected to train at all times in order to retain a cadre of capability within the unit. The second number represents the number of MET capable crews the unit must train if that MET becomes required within an Assigned Mission/Directed Mission Set.

MINIMUM CREW QUALIFICATIONS / DESIGNATIONS REQUIRED FOR MET CAPABILITY						
CREW POSITION				CREWS REQUIRED PER MET (CREW CMMR)[1]		
CORE METS						
MCT	CP-1	CP-2	CP-3	SQD	SQD(-)	DET
MCT X.X.X.XX (ABC)	MSP, HAC	NSQ(LLL)	MSP, NSQ(LLL)	8	6	2
MCT X.X.X.X.XX (DEF)	MSP, HAC	NSQ(LLL)	MSP, NSQ(LLL)	8	6	2
MCT X.X (GHI)	MSP, HAC	NSQ(LLL)	MSP, NSQ(LLL)	8	6	2
MCT X.X.X (JKL)	MSP, HAC	NSQ(LLL)	MSP, NSQ(LLL)	8	6	2
CORE PLUS METS				SQD	SQD(-)	DET
MCT XX.X.X (MNO)	MSP, HAC	NSQ(LLL)	MSP, NSQ(LLL)	4/8	3/6	2/2
MCT X.X.XX (PQR)	MSP, HAC, CQ	NSQ(LLL), CQ	MSP, NSQ(LLL), CQ	4/8	3/6	2/2

Note: 1 - Aviation ground communities shall include each unit and subunit reflected and required in the Core MET.

1.11 INSTRUCTOR DESIGNATIONS (5000 Phase)

UNIT			
INSTRUCTOR DESIGNATIONS (5000 Phase) CMMR			
16/12/4/6 Aircraft[1] Unit/Subunit 1/ Subunit 2/ Subunit X[2]			
INSTRUCTOR DESIGNATIONS	CREW POSITION 1	CREW POSITION 2	CREW POSITION 3
INSTRUCTOR 1	6/4/2/3	N/A	N/A
INSTRUCTOR 2	6/4/2/3	N/A	N/A
INSTRUCTOR 3	6/4/2/3	6/4/2/3	6/4/2/3
INSTRUCTOR 4	N/A	6/4/2/3	6/4/2/3

Note 1: Equipment is not reflected for aviation ground communities.

AVIATION GROUND UNIT			
INSTRUCTOR DESIGNATIONS (5000 Phase)			
Instructor Designations	UNIT	SUB UNIT	DETACHMENT
Basic Instructor			
Senior Instructor			
Weapons and Tactics Instructor			

Note 2: Aviation ground communities shall reflect each unit and subunit; See table at para 1.9.2 for example.

1.12 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (R, C, Q & D) (6000 Phase)

UNIT			
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (R,C,Q,D) (6000 Phase) CMMR [T-2]			
16/12/4/6 Aircraft[1] Unit/Subunit 1/ Subunit 2/Subunit X[2]			
R,C,Q,D	CREW POSITION 1	CREW POSITION 1	CREW POSITION 2
R,C,Q,D - 1	6/4/2/3	N/A	N/A
R,C,Q,D - 2	6/4/2/3	N/A	N/A
R,C,Q,D - 3	6/4/2/3	6/4/2/3	6/4/2/3
R,C,Q,D - 4	N/A	6/4/2/3	6/4/2/3
COMBAT/FLIGHT LEADERSHIP			
16/12/4/6 Aircraft			
D	CREW POSITION 1	CREW POSITION 1	CREW POSITION 2
COMBAT LEADERSHIP 1	10/6/4/4	N/A	N/A
COMBAT LEADERSHIP 2	7/4/2/2	N/A	N/A
COMBAT LEADERSHIP 3	4/2/2/2	N/A	N/A

Note 1: Equipment is not reflected for aviation ground communities

LAAD		
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD) (6000 PHASE) CMMR (T-2)		
BATTALION/BATTERY/PLATOON/SECTION		
RCQD	7204	7212
AGNR		
TLDR		
SLDR		
PSGT		
OPSC		
PCDR		
STFO		
BCDR		

Note 2: Aviation ground communities shall reflect each unit and subunit; See table at 1.9 for example.

1.13 UNIT EXTERNAL SYLLABUS RESOURCE REQUIREMENTS

(As previously stated in Section 1) - This section addresses any external critical training resources required to achieve T&R requirements (e.g., ranges, adversary support, tanker support, etc.). Objectively defining and identifying aviation training resource requirements will assist operational and HQ agencies in defining required aviation training resources. Communities may tailor the format of this section to meet their requirements.

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CHAPTER 6

T&R MANUAL STRUCTURE

SECTION 3: INSTRUCTIONS FOR BUILDING A T&R MANUAL CHAPTER 2, INDIVIDUAL REQUIREMENTS

603. INDIVIDUAL T&R REQUIREMENTS

1. This section delineates individual training requirements for each applicable MOS/crew position in the applicable community. Each community T&R will contain at least one chapter delineating requirements for individual training.

2. Aviation Ground Communities - Specific Considerations. Crewmembers typically train to multiple crew positions. Therefore, a single chapter may be composed of one primary MOS with more than one position to reflect the training requirement of each position and the resultant training progression of that MOS.

3. Set-up:

Font - Courier New 10 pitch (Tables may be in 8 pitch, if required)

1" Margins (left & right)

1" Top & Bottom: Header - NAVMC 3500.XX; Footer - Chapter & page example (2-1)

Numbering convention and spacing:

The numbering convention utilized will be down to the fourth level as shown in example below:

2.2.3.4

The first number will be the Chapter; in this example it would be Chapter 2.

2.2 TRAINING PROGRESSION MODEL

The second number is the major paragraph or section in the chapter (see sample Chapter 2 for major paragraphs). The major paragraph is CAPITALIZED AND UNDERLINED. The tab for "TRAINING PROGRESSION MODEL" is set at .75".

2.2.3 The training progression model reflects the minimum to maximum time to train.

The third number reflects sub-paragraphs of the major sections (see sample Chapter 2 for sub-paragraphs). There is no requirement for underlining or capitalization but it may be utilized by the syllabus sponsor. The tab is set at .75" and the remainder of the paragraph "hanging" will be set at .00".

2.2.3.1 The stages of Core Skill are FAM, INST, CAL, NS HHH, NS LLL, TERF, TAC.

The fourth number reflects lists of items or major thoughts under the sub-paragraph. The use of underlining or capitalization is not necessary but may be utilized by the syllabus sponsor. For the fourth level the tab is set at 1.0" and the remainder of the paragraph "hanging" will be set at 1.0".

Should the community need additional separation of lists or items, the syllabus sponsor may utilize the a,b,c, or 1,2,3 format for presentation.

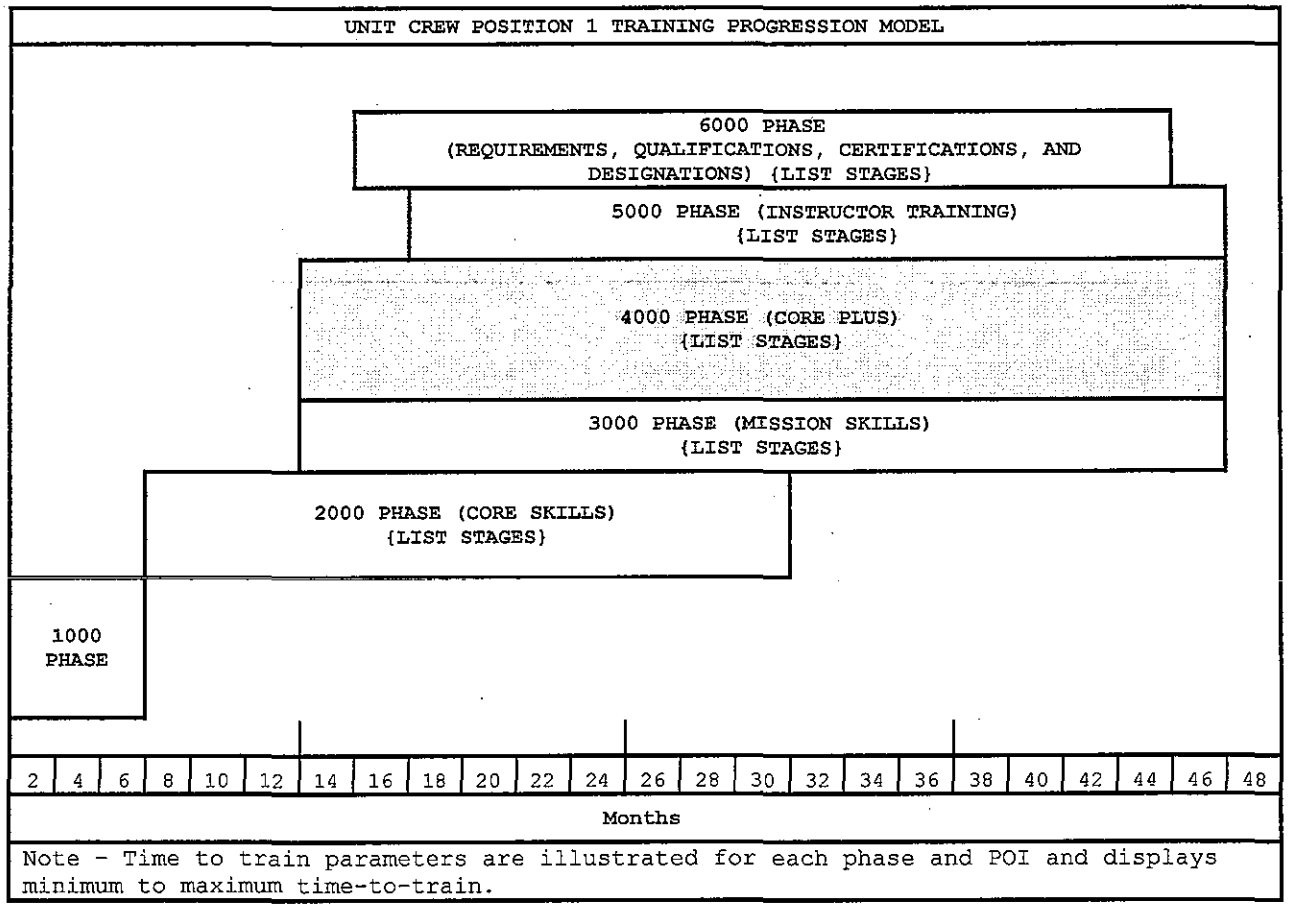
4. Each individual requirements T&R chapter shall contain paragraphs listed in the following order:

Contents

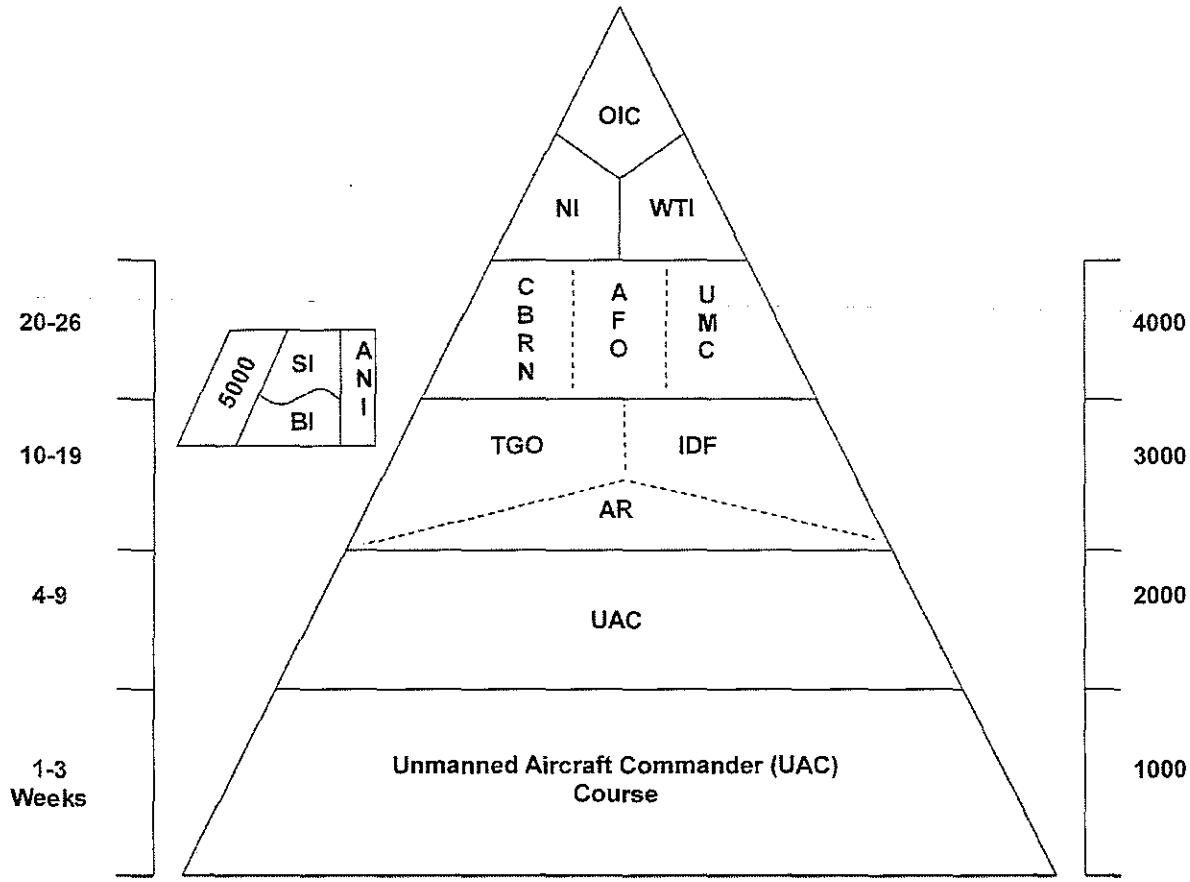
2.0 INDIVIDUAL TRAINING AND READINESS REQUIREMENTS
2.1 TRAINING PROGRESSION MODEL
2.2 ABBREVIATIONS
2.3 DEFINITIONS
2.4 INDIVIDUAL CORE/MISSION/CORE PLUS SKILL PROFICIENCY REQUIREMENTS
2.5 CERTIFICATION, QUALIFICATIONS AND DESIGNATIONS TABLES
2.6 UNIT CREW POSITION 1 PROGRAMS OF INSTRUCTION (POI)
2.7 SYLLABUS NOTES
2.8 CORE SKILL INTRODUCTION FRS ACADEMIC PHASE (0000)
2.9 CORE SKILL INTRODUCTION PHASE (1000)
2.10 CORE SKILL PHASE (2000)
2.11 MISSION SKILL PHASE (3000)
2.12 CORE PLUS PHASE (4000)
2.13 MISSION PLUS PHASE (4000)
2.14 INSTRUCTOR TRAINING PHASE (5000)
2.15 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD) PHASE (6000)
2.16 AVIATION CAREER PROGRESSION MODEL (ACPM) (8000)
2.17 T&R ATTAIN AND MAINTAIN TABLES
2.18 T&R SYLLABUS MATRICES
2.19 ADDITIONAL MATRIX (ORDNANCE/RANGES)
2.20 ADDITIONAL CHAINING FOR 5000 AND 6000 PHASE EVENTS
2.21 SYLLABUS EVALUATION FORMS
2.22 TRAINING DEVICE ESSENTIAL SUBSYSTEMS MATRIX (EESM)

5. Individual Training And Readiness Requirements (Para 2.0). The first paragraph of each individual MOS/crew position chapter is the same for all T&R manuals and simply provides the goal of the chapter.

6. Training Progression Model (Para 2.1). A training progression model graphically depicts community recommended progression for the minimum to maximum crewmember in terms of Core Skills, Mission and Core Plus Skills, Certifications, Qualifications and Designations. Communities shall develop a training progression model for each MOS T&R chapter. Two formats noted below may be used.



Note - Time to train parameters are illustrated for each phase and POI and displays minimum to maximum time-to-train.



7. Abbreviations (Para 2.2). Communities will build this table to address all training phases and FRS-unique abbreviations.

8. Skill Definitions (Para 2.3). At a minimum, communities shall provide definitions for the skills provided in the template. Additional definitions may be added at the discretion of the community.

9. Individual Core/Mission/Core Plus Skill Proficiency Requirements (Para 2.4)

a. These requirements are listed in a matrix by POI.

b. The following rules apply when updating/developing Attain and Maintain CSP/MSP/CPP table.

- All Skills shall be represented in an Attain and Maintain skill proficiency table.

- All 2000, 3000, 4000 phase events shall be listed in corresponding Attain table under the applicable Skill.

- All events in the Attain table that are not listed in the respective Maintain table shall be chained by event(s) in the Maintain Table unless the event(s) is not assigned a refly interval (one time training event).

- To attain Individual Skill Proficiency, an individual must simultaneously have a proficient status in all of the events listed in the applicable Attain table for that Skill.

- The Maintain table shall contain at least one event for each Skill. Note: The intent is that at least one event, per skill, should have a refly interval.

- There may be some **core skills** in the MACG and some Operational Support Airlift (OSA) communities that do not have a refly or refresher requirement. The **core skills**, once attained, remain proficient.

- Events in the Maintain table shall be R-coded (Refresher POI) events (not all R-coded events are required to be in the Maintain table) and shall have a refly interval.

- Events in the Attain and Maintain Tables may chain update events in other Attain and Maintain Tables.

- Higher phase events such as a Mission Skill event can chain entire Core Skills or single events, but not vice versa. Chaining complexity varies by community.

Note: Communities shall consider the entire T&R to include event complexity, event conditions (day, night, ATC non-radar, severe weather), R-coding, event chaining, event refly, etc. when determining MSP Maintain requirements.

Communities shall consider the following regarding T&R events in the Attain table that are not chained by event(s) in the Maintain table:

- Such events must not be assigned a refly factor ('*' listed for refly factor)

or

- Such events must be included in the Maintain table

or

- Such events must be moved out of the skill in the current Attain table to another skill within that table or another phase. For example from core skill in 2000 phase to one in the 4000 phase.

or

- Such events are **core / core plus** skills in the MACG and some Operational Support Airlift(OSA) communities that do not have a refly or refresher requirement and once attained remain proficient.

- Such events must be deleted from the syllabus.

10. Certifications, Qualifications and Designations (Para 2.5). All certification, qualification, and designation requirements and specific criteria to achieve them shall be delineated in community T&R manuals. Commanders may issue certification, qualification or designation letters when individual personnel complete applicable training requirements. A copy of these letters shall be included in section 4 of Performance Records per Chapter 2. Only after successfully completing certification, qualification or designation requirements and being issued a letter signed by the commanding officer will an individual be considered certified, qualified or designated. Do not confuse certifications with qualifications or designations as defined below.

a. Certification

(1) A certification refers to the completion of an evaluation process conducted during syllabus event(s) by a designated instructor or authorized personnel for the purpose of ascertaining proficiency of a crewmember as a prerequisite to qualification or designation.

(2) For Aviation Ground Communities. Some certifications may serve to ascertain one-time proficiency evaluation for a given position. Commanders or designated representatives shall issue certification letters.

b. Qualification. A qualification is a status ('qualified' or 'not qualified') assigned to personnel based on demonstration of proficiency in a specific skill. Individuals do not lose a qualification as a function of refly factor for individual events. However, loss of proficiency (delinquent refly factor) for all associated qualification events (events with measurable refly factor) constitutes loss of that qualification. Re-qualification requires demonstration of proficiency and shall be achieved by successfully repeating all R-coded events associated with the respective qualification (unless waived per paragraph 207).

c. Designation. A designation is a status assigned to an individual based on leadership ability. Designations are command specific and remain in effect until removed for cause or the individual is transferred to another command. T&R syllabi shall refer to the MAWTS-1 Course Catalog, MAWTS-1 C3 Course Catalog, NATOPS, and other applicable directives for instructor designation criteria. Certain communities have established refly intervals for some designations.

(1) Designation Criteria. Aviation communities shall delineate community standardized criteria to achieve all designations in individual T&Rs. Designation criteria (to include workup/evaluation events) shall be evaluated events. Criteria for instructor designations shall be delineated in the 5000 phase (Instructor Training). However, if training for a specific instructor is proscribed by a formal course, then the course shall be the requirement for instructor designation. Criteria for all other designations shall be delineated in the 6000 phase or the

DESG requirements table, as applicable. Community T&Rs may stipulate re-designation criteria; if re-designation criteria are not delineated, re-designation is at the discretion of the commanding officer.

(2) Instructor Designations. Instructor designations are assigned to personnel based on ability to conduct ground academics, position, and/or airborne instruction. Instructor designations are designed to enhance standardization and safety while training personnel in specific skills. T&R instructor designation/re-designation requirements should be consistent with, and may reference instructor requirements listed in the MAWTS-1 Course Catalog, MAWTS-1 C3 Course Catalog, NATOPS, and other applicable directives.

11. (*Crew Position*) Programs of Instruction (POI) (Para 2.6)

a. A POI is a group of events within a syllabus that an individual is required to perform; a POI can be thought of as a subset of a T&R syllabus. POI categories are; Basic (B), Conversion (C), Series Conversion (SC), Transition (T), and Refresher (R) to attain proficiency; see paragraph 202.a for more detail. Individuals are assigned to one POI by core skill or mission skill at any given time. Due to the nature of how aviation ground communities progress in their training, individuals in some of the communities can be training in more than one crew position as delineated in their respective T&R manual.

b. POI categories exist to standardize differing training requirements based on MOS experience of an average individual in each category. For example, 'individual A' has no previous MOS experience and was recently assigned to a unit; 'individual B' has 10 years of experience in that MOS and has been assigned to the same unit for 2 years. Obviously, individual A has different training requirements than individual B; therefore, individual A is assigned to the Basic POI, and individual B is assigned to the Refresher POI.

c. Events within a POI are annotated in both the event description and the T&R syllabus matrix. Applicable POIs shall be listed in the following order: Basic (B), Conversion (C), Series Conversion (SC), Transition (T), Refresher (R), and Maintain (M). For each POI include all courses and levels of training required to complete the POI.

d. When proficiency has been obtained in a B, C, SC, T, or R POI, the individual moves to the Maintain (M) POI. This POI accounts for the ongoing sustainment of proficiency training.

12. Syllabus Notes (Para 2.7). This paragraph should include all notes, policies, and guidelines applicable to the syllabus. Essential information pertaining to the entire syllabus should be explained in detail in this paragraph.

13. T&R Syllabus Structure (Para 2.8 through 2.14, Phases 1000 through 6000)

a. Aviation T&R manuals contain syllabi that apply to a specified aviation community. A T&R syllabus refers to all events that apply to a specified aviation crew position. Example. An aircrew syllabus exists for each crew position within each aircraft. For the F/A-18D, there are two syllabi defined - the pilot and the WSO. Because T&R manuals are generally separated by aircraft model, all syllabi that apply to the F/A-18 model aircraft (F/A-18A Pilot, F/A-18C Pilot, F/A-18D Pilot and F/A-18D WSO) will be contained in the F/A-18 T&R Manual.

b. T&R syllabi are constructed using a tiered progression of increasingly challenging training events. T&R syllabi are divided into phases, which are subdivided into stages and events as described below:

EVENTS are unique training evolutions grouped within a STAGE

STAGES contain grouped events that are similar

PHASES are subdivided into STAGES

c. Community SMEs shall update/construct T&R syllabi per the following guidelines:

(1) Event

(a) The basic building block of training in Marine Aviation is an event. An event delineates specific tasks/performance steps that must be successfully performed. An event is a unique action designed to contribute a specified end result to the accomplishment of a goal. It has an identifiable beginning and end with a measureable component with a quantifiable metric.

(b) Each event is assigned a unique four-digit numeric training code (e.g., 2014) that can only be used once within a syllabus. Events are displayed along with the stage acronym (e.g., TERF-2014). Several terms are often used interchangeably to refer to an event (e.g., 'Event,' 'Training Event,' 'T&R Code,' 'Training Code,' etc.).

(2) Stage. A stage is a group of one or more similar events within a phase (i.e., COMM, MMGT, EQUIP, etc.). Each stage is categorized and named by common attributes or skill set (e.g. Terrain Flight or TERF). Aviation manned flight communities should follow stage titles standardized terminology established in Appendix C. A stage may not contain events from more than one phase, although the same stage name may be used in more than one Phase (e.g., a 2000 Phase TERF stage and a 3000 Phase TERF stage).

(3) Phase Structure. A phase is a group of stages consisting of events. Each phase is numbered in increments of one thousand (0000, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000, etc). Events in the same phase share the same first digit and are organized as described below.

(a) Core Skill Introduction Phases

1 Core Skill Introduction FRS Academic Phase (0000 phase). This training includes FRS oriented academics.

2 Core Skill Introduction Phase (1000 phase). This training includes fundamental system/equipment operation familiarization, initial individual or crew procedures, and initial exposure to future Core Skill training. This phase may also include aircrew specific Refresher, Series Conversion, and Transition training. CNATRA, FRSs, and/or operational units conduct aircrew Core Skill Introduction training. Aviation Ground personnel receive all 1000 Phase training at their respective MOS formal schools. At the completion of this phase, individuals are normally assigned to operational units.

(b) Core Skill Phase (2000 phase). This phase includes Core Skill training essential to wartime employment of the unit platform/system. Training at this level enhances proficiency from fundamental understanding of Core Skills to proficiency in basic skills. Individuals normally complete this phase of training within the first year of assignment to a fleet aviation unit. Aviation flight units will normally train aircrews through this phase prior to overseas assignment.

