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From: Commandant of the Marine Corps
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Subj: CMV-22B TRAINING AND READINESS MANUAL

Ref: (a) NAVMC 3500.14D

Encl: (1) CMV-22B T&R Manual

1. Purpose. Per the reference, this Training and Readiness (T&R) Manual, contained in enclosure (1), establishes standards, regulations, and policies regarding training of CMV-22B Naval aircrew.

2. Scope. The standards, regulations and procedures established in this Manual are the result of a collaborative effort of subject matter experts from Deputy Commandant for Aviation, Director, Air Warfare, Commander, Naval Air Forces, and Training and Education Command (TECOM), Marine Air-Ground Task Force (MAGTF) Training and Education (T&E) Standards Division.

a. Chapter 1 contains fundamental T&R requirements and standards that describe and define individual capabilities necessary to establish a cadre of Naval aircrew as they transition from the C-2A to the CMV-22B.

b. Chapter 2 is based on specific goals and performance standards designed to ensure individual proficiency in selected core and core plus skills. The goal of this chapter is to develop individual training requirements to train the initial cadre of Navy Tilt-Rotor Aircraft Commanders.

c. Chapter 3 provides goals and performance standards to ensure individual proficiency in core and mission skills for CMV-22B crew chiefs.

4. Information. Commanding General (CG), TECOM, will update this T&R Manual as necessary to provide current and relevant training standards. All questions should be directed to: CG, TECOM, MAGTF T&E Standards Division (C 466), 1019 Elliot Road, Quantico, Virginia 22134.

5. Command. This Manual is applicable to the Marine Corps Total Force and Naval CMV-22B aircrew.

6. Certification. Reviewed and approved this date.

W. F. MULLEN III
By direction

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CHAPTER 1

CMV-22B UNIT READINESS REQUIREMENTS

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CHAPTER 1

MV-22B

1.0 TRAINING AND READINESS REQUIREMENTS. The goal of this Manual is to assist in Transition training of Navy C-2 Pilots and Enlisted Aircrew to the CMV-22B. The standards established in this program are validated by subject matter experts to maximize aircrew Transition training. These standards describe and define individual capabilities and requirements necessary to establish a cadre of Navy Aircrew as they transition from the C-2 to the CMV-22B.

1.1 MISSION. Establish Transition training requirements for 11 pilots and 17 Enlisted Aircrew.

1.2 TABLE OF ORGANIZATION (T/O). N/A

1.3 MISSION ESSENTIAL TASK LIST (METL). N/A

1.4 MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION. N/A

1.5 MET TO CORE/MISSION/CORE PLUS SKILL MATRIX. Depicts the relationship between the Task and each Core/Core Plus skill associated with the Task.

CMV-22B													
TASK TO CORE AND CORE PLUS SKILL MATRIX													
TASK	CORE SKILLS (2000 PHASE)											CORE PLUS SKILLS (4000 PHASE)	
	FAM	FORM	CAL	RVL	NS HLL	NS LLL	AAR	LAT	MAT	GTR	CQ	AD	AI/E
Transition Training	X	X	X	X	X	X	X	X	X	X	X	X	X

1.6 TASK OUTPUT STANDARDS. N/A

1.7 CORE MODEL MINIMUM REQUIREMENT (CMMR) TRAINING STANDARDS FOR READINESS REPORTING (DRRS-MC). N/A

1.8 CORE MODEL TRAINING STANDARD. Optimum number of Aircrew trained.

CORE MODEL TRAINING STANDARD (CMTS)		
CORE SKILLS (2000 Phase)		
SKILL	PILOTS	CREW CHIEF
FAM	11	17
FORM	11	17
CAL	11	17
RVL	11	17
NS HLL	11	17
NS LLL	11	17
AAR	11	17
LAT	11	17
MAT	11	17
GTR	11	17
CQ	11	17
CORE PLUS SKILLS (4000 Phase)		
CORE PLUS SKILL	PILOTS	CREW CHIEF
AD	11	17
AI/E	11	17

1.9 DESIGNATIONS

DESIGNATIONS (5000 & 6000 PHASE)		
DESIGNATION	**PILOTS**	**CREW CHIEF**
NAVY TILTROTOR AIRCRAFT COMMANDER (NTAC)	11	-
FUNCTIONAL CHECK PILOT (FCP)	11	
CREW CHIEF (CC)	-	17
BASIC INSTRUCTOR PILOT (BIP)	11	-
BASIC INSTRUCTOR CREW CHIEF (BICC)	-	17
NATOPS INSTRUCTOR (NI)	4	3
ASSISTANT NATOPS INSTRUCTOR (ANI)	-	-
INSTRUMENT EVALUATOR (INST EVAL)	-	-
AIR-TO-AIR REFUELING INSTRUCTOR (AARI)	4	-
NIGHT SYSTEMS INSTRUCTOR (NSI)	-	-
LOW ALTITUDE TACTICS INSTRUCTOR (LATI)	-	-
CREW RESOURCE MANAGEMENT FACILITATOR (CRMF)	4	3
CREW RESOURCE MANAGEMENT INSTRUCTOR (CRMI)	-	-

1.10 ABBREVIATIONS

ABBREVIATIONS	
CORE SKILLS (2000 Phase)	
FAM	Familiarization / Instrument
CAL	Confined Area Landing
FORM	Formation
RVL	Reduced Visibility Landing
NS HLL	Night Systems High Light Level
NS LLL	Night Systems Low Light Level
AAR	Air-to-Air Refueling
LAT	Low Altitude Tactics
MAT	Mountain Area Training
GTR	Ground Threat Reaction
CQ	Carrier Qualification
CORE PLUS SKILLS (4000 Phase)	
AD	Air Delivery
AI/E	Alternate Insertion/Extraction
INSTRUCTOR TRAINING (5000 Phase)	
BIP	Basic Instructor Pilot
BICC	Basic Instructor Crew Chief
NI	NATOPS Instructor/Evaluator
ANI	Assistant NATOPS Instructor/Evaluator
INST EVAL	Instrument Evaluator
AARI	Air-to-Air Refueling Instructor
DWSI	Defensive Weapon System Instructor
LATI	Low Altitude Tactics Instructor
CRMF	Crew Resource Management Facilitator
CRMI	Crew Resource Management Instructor
NSI	Night Systems Instructor
NSFI	Night Systems FAM Instructor
REQUIREMENTS, QUALIFICATIONS, CERTIFICATIONS, AND DESIGNATIONS (RCQD) (6000 Phase)	
FCP	Functional Check Pilot

CHAPTER 2

CMV-22 PILOT/NAVY

TABLE OF CONTENTS

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CHAPTER 2

CMV-22B PILOT

2.0 PILOT SYLLABUS T&R REQUIREMENTS. This T&R Syllabus is based on specific goals and performance standards designed to ensure individual proficiency in selected Core and Core Plus Skills. The goal of this chapter is to develop individual training requirements to train the initial cadre of Navy Tilt-Rotor Aircraft Commanders (NTAC).

2.1 TRAINING PROGRESSION MODEL. This model is not required for the CMV-22B transition.

2.2 PROGRAMS OF INSTRUCTION. A Program of Instruction (POI) is a training track assigned to a Navy pilot based on their proficiency in a skill. All Navy pilots undergoing training are assigned to at least one POI. The following POI's represent the average POI time-to-train. All Navy pilots undergoing training are assigned to at least one POI.

PROGRAM OF INSTRUCTION (POI)		
POI	**SYMBOL**	**AVIATION FLYING**
BASIC	B	INITIAL MOS/SKILL TRAINING
REFRESHER	R	DIFDEN TO DIFOPS IN SAME T/M/S
MAINTAIN	M	ALL INDIVIDUALS WHO HAVE ATTAINED CSP//CPP BY INITIAL POI ASSIGNMENT ARE RE-ASSIGNED TO THE M POI TO MAINTAIN PROFICIENCY.

2.2.1 Basic (B). All Navy Transition pilots shall be placed in the Basic POI and shall complete all events.

WEEKS	COURSE	PERFORMING ACTIVITY
1-3	GROUND SCHOOL	VMMT-204
4-18	CORE SKILL INTRODUCTION	VMMT-204
19-52	CORE SKILL	TACTICAL SQUADRON

2.2.2 Refresher (R). Pilots will only be assigned to the Refresher POI should they be grounded for an extended period of time and need to regain proficiency in 2000 and 4000 Phase events.

2.3 ROFICIENCY AND CURRENCY. The following rules apply when updating/developing the Attain and Maintain columns in the T&R matrix tables at the end of the chapter.

2.3.1 Event Proficiency

Event proficiency is defined as successful completion of the performance standard as determined by the instructor or evaluator. Event completion is predicated upon demonstrated proficiency. Once completed, it is logged in M-SHARP by entering the appropriate event code. M-SHARP automatically updates the event proficiency date to reflect the completion date.

2.3.2 Skill Proficiency

Proficiency is a measure of achievement of a specific skill. To attain Individual Skill proficiency, an individual must be simultaneously proficient in all events for that Skill. Individuals may be attaining proficiency in some skills while maintaining proficiency in others.

2.3.3 Maintaining Skill Proficiency

Once attained, skill proficiency is maintained by executing those events which have a Proficiency Period (Maintain events). Proficiency Periods establish the maximum time between Event demonstration. Should proficiency be lost in any maintain event, for a specific skill, that skill proficiency is temporarily lost. Skill proficiency can be re-attained by again demonstrating proficiency in the Event(s) that are not proficient. For flying communities, an individual shall complete delinquent events with a proficient instructor, crewman/flight lead as delineated by the T/M/S Syllabus Sponsor (see Chapter 3 of the Program Manual on specific instructor requirements for Low Altitude Flight, Night Systems, ACM, DM, DACM, DCM, FAC (A)).

2.3.4 Loss of Individual Skill Proficiency

Should an individual lose proficiency in all maintain events in a skill, the individual will be assigned to the Refresher POI for the skill. To regain skill proficiency, the individual must demonstrate proficiency in all R-coded events for the skill.

2.3.5 Loss of Unit Skill Proficiency

If an entire unit loses proficiency in an Event, unit instructors shall regain proficiency by completing the Event with an instructor from a like unit. If not feasible, the instructor shall regain proficiency by completing the Event with another instructor. For flying communities, if a unit has only one instructor and cannot complete the Event with an instructor from another unit, the instructor shall regain proficiency with another aircraft commander or as designated by the commanding officer.

2.3.6 Proficiency Status

Proficiency is a "Yes/No" status by skill assigned to an individual. When an individual attains and maintains Core Skill Proficiency (CSP), or Core Plus Skill Proficiency (CPSP), the individual may count towards the CMTS.

2.3.7 Skill Currency

Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill and applies to all MOS's that must comply with NATOPS and CNAF requirements. It is a measure of time since the last event demanding that specific skill. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for aircrew individual type mission profiles can be found in Chapter 3 of the Program Manual.

2.4 REQUIREMENTS, QUALIFICATIONS, AND DESIGNATION TABLES

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 Aircrew Performance Records per Chapter 2 of the Program Manual. 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.

Error! Reference source not found. below delineate T&R events required to be completed to achieve initial 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. Qualification and designation letters signed by the commanding officer shall be placed in individual Aircrew Performance Records (APR). Regaining a qualification requires completing all R-coded syllabus events associated with that qualification.

INDIVIDUAL QUALIFICATION AND DESIGNATION REQUIREMENTS	
QUALIFICATION	**EVENTS**
NATOPS	6010, 6011, 6012, 6030
INSTRUMENT	6040, 6041, 6042, 6060
NSQ HLL	2330, 2331, 2340, 2341
NSQ LLL	NSQ HLL, 2370, 2371, 2380, 2381, 2382, 2383
LAT	2610,2611,2612,2613,2620,2630,2640
CQ	2930, 2931, 2940, 2941, 2942, 2943
DESIGNATION	EVENTS
T2P	CORE SKILL INTRODUCTION PHASE. COMPLETE, 1840
NTAC	T2P, 6130, 6131, 6132
FCP	NTAC, 6630, 6631
BIP	NTAC, 5020, 5030, 5031
AARI	BIP, 5330, 5340
ANI	6031
NI	6032
CRMF	6090,6091
INST EVALUATOR	6061
NOTE: ALL QUALIFICATION AND DESIGNATIONS REQUIRE COMPLETION OF ALL ACADEMIC EVENTS IN STAGE. RE-QUALIFICATIONS REQUIRE COMPLETION OF ALL R-CODED EVENTS IN STAGE.	

2.5 SYLLABUS NOTES

2.5.1 Event Environmental Conditions

ENVIRONMENTAL CONDITIONS	
CODE	**DESCRIPTION**
D	SHALL BE CONDUCTED DURING DAY
N	SHALL BE CONDUCTED AT NIGHT, AIDED OR UNAIDED, AT LEAST 30 MINUTES AFTER OFFICIAL SUNSET.
(N)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, AIDED OR UNAIDED.
NS	SHALL BE CONDUCTED AT NIGHT AIDED UNDER HIGH LIGHT LEVEL OR LOW LIGHT LEVEL AT LEAST 30 MINUTES AFTER OFFICIAL SUNSET.
HLL	SHALL BE CONDUCTED AT NIGHT AIDED UNDER HIGH LIGHT LEVEL CONDITIONS.
LLL	SHALL BE CONDUCTED AT NIGHT AIDED UNDER LOW LIGHT LEVEL CONDITIONS.
(NS)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, SHALL BE AIDED UNDER HIGH LIGHT LEVEL OR LOW LIGHT LEVEL AT LEAST 30 MINUTES AFTER OFFICIAL SUNSET.
(HLL)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, SHALL BE AIDED AND UNDER HIGH LIGHT LEVEL CONDITIONS.
(LLL)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, SHALL BE AIDED AND UNDER LOW LIGHT LEVEL CONDITIONS.
N*	SHALL BE CONDUCTED AT NIGHT UNAIDED, AT LEAST 30 MINUTES AFTER OFFICIAL SUNSET
(N*)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, SHALL BE UNAIDED.
D/N*	SHALL BE CONDUCTED IN THE SIMULATOR DURING DAY AND NIGHT AIDED.

2.5.2 Device Matrix

The following nomenclature in the Table below is used to differentiate aircraft, simulator, cockpit trainer, cockpit management system part task trainer, computer based trainer, and classroom events. The aircraft is used for those events designated with an A, the flight simulator is used for those events designated with an S, the cockpit trainer is used for those events designated with a C, the cockpit management system part task trainer is used for those events designated with a CMS, and the computer based trainer is used for those events designated with a G. To provide commanding officers the maximum amount of flexibility for training, some events allow for the optional use of simulators or aircraft and cockpit trainer or simulator. Those types of events will use the designator A/S for aircraft preferred, simulator optional and S/A for simulator preferred, aircraft optional and C/S for cockpit trainer preferred, simulator optional.

Refer to NAVMC 3500.14 for guidance concerning deviations from the device requirement.

DEVICE MATRIX	
SYMBOL	**MEANING**
A	CONDUCTED IN AIRCRAFT
A/S	AIRCRAFT PREFERRED/SIMULATOR OPTIONAL
S	CONDUCTED IN SIMULATOR
S/A	SIMULATOR PREFERRED/AIRCRAFT OPTIONAL
G	GROUND/ACADEMIC TRAINING. MAY INCLUDE ADVANCED DISTRIBUTED LEARNING, LECTURES, SELF PACED.
NOTE – IF THE EVENT IS TO BE FLOWN IN THE SIMULATOR THE SIMULATOR INSTRUCTOR SHALL SET THE DESIRED ENVIRONMENTAL CONDITIONS FOR THE EVENT.	

2.5.3 Computer Based Training (G)

G lessons comprise the majority of MV-22 Ground School training. All aircrew (Replacement Aircrew (RAC), Refreshers, etc.) shall complete the MV-22 Ground School as prescribed by the FRS Commanding Officer. Completion of G lessons shall be documented in the Aircrew Performance Record (APR). Courseware shall be reviewed on an annual basis to ensure proper content, concurrency with the aircraft, procedures, and tactics.

2.5.4 Event Terms

Discuss

The IP shall discuss a system, procedure, or maneuver during the brief, in flight, or debrief.
The PUI shall demonstrate an understanding of all discussed items listed in the event description.
Demonstrate/Introduce flight events shall be discussed during the brief.
Emergencies listed in the event description are treated as discussion items during the brief and may be simulated during the flight at the option of the IP and in accordance with unit SOP. EPs for Simulator events will be treated as Demonstrate/Introduce items on the event in which they are listed and are subject to review during any subsequent event.

Demonstrate

IP performs the maneuver with accompanying description. At IP discretion, the PUI may fly the maneuver, but is not graded. Playback of recorded demonstrations may be used during simulator events.
The PUI observes the maneuver and is responsible for knowledge of the procedures during the brief.

Introduce

The IP may perform the maneuver with an accompanying description followed by the PUI flying the maneuver, or the IP may coach the PUI through the maneuver without demonstration.
The PUI shall perform the maneuver with coaching as necessary and is responsible for knowledge of the procedures prior to the flight. In general, the expectation is that the PUI will not consistently recognize errors and will frequently be outside performance standards.
Safe but limited proficiency. Requires frequent input from the instructor.

Practice

The PUI shall perform, with occasional coaching, a maneuver or procedure that has been previously introduced. The purpose is to continue to work towards attaining a specified level of performance.
Correct. Recognizes and corrects errors. Requires occasional input from the instructor.

Review

The IP observes and grades the maneuver with only minimal coaching.
The PUI is expected to perform the maneuver with minimal coaching and with only minor procedural errors. In general, the expectation is that the PUI will consistently recognize errors; however occasionally, corrections will not be timely with some excursions outside performance standards.
Correct, efficient, skillful and without hesitation. Requires minimal input from the instructor.

Evaluate

The IP observes and grades the maneuver without coaching the PUI. An airborne critique of the PUIs performance is at the option of the instructor.
The PUI is expected to perform the maneuver without coaching, with minor or no procedural errors, and at a level acceptable to warrant progress in the syllabus. The expectation is that the PUI will consistently apply timely corrections with very few and quickly corrected excursions outside performance standards.
Unusually high degree of ability. Requires no input from instructor.

Expose

The IP shall expose the PUI to the procedure or consideration during the brief, in flight or debrief. The PUI is not responsible for the knowledge of the procedure or consideration prior to the flight.

2.5.5 Training Event Performance Requirements

Purpose. To familiarize the PUI with general syllabus expectations, definitions, and the observation scale found on the Aircrew Training Forms (ATF).

General. All flights shall terminate with a comprehensive debrief with emphasis on aircrew performance and procedures or systems discussed. Instructors should use all available debriefing techniques. The culmination of the debrief shall be an ATF for initial events or those events listed with an X at the discretion of the commanding officer.

2.5.6 Levels of Learning

The table below describes how the MAWTS grading scale correlates to the numerical observations for graded events. The MAWTS scale comments are designed to evaluate a student's performance.

GRADING SCALE			
OBSERVATION	**LEVEL OF LEARNING**	**GENERAL**	**MAWTS SCALE**
5	CORRELATION (EVALUATE)	PROACTIVE. AHEAD OF THE SITUATION. REACTS CORRECTLY WITH CHANGING CONDITIONS. AND/OR CHANGING MISSION.	UNUSUALLY HIGH DEGREE OF ABILITY. REQUIRES NO INPUT FROM INSTRUCTOR.
4	APPLICATION (REVIEW)	SELF / CREW RECOGNITION OF ERRORS. CORRECT APPLICATION OF RESOURCES.	CORRECT, EFFICIENT, SKILLFUL, AND WITHOUT HESITATION. REQUIRES MINIMAL INPUTS FROM THE INSTRUCTOR.
3	UNDERSTANDING (PRACTICE)	MINOR ERRORS NOT DETECTED. CREW REDUNDANCY DIMINISHED.	CORRECT. RECOGNIZES AND CORRECTS ERRORS. REQUIRES OCCASIONAL INPUT FROM THE INSTRUCTOR.
2	ROTE (INTRODUCE)	TASK ACCOMPLISHED MECHANICALLY AND/OR WITH LIMITED SITUATIONAL AWARENESS. CREW REDUNDANCY LOST. RISK INCREASED.	SAFE BUT LIMITED PROFICIENCY. REQUIRES FREQUENT INPUT FROM THE INSTRUCTOR.
1	UNFAMILIAR	UNABLE	UNSAT – UNSAFE OR COMPLETE LACK OF ABILITY AND/OR KNOWLEDGE. REQUIRES SUBSTANTIAL INPUT FROM INSTRUCTOR FOR SAFE EXECUTION AND /OR MISSION ACCOMPLISHMENT.

Aircrew Training Forms (ATF)

Also known as syllabus evaluation forms, EATFs are required for every event completed by a pilot in one of the formal POIs, or as recommended by the Squadron Standardization Board, to include ACAD and LAB events. Events that were converted from a previous version of the T&R do not require a new ATF however, events that did not previously exist will require an ATF.

If the MAG or squadron commanding officer has waived a syllabus event, the squadron training officer shall place a waiver letter in section 3 of the APR.

Aircrew Evaluation Flights. All pilots shall have an appropriate NATOPS evaluation form completed annually upon completion of the following:

NATOPS Check (RQD-6030). A designated NATOPS Instructor/Assistant NATOPS Instructor shall evaluate RQD-6030.

Instrument Check (RQD-6060). A designated Instrument Evaluator who is a member of the Instrument Flight Board shall evaluate RQD-6060.

Instructor Requirements

For all simulator and flight events the instructor requirement is noted at the right margin of each event.

If the event header does not contain an instructor requirement then the minimum requirement is an aircraft commander who is complete with the Basic Instructor Pilot syllabus, proficient in the given event, fulfilling the role of aircraft commander.

For Core Skill Introduction simulator events, designated Contract Instructors (CI) may fulfill the role of instructor. Additionally, when designated by the FRS Commanding Officer, a CI may instruct LAT and Night Systems simulator events.

Certification as a CI may be withdrawn by the FRS Commanding Officer.

Basic networked events require a tactical network operator.

During events designated as TEN (Tactical Environment Network) or TEN+ (Tactical Environment Network with additional networked simulator), the simulator(s) shall be configured (fuel, internal load, ordnance, etc.) in accordance with the flight brief and the mission scenario.

Crew Requirements/Position Designations

Crew requirements are listed for each stage of training.

This Manual requires the use of an aerial observer for all external flights, NVD flights, Ground Threat Reaction (GTR), and all DCM flights.

However, the squadron commanding officer may, at his or her discretion, employ an aerial observer on any flight event.

The requirement for an aerial observer is intended to provide a second crewmember in the aircraft cabin section. A designated aerial observer or crew chief may fill this requirement.

On NVD training flights a Crew Chief or Aerial Observer Under Instruction (CCUI/AOUI) may fill this requirement when flying with a Crew Chief Night Systems Instructor (CCNSI).

Event Completion

Event completion is predicated upon demonstrated proficiency.

When an individual successfully accomplishes the requirements of an event per the performance standards, the individual should log completion of the event (enter the appropriate T&R code) in M-SHARP.

When the event is entered into M-SHARP, the individual's proficiency date for that event is automatically updated to reflect the date the event was completed.

When supervising individual events, unit instructors/leaders shall ensure that trainees demonstrate proficiency per T&R standards prior to logging successful event completion.

Evaluating individual proficiency in an event normally requires both objective and subjective assessment.

If, in the instructor's opinion, the PUI does not adequately perform a required event, then all or parts of the sortie shall be repeated until adequate performance is demonstrated.

If an individual fails to accomplish the requirements of an event per the performance standards, the individual should not log that event and the proficiency status for that event remains unchanged.

Times indicated for each event are for planning purposes only.

Weight & Balance Form F and Load Computation. Unless otherwise annotated, the Joint Mission Planning System (JMPS) will be the primary method used to complete the preflight forms, with the Naval WT and Balance software program and the NATOPS (paper products) as the alternates in accordance with certification and flight clearance.

Joint Mission Planning System (JMPS). All tactical and non-tactical applications of the JMPS will be discussed in detail for each event.

Crew Resource Management (CRM). Aircrews shall brief techniques of CRM for all flights and/or events.

Operational Risk Management (ORM). Aircrews shall brief those factors that affect risk mitigation decisions for every flight or mission.

2.6 CORE INTRODUCTION PHASE (1000-1999)

General. The purpose of this phase is to instruct the Navy Transition Pilot in MV-22 fundamentals and introduce mission elements. All Navy Transition pilots shall be assigned to the Basic "B" Marine Corps POI and complete the syllabus at VMMT-204. Aircrew shall use the Marine Corps MV-22B T&R Chapter 2 for reference.

2.7 CORE PHASE (2000)

Purpose. To teach the PUI the enabling Core Skills required to support mission skill execution.

General

All ACAD and LAB events can be found in the MAWTS-1 Academic Support Package (ASP).
All references to ANTTP are directed to the ANTTP 3.22.3 MV-22 (unclassified) unless otherwise noted.
A BIP is the minimum requirement to instruct an initial event. Additional instructor requirements are identified on each specific event if needed.

CORE Phase Overview

CORE SKILL PHASE OVERVIEW		
STAGES	**PARAGRAPH**	**PAGE**
FAMILIARIZATION (FAM)	2.7.1	2-7
FORMATION (FORM)	2.7.2	2-8
CONFINED AREA LANDING (CAL)	2.7.3	2-10
REDUCED VISIBILITY LANDING (RVL)	2.7.4	2-12
NIGHT SYSTEMS HIGH LIGHT LEVEL (NS HLL)	2.7.5	2-14
NIGHT SYSTEMS LOW LIGHT LEVEL (NS LLL)	2.7.6	2-17
AIR TO AIR REFUELING (AAR)	2.7.7	2-20
LOW ALTITUDE TACTICS (LAT)	2.7.8	2-23
MOUNTAIN AREA TRAINING (MAT)	2.7.9	2-25
GROUND THREAT REACTION (GTR)	2.7.10	2-27
CARRIER QUALIFICATIONS (CQ)	2.7.11	2-29

2.7.1 Familiarization (FAM)

Purpose. To review aircraft flight characteristics, limitations, emergency procedures, day/night familiarization maneuvers, instrument procedures and aircraft automation.

General. The PUI must be qualified as a T2P prior to beginning this stage of training.

Crew Requirements. P/P for simulators, P/P/CC if flown in aircraft.

FAM Overview**Error! Reference source not found.**

FAMILIARIZATION (FAM) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2010	1.0	*	B		G		
ACAD-2011	1.0	*	B		G		
LAB-2020	2.0	*	B		A	2	
SFAM-2030	2.0	*	B	(N)	S	1	FFS/FTD
SFAM-2031	2.0	365	B,R,M	(N)	S	1	FFS/FTD

ACAD-2010 1.0 * B G

MV-22 SINCGARS / HAVEQUICK Lecture

Goal. The PUI will have an introductory knowledge of SINCGARS and HAVEQUICK radio waveforms and their utilization in the MV-22.

Prerequisite. T2P. Required Reading - NTRP Ch 12.

ACAD-2011 1.0 * B G

MV-22 SATCOM

Goal. The PUI will have an introductory knowledge of the SATCOM radio waveform and its utilization in the MV-22.

Prerequisite. T2P.

Required Reading - NTRP Ch 12.

LAB-2020 2.0 * B A 2

MV-22B Flight Line Radio Demo

Goal. The PUI will have an introductory knowledge of all of the functions of the ARC-210 through operating the CMS and the remote control head in an aircraft on APU or external power. Example comm demo can be found on the MAWTS-1 website and in the ACAD 2010 ASP courseware.

Prerequisite. ACAD-2010,-2011

Required Reading - NTRP Ch 12.

SFAM-2030 2.0 * B (N) S/A 1 FFS/FTD

Goal. Review familiarization maneuvers and conduct an area familiarization if required.

Requirements

Discuss

Squadron, MAG, Wing SOPs
Local course rules
Delegation of communication responsibilities
Range Regulations

Review

Familiarization maneuvers
Day HUD utilization

Performance Standards

Demonstrate the ability to utilize the ARC-210 to include HAVEQUICK, SINCGARS, and SATCOM communications.

Demonstrate proficiency in familiarization maneuvers.

Prerequisites. LAB-2020

Required Reading - Local Airfield Operations Manual, Local Range Regulations, Squadron Flight Operations Manual, ANTTP Ch 1, ASTACSOP.

SFAM-2031 2.0 365 B,R,M (N) S 1 FFS/FTD

Goal. Review instrument procedures.

Requirements

Discuss

Squadron SOP for instrument flight
Icing
ICAO flight plans and procedures
Flight plans to MTRs, tanker tracks, and ships
Approach mode automation

Review

Instrument flight procedures
Emergency procedures
Automation, Commands, & Cues

Performance Standards.

Demonstrate proficiency in instrument flight planning, instrument procedures, and local squadron instrument SOPs.

Prerequisite. LAB-2020

Required Reading - NTRP Ch 13 & 14, ANTTP Ch 1 & 9.

2.7.2 Formation (FORM)

Purpose. To introduce tactical formations and tactical formation maneuvering.

General. All maneuver descriptions are in the ANTTP.

Crew Requirements. P/P for simulators, P/P/CC/AO for aircraft events.

FORM Overview.

FORMATION (FORM) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2110	1.0	*	B		G		TACTICAL FORM
ACAD-2111	1.0	*	B		G		TRAIL FORMATION
LAB-2120	1.0	*	B		G		FORMATION WALK THROUGH
SFORM-2130	2.0	*	B	D	S	2	FFS/FTD
SFORM-2131	2.0	*	B,R,M	(NS)	S	2	FFS/FTD
FORM/NAV-2140	2.0	365	B,R,M	(NS)	A	2	MV-22

ACAD-2110 1.0 * B G

MV-22 Tactical Formation

Goal. The PUI will have an introductory knowledge of Tactical Formation Maneuvering in the MV-22.

Prerequisite. T2P.

Required Reading - ANTTP Ch 5.

ACAD-2111 1.0 * B G

MV-22 Trail Formation Flight

Goal. The PUI will have an introductory knowledge of Trail Formation Procedures in the MV-22.

Prerequisite. T2P.

Required Reading - ANTTP Ch 5.

LAB-2120 1.0 * B G

FORMATION WALK THROUGH

Goal. The PUI will have an introductory knowledge of the different MV-22 formations and tactical formation maneuvering.

Prerequisite. T2P. ACAD-2110, 2111.

Required Reading - ANTTP Ch 5.

SFORM-2130 2.0 * B D S 2 FFS/FTD

Goal. Introduce tactical formations, tactical formation maneuvering, navigation to a SYS TOT and lost contact procedures.

Requirements. Navigation route to a planned SYS TO each aircraft lead to a minimum of 1 SYS TO each leg must be a minimum of 5 checkpoints of sufficient distance to manage a system TOT. Execute tactical formation maneuvering during the navigation route.

Discuss

Formation principles.
Formation communications.
Lookout doctrine.
Inter/intra-plane coordination.
Roles and responsibilities.

Introduce

Combat spread and combat cruise.
All tactical formation maneuvers in the ANTTP (each in lead and wing).
Tactical lead changes.
IIMC break up and rendezvous.
Lost visual contact and rejoin.

Review

Cruise principles.

Performance Standards

Execute all tactical formation maneuvers IAW the ANTTP.

Demonstrate the ability to control the flight through the use of tactical formation maneuvers IAW ANTTP.

SYS TOT within 30 secs

Effective route and checkpoint planning

Fuel planning within +/- 500lbs of fuel ladder

Prerequisites. SFAM-2030, LAB-2120.

SFORM-2131 2.0 * B,R,M (NS) S 2 FFS/FTD

Goal. Introduce trail formation procedures.

Requirements. Prepare a flight plan to include a Standard Instrument Departure, Victor Route Navigation, Standard Terminal Area Arrival and Instrument approach procedures.

Discuss

CNAF M-3710.7 requirements for section IFR.
FAA JO 7110.65T requirements for section IFR.
Planning considerations.
Join up after individual departures.
Flight Director Panel utilization.
Departure, penetration, enroute, and arrival procedures.
Intra-flight communication.
Lead/wingman responsibilities and contracts.
Icing considerations.

Introduce

Section trail departure and arrival procedures in VMC and IMC.
ATC coordination (non-standard formation, radar vectors).
Enroute weather penetration.
Formation break up for individual arrivals.
Lost communications procedures.

Performance Standards.

Demonstrate proper procedural knowledge of section trail operations IAW the ANTTP.

Maintain proper trail formation positioning and execute proper procedures for all climbs/descents and routing changes.

Prerequisites. SFAM-2031.

FORM-2140 2.0 365 B,R,M (NS) A 2 MV-22

Goal. Introduce tactical formations, tactical formation maneuvering, navigation to a SYS TOT and lost contact procedures.

Requirements. Navigation route to a planned SYS TO each aircraft lead to a minimum of 1 SYS TO each leg must be a minimum of 5 checkpoints of sufficient distance to manage a system TOT. Execute tactical formation maneuvering during the navigation route.