(c) Mission Skill Phase (3000 phase). This phase contains advanced skills training. It extends proficiency achieved in basic Core Skills and develops mission-level individuals and leaders that normally results in certifications, qualifications, and leadership designations. Individuals and crews proficient in this phase of training should be capable of planning, managing, conducting mission essential tasks or leading crews / flights of numerous aircraft in a contingency operation.

(d) Core Plus Phase (4000 phase). This phase contains skill training associated with low probability of execution and/or theater specific operations. Although Core Plus training events may provide valuable training opportunities, they are not considered essential to achieve unit Core Competency. Core Plus training is conducted at the discretion of operational commanders and allows unit training flexibility. Aviation ground units may also use this phase to "cross train" select individuals in a specific MOS/crew position that although not required provides the commander flexibility to meets CMMR requirements. For example, a shortage of officers in a specific unit may require the training of senior more experienced enlisted Marines to the skill level required in order to meet and fill officer crew position requirements. When Core Plus is used to cross train, the core plus skill is not reflected as a unit CMMR requirement because the skill set more likely exists for the unit as a core or mission skill for the unit.

(e) Additional Phases. These phases are reserved for Instructor, Requirements, Certification, Qualification and Designation syllabi, and select event tracking.

1 Instructor Training Phase (5000 phase). This phase contains instructor workup and evaluation certification syllabus events. This phase will also contain instructor workup and certification syllabus events as applicable. Instructors include:

A Contract Instructors (CI) who instruct simulator events.

B Fleet Replacement Squadron (FRSI) IUT POIs.

C Basic Instructor (BI) IUT POIs*

D Senior Instructor (SI) IUT POIs*

Note: * To ensure standardization across all Marine AC2 communities, BI and SI IUT POIs are maintained by the MAWTS-1 C3 Division and are located in the MAWTS-1 C3 Course Catalog.

2 Aviation Ground Communities only. In order to ensure training is conducted by properly trained and experienced personnel, instructor training has been developed and standardized for individuals to be designated instructors. There are community specific instructors that undergo unique training, and there are standardized instructors: Basic instructor (BI), Senior instructor (SI), and WTI. A matrix delineating which events each instructor may instruct shall be developed and included in the 5000 phase. For example:

INSTRUCTOR	Event Training, Evaluation and Approval
BI	Core Skill events in which current and proficient
SI	Core Skill, Mission Skill, and Core Plus events in which current and proficient. - SID for: SO, DLC - STD for: TATC - SWD for: AWC, MC, AIC - DAOC for: DAC - SAD for: SCC, and all other crew positions qualified and current in
AICI	Evaluate and recommend the following positions for qualification: - AWC - AIC ***This is an example of a community specific instructor***
WTI	Mission Skill, Core Plus, and Qualification events. WTI: - Evaluate and recommend for qualification - Endorse recommendations for position designations
Notes	The Commanding Officer is the approving authority for qualifications and designations.

3 Requirements, Certifications, Qualifications, Designations (RCQD) Phase (6000 phase). This phase contains all other syllabus events and special interest tracking codes that do not neatly 'fit' into the above phases and is designed to facilitate training management. The 6000 phase contains standardized combat/flight leadership workup and evaluation events. This phase often contains event requirements not mandated by the T&R program such as NATOPS, instrument evaluations, and the functional check pilot syllabus.

A RCQD tracking codes are used to facilitate community training management that may be used in the 6000 phase if M-SHARP does not otherwise handle the specific instance that the community wishes to track. For example, RCQD codes may be established to monitor execution of specific instances of strategic air refueling (if no Strategic Air Refueling T&R event exists), arctic weather events, specific exercise sorties, etc.

B M-SHARP functionality eliminates the need for tracking codes related to the possession of certifications, qualifications, designations, certifications; flight cancellation codes (no takeoff) or airborne abort cancellation codes (T&R code specific); and ordnance expenditure. All of these can be logged and reported within M-SHARP and therefore shall not be authorized as tracking codes. However, qualification or designations may be used in this phase to reflect the completion of events, skill sets, and operational/administrative actions required prior to approval of the qualification or designation.

14. T&R Syllabus Structure For Phases And Subsequent Stages (Para 2.8 through 2.14, Phases 1000 through 6000) (Continued) - Construction Of Phases, Stages, and Individual Events

NAME OF PHASE

1. Purpose. Required. Describe end state training being accomplished in this phase.

2. General. Required.

a. Admin Notes. As applicable. Include administrative notes, policies, guidelines, ACPM and other amplifying pertinent phase information.

b. Prerequisites. As applicable. Includes academics, events, stages or other phases required to be completed prior to beginning training in the phase.

c. Stages. Required for 1000-8000 phases. List stages in the order they occur in the phase. Stage abbreviations shall be used and shall follow standard abbreviations per the Abbreviations table or Appendix C, as applicable.

3. Stage Title. Use the title listed in the "Stages" paragraph above.

a. Purpose. Required. Describe the end state of the stage to include level of performance.

b. General. As applicable.

c. Admin Notes. As applicable. Include administrative notes, policies, guidelines, ACPM and other amplifying pertinent stage information. May include crew requirements and specify academic instruction required in the stage. For tactical T/M/S communities, ACPM training events will be listed for the 2000, 3000 and 6000 phases; and, where applicable, include the following statement:

"Utilize academic courseware as outlined in the appropriate Type/Model/Series chapter of the MAWTS-1 Course Catalog."

d. Prerequisites. As applicable. Includes academics, events, other stages or phases required to be completed prior to beginning training in the stage.

4. Event Format. Events contain two main parts - a header and body. The notes below describe how entries are to be developed. Event information shall be consistent with and summarized in the each T&R Syllabus Matrix.

a. Event Header

1/	2/	3/	4/	5/	6/	7/	8/	9/
CAL-2100	**1.5**	**365**	**B,R,SC,M,R**	**(NS)**	**E**	**A/S**	**1**	**AH-1Z**

Number	Section	Inches from Margin	Notes
1	Stage & and event code	0	0 to 1"
2	Time (Flight, Sim, Acad)	1.0	
3	Refly Interval	1.5	Expressed in days
4	Program of Instruction	2.0	2" to 3"
5	Conditions	3.0	D,N,NS etc
6	Evaluation	3.5	
7	Device	4.0	A, A/S, S
8	Number & T/M/S	4.5	Can be specific CBT, WST etc.

EVENT HEADER INFORMATION:

1/ Stage-Event Code. Required. Stage abbreviations in the abbreviations table or standard abbreviations shall be used, as applicable. A unique numeric four-digit training code shall be assigned to each syllabus event. The first digit of the event code shall begin with the appropriate phase series number (Core Skill Introduction events = 1XXX; Core Skill events = 2XXX; etc.). The second digit of a T&R code refers to the stage. The third and fourth digits refer to the individual events within a stage, in sequence. Example: a hypothetical "TERF" stage may consist of the following events: 2100, 2101, 2102, 2103, and 2104. The 2200 event would indicate the start of the next stage, such as CQ-2200. If necessary, communities may number grouped stage events into a logical numbering progression. Number as follows:

Core Skill Introduction Academics	0000-1099
Core Skill Introduction	1100-1999
Core Skill Academics	2000-2099
Core Skill	2100-2999
Mission Skill Academics	3000-3099
Mission Skill	3100-3999
Core Plus Academics	4000-4099
Core Plus Skills	4100-4499
Mission Plus Skills	4500-4999
Instructor Training Academics	5000-5099
Instructor Training	5100-5999
RCQD[1] Academics	6000-6099
RCQD[1]	6100-6999
Reserved for future use	7000-7999
Additional/AC2 Academics[2]	8000-8999
ACPM Flying communities blocked event codes	8000-8699
Reserved for M-SHARP future use	9000-

Notes:
1. Requirements, Certifications, Qualifications, and Designations
2. Aviation Ground communities shall note all academics in the 8000 phase.
3. MAWTS-1 C3 Course Catalog contains events that are common to all AC2 communities. The table below lists all codes that are blocked and cannot be used in AC2 community T&Rs.

EVENT CODE	CATEGORY
X900-X999	C2SYS
5000-5199	BI AND SI INSTRUCTOR EVENTS
6000-6200	FORMAL SCHOOL CODES
8000-8099	ACPM

2/ Projected Event Duration. Required. Projected event duration should reflect the average time to execute the event requirement (actual time to execute the event may vary). Transit time may be added to the event duration. Projected event durations should be listed in applicable columns in the T&R syllabus matrix (flight, live, simulator, etc.) and be stated in hours.

3/ Refly Factor. As applicable. Refly (proficiency interval) factors reflect the maximum time between syllabus events. Refly factors shall be delineated in days. If not applicable, an asterisk (*) will be used to indicate the event has no refly interval - it is a one-time training requirement (unless R-coded).

4/ Programs of Instruction (POI). Required. See the example template.

5/ Event Conditions. See the example template. Normally used by tactical flight communities.

6/ Evaluation Code. Enter "E" if applicable.

7/ Device Options. See example template..

8/ Device Number. As applicable. List the number of aircraft, system, simulator, or other device(s)/major end items (MEIs) required for the completion of the event.

9/ Device Type. As applicable. List the type of device/MEI required for the completion of the event. For simulator events, list the specific type(s) of trainers.

b. Body. All events shall contain a Goal, Requirement, and Performance Standard. Additional items such as External Syllabus Support, Ordnance, and/or Range Requirements may be utilized.

First level	- Goal, Requirement, Performance Standard shall be underlined and the "left indentation" set at .5".
Second level	- Discuss, Demonstrate, Introduce etc., shall be set at .75". There is no requirement to underline.
Third level	- In the example, Vertical T/O, Taxi, Transition to Forward Flight etc., shall be set at 1.00". - There is no requirement to underline. Each subsequent level shall be indented at .25" for each level

10/ Goal. Required.

11/ Requirement. Required.

12/ Performance Standard. Required.

13/ Instructor. Required for Aviation Ground communities.

14/ Prerequisite. As applicable.

15/ Ordnance. As applicable.

16/ Range. As applicable.

17/ External Syllabus Support. As applicable.

18/ Reference. Required for Aviation Ground communities.

EVENT BODY INFORMATION:

10/ Goal. State the terminal learning objective.

11/ Requirement. List specific tasks for the event; indicate what the individual must accomplish. For Aviation Ground communities this includes a condition and performance steps; for example:

"Requirement. (*condition*) Given a warning order, site diagram, and applicable references:

(performance steps)
1. Determine equipment density list based on site diagram
2. Identify total crews and personnel required to support the mission.
3. Etc..

12/ Performance Standard. Required. Describe measurable level of proficiency for the event. It must be observable or measurable and shall specify the quantity and/or quality of the performance.

13/ Instructor. Required for Aviation Ground communities. List instructors authorized to train the event.

14/ Prerequisite. As applicable. A prerequisite is a requirement that must be completed prior to commencing another (generally more complex) training requirement. Prerequisites implement a building block approach to training. Omitting or skipping event prerequisites is prohibited (unless the prerequisite is waived). Prerequisites may include academics, events, entire stages, entire phases, certifications, qualifications, and designations. Communities may use any combination or number of these prerequisites to tailor training as appropriate.

Academic Prerequisite. "Knowledge-based" information (often a class or lecture) that must be imparted to, or gained by the student prior to commencing another training requirement. For example, a lecture series may be a prerequisite to commencing a stage.

Event Prerequisite. For events with device options, prerequisites may be specified by device type. For example, if a T&R code 2123 can be conducted in a simulator or in an aircraft, 2123 may have no prerequisite if conducted in the simulator, but if conducted in the aircraft prerequisites may apply. Events may be refined depending on conditions as follows.

Night optional prerequisite conditions may exist for night optional T&R events and are annotated with parentheses around the event [e.g. (2100)] or with "DAY" after them (e.g. 2100 DAY). A prerequisite annotated with parentheses must be previously completed only if the scheduled night optional T&R event is actually conducted at night. A prerequisite annotated with "DAY" must be previously completed only if the scheduled night optional T&R event is actually conducted during the day. As an example, if 2130 is a night-optional event and its

prerequisites are listed as "2120, (2121), 2122 DAY," the following applies:

- If event 2130 is conducted during the day, prerequisites that apply are 2120 and 2122 only.
- If event 2130 is conducted during night, prerequisites that apply are 2120 and 2121 only.

Light level prerequisite conditions may exist for T&R events that can be conducted at night and are annotated with parentheses and "HLL" or "LLL" around the event [e.g. (2100 HLL)]. Prerequisite codes annotated with parentheses and "HLL" after them must be previously completed if the T&R event is flown using night systems during high light level conditions. Prerequisite codes annotated with parentheses and "LLL" after them [e.g. (2100 LLL)] must be previously completed if the T&R event is flown using night systems during low light level conditions. As an example, if 2140 is a night-optional event and its prerequisites are listed as "2130, (2131 HLL), (2132 LLL)," the following applies:

- If event 2140 is flown during HLL conditions, prerequisites that apply are 2130 and 2131 only.
- If event 2140 is flown during LLL conditions, prerequisites that apply are 2130 and 2132 only.

Certification Prerequisite. For Aviation Ground only. A certification that must be completed prior to completing another training requirement is a certification prerequisite. For example, a LAAD Platoon Commander certification is normally a prerequisite to commencing Battery/Battalion training.

15/ Ordnance Requirement. As applicable. Ordnance shall be specified in a table format to identify primary ordnance requirements and quantity with allowable substitutes if applicable. A list of ordnance types may be viewed at the CG TECOM ATD website at https://www.intranet.tecom.usmc.mil/hq/branches/atbl/Homepage%20Web%20Part%20Pages/NCEA%20Cockpit%20Chart.aspx

There may be instances where a specific quantity and type of ordnance is required by POI, i.e. Basic or Refresher. In those instances the POI shall be identified in a separate column prior to the ordnance column.

ORDNANCE				
*POI**	*ORDNANCE*	*QUANTITY*	*ALLOWABLE SUBSTITUTES*	*NOTES*
*Basic**	*GBU-31*	*1*	*GBU-38/32*	
*Refresher**	*GBU-16*	*2*	*GBU-10/12*	
	RR-129	*60*	*RR-144*	
	SM-875 STUF	*60*	*MK-32*	

16/ Range/Target Requirement. List all range/target capabilities required to complete the event, if applicable. Range/target capability acronyms, derived from a standard list, shall be used. The standard list of range/target capabilities are under development.

Format example for Range or Target requirements:

Range Requirements		
Required Capabilities	*Allowable substitutes*	*Desired Capabilities*
RSTD		*SST, EW, TGTDISP, EXP*
TGT	*NBDS*	
URBN WPNS		
JCAS		
JDAM		

17/ External Syllabus Support. As applicable. List of additional training resources and/or external support required to complete the event, (e.g., adversary support, tanker support, etc) if applicable. For example, *CAS - FAC(A) with X number of mortar/arty/rockets for marking; dissimilar FW adversary F-18/F-5 etc.*

18/ Reference. Required for Aviation Ground communities. State references that are required or support accomplishment of the event.

15. Aviation Career Progression Model (Para 2.15). See example in Section 4.

16. T&R Attain and Maintain Tables (Para 2.16). See example in Section 4.

17. T&R Syllabus Matrices (Para 2.17). See examples in Section 4.

18. T&R Syllabus Evaluation Forms (Para 2.18). Communities shall develop community standardized evaluation forms for all events contained in their T&R syllabus. T&R syllabus evaluation forms shall be placed in T&R manuals as an appendix or maintained by the syllabus sponsor. If the syllabus sponsor maintains T&R syllabus evaluation forms, the syllabus sponsor shall ensure electronic copies are made available to fleet units. Marine Aviation Command and Control communities have standardized an evaluation form titled "MACCS Training Form (MTF)," and it is located in the MAWTS-1 C3 Course Catalog.

19. Training Device Event Essential Subsystem Matrix (EESM) (Para 2.19). All communities that utilize training devices shall develop a training device EESM for each type or configuration of training device employed. The training device EESM will define the mandatory and preferred subsystems for each T&R event (see example in template provided in Section 4 at the end of the section.). Syllabus Sponsors and Model Managers shall coordinate with the cognizant MATSS to catalog training device configurations and associated hardware/software subsystems.

a. Subsystems. Subsystems of a training device support attainment of skills for completion of specific T&R events. The EESM will include applicable subsystems on each training device for the T/M/S, to include hardware, software, and appropriate presentation to the user (see matrix below). The listed subsystems are generic and not all-encompassing for use as a template for incorporation.

Aerodynamic Model
After Action Review (Debrief Station/ Debrief Playback, etc)
Aircraft Survivability Equipment (CIT, current MDF, RWR, ALQ, ALE, AAR, etc)
Aural
Automatic Flight Control System (or T/M/S equivalent flight stabilization equipment)
Caution/Warning System
Cockpit Displays (HUD, UFCP, LMDI, RMDI, MPCD, ADU, IFEI, ALR-67)
Cockpit Instruments (Stby Airspeed, Rad Alt, VVI, BaroAlt, Brake Accum Pr, Stby Mag Compass, Attitude Indicator)
Cockpit Panels (Advisory/Threat Warning Ind L/R, Master Arm Panel, Jettison Select, ECM, Video Record, Landing Gear, Wing Fold Handle)
Comms/ICS (Radio, HQ, SINCGARS, KY, etc)
Copilot/Aircrew Systems (as applicable)
Flight Controls
Instructor Operator Station (HUD/OTW Repeater, Cockpit Repeater, Interactive Display (IAD 1,2,3,) Data Entry System (Keyboard))
Landing Gear System (as applicable)
Lighting System
Mechanical Diagnostics System
Miscellaneous Mission Systems (external cargo, aerial refueling, BFT, MIDS)
Miscellaneous Switches/knobs (blade fold, anti-ice)
Mission Planning Interface
Motion System
Moving Models (Ships, Aircraft, Vehicles, and associated capabilities/signatures)
Navigation systems
Operational Flight Program/SCS (current flight software)
Sensor Systems (Radar, FLIR, L-Pod, etc.)
TEN/Networking Capability
Visual System (Environmental Conditions, Database Coverage, etc)
Visual System (Projectors, NVG System, Head Tracker)
Weapons Systems (SMS, EW suite, AMRAAM, HARM, JSOW, etc.)

b. Subsystem Categorization. Subsystems may be categorized as mandatory or preferred.

(1) Mandatory. A subsystem is considered mandatory for a specific T&R event if absence of that subsystem would result in negative training or otherwise prevent the achievement of training objectives as delineated in the goal, requirement or performance standard sections of the T&R event description.

(2) Preferred. A subsystem is considered preferred for a specific T&R event if absence of the subsystem would degrade quality of training, but not specifically prevent the achievement of training objectives.

c. Event Categorization. T&R events that require the use of a training device shall only be completed in devices that are equipped with all mandatory subsystems per the EESM. For each event, a training device is categorized as follows:

(1) Mission Capable (MC). A training device is MC for a T&R event if all mandatory subsystems are installed and operational.

(2) Non-Mission Capable (NMC). A training device is NMC for a T&R event if any one of the mandatory subsystems is not installed or non-operational. In addition, if more than 5 *and* more than 50% of preferred subsystems are not installed or operational the device is NMC for that T&R event. A training device will be considered NMC for all events if its configuration is greater than 6 months out of date as compared to the majority of the current operational systems at the primary location supported by the training device.

d. Training Device EESM Application. The matrix example in the template in Section 4 illustrates how the absence of a particular simulator subsystem or capability affects simulator status for each S-coded T&R event. All events requiring a training device shall be completed in an MC device as determined by the instructor. MATSS shall notify squadron commanding officers of all events that were not completed due to an NMC training device.

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CHAPTER 6

T&R MANUAL STRUCTURE

SECTION 4

SAMPLE T&R MANUAL CHAPTER 2 INDIVIDUAL REQUIREMENTS TEMPLATE

THIS SECTION PROVIDES A TEMPLATE FOR CHAPTER 2 OF AN AVIATION T&R MANUAL

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CHAPTER 2

INDIVIDUAL TRAINING
MOS TITLE OR CREW POSITION/MOS

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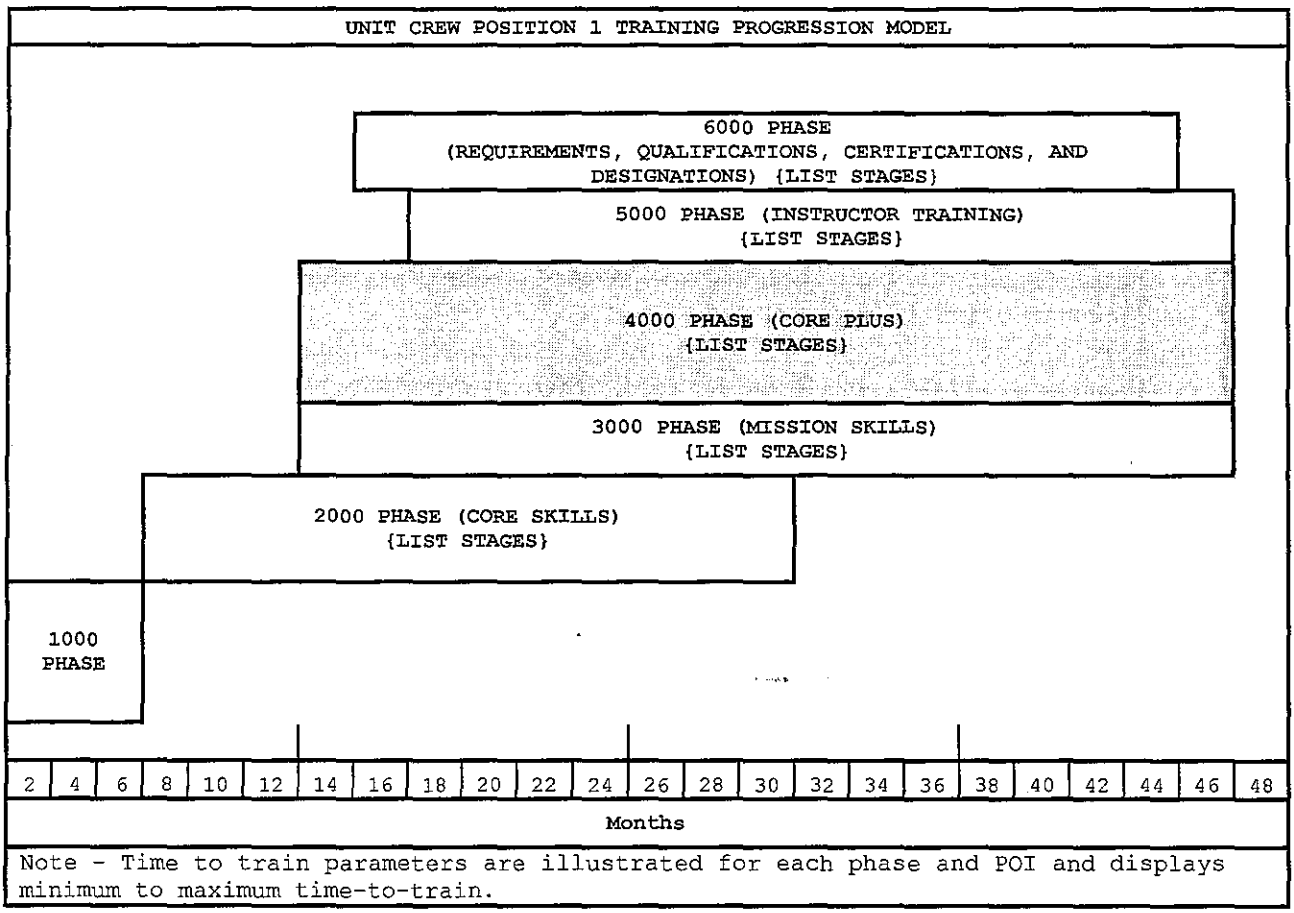
CHAPTER 2

INDIVIDUAL TRAINING
MOS TITLE OR CREW POSITION/MOS

2.0 INDIVIDUAL TRAINING AND READINESS REQUIREMENTS. This T&R syllabus is based on specific goals and performance standards designed to ensure individual proficiency in Core, Mission, and Core Plus Skills. The goal of this chapter is to develop individual and unit war fighting capabilities.

2.1 TRAINING PROGRESSION MODEL. This model represents the recommended training progression for the minimum to maximum time per phase for each *(Crew Position)* crewmember. Units should use the model as a guide to generate individual training plans (Example is one of two models authorized per Section 3 paragraph 603.6).



Note - Time to train parameters are illustrated for each phase and POI and displays minimum to maximum time-to-train.