Discuss

Tactical formation maneuvers.
Roles and responsibilities.
Turns (easy, hard, max performance) and energy management.

Introduce

Combat spread and combat cruise.
All ANTTP tactical formation maneuvers (each in lead and wing)
Tactical lead changes.
Simulated loss of visual contact with wingman with subsequent rejoin enroute and at a point.
Lost communications procedures.

Performance Standards

Execute all tactical formation maneuvers IAW the ANTTP.

Demonstrate the ability to control the flight through the use of tactical formation maneuvers IAW ANTTP.

Prerequisites. SFORM-2130, SFORM-2131.

2.7.3 Confined Area Landings (CAL)

Purpose. To develop proficiency in single and section takeoffs and landings and tactical approaches to confined areas.

General. All maneuver descriptions are in the ANTTP.

Crew Requirements. P/P for simulators, P/P/CC for aircraft events.

CAL Overview

CONFINED AREA LANDING (CAL) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2210	1.0	*	B		G		
SCAL-2230	2.0	*	B	D	S	1	FFS/FTD
SCAL-2231	2.0	365	B, R,M	D	S	2	FFS/FTD
CAL-2240	1.5	*	B	D	A	1	MV-22
CAL-2241	1.5	*	B	D	A	1	MV-22
CAL-2242	2.0	365	B,R,M	D	A	2	MV-22

ACAD-2210 1.0 * B G

Confined Area Landings

Goal. The PUI will have an introductory knowledge of the procedures for confined area landings in the MV-22.

Prerequisite. T2P.

Required Reading. ANTTP Ch 3.

SCAL-2230 2.0 * B D S FFS/FTD

Goal**.** Review single aircraft CALs. Demonstrate/introduce low and medium altitude tactical approaches and departures to a confined area.

Requirements. For planned landing zones, prepare LZ diagrams and brief the landing plan in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit grid landing points appropriate for each zone.

Discuss

Approach considerations (threat level, weather).
Landing zone considerations per the ASTACSOP and ANTTP.

Tactical approach planning JMPS considerations.
Cockpit set-up and CRM during tactical approaches.
Unplanned LZ considerations (shifting landing points, ITG, obstacles, threat)
H/V Diagram considerations

Introduce

Slope landings with respect to tail and nacelle clearance.
Low altitude tactical approaches, landings and departures to a confined area. (Minimum of 1 of each low altitude tactical approach in the ANTTP).
Medium altitude tactical approaches, landings, and departures to a confined area (minimum of 1 of each medium altitude tactical approach in the ANTTP).
CALs and departures at low power margins.
HUD Precision scan technique to land within .03nm of the intended point of landing.

Performance Standards

Demonstrate proper procedures for tactical CAL approaches IAW the ANTTP.
Maintain the proper glideslope/departure profile for obstacle clearance.
Maintain assigned landing heading within 10 degrees.
Land within 0.03 nm of the intended point of landing.

Prerequisite. SFAM-2030, ACAD-2210

Required Reading - ANTTP Ch 3.

SCAL-2231 2.0 365 B,R,M D S 2 FFS/FTD

Goal. Demonstrate/introduce section low and medium altitude tactical approaches and departures to a confined area.

Requirements. For planned landing zones, prepare LZ diagrams and brief landing plans in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit grid landing points appropriate for each zone.

Discuss

Lead and wingman responsibilities.
Loss of visual contact/rejoining the flight.
Lead ship wake interaction.
Section Approach Mode considerations.
Relationship between Landing Plan and Ground Tactical Plan.
Formation brevity codes/prowords (visual, blind, tally, no-joy).

Introduce

Section low altitude tactical approaches, landings and departures to a confined area (minimum of 1 of each low altitude tactical approach in the ANTTP as wing).
Section medium altitude tactical approaches, landings, and departures to a confined area (minimum of 1 of each medium altitude tactical approach in the ANTTP as wing).

Performance Standards

Demonstrate proper procedures for tactical CAL approaches IAW the ANTTP.

Maintain the proper glideslope/departure profile for obstacle clearance.

Maintain assigned landing heading within 10 degrees.

Wing land within 30 secs of lead.

With discrete landing waypoints, utilize the HUD precision scan for lead and wing to each land within 0.03nm of their assigned waypoint. Maintain the proper formation position for section CALs.

Prerequisite. SFORM-2130, SCAL-2230.

Required Reading. - ANTTP Ch 3.

CAL-2240 1.5 * B D A 1 MV-22

Goal. Introduce low and medium altitude tactical approaches, landings, and departures to a confined area with a focus on visual landings to a landing point.

Requirements. For planned landing zones, prepare LZ diagrams and brief the landing plan in accordance with the ASTACSOP and ANTTP. Evaluate useful load for each zone.

Discuss

Approach considerations (threat, weather, automation considerations).
Landing zone considerations per the ASTACSOP and ANTTP.
Tactical approach planning and JMPS considerations.
Cockpit set-up and CRM during tactical approaches.
Initial Terminal Guidance
Visual Zone Clearance and Obstacle Avoidance

Introduce

Tactical approaches, landings and departures to a confined area (minimum of 5 for initial sorties) with a focus on visual landings without INAV waypoint guidance.

Performance Standards

Without reference to an INAV waypoint:

Demonstrate proper procedures for tactical CAL approaches IAW the ANTTP.

Maintain the proper glideslope/departure profile for obstacle clearance.

Maintain assigned landing heading within 10 degrees.

Prerequisite. SCAL-2230.

External Syllabus Support. Suitable airspace and landing site.

CAL-2241 1.5 * B D A 1 MV-22

Goal. Introduce low and medium altitude tactical approaches, landings, and departures to a confined area with a focus on landing to a defined INAV waypoint.

Requirements. For planned landing zones, prepare LZ diagrams and brief the landing plan in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit landing grid points appropriate for each zone.

Discuss

Approach considerations (threat, weather, automation considerations).
Landing zone considerations per the ASTACSOP and ANTTP.
Tactical approach planning and JMPS considerations.
Cockpit set-up and CRM during tactical approaches.

Introduce. Tactical approaches, landings and departures to a confined area (minimum of 5 for initial sorties).

Performance Standards

Demonstrate proper procedures for tactical CAL approaches IAW the ANTTP.

Demonstrate proper HUD precision scan technique to land within .03nm of the intended landing point.

Maintain the proper glideslope/departure profile for obstacle clearance.

Maintain assigned landing heading within 10 degrees.

Prerequisite. SCAL-2230.

External Syllabus Support. Suitable airspace and landing site.

CAL-2242 2.0 365 B, R,M D A 2 MV-22

Goal. Introduce section low and medium altitude tactical approaches, landings, and departures to a confined area.

Requirements. For planned landing zones, prepare LZ diagrams and brief landing plans in accordance with ASTACSOP and ANTTP. Evaluate useful load and determine eight digit grid landing points appropriate for each zone.

Discuss

Closure rates.
Section departure considerations.
Landing formation considerations.
Formation VTOL/CONV minimum separation.
Loss of visual contact/rejoining of flight.

Introduce

Section tactical approaches, landings, takeoffs, and departures to a confined area (minimum of 3 as wing for initial sorties).

Review

Running and Carrier rendezvous
Cruise principles.
Lead changes.

Performance Standards

Demonstrate proper procedures for tactical CAL approaches IAW the ANTTP.

Maintain assigned landing heading within 10 degrees.

With discrete landing waypoints, utilize the HUD precision scan for lead and wing to each land within 0.03nm of their assigned waypoint. Maintain the proper formation position for section CALs.

Without discrete landing waypoints, visually land to desired landing points as a section.

Maintain the proper glideslope/departure profile for obstacle clearance.

Prerequisite. FORM-2140, SCAL-2231, CAL-2240, CAL-2241.

External Syllabus Support. Suitable landing site.

2.7.4 Reduced Visibility Landings (RVL)

Purpose. To introduce RVL procedures, landings, departures and EPs.

General.

All maneuver descriptions are in the ANTTP.
All initial RVL events shall be conducted with a proficient RVLI.
If a pilot has lost proficiency in any event they must fly with a RVLI to regain proficiency in that event.
If the PUI is not NSQ for the appropriate light level, then he/she shall fly the event with a NSI.
All initial sorties shall be conducted during the day. Proficient aircrew may conduct subsequent sorties at night.
Crew Requirements. P/P for simulators, P/P/CC/AO for aircraft events.

RVL Overview.

REDUCED VISIBILITY LANDINGS (RVL) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2250	1.0	*	B		G		RVL ACAD
LAB-2260	1.0	*	B		G		RVL WALKTHROUGH
SRVL-2270	2.0	365	B,R	(NS)	S	1	FFS/FTD TEN+
SRVL-2271	2.0	365	B,R	(NS)	S	1	FFS/FTD TEN+

ACAD-2250 1.0 * B G

Reduced Visibility Landings

Goal. The PUI will have an introductory knowledge of RVLs in the MV-22.

Instructor. RVLI

Prerequisite. ACAD-2210

Required Reading - ANTTP Ch 3.

LAB-2260 1.0 * B G

Reduced Visibility Landings Procedures and Walkthrough

Goal. The PUI will be able to walk through all of the RVL procedures and CRM cadences prior to execution in the simulator.

Instructor. RVLI

Prerequisite. ACAD-2250.

Required Reading - ANTTP Ch 3.

SRVL-2270 2.0 365 B (NS) S 1 FFS/FTD

Goal. Demonstrate/Introduce single ship automated RVL procedures (All approach and landing types that utilize coupled automation).

Requirements

Discuss

Landing zone evaluation and selection.
Soil composition.
Elevation and density altitude.
Micro terrain, obstacles, and aircraft clearances.
Wind effects.
Position hold vs position select.
Control detents.
Landing point planning for multi-ship RVLs.
Transition from the HUD precision scan to the MFD once reduced visibility is experienced.
NATOPS RVL limitations.
Engine degradation in an RVL environment.
Emergencies in an RVL environment.
Automation limitations and reduction of automation during an approach
Vertical submodes of automation (RALT & VS)
Horizontal submodes of automation (POSN & GNDSPD)
Threat, ambient conditions, weather, terrain, obstacle, and ground tactical plan considerations on the use of automation.
Standard approach procedures to RVL.
Proper CRM cadence.
RVL procedures.
Cockpit set-up and crew resource management during RVLs.
Wave-off criteria for RVLs.
Takeoff procedures.
Go Around functions.

Introduce

RVL automated approaches in all levels of the landing scale (minimum of 2 of each for initial events).
Takeoffs and departures with various levels of obscuration.
Engine degradation and emergencies in an RVL environment.
PF and PNF duties and CRM.
RVL Waveoffs

Performance Standards

Demonstrate the proper procedures for RVL automated approaches IAW the ANTTP.

Maintain assigned landing heading within 10 degrees.

Transition from the HUD precision scan to the MFD in an RVL to land within .03nm of the discrete landing point.

Execute NATOPS procedures for emergencies in an RVL environment.

As PF and PNF, recognize and respond correctly to deviations from RVL profile conditions.

Maintain assigned landing heading within 10 degrees during RVL waveoff

Instructor. RVLI

Prerequisite. SCAL-2230, LAB-2260.

Required Reading - ANTTP Ch 3.

SRVL-2271 2.0 365 B (NS) S 1 FFS/FTD

Goal. Demonstrate/Introduce single ship RVL procedures without the use of automation.

Requirements

Discuss

Landing zone evaluation and selection.
- Soil composition.
- Elevation and density altitude.
- Micro terrain, obstacles, and aircraft clearances.
- Wind effects.

Landing point planning for multi-ship RVLs.
MFD setup to include HUD Layer vs MFD hover page distinctions.
Transition from the HUD precision scan to the MFD once reduced visibility is experienced.
RVL chapter 4 limitations.
Engine degradation in an RVL environment.
Emergencies in an RVL environment.
Standard approach procedures to RVL.
Proper CRM cadence.
RVL procedures.
Crew resource management during RVLs.
Wave-off criteria for RVLs.
Takeoff procedures.

Introduce

Hand flown RVL approaches in all levels of the landing scale (minimum of 10 for initial events).
Takeoffs and departures with various levels of obscuration.
Engine degradation and emergencies in an RVL environment.
PF and PNF duties and CRM.
RVL Wave-off procedures.
Hover page scan.

Performance Standards

Demonstrate the proper procedures for RVL approaches IAW the ANTTP.

Maintain assigned landing heading within 10 degrees.

Transition from the HUD precision approach to the MFD in an RVL to land within .03nm of the discrete landing point.

Execute NATOPS procedures for emergencies in an RVL environment.

As PF and PNF, recognize and respond correctly to deviations from RVL profile conditions.

Proper Hover page set-up.

Maintain assigned landing heading within 10 degrees during RVL waveoff

Instructor. RVLI

Prerequisite. SCAL-2230, LAB-2260.

Required Reading - ANTTP Ch 3.

2.7.5 Night Systems (NS) High Light Level (HLL)

Purpose

To develop proficiency while using night vision goggles under light levels greater than 0.0022 lux as predicted by the SLAP module.
Certify the PUI Night Systems Qualified (NSQ) HLL.

General

A NSI is required for all unqualified pilots.
The PUI is NS HLL qualified upon completion of this stage and written designation by the unit commanding officer.
Crew Requirements. P/P for simulators, P/P/CC/AO for aircraft events.

NS HLL Overview

NIGHT SYSTEMS HIGH LIGHT LEVEL (NS HLL) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2310	1.0	*	B		G		MV-22 NS EMPLOYMENT
SNS-2330	2.0	365	B, R	NS	S	1	FFS/FTD
SNS-2331	2.0	365	B, R	NS	S	2	FFS/FTD
NS-2340	2.0	365	B,,R,M	HLL	A	1	MV-22
NS-2341	2.0	365	B, R,M	HLL	A	2	MV22

ACAD-2310 1.0 * B G

MV-22 Night Systems Employment

Goal. The PUI will have an introductory knowledge of night systems employment of the MV-22.

Prerequisite. ACAD-2250.

Required Reading. MAWTS-1 NVD Manual Ch. 14 and 15.

Instructor: NSI

SNS-2330 2.0 365 B, R NS S 1 FFS/FTD

Goal. Review single aircraft CALs and introduce tactical approaches using NVDs in HLL conditions.

Requirement. For planned landing zones, prepare LZ diagrams and brief landing plans in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit grid landing points appropriate for each zone.

Discuss

NVDs set up and employment.
Night approach considerations (threat, weather, size of flight).
Night landing zone selection and analysis.
NVD scan techniques.
Sensor integration
Cockpit set-up and CRM during tactical approaches.
SLAP and EOTDA.

Introduce

Tactical approaches, landings and departures to a confined area (minimum of 6).
Crew comfort level during NVD CAL operations.
Single aircraft tactical approaches and CALs in HLL.
Waveoffs on NVDs

Performance Standards

Demonstrate proper procedural knowledge for NVD CALs IAW the ANTTP and the MAWTS-1 NVD Manual.

Demonstrate proper NVD scanning techniques IAW the MAWTS-1 NVD Manual.

Maintain assigned landing heading within 10 degrees.

With discrete landing waypoints, utilize the HUD precision approach scan technique to land within 0.03nm of assigned waypoint.

Maintain the proper glideslope/departure profile for obstacle clearance.

Maintain assigned landing heading within 10 degrees during waveoff.

Instructor. NSI.

Prerequisites. SCAL-2230.

Required Reading - T&R Program Manual chapter 3, MAWTS-1 NVD Manual Ch 14.

SNS-2331 2.0 365 B, R NS S 2 FFS/FTD

Goal. Introduce section CALs and review tactical approaches using NVDs in HLL conditions.

Requirement. Create a landing plan that facilitates landing to both an 8 digit grid and a visual landing point.

Discuss

Night landing zone selection and analysis.
NVD scan techniques.
Lead and wingman responsibilities at night.
Loss of visual contact/rejoining the flight.
Lead ship wake interaction.
Section Approach Mode considerations.

Introduce

Section low altitude tactical approaches, landings and departures to a confined area (minimum of 1 of each low altitude tactical approach in the ANTTP as wing).
Section medium altitude tactical approaches, landings, and departures to a confined area (minimum of 1 of each medium altitude tactical approach in the ANTTP as wing).

Section waveoffs at night (both flight and individual waveoffs)

Performance Standards

Demonstrate proper procedures for tactical CAL approaches IAW the ANTTP.

Maintain the proper glideslope/departure profile for obstacle clearance.

Maintain assigned landing heading within 10 degrees.

Wing land within 30 secs of lead.

With discrete landing waypoints, utilize the HUD precision scan for lead and wing to each land within 0.03nm of their assigned waypoint. Maintain the proper formation position for section CALs.

Maintain assigned landing heading within 10 degrees during waveoffs.

Prerequisite. SCAL-2231, SNS-2330.

Required Reading - ANTTP Ch 3, MAWTS-1 NVD Manual Ch 14.

Instructor. NSI.

NS-2340 2.0 365 B, R,M HLL A 1 MV-22

Goal. Introduce single ship familiarization maneuvers and tactical CALs.

Requirement. For planned landing zones, prepare LZ diagrams and brief landing plans in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit landing grid points appropriate for each zone.

Discuss

Pilot and aircrew duties during NVD CAL operations.
Aircraft lighting controls, regulations (FAA exemption) and conditions.
Use of the FLIR for LZ identification.
Night environment scene interpretation (NVG vs. FLIR).
Initial Terminal Guidance.
NVG Emergencies.

Introduce

FAM maneuvers utilizing NVDs.
NVD tactical approaches, landings, and departures to a confined area (minimum of 5 for initial events).
Use of aircraft lighting (visible and IR searchlight).
Initial Terminal Guidance.
Waveoff.

Performance Standards

Demonstrate proper procedural knowledge for NVD CALs IAW the ANTTP and the MAWTS-1 NVD Manual.

Demonstrate proper NVD scanning techniques IAW the MAWTS-1 NVD Manual.

Maintain assigned landing heading within 10 degrees.

With discrete landing waypoints, utilize the HUD precision approach to land within 0.03nm of the assigned waypoint.

Maintain assigned landing heading within 10 degrees during waveoff.

Instructor. NSI.

Prerequisites. CAL-2240, CAL-2241, SNS-2330.

External Syllabus Support. Suitable landing site and airspace.

NS-2341 2.0 365 B, R,M HLL A 2 MV-22

Goal. Introduce section tactical CALs in HLL.

Requirement. For planned landing zones, prepare LZ diagrams and brief landing plans in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit grid landing points appropriate for each zone.

Discuss

Night approach considerations (threat, weather, size of flight).
Night landing zone selection and analysis.
NVD scan techniques.
Cockpit set-up and CRM during tactical approaches.
SLAP and EOTDA.
Night systems formation techniques.

Introduce

Section tactical approaches, landings and departures to a confined area (minimum of 3 as lead and 3 as wing).
Wingman responsibilities.
Loss of visual contact/rejoining the flight.
Crew comfort level during NVD CAL operations.

Lead changes.

Review

Single aircraft CALs in HLL.

Performance Standards

Demonstrate proper procedural knowledge for NVD CALs IAW the ANTTP and the MAWTS-1 NVD Manual.

Demonstrate proper NVD scanning techniques IAW the MAWTS-1 NVD Manual.

Maintain assigned landing heading within 10 degrees.

With discrete landing waypoints, utilize the HUD precision scan for lead and wing to each land within 0.03nm of their assigned waypoint. Wing land within 30 secs of lead.

Without discrete landing waypoints, utilize the HUD precision scan for lead and wing to each land at their desired landing points in the briefed formation. Wing land within 30 secs of lead.

Maintain the proper glideslope/departure profile for obstacle clearance.

Recognize proper formation positions for NVD section CALs.

Instructor. NSI.

Prerequisites. CAL-2242, SNSHLL-2331, NSHLL-2340.

External Syllabus Support. Suitable landing zone and airspace.

2.7.6 Night Systems (NS) Low Light Level (LLL)

Purpose

To develop proficiency while using night vision goggles under light levels less than 0.0022 lux as predicted by the SLAP module.
Certify the PUI Night Systems Qualified [NSQ LLL].

General

A NSI is required for all unqualified pilots.
The PUI is NS LLL qualified upon completion of this stage and written designation by the unit commanding officer.
Crew Requirements. P/P for simulators, P/P/CC/AO for aircraft events.

NS LLL Overview

NIGHT SYSTEMS LOW LIGHT LEVEL (NS LLL) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
SNS-2370	2.0	365	B,,R,M	LLL	S	1	LLL CAL SIM
SNS-2371	2.0	365	B,R	LLL	S	2	LLL SEC CAL SIM
NS-2380	1.5	240	B,R	LLL	A	1	LLL FAM / CAL
NS-2381	1.5	240	B,R	LLL	A	1	LLL CAL
NS -2382	1.5	*	B	LLL	A	2	LLL TACFORM
NS-2383	1.5	240	B, R,M	LLL	A	2	LLL SEC CAL

SNS-2370 2.0 365 B,R,M LLL S 1 FFS/FTD

Goal. Introduce single aircraft NS RVLs using NVDs in LLL.

Requirement. Create an RVL landing plan that facilitates landing to an 8 digit grid in planned RVL conditions. Conduct the RVL profile to a discrete waypoint landing utilizing all of the RVL approach types.

Discuss

Landing zone evaluation and selection.
- Soil composition in the night environment.
- Elevation and density altitude.
- Micro terrain, obstacles, and aircraft clearances.
- Position hold vs position select.
- Control detents.
- Landing point planning for multi-ship RVLs.
- Automation limitations and reduction of automation during an approach due to unforeseen circumstances.
- Threat, ambient conditions, weather, terrain, obstacle, and ground tactical plan considerations on the use of automation in NS RVLs.

Cockpit set-up and crew resource management during NS RVLs.
Transition from the HUD precision approach to the MFD once reduced visibility is experienced.
Peripheral scan and loss of peripheral speed rush during LLL landing.
Wave-off criteria for RVL.
Takeoff procedures.
Go Around functions.
Obscuration effects on NVDs.

Review

All RVL approach types.
PF and PNF duties and CRM during LLL NS CALs.

RVL Wave-off procedures.
Scan within the NVD HUD Hover Layer.
Scan within the MFD Hover Page.

Performance Standards

Demonstrate the proper procedures for RVL automated approaches IAW the ANTTP.

Maintain assigned landing heading within 10 degrees.

Transition from the HUD precision approach to the MFD during the landing phase.

Land within .03nm of the discrete landing point.

As PF and PNF, recognize and respond correctly to deviations from RVL profile conditions.

Proper Hover page set-up.

Maintain assigned landing heading within 10 degrees during waveoff.

Instructor. NSI, RVLI.

Prerequisites. SRVL-2270, SRVL-2271, HLL NSQ.

SNS-2371 2.0 365 B, R NS S 2 FFS/FTD

Goal. Introduce section CALs and review tactical approaches using NVDs in LLL conditions.

Requirement. Create a landing plan that facilitates landing to both an 8 digit grid and a visual landing point.

Discuss

Night landing zone selection and analysis.
NVD scan techniques.
Lead and wingman responsibilities at night.
Loss of visual contact/rejoining the flight.
Lead ship wake interaction.
Section Approach Mode considerations.

Introduce

Section low altitude tactical approaches, landings and departures to a confined area (minimum of 1 of each low altitude tactical approach in the ANTTP as wing).
Section medium altitude tactical approaches, landings, and departures to a confined area (minimum of 1 of each medium altitude tactical approach in the ANTTP as wing).
Section waveoffs at night (both flight and individual waveoffs)

Performance Standards

Demonstrate proper procedures for tactical CAL approaches IAW the ANTTP.

Maintain the proper glideslope/departure profile for obstacle clearance.

Maintain assigned landing heading within 10 degrees.

Wing land within 30 secs of lead.

With discrete landing waypoints, utilize the HUD precision scan for lead and wing to each land within 0.03nm of their assigned waypoint. Maintain the proper formation position for section CALs.

Maintain assigned landing heading within 10 degrees during waveoffs.

Instructor. NSI.

Prerequisite. NSQ HLL.

Required Reading - ANTTP Ch 3, MAWTS-1 NVD Manual Ch 14.

NS-2380 1.5 240 B,R LLL A 1 MV-22

Goal. Introduce FAM maneuvers, single aircraft CALs to a visual point, and tactical approaches using NVDs in LLL.

Requirement. For planned landing zones, prepare LZ diagrams and brief landing plans in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit grid landing points appropriate for each zone.

Discuss

LLL CAL considerations.
LLL planning considerations.
Initial Terminal Guidance (ITG) employment considerations.
Environmental considerations.
LLL scene interpretation.
Sensor integration.

Introduce

NVD tactical approaches, landings, and departures to ITG in LLL (minimum of 5 for initial events).

Performance Standards

Execute proper procedures for NVD LLL CALs IAW the ANTTP and the MAWTS-1 NVD Manual.

Maintain assigned landing heading within 10 degrees.

With discrete landing waypoints, utilize the HUD precision scan to land within 0.03nm of the assigned waypoint.

Maintain the proper glideslope/departure profile for obstacle clearance.

Demonstrate proper NVD scanning techniques IAW the MAWTS-1 NVD Manual.

Instructor. NSI.

Prerequisites. SNS LLL-2370, SNS LLL-2371.

External Syllabus Support. Suitable landing site and airspace.

NS-2381 1.5 240 B,R LLL A 1 MV-22

Goal. Introduce single aircraft CALs to a visual point and review tactical approaches using NVDs in LLL.

Requirement. For planned landing zones, prepare LZ diagrams and brief landing plans in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit grid landing points appropriate for each zone.

Discuss

LLL CAL considerations.
LLL planning considerations.
Initial Terminal Guidance (ITG) employment considerations.
Environmental considerations.
LLL scene interpretation.
Sensor integration.
Landing Point talk on and CRM

Introduce

NVD tactical approaches, landings, and departures to ITG in LLL (minimum of 5 for initial events).

Performance Standards

Execute proper procedures for NVD LLL CALs IAW the ANTTP and the MAWTS-1 NVD Manual.

Maintain assigned landing heading within 10 degrees.

With discrete landing waypoints, utilize the HUD precision scan to land within 0.03nm of desired landing point.

Maintain the proper glideslope/departure profile for obstacle clearance.

Demonstrate proper NVD scanning techniques IAW the MAWTS-1 NVD Manual.

Maintain assigned landing heading within 10 degrees during waveoff.

Instructor. NSI.

Prerequisites. SNS LLL-2370, SNS LLL-2371.

External Syllabus Support. Suitable landing site and airspace.

NS-2382 1.5 * B LLL A 2 MV-22

Goal. Introduce NS tactical formations, tactical formation maneuvering, navigation to a SYS TOT and lost contact procedures.

Requirements. Navigation route to a planned SYS TOT, each aircraft lead a minimum of 1 SYS TOT. Each route should be a minimum of 5 checkpoints of sufficient distance to manage a system TOT. Execute tactical formation maneuvering during the navigation route.

Discuss

Tactical formation maneuvers.
NS formation roles and responsibilities.
Turns (easy, hard, max performance) and energy management.
CRM and formation lookout doctrine during LLL.

Introduce

NS Combat spread and combat cruise.
Simulated loss of visual contact with wingman with subsequent rejoin enroute and at a point.
Sensor integration and distance estimation.

Performance Standards

Execute all tactical formation maneuvers IAW the ANTTP.

Demonstrate the ability to control the flight through the use of tactical formation maneuvers IAW ANTTP.

Instructor. NSI.

Prerequisites. SNSLLL-2371.

NS-2383 2.0 240 B, R,M LLL A 2 MV-22B

Goal. Introduce section navigation to an L-Hour and section tactical CALs in LLL.

Requirement. Navigation route to a planned L-Hour, each aircraft lead to a minimum of 1 L-Hour, each leg must be a minimum of 5 checkpoints of sufficient distance to manage a system TOT. For planned landing zones, prepare LZ diagrams and brief landing plans in accordance with the ASTACSOP and ANTTP. Evaluate useful load and determine eight digit grid landing points appropriate for each zone.

Discuss

NVDs set up and employment.
Night approach considerations (threat, weather, size of flight).
Night landing zone selection and analysis.
NVD scan techniques.
Cockpit set-up and CRM during tactical approaches.
SLAP and EOTDA.
Night systems formation techniques.
Considerations for navigating at night.
Map study.

Introduce

Section tactical approaches, landings and departures to a confined area (minimum of 3 as lead and 3 as wing).
Wingman responsibilities.
Loss of visual contact/rejoining the flight.
Crew comfort level during NVD CAL operations.
Lead changes.

Review

Section aircraft CALs in LLL.

Performance Standards

Lead a navigation route to a tactical CAL within 30 secs of a planned L-Hour.

Demonstrate proper procedural knowledge for NVD CALs IAW the ANTTP and the MAWTS-1 NVD Manual.

Demonstrate proper NVD scanning techniques IAW the MAWTS-1 NVD Manual.

Maintain assigned landing heading within 10 degrees.

With discrete landing waypoints, utilize the HUD precision approach for lead and wing to each land within 0.03nmof their assigned waypoint. Wing land within 30 secs of lead.

Maintain the proper glideslope/departure profile for obstacle clearance.

Recognize proper formation positions for NVD section CALs.

Instructor. NSI.

Prerequisites. NS LLL-2380, NS LLL-2381, NS LLL-2382.

External Syllabus Support. Suitable landing site and airspace.

2.7.7 Air to Air Refueling (AAR)

Purpose. To develop proficiency in day and NVD AAR.

General

All maneuver descriptions are in the ANTTP and ATP-3.3.4.2-NATO Air to Air Refueling Part 4.
A minimum of 5 contacts and movement to the refueling position are required to successfully complete each initial flight.
An AARI is required for all initial sorties. Aircrew who have completed their initial AAR sortie (day or night) and have lost proficiency in that sortie may regain proficiency by flying with an aircraft commander who is proficient in that sortie. If the PUI is not NSQ for the appropriate light level, then he/she shall fly event 2433 with a NSI.
Crew Requirements. P/P for simulators, P/P/CC for day aircraft events, P/P/CC/AO for night aircraft events.

AAR Overview

AIR TO AIR REFUELING STAGE OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2410	0.5	*	B,R		G		REFUELING LECTURE
ACAD-2411	1.0	*	B,		G		ICAO PROCEDURES
LAB-2420	1.0	*	B,		G		LONG RANGE PLANNING
SAAR-2430	1.0	*	B	D	S	1	DAY AAR SIM
SAAR-2431	1.0	*	B	NS	S	1	NS AAR SIM
AAR-2440	1.5	365	B,R	D	A	1	DAY AAR
AAR-2441	1.5	365	B,R,M	NS	A	1	NS AAR

ACAD-2410 0.5 * B,R G

MV-22 Air to Air Refueling Lecture

Goal. The PUI will have a familiarity with MV-22 air to air refueling.

Instructor. AARI.

Prerequisite. ACAD-2110, ACAD-2111.

Required reading - NATOPS 9.2, ANTTP Ch 6, ATP-3.3.4.2-NATO Air to Air Refueling Ch 1 and 4, United States ATP-3.3.4.2 Standard Related Document (SRD) Ch 3, 5, 7, and 8E.

ACAD-2411 1.0 * B G

ICAO Procedures

Goal. The PUI will have a familiarity with MV-22 international flight planning and long range tanker movements.

Instructor. AARI.

Prerequisite. ACAD-2410.

Required Reading – General Planning (GP) Ch 7, 8.

LAB-2420 1.0 * B G

Long Range Fuel Planning Practical Application

Goal. The PUI will be able plan a long range flight plan utilizing aerial refueling.

Instructor. AARI

Requirements. Build a flight plan on JMPS and prepare a NAVLOG for a route of more than 2,000 NM for two MV-22s utilizing aerial refueling. Identify the Point of No Return, tanker tracks, abort points, and End AAR points. At least one tanking evolution must take place in a MOA IAW the AP-1.

Prerequisite. ACAD-2411

SAAR-2430 1.0 * B D S 1 FFS/FTD

Goal. Introduce day AAR.

Requirements

Discuss

AAR terminology.
CRM during AAR and crew comfort level.
Rendezvous procedures, both VMC and IMC.
AAR performance envelope and limitations.
Cross-overs.
Inadvertent disconnects.
Emergency disconnect.
EMCON refueling.
MOA and Warning area procedures.
AAR aircraft configurations.
Dead band considerations during high altitudes.
High closure rates with drogue and possible drogue contact.
Low altitude tanking considerations.

Introduce

Basic scan and flight techniques required for AAR.
Medium and high altitude, high gross weight AAR profiles.
Rendezvous (minimum of 2 for initial events).
Join-up.
Contact/fuel transfer.
Post AAR procedures.
Emergency breakaway.

Performance Standards

Demonstrate proper knowledge of AAR procedures IAW the ANTTP and the ATP-3.3.4.2-NATO Air to Air Refueling Part 4.

Recognize proper visual reference points IAW the ANTTP.

Demonstrate proper closure rates.

Demonstrate proper missed contact procedures

Instructor. AARI.

Prerequisites. SFORM-2130, SFORM-2131, LAB-2420.

Required Reading - ANTTP Ch 6.

SAAR-2431 1.0 * B NS S 1 FFS/FTD

Goal. Introduce night aided AAR.

Requirements.

Discuss

CRM during NVD AAR.
Comfort level.
Closure rates.
Depth perception.
Receiver/tanker lighting.
Visual illusions.
Inadvertent IMC.
Emergency procedures.
Visual signals.
Tanker sequence.

Introduce. NVD AAR.

Performance Standards

Demonstrate proper knowledge of night/NVD AAR procedures IAW the ANTTP and the ATP-56.

Recognize proper night/NVD visual reference points IAW the ANTTP.

Demonstrate proper closure rates

Demonstrate proper missed contact procedures

Instructor. AARI.

Prerequisites. SNS-2330, SAAR-2430.

Required Reading. ANTTP Ch 6, MAWTS-1 NVD Manual.

AAR-2440 1.5 365 B,R D A 1 MV-22

Goal. Introduce day AAR.

Requirements

Discuss

AAR planning and coordination (AAR card).
CRM during AAR and crew comfort level.
Rendezvous procedures.
Enroute AAR considerations.
Fuel boost.
Cross-under.
Reel response.
Inadvertent disconnects.
Fuel siphoning.
Emergency disconnect.
Dead band considerations during high altitudes.
High closure rates with drogue and possible drogue contact.
Low altitude tanking considerations.
Inadvertent IMC
AAR checklist.
Abort Point
Divert Planning
Knock it off.
Must plug scenarios

Introduce

Rendezvous (minimum of 2).
Tanker flow.
Contact/fuel transfer (minimum of 5 for initial events).
Post AAR procedures.
Emergency breakaway.

Performance Standards

Execute proper AAR procedures IAW the ANTTP and the ATP-56.

Maintain proper visual reference points IAW the ANTTP.

Execute 5 successful contacts with 5 minutes sustained contact (actual or simulated fuel transfer).

Demonstrate proper closure rates

Demonstrate proper missed contact procedures

Instructor. AARI.

Prerequisites. FORM-2140, SAAR-2430.

External Syllabus Support. Approved tanker.

AAR-2441 1.5 365 B,R,M NS A 1 MV-22

Goal. Review NVD AAR.

Requirements. Introduce night AAR while using NVDs.

Discuss

CRM during NVD AAR.
Comfort level.
Closure rates.
Depth perception.
Receiver/tanker lighting.
Visual illusions.
Emergency procedures.
Visual signals.
Tanker sequence.
NVD failures.
NVD rendezvous.
Simultaneous/alternate AAR operations.
Threat response during AAR operations.

Introduce

Rendezvous (minimum of 2).
Tanker flow.
Contact/fuel transfer.
Post AAR procedures.
Emergency breakaway.
EMCON tanker procedures (EMCON condition 3 or 4).

Performance Standards.

Execute proper AAR procedures IAW the ANTTP and the ATP-3.3.4.2.

Maintain proper visual reference points IAW the ANTTP.

Execute 5 successful contacts with 5 minutes sustained contact (actual or simulated fuel transfer).

Demonstrate proper closure rates

Demonstrate proper missed contact procedures

Instructor. AARI.

Prerequisites. SAAR-2431, AAR-2440

External Syllabus Support. Approved tanker.

2.7.8 Low Altitude Tactics (LAT)

Purpose. To develop proficiency in MV-22 Low Altitude Tactics.

General

All maneuver descriptions are in the ANTTP.
Non-proficient aircrew are required to fly with a LATI for day events.
LAT altitude restrictions and currency requirements are IAW the T&R Program Manual.
Events should be flown in areas with significant vertical relief.
The instructor shall conduct all flight briefs for initial events.
A HUD shall be utilized for all events.

Crew Requirements. P/P for simulators, P/P/CC/AO for aircraft events.

LAT Overview

LOW ALTITUDE TACTICS (LAT) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2610	0.5	*	B		G		LAT PLANNING
ACAD-2611	0.5	*	B		G		AIRCREW COORDINATION
ACAD-2612	0.5	*	B		G		ROUTE PLANNING
ACAD-2613	0.5	*	B		G		Ps E/M
LAB-2620	0.5	*	B		G		WALK THROUGH
SLAT-2630	2.0	*	B	D	S	1	LAT SIM
LAT-2640	1.5	365	B,R,M	D	A	1	DAY LAT

ACAD-2610 0.5 * B G

LAT IV: Planning, Briefing and Debriefing

Goal. The PUI will have an introductory knowledge of planning, briefing, and debriefing a LAT sortie.

Instructor. LATI.

Prerequisite. T2P.

Required Reading. - AP-1B Ch 1-1 through 1-3, 2-1, 2-2, ANTTP Ch 5.

ACAD-2611 0.5 * B G

Tactical Aircrew Coordination

Goal. The PUI will have an introductory knowledge of required coordination between the pilots and aircrew during LAT.

Instructor: LATI.

Prerequisite. ACAD-2610.

ACAD-2612 0.5 * B G

Route Planning Considerations Lecture

Goal. The PUI will have an introductory knowledge of systems route planning considerations.

Instructor: LATI.

Prerequisites. ACAD-2611.

Required Reading - ANTTP Ch 1.

ACAD-2613 0.5 * B G

Ps E/M

Goal. The pilot will have an introductory knowledge of Specific Power and Energy-Maneuverability and Energy-Maneuverability Diagrams.

Instructor: LATI.

Prerequisites. ACAD-2612.

Required Reading – NTRP-Ch 6.

LAB-2620 0.5 * B G

LAT Maneuver Walk Through

Goal. The PUI will be able to walk through all LAT maneuvers prior to executing them in the aircraft.

Instructor: LATI.

Prerequisites. ACAD-2610-2613.

Required Reading - ANTTP Ch 4.

SLAT-2630 2.0 * B D S 1 FFS/FTD TEN

Goal. Introduce LAT maneuvers and navigation on a route in the contour profile.

Requirement. Plan a contour profile route of 150nm (One leg in CONV) incorporating no fewer than 5 check points with significant vertical relief and threats. Prepare all applicable JMPS/DTM handouts and briefing products. The LATI shall conduct the brief.

Discuss

- Dive Recovery Rules
- Small descent rule
- Optical flow
- Speed rush baseline
- LAT risk assessment
  - Time to impact calculations
  - Turning and looking
  - G available / required
- Crew Responsibilities
  - Terrain Clearance Tasks (TCT)
  - Mission Tasks (MT): Critical (CT) and Non Critical (NCT)
  - Mission Crosscheck Time (MCT)
- Display utilization
  - DIGMAP
  - HAT
  - Terrain and Sun shading
  - LOS
- FLIR
- Route Properties
  - Weather, SLAP & Wind Considerations
  - Route Checkpoint Selection (Tactically relevant vs. MTR)
  - Vertical Planning
  - Altitude/Speed Profiles
  - L-Hour Planning
  - Aircraft Performance
- CONV mode altitude/airspeed combinations
- LAT Briefing Requirements (including LAT ROC)

Turbulence
Airspeed planning considerations (route length, forecasted winds, weather, threat, ambient conditions, fuel)
TOT management and CMS integration (commanded speed indicator functions, leg timing, clock time)

Introduce

Max Performance Turns
Vertical Maneuvers
Dive entry using 50% rule
Specific excess power available performance charts.

Review

Navigation of a route
Minimum of one leg in CONV mode
.
LAT maneuvers
Mission Management
Route
Fuel
L-hour management
Flight Director usage
Day HUD utilization
Emergencies in the LAT environment

Performance Standards

Complete all mission planning tasks related to JMPS and DTM loads, to include selecting tactically relevant checkpoints.

Execute all LAT maneuvers IAW the ANTTP.

Remain oriented within the planned lateral boundaries of the route.

Land at the planned LZ within .03 nm of a discrete landing point and +/- 30 seconds of L-hour.

Employ proper CRM in the LAT regime.

Comply with ROC IAW T&R Program Manual and other governing directives.

Instructor. LATI.

Prerequisites. SCAL-2130, LAB-2620.

Required Reading - ANTTP Ch 4.

LAT-2640 1.5 365 B,R,M D A 1 MV-22

Goal. Review LAT maneuvers and navigation on a route in the contour profile.

Requirement. Plan a contour profile route of 100nm incorporating no fewer than 5 check points with significant vertical relief and threats. Prepare all applicable JMPS/DTM handouts and briefing products. The LATI shall brief the route.

Discuss

Stress and fatigue while flying LAT
Aircrew coordination during LAT
Squadron SOP for required equipment
T&R Program Manual
Altitude Restrictions and Currency Requirements
LAT Training with Embarked Troops
FENCE Checks
Sensor Integration
FLIR calibration
Bird strikes
LAT Briefing Requirements (including LAT ROC)
Turbulence
Airspeed planning considerations (route length, forecasted winds, weather, threat, ambient conditions, fuel)
TOT management and CMS integration (commanded speed indicator functions, leg timing, clock time)

Emergencies

Emergencies in the LAT environment
Bird Strikes
Proprotor over torque

Review

Route Briefing
Max Performance Turns
Vertical Maneuvers
Dive entry using 50% rule
Navigation of a route of 100 nautical miles in the contour profile
Update EOB inflight

Performance Standards

Complete all mission planning tasks related to JMPS and DTM loads, to include selecting tactically relevant checkpoints

Execute all LAT maneuvers IAW the ANTTP

Remain oriented within the planned lateral boundaries of the route

Properly insert and edit threat utilizing CMS

Land at the planned LZ within .03nm of the discrete landing point and +/- 30 seconds of L-hour

Employ proper CRM in the LAT regime

Comply with ROC IAW T&R Program Manual and other governing directives

Instructor. LATI.

Prerequisites. SLAT-2630.

External Syllabus Support. Approved route/range space with vertical relief.

2.7.9 Mountain Area Training (MAT)

Purpose. To develop proficiency in day and NVD mountainous terrain and high/hot/heavy operations.

General

All maneuver descriptions are in the ANTTP.
Crew Requirements. P/P/CC/AO.

MAT Overview

MOUNTAIN AREA LANDINGS (MAT) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2710	0.5	*	B		G		HIGH ALT OPS
ACAD-2711	0.5	*	B		G		AERO
SMAT-2730	1.0	365	B,R	D	S	1	DAY CAL SIM
SMAT-2731	1.0	365	B,R,M	NS	S	1	NS CAL SIM
SMAT-2732	1.0	365	B,R,M	(NS)	S	1	HIGH HOT HEAVY SIM

ACAD-2710 0.5 * B G

MV-22 High Altitude Operations Lecture

Goal. The PUI has a familiarity with MV-22 high altitude operations.

Instructor: BIP.

Prerequisites. ACAD-2210

Required Reading - NATOPS Ch 22, 23, 30, 31, ANTTP Ch 3.

ACAD-2711 0.5 * B G

MV-22 Advanced Tiltrotor Aerodynamics

Goal. The PUI has an increased familiarity of MV-22 aerodynamics with a focus on high PA and DA characteristics.

Instructor: BIP.

Prerequisites. ACAD-2210

Required Reading - NATOPS Ch 22, 23, 30, 31, ANTTP Ch 3.

SMAT-2730 1.0 365 B,R D S 1 FFS/FTD

Goal. Introduce CALs in mountainous terrain in day conditions.

Requirements. Conduct performance calculations to include a TOLD card for high density altitude landing environment (6,000' PA). Landings shall be conducted at where mountainous terrain is a significant factor, utilizing pinnacles, bowls, valleys, and canyons.

Discuss

High altitude physiology Emergencies.
Wind and weather effects.
Terrain classifications.

Power available vs power required.
Calibrated airspeed versus ground speed (acceleration, deceleration).
Considerations for LZ selection and evaluation at high altitudes.

Introduce

Mountainous area operations.
Pinnacle landings.

Slope landings.
Confined area landings.
Landings and operations in valleys and canyons.
Crosswind landings.
Various short/rolling takeoff techniques at high elevation.

Performance Standards

Demonstrate knowledge of proper MAT procedures IAW the ANTTP and NATOPS.

Execute up-slope/down-slope and cross-slope landings.

Properly calculate power available and power required for high altitude LZs.

Properly utilize the CMS performance layer for inflight power planning.

Land within 0.03 nm of the discrete landing point.

Instructor: BIP.

Prerequisites. CAL-2230, ACAD-2710, ACAD-2711.

SMAT-2731 1.0 365 B,R,M NS S 1 FFS/FTD

Goal. Introduce CALs in mountainous terrain in night conditions using NVDs.

Requirement. Conduct performance calculations to include a TOLD card for high density altitude night landing environment (6000' PA with ISA +20). Aircraft landings shall be conducted at zones where mountainous terrain is a significant factor.

Discuss

Waveoffs during mountainous terrain NVD operations.
Visual illusions on NVDs in mountainous terrain.
Sensor utilization in mountainous terrain.

Introduce

NVD mountainous terrain operations.
Pinnacle landings.
Slope landings.
Confined area landings.
Landings and operations in valleys and canyons.
Crosswind landings.
Various short/rolling takeoff techniques at high elevation.

Performance Standards

Demonstrate knowledge of proper MAT procedures IAW the ANTTP and NATOPS.

Execute up-slope/down-slope and cross-slope landings.

Properly calculate power available and power required for high altitude LZs.

Land within 0.03 nm of the discrete landing point.

Instructor: NSI.

Prerequisites. SNS-2330, SMAT-2730.

SMAT-2732 1.0 365 B,R,M (NS) S 1 FFS/FTD

Goal. Introduce operations in a High/Hot/Heavy environment with limited power margins.

Requirement. Conduct performance calculations to include a TOLD card for 8,000' and 10,000' DA. Conduct landings in areas where mountainous terrain is a significant factor and the power margin ranges from 5% HOGE to 0% HIGE

Discuss

Power margins.
Power/rate of descent control.
Lift vector control.
High altitude operations.
Wind effects on power required.
MGT/Ng limitations.
Power assurance checks.
High DA/Gross weight runway arrivals/departures.
Aircraft handling qualities (turn radius, CONV corridor, FFR, rate of climb, stall margin).

Introduce

Zero power margin operations

Performance Standards.

Demonstrate knowledge of proper MAT procedures IAW the ANTTP and NATOPS.

Properly calculate power available and power required for high altitude LZs.

Land within 0.03 nm of the discrete landing point.

Instructor: BIP.

Prerequisites. SCAL-2230, ACAD-2710, ACAD-2711.

2.7.10 Ground Threat Reaction (GTR)

Purpose. To develop proficiency in counter-tactics versus enemy surface-to-air threats.

General

All maneuver descriptions are in the Classified ANTTP.
RADAR principles are listed in the NTRP Appendix G.
A GTR-2832 proficient WTI (7577 MOS) shall brief and lead all sorties in which any pilot within the flight is not proficient.
Pilots who have completed their initial GTR sorties and have lost proficiency in that sortie may regain proficiency by flying with a LATI who is proficient in that sortie.
The flight lead shall brief all applicable GTR training rules IAW the ANTTP.
All initial sorties shall be conducted during the day following completion of LAT-2640. Proficient aircrew may conduct subsequent sorties at night if they are LAT-Q.

Crew Requirements. P/P for simulators, P/P/CC/AO for aircraft events.

GTR Overview

GROUND THREAT REACTION STAGE OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2810	1.0	*	B		G		ALE-47 LECTURE
ACAD-2811	1.0	*	B		G		APR-39 LECTURE
ACAD-2812	1.0	*	B		G		AAR-47 LECTURE
ACAD-2813	1.0	*	B		G		ADA THREAT LECTURE
ACAD-2814	1.0	*	B		G		IR SAM THREAT
ACAD-2815	1.0	*	B		G		RADAR INTRO
ACAD-2816	1.0	*	B		G		RADAR SAM THREAT
ACAD-2817	1.0	*	B		G		GTR LECTURE
LAB-2820	0.5	*	B		G		WALKTHROUGH
SGTR-2830	2.0	365	B,R,M	(NS)	S	1	GTR SIM

ACAD-2810 1.0 * B G

MV-22 ALE-47 Lecture

Goal. The PUI will be familiar with the operation of the MV-22 ALE-47.

Instructor. WTI.

Prerequisites. T2P.

Required Reading - NTRP Ch5, APP F, Classified ANTTP Ch 2.

ACAD-2811 1.0 * B G

MV-22 APR-39 Lecture

Goal. The PUI will be familiar with the operation of the MV-22 APR-39.

Instructor. WTI.

Prerequisite. T2P.

Required Reading - NTRP Ch5, APP F, Classified ANTTP Ch 2.

ACAD-2812 1.0 * B G

MV-22 AAR-47 Lecture

Goal. The PUI will be familiar with the operation of the MV-22 AAR-47.

Instructor. WTI.

Prerequisites. T2P.

Required Reading - NTRP Ch5, APP F, Classified ANTTP Ch 2.

ACAD-2813 1.0 * B G

ADA Threat to Assault Support Lecture

Goal. The PUI will be familiar with the threat of ADA to assault support.

Instructor. WTI.

Prerequisites. T2P.

Required Reading - AFTTP 3-1 ADA Ch.

ACAD-2814 1.0 * B G

IR SAM Threat to Assault Support Lecture

Goal. The PUI will be familiar with the threat of IR SAMS to assault support.

Instructor. WTI.

Prerequisites. T2P.

Required Reading - AFTTP 3-1 IR SAM Ch.

ACAD-2815 1.0 * B G

RADAR principles

Goal. The PUI will be familiar with radar principles.

Instructor. WTI.

Prerequisites. T2P.

Required Reading – MV-22 NTRP APP G.

ACAD-2816 1.0 * B G

RADAR SAM Threat to Assault Support Lecture

Goal. The PUI will be familiar with the threat of RADAR SAMS to assault support.

Instructor. WTI.

Prerequisites. T2P.

Required Reading - AFTTP 3-1 RADAR SAM Ch.

ACAD-2817 1.0 * B G

MV-22 Ground Threat Reaction Lecture

Goal. The PUI will be familiar with the reaction maneuvers executed by the MV-22 as a result of a ground threats.

Instructor. WTI.

Prerequisites. ACAD-2810-2816.

Required Reading - Classified ANTTP Ch 2.

LAB-2820 0.5 * B G

MV-22 Ground Threat Reaction Walk through

Goal. The PUI will have a solid understanding of all GTR maneuvers, inflight CRM, and GTR line numbers prior to inflight execution.

Instructor. WTI.

Prerequisites. ACAD-2817.

Required Reading - ANTTP Appendix A.

SGTR-2830 2.0 365 B,R,M (NS) S 1 FFS/FTD TEN

Goal. Introduce operation of onboard ASE to include strengths and weaknesses of ASE. Introduce counter-tactics vs ADA, RF and IR threats.

Discuss

Operation of the ALE-47, APR-39, AAR-47.
Strengths and weaknesses of each ASE system vs ADA, RF and IR threat.
CRM as it applies to the use of onboard ASE and threat detection.
Counter-tactics against ADA, RF and IR threats.
All available expendables.
ROC per T&R Program Manual.
GTR training rules.
Threat reaction and escort coordination in the landing environment (in the objective area).

Introduce

Use of all onboard ASE.
Counter-tactics against ADA, RF and IR threats.

Performance Standards

Properly operate all ASE IAW the ANTTP.

Employ proper counter-tactics vs ADA, RF and IR threats.

Instructor. WTI.

Prerequisites. LAT-2630, LAB-2820.

2.7.11 Carrier Qualification (CQ)

Purpose. To qualify the PUI in flight operations from a carrier deck or ship platform under day and NVD conditions.

General

Refer to CV/LHA/LHD/MCS NATOPS Manuals for carrier operations. Refer to NWP-42 for air capable ship operations.

CQ-2943 shall be flown under HLL conditions for initial qualifications. A NSI is required for unqualified pilots on NVD CQ flights.
IAW NATOPS and NAVMC 3500.14, a pilot is day CQ upon completion of CQ-2941 and is NVG CQ upon completion of CQ-2934.
The IP will emphasize proper communication procedures, patterns, and aviation operations in the shipboard environment per aircraft and ship NATOPS and NAVMC 3500.14.
Crew Requirements. P/P/CC (AO required for NVD CQ).
CQ Overview

CARRIER QUALIFICATION (CQ) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-2910	1.0	*	B		G		LHD LECTURE
ACAD-2911	0.5	*	B		G		CV
SCQ-2930	1.0	365	B,R	D	S	1	DAY CQ SIM
SCQ-2931	1.0	365	B,R	NS	S	1	NS CQ SIM
CQ-2940	1.5	365	B,R	D	A	1	DAY FCLP
CQ-2941	1.5	365	B,R,M	D	A	1	NS FCLP
CQ-2942	1.5	365	B,R,M	NS	A	1	DAY CQ
CQ-2943	1.5	365	B,R,M	NS	A	1	NS CQ

ACAD-2910 1.0 * B G

MV-22 LHD Operations Lecture

Goal. The PUI will be familiar with MV-22 LHD Operations.

Instructor: BIP.

Prerequisite. T2P.

Required Reading - NATOPS 8, LHA/LHD NATOPS Ch 2-6, 7.2, 7.3, App A & D, Ships Facilities Resume,

ACAD-2911 0.5 * B G

CV/Air Capable Ships Operations Lecture

Goal. The PUI will be familiar with other air capable ships and CV flight operations.

Instructor: BIP.

Prerequisite. T2P.

SCQ-2930 1.0 365 B,R D S 1 FFS/FTD

Goal. Practice day CQ pattern and procedures to various Classes of ships.

Requirements

Discuss

Emergency procedures in the shipboard environment (engine failures, nacelle blower failures, fires).
Various patterns around the ship.
Different Case departures and arrivals.
Nacelle control techniques.

Practice

Carrier operation.
- Airplane and conversion mode arrivals.
- Charlie pattern for LHA/LHD and LPD/LSD (minimum of 5 for initial events).
- Communication procedures.
- Lights and light signals.
- LSE signals and procedures.
- Waveoff.
- Departure procedures.

Self-taxi procedures.
STOs.
Pitch-up with side-slip characteristics.
NATOPS shipboard approaches.
High gross weight operations.
Shipboard INS alignment procedures.
Shipboard emergencies (EXDEF failure)
Checklists (interim power and ANTTP take-off cadence).

Performance Standards

Demonstrate proper knowledge of day shipboard procedures IAW the LHA/LHD/MCS NATOPS, and NWP-42.

Maintain pattern parameters within 50 feet, 10 KCAS, and 10 degrees alignment with the BRC.

Maintain proper glideslope/departure profile for NATOPS shipboard approaches.

Maintain proper closure rate during approaches.

Land without unsafe delay within 3 feet of the intended point of landing and within 5 degrees of heading (BRC).

Instructor: BIP.

Prerequisite. SCAL-2230, ACAD-2910, ACAD-2911.

SCQ-2931 1.0 365 B,R NS S 1 FFS/FTD

Goal. Introduce NVD CQ pattern and procedures.

Requirements.

Discuss

Emergency procedures in the shipboard environment (engine failures, nacelle blower failures, fires).

Demonstrate/Introduce

Carrier operations using NVDs.
Arrival.
Night landing patterns (minimum of 5 for initials).
Communication procedures.
Night shipboard lighting and light signals.
LSE signals and procedures.
(Waveoff.
Departure.
Self-taxi procedures.
STOs.
High gross weight operations.
NATOPS shipboard approaches.

Performance Standards

Demonstrate proper knowledge of day shipboard procedures IAW the LHA/LHD/MCS NATOPS, and NWP-42.

Maintain pattern parameters within 50 feet, 10 KCAS, and 10 degrees alignment with the BRC.

Maintain proper glideslope/departure profile for NATOPS shipboard approaches.

Maintain proper closure rate during approaches.

Land without unsafe delay within 3 feet of the intended point of landing and within 5 degrees of heading (BRC).

Instructor. NSI.

Prerequisites. SNS-2330, SCQ-2930.

Required Reading - MAWTS-1 NVD Manual Ch 17.

CQ-2940 1.5 365 B,R D A 1 MV-22

Goal. Practice day CQ patterns and procedures in a Field Carrier Landing Practice (FCLP) scenario.

Requirements

Discuss

Crewmember duties during CQs.
Any item discussed or introduced on SFCLP-2830.

Practice

Carrier operation.
Charlie pattern (minimum of 5 for initials).
Communication procedures.
Lights and light signals.
LSE signals and procedures.
Departure procedures.
Self-taxi procedures.
STOs.
Pitch-up with side-slip characteristics.
High gross weight operations.
NATOPS shipboard approaches.

Performance Standards

Demonstrate proper knowledge of day shipboard procedures IAW the LHA/LHD/MCS NATOPS, and NWP-42.

Maintain pattern parameters within 50 feet, 10 KCAS, and 10 degrees alignment with the BRC.

Maintain proper glideslope/departure profile for NATOPS shipboard approaches.

Maintain proper closure rate during approaches.

Land without unsafe delay within 3 feet of the intended point of landing and within 5 degrees of heading (BRC).

Instructor: BIP.

Prerequisites. CAL-2240, SCQ-2930.

External Syllabus Support. FCLP site.

CQ-2941 1.5 365 B,R,M D A 1 MV-22

Goal. Day qualification flight.

Requirements

Discuss

Any FCLP discussed/introduced item.
Shipboard instrument procedures.

Review

Air capable amphibious ship operations.
Airplane and conversion mode arrivals.
Charlie pattern (minimum of 5 for initial events).
Instrument marshalling and recovery.
Communication procedures.
Lights and light signals.
LSE signals and procedures.
Departure procedures.
Self-taxi procedures.
STOs.
Pitch-up with side-slip characteristics.
High gross weight operations.
NATOPS shipboard approaches.
Wake interaction with other aircraft.

Performance Standards.

Demonstrate proper knowledge of day shipboard procedures IAW the LHA/LHD/MCS NATOPS, and NWP-42.

Maintain pattern parameters within 50 feet, 10 KCAS, and 10 degrees alignment with the BRC.

Maintain proper glideslope/departure profile for NATOPS shipboard approaches.

Maintain proper closure rate during approaches.

Land without unsafe delay within 3 feet of the intended point of landing and within 5 degrees of heading (BRC).

Instructor: BIP.

Prerequisite. CQ-2940.

External Syllabus Support. Landing platform afloat.

CQ-2942 1.5 365 B,R,M NS A 1 MV-22

Goal. Introduce night aided CQ patterns and procedures in a FCLP scenario.

Requirements

Discuss

Differences and similarities of day and night takeoff and landing techniques.
Crewmember duties during NVD CQs.
Any item discussed or introduced on SCQ-301.

Introduce

Carrier operations using NVDs.
Airplane and conversion mode arrivals.
Night takeoff/landing patterns (minimum of 5 for initial events).
Communication procedures.
Night shipboard lighting and light signals peculiar to night operations.
LSE signals and procedures.
Departure procedures.
Self-taxi procedures.
High gross weight operations.
STOs.
Pitch-up with side-slip characteristics.
NATOPS shipboard approaches.

Performance Standards

Demonstrate proper knowledge of day shipboard procedures IAW the LHA/LHD/MCS NATOPS, and NWP-42.

Maintain pattern parameters within 50 feet, 10 KCAS, and 10 degrees alignment with the BRC.

Maintain proper glideslope/departure profile for NATOPS shipboard approaches.

Maintain proper closure rate during approaches.

Land without unsafe delay within 3 feet of the intended point of landing and within 5 degrees of heading (BRC).

Instructor. NSI.

Prerequisites. NS-2340, SCQ-2931, CQ-2940.

External Syllabus Support. FCLP site.

CQ-2943 1.5 365 B,R,M NS A 1 MV-22

Goal. NVD qualification flight.

Requirements

Discuss

Aircraft lighting configurations.
Deck lighting configurations.
LSE signals and NVD requirements.
Voice procedures at night.
Closure rates and depth perception over water at night.
Night waveoff signals and procedures.
Egress peculiar to shipboard operations at night utilizing NVDs.
Any previously discussed/introduced FCLP/CQ item.

Practice

Air capable amphibious ship operations.
Airplane and conversion mode arrivals.
Night landing patterns (minimum of 5 for initial events).
Communication procedures.
Lights and light signals.
LSE signals and procedures.
Departure procedures.
Self-taxi procedures.
STOs.
High gross weight operations.
Pitch-up with side-slip characteristics.
NATOPS shipboard approaches.

Performance Standards

Demonstrate proper knowledge of day shipboard procedures IAW the LHA/LHD/MCS NATOPS, and NWP-42.

Maintain pattern parameters within 50 feet, 10 KCAS, and 10 degrees alignment with the BRC.

Maintain proper glideslope/departure profile for NATOPS shipboard approaches.

Maintain proper closure rate during approaches.

Land without unsafe delay within 3 feet of the intended point of landing and within 5 degrees of heading (BRC).

Instructor. NSI.

Prerequisites. NSQ for appropriate light level, CQ-2941, CQ-2942

External Syllabus Support. Landing platform afloat.

2.8 CORE PLUS SKILL PHASE

Purpose. To establish training for Core Plus Skill (theater specific, low-probability of occurrence) events.

General

ROC will be per the T&R Program Manual.

Pilots may fly night flights using NVDs in this level under HLL or LLL conditions provided they are NSQ for that light level.

Prior to training in this phase a pilot should be complete with core skills training.

Phase Overview

CORE PLUS SKILL PHASE OVERVIEW		
STAGE	**PARAGRAPH**	**PAGE**
AIR DELIVERY (AD)	2.8.1	2-33
ALTERNATE INSERTION/EXTRACTION TECHNIQUES (AI/E)	2.8.2	2-35

2.8.1 Air Delivery (AD)

Purpose. To develop proficiency in personnel parachute operations (PARAOPS), air delivery of cargo, and day/NVD external load operations from confined areas.

General

All maneuver descriptions are in the MV-22 ANTTP.
An NSI is required for initial NVD external events.
Crew Requirements. P/P/CC/AO for aircraft events and P/P for simulators.

AD Overview

AERIAL DELIVERY (AD) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-4010	1.0	*	B		G		PARAOPS
SAD-4030	2.0	365	B,R	(NS)	S	1	CARGO AND PARAOPS
PARA-4040	1.5	365	B,R,M	(NS)	A	1	REV PARAOPS
SEXT-4070	2.0	*	B	D/NS	S	1	SIM EXTERNAL
EXT-4080	1.5	365	B,R,M	D	A	1	EXTERNAL

ACAD-4010 1.0 * B G

MV-22 Air Delivery - PARAOPS

Goal. The PUI will have an introductory knowledge of procedures to execute air delivery of cargo and PARAOPS from the MV-22.

Instructor: BIP.

Prerequisites. T2P.

Required Reading. Cargo Handling Manual (CLG), NTRP Ch 7, ANTTP Ch 10, AFI 11-231: Parachute Ballistic Data.

SAD-4030 2.0 365 B,R (NS) S 1 FFS/FTD

Goal. Introduce air delivery of cargo procedures and PARAOPS procedures.

Requirement. Using mission planning software, prepare multiple computed air release points (CARPs) for Container Delivery System (CDS), door bundle delivery profiles, and PARAOPS.

Discuss

Mission planning software and applicable AD CMS capabilities.
CRM during air deliveries to include TPG AD checklist.
Standard terminology during air delivery.
Tactical considerations for air delivery.
Proper rigging and preflight of equipment to be inserted by air delivery.
Drop Zone survey.
Mission planning coordination.
CRM during PARAOPS (aircrew / jumpmaster responsibilities).
Voice communication/standard terminology during PARAOPS.
Tactical considerations for air delivery of troops.
MV-22 TPG air delivery briefing guide.
AD mission planning software.
Procedures for achieving TOT.

Introduce

Use of TPG AD checklist.
Air delivery of door bundles.
Air delivery of CDS.
AD flight profiles.
AD Emergency procedures.
PARAOPS.
Inspection of static line.
AD formations.

Performance Standards

Execute air delivery procedures IAW the references.

Demonstrate proper CRM during air delivery operations.

Airspeed within 5 kts.

Altitude within 50 ft.

Aircraft at release point within 30 sec of TOT.

Release command given within 2 sec of arriving at release point.

Execute PARAOPS procedures IAW the MV-22 ANTTP.

Demonstrate proper crew coordination during PARAOPS operations.

Instructor: BIP

Prerequisites. ACAD-4010

PARA-4040 1.5 365 B,R,M (NS) A 1 MV-22

Goal. Review PARAOPS procedures.

Requirement.

Discuss

CRM during PARAOPS (aircrew / jumpmaster responsibilities).
Voice communication/standard terminology during PARAOPS.
Tactical considerations for air delivery of troops.