2.2 ABBREVIATIONS

UNIT CREW POSITION 1	
CORE/MISSION/CORE PLUS SKILL ABBREVIATIONS	
CORE SKILLS (2000 Phase)	
CS-1	CORE SKILL 1
CS-2	CORE SKILL 2
CS-3	CORE SKILL 3
CS-4	CORE SKILL 4
CS-5	CORE SKILL 5
CS-6	CORE SKILL 6
MISSION SKILLS (3000 Phase)	
MS-1	MISSION SKILL 1
MS-2	MISSION SKILL 2
MS-3	MISSION SKILL 3
MS-4	MISSION SKILL 4
CORE PLUS (4000 Phase)	
CORE PLUS SKILLS	
CPS-1	CORE PLUS SKILL 1
CPS-2	CORE PLUS SKILL 2
CPS-3	CORE PLUS SKILL 3
MISSION PLUS SKILLS	
MPS-1	MISSION PLUS SKILL 1
MPS-2	MISSION PLUS SKILL 2
INSTRUCTOR (5000 Phase)	
DESG-1	DESIGNATION 1
DESG-2	DESIGNATION 2
DESG-3	DESIGNATION 3
QUALIFICATIONS AND DESIGNATIONS (6000 Phase)	
QUAL-1	QUALIFICATION 1
QUAL-2	QUALIFICATION 2
QUAL-3	QUALIFICATION 3
FL-1	FLIGHT LEADERSHIP/COMBAT LEADERSHIP 1
FL-2	FLIGHT LEADERSHIP/COMBAT LEADERSHIP 2
FL-3	FLIGHT LEADERSHIP/COMBAT LEADERSHIP 2
CORE SKILL INTRODUCTION / FRS (1000, 5000, & 6000 Phase)	
CSI-1	CORE SKILL INTRODUCTION 1
CSI-2	CORE SKILL INTRODUCTION 2
FRS I	FLEET REPLACEMENT SQUADRON DESIGNATION 1
DESG-5	DESIGNATION 5

2.3 DEFINITIONS

TERM	DEFINITION
Core Model	The Core Model is the basic foundation or standardized format by which all T&Rs are constructed. The Core model provides the capability of quantifying both unit and individual training requirements and measuring readiness. This is accomplished by linking community Mission Statements, Mission Essential Task Lists, Output Standards, Core Skill Proficiency Requirements and Combat Leadership Matrices
Core Skill	Fundamental, environmental, or conditional capabilities required to perform basic functions. These basic functions serve as tactical enablers that allow crews to progress to the more complex Mission Skills. Primarily 2000 Phase events but may be introduced in the 1000 Phase.
Mission Skill	Mission Skills enable a unit to execute a specific MET. They are comprised of advanced event(s) that are focused on MET performance and draw upon the knowledge, aeronautical abilities, and situational awareness developed during Core Skill training. 3000 Phase events.
Core Plus Skill	Training events that can be theater specific or that have a low likelihood of occurrence. They may be Fundamental, environmental, or conditional capabilities required to perform basic functions. 4000 Phase events.

Core Plus Mission	Training events that can be theater specific or that have a low likelihood of occurrence. They are comprised of advanced event(s) that are focused on Core Plus MET performance and draw upon the knowledge, aeronautical abilities, and situational awareness. 4000 Phase events.
Core Skill Proficiency (CSP)	CSP is a measure of training completion for 2000 Phase events. CSP is attained by executing all events listed in the Attain Table for each Core Skill. The individual must be simultaneously proficient in all events within that Core Skill to attain CSP.
Mission Skill Proficiency (MSP)	MSP is a measure of training completion for 3000 Phase events. MSP is attained by executing all events listed in the Attain Table for each Mission Skill. The individual must be simultaneously proficient in all events within that Mission Skill to attain MSP. MSP is directly related to Training Readiness.
Core Plus Skill Proficiency (CPSP)	CPSP is a measure of training completion for 4000 Phase "Skill" events. CPSP is attained by executing all events listed in the Attain Table for each Core Plus Skill. The individual must be simultaneously proficient in all events within that Core Plus Skill to attain CPSP
Core Plus Mission Proficiency (CPMP)	CPMP is a measure of training completion for 4000 Phase "Mission" events. CPMP is attained by executing all events listed in the Attain Table for each Core Plus Mission. The individual must be simultaneously proficient in all events within that Core Plus Mission to attain CPMP

2.4 INDIVIDUAL CORE/MISSION/CORE PLUS SKILL PROFICIENCY REQUIREMENTS

2.4.1 Management of individual CSP/MSP/CPSP/CPMP serves as the foundation for developing proficiency requirements in DRRS.

2.4.2 Individual CSP is a "Yes/No" status assigned to an individual by Core Skill. When an individual attains and maintains CSP in a Core Skill, the individual counts towards CMMR Unit CSP requirements for that Core Skill.

2.4.3 Proficiency is attained by individual Core/Mission/Core Plus skill where the training events for each skill are determined by POI assignment.

2.4.4 Once proficiency has been attained by Core/Mission/Core Plus Skill (by any POI assignment) then the individual maintains proficiency by executing those events noted in the maintain table and in the "Maintain POI" column of the T&R syllabus matrix. An individual maintains proficiency by individual Core/Mission/Core Plus Skill.

Note

Individuals may be attaining proficiency in some Core/Mission/Core Plus Skills while maintaining proficiency in other Core/Mission/Core Plus Skills.

2.4.5 Once proficiency has been attained, should one lose proficiency in an event in the "Maintain POI" column, proficiency can be re-attained by demonstrating proficiency in the delinquent event. Should an individual lose proficiency in all events in the "Maintain POI" column by Core/Mission/Core Plus Skill, the individual will be assigned to the Refresher POI for that Skill. To regain proficiency for that Core/Mission/Core Plus Skill the individual must demonstrate proficiency in all R-coded events for that Skill.

Note

See Chapter 2 for amplifying information on POI updating.

UNIT CREW POSITION 1							
ATTAIN AND MAINTAIN CORE/MISSION/CORE PLUS PROFICIENCY MATRIX BY POI							
ATTAIN PROFICIENCY						MAINTAIN POI	
BASIC POI		SERIES CONVERSION POI		REFRESHER POI			
CORE SKILL (2000 Phase)							
STAGE	CODE	STAGE	CODE	STAGE	CODE	STAGE	CODE
CORE SKILL 1	S2100	CORE SKILL 1	S2100	CORE SKILL 1		CORE SKILL 1	
	2101R				2101R		
	2102R		2102R		2102R		2102R
CORE SKILL 2	S2200	CORE SKILL 2	S2200	CORE SKILL 2		CORE SKILL 2	
	2201						
	2202						
	2203R		2203R		2203R		2203R
CORE SKILL 3	S2300	CORE SKILL 3	S2300	CORE SKILL 3		CORE SKILL 3	
	2301R		2301R		2301R		2301R
CORE SKILL 4	S2400	CORE SKILL 4		CORE SKILL 4		CORE SKILL 4	
	S2401R				S2401R		S2401R
	2402		2402				
	2403R		2403R		2403R		2403R
CORE SKILL 5	2500R	CORE SKILL 5	2500R	CORE SKILL 5	2500R	CORE SKILL 5	2500R
	2501R		2501R		2501R		2501R
CORE SKILL 6	S2600	CORE SKILL 6		CORE SKILL 6		CORE SKILL 6	
	2601		2601				
	2602R		2602R		2602R		3202R
MISSION SKILL (3000 Phase)							
MISSION SKILL 1	S3100R	MISSION SKILL 1		MISSION SKILL 1	S3100R	MISSION SKILL 1	S3100R
	3101R		3101R		3101R		
MISSION SKILL 2	3200R	MISSION SKILL 2	3200R	MISSION SKILL 2	3200R	MISSION SKILL 2	3200R
MISSION SKILL 3	S3300	MISSION SKILL 3	S3300	MISSION SKILL 3		MISSION SKILL 3	
	S3301R				S3301R		S3301R
MISSION SKILL 4	3400R	MISSION SKILL 4		MISSION SKILL 4	3400R	MISSION SKILL 4	3400R
CORE PLUS SKILLS (4000 Phase)							
CORE PLUS SKILL 1	4100	CORE PLUS SKILL 1	4100	CORE PLUS SKILL 1		CORE PLUS SKILL 1	
	4101R				4101R		4101R
	4102						
CORE PLUS SKILL 2	S4200	CORE PLUS SKILL 2	S4200	CORE PLUS SKILL 2		CORE PLUS SKILL 2	
	S4201R		S4201R		S4201R		S4201R
CORE PLUS SKILL 3	4300R	CORE PLUS SKILL 3	4300R	CORE PLUS SKILL 3	4300R	CORE PLUS SKILL 3	4300R
	4301R		4301R		4301R		4301R
	4302R		4302R		4302R		4302R
MISSION PLUS SKILLS (4000 Phase)							
MISSION PLUS SKILL 1	4400	MISSION PLUS SKILL 1	4400	MISSION PLUS SKILL 1		MISSION PLUS SKILL 1	
	4401R		4401R		4401R		4401R
MISSION PLUS SKILL 2	4500	MISSION PLUS SKILL 2		MISSION PLUS SKILL 2		MISSION PLUS SKILL 2	
	4501R		4501R		4501R		4501R
"S" prefix and blue font = flown in simulator							
"R" suffix and Grey highlight = R-coded "Refresher" event							

2.5 REQUIREMENT, CERTIFICATION, QUALIFICATION AND DESIGNATION TABLES. The tables below delineate T&R events required to be completed to attain proficiency for select certifications, qualifications and designations. In addition to event requirements, all required stage lectures, briefs, squadron training, prerequisites, and other criteria shall be completed prior to completing final events. Certification, qualification and designation letters signed by the commanding officer shall be placed in training Performance Records and NATOPS. See Chapter 6 of the Aviation T&R Program Manual on regaining lost qualifications.

2.5.1 Instructor Designations

UNIT CREW POSITION 1 INSTRUCTOR DESIGNATIONS (5000 Phase)	
INSTRUCTOR DESIGNATION	EVENTS
XXXXX I	5100,5101,5102R
XXX I	5200R
XXXXXX I	5300,5301,5302,5303R
XX I	5400,5401R
XXXX I	5500,5501,5502,5503R

2.5.2 Requirements, Certifications, Qualifications, and Designations

UNIT CREW POSITION 1 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (R,C,Q & D) [6000 Phase]	
R,C,Q & D	EVENTS
NATOPS	6100R
INSTRUMENT	6101R
XXXX	6200,6201,6203,6204,6205R
XXXX	6300R
XXXX	6400R
XXXX	6500R
XXXX	6600R
XXXX	6700,6701R

2.6 *(CREW POSITION)* PROGRAMS OF INSTRUCTION (POI). These tables reflect average time-to-train versus the minimum to maximum time-to-train parameters in the Training Progression Model.

2.6.1 Basic POI

UNIT CREW POSITION 1 Basic POI		
Weeks	Phase of Instruction	Unit
1-2	Core Skill Introduction (1000 Phase)	FRS
3-16	Core Skill (2000 Phase)	Tactical Unit
17-26	Mission Skill (3000 Phase)	Tactical Unit
27-52	Core Plus (4000 Phase)	Tactical Unit

2.6.2 Refresher POI

UNIT CREW POSITION 1 Refresher POI		
Weeks	Phase of Instruction	Unit
1-2	Core Skill Introduction (1000 Phase)	FRS
3-12	Core Skill (2000 Phase)	Tactical Unit
13-22	Mission Skill (3000 Phase)	Tactical Unit
23-52	Core Plus (4000 Phase)	Tactical Unit

Note: Basic and Refresher POI tables shall account for each crew position.

2.7 SYLLABUS NOTES. As needed.

2.7.1 Environmental Conditions Matrix. As required, only include applicable rows.

Environmental Conditions	
Code	**Meaning**
D	Shall be flown during hours of daylight: (by exception - there is no use of a symbol)
N	Shall be flown during hours of darkness, may be aided or unaided
N*	Shall be flown during hours of darkness must be flown unaided
(N*)	May be flown during hours of darkness - If flown during hours of darkness must be flown unaided
(N)	May be flown during darkness - If flown during hours of darkness; may be flown aided or unaided
NS	Shall be flown during hours of darkness - Mandatory use of Night Vision Devices
(NS)	May be flown during darkness - If flown during hours of darkness; must be flown with Night Vision Devices
Note - If the event is to be flown in the simulator the Simulator Instructor shall set the desired environmental conditions for the event.	

2.7.2 Device Matrix. Only include applicable rows

DEVICE	
Symbol	**Meaning**
A	Flown in Aircraft
A/S	Aircraft preferred may be flown in Simulator
S	Flown in Simulator
S/A	Simulator preferred may be flown in Aircraft
L	Event shall be conducted live (conducted in the field/garrison, during an exercise, etc). Requires live (non-simulated) execution of the event.
L/S	Event performed live preferred/simulator optional.
S/L	Event performed in simulator preferred/live optional.
G	Ground/academic training. May include Distance Learning, CBT, lectures, self paced.
CBT	Computer Based Training
LAB	Laboratory
LEC	Lecture
CP	Command Post
TEN	Tactical Environment Network. Events designated as TEN require an approved tactical environment simulation capable of introducing both semi-autonomous threats and moving models controllable from the tactical operator station.
TEN+	Enhanced Tactical Environment Network. Events designated as TEN+ require an approved tactical environment simulation and at least one additional, networked, man-in-the-loop simulator to meet the training objectives. A moving model controlled from the operator station does not satisfy the man-in-the-loop requirement.
Note - If the event is to be flown in the simulator the Simulator Instructor shall set the desired environmental conditions for the event.	

2.7.3 Program of Instruction Matrix. Only include applicable rows and columns.

PROGRAM OF INSTRUCTION MATRIX			
Program of Instruction (POI)	**Symbol**	**Aviation Flying**	**Aviation Ground**
Basic	B	Initial MOS/Skill Training	Initial MOS Training
Transition*	T	Moving from one Type to another (Rotary-Wing to Fixed-Wing)	N/A
Conversion*	C	Moving from one Model to another (CH-46E to CH-53E)	N/A
Series Conversion	SC	Moving from one Series to another (KC-130T to KC-130J)	N/A
Refresher	R	DIFDEN to DIFOPS in same T/M/S	Return to community from non (MOS/Skill) associated tour
Maintain	M	All individuals who have attained CSP/MSP/CPP by initial POI assignment are re-assigned to the M POI to maintain proficiency.	
Modified Refresher	MR	FRS only - See Chapter 4 for specific assignment	N/A
Safe For Solo	SS	FRS only - See Chapter 4 for specific assignment	N/A
*Many communities will assign Transition and Conversion aircrew to the Basic POI.			

2.7.4 Event Terms. As required. Flight communities may use the below listed terms. Aviation ground communities will use verbs that best describe executable and measurable goals and performance steps, see paragraph 603.13.4 for event structure. Taxonomies, such as Bloom, offer a list of verbs for various learning levels.

EVENT TERMS	
TERM	**DESCRIPTION**
Discuss	An explanation of systems, procedures, or maneuvers during the brief, in flight, or post flight. Student is responsible for knowledge of procedures.
Demonstrate	The description and performance of a particular maneuver/event by the instructor, observed by the PUI/student. The PUI/student is responsible for knowledge of the procedures prior to the demonstration of a required maneuver/student.
Introduce	The instructor may demonstrate a procedure or maneuver to a student, or may coach the PUI through the maneuver without demonstration. The PUI performs the procedures or maneuver with coaching as necessary. The PUI is responsible for knowledge of the procedures.
Practice	The performance of a maneuver or procedure by the PUI/student that may have been previously introduced in order to attain a specified level of performance.
Review	Demonstrated proficiency of a maneuver by the PUI/student.
Evaluate	Any flight designed to evaluate aircrew standardization that does not fit another category such as SARCK, HACCK, T2PCK, etc.
E-Coded	This term means an event evaluation form is required each time the event is logged. Requires evaluation by a certified standardization instructor (NATOPS I, WTI, INST Evaluator etc.)

2.8 CORE SKILL INTRODUCTION FRS ACADEMIC PHASE (0000 Phase)

2.8.1 Purpose. To ensure Replacement Air Crew (RACs) assigned to the Fleet Replacement Squadron (FRS) are given the proper academic instruction prior to beginning the Corps Skill Introduction Phase.

2.8.2 General. Each RAC assigned to the FRS shall receive all of the academic classes listed in the matrix below prior to beginning the Core Skill Introduction Phase (1000). The academic classes have corresponding T&R codes associated with them and will be tracked and logged in M-SHARP.

2.8.3 Ground/Academic Training. The following matrix will be used to track academic and administrative training:

T&R CODE	EVENT
ACAD-0001	PFAM
ACAD-0001	ODO PROCEDURES
ACAD-0001	SDO PROCEDURES
ACAD-0001	FRS COURSE RULES
ACAD-0001	LOAD COMPUTATIONS
ACAD-0001	PFPS
ACAD-0001	APP PROCEDURES

2.9 CORE SKILL INTRODUCTION PHASE (1000)

Note: This template applies to all phases through 6000, see **para 6.2.9 through 6.2.15}**

2.9.1 Purpose. To instruct the copilot in MV-22B fundamentals and introduce mission elements. At the completion of this phase the PUI will be a NATOPS qualified T2P and rate the 7532 MOS as specified in RQD-6030. All cockpit trainer, simulator, and flight events require an Aviation Training Form (ATF), except CFAM-1030 and CFAM-1031.

2.9.2 General

2.9.2.1 Prerequisite. As applicable.

2.9.2.2 Admin Notes. As applicable.

2.9.2.3 Stages. The following stages are included in the Core Skill Introduction Phase of training.

Par No.	Stage Name
2.9.3	Familiarization (FAM)
2.9.4	Navigation (NAV)
2.9.5	Instrument (INST)
2.9.X	Etc.

2.9.3 FAMILIARIZATION (FAM) STAGE

2.9.3.1 Purpose. To teach the PUI basic V-22 aircraft control, normal procedures, normal checklists and Pilot Flying (PF) actions during Emergency Procedures (EPs). Focus of Effort (FOE): Basic aircraft control, tiltrotor aerodynamics, tiltrotor flying qualities, major aircraft systems, cue level of automation, and NATOPS Chapters: 2, 4, 7, 11, & 12.

2.9.3.2 General

Prerequisite. As applicable.

Admin Notes. As applicable. Example:

CFAMs are events conducted in cockpit trainers to familiarize the pilot with the cockpit, CMS, start-up, and shutdown procedures prior to the

first flight in the simulator. CFAMs may be conducted in an FFS, FTD, CFTD, Interactive Cockpit Learning Environment (ICLE) or other equivalent device.

EPs will be consistent with discuss items and with the flight profile of the event.

DTM will be a standard brick provided by the instructor for all events in the FAM stage. Starting with CFAM-1030, the PUI will fill out a load computation form by hand using NATOPS charts based on the conditions stated in the Student Guide.

Emphasize NATOPS chapters 2, 4, 7, 11, and 12. PUI is responsible for reading all applicable NATOPS sections of the above chapters for each Simulator and Flight event.

If the FAM-1043 is not flown within 5 days of the SFAM-1042, the SFAM-1042 shall be re-flown.

Crew Requirements:

CFAM: Max of 2 PUI to 1 IP, CFAM-1031 PUI/PUI

SFAM: IP/PUI

FAM: IP/PUI/CC

SFAM-1100 2.0 * B E S WST

Goal. Introduce cockpit preflight inspection, checklists, and engine start procedures.

Requirement (Format applies to flying communities, Aviation Ground communities will continue to use conventional paragraph numbering.)

Discuss: (ref: CH-46E NATOPS Manual, CH-46E Flight Standardization Manual)
- The Engine and related sub-systems.
- Scan during Start-up/Shutdown
- CRM during Start-up/Shutdown
- Start/shutdown limitations.

Introduce/Evaluate:
- Interior inspection/pre-start checklist.
- Normal engine start.
- Single engine start/engagement.
- Rotor brake slippage on engine start.
- Pre-taxi checklist.
- Radios and communication.
- ICS operation.
- UHF & VHF operation.
- Normal shutdown.

Emergencies:
- Engine start malfunctions.
- Hot start/cold hang-up.
- Starter hang-up.

Performance Standard. Pilot shall demonstrate knowledge of engine systems, NATOPS Checklists, and communication systems.

Note: Format above remains the same for paragraphs 2.10 through 2.14 of chapter 6 section 4 (use above sample table of contents as a guide).

2.16 AVIATION CAREER PROGRESSION MODEL (8000). Applicable only to flying communities.

2.16.1 Purpose. To enhance professional understanding of Marine Aviation and the MAGTF, and to ensure individuals possess the requisite skills to fill battle command and battle staff positions in support of the ACE and the MAGTF in a joint environment. The focus of training in the Aviation Career Progression Model (ACPM) is on academic events in the following areas:

Marine Air Command and Control System (MACCS)

Aviation Ground Support

Joint Air Operations

ACE Battle Staff

MAGTF

Seabased Operations

Combatant Commander Organizations

2.16.1.2 All tactical T/M/S T&R manuals have ACPM training requirements embedded within the progressive training phases, including the flight leadership POI. If not already completed prior to assignment to VMR-1, an OSA unit, or a VMR Det (C-9, UC-35, C-12, or C-20), pilots assigned to an OSA platform should complete ACPM training requirements as outlined per their original T/M/S MOS T&R manual. Refer to NAVMC 3500.14, Aviation T&R Program Manual, as a primary reference for ACPM training requirements.

2.16.2 General. The ACPM is intended to be an integrated series of academic events contained within each phase of training. Accordingly, ACPM academic events are like any other academic event in that they serve as pre-requisites to selected flight events or stages. Additionally, several ACPM academic events are integrated as prerequisites for flight leadership syllabi.

ACPM events may be conducted in group session with an assigned instructor teaching the period of instruction or they may be accomplished by self-paced instruction.

MAWTS-1 is responsible for the update and validity of the ACPM periods of instruction. In the future, courses may be consolidated or revised to meet changing requirements. Refer to the MAWTS-1 ACPM link for the current ACPM program of instruction:

https://www.intranet.tecom.usmc.mil/sites/mawts1/aviation%20career%20progression%20model/forms/allitems.aspx

Completed events shall be manually logged and tracked in M-SHARP.

ACPM academic events, along with their identifying prerequisite association with other training phases/stages/events, are listed below.

STAGE	TRNG CODE	T&R DESCRIPTION		ACAD TIME	TO BE COMPLETED DURING
ACPM	8200	CONTROL OF AIRCRAFT AND MISSILES		0.6	2000 PHASE
ACPM	8201	MWCS BRIEF		0.4	2000 PHASE
ACPM	8202	AIRSPACE CONTROL AUTHORITY (ACA) & AIRSPACE		0.5	2000 PHASE
ACPM	8210	AVIATION GROUND SUPPORT		0.6	2000 PHASE
ACPM	8230	ACE BATTLESTAFF		0.6	2000 PHASE
ACPM	8231	BATTLE COMMAND DISPLAY		0.3	2000 PHASE
ACPM	8240	SIX FUNCTIONS INTEGRATION		1.3	2000 PHASE
ACPM	8241	ASR/JTAR INTRODUCTION AND PRACTICAL APPLICATION CLASS		0.5	2000 PHASE
ACPM	8242	AVIATION SITE COMMAND		0.7	2000 PHASE
ACPM	8250	THEATER AIR GROUND SYSTEM (TAGS)		0.6	2000 PHASE
ACPM	8300	AIR DEFENSE		0.6	3000 PHASE
ACPM	8310	FORWARD ARMING AND REFUELING POINT (FARP)		0.4	3000 PHASE
ACPM	8311	MARINE CORPS TACTICAL FUEL SYSTEMS		0.2	3000 PHASE
ACPM	8320	JOINT STRUCTURE & JOINT AIR OPERATIONS		1.3	3000 PHASE
ACPM	8321-26	JOINT AIR PLANNING & JOINT TASKING		1.3	3000 PHASE
ACPM	8340	INTEGRATING FIRES & AIRSPACE WITHIN THE MAGTF		0.5	3000 PHASE
ACPM	8350	PHASING CONTROL ASHORE		0.5	3000 PHASE
ACPM	8351	TACRON		TBD	3000 PHASE
ACPM	8620	ESG/CSG INTEGRATION		TBD	6000 PHASE
ACPM	8630	TACTICAL AIR COMMAND CENTER (TACC)		0.7	6000 PHASE
ACPM	8640	JOINT DATA NETWORK		0.4	6000 PHASE
ACPM	8641	NATIONAL, THEATRE, & MAGTF ISR EMPLOYMENT		1.5	6000 PHASE
ACPM	8660	JOINT OPS INTRO		0.5	6000 PHASE
		TOTAL ACPM STAGE	23	14.0	

2.16 AVIATION CAREER PROGRESSION MODEL (ACPM) (8000). Applicable only to MACCS communities.

2.16.1 Purpose. To enhance the professional understanding of Marine Aviation and the MAGTF, and to ensure individuals possess the requisite skills to fill battle command and battle staff positions in support of the ACE and the MAGTF in a joint environment. The focus in the Aviation Career Progression Model (ACPM) is on academics in the following areas:

Marine Air Command and Control System (MACCS)
Aviation Combat Element (ACE)
Threat to the MAGTF
MAGTF Joint Air Operations

2.16.2 General. The ACPM is intended to be an integrated series of academic events contained within each phase of training. Accordingly, ACPM academic events are like any other academic event in that they serve as prerequisites to selected training events or stages. Additionally, several ACPM academic events are integrated as prerequisite for certain combat leadership syllabi.

ACPM events may be conducted in group session with an assigned instructor teaching the period of instruction or they may be accomplished by self-paced instruction.

MAWTS-1 is responsible for the update and validity of the ACPM periods of instruction. In the future, courses may be consolidated or revised to meet changing requirements. Refer to the MAWTS-1 ACPM link for the current ACPM program of instruction:

https://www.intranet.tecom.usmc.mil/sites/mawts1/aviation%20career%20progression%20model/forms/allitems.aspx

Completed events shall be manually logged and tracked in M-SHARP.