MV-22 TPG air delivery briefing guide.
AD mission planning software.
Procedures for achieving TOT.

Review

PARAOPS.
Inspection of static line.
AD formations.

Performance Standards

Execute PARAOPS procedures IAW the MV-22 ANTTP.

Demonstrate proper crew coordination during PARAOPS operations.

Instructor. BIP

Prerequisites. SAD-4030.

Range. Certified Drop Zone.

External Syllabus Support. Jumpmaster, qualified troops.

SEXT-4070 2.0 * B D/NS S 1 FFS/FTD

Goal. Introduce day and NVD external load hook-ups and drops to a confined area (conversion and airplane modes).

Requirement.

Discuss

NVD considerations during external lift operations.
Use of the FLIR to monitor the load.
NVD emergencies with external load.
Performance considerations to include the effect of wind on hover mast torque required.
Load stability.
CMS monitoring during flight.
Hook release system.
H/V diagram.
External pattern.
External load rigging.
Landing zone marking.
Emergencies: Cargo jettison criteria and procedures, emergency procedures with external loads, loss of ICS.

Demonstrate/Introduce

Power Checks.
Approach to pick up zone.
Single or dual point cargo hookup.
Approach and cargo release procedures.
Wave-off with external load.
Departure from pickup zone.
Transition to APLN mode at least once with external.
Use of FLIR.

Performance Standards

Conduct all maneuvers IAW MV-22 ANTTP.

Successfully conduct 5 single point hookups and releases.

Recognize indications, execute memorized items, exercise proper crew coordination, and maintain control of the aircraft during simulated emergency procedures.

Instructor. BIP

Prerequisites. SNS-2330.

Required Reading - NATOPS 9.4, ANTTP Ch 9, MAWTS-1 NVD Manual Ch 14.

EXT-4080 1.5 365 B,R,M D A 1 MV-22

Goal. Review single point and/or dual point external load hook-ups and drops to a confined area.

Requirement.

Discuss

Crew responsibilities and communications during external operations.
Aircraft hook release systems. Hook preflight and checks.
Approach to LZ. Downwash, static electricity, FOD, and precision hover.
Cargo hook-up procedures and heading control.
Power checks, switchology, and HST brief.
HST composition, functions, and signals.
HST safety brief.
Power settling.
Pilot induced oscillations.
Reduced visibility conditions.

Terrain/obstacle clearance.
Inadvertent IMC procedures.
Aircraft emergencies with external load (flight control system failures).
Tactical considerations during external lift operations.
Aerodynamic characteristics of external loads.
Light and heavy external load considerations.

Review

External load hook-ups and drops to a confined area (minimum of 5 for initial events).
Waveoff with external load.

Performance Standards

Execute proper external procedures IAW the ANTTP.

Demonstrate proper ICS terminology during external operations.

Place the load within 10 meters of desired location.

Instructor. BIP

Prerequisites. CAL-2240, SEXT-4070.

External Syllabus Support. External load, HS approved LZ with 7nm of protected airspace to 1000' AGL.

2.8.2 Alternate Insertion/Extraction Techniques (AI/E)

Purpose. To develop proficiency in tiltrotor alternate insertion and extraction techniques and procedures.

General.

Initial AIE-4140 and AIE-4141 shall be conducted during the day.
Subsequent execution of AIE-4140 and AIE-4141 may be conducted at night.
Pilots shall be NSQ for the appropriate light level if conducting AIE-4140 and AIE-4141 using NVDs.
Crew Requirement. P/P/CC/AO.

AI/E Overview

AI/E STAGE OVERVIEW							
EVENT	TIME	REFLY	POI	CONDITIONS	DEVICE	NUM	DESCRIPTION
ACAD-4110	0.5	*	B		G		FASTROPE/RAPPEL/SPIE
ACAD-4112	0.5	*	b		G		HOIST OPS
AIE-4140	1.5	365	B,R,M	(NS)	A	1	FASTROPE/RAPPEL
AIE-4141	1.5	365	B,R,M	(NS)	A	1	HOISTING

ACAD-4110 0.5 * B G

Fastrope, Rappel, and SPIE Operations

Goal. The PUI will have an introductory knowledge of procedures to execute fastrope, rappel, and SPIE operations from the MV-22.

Instructor: BIP.

Prerequisite. T2P.

Required Reading - NATOPS 9.7 - 9.8, NTTP Ch 11.1 - 11.5, 11.7.

ACAD-4112 0.5 * B G

Hoist Operations

Goal. The PUI will have an introductory knowledge of procedures to execute hoist operations from the MV-22.

Instructor: BIP.

Prerequisite. T2P.

Required Reading - ANTTP 11.7, NTRP 8.6.

AIE-4140 1.5 365 B,R,M (NS) A 1 MV-22

Goal. Introduce insertion procedures via fastrope and rappel.

Requirement

Discuss

HIGE/HOGE requirements.
Pilot flying, pilot monitoring, and crew chief duties.
RST brief.
Voice communication/standard terminology.
ICS failure/hand and arm signals.
Current Force Order/Wing SOP.
Obstacle clearance/wave-off.
Emergency procedures: Engine failure, uncommanded nacelle movement, nacelle blower failure.
Coupled mode operation.

Introduce

Preflight of fast rope/rappel rigging.
Skills involved for holding an extended hover.
Troop insertion via fast rope/rappelling.

Performance Standards

Maintain stable hover when deploying troops.

Execute proper AIE procedures IAW the MV-22 ANTTP.

Maintain obstacle clearance.

Instructor: BIP.

Prerequisites. SEXT-4070, ACAD 4110.

AIE-4141 1.5 365 B,R,M (NS) A 1 MV-22

Goal. Introduce insertion and extraction procedures via hoisting.

Requirement

Discuss

HIGE/HOGE requirements.
Pilot flying, pilot monitoring, and crew chief duties.
Voice communication/standard terminology.
ICS failure/hand and arm signals.
Obstacle clearance/wave-off.
Hoist system operation.
Emergency procedures: Engine failure, uncommanded nacelle movement, nacelle blower failure.
Coupled mode operation.
SAR patterns and over-water hoisting operations.

Introduce

Preflight of hoist system.
Skills involved for holding an extended hover.
Troop insertion via hoisting.
Extraction via hoist

Performance Standards

Maintain stable hover when deploying troops.

Execute proper AIE procedures IAW the MV-22 ANTTP.

Maintain obstacle clearance.

Instructor: BIP.

Prerequisites. SEXT-4070, ACAD 4112.

2.9 INSTRUCTOR TRAINING PHASE (5000)

Purpose. To establish training for instructor designations.

General

ROC will be per the T&R Program manual.
Pilots may fly night flights using NVDs in this phase under HLL or LLL conditions provided they are NSQ for that light level
Refer to the MAWTS-1 Course Catalog for specific syllabus information.
For Instructor Designations other than BIP refer to the Tactical MV-22B T&R Manual and the MAWTS-1 Course Catalog.

Stage Overview

INSTRUCTOR TRAINING PHASE OVERVIEW		
STAGE	**PARAGRAPH**	**PAGE**
BASIC INSTRUCTOR PILOT (BIP)	2.9.1	2-36

2.9.1 Basic Instructor Pilot (BIP)

Purpose

To develop qualified Basic Instructor Pilots (BIPs) using a standardized instructor training program.

This syllabus is designed to prepare aircraft commanders to instruct initial events in the simulator and aircraft.

This portion of the syllabus shall be used by VMM squadrons to assist in instructor standardization.

General

All maneuver descriptions are in the MV-22 NATOPS and ANTTP.
Conduct Instructor Under Training (IUT) events with a WTI.
IUT flights will emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas.
Crew Requirements. P/P for simulators.

Instructor Overview

BASIC INSTRUCTOR PILOT STAGE OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-5010	8.0	*	B		G		TRAINING COURSE
LAB-5020	1.0	*	B		G		IOS FUNCTIONS
SBIP-5030	2.0	*	B	D	S	1	FAM/CAL/FORM SIM
SBIP-5031	2.0	*	B	D	S	1	MAT/AIE/CQ SIM

ACAD-5010 8.0 * B,R G

Basic Instructor Training Course

Goal. The PUI will have an introductory knowledge of instructional techniques, briefing and debriefing styles, and tactical risk mitigation for instructional sorties.

Prerequisite. Recommended by the Squadron Standardization Board.

LAB-5020 1.0 * B G

Trainer IOS Functions and Operations

Goal. The PUI has an introductory knowledge of the functions and operation of the trainer's IOS.

Instructor. BIP.

Prerequisite. Recommended by the Squadron Standardization Board.

SBIP-5030 2.0 * B D S 1 FFS/FTD

Goal. Introduce Familiarization, Confined Area Landing, and Formation instruction techniques.

Requirements

Discuss

All "discuss" items in the FAM, CAL, and FORM stage events with emphasis on IUT instructional technique.
Comfort level.
Simulator preparation for a networked event
Review. All FAM, CAL, and FORM stage maneuvers with emphasis on instructional technique.

Performance Standards

Execute proper CAL approaches IAW MV-22 ANTTP and provide accompanying inflight description.

Provide accurate instruction on glideslope correction to achieve proper normal and steep approach glideslope.

Maintain proper formation positioning while flying in combat cruise and combat spread

Instructor. WTI.

Prerequisites. ACAD-5010, LAB-5020, FAM, FORM, CAL stage complete.

SBIP-5031 2.0 * B D S 1 FFS/FTD

Goal. Introduce instructional techniques regarding air delivery operations, mountain area training, and carrier qualification.

Requirements.

Discuss

Simulator set-up for externals.
All AD, MA or CQ stage discuss items.

Review. All AD, MA and CQ stage maneuvers with emphasis on instructional technique.

Performance Standards

Execute proper MAT approaches IAW MV-22 ANTTP and provide accompanying inflight description.

Provide accurate instruction CMS and mission planning skills during air delivery operations.

Maintain proper glideslope and closure rate during CQs.

Instructor. WTI.

Prerequisites. ACAD-5010, LAB-5020, AD, MA and CQ stage complete, and recommended by the Squadron Standardization Board.

2.10 REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS (RQD) PHASE (6000)

Purpose. To establish training for specific requirements and flight leadership designations.

General

Squadrons will use this phase of training for check flights and designations.
The PUI will demonstrate sound levels of aircraft/flight leadership and judgment required in a combat environment.
Requirement and flight leadership codes in the 6000 Phase should be logged in conjunction with other 2000-4000 codes completed during the event.

When the flight to attain the requirement / designation is complete, a letter from the squadron Commanding Officer awarding the designation shall be placed in the NATOPS and APR before that designation may be utilized. After the Commanding Officer has designated the PUI in writing as gaining a designation, the required qualification or designation entry shall be made in M-SHARP.

Phase Overview

PHASE OVERVIEW		
STAGE	**PARAGRAPH**	**PAGE**
REQUIREMENTS (RQD)	2.10.1	2-38
NAVY TILTROTOR AIRCRAFT COMMANDER (NTAC)	2.10.2	2-41
FUNCTIONAL CHECK PILOT (FCP)	2.10.3	2-42

2.10.1 REQUIREMENTS (RQD)

Purpose. To track requirements as outlined in the MV-22 NATOPS, OPNAVINST 3710.7 and OPNAVINST 1542.7.

General. This section allows squadrons to document and track annual NATOPS and Instrument check flights as well as CRM training.

Crew Requirements. All checks will be per all applicable directives. NATOPS and Instrument checks may be accomplished in the trainer or the aircraft.

RQD Overview

RQD OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-6010	3.0	365	B,R,M		G		OPEN BOOK NATOPS
ACAD-6011	1.0	365	B,R,M		G		CLOSED BOOK NATOPS
ACAD-6012	1.0	365	B,R,M		G		NATOPS ORAL EXAM
RQD-6030	2.0	365	B,R,M	(N)	A/S	1	NATOPS CHECK
RQD-6031	0.0	365	B,R,M	(N)	A/S	1	ANI/NI CHECK
RQD-6032	0.0	365	B,R,M	(N)	A/S	1	NI CHECK
ACAD-6040	6.0	365	B,R,M		G		IGS
ACAD-6041	2.0	365	B,R,M		G		WRITTEN INST EXAM
ACAD-6042	1.0	365	B,R,M		G		ORAL INST EXAM
RQD-6060	2.0	365	B,R,M	(N)	S/A	1	INSTRUMENT CHECK
RQD-6061	0.0	365	B,R,M	(N)	S	1	INST EVALUATOR
ACAD-6070	1.0	365	B,R,M		G		CRM REFRESH LECTURE
RQD-6080	1.5	365	B,R,M	(N)	S/A	1	CRM CHECK
ACAD-6090	0.0	365	B,R,M		G		CRMF LECTURE
RQD-6091	0.0	365	B,R,M	(N)	S/A	1	CRMF EVAL
RQD-6033	1.0	90	B,R,M	(N)	S/A	1	EP REVIEW

ACAD-6010 3.0 365 B,R,M E G

Open Book NATOPS Examination

Goal. The Open Book Examination shall consist of, but not be limited to the NATOPS question bank. The purpose of the open book examination is to evaluate the airman's knowledge of the appropriate publications and the aircraft.

Instructor. NI/ANI.

Performance Standard. Achieve a minimum grade of qualified on the Open Book examination.

ACAD-6011 1.0 365 B,R,M E G

Closed Book NATOPS Examination

Goal. The Closed Book Examination shall be limited to the NATOPS question bank. The purpose of the closed book examination portion is to evaluate the airman's knowledge of emergency procedures and aircraft limitations.

Performance Standard. Achieve a minimum grade of qualified on the Closed Book examination.

Instructor. NI/ANI.

Prerequisite. ACAD-6010

ACAD-6012 1.0 365 B,R,M E G

Oral NATOPS Examination

Goal. The Oral Examination shall consist of, but not be limited to, the NATOPS question bank. The evaluator may draw upon their experience to propose questions of a direct and positive manner and in no way be opinionated to evaluate the airman's knowledge of normal/emergency procedures, aircraft limitations, and performance.

Performance Standard. Achieve a minimum grade of qualified on the Oral examination.

Instructor. NI/ANI.

Prerequisite. ACAD-6011

RQD-6030 2.0 365 B,R,M (N) E A/S 1 FFS/FTD

Goal. Conduct an objective evaluation of the airman's knowledge of mission planning, briefing, normal operating procedures (flight and ground), crew resource management, aircraft systems, performance criteria, emergency procedures, and debriefing. The focus is on normal and emergency procedures, not tactical execution. Emphasis shall be placed on the aforementioned items with the addition of USMC Admin SOP, local course rules, local SOP addendum, and admin flight

procedures. The NATOPS evaluation is intended to evaluate compliance with NATOPS procedures. The NATOPS evaluation is the means to measure the airman's efficiency in the execution of normal operating procedures and reaction to emergencies and malfunctions. The NATOPS evaluation process should be as much a learning tool and/or experience as it is an evaluation.

Requirement. The pilot under evaluation shall bring a completed NATOPS evaluation card, pre-coordinated DTM and load comp. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level and highest flight leadership designation of the pilot under evaluation.

Performance Standards. The pilot under evaluation must be prepared to safely demonstrate flight proficiency and knowledge of all maneuvers and procedures described within the NATOPS, CNAF 3710.7 and in accordance with all SOPs.

Instructor. NI/ANI.

Prerequisite. ACAD-6012

RQD-6031 0.0 365 B,R,M (N) E A/S 1 FFS/FTD

Goal. Tracking code for when a NATOPS check is conducted as a NI or ANI check. Log this code in place of a 6030.

Requirement.

The pilot under evaluation shall bring a completed NATOPS evaluation card, pre-coordinated DTM and load comp. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level and highest flight leadership designation of the pilot under evaluation.

Performance Standards. The pilot under evaluation must be prepared to safely demonstrate flight proficiency and knowledge of all maneuvers and procedures described within the NATOPS, CNAF 3710.7 and in accordance with all SOPs.

Instructor. NE/NI.

Prerequisite. ACAD-6012

RQD-6032 0.0 365 B,R,M (N) E A/S 1 FFS/FTD

Goal. Tracking code for when a NATOPS check is conducted as a NI check. Log this code in place of a 6030.

Requirement.

The pilot under evaluation shall bring a completed NATOPS evaluation card, pre-coordinated DTM and load comp. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level and highest flight leadership designation of the pilot under evaluation.

Performance Standards. The pilot under evaluation must be prepared to safely demonstrate flight proficiency and knowledge of all maneuvers and procedures described within the NATOPS, CNAF 3710.7 and in accordance with all SOPs.

Instructor. NE.

Prerequisite. ACAD-6012

ACAD-6040 6.0 365 B,R,M E G

Instrument Ground School

Goal. The Instrument Ground School shall be a Commander Naval Air Forces (CNAF) approved syllabus and at a minimum cover the following topics:

Spatial disorientation.

CNO GPS Policy Statement and GPS fundamentals to include RNAV (GPS) and Required Navigation Performance (RNP).

Vertical Separation Minimums (RVSM) procedures.

Requirements and denial reports.

Use of non-DoD instrument approach/departure reports.

Use of non-DoD GPS NOTAMS systems (Jeppeson GPS NOTAMS and Databases).

Performance Standards. Successful completion of Instrument Ground School.

Instructor. INSTEVAL.

ACAD-6041 2.0 365 B,R,M E G

Open Book NATOPS Instrument Examination

Goal. The Open Book Instrument Examination shall consist of, but is not limited to knowledge of the NATOPS, NATOPS Instrument Flight Manual, FAR/AIM and/or aeronautical publications which are applicable, normal/emergency instrument ground and flight procedures, weather, aircraft limitations, and performance, and any subject listed in OPNAVINST 3710.7 Series. The examination shall include questions on the following subjects:

Pertinent Navy or Marine Corps regulations, orders, and instructions.

Pertinent parts of the Federal Aviation Regulations (FAR), other regulations, and/or aeronautical publications which are applicable.

Interpretation of weather information normally used in flight planning.

Performance Standard. Achieve a minimum grade of qualified on the Open Book examination.

Instructor. INSTEVAL.

Prerequisite. ACAD-6040.

ACAD-6042 1.0 365 B,R,M E G

Oral NATOPS Instrument Examination

Goal. The Oral Examination shall consist of, but is not be limited to, knowledge of the NATOPS, NATOPS Instrument Flight Manual, FAR/AIM and/or aeronautical publications which are applicable, normal/emergency instrument ground and flight procedures, weather, aircraft limitations, and performance. Additionally, the instructor/evaluator may draw upon their individual experience to propose questions of a direct and positive manner to evaluate the airman's knowledge and understanding.

Performance Standards. Achieve a minimum grade of qualified on the Oral examination.

Instructor. INSTEVAL.

Prerequisite. ACAD-6041.

RQD-6060 2.0 365 B,R,M (N) E S/A 1 FFS/FTD

Goal. Following completion of the ground evaluation events, an instrument flight/simulator evaluation event shall be flown and completed with a grade of "Qualified." The evaluator shall conduct an objective evaluation of the airman's knowledge of flight planning, filing, briefing, conduct of flight under normal operating conditions, emergency procedures, closing out flight plans, and debriefing.

Performance Standards.

> Execute flight and/or ground operations safely IAW CNAF 3710.7 Series, Platform NATOPS, NATOPS Instrument Flight Manual, and local training SOPs. All areas on the instrument flight evaluation are critical. An "Unsatisfactory" grade in any area shall result in an "Unsatisfactory" grade for the flight.

Instructor. INSTEVAL.

Prerequisite. ACAD-6042.

RQD-6061 0.0 365 B,R,M (N) E S 1 FFS/FTD

Goal. Tracking code for an Instrument Evaluator.

ACAD-6070 1.0 365 B,R,M E G

Crew Resource Management Refresher Lecture

Goal. Review the 7 critical CRM skills during a mission scenario as well as during emergencies and system failures.

Performance Standards. Successful completion of the CRM lecture.

Instructor. CRMF/I.

RQD-6080 1.5 365 B,R,M (N), E S/A 1 FFS/FTD

Goal. Review CRM principles while executing a simulated mission scenario.

Requirement. Review the 7 critical CRM skills during a mission scenario as well as during emergencies and system failures.

Performance Standards. Pilots shall demonstrate effective use of the 7 critical CRM skills in accordance with OPNAVINST 1542.7, MV-22 NATOPS, and applicable directives.

Instructor. CRMF/I.

Prerequisites. ACAD-6070

RQD-6090 0.0 365 B,R,M E G

Goal. Tracking code for CRMF lecture.

Performance Standards. Successful completion of the CRMF lecture.

Instructor. CRMI.

RQD-6091 0.0 365 B,R,M (N), E S/A 1 FFS/FTD

Goal. Tracking code for CRMF evaluation.

Requirement. Review the 7 critical CRM skills during a mission scenario as well as during emergencies and system failures.

Performance Standards. Pilots shall demonstrate effective use of the 7 critical CRM skills in accordance with OPNAVINST 1542.7, MV-22 NATOPS, and applicable directives.

Instructor. CRMI.

Prerequisites. ACAD-6090

RQD-6092 0.0 * B,R,M E G

Goal. Tracking code for CRMI course.

Performance Standards. Successful completion of the CRMI course.

RQD-6033 1.0 90 B,R,M (N), E S/A 1 FFS/FTD

Goal. Emergency Procedures review.

Requirement. This flight will review MV-22 emergency procedures and fulfills the requirement of the 90 day EP review requirement.

Performance Standards. Comply with MV-22 NATOPS procedures while dealing with non-normal conditions.

Prerequisites. T2P.

2.10.2 NAVY TILTROTOR AIRCRAFT COMMANDER (NTAC)

Purpose. To prepare and evaluate PUI's ability to plan, brief, and command a CMV-22 in a tactical environment.

General

All Basic pilots are required to complete the entire syllabus.
The NTAC-6130 should be flown in a simulator and will serve as a NATOPS evaluation for the Aircraft Commander position; however, any event may serve as the NATOPS evaluation.
BIP syllabus completion is not required for Aircraft Commander designation but is required to instruct as an Aircraft Commander.
Pilots may begin the Aircraft Commander syllabus prior to meeting CNAF 3710.7 minimum hours requirements at the discretion of the Commanding Officer however the hours requirements shall be met prior to designation.

Prerequisites. Core Skill complete. Any event deferred or waived for syllabus progression is required to be completed under instruction before the PUI may serve as an Aircraft Commander for that event. Recommended by the Squadron Standardization Board.

Crew Requirements. NI/ANI, WTI, other senior pilot designated by the Commanding Officer/T2P/CC/AO for aircraft events. NI/ANI/T2P/CC/AO for NATOPS evaluations.

NTAC Overview

NAVY TILTROTOR AIRCRAFT COMMANDER STAGE OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-6110	3.0	*	B		G		ORAL EXAM
NTAC-6130	2.0	*	B	(N)	S/A	1	REV FOR NTAC
NTAC-6131	2.0	*	B	NS	S/A	1	NIGHT NTAC
NTAC-6132	2.0	*	B	(N)	A	1	NTAC EVAL

ACAD-6110 3.0 * B E G

Navy Tiltrotor Aircraft Commander Oral Examination

Goal. Conduct a Navy Tiltrotor Aircraft Commander Oral Examination.

Requirement. Squadrons shall evaluate pilots for the TAC designation per the criteria in the MV-22 NATOPS Flight Manual, CNAF-M3710.7, and local SOPs. The composition and conduct of the board is to be determined by the squadron standardization board and Commanding Officer. It is recommended to provide the PUI a single ship mission representative of the current or anticipated deployment. Additive conditions and mission changes will be discussed during the oral board. The PUI will be evaluated on his knowledge, planning, and decision making logic.

Discuss

Mission Planning
Joint Mission Planning Software.
Load Computation & Take-off and Landing Data.
Flight Plan.

NATOPS

CNAF-M3710.7.
Systems & limitations.
Emergency Procedures.
Local Standard Operating Procedures.

Maintenance

COMNAVAIRFOR 4790.
Aircraft Discrepancy Book (ADB).
Maintenance Action Forms (MAF).
Troubleshooting Procedures.
Quality Assurance (QA).
Safe for Flight (SFF).
Mission Essential Subsystems Matrix (MESM).

Operational Risk Management

Deliberate Risk Management.
Time Critical Risk Management.
Decision Making.
Headwork.
Maturity.

Instructor. NI/ANI, WTI, other senior pilot designated by the Commanding Officer.

Prerequisites. Recommendation by Squadron Standardization Board, Core Skill Complete.

NTAC-6130 2.0 * B (N) E S/A 1 FFS/FTD

Goal. Conduct a Navy Tiltrotor Aircraft Commander (NTAC) review.

Requirement. This flight will review day operations and procedures contained in the T&R syllabus in preparation for the TAC check.

Performance Standards

Conduct day Core Skill and Mission Skill events IAW applicable manuals.

Demonstrate sound knowledge of NATOPS limits, Eps, and aircraft systems.

Instructor. NI/ANI, WTI, other senior pilot designated by the Commanding Officer.

Prerequisites. Core Skill Complete, ACAD-6110.

NTAC-6131 2.0 * B NS E S/A 1 FFS/FTD

Goal. Conduct a night NTAC review.

Requirement. Continuation of review flight to include night operations and procedures.

Performance Standards.

Conduct night/NVD Core Skill and Mission Skill events IAW applicable manuals.

Demonstrate sound knowledge of SOPs, T&R Program Manual regulations, and CNAF 3710.7 regulations.

Instructor. NI/ANI, WTI, other senior pilot designated by the Commanding Officer.

Prerequisites. Core Skill Complete, ACAD-6110.

NTAC-6132 2.0 * B (N) E A 1 MV-22

Goal. Conduct a NTAC check.

Requirement. Squadrons shall evaluate pilots for the NTAC designation per the criteria in the MV-22 NATOPS Flight Manual, CNAF-M3710.7, and local SOPs. This flight will cover all practicable operations and procedures contained in the T&R syllabus.

Performance Standards

Conduct day, night, and/or NVD Core Skill and Mission Skill events IAW applicable manuals.

Demonstrate situational awareness, CRM, and operational knowledge necessary to be a TAC.

Demonstrate sound knowledge of the MV-22 ANTTP.

Instructor. NI/ANI, WTI, other senior pilot designated by the Commanding Officer.

Prerequisites. Core Skill Complete, NSQ, RQD-6030, RQD-6060, RQD-6080, TAC-6130, TAC-6131

2.10.3 Functional Check Pilot (FCP)

Purpose. To track requirements as outlined in the COMNAVAIRFOR 4790.2.

General. This section allows squadrons to document and track initial functional check pilot training as well as functional check flight proficiency.

Prerequisites

Designated CMV-22 Navy Tiltrotor Aircraft Commander. It is recommended that this designation be pursued simultaneously to NTAC. Designation may not occur until the PUI is a designated NTAC.
Recommended by the Squadron Standardization Board.

Crew Requirements. Events will be per all applicable directives and local maintenance SOPs. Events may be accomplished in the trainer or the aircraft.

FCF Overview

FUNCTIONAL CHECK PILOT (FCP) OVERVIEW							
EVENT	**TIME**	**REFLY**	**POI**	**CONDITIONS**	**DEVICE**	**NUM**	**DESCRIPTION**
ACAD-6610	1.0	*	B		G		QA LECTURE
SFCP-6630	1.0	*	B	D	S/A	1	TRACK AND BALANCE
SFCP-6631	1.5	*	B	D	A	1	FCF PROCEDURES

ACAD-6610 1.0 * B G

Functional Check Flight QA Lecture

Goal. The PUI will have an understanding of the procedures to conduct MV-22 functional check flights.

Required Reading. Per squadron directives.

Instructor. FCP.

Prerequisite. Recommended by the Squadron Standardization Board.

SFCP-6630 1.0 * B D S/A 1 FFS/FTD

Goal. Conduct an evaluation of Rotor Track and Balance (RT&B) procedures.

General. Squadrons shall evaluate pilots for designation at the discretion of the Commanding Officer per the criteria in the MV-22 NATOPS Flight Manual, CNAF-M 3710.7, COMNAVAIRFORINST 4790.2, and local SOPs. Prospective FCPs shall complete the ground-training syllabus per Squadron Order prior to commencing flight training. Requirements. A pilot in the FCP syllabus will receive a brief from a Quality Assurance Representative (QAR) or from Maintenance Control personnel on QA and Maintenance Control procedures related to FCFs, use of IETMS and other publications, phase Inspections, discussion of logbooks, ADBs, Test Cards and general paperwork related to FCFs, use of VSLED for track and balance procedures and use of the AMEGS for maintenance data downloads, Maintenance Control debriefs and vibration trend analysis.

Discuss

COMNAVAIRFORINST 4790.2 and CNAF-M 3710.7 FCF requirements.
Level 1 and Level 2 vibration criteria.
Use of optical sensors.
Flight regimes, airspeed and vertical speed constraints.
IETMS RT&B requirements.
CMS RT&B functions (moves made, performance calculation and configurations edited).
AMEGS review of RT&B and trend analysis data.

Evaluate

Data collection in all RT&B regimes.
Post flight data processing using the CMS.
Post flight data processing using the AMEGS.
Squadrons shall base this evaluation on completion of a locally prepared syllabus.

Performance Standards. Perform RT&B IAW the MV-22 NATOPS.

Instructor. FCP.

Prerequisite. ACAD-6610, Recommended by Squadron Standardization Board.

Required Reading – COMNAVAIRFOR 4790.2G Volume I, Ch 12.1.4 Functional Check Flights, OPNAVINST 3710.7R Paragraph 3.8, A1-V22AB-NFM-000, IETM rotor track and balance procedures and V-22 Periodic Maintenance Information Cards.

SFCP-6631 1.5 * B D S/A 1 FFS/FTD

Goal. Conduct an evaluation of FCF procedures. After the completion of this flight the pilot will receive the FCP designation.

Discuss

COMNAVAIRFOR 4790 and CNAF 3710 FCF requirements.
Systems checks.
Engine performance checks, with and without VSLED.
Flight control checks.

Evaluate

Systems checks.
Engine performance checks.
Flight control checks.
Stall check.
Fire toggle check.

Performance Standards. Perform a complete FCF IAW the MV-22 NATOPS.

Instructor. FCP.

Prerequisite. NTAC-6132, SFCP-6630

2.11 CMV-22B PILOT T&R MATRIX (2000-6000 Phase)

CMV-22B PILOT T&R MATRIX (2000-6000 Phase)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN		MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	TEN	TEN+	NETWORK	# NETWORK	PROF INTERVAL	PREREQUISITE	PREREQUISITE NOTES	CHAINING	EVAL	INST	EOM	EVENT CONV
				B	R		#	TIME	#	TIME	#	TIME															
2000 PHASE CORE SKILLS																										
FAMILIARIZATION (FAM)																										
FAM	ACAD	MV-22 SINCGARS	2010	X				1.0						G						*					BIP		
	ACAD	MV-22 SATCOM	2011	X				1.0						G						*					BIP		
	LAB	FLIGHT LINE RADIO DEMO	2020	X				2.0						A	2					*	2010,2011				BIP		
	SFAM	FAM	2030	X						2.0			(N)	S	1					*	2020,2021				BIP		
	SFAM	INST	2031	X	X	X				2.0			(N)	S	1					365	2020,2021				BIP		
FAM TOTAL							3	4.0	2	4.0	0	0.0														
FORMATION (FORM)																										
FORM	ACAD	TACFORM	2110	X				1.0						G						*					BIP		
	ACAD	TRAIL FORM	2111	X				1.0						G						*					BIP		
	LAB	TACFORM/TRAIL WALK THROUGH	2120	X				1.0						G						*	2110,2111				BIP		
	SFORM	TACFORM / NAV	2130	X						2.0			D	S	2			X	2	*	2111,2120				BIP		
	SFORM	TRAIL FORMATION	2131	X						2.0			(NS)	S	2			X	2	*	2031,2120				BIP		
	FORM/NAV	TAC FORM / NAV	2140	X	X	X						2.0	(NS)	A	2					365	2130,2131				BIP		
FORM TOTAL							3	3.0	2	4.0	1	2.0														
CONFINED AREA LANDING (CAL)																										
CAL	ACAD	CAL PROCEDURES	2210	X				1.0						G						*					BIP		
	SCAL	SINGLE CAL	2230	X						2.0			D	S	1					*	2030,2210				BIP		
	SCAL	SECTION CAL	2231	X	X	X				2.0			D	S	2			X	2	365	2130,2230				BIP		
	CAL	SINGLE CAL VISUAL	2240	X								1.5	D	A	1					*	2230		2230		BIP		
	CAL	SINGLE CAL WYPT	2241	X								1.5	D	A	1					*	2230		2230		BIP		
	CAL	SECTION CAL	2242	X	X	X						2.0	D	A	2					365	2140,2231,2240,2241		2231, 2240,2241		BIP		
CAL TOTAL							1	1.0	2	4.0	3	5.0														
REDUCED VISIBILITY LANDINGS (RVL)																										
RVL	ACAD	RVL	2250	X				1.0						G						*	2210				RVLI		
	LAB	RVL LAB	2260	X				1.0						G						*	2250				RVLI		
	SRVL	RVL AUTOMATED	2270	X	X					2.0			(NS)	S	1					365	2230,2260				RVLI		
	SRVL	RVL UNASSISTED	2271	X	X					2.0			(NS)	S	1					365	2230,2260				RVLI		
RVL SKILL TOTAL							2	2.0	2	4.0	0	0.0														
NIGHT SYSTEMS HIGH LIGHT LEVEL (NS HLL)																										
NS HLL	ACAD	MV-22 NS EMPLOYMENT	2310	X				1.0						G						*	2250				NSI		
	SNS	HLL SGL CAL	2330	X	X					2.0			NS	S	1					365	2230		2230		NSI		
	SNS	HLL SEC CAL	2331	X	X					2.0			NS	S	2			X	2	365	2231,2330		2231,2330		NSI		
	NS	HLL SGL CAL	2340	X	X	X						2.0	HLL	A	1					365	2240,2241,2330		2240,2241,2330		NSI		
	NS	HLL SEC CAL	2341	X	X	X						2.0	HLL	A	2					365	2242,2331,2340		2242,2331,2340		NSI		
NS HLL SKILL TOTAL							1	1.0	2	4.0	2	4.0														

CMV-22B PILOT T&R MATRIX (2000-6000 Phase)																											
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN		MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	TEN	TEN+	NETWORK	# NETWORK	PROF INTERVAL	PREREQUISITE	PREREQUISITE NOTES	CHAINING	EVAL	INST	EOM	EVENT CONV
				B	R		#	TIME	#	TIME	#	TIME															
NIGHT SYSTEMS LOW LIGHT LEVEL (NS LLL)																											
NS LLL	SNS	LLL RVL	2370	X	X	X				2.0			LLL	S	1					365	NSQ HLL, 2270, 2271		2270,2271,2330		NSI		
	SNS	LLL SGL/SEC CAL	2371	X	X					2.0			LLL	S	2			X	2	365	NSQ HLL		2330,2331		NSI		
	NS	LLL SGL CAL VISUAL	2380	X	X							1.5	LLL	A	1					240	2370,2371		2340		NSI		
	NS	LLL SGL CAL WYPT	2381	X	X							1.5	LLL	A	1					240	2370,2371		2340		NSI		
	NS	LLL SEC NAV/TACFORM	2382	X								1.5	LLL	A	2					*	2371		2140		NSI		
	NS	LLL SEC CAL	2383	X	X	X						2.0	LLL	A	2					240	2380, 2381, 2382		2341,2371,2380, 2381, 2382		NSI		
NS LLL SKILL TOTAL							0	0.0	2	4.0	4	6.5															
AIR to AIR REFUELING (AAR)																											
AAR	ACAD	MV-22B AAR ACAD	2410	X				0.5						G						*	2110, 2111				AARI		
	ACAD	ICAO PROCEDURES	2411	X				1.0						G						*	2410				AARI		
	LAB	LONG RANGE PLNG LAB	2420	X				1.0						G						*	2411				AARI		
	SAAR	DAY AAR	2430	X						1.0			D	S	1					*	2130,2131,2420				AARI		
	SAAR	NIGHT AAR	2431	X						1.0			NS	S	1					*	2330,2430				AARI		
	AAR	DAY AAR	2440	X	X							1.5	D	A	1					365	2140,2430		2430		AARI		
	AAR	NIGHT AAR	2441	X	X	X						1.5	NS	A	1					365	2431,2440		2431, 2440		AARI		
AAR SKILL TOTAL							3	2.5	2	2.0	2	3.0															
LOW ALTITUDE TACTICS (LAT)																											
LAT	ACAD	LAT PLANNING	2610	X				0.5						G						*		T2P			LATI		
	ACAD	AIRCREW COORDINATION	1611	X				0.5						G						*	2610				LATI		
	ACAD	ROUTE PLANNING	2612	X				0.5						G						*	2611				LATI		
	ACAD	Ps E/M	2513	X				0.5						G						*	2612				LATI		
	LAB	WALK THROUGH	2620	X				0.5						G						*	2613				LATI		
	SLAT	LAT SIM	2630	X						2.0			D	S	1					*	2130,2620				LATI		
	LAT	DAY LAT	2640	X	X	X						1.5	D	A	1					365	2630				LATI		
LAT SKILL TOTAL							5	2.5	1	2.0	1	1.5															
MOUNTAIN AREA TRAINING																											
MAT	ACAD	HIGH ALTITUDE OPS	2710	X				0.5						G						*	2210				BIP		
	ACAD	ADV MV-22 AERO	2711	X				0.5						G						*	2210				BIP		
	SMAT	DAY MAT SIM	2730	X	X					1.0			D	S	1					365	2230,2710,2711				BIP		
	SMAT	NS MAT SIM	2731	X	X	X				1.0			NS	S	1					365	2330,2730		2330,2730		NSI		
	SMAT	HIGH/HOT/HEAVY SIM	2732	X	X	X				1.0			(NS)	S/A	1					365	2230,2710,2711		2730		BIP		
MAT SKILL TOTAL							2	1.0	3	3.0	0	0.0															

CMV-22B PILOT T&R MATRIX (2000-6000 Phase)																											
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN		MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	TEN	TEN+	NETWORK	# NETWORK	PROF INTERVAL	PREREQUISITE	PREREQUISITE NOTES	CHAINING	EVAL	INST	EOM	EVENT CONV
				B	R		#	TIME	#	TIME	#	TIME															
GROUND THREAT REACTION (GTR)																											
GTR	ACAD	MV-22 ALE-47	2810	X				1.0						G						*					WTI		
	ACAD	MV-22 APR-39	2811	X				1.0						G						*					WTI		
	ACAD	MV-22 AAR-47	2812	X				1.0						G						*					WTI		
	ACAD	ADA THREAT	2813	X				1.0						G						*					WTI		
	ACAD	IR SAM THREAT	2814	X				1.0						G						*					WTI		
	ACAD	RADAR PRINCIPLES	2815	X				1.0						G						*					WTI		
	ACAD	RADAR SAMS	2816	X				1.0						G						*					WTI		
	ACAD	GTR	2817	X				1.0						G						*	2810,2811,2812,2813,2814,2815,2816				WTI		
	LAB	GTR WALK-THR	2820	X				0.5						G						*	2817				WTI		
	SGTR	SINGLE TR	2830	X	X	X				2.0			(NS)	S	1	X				365	2630,2820				WTI		
GTR SKILL TOTAL							9	8.5	1	2.0	0	0.0															
CARRIER QUALIFICATION (CQ)																											
CQ	ACAD	MV-22 SHIP OPS	2910	X				1.0						G						*					BIP		
	ACAD	AIR CAPABLE SHIPS	2911	X				0.5						G						*					BIP		
	SCQ	DAY SIM	2930	X	X					1.0			D	S	1					365	2230,2910,2911				NSI		
	SCQ	NIGHT SIM	2931	X	X					1.0			NS	S	1					365	2330,2930		2930		NSI		
	CQ	DAY FCLP	2940	X	X							1.5	D	A	1					365	2240,2930		2230,2930		BIP		
	CQ	DAY CQ	2941	X	X	X						1.5	D	A	1					365	2940		2940,2930		BIP		
	NS CQ	NIGHT FCLP	2942	X	X	X						1.5	NS	A	1					365	2340,2931,2940		2340,2940		NSI		
	NS CQ	NIGHT CQ	2943	X	X	X						1.5	NS	A	1					365	NSQ for light level,2941,2942		2941,2942,2931		NSI		
CQ SKILL TOTAL							2	1.5	2	2.0	4	6.0															
2000 PHASE TOTAL							**31**	**27.0**	**21**	**35.0**	**17**	**28.0**															
4000 PHASE CORE PLUS SKILLS																											
AERIAL DELIVERY (AD)																											
AD	ACAD	AD / PARAOPS	4010	X				1.0						G						*					BIP		
	SAD	AD OF CARGO / PARAOPS	4030	X	X					2.0			(NS)	S	1					365	4010				BIP		
	PARA	PARAOPS	4040	X	X	X						1.5	(NS)	A	1					365	4030		4030		BIP		
	SEXT	DAY/NS EXTERNALS	4070	X						2.0			D/NS	S	1					*	2330				BIP		
	EXT	DAY EXTERNALS	4080	X	X	X						1.5	D	A	1					365	2240,4070				BIP		
AD SKILL TOTAL							1	1.0	2	4.0	2	3.0															
ALTERNATE INSERTION/EXTRACTION TECHNIQUES (AI/E)																											
AI/E	ACAD	FASTROPE, RAPPEL, SPIE OPS	4110	X				0.5						G						*					BIP		
	ACAD	HOIST OPS	4112	X				0.5						G						*					BIP		
	AIE	FASTROPE/RAPPEL	4140	X	X	X						1.5	(NS)	A	1					365	4070, 4110				BIP		
	AIE	HOISTING	4141	X	X	X						1.5	(NS)	A	1					365	4070,4112				BIP		
AI/E SKILL TOTAL							2	1.0	0	0.0	2	3.0															

CMV-22B PILOT T&R MATRIX (2000-6000 Phase)

SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN		MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	TEN	TEN+	NETWORK	# NETWORK	PROF INTERVAL	PREREQUISITE	PREREQUISITE NOTES	CHAINING	EVAL	INST	EOM	EVENT CONV
				B	R		#	TIME	#	TIME	#	TIME																
5000 PHASE INSTRUCTOR																												
BASIC INSTRUCTOR PILOT (BIP)																												
BIP	ACAD	BITC	5010	X				8.0						G						*					BIP		
	LAB	TRAINER IOS FUNCTIONS AND OPS	5020	X				1.0						G						*					BIP		
	SBIP	FAM / CAL / FORM	5030	X						2.0			D	S	1					*	5020			E	WTI		
	SBIP	AD / MAT / CQ	5031	X						2.0			D	S	1					*	5020			E	WTI		
BIP SKILL TOTAL							2	9.0	2	4.0	0	0.0															
AARI																												
AARI	ACAD	INSTRUCT MV-22 AAR ACAD	5310	X				1.0						G						*	MAWTS-1 COURSE CATALOG			E	AARI		
	LAB	INSTRUCT MV-22 AAR CHALK TALK	5320	X				1.0						G						*	MAWTS-1 COURSE CATALOG			E	WTI		
	SAARI	DAT / NT AAR SIM	5330	X						2.0			D/NS	S	1					*	MAWTS-1 COURSE CATALOG			E	AARI		
	AARI	NIGHT AAR CERT	5331	X								2.0	NS	A	1					*	MAWTS-1 COURSE CATALOG			E	WTI		
AARI SKILL TOTAL							2	2.0	1	2.0	1	2.0															
6000 PHASE (REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS (R,C,Q,D)																												
NATOPS (NTPS)																												
NTPS	ACAD	NATOPS OPEN BOOK	6010	X	X	X		3.0						G						365				E	NI/ANI	X	
	ACAD	NATOPS CLOSED BOOK	6011	X	X	X		1.0						G						365	6010			E	NI/ANI	X	
	ACAD	NATOPS ORAL EXAM	6012	X	X	X		1.0						G						365	6011			E	NI/ANI	X	
	RQD	NATOPS EVAL	6030	X	X	X						2.0	(N)	A/S	1					365	6012			E	NI/ANI	X	
	RQD	ANI EVALUATOR	6031	X	X	X						0.0	(N)	A/S	1					365	6012			E	NI	X	
	RQD	NI EVALUATOR	6032	X	X	X						0.0	(N)	A/S	1					365	6012		6030	E	NE	X	
NTPS SKILL TOTAL							3	5.0	0	0.0	3	2.0															
INSTRUMENT (INST)																												
INST	ACAD	IGS	6040	X	X	X		6.0						G						365				E	INSTEVAL	X	
	ACAD	INSTRUMENT EXAM	6041	X	X	X		2.0						G						365	6040			E	INSTEVAL	X	
	ACAD	INSTRUMENT ORAL EXAM	6042	X	X	X		1.0						G						365	6041			E	INSTEVAL	X	
	RQD	INST EVAL	6060	X	X	X				2.0			(N)	S/A	1					365	6042			E	INSTEVAL	X	
	RQD	INST EVALUATOR	6061	X	X	X				0.0			(N)	S/A	1					365	6060			E	INST EVAL	X	
INST SKILL TOTAL							3	9.0	2	2.0	0	0.0															
CREW RESOURCE MANAGEMENT (CRM)																												
CRM	ACAD	CRM REFRESHER	6070	X	X	X		1.0						G						365				E	CRMF/I	X	
	RQD	CRM EVAL	6080	X	X	X				1.5			(N)	S/A	1					365	6070			E	CRMF/I	X	
	ACAD	CRMF LECTURE	6090	X	X	X		0.0						G						365	-	-	6070	E	CRMF/I	X	
	RQD	CRMF EVAL	6091	X	X	X				0.0			(N)	S/A	1					365	6090		6080	E	CRMF/I	X	
	ACAD	CRMI COURSE	6092	X				0.0						G						*							
CRM SKILL TOTAL							3	1.0	2	1.5	0	0.0															
EMERGENCY PROCEDURES (EP)																												
EP	RQD	EP REVIEW	6033	X	X	X				1.0			(N)	S/A	1					90	T2P			E			
EP SKILL TOTAL							0	0.0	1	1.0	0	0.0															
NAVY TILTROTOR AIRCRAFT COMMANDER (NTAC)																												
NTAC	ACAD	ORAL NTAC BOARD	6110	X				3.0						G						*				E	NI/ANI/WTI		
	NSTAC	NTAC REVIEW	6130	X						2.0			(N)	S/A	1					*	6110			E	NI/ANI/WTI		
	NSTAC	NIGHT NTAC REVIEW	6131	X						2.0			NS	S/A	1					*	6110			E	NI/ANI/WTI		

CMV-22B PILOT T&R MATRIX (2000-6000 Phase)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN		MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	TEN	TEN+	NETWORK	# NETWORK	PROF INTERVAL	PREREQUISITE	PREREQUISITE NOTES	CHAINING	EVAL	INST	EOM	EVENT CONV
				B	R		#	TIME	#	TIME	#	TIME															
	NTAC	NTAC CHECK	6132	X								2.0	(N)	A	1					*	NSQ,6030,6060,6080,6130,6131			E	NI/ANI/WTI		
NTAC SKILL TOTAL							1	3.0	2	4.0	1	2.0															
FUNCTIONAL CHECK PILOT (FCP)																											
FCP	ACAD	QA LECTURE	6610	X				1.0						G						*					FCP		
	SFCP	RTB	6630	X						1.0			D	S/A	1					*	6610				FCP		
	SFCP	FCF CERT	6631	X						1.5			D	S/A	1					*	6132,6630				FCP		
FCP SKILL TOTAL							1	1.0	2	2.5	0	0.0															

2.12 CMV-22B PILOT RANGE AND ORDNANCE MATRIX

CMV-22B PILOT RANGE AND ORDNANCE MATRIX										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE QUANTITY	ORDNANCE NOTES	RANGE	RANGE NOTES	EXTERNAL SYLLABUS SUPPORT	EXTERNAL SYLLABUS NOTES
2000 PHASE CORE SKILLS										
CONFINED AREA LANDING (CAL)										
CAL	CAL	SINGLE CAL VISUAL	2240					SUITABLE LZ AND AIRSPACE		
	CAL	SINGLE CAL WYPT	2241					SUITABLE LZ AND AIRSPACE		
	CAL	SECTION CAL	2242					SUITABLE LZ AND AIRSPACE		
NIGHT SYSTEMS HIGH LIGHT LEVEL (NS HLL)										
NS HLL	NS	HLL SGL CAL	2340					SUITABLE LZ AND AIRSPACE		
	NS	HLL SEC CAL	2341					SUITABLE LZ AND AIRSPACE		
NIGHT SYSTEMS LOW LIGHT LEVEL (NS LLL)										
NS LLL	NS	LLL SGL CAL VISUAL	2380					SUITABLE LZ AND AIRSPACE		
	NS	LLL SGL CAL WYPT	2381					SUITABLE LZ AND AIRSPACE		
	NS	LLL SEC NAV/TACFORM	2382					SUITABLE LZ AND AIRSPACE		
	NS	LLL SEC CAL	2383					SUITABLE LZ AND AIRSPACE		
AIR to AIR REFUELING (AAR)										
AAR	AAR	DAY AAR	2440					SUITABLE AIRSPACE	APPROVED TANKER	
	AAR	NIGHT AAR	2441					SUITABLE AIRSPACE	APPROVED TANKER	
LOW ALTITUDE TACTICS (LAT)										
LAT	LAT	LAT	2640				LAT Route			
CARRIER QUALIFICATION (CQ)										
CQ	CQ	DAY FCLP	2940							FCLP SITE
	CQ	DAY CQ	2941							AIR CAPABLE SHIP
	NS CQ	NIGHT FCLP	2942							FCLP SITE
	NS CQ	NIGHT CQ	2943							AIR CAPABLE SHIP
4000 PHASE CORE PLUS SKILLS										
AERIAL DELIVERY (AD)										
AD	PARA	PARAOPS	4040					CERTIFIED DROP ZONE		
	AD	CARGO	4041					CERTIFIED DROP ZONE		
	EXT	DAY EXTERNALS	4080						EXTERNAL LOAD, HST, APPROVED LZ WITH 7NM OF PROTECTED AIRSPACE TO 1000' AGL	
ALTERNATE INSERTION/EXTRACTION TECHNIQUES (AI/E)										
AI/E	AIE	FASTROPE/RAPPEL	4140						ROPEMASTER, QUALIFIED TROOPS	
AI/E	AIE	HOISTING	4141							
5000 PHASE INSTRUCTOR										
AARI										
AARI	AARI	NIGHT AAR CERT	5331						Approved Tanker	

2.13 MV-22B PILOT FRS T&R MATRIX (1000, 5000, 6000 Phase)

MV-22B FRS T&R MATRIX (1000, 5000, 6000 Phase)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN						MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	#AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	RANGE	INSTRUCTOR	EOM	EVENT CONV
				BASIC	REFRESHER						#	TIME	#	TIME	#	TIME										
1000 PHASE (CORE INTRODUCTION)																										
GROUND SCHOOL																										
GS	ADL	COURSEWARE INTRO	0001	X	X							1.5						G		*						
	ADL	AIRFRAME BASICS	0002	X	X							2.5						G		*	0001					
	ADL	INTRO COCKPIT MGMT SYS	0003	X	X							2.5						G		*	0001					
	ADL	ELECTRICAL SYSTEM	0004	X	X							3.0						G		*	0001					
	ADL	HYDRAULIC SYSTEM	0005	X	X							2.0						G		*	0001					
	ADL	FLIGHT CONTROL SYSTEM	0006	X	X							3.5						G		*	0001					
	ADL	DRIVE SYSTEM	0007	X	X							2.5						G		*	0001					
	ADL	POWERPLANT	0008	X	X							2.5						G		*	0001					
	ADL	FUEL SYSTEM	0009	X	X							2.0						G		*	0001					
	ADL	ECS,OBOGS/ OBIGGS	0010	X	X							2.0						G		*	0001					
	ADL	INTRO TO COMM,NAV,FD	0011	X	X							2.5						G		*	0001					
	ADL	NORMAL PROCEDURE CHKLST	0012	X	X							2.0						G		*	0001					
	ADL	MAINT-VSLED,AMEGS,BFWS	0013	X	X							1.5						G		*	0001					
	ADL	LOCAL COURSE RULES	0014	X	X							1.0						G		*	0001					
	ADL	PERF CHARTS, WT BAL(FORM F)	0015	X	X							2.0						G		*	0001					
	ACAD	1000 LVL INBRIEF	0100	X	X							1.0						G		*						
	ACAD	ELECTRICAL SYSTEM	0101	X	X							2.0						G		*	0004					
	ACAD	HYDRAULIC SYSTEM	0102	X	X							4.0						G		*	0005					
	ACAD	FLIGHT CONTROL SYSTEM	0103	X	X							3.0						G		*	0006					
	ACAD	DRIVE SYSTEM	0104	X	X							3.0						G		*	0007					
	ACAD	POWERPLANT	0105	X	X							3.0						G		*	0008					
	ACAD	FUEL SYSTEM	0106	X	X							2.0						G		*	0009					
	ACAD	ECS,OBOGS/ OBIGGS	0107	X	X							2.0						G		*	0010					
	ACAD	COURSE RULES EXAM	0108	X	X							3.0						G		*	0014					
	ACAD	PERF CHARTS,WT BAL, LD COMP	0109	X	X							3.0						G		*	0015					

MV-22B FRS T&R MATRIX (1000, 5000, 6000 Phase)

SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN						MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	#AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	RANGE	INSTRUCTOR	EOM	EVENT CONV
				BASIC	REFRESHER						#	TIME	#	TIME	#	TIME										
	ACAD	AERODYNAMIC BASICS REVIEW	0110	X	X							5.0						G		*	0002					
	ACAD	TILTROTOR AERO	0111	X	X							5.0						G		*	0110					
	ACAD	CRM INITIAL	0112	X	X							2.5						G		*	0112			CRMF		
	ACAD	MV-22B CRM	0113	X	X							2.0						G		*	0011			CRMF		
	LAB	CMS LAB-OVERVIEW BASICS	0200	X	X							2.0						G		*	0011			CI		
	LAB	COMM (CDU), NAV, LOAD BRICK	0201	X	X							2.0						G		*	0012			CI		
GS TOTAL											31	77.5	0	0.0	0	0.0										
FAM																										
FAM	ADL	FLIR	1001	X	X							1.0						G		*	0001					
	ACAD	FAM STAGE INBRIEF	1010	X	X							1.0						G		*	0001-0015,0100-0113,0200,0201			FRSI		
	ACAD	FLIR THEORY	1011	X								2.0						G		*	1010			NSI/NSFI		
	ACAD	MV-22B DAY HUD	1012	X								0.5						G		*	1011			FRSI		
	ACAD	AERO	1013	X	X							2.0						G		*	1036			CI		
	LAB	DEVICE OPERATOR TRAINING	1020	X	X							2.0						S	1	*	0100			CI		
	LAB	A/C PREFLT, EGRESS, SQDN PROC A/C SYS HARDWARE FAM	1021	X	X							2.5						G		*	1070			FRSI		
	CFAM	CHECKLIST	1030	X	X									2.0			D	S		*	0110,1010			CI		
	CFAM	CHECKLIST PRACTICE	1031	X										2.0			D	S		*	1030			CI		
	CFAM	NORM PROC, BFWS,GND EP'S	1032	X	X									2.0			D	S		*	1031			CI		
	SFAM	CHKLST,NAC DRILLS,HVR WORK	1033	X										2.0			D	S	1	*	1032,1015			CI		
	SFAM	CHKLST,NAC DRILLS,CONV PTRN	1034	X	X									2.0			D	S	1	*	1033			CI		
	SFAM	CHKLST,CONV PTRN,STEEP APPR	1035	X										2.0			D	S	1	*	1034			CI		
	SFAM	CONV PTRN, TRNS/CONV	1036	X										2.0			D	S	1	*	1035,1012			CI		
	SFAM	STO,ROL,CONV PTRN,APLN PTRN	1037	X	X									2.0			D	S	1	*	1016,1036			CI		
	SFAM	APLN PTRN,HIGH AOB,SLOW FLT	1038	X										2.0			D	S	1	*	1037			CI		
	SFAM	APLN PTRN,STALLS,ELP	1039	X	X									2.0			D	S	1	*	1038			CI		
	SFAM	EMERG PROC	1070	X	X									2.0			D	S	1	*	1039			CI		
	SFAM	FLT CONT EPs, DEGRADED HAND	1071	X	X									2.0			D	S	1	*	1070			CI		
	SFAM	FAM STAGE REVIEW	1072	X										2.0			D	S	1	*	1071			CI		
	SFAM	NIGHT FAM	1073	X	X									2.0			N*	S		*	1072			CI		
	SFAM	CHKLST,NAC DRILLS,CONV PTRN	1074											2.0			D	S	1	*	1033			CI		
	SFAM	CHKLST,NAC DRILLS,CONV PTRN	1075											2.0			D	S	1	*	1033			CI		
	SFAM	CHKLST,NAC DRILLS,CONV PTRN	1076											2.0			D	S	1	*	1033			CI		
	SFAM	CHKLST,NAC DRILLS,CONV PTRN	1077											2.0			D	S	1	*	1033			CI		
	SFAM	CHKLST,NAC DRILLS,CONV PTRN	1078											2.0			D	S	1	*	1033			CI		
	FAM	ENG START,NAC DRILL,CONV PAT	1080	X	X											1.5	D	A	1	*	1013,1021,1072			FRSI		

MV-22B FRS T&R MATRIX (1000, 5000, 6000 Phase)

SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN						MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	#AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	RANGE	INSTRUCTOR	EOM	EVENT CONV
				BASIC	REFRESHER						#	TIME	#	TIME	#	TIME										
	FAM	CONV PTRN,STP APP,MGW	1081	X	X											1.5	D	A	1	*	1080			FRSI		
	FAM	CONV PTRN, TRNS/CONV,LSC	1082	X	X											1.5	D	A	1	*	1081			FRSI		
	FAM	APLN PTRN	1083	X												1.5	D	A	1	*	1082,1013			FRSI		
	FAM	APLN PTRN,HIGH AOB,STALLS	1084	X	X											1.5	D	A	1	*	1083			FRSI		
	FAM	APLN PTRN,STALLS,ELP	1085	X												1.5	D	A	1	*	1084			FRSI		
	FAM	FAM PROGRESS CHK	1086	X	X											1.5	D	A	1	*	1085			FRSI		
FAM TOTAL											6	11.0	14	38.0	7	10.5										
NAV																										
NAV	ADL	DMS,INAV FUNCTIONS	1101	X	X							2.0						G		*	0001					
	ACAD	NAV STAGE INBRIEF	1110	X								1.0						G		*	1101,1072			FRSI		
	ACAD	AUTOMATION	1111	X	X							1.0						G		*	0011			CI		
	LAB	VMPS 1 BUILD WP,RTS,COM PLN	1120	X	X							6.0						G		*	1101,0201			CI		
	LAB	DMS,MSN, INAV,ENAV, WYPT, FLPN	1121	X	X							2.0						G		*	1120			CI		
	LAB	NAV,CMS,MISSION MANAGEMENT	1122	X	X							1.0						G		*	1121			CI		
	LAB	VMPS 2	1123	X	X							4.0						G		*	1321			CI		
	CNAV	DMS,MSN, INAV,ENAV, WYPT, FLPN	1130	X	X									2.0			D	S	1	*	1120,1121			CI		
	SNAV	FLT PLNS, TOT,FUEL MAN,FD CORE	1131	X										2.0			D	S	1	*	1130			CI		
	SNAV	FLT PLNS,TOT, FUEL,FD INAV	1132	X	X									2.0			D	S	1	*	1131			CI		
NAV TOTAL											5	11.0	3	6.0	0	0.0										
INST																										
INST	ADL	INST CMS, DMS AND INAV	1201	X	X							1.0						G		*	0003					
	ADL	WX RADAR	1202	X	X							1.0						G		*	0003					
	ADL	ICE PROTECTION SYSTEM	1203	X	X							1.0						G		*	0003					
	ACAD	INST STAGE INBRIEF	1210	X								1.0						G		*	1072,1201,1202,1203			FRSI		
	ACAD	ICAO PLANNING AND PROCEDURES	1211	X	X							1.0						G		*	1210			FRSI		
	LAB	VMPS 3	1220	X	X							5.0						G		*	1132,1210			CI		
	SINST	BASIC INST / EN ROUTE NAV	1230	X	X									2.0			(N*)	S	1	*	1132,1220			CI		
	SINST	NON-PRECISION APP, HIGH ALT	1231	X	X									2.0			(N*)	S	1	*	1050,1230			CI		
	SINST	PRECISION APP	1232	X	X									2.0			(N*)	S	1	*	1231			CI		
	SINST	IFR FLIGHT OPS	1233	X										2.0			(N*)	S	1	*	1232			CI		
	INST	INSTRUMENT APPROACHES	1240	X	X											2.0	(N*)	A	1	*	1083,1233			CI		
	INST	ENROUTE, HIGH/LOW APP	1241	X	X											2.0	(N*)	A	1	*	1240			CI		
	INST	NON-PRECISION APP, PRECISION APP	1242													2.5	(N*)	A	1	*	1241			CI		
INST TOTAL											6	10.0	4	8.0	2	4.0										
CAL																										
CAL	ACAD	CAL STAGE INBRIEF	1310	X	X							1.0						G		*	1080			FRSI		
	ACAD	RVL PROCEDURES	1311	X	X							0.5						G		*	1310			FRSI		
	LAB	VMPS, MTRS, DRW FILES	1320	X	X							6.0						G		*	1220			CI		

MV-22B FRS T&R MATRIX (1000, 5000, 6000 Phase)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN						MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	#AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	RANGE	INSTRUCTOR	EOM	EVENT CONV
				BASIC	REFRESHER						#	TIME	#	TIME	#	TIME										
	LAB	MAP, FUNC, LOS, HAT	1321	X	X							2.0						G		*	1320			CI		
	LAB	VMPS PROG CHECK	1322	X	X							4.0						G		*	1321			CI		
	SCAL	CAL PRTN,TAC STRT-IN, LAND	1330	X										2.0			D	S	1	*	1310			CI		
	SCAL	CAL PTRN,STR 90 180	1331	X	X									2.0			D	S	1	*	1330			CI		
	SCAL	CAL,RVL	1332	X	X									2.0			D	S	1	*	1331			CI		
	SCAL	CAL,RVL,APPR	1333	X	X									2.0			D	S	1	*	1080,1332		CAL	CI		
	CAL	CAL PTRN,STR 90 180	1340	X	X											2.0	D	A	1	*	1086,1331		CAL	FRSI		
	CAL	CAL,RVL,APPR	1341	X	X											1.5	D	A	1	*	1340,1333		CAL	FRSI		
	CAL	RVL PROFILE,COUPLE LANDINGS	1342													2.0	D	A	1	*	1340		CAL	FRSI		
	CAL	RVL PROFILE,COUPLE LANDINGS	1343													2.0	D	A	1	*	1342		CAL	FRSI		
CAL TOTAL											5	13.5	4	8.0	2	3.5										
FORM																										
FORM	ACAD	FORM STAGE INBRIEF	1410	X								1.0						G		*	1310			FRSI		
	SFORM	FORM PRINCIPLES	1430	X	X									2.0			D	S	2	*	1331,1410			CI		
	FORM	SEC FORM, RVL, AUTOMATION	1440	X												2.0	D	A	2	*	1046,1340,1430		FORM	FRSI		
FORM TOTAL											1	1.0	1	2.0	1	2.0										
FCLP																										
FCLP	ADL	FIELD CARRIER LANDING PRACTICE	1501	X	X							1.0						G		*	0001					
	ACAD	MV-22 SHIP OPERATIONS	1510	X	X							1.0						G		*	1330			FRSI		
	SFCLP	CQ	1530	X	X									2.0			D	S		*	1510			CI		
	FCLP	DAY FCLP	1540	X												1.5	D	A		*	1340,1530			FRSI		
CQ TOTAL											2	2.0	1	2.0	1	1.5										
NS HLL																										
NS	ADL	NVD SYSTEMS	1601	X	X							1.0						G		*	0001					
	ACAD	NS STAGE BRIEF	1610	X	X							0.5						G		*	1083,1601			FRSI		
	ACAD	MV-22B HUD	1611	X	X							0.5						G		*	1610			FRSI		
	SNS	NVD FAM, FLIR USE	1630	X										2.0			NS	S	1	*	1086, 1611			CI		
	SNS	NVD CALS, STR,90,180	1631	X	X									2.0			NS	S	1	*	1630			CI		
	SNS	NVD CALS, RVL	1632	X	X									2.0			NS	S	2	*	1631.1430		NS,CAL	CI		
	SNS	FORM SEQUENCE / CALs	1633	X										2.0			NS	S	2	*	1430,1632			CI		
	SNS	SEC CAL, RVL, AUTOMATION	1634	X	X									2.0			NS	S	2	*	1633			CI		
	NS	NVD FAM, FLIR USE	1640	X	X											2.0	NS	A	1	*	1341,1630		NS	FRSI		
	NS	NVD CALS, STR,90,180	1641	X	X											2.0	NS	A	1	*	1640		NS,CAL	FRSI		
	NS	SEC FORM,CAL,RVL	1642	X												2.0	NS	A	2	*	1440,1634,1641			FRSI		
NS TOTAL											3	2.0	3	10.0	3	6.0										
REV																										
REV	SREV	INST REV, EP	1830	X										2.0			(N*)	S	1	*	1241			FRSI		