ACPM academic events, along with their identifying prerequisite association with other training phases/stages/events, are listed below.

STAGE	TRNG CODE	T&R DESCRIPTION		ACAD TIME	TO BE COMPLETED DURING
ACPM	8000	**MACCS**		1	3000 PHASE
ACPM	8001	MARINE AIR COMMAND AND CONTROL SYSTEM		4	3000 PHASE
ACPM	8002	TACTICAL AIR COMMAND CENTER (TACC)		4	3000 PHASE
ACPM	8003	DIRECT AIR SUPPORT CENTER (DASC)		4	3000 PHASE
ACPM	8004	TACTICAL AIR OPERATIONS CENTER (TAOC)		4	3000 PHASE
ACPM	8005	MARINE AIR TRAFFIC CONTROL (MATC)		4	3000 PHASE
ACPM	8006	LOW ALTITUDE AIR DEFENSE (LAAD)		4	3000 PHASE
ACPM	8007	UAS SUPPORT TO THE MAGTF		4	3000 PHASE
ACPM	8008	MARINE WING COMMUNICATION SQUADRON (MWCS)		4	3000 PHASE
ACPM	8020	**ACE**		1	3000 PHASE
ACPM	8021	AVIATION OPERATIONS		4	3000 PHASE
ACPM	8022	CONTROL OF AIRCRAFT AND MISSILES		4	3000 PHASE
ACPM	8023	OFFENSIVE AIR SUPPORT (OAS)		4	3000 PHASE
ACPM	8024	ASSAULT SUPPORT		4	3000 PHASE
ACPM	8025	AIR RECONNAISSANCE		4	3000 PHASE
ACPM	8026	ELECTRONIC WARFARE		4	3000 PHASE
ACPM	8027	ANTI-AIR WARFARE		4	3000 PHASE
ACPM	8028	AVIATION GROUND SUPPORT		4	3000 PHASE
ACPM	8040	**THREAT**		1	2000 PHASE
ACPM	8041	SURFACE TO AIR THREAT TO THE MAGTF		4	2000 PHASE
ACPM	8042	FIXED WING THREAT TO THE MAGTF		4	2000 PHASE
ACPM	8043	ROTARY WING THREAT TO THE MAGTF		4	2000 PHASE
ACPM	8044	MISSILE AND UAS THREAT TO THE MAGTF		4	2000 PHASE
ACPM	8045	RADIO ELECTRONIC COMBAT THREAT TO THE MAGTF		4	2000 PHASE
ACPM	8060	**MAGTF**		1	3000 PHASE
ACPM	8061	GROUND COMBAT OPERATIONS		4	3000 PHASE
ACPM	8062	FIRE SUPPORT COORDINATION IN THE GCE		4	3000 PHASE
ACPM	8063	MAGTF COMMAND AND CONTROL		4	3000 PHASE
ACPM	8064	MAGTF COMMUNICATIONS		4	3000 PHASE
ACPM	8065	PHASING CONTROL ASHORE		4	3000 PHASE
ACPM	8080	**JOINT AIR OPERATIONS**		1	3000 PHASE
ACPM	8081	COMMAND AND CONTROL OF JOINT AIR OPERATIONS		4	3000 PHASE
ACPM	8082	THEATER AIR CROUND SYSTEM (TAGS)		4	3000 PHASE
ACPM	8083	JOINT FIRE SUPPORT		4	3000 PHASE
ACPM	8084	CLOSE AIR SUPPORT		4	3000 PHASE
ACPM	8085	JOINT TARGETING		4	3000 PHASE
ACPM	8086	NORTH ATLANTIC TREATY ORGANIZATION (NATO)		4	3000 PHASE
ACPM	8087	JOINT AIRSPACE CONTROL		4	3000 PHASE
ACPM	8088	COUNTERING AIR AND MISSILE THREATS		4	3000 PHASE
		TOTAL ACPM STAGE	39	141	

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2.17 T&R ATTAIN AND MAINTAIN TABLES

UNIT CREW POSITION 1													
CORE/MISSION/CORE PLUS ATTAIN & MAINTAIN MATRIX													
CORE SKILLS (2000 Phase)													
T&R EVENT INFORMATION				ATTAIN PROFICIENCY						MAINTAIN POI		PREREQUISITES	CHAINING
T&R DESCRIPTION	STAGE	CODE	RE FLY	BASIC POI		SERIES CONVERSION POI		REFRESHER POI					
				STAGE	CODE	STAGE	CODE	STAGE	CODE	STAGE	CODE		
INTRO CS 1	CORE SKILL 1	S2100	*	CORE SKILL 1	S2100	CORE SKILL 1	S2100	CORE SKILL 1		CORE SKILL 1			
PRAC CS 1	CORE SKILL 1	2101R	365		2101R				2101R			2100,	
REV CS 1	CORE SKILL 1	2102R	180		2102R		2102R		2102R		2102R	2100,2101	2101
INTRO CS 2	CORE SKILL 2	S2200	90	CORE SKILL 2	S2200	CORE SKILL 2	S2200	CORE SKILL 2		CORE SKILL 2			
DEMO CS 2	CORE SKILL 2	2201	180		2201								
PRAC CS 2	CORE SKILL 2	2202	180		2202								
REV CS 2	CORE SKILL 2	2203R	90		2203R		2203R		2203R		2203R		2202,2201,2200
DEMO CS 3	CORE SKILL 3	S2300	*	CORE SKILL 3	S2300	CORE SKILL 3	S2300	CORE SKILL 3		CORE SKILL 3			
INTRO CS 3	CORE SKILL 3	2301R	90		2301R		2301R		2301R		2301R	2300	
DEMO CS 4	CORE SKILL 4	S2400	180	CORE SKILL 4	S2400	CORE SKILL 4		CORE SKILL 4		CORE SKILL 4			
INTRO CS 4	CORE SKILL 4	S2401R	180		S2401R				S2401R		S2401R	2400	
PRAC CS 4	CORE SKILL 4	2402	*		2402		2402						
REV CS 4	CORE SKILL 4	2403R	180		2403R		2407R		2403R		2403R	2400,2402,	
INTRO CS 5	CORE SKILL 5	2500R	90	CORE SKILL 5	2500R	CORE SKILL 5	2500R	CORE SKILL 5	2500R	CORE SKILL 5	2500R		
REV CS 5	CORE SKILL 5	2501R	90		2501R		2501R		2501R		2501R		
DEMO CS 6	CORE SKILL 6	S2600	180	CORE SKILL 6	S2600	CORE SKILL 6		CORE SKILL 6		CORE SKILL 6			
INTRO CS 6	CORE SKILL 6	2601	180		2601		2601					2600	
REV CS 6	CORE SKILL 6	2602R	90		2602R		2602R		2602R		2602R	2600,2601	2601,2600
MISSION SKILLS (3000 Phase													
T&R EVENT INFORMATION				ATTAIN PROFICIENCY						MAINTAIN POI		PREREQUISITES	CHAINING
T&R DESCRIPTION	STAGE	CODE	RE FLY	BASIC POI		SERIES CONVERSION POI		REFRESHER POI					
				STAGE	CODE	STAGE	CODE	STAGE	CODE	STAGE	CODE		
MISSION SKILLS													
INTRO MS 1	MS 1	S3100R	*	MS 1	S3100R	MS 1		MS 1	S3100R	MS 1	S3100R	2403,2301	2300,2401
REV MS 1	MS 1	3101R	365		3101R		3101R		3101R			3100	2301,2403,2401
REV MS 2	MS 2	3200R	180	MS 2	3200R	MS 2	3200R	MS 2	3200R	MS 2	3200R	2602	2602
INTRO MS 3	MS 3	S3300	*	MS 3	S3300	MS 3	S3300	MS 3		MS 3		2301	2300
REV MS 3	MS 3	S3301R	180		S3301R				S3301R		S3301R	3300	2301
REV MS 4	MS 4	3400R	180	MS 4	3400R	MS 4	3400R	MS 4	3400R	MS 4	3400R	3301	3301

CORE PLUS													
T&R EVENT INFORMATION				ATTAIN PROFICIENCY						MAINTAIN POI		PREREQUISITES	CHAINING
T&R DESCRIPTION	STAGE	CODE		BASIC POI		SERIES CONVERSION POI		REFRESHER POI					
				STAGE	CODE	STAGE	CODE	STAGE	CODE	STAGE	CODE		
INTRO CP 1	CORE PLUS 1	4100	*	CORE PLUS SKILL 1	4100	CORE PLUS SKILL 1	4100	CORE PLUS SKILL 1		CORE PLUS SKILL 1			
PRAC CP 1	CORE PLUS 1	4101R	180		4101R				4101R		4101R	4100	
REV CP 1	CORE PLUS 1	4102	*		4102							4101	
DEMO CP 2	CORE PLUS 2	S4200	*	CORE PLUS SKILL 2	S4200	CORE PLUS SKILL 2	S4200	CORE PLUS SKILL 2		CORE PLUS SKILL 2			
INTRO CP 2	CORE PLUS 2	S4201R	90		S4201R		S4201R		S4201R		S4201R	4200	
INTRO CP 3	CORE PLUS 3	4300R	180	CORE PLUS SKILL 3	4300R	CORE PLUS SKILL 3	4300R	CORE PLUS SKILL 3	4300R	CORE PLUS SKILL 3	4300R		
PRAC CP 3	CORE PLUS 3	4301R	180		4301R		4301R		4301R		4301R		
REV CP 3	CORE PLUS 3	4302R	180		4302R		4302R		4302R		4302R	4300,4301	
INTRO MP 1	MISSION PLUS 1	4400	*	MISSION PLUS SKILL 1	4400	MISSION PLUS SKILL 1	4400	MISSION PLUS SKILL 1		MISSION PLUS SKILL 1			
REV MP 1	MISSION PLUS 1	4401R	365		4401R		4401R		4401R		4401R	4400	
INTRO MP 2	MISSION PLUS 2	4500	*	MISSION PLUS SKILL 2	4500	MISSION PLUS SKILL 2		MISSION PLUS SKILL 2		MISSION PLUS SKILL 2			
REV MP 2	MISSION PLUS 2	4501R	365		4501R		4501R		4501R		4501R	4500	

2.18 T&R SYLLABUS MATRIX. All communities shall have a T&R syllabus matrix.

(UNIT / CREW POSITION) T&R SYLLABUS MATRIX																				
STAGE	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE/FLIGHT EVENTS		PREREQ	NOTES	CHAIN	EVENT
	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				CONV
CORE SKILL INTRODUCTION TRAINING (1000 PHASE EVENTS)																			
CORE SKILL ACADEMICS																			
ACAD	1000	CHECK-IN	R						*		2								
ACAD	1001	COURSE RULES	R						*		2								
ACAD	1002		SC,R						*		2								
ACAD	1003		R						*		2								
CORE SKILL ACADEMICS TOTAL										4	8	0	0	0	0				
CORE SKILL INTRODUCTION 1 (CSI 1)																			
CSI 1	1100	XXXXX	MR,R		S				*				2						
CSI 1	1101	XXXXX	SC		A	1		D	*						1.5	1100			
CSI 1	1102	XXXXX	R		A	1		N*	*						1.5	1101			
TOTAL CSI 1 STAGE										0	0	1	2	0	0				
TOTAL CORE SKILL INTRODUCTION (1000 PHASE EVENTS)										4	8	1	2	2	3				
CORE SKILL TRAINING (2000 PHASE EVENTS)																			
CORE SKILL ACADEMICS (ACAD)																			
ACAD	2000	INTRO LOCAL PROC	B,C,R						*		3								XXX
ACAD	2001	FMS PROCEDURES	B,C,R						*		3					2000			XXX
TOTAL ACAD STAGE										2	6	0	0	0	0				

(UNIT / CREW POSITION) T&R SYLLABUS MATRIX

STAGE	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE/FLIGHT EVENTS		PREREQ	NOTES	CHAIN	EVENT
	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				CONV
CORE SKILL 1 (CS 1)																			
CS 1	2100	INTRO CS 1	SC		S			(N)	*				2.0						XXX
CS 1	2101	PRAC CS 1	R		A	1		D	365						1.5	2100			XXX
CS 1	2102	REV CS 1	SC,R, M		A	1		D	180						1.5	2101		2101	XXX
TOTAL CS 1 STAGE										0	0	1	2	2	3				
CORE SKILL 2 (CS 2)																			
CS 2	2200	INTRO CS 2	SC		S			(N)	90				2.0						XXX
CS 2	2201	DEMO CS 2			A	1		D	180						1.5	2200			XXX
CS 2	2202	PRAC CS 2			A	1		D	180						1.5	2201			XXX
CS 2	2203	REV CS 2	SC,R, M		A	1		D	90						1.5	2202		2200, 2201, 2202	XXX
TOTAL CS 2 STAGE										0	0	1	2	3	4.5				
CORE SKILL 3 (CS 3)																			
CS 3	2300	DEMO CS 3	SC		S			N	*				2						XXX
CS 3	2301	INTRO CS 3	SC,R, M		A	1		N*	180						1.5	2300			XXX
TOTAL CS 3 STAGE										0	0	1	2	1	1.5				
CORE SKILL 4 (CS 4)																			
CS 4	2400	DEMO CS 4			S			(N)	180				2						XXX
CS 4	2401	INTRO CS 4	R		S			NS	180				2			2400			XXX
CS 4	2402	PRAC CS 4	SC		A	1		NS	*						1.5				XXX
CS 4	2403	REV CS 4	SC,R, M		A	1		NS	180						1.5	2400, 2402			XXX
TOTAL CS 4 STAGE										0	0	2	4	2	3				
CORE SKILL 5 (CS 5)																			
CS 5	2500	INTRO CS 5	SC,R		A	2		D	90						1.5				
CS 5	2501	REV CS 5	SC,R, M		A	2		NS	90						1.5				
TOTAL CS 5 STAGE										0	0	0	0	2	3				

(UNIT / CREW POSITION) T&R SYLLABUS MATRIX

STAGE	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE/FLIGHT EVENTS		PREREQ	NOTES	CHAIN	EVENT
	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				CONV
CORE SKILL 6 (CS 6)																			
CS 6	2600	DEMO CS 6			S			N	180				2						
CS 6	2601	INTRO CS 6	SC		A	1		D	180						1.5				
CS 6	2602	REV CS 6	SC,R, M		A	1		NS	90						1.5				
TOTAL CS 6 STAGE										0	0	1	2	2	3				
TOTAL CORE SKILL PHASE (2000 PHASE)										2	6	6	12	12	18				
MISSION SKILL TRAINING (3000 PHASE EVENTS)																			
MISSION SKILL ACADEMICS (ACAD)																			
ACAD	3000	INTRO MS PROC	SC,R						*		3					1000, 1001, 1107			XXX
ACAD	3001	MS PROCEDURES	SC,R, M						*		3					2000			XXX
TOTAL MS ACAD STAGE										2	6	0	0	0	0				
MISSION SKILL 1 (MS 1)																			
MS 1	3100	INTRO MS 1	R		S			N	*			1	2			2403, 2301	TEn +	2300, 2401	XXX
MS 1	3101	REV MS 1	SC,R, M		A			N	365					1	1.5	3100		2301, 2403, 2401	XXX
TOTAL MS 1 STAGE										0	0	1	2	1	1.5				
MISSION SKILL 2 (MS 2)																			
MS 2	3200	REV MS 2	SC,R, M		A			NS	180					1	1.5	2602		2602	XXX
TOTAL MS 2 STAGE										0	0	0	0	1	1.5				
MISSION SKILL 3 (MS 3)																			
MS 3	3300	INTRO MS 3	SC		S			NS	*				2				TEn +		XXX
MS 3	3301	REV MS 3	R		S			NS	180				2				TEn +		XXX
TOTAL MS 3 STAGE										0	0	2	4	0	0				

(UNIT / CREW POSITION) T&R SYLLABUS MATRIX

STAGE	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE/FLIGHT EVENTS		PREREQ	NOTES	CHAIN	EVENT
	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				CONV
MISSION SKILL 4 (MS 4)																			
MS 4	3400	REV MS 4	SC,R, M		A	1		(NS)	180						1.5	3301		3301	XXX
TOTAL MS 4 STAGE										0	0	0	0	1	1.5				
TOTAL MISSION SKILL PHASE (3000 PHASE)										2	6	3	6	3	4.5				
CORE PLUS																			
CORE PLUS 1 (CP 1)																			
CP 1	4100	INTRO CP 1	SC		A	1		D	*						1.5				XXX
CP 1	4101	PRAC CP 1	R		A	1		N	180						1.5	4100			XXX
CP 1	4102	REV CP 1	R, M		A	1		N	*						1.5	4101			XXX
TOTAL CP 1 STAGE										0	0	0	0	3	4.5				
CORE PLUS 2 (CP 2)																			
CP 2	4200	DEMO CP 2	SC		S			N	*				2						XXX
CP 2	4201	INTRO CP 2	SC,R		S			N	90				2						XXX
TOTAL CP 2 STAGE										0	0	2	4	0	0				
CORE PLUS 3 (CP 3)																			
CP 3	4300	INTRO CP 3	SC,R		A	1		D	180						1.5				XXX
CP 3	4301	PRAC CP 3	SC,R		A	2		NS	180						1.5				XXX
CP 3	4302	REV CP 3	SC,R, M		A	2		NS	180						1.5	4300, 4301			XXX
TOTAL CP 3 STAGE										0	0	0	0	3	4.5				
MISSION PLUS																			
MISSION PLUS 1 (MP 1)																			
MP 1	4400	INTRO MP 1	SC		A	3		D	*						1.5				XXX
MP 1	4401	REV MP 1	SC,R, M		A	3		NS	365						1.5	4400			XXX
TOTAL MP 1 STAGE										0	0	0	0	2	3				

(UNIT / CREW POSITION) T&R SYLLABUS MATRIX

STAGE	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE/FLIGHT EVENTS		PREREQ	NOTES	CHAIN	EVENT
	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				CONV
MISSION PLUS 2 (MP 2)																			
MP 2	4500	INTRO MP 2			A	1		D	*						1.5				XXX
MP 2	4501	REV MP 2	SC, R, M		A	1		N	365						1.5	4500			XXX
TOTAL MP 2 STAGE										0	0	0	0	2	3				
TOTAL CORE PLUS PHASE (4000 PHASE)										0	0	2	4	10	15				
TOTAL 2000, 3000, & 4000 PHASE										4	12	11	22	25	37.5				
INSTRUCTOR TRAINING (500 PHASE EVENTS)																			
INSTRUCTOR UNDER TRAIING (IUT)																			
IUT	5100	INTRO IUT		E	S	1		D	*				2.0						501
IUT	5101	PRAC IUT		E	A	1-		D	*						1.5	5100			502
IUT	5102	INST TECHNIQUES		E	A	1		D	*						1.5	5101			503
IUT	5103	IUT EVAL	SC, R, M	E	A	1		D	*						2	5102			504
TOTAL IUT STAGE										0	0	1	2	3	5				
INSTRUCTOR TRAINING (5000 PHASE EVENTS) TOTAL										0	0	1	2	3	5				
REQUIREMENT, QUALIFICATIONS, AND DESIGNATIONS (RQD) (6000 PHASE)																			
RQD ACADEMICS (ACAD)																			
ACAD	6000	NATOPS Open Exam	SC						365		4								
ACAD	6001	NATOPS Closed Exam	SC						365		2					6000			
TOTAL ACAD STAGE										2	6	0	0	0	0				
NATOPS																			
NATOPS	6100	NATOPS Evaluation	SC, R	E	S/A	1		D	365						2	6000, 6001			
NATOPS	6103	Quarterly EP Eval	SC, R	E	S	A		(N*)	90				2.0						

(UNIT / CREW POSITION) T&R SYLLABUS MATRIX

STAGE	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE/FLIGHT EVENTS		PREREQ	NOTES	CHAIN	EVENT
	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				CONV
NATOPS TOTAL										0	0	1	2	1	2				
INSTRUMENT (INST)																			
INST	6101	Stan Instrument Eval	B,R	E	A/S	1		(N*)	365						2				
INST	6102	Spec Instrument Eval	B,R	E	S/A	1		(N*)	365				2.0					6101	
TOTAL INST STAGE										0	0	1	0	1	2				
FUNCTIONAL CHECK PILOT (FCP)																			
FCP	6500	FCP REVIEW	B	E	A	1		D	*						2	6402, 6009			
FCP	6501	FCP EVAL	B,R	E	A	1		D	*						2	6500			
TOTAL FCP STAGE										0	0	0	0	2	4				

2.21 SYLLABUS EVALUATION FORMS. Insert here or provide information on where they can be downloaded.

2.22 TRAINING DEVICE EVENT ESSENTIAL SUBSYSTEM MATRIX (EESM). The matrix below defines the mandatory and preferred subsystems for each simulated T&R event.

TRAINING DEVICE EVENT ESSENTIAL SUBSYSTEM MATRIX (EESM)																				
DEVICE: (appropriate simulator designator)																				
	T&R EVENT CODE (S, S/A, A/S)																			
FAILED SUB-SYSTEM	S1000	S1001	S1100	S2000	S2001	S/A2002	S/A2003	S2300	S3000	S3001	S3100	S3001	S4000	S4001	S4002	S5000	S/A5001	S/A5002	A/S6001	A/S6200
*AFCS Functions (DSEN, BIAS, COORD, SAS, HVR, BANK, TRIM, ATT, ALT, HDG, A/S)	M	M	M	M	M	M	M	M	M	M	M	M	M		M	M		M	M	M
AFCS Panel	M	M	M			M			P	M				M		P				P
AFCS Servos	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Aircraft Survivability Equipment									M			P	P			M			P	P
M = Mandatory												P = Preferred								

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CHAPTER 7

AVIATION TRAINING READINESS

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CHAPTER 7

AVIATION TRAINING READINESS

700. PURPOSE. To provide aviation unit commanders information, guidance, and policy on readiness reporting in the Department of Defense Readiness Reporting System - Marine Corps (DRRS-MC) and the Marine Corps Aviation Current Readiness Improvement Program (CR).

701. DRRS-MC OVERVIEW

1. DRRS-MC is the Marine Corps readiness reporting system that combines resource (personnel and equipment) and MET-based training reporting with a capabilities-based, adaptive, near real-time readiness reporting system that presents a demonstrable link between METs and readiness reporting. DRRS-MC readiness reporting applies to all Marine units and is governed by the Readiness Branch of HQMC Plans, Policy, and Operations (PP&O). DRRS-MC policy and procedures are established by MCO 3000.13 (Marine Corps Readiness Reporting SOP). This reporting is completed on the Secure Internet Protocol Router (SIPR) network. The resource assessment within DRRS-MC directly feeds the Global Status of Resources and Training System (GSORTS) for the Joint Staff in order to support crisis management, deliberate planning information requirements, and Title 10 readiness reporting requirements. The capability-based Mission and MET assessments within DRRS-MC directly feeds DRRS Strategic for the Office of the Secretary of Defense (OSD) in order to support Combatant Command (COCOM) planning and operational readiness requirements.

2. Two DRRS-MC metrics are germane to this manual: Training rating (T-rating) and MET Assessment. DRRS-MC procedures and supplemental guidance are described in further detail in Section 704.

702. CURRENT READINESS PROGRAM OVERVIEW

1. The goal of Marine Aviation is to attain and maintain combat readiness while preserving and conserving Marines and equipment. The Current Readiness (CR) program, embedded within the Naval Aviation Enterprise (NAE), is utilized by aviation commanders to maximize readiness, optimize resources (allocation and expenditures) and minimize logistical delays in order to produce core competent aviation units (squadrons/detachments). CR reporting and briefing applies to Marine Aviation flying units and is governed by HQMC Aviation and the NAE. CR policy and procedures are established by MCO 3710.7. This reporting is completed on the Non-classified Internet Protocol Router (NIPR) network.

2. In order to determine aircrew training trends across a Type/Model/Series (T/M/S) community (and ultimately, across Marine Aviation), the CR program portrays an assessment of a unit's level of core competency training. These unit training levels are calculated by comparing the unit's on-hand trained aircrew to the T/M/S T&R Core Model Minimum Requirement (CMMR) of mission capable crews and Combat Leaders. CR metrics are described in further detail in Section 705.

703. AVIATION TRAINING: SOURCE DOCUMENTS

1. Aviation METLs. The Deputy Commandant for Combat Development and Integration manages, coordinates, maintains, and serves as the primary review authority for the Marine Corps Task List (MCTL), and updates it as required, reflecting tasks developed for inclusion in standardized unit METLs. The output standard for most

TACAVN METs is sortie production while the output standard for most aviation ground unit METs is task-based.

a. The Tactical Aviation Mission Essential Task List (TACAVN METL) contains the standardized METL for each T/M/S along with Mission Essential Task conditions and standards. These standards are divided into MET-specific personnel, equipment, training, and output categories. The standardized T/M/S METL shall be incorporated in applicable Training and Readiness (T&R) manuals.

b. Units shall train to the standards and programs of instruction developed in T&R manuals in support of Marine Aviation METLs.

c. Units shall always report readiness for their Core Mission. At times, units will be given an Assigned Mission (within DRRS-MC). The Assigned Mission will consist of METs drawn from Core and Core Plus METS or other METs as directed/required.