MV-22B FRS T&R MATRIX (1000, 5000, 6000 Phase)																												
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN						MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	#AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	RANGE	INSTRUCTOR	EOM	EVENT CONV
				BASIC	REFRESHER						#	TIME	#	TIME	#	TIME											
	SREV	EP REV	1831	X	X									2.0			(N)	S	1	*	6011			FRSI		
	SREV	REV ALL MANEUVERS	1832	X										2.0			(N)	S	1	*	1831			FRSI		
	REV	REV ALL MANEUVERS	1840	X	X											1.5	(N)	A	1	*	1832			FRSI		
	REV	T2P CHECK / CRM FLIGHT	1841	X	X											1.5	(N)	A	1	*	1840			NI/ANI		
REV TOTAL											3	0.0	2	6.0	2	3.0										
1000 PHASE TOTAL											**62**	**128.0**	**32**	**80.0**	**18**	**30.5**										
5000 PHASE INSTRUCTOR TRAINING																												
FLEET REPLACEMENT SQUADRON INSTRUCTOR (FRSI)																												
FRSI	ACAD	BASIC FLIGHT INST COURSE	5111	X	X							8.0						G		*							
	FIT	DAY FAM MANEUVERS	5140	X	X											2.0	D	A/S	1	*	6234			STANI		
	FIT	NIGHT FAM MANEUVERS	5141	X	X											1.0	N*	A/S	1	*	5140			STANI		
	SFIT	IFR	5142	X	X									2.0			(N)	S	1	*	6234			STANI		
	FIT	CAL/FCLP INST TECHNIQUES	5143	X	X											1.5	D	A/S	1	*	6234			STANI		
	SFIT	NAV INSTRUCTION TECHNIQUES	5144	X	X									1.5			D	S	1	*	6234			STANI		
	FIT	FORM INSTRUCTION TECHNIQUES	5145	X	X											1.5	D	A/S	2	*	6234			STANI		
	FIT	STAN PILOT CHECK FLIGHT	5147	X	X									2.0			(N)	S	1	*	6234, 5140-5145			STANI		
FRSI TOTAL											1	8.0	4	7.5	4	6.0										
NIGHT SYSTEMS FAM INSTRUCTOR																												
NSFI	ACAD	NSFI LECTURE	5112	X								1.0						G		*				NSI		
	SNSFI	HLL LOW WORK/FAM/CAL	5150	X										2.0			NS	S	1	*				NSI		
	NSFI	HLL FAM/FORM/CAL	5151	X												2.0	NS	A	1	*				NSI		
	NSFI	NSFI CERT FLIGHT	5152	X	X											2.0	NS	A	2	*				NSI		
NSFI TOTAL											1	1.0	1	2.0	2	4.0										
6000 PHASE REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (R,C,Q,D)																												
NATOPS (NTPS)																												
NTPS	ACAD	NATOPS OPEN BOOK	6010	X	X					X		3.0						G		365				NI/ANI	X	
	ACAD	NATOPS CLOSED BOOK	6011	X	X					X		1.0						G		365	6010			NI/ANI	X	
	ACAD	NATOPS ORAL EXAM	6012	X	X					X		1.0						G		365	6011			NI/ANI	X	
	RQD	NATOPS EVAL	6030	X	X					X						1.5	(N)	A/S	1	365	6012			NI/ANI	X	
	RQD	ANI EVALUATOR	6031	X	X					X						0.0	(N)	A/S	1	365	6012			NI	X	
	RQD	NI EVALUATOR	6032	X	X					X						0.0	(N)	A/S	1	365	6012	6030		NE	X	
NTPS TOTAL											3	5.0	0	0.0	3	1.5										
INSTRUMENT (INST)																												
INST	ACAD	IGS	6040	X	X					X		6.0						G		365				INSTEVAL	X	
	ACAD	INSTRUMENT EXAM	6041	X	X					X		2.0						G		365	6040			INSTEVAL	X	
	ACAD	INSTRUMENT ORAL EXAM	6042	X	X					X		1.0						G		365	6041			INSTEVAL	X	
	RQD	INST EVAL	6060	X	X					X				2.0			(N)	S/A	1	365	6042			INSTEVAL	X	
	RQD	INST EVALUATOR	6061	X	X					X				0.0			(N)	S/A	1	365	6060			INST EVAL	X	

MV-22B FRS T&R MATRIX (1000, 5000, 6000 Phase)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN						MAINTAIN	ACAD		SIM		FLIGHT		CONDITION	TYPE	#AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	RANGE	INSTRUCTOR	EOM	EVENT CONV
				BASIC	REFRESHER						#	TIME	#	TIME	#	TIME										
INST TOTAL											3	9.0	2	2.0	0	0.0										
CREW RESOURCE MANAGEMENT (CRM)																										
CRM	ACAD	CRM REFRESHER	6070	X	X					X		1.0						G		365				CRMF/I	X	
	RQD	CRM EVAL	6080	X	X					X				1.5			(N)	S/A	1	365	6070	6070		CRMF/I	X	
	ACAD	CRMF LECTURE	6090	X	X					X		0.0						G		365				CRMF/I	X	
	RQD	CRMF EVAL	6091	X	X					X				0.0			(N)	S/A	1	365	6090			CRMF/I	X	
	ACAD	CRMI COURSE	6092	X								0.0						G		*		6090			X	
CRM TOTAL											3	1.0	2	1.5	0	0.0										
EMERGENCY PROCEDURES (EP)																										
EP	RQD	EP REVIEW	6033	X	X					X				1.0			(N)	S/A	1	90	T2P				X	
EP TOTAL											0	0.0	1	1.0	0	0.0										

CHAPTER 3

CMV-22B CREW CHIEF/NAVY

TABLE OF CONTENTS

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CHAPTER 3

CMV-22 CREW CHIEF/NAVY

3.0 CREW CHIEF SYLLABUS T&R REQUIREMENTS

This T&R Syllabus is based on specific goals and performance standards designed to ensure individual proficiency in Core and Mission skills. The goal of this chapter is to develop individual and unit warfighting capabilities.

3.1 TRAINING PROGRESSION MODEL

This model represents the recommended training progression for the average CMV-22 crew chief. Units should use the model as a point of departure to generate individual training plans.

3.2 PROGRAMS OF INSTRUCTION (POI)

A Program of Instruction (POI) is a training track assigned to a Navy Crew Chief based on proficiency in a skill. All Navy personnel undergoing training are assigned to at least one POI. The following POIs represent the average time-to-train.

BASIC PROGRAM OF INSTRUCTION (POI)		
Weeks	**Course/Phase**	**Activity**
1-10	MV-22 Tiltrotor Mechanics Course	CNATT
11-28	Core Introduction Phase	Training Squadron
29-40	Core Phase	Tactical Squadron

Refresher (R). Crew Chiefs will only be assigned to the Refresher POI should they be grounded for an extended period of time and need to regain proficiency in 2000 and 4000 Phase events.

3.3 PROFICIENCY AND CURRENCY

Event Proficiency. Event proficiency is defined as successful completion of the performance standard as determined by the instructor or evaluator. Event completion is predicated upon demonstrated proficiency. Once completed, it is logged in M-SHARP by entering the appropriate event code. M-SHARP automatically updates the event proficiency date to reflect the completion date.

Skill Proficiency. Proficiency is a measure of achievement of a specific skill. To attain Individual Skill proficiency, an individual must be simultaneously proficient in all events for that Skill. Individuals may be attaining proficiency in some skills while maintaining proficiency in others.

Maintaining Skill Proficiency. Once attained, skill proficiency is maintained by executing those events which have a Proficiency Period (Maintain events). Proficiency Periods establish the maximum time between Event demonstration. Should proficiency be lost in any maintain event, for a specific skill, that skill proficiency is temporarily lost. Skill proficiency can be re-attained by again demonstrating proficiency in the Event(s) that are not proficient. For flying communities, an individual shall complete delinquent events with a proficient instructor, crewman/flight lead as delineated by the T/M/S Syllabus Sponsor (see Chapter 3 of the Program Manual on specific instructor requirements for Low Altitude Flight, Night Systems, ACM, DM, DACM, DCM, FAC(A)).

Loss of Individual Skill Proficiency. Should an individual lose proficiency in all maintain events in a skill, the individual will be assigned to the Refresher POI for the skill. To regain skill proficiency, the individual must demonstrate proficiency in all R-coded events for the skill.

Loss of Unit Skill Proficiency. If an entire unit loses proficiency in an Event, unit instructors shall regain proficiency by completing the Event with an instructor from a like unit. If not feasible, the instructor shall regain proficiency by completing the Event with another instructor. For flying communities, if a unit has only one instructor and cannot complete the Event with an instructor from another unit, the instructor shall regain proficiency with another aircraft commander or as designated by the commanding officer.

Proficiency Status. Proficiency is a "Yes/No" status by skill assigned to an individual. When an individual attains and maintains Core Skill Proficiency (CSP), or Core Plus Skill Proficiency (CPSP), the individual may count towards CMMR or CMTS.

Skill Currency. Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill and applies to all MOSs that must comply with NATOPS and OPNAV requirements. It is a measure of time since the last event demanding that specific skill. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for aircrew individual type mission profiles can be found in Chapter 3of the Program Manual.

3.4 REQUIREMENTS, QUALIFICATIONS, AND DESIGNATION TABLES

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 Aircrew Performance Records per Chapter 2 of the Program Manual. 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.

CMV-22B CREW CHIEF QUALIFICATIONS AND DESIGNATIONS	
Qualification	**Event Requirements**
NATOPS	6010R, 6011R , 6012R, 1833, 6030R
NSQ HLL	2310,2311,2340,2341
NSQ LLL	2380,2381,2382,2383
CQ	2930,2931,2940,2941,2942,2943
Designation	**Event Requirements**
BICC	5010R,5020R,5030R
NI	6032
CRMF	6090,6091

3.5 SYLLABUS NOTES

ENVIRONMENTAL CONDITIONS	
Code	**Description (Environmental Condition)**
D	SHALL BE CONDUCTED DURING DAY
N	SHALL BE CONDUCTED AT NIGHT, AIDED OR UNAIDED, AT LEAST 30 MINUTES AFTER OFFICIAL SUNSET.
(N)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, AIDED OR UNAIDED.
NS	SHALL BE CONDUCTED AT NIGHT AIDED UNDER HIGH LIGHT LEVEL OR LOW LIGHT LEVEL AT LEAST 30 MINUTES AFTER OFFICIAL SUNSET.
HLL	SHALL BE CONDUCTED AT NIGHT AIDED UNDER HIGH LIGHT LEVEL CONDITIONS.
LLL	SHALL BE CONDUCTED AT NIGHT AIDED UNDER LOW LIGHT LEVEL CONDITIONS.
(NS)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, SHALL BE AIDED UNDER HIGH LIGHT LEVEL OR LOW LIGHT LEVEL AT LEAST 30MINUTES AFTER OFFICIAL SUNSET.
(HLL)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, SHALL BE AIDED AND UNDER HIGH LIGHT LEVEL CONDITIONS.
(LLL)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, SHALL BE AIDED AND UNDER LOW LIGHT LEVEL CONDITIONS.
N*	SHALL BE CONDUCTED AT NIGHT UNAIDED, AT LEAST 30 MINUTES AFTER OFFICIAL SUNSET
(N*)	MAY BE CONDUCTED DAY OR NIGHT. IF AT NIGHT, SHALL BE UNAIDED.
D/N*	SHALL BE CONDUCTED IN THE SIMULATOR DURING DAY AND NIGHT AIDED.

Device Matrix. The nomenclature in the table below is used to differentiate aircraft, simulator, part task trainer, computer-based trainer, and classroom events. Particular device information is found on the far right of the header. The aircraft is used for those events designated with an A, a simulator or part task trainer is used for those events designated with an S, and ground/academic training, labs, self-paced learning, or the computer based trainer is used for those events designated with a G in the event header. To give commanding officers the maximum amount of flexibility for training, some events allow for the optional use of simulators or aircraft.

DEVICE MATRIX	
Symbol	**Meaning**
A	CONDUCTED IN AIRCRAFT
A/S	AIRCRAFT PREFERRED/SIMULATOR OPTIONAL
S	CONDUCTED IN SIMULATOR
S/A	SIMULATOR PREFERRED/AIRCRAFT OPTIONAL
G	GROUND/ACADEMIC TRAINING. MAY INCLUDE COMPUTER-BASED TRAINING, LECTURES, OR LABS.
NOTE – IF THE EVENT IS TO BE FLOWN IN THE SIMULATOR THE SIMULATOR INSTRUCTOR SHALL SET THE DESIRED ENVIRONMENTAL CONDITIONS FOR THE EVENT.	

Simulator Training

While it is recognized that the simulator does not specifically train to the crew chief position, the Flight Training Device (FTD), Full Flight Simulator (FFS), Interactive Cockpit Learning Environment (ICLE) and Consolidated V-22 Enhanced Maintenance Trainer (CVEMT) have been incorporated into the Core Introduction and the Core phases of the syllabus to integrate the crew chief into cockpit and cabin procedures prior to entering the aircraft. To further clarify the use of the simulator, an event marked as ESFAM designates that the enlisted aircrewman is the priority for that particular simulator event and a dedicated Contract Instructor or Pilot is required. Any other simulator event in the crew chief syllabus can be conducted in conjunction with pilot training vice having a dedicated pilot for crew chief-only training.

Event Terms

Discuss

The CCI shall discuss a system, procedure, or maneuver during the brief, in flight, or debrief.

The CCUI shall demonstrate an understanding of all discussed items listed in the event description.

Demonstrate/Introduce flight events shall be discussed during the brief.

Emergencies listed in the event description are treated as discussion items during the brief and may be simulated during the flight at the option of the CCI and in accordance with unit SOP. EPs for Simulator events will be treated as Demonstrate/Introduce items on the event in which they are listed and are subject to review during any subsequent event.

Demonstrate

CCI performs the maneuver or procedure with accompanying description. At CCI discretion, the CCUI may perform the maneuver or procedure, but is not graded. The CCUI observes the maneuver and is responsible for knowledge of the procedures during the brief.

Introduce

The CCI may perform the maneuver or procedure with an accompanying description followed by the CCUI performing the maneuver or procedure, the CCI may coach the CCUI through the maneuver or procedure without demonstration.

The CCUI shall perform the maneuver with coaching as necessary and is responsible for knowledge of the procedures prior to the flight. In general, the expectation is that the CCUI will not consistently recognize errors and will frequently be outside performance standards.

Safe but limited proficiency. Requires frequent input from the instructor.

Practice

The CCUI shall perform, with occasional coaching, a maneuver or procedure that has been previously introduced. The purpose is to continue to work towards attaining a specified level of performance.

Correct. Recognizes and corrects errors. Requires occasional input from the instructor.

Review

The CCI observes and grades the maneuver or procedure with only minimal coaching.

The CCUI is expected to perform the maneuver or procedure with minimal coaching and with only minor procedural errors. In general, the expectation is that the CCUI will consistently recognize errors; however occasionally, corrections will not be timely with some excursions outside performance standards.

Correct, efficient, skillful and without hesitation. Requires minimal input from the instructor.

Evaluate

The CCI observes and grades the maneuver or procedure without coaching the CCUI. An airborne critique of the CCUI's performance is at the option of the instructor.

The CCUI is expected to perform the maneuver or procedure without coaching, with minor or no procedural errors, and at a level acceptable to warrant progress in the syllabus. The expectation is that the CCUI will consistently apply timely corrections with very few and quickly corrected excursions outside performance standards.

Unusually high degree of ability. Requires no input from instructor.

Expose

The CCI shall expose the CCUI to the procedure or consideration during the brief, in flight or debrief. The CCUI is not responsible for the knowledge of the procedure or consideration prior to the flight.

Training Event Performance Requirements

Purpose

To familiarize the CCUI with general syllabus expectations, definitions, and the observation scale found on the Aircrew Training Forms (ATF).

General

CCUIs shall be familiar with, but not be required to memorize, numerical system limitations for those systems with indications displayed with a green, yellow or red scale on either the EICAS or MFDs.

All flights shall terminate with a comprehensive debrief with emphasis on aircrew performance and procedures or systems discussed. Instructors should use all available debriefing techniques. The culmination of the debrief shall be an ATF for initial events or those events listed with an X at the discretion of the Commanding Officer.

LEVELS OF LEARNING			
Observation	**Level of Learning**	**General**	**MAWTS Scale**
5	CORRELATION (EVALUATE)	PROACTIVE. AHEAD OF THE SITUATION. REACTS CORRECTLY WITH CHANGING CONDITIONS. AND/OR CHANGING MISSION.	UNUSUALLY HIGH DEGREE OF ABILITY. REQUIRES NO INPUT FROM INSTRUCTOR.
4	APPLICATION (REVIEW)	SELF / CREW RECOGNITION OF ERRORS. CORRECT APPLICATION OF RESOURCES.	CORRECT, EFFICIENT, SKILLFUL, AND WITHOUT HESITATION. REQUIRES MINIMAL INPUTS FROM THE INSTRUCTOR.
3	UNDERSTANDING (PRACTICE)	MINOR ERRORS NOT DETECTED. CREW REDUNDANCY DIMINISHED.	CORRECT. RECOGNIZES AND CORRECTS ERRORS. REQUIRES OCCASIONAL INPUT FROM THE INSTRUCTOR.
2	ROTE (INTRODUCE)	TASK ACCOMPLISHED MECHANICALLY AND/OR WITH LIMITED SITUATIONAL AWARENESS. CREW REDUNDANCY LOST. RISK INCREASED.	SAFE BUT LIMITED PROFICIENCY. REQUIRES FREQUENT INPUT FROM THE INSTRUCTOR.
1	UNFAMILIAR	UNABLE	UNSAT – UNSAFE OR COMPLETE LACK OF ABILITY AND/OR KNOWLEDGE. REQUIRES SUBSTANTIAL INPUT FROM INSTRUCTOR FOR SAFE EXECUTION AND /OR MISSION ACCOMPLISHMENT.

Aircrew Training Forms (ATFs)

Also known as syllabus evaluation forms, ATFs are required for any initial event completed by crew members in one of the formal POIs, or as recommended by the Squadron Standardization Board, to include ACAD and LAB events. Events that were converted from a previous version of the T&R do not require a new ATF. However, events that did not previously exist will require an ATF.

If the commanding officer has waived or deferred a syllabus event, the squadron training officer shall place a waiver or deferral letter in Section 3 of the APR.

Aircrew Evaluation Flights

All crew chiefs shall have an appropriate NATOPS evaluation form completed annually upon completion of the NATOPS Check (RQD-6030) (RQD-1841 for Core Introduction completion). A designated FRSCCI NATOPS Evaluator or NATOPS Instructor/Assistant NATOPS instructor shall evaluate RQD-1841. A designated NATOPS Evaluator or NATOPS Instructor/Assistant NATOPS Instructor shall evaluate RQD-6030.

Instructor Requirements

An instructor requirement is noted for each event. If the case an event does not list an instructor requirement, then the minimum requirement is a Basic Instructor Crew Chief (BICC) proficient in the given event.

For Core Introduction flight events, the minimum instructor requirement is an FRSCCI. An FRSCCI, once designated by the FRS Commanding Officer, may instruct Core Skill Introduction flight events as qualified by stage of flight.

For Core Skill Introduction simulator events, the minimum instructor requirement is an FRS Instructor qualified to operate the device.

Crew Requirements/Position Designations

Crew requirements are listed for each stage of training. This Manual requires an aerial observer for all external cargo, NS, and Ground Threat Reaction (GTR). However, the squadron commanding officer may, at his or her discretion, employ an aerial observer on any flight event. The requirement for an aerial observer is intended to provide a second crewmember in the aircraft cabin section. A designated aerial observer or crew chief may fill this requirement. On training flights a crew chief under instruction (CCUI) may fill this requirement when flying with an appropriate syllabus instructor.

Event Completion

Event completion is predicated upon demonstrated proficiency. When an individual successfully accomplishes the requirements of an event per the performance standards, the individual should log completion of the event (enter the appropriate T&R code) in M-SHARP. When the event is entered into M-SHARP, the individual's proficiency date for that event is automatically updated to reflect the date the event was completed. When supervising individual events, unit instructors/leaders shall ensure that trainees demonstrate proficiency per T&R standards prior to logging successful event completion. Evaluating individual proficiency in an event normally requires both objective and subjective assessment. If, in the instructor's opinion, the CCUI does not adequately perform a required event, then all or parts of the sortie shall be repeated until adequate performance is demonstrated. If an individual fails to accomplish the requirements of an event per the performance standards, the individual should not log that event and the proficiency status for that event remains unchanged. Times indicated for each event are for planning purposes only.

Sequence

Training should be accomplished by flying events within a stage in sequence and stages in sequence when practical.

Crew Resource Management (CRM)

Aircrew shall brief techniques of CRM for all flights and/or events.

Operational Risk Management (ORM)

Aircrews shall brief those factors that affect risk mitigation decisions for every flight or mission.

3.6 CORE INTRODUCTION PHASE (1000-1999)

General. The Core Skill Introduction Phase shall be conducted at VMMT-204 and the Crew Chief shall be assigned to the Basic Program of Instruction (POI). The purpose is to develop a Core Introduction phase complete crew chief. At the completion of this phase the CCUI will be a NATOPS qualified crew chief and NEC G35A as specified in RQD-1841. All cockpit trainer, simulator, and flight events require an ATF.

Admin Notes. ROC will be per the T&R Manual. An FRSCCI is required on all Core Introduction phase events.

3.7 CORE PHASE (2000)

CORE PHASE OVERVIEW		
Stage Name	**Paragraph Number**	**Page Number**
FAMILIARIZATION (FAM)	3.7.1	3-8
FORMATION (FORM)	3.7.2	3-10
CONFINED AREA LANDINGS (CAL)	3.7.3	3-11
REDUCED VISIBILITY LANDING (RVL)	3.7.4	3-13
NIGHT SYSTEMS HIGH LIGHT LEVEL (HLL)	3.75	3-14
NIGHT SYSTEMS LOW LIGHT LEVEL (LLL)	3.7.6	3-17
LOW ALTITUDE TACTICS (LAT)	3.7.7	3-19
GROUND THREAT REACTION (GTR)	3.7.8	3-24
CARRIER QUALIFICATION (CQ)	3.7.9	3-27

3.7.1 Familiarization (FAM)

Purpose. To prepare the CCUI for the Core Phase. This stage introduces the crew chief to Air-to-Air Refueling; Mission Auxiliary Tank System (MATS) installation and mission utilization; and cargo loading and forklift operations.

General. The CCUI must be NATOPS qualified as a crew chief prior to beginning this stage of training.

Familiarization Stage Overview. The events included in the FAM stage of the Core Phase of training are depicted below.

FAMILIARIZATION (FAM) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-2012	1.0	*	B		G		Reference Publication
ACAD-2013	1.0	*	B		G		Air-to-air Refueling
LAB-2020	2.0	*	B		A	1	Mission Auxiliary Tank System
LAB-2027	1.5	365	B,R,M		A	1	Cargo Loading

ACAD-2012 1.0 * B G

Reference Publications

Goal. The CCUI has a familiarity with manuals that governing operations and procedures in the MV-22.

Requirements. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to reference publications.

Prerequisite. RQD-1841

Instructor. BICC

ACAD-2013 1.0 * B G

MV-22 Air-to-Air Refueling

Goal. The CCUI has a familiarity with air-to-air refueling procedures in the MV-22.

Requirements. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to aerial refueling procedures.

Prerequisite. RQD-1841

Instructor. BICC

Required Reading. NATOPS Operating limitations MAWTS-1 NVD Manual Ch 18

LAB-2020 2.0 * B A 1 MV-22

Mission Auxiliary Tank System Lab

Goal. The CCUI has an introductory knowledge of the installation and set-up of the MV-22 MATS.

Requirement. IAW IETMS

Performance Standard. Student is introduced to installation procedures for Mission Auxiliary Tanks.

Prerequisite. RQD-1841

Instructor. BICC

Required Reading. ANTTP Ch 6, 9

LAB-2027 1.5 * B,R,M S/A 1 CVEMT

Cargo Loading

Goal. To prepare the CCUI for cargo and forklift operations.

Requirements.

Discuss
- Cargo Handling Manual
- Cabin set-up for different mission profiles
- Cargo winch and pulley systems
- Tie down fittings and restraints
- Aircrew communication with ground personnel during cargo operations
- Approach with load and fuselage clearance procedures
- Hand and arm signals and forklift operations
- Proper restraint procedures

Introduce
- Proper load planning
- Loading and unloading procedures
- Weight and balance computations

Performance Standards.
- Demonstrate knowledge of internal cargo procedures.
- Successfully load, restrain and unload an internal cargo load.

Prerequisite. RQD-1841

Instructor. BICC

Required Reading. A1-V22AB-CLG-000

3.7.2 Formation (FORM)

Purpose. To introduce tactical formations and tactical formation maneuvering.

General. All maneuver descriptions are in the MV-22 ANTTP Manual.

Crew Requirements. P/P/CC/AO

Formation Stage Overview. The events included in the FORM stage of the Core Phase of training are depicted below.

FORMATION (FORM) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-2110	1.0	*	B		G		EA TACFORM
FORM-2140	2.0	365	B,R,M	(NS)	A	2	TACFORM/NAV

ACAD-2110 1.0 * B G

TACFORM for Enlisted Aircrew

Goal. The CCUI is introduced to basic tactical formation maneuvers.

Requirement. Utilize MAWTS-1 courseware

Performance Standard. Student is introduced to MV-22 TACFORM maneuvers.

Prerequisite. RQD-1841

Instructor. BICC

Required Reading. NATOPS Ch 9.1-9.1.14, ANTTP Ch 4

FORM-2140 2.0 365 B,R,M (NS) A 2 MV-22

Goal. Introduce tactical formations, tactical formation maneuvering, navigation to a SYS TOT, and lost contact procedures.

Requirement.

Discuss
- CRM
- Standard terminology
- Lookout doctrine
- Crew comfort level
- Inter/intra-plane coordination
- Lead/wingman responsibilities
- Bullseye calls
- Inadvertent IMC

Introduce
- Combat spread and combat cruise
- Tactical formation maneuvers in the ANTTP
- Tactical lead changes
- Simulated lost contact with wingman with subsequent rejoin enroute and at a point.
- Lost communications procedures

Practice
- Formation lookout doctrine

Review
- CMS power-up

Expose
- EMCON procedures.
- Types of escort operations.
- CMS tactical considerations (e.g. Threat Ring).
- Split section operations.

Performance Standards

Demonstrate procedural knowledge of tactical formation maneuvers IAW MV-22 ANTTP manual.
Recognize proper tactical formations IAW MV-22 ANTTP manual.
Distance estimation calls to wingman are performed to a reasonable margin of error.

Prerequisites. ACAD-2110

Instructor. BICC

Required Reading. Review NATOPS Ch 9.1-9.1.14, MV-22 ANTTP *Formation*

3.7.3 Confined Area Landings (CAL)

Purpose. To develop proficiency in single and section takeoffs and landings and tactical approaches to confined areas.

General. All maneuver descriptions are in the MV-22 ANTTP Manual.

Crew Requirements. P/P/CC

Confined Area Landing Stage Overview. The events included in the CAL stage of the Core Phase of training are depicted below.

CONFINED AREA LANDING (CAL) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
CAL-2240	1.5	*	B	D	A	1	Single-ship CAL
CAL-2242	2.0	365	B,R,M	D	A	2	Section CAL

CAL-2240 1.5 * B D A 1 MV-22

Single-ship Confined Area Landings

Goal. Introduce low- and medium-altitude tactical approaches, landings, and departures to a confined area.

Requirements.

Discuss
- CRM
- Standard terminology
- Crew chief responsibilities
- Obstacle clearance
- Crew comfort level
- Tactical approaches
- Initial terminal guidance (ITG)
- Glide slope
- Distance Estimation
- Wave-off procedures

Introduce
- Tactical approaches, landings and departures to a confined area (minimum 5 for initial sorties)

Practice
- Standard terminology
- Obstacle clearance
- Distance estimation
- Drift correction

Review
- Fuel burn considerations
- Proper restraint procedures
- Weight and balance computations
- CG limitations
- Procedures and safety precautions for transporting passengers, internal cargo, and/or tactical vehicles
- Major system EP

Expose
- LZ diagram
- Final Approach Course (FAC), or ingress heading
- L-Hour and Time on Target (TOT)
- METT-TC

Performance Standards

Perform obstacle clearance calls during approach, landing, and takeoff.
Evaluate suitability of LZ terrain and communicate information to pilots.
Perform drift correction, accurate and timely distance estimation calls to the pilot prior to aircraft touchdown.

Instructor. BICC

Prerequisite. RQD-1841

Required Reading. MV-22 ANTTP *Takeoff, Departure, and Landing*

External Syllabus Support. Suitable airspace and landing site.

CAL-2242 2.0 365 B,R,M D A 2 MV-22

Section Confined Area Landings

Goal. Introduce section low- and medium-altitude tactical approaches, landings, and departures to a confined area.

Requirements.

Discuss
- CRM
- Standard terminology
- Crew chief responsibilities during section CALs
- Closure rates
- Air-to-air TACAN
- Crew comfort level
- Lookout doctrine
- Wingman considerations
- Wave-off procedures

Introduce
- Section tactical approaches, takeoffs and landings (minimum 3 as lead for initial sorties).

Review
- Standard terminology
- Obstacle clearance
- Distance estimation
- Drift correction

Expose
- Assault Support Serial Assignment Table (ASSAT).
- Assault Support Landing Table (ASLT).
- Objective area diagram
- Initial point(IP), Holding area(HA), and Battle position(BP).
- Rules of engagement.
- Wind considerations with high gross weight.
- Discuss Air-Defense Artillery (ADA).

Performance Standards.

Provide pilots with accurate and timely information on the position of wingman.
Distance estimation calls to wingman are performed to a reasonable margin of error in terms of DME.
Provide obstacle clearance calls for the section during approach, landing, and takeoff.
Inform pilots of wingman's position prior to landing to ensure both aircraft have adequate clearance to land.

Instructor. BICC

Prerequisite. FORM-2140, CAL-2240

Required Reading. ANTTP Ch.1, Ch. 5

External Syllabus Support. Suitable landing site.

3.7.4 Reduced Visibility Landing (RVL)

Purpose. To introduce RVL procedures and landings.

General. All maneuver descriptions are in the MV-22 ANTTP Manual. All initial sorties shall be conducted during the day. Proficient aircrew may conduct subsequent sorties at night. If the level of obscuration causes all crew members to lose visual reference with the deck, RVL-6900 will be logged.

Crew Requirements. P/P/CC/AO

REDUCED VISIBILITY LANDING (RVL) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-2250	1.0	*	B		G		RVL ACAD
LAB-2260	1.0	*	B		G		RVL WALKTHROUGH

ACAD-2250 1.0 * B G

Reduced Visibility Landings

Goal. The PUI will have an introductory knowledge of RVLs in the MV-22.

Instructor. BICC

Prerequisite. ACAD-2240

Required Reading - ANTTP Ch 3.

LAB-2260 1.0 * B G

Reduced Visibility Landings Procedures and Walkthrough

Goal. The PUI will be able to walk through all of the RVL procedures and CRM cadences prior to execution in the simulator.

Instructor. BICC

Prerequisite. ACAD-2250.

Required Reading - ANTTP Ch 3.

3.7.5 Night Systems (NS) High Light Level (HLL)

Purpose. To develop proficiency while using night vision devices under light levels greater than or equal to .0022 lux as predicted by the SLAP application. Certify the crewmember Night Systems Qualified High Light Level (NSQ HLL).

General. An NSI is required for all unqualified aircrew. Upon completion of this stage and receipt of a qualification letter signed by the unit commanding officer the crewmember is NSQ HLL.

Crew Requirements. P/P/CC/AO

NIGHT SYSTEMS HIGH LIGHT LEVEL (NS HLL) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-2310	1.0	*	B		G		Night Vision Training
ACAD-2311	1.0	*	B		G		MV-22 FLIR
NS HLL-2340	2.0	365	B,R	HLL	A	1	Single-ship CAL
NS HLL-2341	2.0	365	B,R,M	HLL	A	2	Section CAL

ACAD-2310 1.0 * B G

Night Vision Training

Goal. The CCUI has an introductory knowledge of the Night Vision Goggles, Night Environment, Human factors, and NVG Weapons employment procedures.

Requirement. Utilize MAWTS-1 Courseware

Performance Standard. Student is introduced to night vision devices.

Instructor. NSI

Prerequisite. RQD-1841

Required Reading. MAWTS-1 NVD Manual

ACAD-2311 1.0 * B G

MV-22 FLIR for Enlisted Aircrew

Goal. The CCUI has an introductory knowledge of the MV-22 FLIR.

Requirement. Utilize MAWTS-1 courseware

Performance Standard. CCUI is introduced to the MV-22 FLIR.

Prerequisite. ACAD-2310

Instructor. NSI

Required Reading. MV-22 NATOPS Chapter 16.8, NVD Manual CH. 4

NSHLL-2340 2.0 365 B,R HLL A 1 MV-22

High Light Level Familiarization Maneuvers and Confined Area Landings

Goal. Introduce single ship familiarization maneuvers and tactical CALs.

Requirements.

Discuss
- NVD briefing guide
- CRM
- Automatic gain control system
- Aircraft lighting
- Lighting conditions
- Night illumination sources
- Aircrew duties during NS CALs
- Crew comfort level
- Human factors considerations
- Night environment considerations
- NVD and FLIR theory
- Scanning techniques
- Monocular cues
- Depth perception
- Distance estimation
- Obstacle clearance
- Drift correction
- NVG failure
- Brown out/white out
- FLIR utilization

Introduce
- NVD tactical approaches, landings, and departures to a confined area (minimum of 5 for initial sorties)

Practice
- NVG Set-up and focusing procedures
- Cabin configuration
- Distance estimation
- ITG

Expose
- Light discipline

Performance Standards:

Execute proper procedures for NS CALs IAW the MV-22 ANTTP Manual and the MAWTS-1 NVD Manual.
Demonstrate proper NVG scanning techniques.
Provide timely and accurate information to the pilots with regard to terrain clearance, LZ topography, aircraft drift, and distance estimation calls prior to landing.

Instructor. NSI

Prerequisite. CAL-2240, ACAD-2311

Required Reading. NATOPS Ch 2.3.9, 2.12, NVD Manual Ch. 2,3,7,14, 3-22.5-ASTACSOP

External Syllabus Support. Suitable landing site and airspace.

NSHLL-2341 2.0 240 B,R,M HLL A 2 MV-22

High Light Level Section Confined Area Landings

Goal. Introduce section tactical CALs in HLL.

Requirements

Discuss
- CRM
- Aircraft lighting
- Loss of visual contact with wingman
- Closure rates
- FLIR functions
- Sensor integration

Introduce
- Formation flight
- Section CALs in HLL (minimum 3 as lead for initial sorties)
- Section tactical approaches, departures, takeoffs and landings in HLL

Practice
- NVG emergencies

Review
- NVG Set-up and focusing procedures
- Cabin configuration
- Distance estimation

Performance Standards

Maintain an aggressive NVG scan and provide the pilots with timely information on LZ topography and aircraft drift.
Maintain awareness of wingman's position and provide timely information to the pilots.
Distance estimation calls prior to landing are within a reasonable margin of error.

Instructor. NSI

Prerequisite. NSHLL-2340, CAL-2242

External Syllabus Support. Suitable landing and airspace.

Required Reading. NVD Manual Ch. 5, 15.8

3.7.6 Night Systems (NS) Low Light Level (LLL)

Purpose. To develop proficiency while using night vision goggles under light levels less than 0.0022 lux as predicted by the SLAP application. Certify the CCUI Night Systems Qualified Low Light Level (NSQ LLL).

General. All maneuver descriptions are in the MV-22 ANTTP Manual.

An NSI is required for all unqualified aircrew. Upon completion of this stage and receipt of a qualification letter signed by the unit commanding officer the crewmember is NSQ LLL.

Crew Requirements. P/P/CC/AO

NIGHT SYSTEMS LOW LIGHT LEVEL (NS LLL)							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
NS LLL-2380	1.5	240	B,R	LLL	A	1	FAM and Single-ship CAL
NS LLL-2381	1.5	*	B	LLL	A	1	Single-ship CAL
NS LLL-2382	1.5	*	B	LLL	A	2	Section NAV/TACFORM
NS LLL-2383	2.0	240	B,R,M	LLL	A	2	Section CAL

NS LLL-2380 1.5 240 B,R LLL A 1 MV-22

Low Light Level Familiarization Maneuvers, Confined Area Landings, and Tactical Approaches

Goal. Introduce FAM maneuvers single aircraft CALs and tactical approaches in LLL.

Requirements

Discuss
- CRM
- LLL CAL considerations
- Cultural lighting considerations
- NVG scan
- Shadowing, moon angle, azimuth

Introduce
- Tactical approaches, landings, and departures to a confined area in LLL (minimum 5 for initial sorties).

Practice
- Aircraft lighting
- NVG emergencies
- Distance estimation

Performance Standards

Execute proper procedures for NS CALs IAW the MV-22 ANTTP Manual and the MAWTS-1 NVD Manual.
Demonstrate proper NVG scanning techniques.
Provide timely and accurate information to the pilots with regard to terrain clearance, LZ topography, aircraft drift, and distance estimation calls prior to landing.

Instructor. NSI

Prerequisites. NSQ HLL

Required Reading. NTRP Ch. 3, Review NVD Manual

External Syllabus Support. Suitable landing site and airspace.

NS LLL-2381 1.5 * B LLL A 1 MV-22

Low Light Level Confined Area Landings, and Tactical Approaches

Goal. Practice single -ship CALs and tactical approaches in LLL.

Requirements.

Discuss
- CRM
- LLL CAL considerations
- Cultural lighting considerations
- NVG scan
- Moon angle/azimuth and terrain shadowing

Practice
- Tactical approaches, landings, and departures to a confined area in LLL (minimum 5 for initial sorties).
- NVG emergencies
- Aircraft lighting
- Distance estimation

Performance Standards.

Execute proper procedures for NS CALs IAW the MV-22 ANTTP Manual and the MAWTS-1 NVD Manual.
Demonstrate proper NVG scanning techniques.
Provide timely and accurate information to the pilots with regard to terrain clearance, LZ topography, aircraft drift, and distance estimation calls prior to landing.

Instructor. NSI

Prerequisites. NS LLL-2380

External Syllabus Support. Suitable landing site and airspace.

NS LLL-2382 1.5 * B LLL A 2 MV-22

Low Light Level Section Navigation and Tactical Formations

Goal. Introduce NS tactical formations, tactical formation maneuvering, navigation to a SYS TOT and lost contact procedures.

Requirements.

Discuss
- Crew duties during NS formation operations
- Aircraft lighting
- Sensor integration
- Night tactical formation maneuvering
- Moon angle/azimuth and terrain shadowing

Practice
- Tactical formation maneuvers in the ANTTP
- Tactical lead changes
- Simulated lost contact with wingman with subsequent rejoin en route and at a point.
- NVG Emergencies

Review
- Formation lookout doctrine
- Closure rates

Performance Standards.

Demonstrate procedural knowledge of tactical formation maneuvers IAW MV-22 ANTTP manual.
Recognize proper tactical formations IAW MV-22 ANTTP manual.
Distance estimation calls to wingman are performed to a reasonable margin of error.
Maintain proper lighting configuration.

Instructor. NSI

Prerequisite. NS LLL-2381

Required Reading. NTRP Ch. 4, Review NVD Manual Ch. 5

External Syllabus Support. Suitable landing site and airspace.

NS LLL-2383 2.0 240 B,R,M LLL A 2 MV-22

Low Light Level Section Confined Area Landings

Goal. Introduce division formations and division CALs using NVDs under LLL conditions.

Requirement.

Discuss
- CRM
- Crew comfort levels
- Moon angle/azimuth and terrain shadowing
- Inadvertent IMC
- Obstacle clearance
- Distance estimation and depth perception
- Wave-offs

Introduce
- Section tactical approaches, departures, takeoffs, and landings in LLL
- Section CALs in LLL (minimum of 3 as lead for initial sorties)

Review
- NVG set-up and focusing procedures
- Aircraft lighting
- NVG Emergencies

Performance Standards

Provide feedback to pilots about the integrity of the flight.
Maintain awareness of both wingmen and provide adequate landing area information to the pilots during CALs.
Provide pilots with timely information with regard to LZ topography, aircraft drift, and distance estimation prior to landing.

Instructor. NSI

Prerequisites. NS LLL-2382

Required Reading. Review NVD Manual Ch. 8,9

External Syllabus Support. Suitable landing site and airspace.

3.7.7 Low Altitude Tactics (LAT)

Purpose. To develop proficiency in MV-22 Low Altitude Tactics.

General

All maneuver descriptions are in the MV-22 ANTTP Manual.
Non-proficient aircrew are required to fly with a LAT Instructor for day events and an NSI for night events.
The CCUI is Day LAT qualified upon completion of LAT 2641, and NS LAT qualified upon completion of LAT-2643.
LAT altitude restrictions and currency requirements are IAW the T&R Program Manual.
Events should be flown in areas with significant vertical relief.

Crew Requirements. P/P/CC/AO

LOW ALTITUDE TACTICS (LAT) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-2610	0.5	*	B		G		LAT for EAC
ACAD-2611	0.5	*	B		G		Tactical Aircrew Considerations
LAB-2620	0.5	*	B		G		LAT Walk-through
LAT-2640	1.5	*	B	D	A	1	LAT Maneuvers and Route

ACAD-2610 1.0 * B G

LAT For Enlisted Aircrew

Goal. The CCUI has introductory knowledge of LAT terms and definitions.

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to MV-22 Low Altitude Tactics.

Instructor. LATI

Required Reading. MV-22 ANTTP Chapters 4&5, NAVMC 3500.14 Chapter 3

Prerequisites. RQD-1841

ACAD-2611 1.0 * B G

Tactical Aircrew Considerations and Responsibilities

Goal. The CCUI has a familiarity with responsibilities specific to a tactical environment.

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to aircrew responsibilities in a tactical environment.

Instructor. LATI

Prerequisites. ACAD-2610

LAB-2620 0.5 * B G

LAT Maneuver Walk Through

Goal. The CCUI is able to walk through all LAT maneuvers prior to executing them in the aircraft.

Requirement. Conduct IAW ANTTP.

Performance Standard. Demonstrate all LAT maneuvers prior to executing.

Instructor. LATI

Prerequisites. ACAD-2611

LAT-2640 1.5 * B D A 1 MV-22

Low Altitude Tactics Maneuvers and Navigation Route

Goal. Introduce LAT maneuvers and navigation on a route in the contour profile.

Requirements

Discuss
- Rules of Conduct (ROC)
- Squadron SOP for required equipment
- CRM
- ICS procedures
- Crew chief duties in the LAT environment
- Lookout doctrine
- Aircraft clearance
- Physiological considerations
- Crew comfort levels
- Climb to cope
- Dive Recovery rules
- MSA/ESA
- L-hour
- Cabin Situational Awareness Device (CSAD)

Introduce
- Route cards
- Fire control, Emissions, Navigation, Communication, Expendables (FENCE) checks
- LAT maneuvers
- Vertical maneuvers
- Low level and contour flight
- Low altitude emergencies
- Height Above Terrain (HAT)

Expose
- CSAD
- Surface-to-Air missiles (SAMs)
- Go/No Go criteria

Performance Standards

Maintain situational awareness during each maneuver with regard to aircraft orientation to the terrain.
Provide timely feedback to the pilots for terrain avoidance and obstacle clearance.
Execute all LAT maneuvers IAW the MV-22 ANTTP Manual.
Demonstrate proper CRM principles in the LAT regime.
Comply with ROC IAW T&R Program Manual and other governing directives.
Assist pilot with navigational assistance, route card, and fuel burn considerations.

Instructor. LATI

Prerequisite. LAB-2620

Required Reading. Review ANTTP En Route Tactics

External Syllabus Support. Approved route/range space with vertical relief.

3.7.8 Ground Threat Reaction (GTR)

Purpose. To develop proficiency in counter-tactics versus enemy surface-to-air threats.

General

All maneuver descriptions are in the Classified MV-22 ANTTP Manual. RADAR principles are listed in the NTRP Appendix G.

A WTI is required for all initial sorties. Aircrew who have completed their initial GTR sorties and have lost proficiency may regain proficiency by flying with a LATI who is proficient in that sortie.

The flight lead shall be GTR-2832 proficient and specifically brief all applicable GTR training rules per the MV-22 ANTTP Manual and T&R Program Manual.

GTR-2832 shall be conducted against a threat emitter; e.g. SA-6, ZSU-23-4, etc. and requires an electronic warfare range.

All initial sorties shall be conducted during the day following completion of LAT-2641. Proficient aircrew may conduct subsequent sorties at night if they are LAT-Q.

Once proficiency is attained in GTR-2832, proficiency may be maintained by completion of GTR-2831.

Crew Requirements. P/P/CC/AO

GROUND THREAT REACTION (GTR) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-2810	1.0	*	B		G		Aircraft Survivability Equipment
ACAD-2811	1.0	*	B		G		Basic Principles of EW
ACAD-2812	1.0	*	B		G		ADA Threat
ACAD-2813	1.0	*	B		G		IR SAM Threat
ACAD-2814	1.0	*	B		G		Radar SAM Threat
ACAD-2815	1.0	*	B		G		GTR
LAB-2820	0.5	*	B		G		GTR Walk-through

ACAD-2810 1.0 * B,R G

EA Aircraft Survivability Equipment

Goal. The CCUI has a familiarity with the Aircraft Survivability Equipment (ASE).

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to Aircraft Survivability Equipment and theory of operation.

Instructor. WTI

Required Reading. MV-22 NTRP Ch 5, App B, C, and G

Prerequisites. ACAD-2611

ACAD-2811 1.0 * B G

EA Basic Principles of Electronic Warfare

Goal. The CCUI has a familiarity with the basic principles of Electronic Warfare.

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to the concepts associated with Electronic Warfare.

Instructor. WTI

Required Reading. MV-22 NTRP App F

Prerequisites. ACAD-2810

ACAD-2812 1.0 * B G

Air Defense Artillery Threat to Assault Support (S)

Goal. The CCUI has a familiarity with the various ADA threats to assault support aircraft.

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to ADA threats to assault support.

Instructor. WTI

Required Reading. AFTTP 3-1

Prerequisites. ACAD-2811

ACAD-2813 1.0 * B G

IR Surface-to-air Missile Threat to Assault Support (S)

Goal. The CCUI has a familiarity with the threat of IR SAMS to assault support.

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to SAM threats to assault support.

Instructor. WTI

Required Reading. AFTTP 3-1

Prerequisites. ACAD-2811

ACAD-2814 1.0 * B G

RADAR SAM Threat to Assault Support(S)

Goal. The CCUI has a familiarity with the threat of RADAR SAMS to assault support.

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to RADAR threats to assault support.

Instructor. WTI

Required Reading. AFTTP 3-1

Prerequisites. ACAD-2811

ACAD-2815 1.0 * B G

MV-22 Ground Threat Reaction (S)

Goal. The CCUI has a familiarity with the reaction maneuvers executed by the MV-22 as a result of a ground threats.

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to Ground Threat Reaction theory and maneuvers.

Instructor. WTI

Required Reading. NATOPS Ch 18, ANTTP Appendix A, Classified ANTTP Ch 2

Prerequisites. ACAD-2810, ACAD-2811, ACAD-2812, ACAD-2813, ACAD-2814

LAB-2820 0.5 * B G

MV-22 Ground Threat Reaction Walk Through

Goal. The CCUI has a solid understanding of all GTR maneuvers prior to in-flight execution.

Required Reading. ANTTP GTR Program Guide Appendix A

Instructor. WTI

Prerequisites. ACAD-2815

3.7.9 Carrier Qualification (CQ)

Purpose. To qualify the CCUI in flight operations from a carrier deck or ship platform under day and NVD conditions.

General

Refer to NAVAIR 00-80T-106 LHA/LHD NATOPS and NAVAIR 00-80T-105 CV NATOPS Manuals for carrier operations. Refer to NAVAIR 00-80T-122 for air capable ship operations.

CQ-2943 shall be flown under HLL conditions for initial qualifications. An NSI is required for unqualified aircrew on NVD CQ flights.

IAW NATOPS and NAVMC 3500.14, a crew member is day CQ upon completion of CQ-2932 and is NVG CQ upon completion of CQ-2935. A qualification letter signed by the commanding officer stating the crew member is day CQ/NVG CQ shall be placed in the crewmember's NATOPS jacket upon completion of the appropriate flight.

Crew Requirement. P/P/CC (AO required for NVD CQ)

CARRIER QUALIFICATION (CQ) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-2910	1.0	*	B		G		LHD LECTURE
ACAD-2911	.5	*	B		G		CV
CQ-2930	1.0	*	B	D	S	1	Day CQ Simulator
CQ-2931	1.0	*	B	NS	S	1	NS CQ Simulator
CQ-2940	1.5	365	B,R	D	A	1	Day FCLP
CQ-2941	1.5	365	B,R	D	A	1	Day CQ Flight
NSCQ-2942	1.5	365	B,R	NS	A	1	NS FCLP
NSCQ-2943	1.5	365	B,R,M	NS	A	1	NS CQ Flight

ACAD-2910 1.0 * B G

MV-22 LHD Operations Lecture

Goal. The PUI will be familiar with MV-22 LHD Operations.

Instructor: BIP.

Prerequisite. RQD-1841.

Required Reading - NATOPS 8, LHA/LHD NATOPS Ch 2-6, 7.2, 7.3, App A & D, Ships Facilities Resume,

ACAD-2911 0.5 * B G

CV/Air Capable Ships Operations Lecture

Goal. The PUI will be familiar with other air capable ships and CV flight operations.

Instructor: BIP.

Prerequisite. ACAD-2910.

SCQ-2930 1.0 365 B D S 1 FFS/FTD

Day Carrier Qualification Simulator

Goal. Introduce day CQ pattern and procedures to various classes of ships.

Requirements

Discuss
- CRM
- Crewmember duties during CQs
- Shipboard ICS procedures
- Flight deck status lights
- Flight deck crew
- Hand-and-arm signals for shipboard operations
- Flight deck operations
- Ship traffic patterns
- Wave offs
- Various patterns around the ship
- Pitch-up with side-slip characteristics
- Emergency procedures in the shipboard environment

Introduce
- Carrier operation
  - Airplane and conversion mode arrivals
  - Charlie pattern for LHA/LHD and LPD/LSD (minimum of 5 for initial events)
  - Communication procedures
  - Lights and light signals
  - LSE signals and procedures
  - Waveoff
  - Departure procedures
- Self-taxi procedures
- STOs
- NATOPS shipboard approaches
- High gross weight operations
- Checklists

Performance Standards

Demonstrate knowledge of flight deck crew.
Demonstrate knowledge of day shipboard procedures IAW the CV/LHA/LHD NATOPS and Air Capable Ships NATOPS.
Demonstrate proper clearance calls prior to landing.

Instructor. BICC

Prerequisite. CAL-2240

SCQ-2931 1.0 365 B NS S 1 FFS/FTD

NS Carrier Qualification Simulator

Goal. Introduce NVD CQ pattern and procedures to various classes of ships.

Requirements

Discuss

CRM
Crewmember duties during CQs
Shipboard ICS procedures
Flight deck crew
Shipboard lighting and light signals
Aircraft lighting
Hand-and-arm signals for shipboard operations
Emergency procedures in the shipboard environment

Introduce

Carrier operations using NVDs

Arrival
Night landing patterns (minimum of 5 for initials)
Communication procedures
Shipboard lighting and light signals
LSE signals and procedures
Waveoff
Departure

Self-taxi procedures
STOs
NATOPS shipboard approaches
High gross weight operations
Checklists

Performance Standards

Demonstrate knowledge of flight deck crew.
Demonstrate knowledge of NS shipboard procedures IAW the CV/LHA/LHD NATOPS and Air Capable Ships NATOPS.
Demonstrate proper clearance calls prior to landing.

Instructor. BICC

Prerequisite. SCQ-2930

CQ-2940 1.5 365 B,R D A 1 MV-22

Field Carrier Landing Practice

Goal. Introduce day CQ patterns and procedures in a Field Carrier Landing Practice (FCLP) scenario.

Requirements

Discuss

CRM
Crewmember duties during CQs
Shipboard ICS procedures
Hand-and-arm signals for shipboard operations
Flight deck status lights
Flight deck operations
Ship traffic patterns
Wave offs

Practice

Carrier operation

Communication procedures
Airplane and conversion mode arrivals
Aircraft lighting
Charlie pattern for LHA/LHD and LPD/LSD (minimum 5 for initial sorties)
LSE signals and procedures

Departure procedures
Self-taxi procedures
STOs
Pitch-up with side-slip characteristics
Technique A and B approaches
Stern Approach

Performance Standards

Demonstrate knowledge of ship landing deck configuration.
Demonstrate proper clearance calls prior to landing.
Properly execute the CQ pattern IAW LHA/LHD NATOPS.
Correction calls over the spot are accurate, clear, and timely.

Instructor. BICC

Prerequisites. SCQ-2930

Required Reading. MV-22 NATOPS Ch 8, LHA/LHD NATOPS Ch 2, 3, 4, 5, 6, App A, ANTTP Ch. 13

External Syllabus Support. FCLP site

CQ-2941 1.5 365 B,R D A 1 MV-22

Goal. Day qualification flight.

Requirements

Discuss
CRM
Crewmember duties during CQs
Shipboard ICS procedures
Hand-and-arm signals for shipboard operations
Flight deck operations
Nacelle modulation procedures
Waveoffs
Ditching

Review
Carrier operation
Communication procedures
Airplane and conversion mode arrivals
Aircraft lighting
Charlie pattern for LHA/LHD or LPD/LSD (minimum 5 for initial sorties)
LSE signals and procedures
Departure procedures
Self-taxi procedures
STOs
NATOPS shipboard approaches
Checklists

Performance Standards

Demonstrate knowledge of ship landing deck configuration.
Demonstrate proper clearance calls prior to landing.
Properly execute the CQ landing pattern IAW applicable NATOPS Manual (minimum 5 for initial sorties).
Correction calls over the spot are accurate, clear, and timely.

Instructor. BICC

Prerequisites. CQ-2940

External Syllabus Support. Landing platform afloat

NSCQ-2942 1.5 365 B,R NS A 1 MV-22

Goal. Introduce night aided CQ patterns and procedures in an FCLP scenario.

Requirements.

- Discuss
  - CRM
  - Aircraft lighting
  - Crewmember duties during NVD CQs
  - NVD CQ patterns
  - Ditching
- Practice
  - Carrier operations using NVDs
    - Arrival
    - Night landing patterns (minimum of 5 for initials)
    - Communication procedures
    - Shipboard lighting and light signals
    - LSE signals and procedures
    - Waveoff
    - Departure
  - Self-taxi procedures
  - STOs
  - NATOPS shipboard approaches
  - High gross weight operations
  - Checklists

Performance Standards

Maintain an active NVG scan to acquire hazards and recognize improper landing profiles.
Correction calls over the spot are accurate, clear, and timely.
Perform standard CQ landing procedures utilizing NVDs (minimum 5 for initial sorties).

Instructor. NSI

Prerequisites. SCQ-2931, CQ-2940

Required Reading. MAWTS-1 NVD Manual Ch 15

External Syllabus Support. FCLP site

NSCQ-2943 1.5 365 B,R,M NS A 1 MV-22

Goal. NVD qualification flight.

Requirements

- Discuss
  - CRM.
  - Aircraft lighting
  - Ship lighting
  - NVD CQ patterns
  - Crewmember duties during NVD CQs

LSE signals at night
Low contrast environment utilizing NVDs
Ditching

Review

Carrier operations using NVDs

Arrival
Night landing patterns (minimum of 5 initial sorties).
Communication procedures
Shipboard lighting and light signals
LSE signals and procedures
Waveoff
Departure

Self-taxi procedures
STOs
NATOPS shipboard approaches
High gross weight operations
Checklists

Performance Standards

Perform standard CQ landing procedures while utilizing NVDs (minimum 5 for initial sorties).
Maintain an active NVG scan to acquire hazards and recognize improper landing profiles.
Correction calls over the spot are accurate, clear, and timely.

Instructor. NSI

Prerequisites. NSQ for appropriate light level, CQ-2942

External Syllabus Support. Landing platform afloat

3.8 CORE PLUS PHASE

Purpose. To establish training for Core Plus Skill events. (theater specific, low-probability of occurrence)

General

ROC will be per T&R Program manual.

Crew chiefs may fly night flights using NVGs in this phase under HLL or LLL conditions provided they are NSQ for that light level.

Prior to training in this phase, a crew chief should be complete with Core Phase training.

CORE PLUS PHASE OVERVIEW		
Stage Name	**Paragraph Number**	**Page Number**
Air Delivery (AD)	3.8.1	3-32
Alternate Insertion/Extraction Techniques (AI/E)	3.8.2	3-34

3.8.1 Air Delivery (AD)

Purpose. To develop proficiency in personnel parachute operations (PARAOPS), air delivery of cargo, and day/NVD external load operations from confined areas.

General. All maneuver descriptions are in the ANTTP.

An NSI is required for initial NVD external events.

Crew Requirements. P/P/CC/AO for aircraft events.

AIR DELIVERY (AD) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-4010	1.0	*	B		G		EA Air Delivery
PARA-4041	1.5	365	B,R,M	(NS)	A	1	PARAOPS
EXT-4081	1.5	365	B,R,M	D	A	1	Day Single-point Externals

ACAD-4010 1.0 * B G

EA MV-22 Air Delivery

Goal. The CCUI has an introductory knowledge of procedures to execute air delivery and PARAOPS from the MV-22.

Requirement. Utilize MAWTS-1 courseware.

Performance Standard. Student is introduced to MV-22 air delivery procedures and appropriate checklists.

Instructor. BICC

Required Reading. ANTTP *Air Delivery*, NATOPS Operating limitations

Prerequisite. ACAD-2610

PARA-4041 1.5 365 B,R,M D A 1 MV-22

Personnel Parachute Operations

Goal. Introduce PARAOPS procedures.

Requirements

Discuss
- CRM during PARAOPS (aircrew/jumpmaster responsibilities)
- Tactical considerations for air delivery of troops
- MV-22 TPG air delivery briefing guide
- Voice communication/standard terminology during PARAOPS
- Cargo handling manual

Introduce
- Inspection of anchor cable
- Air delivery checklist

Performance Standards
- Execute PARAOPS procedures IAW the MV-22 ANTTP.
- Demonstrate proper crew coordination during PARAOPS operations.

Prerequisites. LAT-2640~D, LAT-2642~HLL, LAT-2643~LLL, ACAD-4010

External Syllabus Support. Certified Drop Zone, Jumpmaster, qualified troops.

EXT-4081 1.5 365 B,R,M D A 1 MV-22

Single-point External Cargo Operations

Goal. Introduce single-point external load hook-up and delivery to a confined area

Requirements

Discuss
- Aircraft hook system
- Pendant preflight
- HWOG operation

HST composition, functions, and signals
HST safety brief
Crew responsibilities and communications during external operations
Standard terminology
Cargo hook-up procedures
Reduced visibility conditions
Terrain/obstacle clearance
Inadvertent IMC procedures
Aircraft emergencies with single-point external load
Tactical considerations during external lift operations
Aerodynamic characteristics of external loads
Light and heavy external load considerations
Load jettison procedures

Introduce

Pendant preflight
Hook checks
External load and rigging inspection.
Single-point external load hook-up and delivery to a confined area (minimum of 5 for initial sorties)
Wave-off with external load

Performance Standards

Demonstrate Proper aircraft hook system and pendant preflight checks IAW Crew Chief Pocket Checklist (NFM-800).
Demonstrate proper ICS terminology during external operations.
Place the load within 10 meters of desired location.
Execute single-point external procedures IAW the MV-22 ANTTP Manual.

Instructor. BICC

Prerequisites. CAL-2240, ACAD-4010

Required Reading. ANTTP *Cargo Operations*, NATOPS Operating limitations

External Syllabus Support. External load, HST, approved LZ with 7nm of protected airspace to 1,000' AGL

3.8.2 Alternate Insertion/Extraction Techniques (AIE)

Purpose. To develop proficiency in tiltrotor alternate insertion and extraction techniques and procedures.

General. Initial AIE-4140 and AIE-4141 shall be conducted during the day. Subsequent execution of AIE-4140 and AIE-4141 may be conducted at night. Crew chiefs shall be NSQ for the appropriate light level if conducting AIE-4140 and AIE-4141 using NVGs

Crew Requirement. P/P/CC/AO

Alternate Insertion/Extraction Techniques Stage Overview. The events included in the AIE stage of the Core Plus Phase of training are depicted below.

ALTERNATE INSERTION/EXTRACTION (AI/E) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-4111	0.5	*	B		G		Alternate Insertion/Extraction
ACAD-4112	0.5	*	B		G		Hoist Operations
AIE-4140	1.5	365	B,R,M	(NS)	A	1	Fastrope/Rappel
AIE-4141	1.5	365	B,R,M	(NS)	A	1	Hoisting

ACAD-4111 0.5 * B G

EA MV-22 Alternate Insertion/Extraction

Goal. The CCUI has an introductory knowledge of procedures to execute Fastrope, Rappel, SPIE, and Helocast operations from the MV-22.

Requirement. Utilize MAWTS-1 Courseware

Performance Standard. Student is introduced to procedures for AIE techniques.

Instructor. BICC

Required Reading. ANTTP *Alternate Insertion and Extraction*

Prerequisite. ACAD-2611

ACAD-4112 0.5 * B G

EA MV-22 Hoist Operations

Goal. The CCUI has an introductory knowledge of procedures to execute hoist operations from the MV-22.

Requirement. Utilize MAWTS-1 Courseware

Performance Standard. Student is introduced to Hoist procedures.

Instructor. BICC

Required Reading. ANTTP *Alternate Insertion and Extraction*

Prerequisite. ACAD-2611

AIE-4140 1.5 365 B,R,M (NS) A 1 MV-22

Alternate Insertion Procedures via Fastrope or Rappel

Goal. Introduce insertion procedures via fastrope or rappel.

Requirements.

Discuss
- HIGE/HOGE power requirements
- HRST brief
- Voice communication/standard terminology
- ICS failure/hand and arm signals
- Obstacle clearance/wave-off
- Emergency procedures

Introduce
- Preflight of fast rope/rappel rigging
- Troop insertion via fastrope/rappel

Performance Standards
- Maintain proper lookout for hover operations when deploying troops.
- Maintain obstacle clearance.
- Execute proper AIE procedures IAW the MV-22 ANTTP Manual.

Instructor. BICC

Prerequisites. EXT-4081, EXT-4083~NS, ACAD-4111

AIE-4141 1.5 365 B,R,M D A 1 MV-22

Alternate Insertion/Extraction Procedures via Hoisting

Goal. Introduce insertion/extraction procedures via hoisting.

Requirements

Discuss
- HIGE/HOGE power requirements
- CRM
- Voice communication/standard terminology
- ICS failures/hand and arm signals
- Obstacle clearance
- Emergency procedures

Introduce
- Hoist cable inspection
- Troop insertion/extraction via hoisting

Performance Standards
- Maintain proper lookout for extended hover when inserting/extracting troops.
- Execute proper hoist procedures IAW the MV-22 ANTTP Manual.
- Maintain obstacle clearance.

Instructor. BICC

Prerequisites. EXT-4081, ACAD-4112

3.9 INSTRUCTOR TRAINING PHASE (5000)

Purpose. To establish training for instructor designations.

General. ROC will be per T&R Program Manual. CCUI may fly night flights using NVGs in this phase under HLL or LLL conditions provided they are NSQ for that light level. Refer to the MAWTS-1 MV-22 Course Catalog for specific syllabus information.

INSTRUCTOR TRAINING PHASE OVERVIEW		
Stage Name	**Paragraph Number**	**Page Number**
Basic Instructor Crew Chief (BICC)	3.9.1	3-36

3.9.1 Basic Instructor Crew Chief (BICC)

Purpose. To develop qualified Basic Instructor Crew Chiefs using a standardized instructor training program. This syllabus is designed to prepare crew chiefs to instruct specific T&R events that do not otherwise have an instructor requirement. This portion of the syllabus shall be used by VMM squadrons to assist in instructor standardization.

General. IUT events will emphasize instructional techniques, briefing and debriefing, and applicable aircrew training publications. Emphasis on all events within the syllabus is on training objectives, method of instruction, and student problem areas.

Conduct IUT events with a designated ANI, NI or WTI.

Crew Requirement. P/P/CC/AO

Prerequisites. Crew chiefs shall be NSQ and recommended by the squadron standardization board prior to beginning the IUT syllabus.

BASIC INSTRUCTOR CREW CHIEF (BICC) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-5010	8.0	*	B		G		Basic Instructor Training Course
LAB-5020	3.0	*	B		G		Aircrew Training Manuals
BICC-5040	1.0	*	B,R		A	1	BICC Certification Flight

ACAD-5010 8.0 * B G

Basic Instructor Training Course

Goal. The CCUI will have an introductory knowledge of instructional techniques, briefing and debriefing styles, and tactical risk mitigation for instructional sorties.

Requirement. Utilize Basic Instructor Training Course courseware.