2. T&R Manual. Each applicable T/M/S T&R manual contains the CMMR number of trained crews / personnel required for various skill specialties. Attaining the CMMR is considered the training standard.

a. Attaining and maintaining Mission Skill Proficiency (MSP) and MET-capable Crews is the first measureable readiness link between T&R events and training readiness.

b. Attaining and maintaining Combat Leaders is the second measureable readiness link between T&R events and training readiness.

704. DRRS-MC

1. MCO 3000.13 establishes all DRRS-MC readiness reporting policy and procedures and is the authoritative document. This section provides supplemental guidance for aviation commanders when assessing the unit.

2. Resourced, Trained, and Observed. During the MET Assessment, the commander will analyze personnel, equipment, and training standards per MET in order to determine whether the unit is resourced and trained to the MET standards and whether the MET output standards have been observed in training or operations.

a. Resourced. A commander is to consider a unit resourced for the MET when the MET-defined personnel and equipment standards are possessed or explicitly identified to the unit to allow it to execute when ordered.

b. Trained. When determining whether a unit is trained for a MET, the commander will compare the number of crews formed who are capable of performing the MET sortie compared to the T&R-defined Crew Core Model Minimum Requirement (Crew CMMR) for that particular MET. Crew requirements for specific missions may be balanced by the experience level of the crew and are at the discretion of the commanding officer. For readiness reporting purposes, tables found in each T/M/S T&R delineate the minimum crew definition for qualifications and designations as well as the number of formed crews required per MET. The number of formed crews using the minimum standards per crew per MET capture the readiness capability of a squadron to perform a MET. The use of ACMMR shall not be used as the basis for the commander's DRRS-MC readiness assessment (see Para 706.2).

c. Observed. The unit has demonstrated, in training or operations, the ability to produce the task's output measures to standard. The typical TACAVN MET

output standard is a quantity of sustained MET sorties. A commander who marks a MET "Observed" should also consider and mark the MET as "Trained." However, it is possible for a unit to be marked "Trained" without the unit being marked "Observed."

d. The commander will reference the appropriate T&R / TACAVN METL-defined sized standards when selecting the CMMR for comparison (i.e. squadron, squadron minus, or detachment).

3. T-Rating Calculation. In DRRS-MC, a unit's T-rating is calculated during the MET Assessment process. Not all aviation organizations have Combat Leader designations within their T&R manual. For aviation organizations with Combat Leader designations, the final T-rating reported (described in para 3c) is determined by the lower of two calculations: the MET Training Percentage (described in para 3a) and the Combat Leadership Assessment (described in para 3b). For organizations without Combat Leader designations, the T-rating reported uses only the MET Training Percentage as defined in paragraph 3a and Table 7-2.

Table 7-1. MET Assessment Guidance Example

Example METL	Resourced	Trained	Observed	MET Assessment (Y=Yes, Q=Qualified Yes, N=No)
MCT (a)	√	√	√	Y
MCT (b)	√	√		Q
MCT (c)	√			N
MCT (d)		√	√	N
MCT (e)		√		N
MCT (f)				N

a. MET Training Percentage. An organization's training percentage will reflect the number of METs that have been marked "Trained" in the MET assessment over the total number of METs contained in that METL. From Table 7-1, the training percentage would equal 4/6, or 66 percent. From Table 7-2, 66 percent equals a T-rating of T3. For aviation organizations without Combat Leadership designations, T3 would be the unit's reported T-rating. For aviation organizations with Combat Leadership designations, the final T-rating reported is the lower between the Training Percentage and the Combat Leadership assessment (see para 3b).

Table 7-2. DRRS-MC MET Training Percentage

MET Rule	T1	T2	T3	T4
Percentatge of METs Trained to Standard	≥85%	70-84%	55-69%	<55%

b. Combat Leadership Assessment. Combat Leaders are tactical leaders who provide the commander the leadership skills and qualities required to execute the unit METL and project combat power. Combat Leadership Assessment is applicable to the entire unit METL and is not tied to individual METs.

(1) Referencing the M-SHARP Core Model Training Report (CMTR) or SBTP execution report, the commander will compare the number of designated Combat Leaders on-hand per each CL designation category to the T&R-defined CMMR for each

category using the appropriate sized unit (i.e. squadron, squadron minus, or detachment).

(2) In DRRS-MC, the commander reports the Combat Leadership Assessment by simply selecting 1, 2, 3, or 4 from the Combat Leadership drop down menu. The commander will select 1, 2, 3, or 4 in DRRS-MC based on the following supplemental guidance:

(a) Combat Leadership (CL) percentage. Using the MCO 3000.13-defined "Training Percentage" as a template, this manual defines "Combat Leadership percentage" for use when determining which T-rating to assign to the Combat Leadership Assessment in DRRS-MC. CL percentage is defined as the number of CL designations trained to standard over the total number of CL designations for that T/M/S. Trained to standard equates to having, at a minimum, the CMMR number of designated Combat Leaders on-hand for that CL designation category.

Table 7-3. CL Assessment Guidance Example

VMM=(5) Combat Leadership Designations	CMMR	On-Hand	CL Trained to Standard?
TAC	12	14	Yes
SEC LDR	6	4	No
DIV LDR	4	4	Yes
FLT LDR	2	2	Yes
MSN CMDR	2	1	No

(b) An organization's CL percentage will reflect the number of CL Designations trained to standard over the total number of CL Designations contained in that T/M/S T&R. From Table 7-3, the CL percentage would equal 3/5, or 60 percent. From Table 7-4, 60 percent for that T/M/S T&R equals a T3 Combat Leadership Assessment.

Table 7-4. Combat Leadership Percentage Bracket

Combat Leadership Rule	T1	T2	T3	T4
Percentage of CL Designations trained to standard	≥ 85%	70-84%	55-69%	<55%

c. Overall T-Rating Reported. For aviation units with Combat Leadership designations, the lower T-rating assessed between the MET Training Percentage and Combat Leadership Assessment will determine the unit's overall T-rating for that report.

Example: If a unit is determined to have a Training Percentage of T3 and Combat Leadership Assessment of T2, the organization's overall T-rating would be reported as T3 since the training percentage is the lower of the two ratings. In this case, the training percentage is driving the unit's overall T-rating.

705. CURRENT READINESS PROGRAM

1. This section provides information pertaining to the multiple aircrew training and readiness metrics and reports that feed training analysis for the CR program. Each of these metrics is supportive and not mutually exclusive. M-SHARP reports and Current Readiness briefing products are designed as a means to conduct training analysis. This analysis will inform commanders' MET and T-rating assessments in DRRS-MC.

a. The T-Rating chart is simply a rollup depiction of all like-type T/M/S T-Ratings with an averaged T-Rating displayed for that T/M/S. T-Rating policy and procedures is contained within MCO 3000.13. Supplemental guidance is contained in Section 704 of this manual.

b. The ACC/DMS chart is designed to objectively represent the number of units that are trained across their Core METL (ACC Assessment) as well the number of units that are trained for their assigned Directed Mission Set (DMS Assessment). ACC reporting is strictly an objective measure of a unit's training accomplishment.

c. ACC and DMS drill-down charts apply color-coded Core Model Training Level (CMTL) thresholds to the monthly SBTP execution report The CMTL thresholds are based on percentage attainment of T&R-defined CMMR for MET-capable crews and Combat Leadership designations.

2. There are two objective aircrew training calculations conducted and displayed on the ACC chart: the ACC Assessment and the DMS Assessment.

a. ACC Assessment. A unit training assessment that applies CMTL thresholds across all Core METs and Combat Leadership designations.

b. DMS Assessment. A unit training assessment that applies CMTL thresholds across Directed Mission Set (DMS) METs and across all Combat Leadership designations.

(1) DMS. "Directed Mission Set" is a Current Readiness term. A DMS is a subset list of METs, selected from the unit's entire METL (Core and Core Plus), that represent the selected METs for a specific mission. A DMS may contain only the applicable Core METs, or may contain both the applicable Core and Core Plus METs when appropriate. An assigned DMS does not necessarily represent, or limit, a unit's training plan nor does it prevent a unit from training across its entire METL. The DMS Assessment simply represents another "filter" through which to view a unit's level of training accomplishment toward selected METs. An assigned DMS should reflect the operational focus for the unit's next anticipated / scheduled deployment.

(2) DMS Construct. DMS is based upon the current operational environment or emerging requirements, and can therefore be changed by HQMC Aviation as needed. Examples of DMS include: Marine Expeditionary Unit (MEU), Operation Enduring Freedom - Afghanistan (OEF-A), TACAIR Integration (TAI), and Unit Deployment Program (UDP).

(3) The CR T/M/S Lead will ensure awareness of DMS assignment for each of their T/M/S units for accurate DMS Assessment reporting purposes.

(4) In order to allow consistent unit training level assessments for reporting and comparison purposes, every T/M/S unit will be continuously assigned a DMS; however, each unit can only be assigned one DMS construct at any given time.

When a detachment departs the parent squadron, the detachment may be assigned the same or different DMS.

(5) The operational chain of command and/or the CR T/M/S Lead can identify the need to add a DMS type, or change the construct of a current DMS. Because DMS is a CR program initiative, any changes/additions will be defined by the T/M/S Lead, coordinated across the T/M/S, and presented to the CR Readiness Leadership Team (RLT) for socialization prior to submission to HQMC Aviation for approval.

(6) DMS and DRRS-MC Interrelationship. At times, units in DRRS-MC will report to an "Assigned Mission" in addition to their Core METs. These Assigned Missions are assigned to units at the discretion of the parent Marine Force Commander. The DMS templates may provide a comparison reference for the unit commander during mission analysis and METL development; however, the DMS itself does not necessarily define the METL for the commander. Real time analysis must take place to confirm the operational requirement.

706. CORE MODEL TRAINING REPORT

1. The Core Model Training Report (CMTR) is an M-SHARP function that provides Commanding, Operations, and Training Officers with an objective snap shot of the unit's current training accomplishment toward T&R-defined training standards. The Aviation T&R Program defines the training standard as the CMMR. Each Core Skill, Core Plus Skill, Mission Skill, Mission Plus Skill, Instructor and Combat Leadership designation within the community T&R is assigned a CMMR for that particular skill/designation. The CMTR calculates and displays color-coded thresholds based on a percentage attainment of the required CMMR.

2. Adjusted Core Model Minimum Requirement (ACMMR) (Flying Units Only)

(a) The T&R CMMR is based upon crew manning levels; 90-100% for flying units. However, when unit crew manning levels fall below 90-100%, an adjustment can be made within the CMTR and ACC in order to provide unit commanders a tool to determine how well the unit is training the crews it possesses. ACMMR functionality within the CMTR provides a metric to estimate training plans given the number of crews it possesses.

(b) The ACMMR shall not be used as the basis for the commander's DRRS-MC readiness assessment. Core Mission readiness reporting in DRRS-MC is intended to measure a full squadron's capability and capacity to respond with its full complement of aircrew and aircraft. Therefore, the Core Mission T-rating in DRRS-MC is measured against the full Crew CMMR for aircrew MET training standards. The exception to this is when a squadron has detached an element to an operational task-organized unit (e.g. MEU (ACE). In this circumstance, the squadron will measure training against the squadron (-) training standard.

3. For each T/M/S aircraft and Aviation Ground community, the CMTR structure and functionality are the same with any exceptions stated in the affected T/M/S CMTR.

CHAPTER 8

MARINE SIERRA HOTEL AVIATION READINESS PROGRAM (M-SHARP)

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CHAPTER 8

MARINE SIERRA HOTEL AVIATION READINESS PROGRAM (M-SHARP)

800. PURPOSE AND OVERVIEW

1. The use of automated training and readiness management systems enhance the accuracy of training management information by improving the efficiency and effectiveness of training and operational risk management.

2. The Marine Sierra-Hotel Aviation Readiness Program (M-SHARP) is the authorized aviation training management system to be used to track all training governed by aviation T&R manuals. Applicable units defined in paragraph 801 are required to meet the M-SHARP training requirements in paragraph 802 and subsequently use M-SHARP per the guidelines in paragraphs 803, 804, and 805.

3. M-SHARP is designed to provide functionality in order to streamline operations and assist in achieving combat readiness via the following primary functions:

a. Training Management. Flight, ground, and duty scheduling, logging, tracking, and standardized reporting of certifications, qualifications, designations, proficiency and currency in accordance with Chapter 2.

b. Operational Risk Management. Pre-execution hazard identification through objective enforcement of Naval Aviation, Marine Aviation, and local Command policies.

c. Document Management. Complete T&R manuals for all communities contained in M-SHARP as single source of T&R information and standardization.

d. Flight Hour Management. Collects, calculates, and reports real time flight hour execution via Naval Flight Information Record (NAVFLIR) logged data to the Deputy Commandant for Aviation (DCA) Aviation Plans and Policies (APP) in support of the MCO 3125.1B (Flight Hour Execution Program/SBTP).

e. Readiness Management. Reports individual and unit Core Skill Proficiency (CSP) and Mission Skill Proficiency (MSP) forecasts and execution via T&R Event Proficiency to DC AVN APP in support of MCO 3125.1B and the Naval Aviation Enterprise Aircrew Core Competency Program.

801. UNIT REQUIREMENTS

1. Applicability. M-SHARP shall be used to track all aviation-related training governed by T&R manuals for the following active and reserve unit types:

a. All fixed-wing, rotary-wing, and tilt-rotor squadrons, UAS squadrons, detachments, and fleet replacement squadrons (except VMFAT-101).

b. All Marine Air Control Group (MACG) and Marine Wing Support Group (MWSG) squadrons, units, detachments, and sections.

c. All Operational Support Airlift (OSA) aircraft.

d. All Higher Headquarters (HHQ) units (MARFOR, MAW, MCI, MCAS, MAG, MACG, and as applicable, MWSG), and MAWTS-1.

e. Marine Executive Helicopter Squadron One (HMX-1).

2. All units identified within paragraphs 801.1.a/b/c above shall appoint an M-SHARP Implementation Officer from within the Operations/WTTP/Training Department who will be responsible for the overall management of the unit's M-SHARP program. The Operations/WTTP/Training Chief shall assist in this function for continuity, and to ensure the proficiency of Operations/WTTP/Training Clerks is maintained while performing daily data processing within M-SHARP.

3. All units are required to maintain a minimum of one representative (officer or enlisted) that has successfully completed the M-SHARP Administrators Course.

4. All flying units identified above are required to capture post flight NAVFLIR data primarily within M-SHARP. The data from the NAVFLIR is then electronically transferred to NALCOMIS/OOMA via one of the published procedures available on the M-SHARP User Support website http://msharpsupport.com under the Resource tab. Direct entry of NAVFLIRs data into NALCOMIS/OOMA, and subsequent backfill or re-entry into M-SHARP is NOT recommended. This action will produce errors and data mismatches between the two systems. Direct entry into NALCOMIS/OOMA should only be done if M-SHARP is offline or unavailable for a substantial amount of time.

5. All M-SHARP users shall maintain the integrity of their M-SHARP data for budgeting and accounting purposes. All M-SHARP data must be maintained at the highest level of accuracy to ensure commanders are provided the necessary information about unit training and readiness. In order to provide higher headquarter elements with information about the accuracy of individual unit data, the health of each unit's M-SHARP program is measured and tracked using the 5 color-coded progression levels per MCO 3125.1B as outlined below. Each unit's System Accuracy Status is objectively assessed by M-SHARP Support Representatives for all levels except Level 1/Green which requires the unit commander's assessment. The M-SHARP System Accuracy Status Report of all units and M-SHARP System Accuracy Status assessment procedures can be found at https://msharpsupport.com.

a. Level 1/Green. Unit is maintaining the requirements for Level 2/Blue, and the Commander has assessed his unit's M-SHARP database accuracy as sufficient for automated reporting to higher headquarters. Commanders or a designated representative shall communicate their Level 1 assessment to TECOM ATB via M-SHARP Support Representatives. Units are required to maintain their M-SHARP program at Level 1/Green.

b. Level 2/Blue. Unit is maintaining the requirements for Level 3/Yellow, has baselined crew data, is logging all flights/training in M-SHARP, is transferring all flights to NALCOMIS (if applicable), and is publishing all schedules using M-SHARP (except in cases where schedules are deemed classified) but the Commander has not assessed his unit's M-SHARP database accuracy as sufficient for automated reporting to higher headquarters.

c. Level 3/Yellow. M-SHARP has been implemented, essential personnel have been indoctrinated in its utilization, and at least one operations/training representative (officer or enlisted) has successfully completed the M-SHARP administrators course offered by M-SHARP support representatives.

d. Level 4/Red. M-SHARP has been implemented, essential personnel have been indoctrinated in its utilization, but no operations/training representative (officer or enlisted) has successfully completed the M-SHARP administrators course offered by M-SHARP support representatives. Note that it is possible for a unit to regress from Level 1/Green to Level 4/Red due to turnover of operations personnel.

This reflects the strong correlation (verified by more than a decade of supporting data drawn from both the SARA and M-SHARP programs) between adequately-trained personnel and the accuracy of a unit's training management system over time.

e. Level 5/Gray. Unit is not required to use M-SHARP. Primarily this coloration is assigned for units or communities that have not yet been fielded with M-SHARP.

802. TRAINING REQUIREMENTS

1. Training is the key to the successful implementation and employment of the functionalities provided within the application for each individual and unit.

2. M-SHARP training is offered regularly by M-SHARP field representatives in a variety of formats ranging from one-on-one over the shoulder training to formalized classroom instruction applicable to the various user levels including User, Logger, Scheduler, and Administrator.

3. M-SHARP Implementation Officers, Operations/Training Chiefs, and any other unit designated M-SHARP administrative personnel are required to attend the M-SHARP Administrator Course instructed by an M-SHARP Support Representative before any Administrator permissions can be granted. M-SHARP Administrator Course completion certification must be maintained on file by the individual and within the unit.

4. All M-SHARP users have a personnel profile attached to their account that follows them as they are transferred from unit to unit. Management of these profiles including personnel transfers, rank changes, T&R syllabus changes, user permissions, and password resets will be the responsibility of the unit M-SHARP Administrator(s). Unit permissions determine what a user can see or access when logged into M-SHARP.

803. UTILIZATION

1. Wherein the functionality of most of the application is based upon policy-driven business rules, understanding the fundamental concepts of the Aviation T&R Program Manual and the construction of individual syllabi is of the utmost importance when utilizing M-SHARP.

2. In order to promulgate community and geographic-specific policies for the administration and management of unit M-SHARP data at the local level, Marine Air Wings, Marine Air Groups, and Marine Air Control Groups are encouraged to publish additional supporting guidance to this policy. Recommendations for inclusion into local policies are:

a. Daily Desktop Procedures for Ops Chief and Clerks

(1) NAVFLIR reconciliation with Maintenance.

(2) Reconciliation of SBTP and Unit Flight Hours.

(3) Hotboards generation/maintenance.

b. Daily Desktop Procedures for Maintenance Admin

(1) Flight Events Page.

(2) Aircraft Summary reconciliation with Ops.

c. Daily Desktop Procedures for Ops Officers

(1) Training Officers - Corrected Flight Schedule.

(2) Flight Officer - Weekly Flight Schedule.

(3) Schedule Writers - Daily Schedule.

d. Daily Desktop Procedures for DoSS Officers

e. Routine Recurring Procedures

(1) New Join Check in.

(2) Ops Chief/Clerk Actions.

(3) Personnel Attributes.

(4) Log Books Baseline.

(5) DoSS actions.

(6) OPNAV and T&R Qualifications/Designations Baseline.

(7) Training Officer Actions.

(8) T&R Qualifications/Designations Baseline.

(9) CSP/MSP Baseline.

f. Lists & Reports (M-SHARP Administrator)

(1) Personnel Group Maintenance.

(2) Unit Aircraft.

(3) Unit Augments.

(4) External Personnel.

(5) Hotboard construction/modification.

g. Data Accuracy Review

(1) Unit M-SHARP Responsible Officer Monthly.

(2) Flight Hour/SBTP Reconciliation and Reporting.

(3) Ops Chief & Ops O.

(4) Maintenance Admin.

(5) Duty Schedule Input Into M-SHARP.

(6) New CMTR Report Review (Future).

(7) MIFAR.

(8) Log Books reconciliation (electronic to paper).

(9) Last working days of each month, M-SHARP Rep does data accuracy assessment of every flying unit, and publishes results to Group and unit operations by end of month. This effort contributes to validating data accuracy for the Flight Hour Program (FHP) Sortie Based Training Program (SBTP), and Aircrew Core Competency (ACC) reporting to HQMC.

(10) To perform audit, each squadron must provide to the M-SHARP Rep which Marines in the unit they expect to be Core or Mission Skill Proficient.

(11) First calendar days of each month, M-SHARP Rep assist units with correcting all data inaccuracies in preparation for Current Readiness pull of SBTP Execution Report.

804. DEPLOYABLE

1. Units deploying to areas with little or no internet connectivity for over 30 days can request a self-contained stand-alone version of M-SHARP on a single laptop, shore-based LAN server, or shipboard server for the deployment. M-SHARP Deployable should not be considered a complete substitute for M-SHARP Global, but rather a means of bridging the deployment gap for scheduling, tracking individual proficiency, and processing NAVFLIR data. Baselining of T&R and aircrew hours should not be done on M-SHARP Deployable, and it is recommended that all baselining or editing of such data be done prior to deployment.

2. Pre-deployment. At least two weeks lead time is needed to coordinate unit data pulls, installation/configuration, and testing of M-SHARP Deployable prior to delivery to the unit. All personnel and aircraft transfers in or out of the unit must be complete prior to the generation of the unit's Deployable database from M-SHARP Global. When requesting a Deployable platform, M-SHARP Support will require the desired "data cutoff date", i.e. the date and time of the last flight logged on M-SHARP Global after which the unit should stop using M-SHARP Global and enter all flights into Deployable upon delivery. This will usually mean a few days of backlogged NAVFLIRs data entry to bring the Deployable instance completely current prior to deployment.

3. HMM/VMM squadrons assigned as the ACE for a Marine Expeditionary Unit will usually require the M-SHARP Deployable stand-alone platform due to limited shipboard bandwidth. M-SHARP Deployable can be integrated into the MEU Local Area Network (LAN) to allow access throughout the LHD. An M-SHARP Support representative will normally embark aboard the LHD during work-ups as part of the Deploying Group System Integration Testing (DGSIT) team to ensure proper configuration and functionality on the MEU's LAN. Training for all appropriate MEU ACE personnel may be conducted during this time.

4. During deployment. Portable installations of M-SHARP can be synchronized regularly with the master server through the use of a Synchronization of Portable Installation (SPIN) file. The SPIN file may be created regularly from the portable installation and contains a deployed unit's new information to update the master server. The SPIN file must be transferred to an internet/NIPRNET-capable computer using a USB drive or other portable media where it can be submitted via email as an attachment. At a minimum, SPIN files of disconnected units shall be submitted by the 5th working day of every month in order to update the master M-SHARP database. Local policy may specify a more frequent submission interval. While disconnected, units are responsible for maintaining their own backups locally and should conduct a full data backup at least once weekly.

5. Classified Data. Local policies may dictate a higher classification level for some aspects of training data normally unclassified and managed by M-SHARP on the NIPRNET, particularly during contingency operations. In such cases, M-SHARP usage must be modified accordingly. For example, if flight schedules are considered classified but completed flight operations (i.e. logged flight data/NAVFLIRS) remain unclassified, units are advised to produce the flight schedule using another system (e.g. Microsoft Word) on a classified computer but still use M-SHARP on an unclassified system to log flights, access reports, produce SPIN files, etc. Although M-SHARP is approved for installation on classified systems, there are currently no procedures for declassifying M-SHARP data. Therefore, all M-SHARP data residing on classified systems cannot be synchronized with the master M-SHARP database with SPIN files during or after deployment. Any unit that maintains M-SHARP data on a classified system during deployment will lose that data and have to complete a full re-baseline of their entire database upon return from deployment.

6. Post-deployment. Any remaining unsynchronized data from the deployment will be submitted via SPIN file. M-SHARP must be uninstalled and shall not be maintained on deployable assets following the deployment.

805. BEST PRACTICES. The following procedures are recommended to minimize the level of effort required to maintain an accurate and effective training management system.

1. Training/Technical Support. Units that fully utilize on-site technical support to troubleshoot problems, answer questions and conduct refresher training generally experience a significantly more effective system.

2. Reports Usage. When M-SHARP-produced reports are used as the authoritative source of training information (as opposed to reports generated from data Excel, Access, or other systems), discrepancies are corrected promptly and data accuracy remains high.

3. Use by non-Operations personnel. M-SHARP offers several security roles that allow various departments to maintain data directly without having to rely upon Operations. Utilizing M-SHARP as a central repository for squadron data permits personnel and asset de-confliction. For example, in flying squadrons all aircrew should enter flights (NAVFLIRs) in M-SHARP, the safety department should maintain qualifications and designations in M-SHARP, the senior watch officer should maintain all monthly duties in M-SHARP, and the squadron flight surgeon and corpsmen should maintain med up/down status in M-SHARP.

4. Regular Audits. Training jackets, log books, and other tracking systems, such as NALCOMIS, contain information that also resides in M-SHARP. Conducting a regular audit of this information will ensure data accuracy is maintained over time. For flying squadrons, it is recommended that maintenance admin representatives conduct a daily or weekly audit of flight hour totals and operations representatives conduct a monthly audit of aircrew logbooks using the M-SHARP logbook report.