Performance Standard. Successfully complete all training requirements of the BITC course curriculum.

Prerequisites. NSQ, Recommended by squadron standardization board.

LAB-5020 3.0 * B G

Aircrew Training Manuals

Goal. Introduce the IUT to training manuals crew chiefs utilize for instructing students.

Requirements

Discuss:
- MV-22 T&R Ch. 1, 3, and 4.
- T&R Program Manual Ch. 2 and 3
- MV-22 ANTTP
- M-SHARP discussion
- Brevity code manual

Performance Standard. IUT demonstrates familiarity with all aircrew training manuals and publications.

Instructor. WTI

Required Reading. NAVMC 3500.11, NAVMC 3500.14

Prerequisites. ACAD-5010

BICC-5040 1.0 * B,R D A 1 MV-22

Goal. Demonstrate the ability to brief, debrief, and instruct events that do not otherwise have an instructor requirement.

Requirements

Discuss
- All "discuss" items for events that do not otherwise have an instructor requirement in the Core Skill phase
- CRM
- Lookout doctrine
- Comfort levels
- Aircraft emergencies/system failures
- Aircraft weight and balance
- CG limitations
- How to read a flight schedule
- Proper PPE

Introduce
- Instructor techniques
- T&R briefing items

Performance Standards

Demonstrate the ability to brief and debrief a crew chief student.

Demonstrate the capability to recognize and correct student errors in the aircraft.

Instructor. WTI, NE, NI, or ANI

Prerequisites. LAB-5020

3.10 REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS (RQD) PHASE (6000)

Purpose. To establish training for specific requirements.

General. Squadrons will use this phase of training for check flights, qualifications and designations. The CCUI will demonstrate sound levels of aircraft/flight leadership and judgment required in a combat environment.

Requirement and qualification codes in the 6000 phase should be logged in conjunction with other 2000-4000 codes completed during the event. For example, RQD-6030 may be logged in conjunction with any flight in the training syllabus provided that all the requirements for that flight have been met. When the flight to attain the requirement/qualification/designation is complete, a letter from the squadron commanding officer awarding the qualification or designation shall be placed in the NATOPS and APR before that designation may be utilized.

After the commanding officer has designated the CCUI in writing as gaining a designation or qualification, Operations shall make the required qualification or designation entry into M-SHARP.

Purpose. To track requirements as outlined in OPNAVINST 3710.7, the MV-22 NATOPS, and CNAFINST 1542.7.

General. This section allows squadrons to document and track annual NATOPS and Instrument check flights and CRM training.

Crew Requirements. All checks will be per applicable directives.

REQUIREMENTS, QUALIFICATIONS AND DESIGNATION (RQD) PHASE OVERVIEW		
Stage Name	**Paragraph Number**	**Page Number**
NATOPS	3.10.1	3-38
Crew Resource Management (CRM)	3.10.2	3-40

3.10.1 NATOPS Requirements

Purpose. To track requirements as outlined in CNAFINST 3710.7 and the CMV-22 NATOPS Manuals

NATOPS OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-6010	3.0	365	B,R,M		G		NATOPS Open Book Exam
ACAD-6011	1.0	365	B,R,M		G		NATOPS Closed Book Exam
ACAD-6012	1.0	365	B,R,M		G		NATOPS Oral Exam
RQD-6030	1.5	365	B,R,M	(N)	A	1	NATOPS Evaluation
RQD-6031	1.5	365	B,R,M	(N)	A	1	ANI Evaluation
RQD-6032	1.5	365	B,R,M	(N)	A	1	NI Evaluation
RQD-6033	1.5	90	B,R,M	(N)	A/S	1	EP Review

ACAD-6010 3.0 365 B,R,M G

Open-book NATOPS Examination

Goal. The Open-book Examination shall consist of, but not be limited to, questions from the V-22 NATOPS question bank. The purpose of the written examination is to evaluate the aircrewman's knowledge of the appropriate publications and the aircraft.

Performance Standard. Achieve a minimum grade of Qualified on the Open-book examination.

Instructor. NI/ANI

ACAD-6011 1.0 365 B,R,M G

Closed-book NATOPS Examination

Goal. The Closed-book Examination shall be limited to the V-22 NATOPS question bank. The purpose of the closed book examination portion of the written examination is to evaluate the aircrewman's knowledge of normal/emergency procedures and aircraft limitations.

Performance Standard. Achieve a minimum grade of Qualified on the Closed-book Examination.

Instructor. NI/ANI

Prerequisite. ACAD-6010

ACAD-6012 1.0 365 B,R,M G

Oral NATOPS Examination

Goal. The Oral Examination shall consist of, but not be limited to, the V-22 NATOPS question bank. The evaluator may draw upon personal experience to propose questions of a direct and positive manner and in no way be opinionated to evaluate the aircrewman's knowledge of normal/emergency procedures, aircraft limitations, and performance.

Performance Standard. Achieve a minimum grade of Qualified on the Oral Examination.

Instructor. NI/ANI

Prerequisite. ACAD-6011

RQD-6030 1.5 365 B,R,M (N) A 1 MV-22

NATOPS Evaluation

Goal. Conduct an objective evaluation of the aircrewman's knowledge of briefing, normal operating procedures (flight and ground), crew resource management, aircraft systems, performance criteria, emergency procedures, and debriefing. The focus is on normal and emergency procedures, not tactical execution. Emphasis shall be placed on the aforementioned items with the addition of local course rules, local SOPs, and admin flight procedures. The NATOPS evaluation is intended to evaluate compliance with NATOPS procedures. The NATOPS evaluation is the means to measure the aircrewman's efficiency in the execution of normal operating procedures and reaction to emergencies and malfunctions. The NATOPS evaluation process should be as much a learning tool and/or experience as it is an evaluation.

Requirement. The crew chief under evaluation shall bring a completed NATOPS evaluation card. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level and highest qualification or designation of the crew chief under evaluation.

Performance Standard. The crew chief under evaluation must be prepared to safely demonstrate emergency procedures and knowledge of all maneuvers and procedures described within the NATOPS, OPNAV 3710.7 and in accordance with all SOPs. Upon successful completion of this event, the evaluator shall log the appropriate training code for tracking purposes.

Instructor. NI/ANI

Prerequisite. ACAD-6012

RQD-6031 1.5 365 B,R,M (N) A 1 MV-22

Assistant NATOPS Instructor Evaluation

Goal. Tracking code for an NI/ANI evaluation. Log this code in place of RQD-6030.

Requirement. The crew chief under evaluation shall bring a completed NATOPS evaluation card. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level qualification of the crew chief under evaluation.

Performance Standards. The crew chief under evaluation must be prepared to safely demonstrate flight proficiency and knowledge of all maneuvers and procedures described within the NATOPS, OPNAV 3710.7 and in accordance with all SOPs.

Instructor. NE/NI.

Prerequisite. ACAD-6012

RQD-6032 1.5 365 B,R,M (N) A 1 MV-22

NATOPS Instructor Evaluation

Goal. Tracking code for an NI evaluation. Log this code in place of RQD-6030.

Requirement. The crew chief under evaluation shall bring a completed NATOPS evaluation card. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level qualification of the crew chief under evaluation.

Performance Standards. The crew chief under evaluation must be prepared to safely demonstrate flight proficiency and knowledge of all maneuvers and procedures described within the NATOPS, OPNAV 3710.7 and in accordance with all SOPs.

Instructor. NE.

Prerequisite. ACAD-6012

RQD-6033 1.0 90 B,R,M (N) A/S 1 MV-22

Emergency Procedures Review

Goal. Emergency Procedures review.

Requirement. This flight will review MV-22 emergency procedures and fulfills the requirement of the 90 day EP review requirement.

Performance Standard. Comply with MV-22 NATOPS procedures while dealing with non-normal conditions.

3.10.2 Crew Resource Management

Purpose. To track requirements as outlined in CNAFINST 1542.7.

CREW RESOURCE MANAGEMENT (CRM) OVERVIEW							
Event	**Time**	**Refly**	**POI**	**Conditions**	**Device**	**Num**	**Description**
ACAD-6070	1.0	365	B,R,M		G		CRM Refresher Lecture
RQD-6080	1.5	365	B,R,M	(N)	A	1	CRM Flight
RQD-6090	0.0	365	B,R,M		G		CRM Lecture
RQD-6091	0.0	365	B,R,M	(N)	A	1	CRM Facilitator Evaluation

ACAD-6070 1.0 365 B,R,M G

Crew Resource Management Refresher Lecture

Goal. Review the 7 critical CRM skills during a mission scenario, as well as during emergencies and system failures.

Instructor. CRMI/F

Prerequisites. RQD-6030

RQD-6080 1.5 365 B,R,M (N) A 1 MV-22

Crew Resource Management Flight

Goal. Review CRM principles while executing a simulated mission scenario.

Requirement. Review the 7 critical CRM skills during a mission scenario as well as during emergencies and system failures.

Performance Standards. Crew chiefs shall demonstrate effective use of the 7 critical CRM skills in accordance with OPNAVINST 1542.7, MV-22 NATOPS, and applicable directives.

Instructor. CRMF/I.

Prerequisites. ACAD-6070

RQD-6090 0.0 365 B,R,M G

Crew Resource Management Facilitator Lecture

Goal. Tracking code for CRMF lecture.

Performance Standards. Successful completion of the CRMF lecture.

Instructor. CRMI.

RQD-6091 0.0 365 B,R,M (N) A 1 MV-22

Crew Resource Management Facilitator Evaluation

Goal. Tracking code for CRMF evaluation.

Requirement. Review the 7 critical CRM skills during a mission scenario as well as during emergencies and system failures.

Performance Standards. Crew chiefs shall demonstrate effective use of the 7 critical CRM skills in accordance with OPNAVINST 1542.7, MV-22 NATOPS, and applicable directives.

Instructor. CRMI.

Prerequisites. ACAD-6090

3.11 CMV-22B CREW CHIEF T&R MATRIX (2000-6000 Phase)

CMV-22B CREW CHIEF T&R MATRIX (2000-6000 Phase)																				
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	POI			ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	INSTRUCTOR	EVENT CONV
				BASIC	REFRESHER	MAINTAIN	#	TIME	#	TIME	#	TIME								
2000 PHASE (CORE)																				
FAMILIARIZATION (FAM)																				
FAM	ACAD	REFERENCE PUBLICATIONS	2012	X				1.0						G		*	1841		BICC	
	ACAD	AIR-TO-AIR REFUELING	2013	X				1.0						G		*	1841		BICC	
	LAB	MISSION AUXILIARY TANK SYSTEM	2020	X				2.0						A	1	*	1841		BICC	
	LAB	CARGO LOADING	2027	X	X	X		1.5						A/S	1	365	1841		BICC	
FAM TOTAL							4	5.5	0	0.0	0	0.0								
FORMATION (FORM)																				
FORM	ACAD	EA TACFORM	2110	X				1.0						G		*	1841		BICC	
	FORM	TAC FORM / NAV	2140	X	X	X						2.0	(NS)	A	2	365	2110		BICC	
FORM TOTAL							1	1.0	0	0.0	1	2.0								
CONFINED AREA LANDING (CAL)																				
CAL	CAL	SINGLE CAL	2240	X								1.5	D	A	1	*	1841		BICC	
	CAL	SECTION CAL	2242	X	X	X						2.0	D	A	2	365	2140, 2240		BICC	
CAL TOTAL							0	0.0	0	0.0	2	3.5								
REDUCED VISIBILITY LANDINGS (RVL)																				
RVL	ACAD	RVL	2250	X				1.0									2240		BICC	
	LAB	RVL LAB	2260	X				1.0									2250		BICC	
RVL SKILL TOTAL							0	2.0	0	0.0	0	0.0								
NIGHT SYSTEMS HIGH LIGHT LEVEL (NS HLL)																				
NS HLL	ACAD	EA NIGHT VISION TRAINING	2310	X				1.0						G		*	1841		NSI	
	ACAD	MV-22 FLIR FOR EAC	2311	X				1.0						G		*	2310		NSI	
	NS HLL	HLL SGL CAL	2340	X	X							2.0	HLL	A	1	365	2311, 2240		NSI	
	NS HLL	HLL SEC CAL	2341	X	X	X						2.0	HLL	A	2	365	2340,2242	2242, 2340	NSI	
NS HLL SKILL TOTAL							2	2.0	0	0.0	2	4.0								
NIGHT SYSTEMS LOW LIGHT LEVEL (NS LLL)																				
NS LLL	NS LLL	FAM/LLL SGL CAL	2380	X	X							1.5	LLL	A	1	240	NSQ HLL	2340	NSI	
	NS LLL	LLL SGL CAL	2381	X								1.5	LLL	A	1	*	2380		NSI	
	NS LLL	LLL SEC NAV/TACFORM	2382	X								1.5	LLL	A	2	*	2381	2140	NSI	
	NS LLL	LLL SEC CAL	2383	X	X	X						2.0	LLL	A	2	240	2382	2341,2340,2242,2380	NSI	
NS LLL SKILL TOTAL							0	0.0	0	0.0	4	6.5								
LOW ALTITUDE TACTICS (LAT)																				
LAT	ACAD	LAT FOR EAC	2610	X				.5						G		*	1841		LATI	
	ACAD	TACTICAL AIRCREW CONSIDERATION	2611	X				.5						G		*	2610		LATI	
	LAB	LAT WALK-THROUGH	2620	X				.5						G		*	2611		LATI	
	LAT	LAT MANEUVERS AND ROUTE	2640	X								1.5	D	A	1	*	2620		LATI	

CMV-22B CREW CHIEF T&R MATRIX (2000-6000 Phase)																				
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	POI			ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	INSTRUCTOR	EVENT CONV
				BASIC	REFRESHER	MAINTAIN	#	TIME	#	TIME	#	TIME								
LAT SKILL TOTAL							3	1.5	0	0.0	1	1.5								
GROUND THREAT REACTION (GTR)																				
GTR	ACAD	ASE	2810	X				1.0						G		*	2611		WTI	
	ACAD	BASIC PRINCIPLES OF EW	2811	X				1.0						G		*	2810		WTI	
	ACAD	AIR DEFENSE ARTILLERY THREAT	2812	X				1.0						G		*	2811		WTI	
	ACAD	IR SURFACE-TO-AIR MISSILE THREAT	2813	X				1.0						G		*	2811		WTI	
	ACAD	RADAR SURFACE-TO-AIR MISSILE	2814	X				1.0						G		*	2811		WTI	
	ACAD	GTR	2815	X				1.0						G		*	2810,2811,2812,2813,2814		WTI	
	LAB	GTR WALK-THROUGH	2820	X				0.5						G		*	2815		WTI	
GTR SKILL TOTAL							7	6.5	0	0.0	0	0.0								
CARRIER QUALIFICATION (CQ)																				
CQ	ACAD	LHD	2910	X				1.0									1841			
	ACAD	CV/AIR CAPABLE SHIPS	2911	X				0.5									2910			
	SCQ	DAY SIM	2930	X						1.0			D	S	1	*	2240		BICC	
	SNSCQ	NIGHT SIM	2931	X						1.0			NS	S	1	*	2930		BICC	
	CQ	DAY FCLP	2940	X	X							1.5	D	A	1	365	2930		BICC	
	CQ	DAY CQ	2941	X	X							1.5	D	A	1	365	2940	2940	BICC	
	NSCQ	NS FCLP	2942	X	X							1.5	NS	A	1	365	2931, 2940	2940	NSI	
	NSCQ	NS CQ	2943	X	X	X						1.5	NS	A	1	365	2942	2941, 2942	NSI	
CQ SKILL TOTAL							2	1.5	2	2.0	4	6.0								
BASIC NCC 2000 PHASE TOTAL							**19**	**20.0**	**4**	**5.0**	**14**	**23.5**								
4000 PHASE (CORE PLUS)																				
AIR DELIVERY (AD)																				
AD	ACAD	AIR DELIVERY	4010	X				1.0						G		*	2611		BICC	
	AIE	PARAOPS	4041	X	X	X						1.5	D	A	1	365	2640~D,2642~HLL,2643~LLL,4010		BICC	
	EXT	DAY SINGLE POINT EXTERNALS	4081	X	X	X						1.5	D	A	1	365	2240,4010		BICC	
AD SKILL TOTAL							1	1.0	0	0.0	2	3.0								
ALTERNATE INSERTION/EXTRACTION TECHNIQUES (AI/E)																				
AIE	ACAD	ALTERNATE INSERTION/EXTRACTION	4111	X				0.5						G			2611		BICC	
	ACAD	HOIST OPERATIONS	4112	X				0.5						G			2611		BICC	
	AIE	FASTROPE / RAPPEL	4140	X	X	X						1.5	(NS)	A	1	365	4081, 4111		BICC	
	AIE	HOISTING	4141	X	X	X						1.5	(NS)	A	1	365	4081, 4112		BICC	
AI/E SKILL TOTAL							2	1.0	0	0.0	2	3.0								
5000 PHASE (INSTRUCTOR TRAINING)																				
BASIC INSTRUCTOR CREW CHIEF (BICC)																				
BICC	ACAD	BASIC INST TRAINING COURSE	5010	X				8.0						G		*	NSQ, STAN BOARD		BICC	
	LAB	AIRCREW TRAINING MANUALS	5020	X	X			3.0						G		*	5010		NI/ANIWTI	
	BICC	BICC CERTIFICATION	5040	X	X							1.0	D	A	1	*	5020		NI/ANIWTI	

CMV-22B CREW CHIEF T&R MATRIX (2000-6000 Phase)																				
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	POI			ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	INSTRUCTOR	EVENT CONV
				BASIC	REFRESHER	MAINTAIN	#	TIME	#	TIME	#	TIME								
BICC SKILL TOTAL							2	11.0	0	0.0	1	1.0								
6000 PHASE (REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS (R,Q,D)																				
NATOPS (NTPS)																				
NTPS	ACAD	NATOPS OPEN BOOK	6010	X	X	X		3.0						G		365			NI / ANI	
	ACAD	NATOPS CLOSED BOOK	6011	X	X	X		1.0						G		365	6010		NI / ANI	
	ACAD	NATOPS ORAL EXAM	6012	X	X	X		1.0						G		365	6011		NI / ANI	
	RQD	NATOPS EVAL	6030	X	X	X						1.5	(N)	A	1	365	6012		NI / ANI	
	RQD	ANI EVAL	6031	X	X	X						1.5	(N)	A	1	365	6012	6030	NE / NI	
	RQD	NI EVAL	6032	X	X	X						1.5	(N)	A	1	365	6012	6030	NE	
	RQD	EP REVIEW	6033	X	X	X				1.0			(N)	S	1	90				
NTPS SKILL TOTAL							3.0	5.0	0	5.0	3	4.5								
CREW RESOURCE MANAGEMENT (CRM)																				
CRM	ACAD	CRM REFRESHER	6070	X	X	X		1.0						G		365			CRMF/I	
	RQD	CRM EVAL	6080	X	X	X				1.5			(N)	S	1	365	6070		CRMF/I	
	ACAD	CRMF LECTURE	6090	X	X	X		0.0						G		365	-	6070	CRMF/I	
	RQD	CRMF EVAL	6091	X	X	X				0.0			(N)	S	1	365	6090	6080	CRMF/I	
	ACAD	CRMI COURSE	6092	X				0.0						G		*				
CRM SKILL TOTAL							3	1.0	2	1.5	0	0.0								

3.12 CMV-22B CREW CHIEF RANGE AND ORDNANCE MATRIX

CMV-22B CREW CHIEF RANGE AND ORDNANCE MATRIX								
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE QUANTITY	ORDNANCE NOTES	RANGE	RANGE NOTES
2000 PHASE (CORE)								
CONFINED AREA LANDING (CAL)								
CAL	CAL	SINGLE CAL	2240					SUITABLE LZ AND AIRSPACE
	CAL	SECTION CAL	2242					SUITABLE LZ AND AIRSPACE
NIGHT SYSTEMS HIGH LIGHT LEVEL (NS HLL)								
HLL	NS HLL	HLL SGL CAL	2340					SUITABLE LZ AND AIRSPACE
	NS HLL	HLL SEC CAL	2341					SUITABLE LZ AND AIRSPACE
NIGHT SYSTEMS LOW LIGHT LEVEL (NS LLL)								
LLL	NS LLL	FAM/LLL SGL CAL	2380					SUITABLE LZ AND AIRSPACE
	NS LLL	LLL SGL CAL	2381					SUITABLE LZ AND AIRSPACE
	NS LLL	LLL SEC NAV/TACFORM	2382					SUITABLE LZ AND AIRSPACE
	NS LLL	LLL SEC CAL	2383					SUITABLE LZ AND AIRSPACE
LOW ALTITUDE TACTICS (LAT)								
LAT	LAT	LAT MANEUVERS	2640					LAT
	LAT	SECTION LAT	2641					LAT
	NS LAT	HLL	2642					LAT
	NS LAT	LLL	2643					LAT
CARRIER QUALIFICATION (CQ)								
CQ	CQ	DAY FCLP	2940					FCLP
	CQ	DAY CQ	2941					FCLP
	NSCQ	NIGHT FCLP	2942					SHIP
	NSCQ	NIGHT CQ	2943					SHIP
4000 PHASE (CORE PLUS)								
AERIAL DELIVERY (AD)								
AD	PARA	PARAOPS	4041				CERTIFIED DROP ZONE	
	EXT	DAY SINGLE POINT EXTERNALS	4081				EXT	External Load
ALTERNATE INSERTION/EXTRACTION TECHNIQUES (AI/E)								
AIE	AIE	FASTROPE/RAPPEL	4140					SUITABLE AIRSPACE
AIE	AIE	HOISTING	4141					SUITABLE AIRSPACE

3.13 CMV-22B FRS CREW CHIEF T&R MATRIX (1000 & 5000 Phase)

CMV-22B FRS CREW CHIEF T&R MATRIX (1000 & 5000 Phase)																				
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	POI				ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	INSTRUCTOR	EVENT CONV
				BASIC		REFRESHER	MAINTAIN	#	TIME	#	TIME	#	TIME								
1000 PHASE (CORE INTRODUCTION)																					
GROUND SCHOOL																					
GROUND SCHOOL	ACAD	GROUND SCHOOL INBRIEF	0100	X					1.0						G		*			FRSCCI	
	ACAD	ACAD BLK 1	0101	X					11.5						G		*	0100		FRSCCI	
	LAB	FIRE EXT LAB	0200	X					1.0						A	1	*	0100		FRSCCI	
	LAB	INGRESS, EGRESS	0201	X					1.0						C/A		*	0100		FRSCCI	
	LAB	INTRO TO APU, CMS STARTUP	0202	X							5.0				S	1	*	0100		FRSCCI	
	ACAD	ACAD BLK 2	0102	X					15.0						G		*	0101		FRSCCI	
	LAB	APU, CMS STARTUP	0203	X							5.0				S	1	*	0101		FRSCCI	
	ACAD	ACAD BLK 3	0103	X					13.5						G		*	0102		FRSCCI	
	LAB	CONTROLS AND DISPLAYS	0204	X							5.0				S	1	*	0102		FRSCCI	
	LAB	COMM AND NAV	0205	X							5.0				S	1	*	0102		FRSCCI	
	ACAD	ACAD BLK 4	0104	X					9.0						G		*	0103		FRSCCI	
	LAB	NAVIGATION AND IEWS	0206	X							4.0				S/A		*	0103		FRSCCI	
	ACAD	ACAD BLK 5	0105	X					16.0						G		*	0104		FRSCCI	
	LAB	ENGINE FAMILIARIZATION	0207	X					5.0						A	1	*	0104		FRSCCI	
	LAB	APU AND FIRE PROTECTION	0208	X					2.0						A	1	*	0104		FRSCCI	
	LAB	WEIGHT AND BALANCE	0209	X							4.0				S	1	*	0104		FRSCCI	
	LAB	CARGO LOADING	0210	X					3.0						G		*	0104		FRSCCI	
	ACAD	ACAD BLK 6	0106	X					12.0						G		*	0105		FRSCCI	
	LAB	PROPROTOR SYS	0211	X					3.0						A	1	*	0105		FRSCCI	
	LAB	HYD, ENG START, EAPS	0212	X							6.0				S	1	*	0105		FRSCCI	
	ACAD	ACAD BLK 7	0107	X					12.5						G		*	0106		FRSCCI	
	LAB	LANDING GEAR	0213	X					2.0						A	1	*	0106		FRSCCI	
	LAB	SERVICING	0214	X					2.0						A	1	*	0106		FRSCCI	
	LAB	INTRO TO BFWS	0215	X							11.0				S	1	*	0106		FRSCCI	
	LAB	BFWS	0216	X					6.0						A/S	1	*	0106		FRSCCI	
	ACAD	ACAD BLK 8	0108	X					22.0						G		*	0107		FRSCCI	
	LAB	INTRO PLANE CAPTAIN DUTIES	0217	X					40.0						A	1	*	0107		FRSCCI	
	ACAD	ACAC BLK 9	0109	X					17.0						G		*	0108		FRSCCI	
	LAB	STARTUP, TAXI, SHUTDOWN	0218	X					5.0						A		*	0108		FRSCCI	
	LAB	MOORING	0219	X					2.0						A	1	*	0108		FRSCCI	
	LAB	ALSS EQUIPMENT	0220	X					4.0						G		*	0108		FRSCCI	
	LAB	EMERGENCY PROCEDURES	0221	X					4.0						C/A		*	0108		FRSCCI	
	LAB	MISSION PREP/BRIEFING	0222	X					2.0						A	1	*	0108		FRSCCI	
	ACAD	CRM INITIAL	0110	X					4.0						G		*			CRMI	

CMV-22B FRS CREW CHIEF T&R MATRIX (1000 & 5000 Phase)																				
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	POI				ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	INSTRUCTOR	EVENT CONV
				BASIC		REFRESHER	MAINTAIN	#	TIME	#	TIME	#	TIME								
	ACAD	NITE LAB	0111	X					8.0						G		*			AMSO/AMSC	
	ACAD	MV-22 CRM	0114	X					2.0						G		*	100		FRSI	
GROUND SCHOOL TOTAL								28	225.5	8	45.0	0	0.0								
FAMILIARIZATION (FAM)																					
FAM	ACAD	FAM STAGE INBRIEF	1010	X					1.0						G		*	GRND SCHOOL COMP		FRSCCI	
	ESFAM	CMS CHECKLIST	1032	X							2.0				S/A	1	*	1010		FRSCCI	
	ESFAM	CC CALL OUTS, START UP	1033	X							2.0			D	S/A	1	*	1032		FRSCCI	
	FAM	ENG STRT, NAC DRILL, CONV PTRN	1080	X									1.5	D	A	1	*	1033		FRSCCI	
	FAM	CONV PTRN, STP APP, MGW	1081	X									1.5	D	A	1	*	1080		FRSCCI	
	FAM	CONV PTRN, TRNS/CONV, LSC	1082	X									1.5	D	A	1	*	1081		FRSCCI	
	FAM	APLN PTRN	1083	X									1.5	D	A	1	*	1082		FRSCCI	
	FAM	APLN PTRN, HIGH AOB, STALLS	1084	X									1.5	D	A	1	*	1083		FRSCCI	
	FAM	APLN PTRN, STALLS, ELP	1085	X									1.5	D	A	1	*	1084		FRSCCI	
	FAM	FAM PROGRESS CHECK	1086	X									1.5	D	A	1	*	1085		FRSCCI	
FAM TOTAL								1	1.0	2	4.0	7	10.5								
INSTRUMENT (INST)																					
INST	ACAD	INST STAGE INBRIEF	1210	X					1.0						G		*	1083		FRSCCI	
	INST	BASIC INSTRUMENT FLIGHT	1240	X									1.5	N*	A	1	*	1210		FRSCCI	
INST TOTAL								1	1.0	0	0.0	1	1.5								
CONFINED AREA LANDING (CAL)																					
CAL	ACAD	CAL STAGE INBRIEF	1310	X					1.0						G		*	1086		FRSCCI	
	CAL	CAL PTRN, TAC ST IN, RVL	1340	X									2.0	D	A	1	*	1310		FRSCCI	
	CAL	CAL, RVL	1341	X									1.5	D	A	1	*	1340		FRSCCI	
CAL TOTAL								1	1.0	0	0.0	2	3.5								
FORMATION (FORM)																					
FORM	ACAD	FORM STAGE INBRIEF	1410	X					1.0						G		*	1086		FRSCCI	
	FORM	FORM SEQ	1440	X									2.0	D	A	2	*	1340,1410		FRSCCI	
FORM TOTAL								1	1.0	0	0.0	1	2.0								
FIELD CARRIER LANDING PRACTICE (FCLP)																					
FCLP	ACAD	FCLP STAGE INBRIEF	1510	X					1.0						G		*	1086		FRSCCI	
	FCLP	DAY FCLP	1540	X									1.5	D	A	1	*	1510,1340		FRSCCI	
FCLP TOTAL								1	1.0	0	0.0	1	1.5								
NIGHT SYSTEMS (NS)																					
NS	ACAD	NS STAGE INBRIEF	1610	X					1.5						G		*	1086		NSFI / NSI	
	NS	NVD FAM, FLIR USE	1640	X									1.5	NS	A	1	*	1610,0111		NSFI / NSI	
	NS	NVD CAL, FLIR	1641	X									1.5	NS	A	1	*	1340,1640		NSFI / NSI	
	NS	NVD FORM	1642	X									2.0	NS	A	2	*	1440,1641		NSFI / NSI	

CMV-22B FRS CREW CHIEF T&R MATRIX (1000 & 5000 Phase)																					
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	POI				ACAD		SIM		FLIGHT		CONDITION	TYPE	# AIRCRAFT or SIM	PROFICIENCY INTERVAL	PREREQUISITE	CHAINING	INSTRUCTOR	EVENT CONV
				BASIC		REFRESHER	MAINTAIN	#	TIME	#	TIME	#	TIME								
NS TOTAL								1	1.5	0	0.0	3	5.0								
CARGO																					
CARGO	ACAD	CARGO OPS STAGE BRIEF	1710	X					2.0						G		*	1086		FRSCCI	
	ACAD	MISSION CONFIG CLASS	1711	X					2.0						G		*	1710		FRSCCI	
	LAB	INTERNAL CARGO LAB	1720	X					2.0						G		*	1710		FRSCCI	
	SCARGO	INTERNAL CARGO SIM	1730	X							1.5			D	S		*	1720		FRSCCI	
CARGO TOTAL								3	6.0	1	1.5	0	0.0								
REVIEW (REV)																					
REV	ACAD	OPEN BOOK NATOPS EXAM	6010	X		X	X		3.0								365			NE/NI/ANI	
	ACAD	CLOSED BOOK NATOPS EXAM	6011	X		X	X		1.0								365	6010		NE/NI/ANI	
	ESREV	EP REV	1830	X							1.0			E	A/S	1	*	CORE SKILL INTRO		NE/NI/ANI	
	ESREV	REV ALL MANEUVERS	1831	X									2.0	(N)	A/S	1	*	1830		FRSCCI	
	REV	REV ALL MANEUVERS	1840	X									1.5	D	A	1	*	1831		FRSCCI	
	ACAD	NATOPS ORAL EXAM	6012	X		X	X		3.0					E			365	6011		NE/NI/ANI	
	RQD	INITIAL NATOPS EVALUATION	1841	X		X	X						1.5	E	A	1	*	6012, 1840	6030	NE/NI/ANI	
REVIEW TOTAL								3	7.0	1	1.0	3	5.0								
1000 PHASE TOTAL								**40**	**244.0**	**12**	**51.5**	**18**	**27.5**								
5000 PHASE																					
NIGHT SYSTEM FAMILIARIZATION INSTRUCTOR (NSFI)																					
NSFI	ACAD	NSFI ACAD	5710	X		X			1.0						G		*	NSQ (HLL/LLL) , 5133		NSI	
	NSFI	NSF IUT	5731	X		X							2.0	NS	A	2	*	5710		NSI	
	NSFI	NSFI CERTIFICATION	5732	X		X							2.0	NS	A	2	*	5630		NSI	
NSFI SKILL TOTAL								0	1.0	0	0.0	0	4.0								
FRS CREW CHIEF INSTRUCTOR (FRSCCI)																					
FRSCCI	ACAD	BASIC INSTRUCTOR TRAINING COURSE	5010	X		X			8.0						G		*	NSQ, STAN BOARD			
	FIT	FAM IUT	5140	X		X							2.0	D	A	1	*	5010		STANI	
	FIT	CAL IUT	5141	X		X							1.5	D	A	1	*	5010		STANI	
	FIT	FORM IUT	5142	X		X							1.5	D	A	2	*	5010		STANI	
	FIT	FRSCCI CERTIFICATION	5143	X		X							2.0	D	A	A	*	5140, 5141, 5142		STANI	
FRSCCI SKILL TOTAL								0	8.0	0	0.0	0	7.0								