806. M-SHARP POINTS OF CONTACT

1. The M-SHARP User Support Web Site contains names, phone numbers, and email addresses of all M-SHARP field representatives at each major air station: http://msharpsupport.com/techsupport.asp

2. The M-SHARP Customer Request Form allows users without on-site support representation to submit feature requests, report bugs, request an account, and request training: http://www.innovasi.com/isi/msharp/

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GLOSSARY OF TERMS

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

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

Aerial Gunner/Observer (AGO) - Individual who assists the Crew Chief in the cabin of a helicopter and has been thoroughly briefed by the Aircraft Commander on lookout doctrine, obstacle clearance calls, ICS utilization and emergencies.

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

Air Combat Maneuvering (ACM)- See OPNAVINST 3710.7 for definition.

Air Mission Commander (AMC) / Mission Commander (MC)- An experienced aviator or UAS commander who has in-depth knowledge of the MACCS, airspace management, fire support coordination, fixed and rotary wing operations and capabilities. The AMC is responsible for the accomplishment of the air mission.

Aircrew (AC) - A collective term that applies to all categories of personnel in a flight status. Analogous to crewmember.

Aircrew Performance Record (APR) - A standardized evaluation and training management tracking system for monitoring and recording the progress of personnel. See paragraph 218. Analogous to OPNAV 3760/32 NATOPS Flight Personnel Training/Qualification Jacket.

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

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

Assault Support Coordinator (Airborne) (ASC(A)) - 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.

Battlefield Illumination (BI) - 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 evolution as a whole.

Cargo and Passenger Loading (CPL) - Any flight required to carry passengers and/or cargo.

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

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

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

a. Category I (CAT I). This equates to the Basic POI.

b. Category II (CAT II). This equates to the Transition or Conversion POI. Additionally, this can refer to a Series Conversion.

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

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

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

Certification - A certification refers to the evaluation process conducted via syllabus event(s) by a designated instructor or authorized personnel for the purpose of assessing individual skills as a prerequisite to qualification or designation.

For Aviation Ground Communities. A certification also serves as a "one-time" assessment of proficiency for a given skill or position that does not expire; specifics shall be noted in community T&Rs. Commanders or designated representatives shall issue certification letters.

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

Command and Control Warfare (C2W) - 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.

Community - A collective term used to identify all aviation units and personnel associated with an individual Aviation T&R Manual (E.G. model aircraft, MACCS system, aviation ground MOS).

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

Core Capability - A unit-centered training readiness calculation that assists operations departments and commanding officers in determining a percentage-adjusted MET Output Standard given crew manning constraints.

Core Competency - Unit Core Competency is a collective term that entails requirements, capabilities, and information delineated in the applicable unit mission statement, METL, appropriate T/O information, Output Standards, Core Model Minimum Requirements, and supporting tables such as METL/Core Skill matrix and qualification/designation tables.

Core Competency Model - Core Competency Model (Core Model) is the basic foundation or standardized format by which all Aviation T&Rs are constructed. The Core model provides the capability of quantifying both unit and individual training requirements and measuring readiness. This is accomplished by linking community Mission Statements, Mission Essential Task Lists, Output Standards, Core Skill Proficiency Requirements and Combat Leadership Matrices.

Core Competency Resource Model (CCRM) - A qualitative analytical tool (model) that displays external resources required to attain and maintain unit proficiency. This

tool objectively captures and displays the required external resources for a desired level of readiness. External resources are defined as those not organic to the unit.

Core Model Minimum Requirement (CMMR) - The CMMR of a unit is an objective standard of the number of crews formed and proficient to execute the output standards defined in the Mission Essential Task worksheets. Units shall train to achieve CMMR and shall track unit CMMR using the Core Model Training Report (CMTR) in M-SHARP.

Core Skill (CS) - Core Skill training essential to wartime employment of the unit platform/system. Training at this level enhances proficiency from fundamental understanding of Core Skills to proficiency in basic skills. Environmental, or conditional capabilities required to perform basic functions (normally 2000 phase). These basic functions serve as tactical enablers that allow crews to progress to the more complex Mission Skills.

Core Skill Proficiency (CSP) Applies to individuals, crews and units.

a. Individual CSP is a measure of training completion for 2000 Phase events. CSP is attained by executing all events listed in the Attain Table for each Core Skill. The individual must be simultaneously proficient in all events within that Core Skill to attain CSP.

b. Crew CSP - A crew is defined by each community T&R manual for each Core Skill. A Crew CSP is a crew where each of the crew positions can be filled by individuals who have attained and maintained a "proficient" status in all T&R defined Core Skill events.

c. Unit CSP shall be defined in terms of numbers of crews required to be proficient in each Core Skill. A CSP Unit (T-2) maintains a minimum number of CSP Crews in each Core Skill as set forth in the applicable T&R community manual.

Core Plus - A term used to define the 4000 Phase of events. The Core Plus Phase consists of both Mission (Core Plus Mission) and Skill (Core Plus Skill) training. Core Plus training is defined as training that is either Mission/Theater specific or that has a low likelihood of occurrence.

Crew Resource Management (CRM) - Replaces Aircrew Coordination Training (ACT) term. CRM incorporates the use of specifically defined behavioral skills into all Navy/Marine Corps aviation operations. Standardized training strategies are used in such areas as academics, simulators, and flight training. Practicing CRM principles improves mission effectiveness and serves to prevent mishaps that result from poor crew coordination. See OPNAV Instruction 1542.7.

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

Currency - Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of proficiency. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for individual type mission profiles can be found in Chapter 3.

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

Defensive Combat Maneuvers (DCM) - Flights in the MV-22 syllabus including the defensive tactics versus airborne threats.

Defensive Measures (DM) - Flights in assault support helicopters utilizing defensive tactics versus airborne threats.

Defensive Tactics (DT) - Those aircraft maneuvers performed by aircraft possessing no offensive armament in response to airborne threats. Performed as last ditch tactics when efforts to escape detection have failed.

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

Designation - A designation is a status assigned to an individual based on leadership ability. Designations are command specific and remain in effect until removed for cause or the individual is transferred to another command.

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

Electronic Attack (EA) - That division of electronic warfare involving the use of electromagnetic energy, directed energy, or anti-radiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability and is considered a form of fires. EA includes: 1) actions taken to prevent or reduce an enemy's effective use of the electromagnetic spectrum, such as jamming and electromagnetic deception; and 2) employment of weapons that use either electromagnetic or directed energy as their primary destructive mechanism (lasers, radio frequency weapons, particle beams).

Electronic Protection (EP) - Division of electronic warfare involving passive and active means taken to protect personnel, facilities, and equipment from any effects of friendly or enemy employment of electronic warfare that degrade, neutralize, or destroy friendly combat capability.

Electronic Warfare (EW) - Any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. Also called EW. The three major subdivisions within electronic warfare are: electronic attack, electronic protection, and electronic warfare support.

Electronic Warfare Support (ES) - That division of electronic warfare involving actions tasked by, or under direct control of, an operational commander to search for, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic energy for the purpose of immediate threat recognition, targeting, planning and conduct of future operations.

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

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

Evaluate or Evaluation (EVAL) - Any flight or T&R Event designed to evaluate aircrew standardization that does not fit another category such as SARCK, HACCK, T2PCK, etc.

EVENT - A flight or ground training evolution defined or required by individual POI(s) within a syllabus. Analogous to Syllabus Event.

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

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

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

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

Formation (FORM) - Any flight designed to develop proficiency in basic section and/or division formation flying, day or night, and develop basic skills in tactical formations and maneuvering.

Forward Air Controller (Airborne) (FAC(A)) - A specially trained and qualified aviation officer who exercises control from the air of aircraft engaged in close air support of ground troops, as well as control of surface based supporting arms as required. The FAC(A) is normally an airborne extension of the Tactical Air Control Party.

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

Instructor Under Training (IUT) - An individual undergoing instructor training. Events that are instructor focused are normally identified with the "IUT" prefix in the event code.

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

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

Introduce - The instructor may demonstrate a procedure/maneuver to a student, or may coach the PUI/student through the procedure/maneuver without demonstration. The PUI/student performs the procedures/maneuver with coaching as necessary. The PUI/student is responsible for knowledge of the procedures.

Low Altitude Tactics (LAT) - Any flight designed to develop proficiency in low altitude tactics. The term LAT shall apply to tactical fixed wing operations conducted during day or night VMC where the briefed intent is to conduct low altitude flight below 500 ft AGL.

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

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

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

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

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

Mission Skills - Mission Skills enable a unit to execute a specific MET. They are comprised of unique event(s) that are focused on MET performance and draw upon the knowledge, aeronautical abilities, and situational awareness developed via Core Skill training.

Mission Skill Proficiency (MSP) Applies to individuals, crews and units.

a. Individual MSP is a measure of training completion for 3000 Phase events. MSP is attained by executing all events listed in the Attain Table for each Mission Skill. The individual must be simultaneously proficient in all events within that Mission Skill to attain MSP..

b. Crew MSP - A crew is defined by each community T&R manual for each Mission Skill. A Crew MSP is a crew where each of the crew positions can be filled by individuals who have attained and maintained a "proficient" status in all T&R defined Mission Skill events.

c. Unit MSP shall be defined in terms of numbers of crews required to be proficient in each Mission Skill. A MSP Unit (T-2) maintains a minimum number of MSP Crews in each Mission Skill as set forth in the applicable T&R community manual.

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

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

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

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

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

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

Performance Record - See paragraph 218. Units shall maintain performance records for all assigned individuals undergoing aviation T&R syllabi training.

a. Flight units shall utilize Aircrew Performance Record (APR) folders.

b. Aviation Ground communities shall use Performance Records as prescribed by the individual communities in coordination with the syllabus sponsor.

Phase - A phase is a group of stages consisting of events. Each phase is numbered in increments of one thousand (0000, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000, etc).

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

Prerequisite - A prerequisite is a requirement that must be completed prior to commencing another (generally more complex) training requirement. Prerequisites implement a building block approach to training. Omitting or skipping event prerequisites is prohibited (unless the prerequisite is waived). Prerequisites may include academics, events, entire stages, entire phases, certifications, qualifications, and designations. Communities may use any combination or number of these prerequisites to tailor training as appropriate.

Proficiency - Proficiency is a measure of achievement of a specific skill.

Qualification (QUAL) - Qualifications are assigned to personnel based on demonstration of proficiency in a specific skill. All qualifications are assigned one or more T&R qualification events. When all qualification requirements and events are completed, the individual may be granted the respective qualification by the commanding officer or in the case of aviation ground communities, as directed in their respective T&R Manual. Proficiency status of these qualification events are used to determine qualification status; an individual qualification status may be either "Qualified" or "Not Qualified." Specific re-qualification criteria shall be delineated in individual T&R manuals.

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

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

Refly Factor - Refly factor establishes the maximum time between syllabus events. Specified T&R events have a refly interval, measured in number of days/months, that indicates the period within which the event must be reflown or updated. Events that have no refly interval have a one-time training requirement and are noted by an asterisk (*) in the events themselves and in the refly column of the syllabus matrix.

Requirements, Certifications, Qualifications, Designations (RCQD) - All other syllabus events and special interest tracking codes that do not neatly 'fit' into the 1000 through 5000 phases and is designed to facilitate training management. The 6000 phase contains standardized combat/flight leadership workup and evaluation events. Events are often requirements not mandated by the T&R program such as NATOPS, instrument evaluations, and the functional check pilot syllabus.

Review - Demonstrated proficiency of a maneuver by the PUI/student.

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

Stage - A stage is a group of one or more similar events within a phase (i.e., COMM, MMGT, EQUIP, etc.). Each stage is categorized and named by common attributes or skill set (e.g. Terrain Flight or TERF). Aviation manned flight communities should follow stage titles standardized terminology established in Appendix C. A stage may not contain events from more than one phase, although the same stage name may be used in more than one Phase (e.g., a 2000 Phase TERF stage and a 3000 Phase TERF stage).

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

Terrain Flight (TERF) - Any helicopter event structured to occur below 200 ft AGL. Terrain flight employs terrain, vegetation, and man-made objects to degrade the

enemy's ability to detect a helicopter. TERF includes the following basic flight techniques: low level, contour, and nap of the earth (NOE).

Threats - Air threat environments are categorized as follows:

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.

Unit Core Skill Proficiency (CSP) - See Core Skill Proficiency (CSP).

Weapons Training Officer (WTO) - A subject matter expert on aircraft weapons, systems, countermeasures and ordnance employment techniques.

APPENDIX B

LIST OF ACRONYMS/CODE DESIGNATIONS

-A-	
AA	Air-to-Air
AAA	Anti-Aircraft Artillery
AAD	Active Air Defense
AADC	Area Air Defense Commander
AAH	Advanced Aircraft Handling
AAR	Air-to-Air Refueling
AAW	Anti-Air Warfare
AC	Aircrew
A/C	Aircraft
ACAD	Academics
ACE	Aviation Combat Element
ACM	Air Combat Maneuvering
ACPM	Aviation Career Progression Model
ACTI	Air Combat Tactics Instructor
AD	Aerial Delivery
ADP	Aeronautical Designated Personnel
ADS	Aerial Delivery System
AESC	Aerial Escort
AG	Air-to-Ground (Fixed wing)
AG	Aerial Gunnery (Rotary Wing)
AGT	Aviation Ground Training
AGO	Aerial Gunner/Observer
AGL	Above Ground Level
AHC	Attack Helicopter Commander
AI	Air Interdiction/Air Intercept
AIE	Alternate Insertion/Extraction
ALZ	Assault Landing Zone
AMC	Air Mission Commander
AIE	Alternate Insertion/Extraction Techniques
AIM	Air Intercept Missile
AMTI	Airborne Moving Target Indicator
ANI	Assistant NATOPS Instructor
ANSQ	Advanced Night System Qualification
AOA	Angle of Attack
AOS	Aviation Operations Specialist
APR	Aircrew Performance Record
AR	Armed Reconnaissance
ARBS	Angle Rate Bombing System
ARCP	Air Refueling Control Point
ARFF	Aircraft Rescue and Firefighting
ARIP	Aerial Refueling Initial Point
ARNAV	Aerial Refueling Navigation
A/S	Aircraft preferred, simulator optional
AS	Air-to-Surface
ASC(A)	Assault Support Coordinator (Airborne)
ASE	Aircraft Survivability Equipment/Assault Support Escort
ASE	Air Support Element
ASM	Air-to-Surface Missile
ASR	Authorized Strength Report
ASTO	Advanced Systems Tactics Ordnance
ASWD	Aerial Specific Weapons Delivery
ATD	Aviation Training Division
ATC	Air Traffic Control
ATS	Aviation Training System
ATSS	Aviation Training Support System
ATU	Aircrew Training Unit
AWACS	Airborne Warning and Control System

AWCAS	All Weather Close Air Support
-B-	
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
BIP	Basic Instructor Pilot
BIT	Built in Test
BMNT	Beginning Morning Nautical Twilight
BVR	Beyond Visual Range
-C-	
C	Conversion
C2W	Command and Control Warfare
CAC	Command Access Card
CAL	Confined Area Landing
CAP	Combat Air Patrol
CAS	Close Air Support
CASEVAC	Casualty Evacuation
CAT	Categories of Training
CATM	Captive Air Training Missile
CBRN	Chemical, Biological, Radiological, Nuclear
CC	Crew Chief
CCRM	Core Competency Resource Model
CCUI	Crew Chief Under Instruction
CERT	Certification
CK or X	Check Flight
CL	Comfort Level
CMMR	Core Model Minimum Requirements
COL	Combat Offload
comm-out/comm-in	No communication/with communication
COMNAV or CNI	Communication, Navigation, Identification
COMOPTEVFOR	Commander Operational Test and Evaluation Forces
COMSEC	Communications Security
CON	V/STOL Consolidation
CONPLAN	Contingency Plan
COT	Cockpit Orientation Trainer
CP	Copilot
CPL	Cargo and Passenger Loading
CPP	Core Plus Proficiency
CPMP	Core Plus Mission Proficiency
CPSP	Core Skill Plus Proficiency
CPT	Cockpit Procedures Trainer
CQ	Carrier Qualification
CRM	Crew Resource Management
CS	Core Skill
CSIX	Core Skill Introduction Check
CSP	Core Skill Proficiency
CTC	Climb to Cope
CTO	Conventional Takeoff
CTOL	Conventional Takeoff/Landing
CV	Fixed Wing Aircraft Carrier
-D-	
D	Day Only
DACM	Defensive Air Combat Maneuvering (RW)
DACT	Dissimilar Air Combat Tactics
DAS	Deep Air Support

DASC	Direct Air Support Center
DCA	Defensive Counter Air
DACMI	Defensive Air Combat Maneuvering Instructor
DCM	Defensive Combat Maneuvers
DCMI	Defensive Combat Maneuvers Instructor
DECM	Defensive Electronic Countermeasures
DOD	Department of Defense
DT	Defensive Tactics
DTI	Defensive Tactics Instructor
DES	Desert Operations
DESG	Designation
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
DLUT	Division Lead under Training
DM	Defensive Measures
DMI	Defensive Measures Instructor
DMT	Dual Mode Tracker
DR	Dead Reckoning
DRRS	Defense Readiness Reporting System
DWEST	Deep Water Environmental Survival Training
-E-	
E	Evaluated
EA	Electronic Attack
EAF	Expeditionary Airfield
ECMO	Electronic Countermeasures Officer
ECQ	Field Expeditionary/Carrier Landing Qualification
EENT	End of Evening Nautical Twilight
EMCON	Emission Control
EO	Electro-optical
EP	Electronic Protection/Emergency Procedures
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
EWT	Extreme Weather Training
EVAL	Evaluate or Evaluation
EXP	Expeditionary Shore Based Operations
EXT	External Cargo Operations
EXTWT	External Weights
-F-	
FAC	Forward Air Controller
FAC(A)	Forward Air Controller (Airborne)
FAC(A)I	Forward Air Controller (Airborne) Instructor
FAE	Fuel Air Explosive
FAM	Familiarization
FAP	Fleet Assistance Program
FBO	Forward Base Operations
FCF	Functional Check Flight
FCLP	Field Carrier Landing Practice
FCP	Functional Check Pilot

FE	Flight Engineer
FEI	Flight Engineer Instructor
FHP	Flight Hour Program
FI	Fighter Intercept
FIREX	Firing Exercise
FL	Flight Leadership
FLIP	Flight Information Publication
FLIR	Forward Looking Infrared
FORM	Formation
FRAG	Fragment or Fragmentary
FRS	Fleet Replacement Squadron
FS	Front Seat
FW (F/W)	Fixed Wing
FWF	Fixed Wing Fragger
FXP	Fleet Exercise Procedure
-G-	
GCE	Ground Combat Element/Ground Convoy Escort
GPS	Global Positioning System
GTR	Ground Threat Reaction
-H-	
H2P	Helicopter Second Pilot
HA	Helicopter Attack
HAC	Helicopter Aircraft Commander
HAHO	High Altitude High Opening
HALO	High Altitude Low Opening
HAAR	Helicopter Air-to-Air 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
HLL	High Light Level
HOGE	Hover Out of Ground Effect
HOTAS	Hands on Throttle and Stick
HQMC	Headquarters Marine Corps
HST	Helicopter Support Teams
HUD	Heads Up Display
-I-	
I	Instructor
ICLS	Instrument Carrier Landing System
ICP	Instrument Check Pilot
ICS	Intercommunications
IDSG	Instructor Designation
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 or Intercepts
INTWT	Internal Weights
INUT	Instructor NFO Under Training
IP	Instructor Pilot
IR	Infrared
IRCM	Infrared Countermeasures
ISD	Instructional Systems Development
ITO	Instrument Takeoff

IUT	Instructor Under Training
-J-	
JATO	Jet Assisted Takeoff
JDAM	Joint Direct Attack Munition
JINTACS	Joint Interoperability Tactical Air Command System
JMEMS	Joint Munitions Effectiveness Manual Series
JSOW	Joint Standoff Weapon
JTF	Joint Task Force
-K-	
KIO	Knock It Off
-L-	
LAAD	Low Altitude Air Defense
LAT	Low Altitude Tactics
LATI	Low Altitude Tactics Instructor
LFE	Large Force Exercise
LGB	Laser Guided Bomb
LHA	Landing Helicopter Amphibious Ship (Helicopter/VSTOL Carrier)
LHD	Landing Helicopter Ship (Helicopter/VSTOL Carrier)
LLL	Low Light Level
LM	Loadmaster
LMUI	Loadmaster Under Instruction
LPH	Landing Platform Helicopter Ship (Helicopter/VSTOL Carrier)
LRAR	Long Range Aerial Refueling
LRNAV	Long Range Navigation
LSE	Landing Signal Enlisted
LSO	Landing Signal Officer
LSS	Landing Site Supervisor
LST	Laser Spot Tracker
LUX	A measure of luminance
-M-	
MAC	Minimum Altitude Capable
MACCS	Marine Air Command and Control System
MACG	Marine Air Control Group
MACS	Marine Air Control Squadron
MAG	Magnetic Degrees
MAGTF	Marine Air Ground Task Force
MARFOR	Marine Forces
MASS	Marine Air Support Squadron
MATC	Marine Air Traffic Control
MC	Mission Commander
MCAD	Marine Corps Administrative Detachment
MCAS	Marine Corps Air Station
MCBUL	Marine Corps Bulletin
MCCDC-CDI	Marine Corps Combat Development Command-Combat
MCCRES	Marine Corps Combat Readiness Evaluation System
MCUT	Mission Commander Under Training
MCTL	Marine Corps Task List
MCWP	Marine Corps Warfighting Publication
MDG	Maneuver Description Guide
MEF	Marine Expeditionary Forces
MET	Mission Essential Tasks
METL	Mission Essential Task List
METOC	Meteorological Oceanographic
MIN	Minimum
MINCOM	Minimum Communication
MITAC	Map Interpretation and Terrain Analysis Course
MMD	Moving Map Display
MOCA	Minimum Obstruction Clearance Altitude
MOS	Military Occupational Specialty

MPD	Multipurpose Display
MPR	MACCS Performance Record
MPS	Mission Performance Standards
MPSP	Mission Plus Skill Proficiency
MR	Modified Refresher
M-SHARP	Marine Corps Sierra Hotel Aviation Readiness Program
MS	Mission Skill
MSA	Minimum Safe Altitude
MSEL	Master Scenario Events List
MSL	Mean Sea Level
MSP	Mission Skill Proficiency
MTACS	Marine Tactical Air Command Squadron
MTF	MACCS Training Form
MTR	Military Training Route
MWSG	Marine Wing Support Group
MWSS	Marine Wing Support Squadron

-N-

N	Night Only
NAC	Naval Avionics Center
NAI	Named Area of Interest
NAPP	Naval Aviator Production Process
NATOPS	Naval Air Training and Operating Procedures Standardization
NAV	Navigation or Navigator
NAVFLIRS	Naval Flight Record Subsystem
NAVMC	Navy Marine Corps (Publication)
NBA	Never Been Attempted
NE	NATOPS Evaluator
NFWS	Navy Fighter Weapons School
NFO	Naval Flight Officer
NI	NATOPS Instructor
NM	Nautical Mile
NOE	Nap of the Earth
NS	Night Systems
NSAR	Night Search and Rescue
NSFS	Naval Surface Fire Support
NSI	Night Systems Instructor
NSFI	Night Systems FAM Instructor
NSQ	Night Systems Qualified
NSSI	Night Systems SAR Instructor
NTTL	Navy Tactical Task List
NVD	Night Vision Device
NVG	Night Vision Goggles
NVGCQ	Night Vision Goggle Carrier Qualification
NVGFCLP	Night Vision Goggle Field Carrier Landing Practice

-O-

O/W	Over Water
OAAW	Offensive Anti-Air Warfare
OAS	Offensive Air Support
OBS	Observer
OCA	Offensive Counter Air
OCE	Officer Conducting Exercise
OFT	Operational Flight Trainer
OPLAN	Operations Plan
OPS	Operations
OPSEC	Operational Security

-P-

PR	Performance Record
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
PREREQ	Prerequisite
PTT	Partial Task Trainer
PUI	Pilot Under Instruction
PUP	Pull Up Point
-Q-	
QUAL	Qualification
-R-	
R	Refresher
RA	Rescue Aircrew
RAI	Rescue Aircrew Instructor
RAUI	Rescue Aircrew Under Instruction
RAC	Replacement Aircrew or Refueling Area Commander or Rescue Aircrew
RADC	Regional Air Defense Commander
RADCON	Radiation Control
RADNAV	RADAR Navigation
RAP	Rappel Operations
RC	Rendezvous Controller
RCB	RADAR Controlled Bombing
RCQD	Requirements, Certification, Qualifications, Designations
RE	RAC Equivalent
RECON	Reconnaissance
REC	Reconnaissance/Requirements
REV	Review
RGR	Rapid Ground Refueling
RNO	Radio Net Operator
ROC	Rules of Conduct
ROE	Rules of Engagement
RPM	Revolutions Per Minute
RS	Rear Seat
RTI	RADAR Target Identification
RTO	Range Training Officer
RVL	Rolling Vertical Landing
RVTO	Rolling Vertical Takeoff
RVTOL	Rolling Vertical Takeoff/Landing
RW	Rotary Wing
RWDACM	Rotary Wing Defensive Air Combat Maneuvering
RWF	Rotary Wing Fragger (TACC)
RWS	Range While Search
-S-	
S	Simulator
S/A	Simulator preferred, aircraft optional
SAC	Supporting Arms Coordination/Senior Air Coordinator
SAM	Surface to Air Missile
SAR	Search and Rescue
SBTB	Sortie Based Training Program
SC	Series Conversion
SCAR	Strike Coordination and Reconnaissance
SEA	Sea based operations
SERE	Survival, Evasion, Resistance, Escape
SI	Senior Instructor
SIM	Simulate or Simulator
SID	Standard Instrument Departure
SLR	Side Looking RADAR
SLT	Simulated Laser Target

SLUT	Section Leader Under Training
SME	Subject Matter Expert
SOP	Standing Operating Procedure
SOTC	Specific Operations Tracking Codes
SPIE	Special Purpose Insertion Extraction
SSSC	Surface, Subsurface, Surveillance, and Control
SSWD	Surface Specific Weapons Delivery
STF	Special Training Flights
STANX	Standardization Check
STOL	Short Takeoff/Landing
SV	Simulator Visual
SWD	Special/Specific Weapons Delivery
SWD	Senior Weapons Director (TAOC)
SYSNAV	System Navigation
SYSTAC	System Tactics
-T-	
T	Transition
T2P	Transport Second Pilot or Tiltrotor Second Pilot
T3P	Transport Third Pilot
TAI	Target Area of Interest
TAC	Tactics/Tiltrotor Aircraft Commander/Transport Aircraft Commander
TAC(A)	Tactical Air Coordinator (Airborne)
TAC(A)I	Tactical Air Coordinator (Airborne) Instructor
TACC	Tactical Air Command Center
TACFORM	Tactical Formation
TACNAV	Tactical Navigation
TACP	Tactical Air Control Party
TACTS	Tactical Aircrew Combat Training System
TAOC	Tactical Air Operations Center
TAR	Tactical Aerial Reconnaissance
TARCAP	Target Combat Air Patrol
TC	Terrain Clearance
TCA	Track Crossing Angle
TCT	Threat Counter-tactics
TCWD	Tactical Conventional Weapons Delivery
TDL	Tactical Data Information Link
TEMP	Temperature
TERF	Terrain Flight
TFS	Task Force Support
THRX	Threat Reaction
TLZ	Temporary Landing Zone
T/M/S	Type Model Series
T/O	Table of Organization
TOT	Time on Target
TPC	Transport Plane Commander
TR	Training Rules
TR	Threat Reaction
TRK	Tracking code
TRXN	Threat Reaction
TTT	Time to Target
TWS	Track While Scan
-U-	
UAS	Unmanned Aircraft System
UFC	Up-Front Control
UHC	Utility Helicopter Commander
UJTL	Universal Joint Task List
UNTL	Universal Naval Task List
UTIL	Utility
UTM	Unit Training Management

-V-

VCON	V/STOL Consolidation
VFR	Visual Flight Rules
VID	Visual Identification
VL	Vertical Landing
VMC	Visual Meteorological Conditions
VMU	Marine Unmanned Aerial Vehicle Squadron
VNSL	Variable Nozzle Slow Landing
VR	Visual Reconnaissance
VS	Velocity Search
VSTOL	Vertical Short Takeoff/Landing
VTO	Vertical Takeoff

-W-

W	Waived
WAS	War-at-Sea
WEO	Weapons Employment Officer
WST	Weapons System Trainer
WTACI	Weapons and Tactics Aircrew Instructor
WTI	Weapons and Tactics Instructor
WTO	Weapons Training Officer
WTT	Weapons Tactics Trainer
WTTP	Weapons and Tactics Training Program

-X-

X	Check Flight (See also CK)

-Y-

-Z-

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APPENDIX C

MISSION AND INSTRUCTOR DESIGNATIONS AND QUALIFICATIONS

Designations Qualifications are grouped as follows:

1. FLIGHT LEADERSHIP DESIGNATIONS
2. LOW ALTITUDE FLIGHT QUALIFICATIONS AND DESIGNATIONS
3. NIGHT OPERATIONS QUALIFICATIONS AND DESIGNATIONS
4. FW ACM QUALIFICATIONS AND DESIGNATIONS
5. RW DM/DACM QUALIFICATIONS AND DESIGNATIONS
6. TILTROTOR DCM QUALIFICATIONS AND DESIGNATIONS
7. ENLISTED FW AIRCREW DESIGNATIONS
8. WEAPONS AND TACTICS INSTRUCTORS
9. WEAPONS TRAINING OFFICER
10. RW AERIAL GUNNERY (AG)
11. FLEET REPLACEMENT SQUADRON INSTRUCTOR (FRSI)
12. BASIC INSTRUCTOR PILOT (BIP)
13. MARINE AIR COMMAND AND CONTROL CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS

1. FLIGHT LEADERSHIP DESIGNATIONS

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

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

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

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

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

(f) Tactical Refueling Area Commander (KC-130 only). A Tactical RAC is a qualified section or division leader able to plan and lead an aerial refueling

mission of two or more KC-130s on a static orbit tanker track with multiple receiver aircraft.

2. LOW ALTITUDE FLIGHT QUALIFICATIONS AND DESIGNATIONS

a. FW Qualifications and Designations

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

(2) Low Altitude Tactics Instructor (LATI). An aircrew 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.

b. RW Qualifications and Designations

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

(2) Terrain Flight Instructor (TERFI). A NA or CC 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. Tiltrotor Qualifications and Designations

(1) Low Altitude Training (LAT) Qualified. A pilot or aircrew certified as having completed the required LAT events in the MV-22 T&R syllabus.

(2) Low Altitude Training Instructor (LATI). A NA or CC certified by a MAWTS-1 designated LATI as having completed the LATI syllabus per the MAWTS-1 Course Catalog.

3. NIGHT OPERATIONS QUALIFICATIONS AND DESIGNATIONS

a. FW Qualifications and Designations

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

(2) 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.

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

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

(3) Night Systems Instructor (NSI). Aircrew certified by a MAWTS-1 instructor as having completed the NSI Course per the MAWTS-1 Course Catalog.

(4) Night Systems Low Altitude Tactics Instructor (NSLATI). Aircrew certified by a MAWTS-1 instructor as having completed the NSLATI Course per the MAWTS-1 Course Catalog. The NSLATI is qualified to instruct NS LAT training operations.

(5) Night Systems Familiarization Instructor (NSFI). Aircrew certified by the FRS as having completed the NSFI Course.

b. RW Qualifications and Designations

(1) Night Systems Qualified (NSQ)

(a) High Light Level (HLL). 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.

(b) Low Light Level (LLL). 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.

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

(3) Night Systems SAR Instructor (NSSI). A NA or CC 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.

(4) Night Systems Instructor (NSI). A NA or CC 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.

c. Tiltrotor Qualifications and Designations

(1) Night Systems Qualified (NSQ)

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

(b) Low Light Level (LLL). 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.

(2) Night Systems Instructor (NSI). A NA or CC 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.

4. FW ACM QUALIFICATIONS AND DESIGNATIONS

a. ACM/DT 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 DT qualified.

b. ACM Flight Leader. A NA who is ACM or DT qualified and is designated to brief, lead, and debrief an ACM/DT 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 (DTI). A NA/NFO certified by a MAWTS-1 instructor as completing the MAWTS-1 DTI Course.

e. 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.

5. RW DM/DACM QUALIFICATIONS AND DESIGNATIONS

a. Defensive Measures (DM) Qualified. Aircrew certified as having completed the DM syllabus within the appropriate T&R syllabus.

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

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

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

6. TILTROTOR DCM QUALIFICATIONS AND DESIGNATIONS

a. Defensive Combat Maneuvers (DCM) Qualified. Aircrew certified as having completed the DCM syllabus within the appropriate T&R syllabus.

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

7. ENLISTED FW AIRCREW DESIGNATIONS

a. 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.

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

8. WEAPONS AND TACTICS INSTRUCTORS. A Weapons and Tactics Instructor (WTI) is an instructor certified by a MAWTS-1 instructor as having completed the WTI course. There are several types of WTIs:

a. Weapons and Tactics Instructor (WTI) - Naval Aviators (NA), Naval Flight Officers (NFO) and Crew Chiefs (CC).

b. Weapons and Tactics Instructor (WTI) - Air Control for Marine air command and control personnel.

c. Weapons and Tactics Instructor (WTI) - A METOC WTI is a METOC Officer who is a graduate of the Marine Aviation Weapons and Tactics Squadron One (MAWTS-1) WTI course. These officers have advanced skills and knowledge to provide instruction in METOC operations and Tactics Techniques and Procedures (TTPs). They are METOC SMEs responsible for managing a METOC unit's Weapons and Tactics Training Program (WTTP) and ACE planners specializing in METOC operations.

9. WEAPONS TRAINING OFFICER (WTO). A subject matter expert on aircraft weapons, systems, countermeasures and ordnance employment techniques.

10. RW AERIAL GUNNERY (AG)

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

b. AG Instructor (AGI). A crew chief or aerial gunner certified by a WTI Crew Chief as having completed the AG Instructor Course.

c. Tail Gunnery Instructor (TGI). A crew chief certified by a MAWTS-1 instructor a having completed TGI POI per the MAWTS-1 course catalog.

11. FLEET REPLACEMENT SQUADRON INSTRUCTOR (FRSI). An instructor certified by the FRS as having completed the FRS IUT Syllabus.

12. BASIC INSTRUCTOR PILOT (BIP). An instructor certified by an operational squadron as having completed the BIP IUT Syllabus.

13. MARINE AIR COMMAND AND CONTROL CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS. For detailed listings and information concerning aviation ground certifications, qualifications and designations refer to the respective community T&R manual. For standardized instructor designations (BI, SI and WTI)and ACPM requirements refer to the MAWTS-1 C3 Course Catalog.

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APPENDIX D

CORE COMPETENCY RESOURCE MODEL (CCRM) GUIDELINES

1. General. The Core Competency Resource Model (CCRM) identifies the external resources needed to attain and maintain a desired level of readiness for a unit. The CCRM, accredited by the Chief of Naval Operations and the Commandant of the Marine Corps was primarily developed as a Flight Hour Model to support the Flight Hour Program. It has been expanded and will include the following external resources: ordnance, indirect fire assets, ranges, targets, aggressor air, external loads, and ground assets (Helicopter Support Teams, convoys, radar support etc). At the HQMC level the CCRM is utilized a budgetary tool to justify the specific resources needed to support a level of readiness based upon training requirements for each platform or community. At the unit level it is utilized to complement the SBTP and to identify resources need to train the unit.

2. CCRM

a. The CCRM is a linear, bottom-up, qualitative model that identifies the resources required to attain and maintain a desired level of readiness based upon T&R Core/Mission Skill Proficiency (CSP/MSP) training requirements and the Core Model Minimum Requirement (CMMR) per unit. At the HQMC level it reflects a 12 month period of time (Oct-Sep) out of a normal 36 month tour for personnel. At the squadron/unit level it can be used to generate individual and unit requirements based upon CSP/MSP and CMMR.

b. Fixed inputs - Phases of Training. These inputs are incorporated into the models by the Aviation Training Division. These inputs are derived from individual T/M/S T&R Manuals and only change when there is a revision to the T&R manual (normally on a triennial basis). The phases of training include:

(1) Core Skill events (2000-4000 phase). All Core Skill, Mission Skill, and Core Plus training events with corresponding refly intervals.

(2) Instructor Training events (5000 phase). These include events contained within T/M/S T&R and the MAWTS-1 Course Catalog (ASP). All work-up and certification events are included as well as flight hours/sorties required to train and designate a WTI at MAWTS-1 during the semi-annual courses.

(3) Combat/Flight Leadership training (6000 phase). These include both the work-up and certification events required for Combat/Flight Leadership designations.

(4) Requirements, Qualifications, and Designations (6000 phase). These include annual training requirements contained within OPNAVINST 3710.7 (NATOPS and Instrument Evaluations) and other requirements.

c. Fixed inputs - Individual Events. These inputs are incorporated into the models by the Aviation Training Division. These inputs are derived from individual T/M/S T&R Manuals and only change when there is a revision to the T&R manual (normally on a triennial basis). Individual event resources required per event/occurrence include:

(1) Sortie duration - Established by HQMC (APP).

(2) Device - Includes flight in aircraft, simulator flight, or training device with refly interval.

(3) Ordnance - Includes quantity and type with allowable substitutes.

(4) Ranges - Specific range requirements.

(5) Targets - Quantity and type of targets requirement.

(6) Indirect Fire Support - Quantity and type of indirect fire assets required.

(7) Aggressor Air - Quantity and type of aggressor air required.

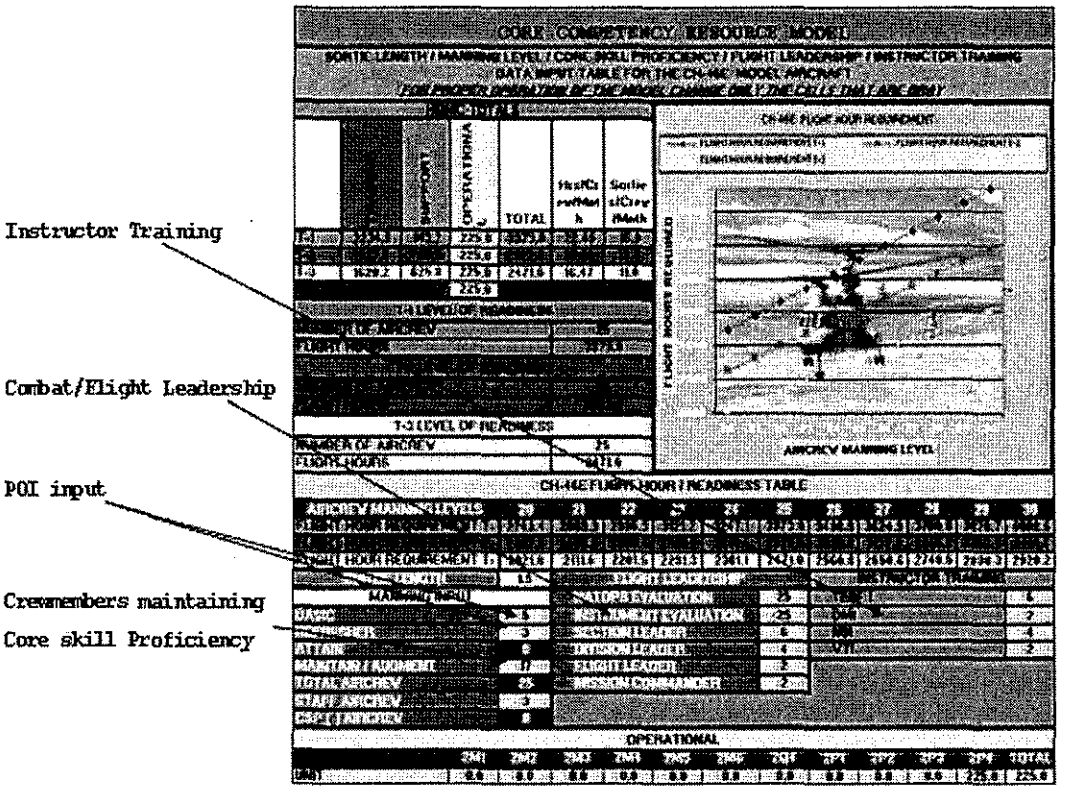
(8) External Load - Type and weight of external load required.

(9) Helicopter Support Team (HST) - Type of HST required.

(10) Convoy Support - Type of convoy support required.

(11) Other - Those other external (not organic to the unit) resources that are required to accomplish event training.

d. Variable Inputs. These inputs include the number and type of crewmembers assigned to various Programs of Instruction (POIs), the number of crewmembers that will undergo Instructor and Combat/Flight Leadership training. There inputs are done both at the HQMC level and the unit level. Inputs at the HQMC level will identify T/M/S resource requirements and at the unit level inputs may assist in developing individual unit or event training requirements. See the matrix below for sample input.



Appendix E

Annual NATOPS Instrument/CRM Evaluation Samples

Below is an example of a Monthly NATOPS Emergency Procedures Examination and Quarterly Simulator/Cockpit-Cabin Drill Evaluation Form. This template should be utilized to assist Model Managers and community representatives in the development of their platform scenarios.

MONTHLY NATOPS EP SIM/COCKPIT CABIN DRILL EVALUATION FORM

Name:
Date of Eval:
Duration:
Device/Buno#:
Evaluator:

SCENARIO:
Night CQ evolution launching from NKX and going to the carrier (USS "X"). Evolution should begin on the line at NKX with Start-up and end with a divert and bingo profile to NKX. The focus of this event is two-fold: 1) to practice start-up , takeoff, and landing emergencies; 2) serve as a refresher event for Case III recovery operations in the CV environment. The following types of emergencies should be covered (one from each category).

- *Start-up: Hot start, Hung start, engine fire, APU fire, R/LATS caution*
- *Take-off: Low-speed/High-speed abort, planning link failure, loss of thrust on take-off*
- *Recovery: Loss of brakes, planning link failure loss of directional control, blown tire, anti-skid failure*
- *CV Operations: Case III recovery, Case III Departure, Settling off the Catapult, Bingo profile to NKX*

NOTE

The Airman in the simulator/training device will perform at least one roll and go/aborted landing attempt and at least one max crosswind landing.

MISSION PERFORMANCE STANDARDS:

- *Start Emergencies: Recognizes engine start malfunction and executes proper procedures IAW NATOPS*
- *Abort: Makes timely decision to continue take-off roll/abort and executes proper procedures IAW NATOPS*
- *Airborne Emergencies: Executes Immediate Action Items (IAI)/Emergency procedures smoothly, slowly, and properly to safely get aircraft "On Deck" IAW NATOPS*
- *CV Operations: Executes all procedures IAW CV and F/A-18 NATOPS Manuals. Executes Emergency procedures IAW NATOPS*
- *Bingo:*
  - *Flies appropriate "BINGO" profile at the appropriate fuel state to the correct divert field.*
  - *Sets up for proper recovery at divert field.*
  - *Completes Ship-to-Shore checklist.*
- *CRM: Utilizes wingman/Base radio to manage emergencies*

EMERGENCY	*X*	*COMMENTS*
Start Engines		
Take-off Emergencies		
Airborne Emergencies		
Recovery		
Roll & Go		
Crosswind		
Case III Recovery		
Case III Departure		
Bingo Profile		

Overall Evaluation/Comments/Remarks:

Name, Rank of Evaluator:

h. Example of Annual NATOPS/CRM Evaluation Scenario. Below is an example of an annual NATOPS/CRM Scenario. This template should be utilized to assist Model Managers and community representatives in the development of their platform scenarios.

ANNUAL NATOPS/CRM EVALUATION SCENARIO 2 (ENGINE)

OBJECTIVE:
The objective of this NATOPS/CRM scenario and evaluation is to integrate the requirement for annual CRM training into the NATOPS evaluation and test the aircrew's ability to apply CRM skills during a typical simulator or flight mission.

SCENARIO:
The aircrew is the dash-two of a two-ship F/A-18C on a day AWI training mission to the local op area. While in the op area, the aircrew experiences engine problems (launch from field or CV as necessary for training).

EVALUATOR:
- *Review the CRM skills and grading criteria.*
- *Brief the aircrew on the scenario.*
- *Evaluate CRM behaviors throughout the evaluation.*
- *Play the role of wingman, ATC, and base as required.*
- *Introduce additional problems and/or distractions as required.*

BRIEFING ITEMS:
- *Scenario*
- *Takeoff data for standard configuration*
- *Weather is 800 OVC, 1-½ nm, wind 210/05 kts, altimeter 29.92, 59° (adjust weather at departure field and diverts as necessary to accomplish training)*
- *Emergencies, aircrew coordination*
- *Diverts*
- *Bingo profiles*
- *Evaluator will play the role of ATC, Lead, and Base as necessary.*

INSTRUCTIONAL TECHNIQUES:
As the evaluator, interject additional problems and/or distractions to test the aircrew's CRM skills. Some examples of what you may use include, but is not all-inclusive:

- *As the aircrew is returning to base or a divert, simulate the role of ATC and direct them to hold. Does the aircrew display effective SA and recognize that holding may not be a good option due to their emergency and/or fuel state? Does the aircrew display effective AS or CM and tell ATC they are unable to accept holding?*
- *Simulate an ATIS report with the PAR down and weather below TACAN minimums. Does the aircrew recognize this (SA) and develop a new game plan (DM/AF)?*
- *ATC advises them the field they are going to is closed for weather, aircraft on the runway, etc.*

SCENARIO EMERGENCIES

PILOT:						DATE:
						EVALUATOR:
START EMERGENCIES (PICK 2)	AA	A	BA	U	NA	COMMENTS
RATS / LATS						
HOT START						
HUNG START						
ENGINE FIRE						
APU FIRE						
GROUND/TAKEOFF (PICK 2)	AA	A	BA	U	NA	COMMENTS
LOSS OF DIRECTIONAL CONTROL ON GROUND						
BLOWN TIRE ON TAKEOFF						
ABORT						
LOSS OF THRUST ON TAKEOFF						
EMERGENCY CATAPULT FLYAWAY						
EMERGENCY TAKEOFF						
OTHER:						
INFLIGHT EMERGENCIES (PICK 3)	AA	A	BA	U	NA	COMMENTS
L/R AMAD PR CAUTION						
L/R BLEED WARNING (SINGLE OR DUAL)						
L/R ENG FIRE						
RUNAWAY ENG / STUCK THROTTLE						
ENGINE FAILURE						
ENG STALL						
RATS / LATS						
LANDING (PICK 2)	AA	A	BA	U	NA	COMMENTS
SINGLE ENGINE FAILURE IN LANDING CONFIGURATION						
SINGLE ENGINE LANDING						
LANDING GEAR UNSAFE / FAILS TO EXTEND						
LANDING WITH AFT CG						
AUTO FLAP LANDING						
FIELD ARRESTMENT						
OTHER:						

Start Emergencies:

- *These, such as L/R ATS Caution or Hot Start should be loaded prior to the Aircrew starting up. Pilot should not start the L Engine until the L DDI is on line. Depending on the temperature achieved during a Hot Start, this could be a good lead in for an Engine Fire on Start.*

Taxi/Takeoff Emergencies:

- *Brake Failure during taxi has to be input early in order for the simulator to make it take effect.*
- ***(9,10)** Discuss abort parameters for runway in use.*
- *Blown Tire on T/O at 60kts can lead to Trailing Edge Flaps Off caution or corresponding engine failure if aircrew does not abort. Tower should inform aircrew of blown tire as soon as it happens.*

Area Emergencies:

- *Dual Generator failure in the OFT simulator will always produce a GEN TIE Caution after approximately 90 seconds. Brief aircrew that this is not necessarily the case in the actual aircraft. Furthermore, it is not possible to simulate a GEN TIE failure as a single emergency in the OFT. If you wish to simulate a GEN TIE failure, reference NATOPS on which items to fail.*
- *Engine Stall should be performed at 300kts with the aircraft trimmed up. Once the Engine stall is input have aircrew accelerate to 400kts. Pilot will need to use MIL or AB depending on the way the malfunction is set up at the control panel. Only indication of engine stall may be a popping noise.*
- *Engine Fire (Single) can be removed after the immediate action procedures are completed, allowing the aircrew to perform crossbleed procedures (along with cycling the bleed air knob) to get the now-good engine back online.*
- *Flaps off caution should be a leading edge flaps failed with less than 10 deg extension. If the evaluator chooses to leave the Flaps off caution in for the duration of the RTB / Divert, use the transit time to talk the aircrew through what systems are inoperative (autopilot) as well as those that perform differently with the LEFs locked out (ATC, TEFs). Section V-14-41 of the NATOPS has amplifying information about the LEF Flaps off caution. If aircrew previously lowered the gear and TEFs are now driven down to 30, Bingo descent point will be somewhere between the half-flaps descent point and the clean descent point, requiring a steeper approach.*

RTB / Approach Emergencies: *To force Bingo profile to divert, put weather just below visibility minimums after approach is commenced. During approach, have departure advise aircrew divert is VFR. During visual straight-in to divert, aircrew can be given one additional emergency. (Once aircrew have determined the correct bingo profile and established in climb, slew the aircrew to the vicinity of divert airfield if short of time.)*

- *L/R Engine Failure in Landing Configuration.*
- *Single Main Gear fails to extend: have one main gear fail to extend with 2000lbs remaining. Aircrew will have to emergency extend the gear.*
- *Anti-Skid Failure on Short Final: it will require the aircrew to perform some remedial action. Aircrew should either decide to take it around for a short field arrestment, or deselect anti-skid and use normal brakes.*
- *HYD 2A/B Failure on final should be displayed as if the RLS system is kicking in, i.e. cycle 2A off, 2B on, both on. If aircrew does not secure the engine and setup for a single engine landing, initiate RAMD Fire.*
- *Landing Gear Unsafe/Planning Link Failure at touchdown: This emergency can also include loss of brakes, demonstrating how controllable the aircraft is at higher speeds, becoming less controllable as it decelerates.*

The Standard	***Below-Average/ Unsatisfactory Characteristics***
• ***SITUATIONAL AWARENESS (SA)***	
Demonstrate ongoing awareness of mission status and identify problems/potential problems and the need for action. *Maintain a proper scan pattern* *Monitor for trends, changes, and abnormal conditions, and share this information with other crewmembers* *Detect deviations from normal procedures and SOPs as well as task overload, underload, or tunnel vision of crewmembers* *Identify potential impact of problems to mission completion*	*Incomplete, sporadic, unaware, off track, or misjudged*
Clarify the validity of discrepant information (e.g., conflicting, ambiguous, incomplete).	*"Not my job," or unconcerned*
• ***ASSERTIVENESS (AS)***	
• *Ask questions when uncertain about decisions/procedures or objectives.*	*Unconcerned, or too timid*
State opinions, advocate course of action, and make suggestions regarding decisions/ procedures. *Request information when needed; confront ambiguities and conflicts* *Make positive calls when safety of flight is threatened; declare an emergency when needed* *Offer/recommend alternative courses of action and/or mission alternatives; provide information without being asked*	*Apathetic, or intimidated*
• ***DECISION MAKING (DM)***	
Identify that a decision must be made based on situational assessment.	*Ignore the problem*
Gather, crosscheck, and evaluate information sources (other crewmembers, ATC, metro, headquarters, support, instruments/equipment) prior to making a decision; filter out erroneous/irrelevant information.	*Jump to conclusions; be misled by poor information*

The Standard	Below-Average/ Unsatisfactory Characteristics
Generate and discuss alternatives using relevant data; provide rationale for all decision alternatives.	Bias, "My way or else," close-mindedness
Anticipate the consequences of a decision alternative.	Not thinking things through
Choose the best alternative, communicate internally and externally, and evaluate its effectiveness.	Indecisiveness, rigidity, faulty communications
• **COMMUNICATION (CM)**	
Provide appropriate response to a communication (e.g., acknowledge, repeat, request clarification).	Ignore, respond to the feeling, incorrect response
Use standard terminology and non-verbal signals with accurate, timely, and concise information.	Inefficient, vague, off the subject
• **LEADERSHIP (LD)**	
Direct and coordinate the activities of other crewmembers; delegate tasks to other crewmembers.	Ignore others, disregard
Monitor other crewmembers to see if they understand what is expected of them; maintain constructive atmosphere.	Discount others, selfishness, hostility
Encourage crewmember participation; provide constructive feedback to other crewmembers.	Disregard, prejudice
• **ADAPTABILITY/FLEXIBILITY (AF)**	
Alter plans and behaviors to meet situation demands; continue to function during system failures/malfunctions/changed mission.	Inflexible, sudden loss of judgment, tunnel vision
Step in and help other crewmembers; be receptive to input from other crewmembers. Adapt to personality styles of other crewmembers Accommodate and cope with stress of other crewmembers and self	Lack of empathy, rigid, prejudiced
• **MISSION ANALYSIS (MA)**	
Conduct thorough pre-mission planning and briefings, assembling mission information, estimating mission timing, and setting priorities based on mission requirements.	Haphazard, incomplete, mistakes, inattentive
Devise contingency plans for unplanned events.	Unprepared, no backup plans
Report ongoing challenges to the mission plan; offer alternatives.	Apathetic, no backup plans, intimidated
Conduct thorough post-mission debriefs, effectively using feedback techniques.	Incomplete, errors, omissions

NATOPS EVALUATION FORM

Name:
Date of Eval:
Duration:
Buno#:

Mission Planning	***Q***	***CQ***	***U***	***Emergency/Malfunction Procedures (*)***	***Q***	***CQ***	***U***
Flight Planning				*Emergency/Malfunction Procedures*			
Briefing				***Post Flight Procedures***			
Personal Flt Equipment (*)				*Taxi*			
Pre-Flight Line Ops				*Shutdown*			
Aircraft Acceptance				*Inspection and Records*			
Start				*Flight Debriefing*			
Before Taxiing Procedures				***Mission Evaluation***			
Taxi				*Mission Evaluation*			
Taxi				***Crew Resource Management Skills (*)***			
Takeoff (*)				*Decision Making*			
ATC Clearance				*Assertiveness*			
Takeoff				*Mission Analysis*			
Climb/Cruise				*Communication*			
Departure				*Leadership*			
Climb and Level-Off				*Adaptability/Flexibility*			
Procedures Enroute				*Situational Awareness*			
Approach/Landing (*)				***Other***			
TACAN, GCA, ACLS, RADAR, ADF.							
Landing							
Communications							
R/T Procedures							
Visual Signals				***Grading:*** *Qualified=*	***Q***		
IFF Procedures				*Conditionally Qualified=*		***CQ***	
				Unqualified=			***U***

(*) Critical Area

Overall Evaluation/Comments/Remarks:

Name, Rank of Evaluator: _____

Ref: NATOPS Publication A1-F18AC-NFM-000, Chapter 29

ANNUAL NATOPS INSTRUMENT/CRM EVALUATION SCENARIO

INTRODUCTION:

The primary purpose of this instrument evaluation is to evaluate the Airman's ability to conduct a flight using proper instrument procedures and to renew the Airman's awareness of the Instrument Flight Rules (IFR) environment and the tools available to him. The secondary objective is to integrate the requirement for annual Crew Resource Management (CRM) training in the annual Instrument Rating Evaluation and test the Airman's ability to apply CRM skills during typical simulator or flight mission.

SCENARIO:

WTI is currently in progress at MCAS Yuma. You have been tasked by the MAG Commanding Officer to ferry a single F/A-18 to MCAS Yuma in support of WTI. The MAG Commanding Officer has made it clear that the jet needs to be delivered to make the next day's flight schedule.

EVALUATOR:

- *Review the CRM skills and grading criteria.*
- *Brief the aircrew on the scenario.*
- *Evaluate CRM behaviors throughout the evaluation.*
- *Play the role of ATC, and base as required.*
- *Introduce additional problems and/or distractions as required.*

BRIEFING ITEMS:

- *Ensure that the evaluation pilot/aircrew has current publications*
- *Mission: Ferry aircraft to MCAS Yuma in support of WTI*
- *Configuration: Single centerline external fuel tank and two pylons*
- *WX: KNKX – 005 OVC 2, tops at 40K, KNJK – 007 OVC 2, KNYL – 005 OVC 3, tops at 40K*
- *NOTAMS: KNYL PAR RWY 3L/21R down*

MIRAMAR ATIS:

- *MCAS Miramar ATIS information Alpha, time 2200Z, Miramar landing and departing RWY 24, current sky condition 500 overcast, 2000 broken, 8000 broken, 20000 broken, visibility 2 miles and light rain, winds 330 at 20G30 kts, temperature 12, dew point 13, altimeter 29.80, precision approaches to RWY24 in use. Advise on initial contact you have information Alpha.*

CLEARANCE:

- *You are cleared to MCAS Yuma via I-13, climb and maintain one one zero, expect FL230 ten minutes after departure, departure frequency 363.1, squawk 2250.*

NOTE

I-13 (FL230 – KNKX - JLI3 – IPL – IPL 07422 – RADOS – KNYL)

TAKEOFF / DEPARTURE:

- *JLI 3 IPL*
- *Clear the aircraft direct GWIRE*

ROUTE:

- *The aircrew should check MCAS Yuma ATIS and get the following:*
  MCAS Yuma ATIS information Tango, time 2230Z, Yuma landing and departing RWY 03, current sky condition 500 overcast, 2000 broken, 8000 broken, 20000 broken, visibility 2 miles and light rain, winds 350 at 10G20 kts, temperature 12, dew point 13, altimeter 29.80, precision approaches not available, HI-TCN RWY 3 approach available. Advise on initial contact you have information Tango.
- *The aircrew should ask for the HI-TCN RWY 3L KNYL*
- *MCAS Miramar has degraded to 100 and ½.*
- *Input intermittent NAV VEL and VVEL caution.*

APPROACH 1:

- *Ensure that the aircrew makes all altitudes*
- *Set the weather in the simulator to 100 overcast and ½-mile visibility.*
- *Give the updated weather to the aircrew during the approach as 300 overcast and 1-mile visibility (This is below minimums, but they may continue the approach since they have already commenced.).*
- *Continue to a missed approach.*

APPROACH 2:

- *MCAS Yuma now reports the PAR to RWY 3L is operable.*
- *Offer a PAR to the aircrew.*
- *Induce an Inertial Navigation Systems (INS) failure, the aircrew should request a "NO GYRO PAR to RWY 3L or Input a Heads-Up Display (HUD) failure. Aircrew should be flying off of the standby instruments.*

- *Full stop, mission complete.*

NOTES:

- *N32 31 46 W114 45 14*
- *KNYL 10nm final RWY 3L*

Requirements

All instrument publications are required. Evaluee must, given the assigned mission and forecasted weather, prepare a DD-175/1801 and Jet Log (a PFPS/JMPS planned route is acceptable) to include takeoff data.

_____

_____

Departure

Note: For each phase of flight, italicized text is a quote for the evaluator to read over the ICS. Each bullet of text will indicate what role the evaluator is to play.
{ Start the evaluee with aircraft running in position and hold on clearance frequency.}
{ Clearance: _____ 11, advise when ready to copy.}
{ Evaluee responds.}
{ Clearance: _____ 11, is cleared to Marine Yuma via planned flight route, climb and maintain two three thousand, departure frequency 269.1, squawk 3200.}
{ Evaluee responds.}
{ Clearance: _____ 11, readback correct, have a safe flight.}
{ Evaluee switches tower, calls for takeoff.}
{ Tower: _____ 11, is cleared for takeoff, switch to departure.}
{ Evaluee responds, switches frequency for deck check.}
{ Departure: _____ 11, SoCal, report airborne.}
{ Evaluee responds, executes takeoff, calls airborne.}
{ Departure: _____ 11, climb and maintain 7,000 feet.}
{ Evaluee responds, executes.}
Note: The evaluee could ask LA Center for his final assigned altitude.
{ Departure: _____ 11, climb and maintain 13,000 fee, passing 10,000 feet switch LA Center, 346.4. Ensure compliance with SID, and acceptable deviations in airspeed and altitude.}
□_Comfort Time_____
□_At least 2 unusual attitudes (Nose High / Nose Low)_____
□_Once complete with evaluee unusual attitudes, direct to RTB (slew if required for time)_____
□_Drop fuel as appropriate to approximate evaluee's briefed BINGO numbers (take slew into account)___

Enroute

{ Evaluee checks in. Slew aircrew position as appropriate as desired.}
{ Center: _____ 11, is cleared present position direct Thermal, rest of route unchanged. Climb and maintain FL230.}
{ Evaluee responds.}
{ Center: (After evaluee arrives at Blythe) _____ 11, is cleared to the RADOS Initial Approach Fix (IAF), contact Yuma Approach 124.7 0r 374.8.}
{ Evaluee responds, switches to approach.}

_____

_____

YUMA APPROACH

{ ATIS: MCAS Yuma ATIS information Juliet, time 2400Z, Ceiling 400, visibility 1 1/4 –mile in rain, winds 030 at *10 knots, temperature 75, dew point 45, altimeter 29.92, departures and instrument approaches to runway 3L.}*
{_____ 11, upon arriving at RADOS enter holding for one turn at FL230.}
{ Evaluee responds.}
{ Approach (after evaluee complies with holding instructions) Upon arrival at RADOS, _____ 11 is cleared for the HI-TCN RWY 3L approach. Report leaving FL230.}

{ Evaluee responds.}

**** Once approach has commenced, drop weather to PAR minimums with no advisory to the Evaluee. Evaluee should descend to MDA, not break out, and execute published missed approach procedures.***

****NOTE****

Evaluee should recognize that the weather is at minimums and consider fuel and weather on the return to MCAS Miramar. Approach should be flown to MDA. If evaluee asks for the weather at MCAS Miramar, it is 200 ¾-mile visibility and forecast to remain so. Have aircrew decide to set appropriate BINGO to divert to NAS El Centro if missed approach at MCAS Miramar. BINGO for 26,000, 50DI, -402 engines.

AIRFIELD FUEL REQUIRED	CLIMB A/S VECTOR	OPT ALT DESCENT	CRUISE KTS	TACAN	APP CON/TWR	RUNWAY A-GEAR
EL CENTRO (WYPT 3) 2700 LBS	490/.83MACH 101 DEG 117NM	40,000 64NM	253	NJK 47X N32-49.91' W115-40.87'	NONE/ 360.2	9,5000' E-28

{ PAR (after evaluee satisfies approach requirement). Slew to Miramar for PARs with weather at 300/1. Have aircrew request "Multiple GSA's." One should be a full-up system. At evaluator's discretion one should be with some level of degraded instrumentation (Up to "Steam Gauge" approach).}

INSTRUCTIONAL TECHNIQUES:

As the Evaluator, interject additional problems and/or distractions to test the aircrew's CRM skills. Some examples of what you may use follows, but is not all inclusive:

- *At the conclusion of the SID, or at the first ATC frequency switch, simulate an aircraft radio failure. Monitor crew coordination/CRM and knowledge of correct instrument procedures*
- *En route to the IAF, fail the INS and have the aircrew perform point-to-point navigation to the IAF (Restore INS when aircrew has demonstrated point-to-point proficiency.).*
- *Simulate ATC loss of radar contact and monitor aircrew knowledge of position reporting requirements en route to ho9me base.*
- *As the aircrew is returning to home base, simulate the role of ATC and direct them to hold. Does the aircrew display effective Mission Analysis (MA) and Situational Awareness (SA), and recognize that holding may not be a good option due to their emergency and/or fuel state? Does the aircrew display effective Assertiveness (AS) or Communication (CM) and tell ATC they are unable to accept holding?*
- *Simulate an ATIS, and report the PAR down and weather below TACAN minimums. Does the aircrew recognize this (SA) and/or develop a new game plan (Decision Making (DM) / Adaptability-Flexibility (AF))*
- *Monitor CRM skills en route to the divert airfield for additional PAR/ILS approaches.*

The Standard	Below-Average/ Unsatisfactory Characteristics
• **SITUATIONAL AWARENESS (SA)**	
Demonstrate ongoing awareness of mission status and identify problems/potential problems and the need for action. Maintain a proper scan pattern Monitor for trends, changes, and abnormal conditions, and share this information with other crewmembers Detect deviations from normal procedures and SOPs as well as task overload, underload, or tunnel vision of crewmembers Identify potential impact of problems to mission completion	Incomplete, sporadic, unaware, off track, or misjudged
Clarify the validity of discrepant information (e.g., conflicting, ambiguous, incomplete).	"Not my job," or unconcerned
• **ASSERTIVENESS (AS)**	
• Ask questions when uncertain about decisions/procedures or objectives.	Unconcerned, or too timid
State opinions, advocate course of action, and make suggestions regarding decisions/ procedures. Request information when needed; confront ambiguities and conflicts Make positive calls when safety of flight is threatened; declare an emergency when needed Offer/recommend alternative courses of action and/or mission alternatives; provide information without being asked	Apathetic, or intimidated
• **DECISION MAKING (DM)**	
Identify that a decision must be made based on situational assessment.	Ignore the problem
Gather, crosscheck, and evaluate information sources (other crewmembers, ATC, metro, headquarters, support, instruments/equipment) prior to making a decision; filter out erroneous/irrelevant information.	Jump to conclusions; be misled by poor information
Generate and discuss alternatives using relevant data; provide rationale for all decision alternatives.	Bias, "My way or else," close-mindedness
Anticipate the consequences of a decision alternative.	Not thinking things through
Choose the best alternative, communicate internally and externally, and evaluate its effectiveness.	Indecisiveness, rigidity, faulty communications
• **COMMUNICATION (CM)**	
Provide appropriate response to a communication (e.g., acknowledge, repeat, and request clarification).	Ignore, respond to the feeling, incorrect response
Use standard terminology and non-verbal signals with accurate, timely, and concise information.	Inefficient, vague, off the subject
• **LEADERSHIP (LD)**	
Direct and coordinate the activities of other crewmembers; delegate tasks to other crewmembers.	Ignore others, disregard
Monitor other crewmembers to see if they understand what is expected of them; maintain constructive atmosphere.	Discount others, selfishness, hostility
Encourage crewmember participation; provide constructive feedback to other crewmembers.	Disregard, prejudice
• **ADAPTABILITY/FLEXIBILITY (AF)**	
Alter plans and behaviors to meet situation demands; continue to function during system failures/malfunctions/changed mission.	Inflexible, sudden loss of judgment, tunnel vision
Step in and help other crewmembers; be receptive to input from other crewmembers. Adapt to personality styles of other crewmembers Accommodate and cope with stress of other crewmembers and self	Lack of empathy, rigid, prejudiced
• **MISSION ANALYSIS (MA)**	
Conduct thorough pre-mission planning and briefings, assembling mission information, estimating mission timing, and setting priorities based on mission requirements.	Haphazard, incomplete, mistakes, inattentive
Devise contingency plans for unplanned events.	Unprepared, no backup plans
Report ongoing challenges to the mission plan; offer alternatives.	Apathetic, no backup plans, intimidated
Conduct thorough post-mission debriefs, effectively using feedback techniques.	Incomplete, errors, omissions

NATOPS INSTRUMENT EVALUATION FORM

Name:
Date of Eval:
Duration:
Buno#:

Mission Planning	***Q***	***CQ***	***U***
Flight Planning			
Briefing			
Personal Flt Equipment			
Pre-Flight Line Ops			
Aircraft Acceptance			
Start			
Before Taxiing Procedures			
Taxi/Takeoff			
Taxi			
ATC Clearance			
Instrument Takeoff			
Climb/Cruise			
Departure			
Climb and Level-Off			
Procedures Enroute			
Communications			
R/T Procedures			
Visual Signals			
FF Procedures			
Basic Instruments			
*Climbing, descending, and timed turns**			
*Steep Turns**			
*Recovery from unusual attitudes**			
Positioning aircraft on predetermined VOR) / TACAN (Pt-to-Pt)			
*Partial Panel Airwork**			
Approach/Landing			
ADF / MDF			
UHF / ADF			
TACAN/VOR			
PAR/ASR			
ACLS			
Radar			
Landing			

Instrument Flight	***Q***	***CQ***	***U***
Airways Flight: The Pilot shall be required to takeoff and proceed to a destination in accordance with an ATC clearance and execute an appropriate published instrument approach, utilizing the available and pertinent navigation facilities. If weather and other conditions permit, the pilot shall be required to execute approaches (including ILS/radar or GPS) and missed approaches as applicable, utilizing as many of the existing navigation aids as practicable. The use of VOR/TACAN shall be emphasized when feasible.			
Demonstrated thorough working knowledge of the operation and use of all installed communications and navigation equipment			
Instrument Flight Emergencies			
Engine Failure			
Instrument Failure			
Communications Failure			
Navigation Equipment Failure			
Emergency/Malfunction Procedures			
Emergency/Malfunction Procedures			
Taxi			
Post Flight Procedures			
Shutdown			
Inspection and Records			
Mission Evaluation			
Mission Evaluation/Debrief			
Crew Resource Management Skills			
Decision Making			
Assertiveness			
Mission Analysis			
Communication			
Leadership			
Adaptability/Flexibility			
Situational Awareness			
Other			
Grading: *Qualified=*	***Q***		
Conditionally Qualified=		***CQ***	
Unqualified=			***U***

(*) Asterisked items above are not required when the evaluation is conducted under actual conditions.
All areas on the instrument flight event evaluation are critical. An unsatisfactory grade in any area shall result in an unsatisfactory grade for the evaluation event.

Overall Evaluation/Comments/Remarks:

Name, Rank of Evaluator: _____

Ref: NATOPS Publication A1-F18AC-NFM-000, Chapter 29

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Appendix F
Flight Leadership Standardization and Evaluation Matrix

FLIGHT LEADERSHIP STANDARDIZATION & EVALUATION MATRIX																	
FIXED WING FLIGHT & SIMULATOR EVENTS																	
	SECTION LEADER			DIVISION LEADER			Flight Lead/Msn Cmdr/AMC			STRATRAC		TACRAC		OTHER REQUIREMENTS		
T/M/S	FLIGHTS	SIMULAOTRS	PREREQUISITES	FLIGHTS	SIMULAOTRS	PREREQUISITES	FLIGHTS	SIMULAOTRS	PREREQUISITES	FLIGHTS	PREREQUISITES	FLIGHTS	PREREQUISITES	FLSE SQUADRON	2000 & 3000 LEVEL COMPLETE	FLSE MODEL MANAGER
KC-130J	2	0*	>100 hrs TPC 2 flts as TPC wingman	2	0*	>200 hrs as TPC, 2 flts SL				2	SL	2	DL	2	N	1ST MAW
KC-130T	2	0*	>100 hrs TPC 2 flts as TPC wingman	2	0*	>200 hrs as TPC, 2 flts SL				2	SL	2	DL	2	Y	4TH MAW
EA-6B	6	0*	>500 hrs total, >250 hrs EA-6B (150 hrs EA-6B if Jet exp)	3	0*	>750 hrs total, >450 hrs EA-6B (250 hrs EA-6B if prior jet exp), 3 flts as SL	14	0*	>400 EA-6B hrs 3 flts as SL					3	N	2ND MAW
AV-8B	6	2	>400 hours total >200 AV-8B hrs	4	0*	>600 hours total >400 AV-8B hrs, 3 flts as SL	2	0*	>500 AV-8B hrs, 3 flts as DL					2	Y	3RD MAW
FA-18	10	2	>400 hours total >200 FA-18 hrs	5	0*	>600 hours total >400 FA-18 hrs, 3 flts as SL	3	0*	>500 F/A-18 hrs 3 flts as DL					2	N	3RD MAW

*Syllabus shall include simulator optional event codes to support network simulation.

FLIGHT LEADERSHIP STANDARDIZATION & EVALUATION MATRIX													
ROTARY WING/TILT ROTOR FLIGHT & SIMULATOR EVENTS											OTHER REQUIREMENTS		
	SECTION LEADER			DIVISION LEADER			FLIGHT LEADER / MISSION COMMANDER / AMC						
T/M/S	FLIGHTS	SIMULATOR	PREREQUISITES FLIGHTS	FLIGHTS	SIMULATOR	PREREQUISITES FLIGHTS	FLIGHTS	SIMULATOR	PREREQUISITES FLIGHTS	FLSE SQUADRON	2000/3000 COMPLETE	FLSE MODEL MANAGER
MV-22B	2	2	>50 hrs TAC 3 flts as TAC wingman	1	2	>600 hrs total, 200 hrs TR, 3 flts as SL	1	0*	>750 hrs total, 3 flts as DL	2	Y	2ND MAW
CH-53	4	0*	>50 hrs HAC 3 flts as HAC wingman	3	0*	>600 hrs total, (200 hrs RW, 50 hrs in model), 3 flts as SL	1	0*	>750 hrs total, 3 flts as DL	2	Y	2ND MAW
CH-46	7	0*	>50 hrs HAC, 3 flts as HAC wingman	4	0*	>600 hrs total, (200 hrs RW, 50 hrs in model), 3 flts as SL	1	0*	>750 hrs total, 3 flts as DL	2	Y	3RD MAR
AH-1W	3	0*	>50 hrs AHC, 3 flts as AHC wingman	3	0*	>600 hrs total, (200 hrs RW, 50 hrs in model), 3 flts as SL	1	0*	>750 hrs total, 3 flts as DL	3	Y	3RD MAW
UH-1N/Y	3	0*	>50 hrs UHC, 3 flts as UHC wingman	3	0*	>600 hrs total, (200 hrs RW, 50 hrs in model), 3 flts as	1	0*	>750 hrs total, 3 flts as DL	3	Y	3RD MAW

*Syllabus shall include simulator optional event codes to support network simulation.
Helicopter Aircraft Commander (HAC); Transport Plane Commander (TPC); Tiltrotor Aircraft Commander (TAC), Section Lead (SL), Division Lead (DL)

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

NAVMC 3500.14C
C4610

23 AUG 2011

NAVMC 3500.14C

From: Commandant of the Marine Corps
To: Distribution List

Subj: AVIATION TRAINING AND READINESS (T&R) PROGRAM MANUAL

Ref: (a) MCO 3500.14

Encl: (1) Aviation T&R Program Manual

1. Purpose. To revise policies regarding the training of Marine Corps aircrews, Unmanned Aircraft System (UAS) operators, Marine Command and Control System (MACCS) operators, Meteorological and Oceanographic (METOC) personnel, Aviation Operations Specialists (AOS), Aircraft Rescue and Fire Fighting (ARFF) specialists and Expeditionary Airfield (EAF) technicians per the reference.

2. Cancellation. NAVMC 3500.14B.

3. Scope. Significant revisions are as follows:

a. All chapters have been revised to include the addition of a new Chapter 8, Marine Sierra Hotel Aviation Readiness Program (M-SHARP).

b. Emphasis on relevancy between the Aviation T&R Program and the six functions of Marine Aviation.

c. Core Model definition revision.

d. Clarification of the role of Core Model Minimum Requirement (CMMR) in unit training.

e. Expansion of Aviation Career Progression Model (ACPM) into two phases.

f. Revision of T&R Manual template and format.

g. Chapter 7 (Aviation Training Readiness) provides policy to unit commanders on readiness reporting in the Department of Defense Readiness Reporting System - Marine Corps (DRRS-MC) and the Marine Corps Aviation Current Readiness (CR) Improvement Program.

4. Information. Recommended changes to this Manual are invited, and may be submitted via the chain of command to: Commanding General (CG), Training and Education Command (TECOM), Aviation Training Division (ATD) using standard Naval correspondence or the Automated Message Handling System plain language address: CG TECOM ATD.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

5. Reserve Applicability. This Manual is applicable to the Marine Corps Total Force.

6. Certification. Reviewed and approved this date.

R. C. FOX
By direction

DISTRIBUTION: PCN 10033193700