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From: Commandant of the Marine Corps  
To: Distribution List

Subj: AH-1Z TRAINING AND READINESS MANUAL

Ref: (a) NAVMC 3500.14E

Encl: (1) AH-1 T&R Manual

1. Purpose. Per the reference, the AH-1Z Training and Readiness (T&R) Manual, contained in enclosure (1) provides revised standards, regulations, and policy regarding the training of AH-1Z aircrew.

2. Cancellation. NAVMC 3500.104B.

3. Scope. Highlights of major changes are:

a. Chapter 1

(1) The definition of critical military occupational specialty (MOS) has been revised to add that MOS shortages shall be reported by the unit via the Defense Readiness Reporting System.

(2) The tactical and reserve squadron critical MOS table has been revised to allow only primary or billet MOSs that appear on a unit table of organization.

b. Chapter 2

(1) Unguided rocket allocations have been redistributed from the Mission Phase to the Core Phase to ensure unguided rocket delivery for proficiency for pilots prior to training to complex mission sets such as close air support.

(2) The Forward Air Controller Airborne syllabus adopted a building block approach with more simulator integration.

(3) Field carrier landing practice events have been moved from the Core Phase to the Core Plus Phase.

(4) Flight leadership events shall include at least one event performed with an instructor in the same aircraft as the pilot being evaluated.

4. Information. Commanding General (CG), Training and Education Command (TECOM) will update the AH-1Z T&R Manual as necessary to provide current and relevant training standards to commanders. All questions pertaining to this manual should be directed to: CG, TECOM, Policy and Standards Division, 1019 Elliot Road, Quantico, Virginia 22134.

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

5. Command. This Manual is applicable to the Marine Corps Total Force.
6. Certification. Reviewed and approved this date.



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

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CHAPTER 1

AH-1Z

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## CHAPTER 1

### AH-1Z

1.0 **TRAINING AND READINESS REQUIREMENTS**. The goal of Marine Aviation is to attain and maintain combat readiness to support Expeditionary Maneuver Warfare while conserving resources. The standards established in this program are validated by subject matter experts to maximize combat capabilities for assigned METs. These standards describe and define unit capabilities and requirements necessary to maintain proficiency in mission skills and combat leadership. Training Events are based on specific requirements and performance standards to ensure a common base of training and depth of combat capability.

#### 1.1 **MISSION**

1.1.1 **Tactical and Reserve Squadron**. Support the MAGTF Commander by providing offensive air support, utility support, armed escort and airborne supporting arms coordination, day or night under all weather conditions during expeditionary, joint or combined operations.

1.1.2 **Fleet Replacement Squadron**. Conduct Core Introduction training for pilots and aircrew in the UH-1Y, pilots in the AH-1Z, and to provide technical training for aviation maintenance personnel.

1.2 **TABLE OF ORGANIZATION (T/O)**. Refer to Table of Organization managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for HMLA squadrons (AH-1Z specific). As of this publication date, HMLA (AH-1Z specific) squadrons are authorized:

#### 1.2.1 **Tactical and Reserve Squadrons**

HMLA AH-1Z				
TABLE OF ORGANIZATION T/O				
CATEGORY	SQUADRON	SQUADRON(-)	DETACHMENT	DETACHMENT
Aircraft	15	10	5	4
Pilots	36	24	12	9

#### 1.2.2 **HMLA AH-1Z Tactical and Reserve Critical MOSs**

AH-1Z TACTICAL AND RESERVE SQUADRON CRITICAL MOSs`				
MOS Description	PRIMARY MOS	Billet and/or MOS Description	SECONDARY MOS	
Pilot	7565	Maintenance Control (Safe-for-flight)	6012	
Aircraft Maintenance Chief	6019	Collateral Duty Inspector (CDI)	6016	
Avionics Tech	6324	Collateral Duty QAR (CDQAR)	6017	
Airframe Mechanic	6154	Quality Assurance Representative (QAR)	6018	
Ordnance Technician	6531	WTI Pilot	7577	
Helicopter Mechanic	6114	Forward Air Controller (Airborne) Instructor	7544	
Ordnance Chief	6591	Night Systems Instructor	7547	
<b>Critical MOS</b> – Those specialties that directly affect the unit’s ability to undertake its mission and appear as either Primary or Billet MOS on a unit T/O. Definition per MCO 3000.13. MOS shortage shall be reported by the unit/squadron via DRRS-MC				
MOS shortages shall be reported by the squadron (15 Aircraft) only via DRRS-MC (See MET Worksheets Appendix A).				
Note: Critical MOSs for Section Leader, Division Leader, Flight Leader, and Air Mission Commander are reported in DRRS-MC via the CMMR paragraph under Combat Leadership (Para 1.7).				
RULE	P1	P2	P3	P4
<b>Personnel Strength</b>	≥90%	80-89%	70-79%	≤70%
<b>Critical MOS</b>	≥85%	75-84%	65-74%	≤65%

#### 1.2.3 **HMLAT-303 Fleet Replacement Squadron**

HMLAT-303 AH-1Z	
TABLE OF ORGANIZATION T/O	
CATEGORY	SQUADRON
Aircraft	18
Pilots	25

1.3 **MISSION ESSENTIAL TASK LIST (METL).** The METL is comprised of specified capabilities-based Mission Essential Tasks (METs) which a unit is designed to execute. METs are drawn from the Marine Corps Task List (MCTL), are standardized by type unit, and defined as Core or Core Plus METs. Core METs are those tasks that a unit is expected to execute at all times, and are the only METs used in reporting the Training Level (T-Level) for the Core Mission (C-Level) in the Defense Readiness Reporting System–Marine Corps (DRRS-MC). Core Plus METs identify additional capabilities to support missions or plans which are limited in scope, and/or theater specific. Core Plus METs may be included in Readiness Reporting when contained within an Assigned Mission METL. An Assigned Mission METL normally consists of selected METs (drawn from Core and Core Plus METs) necessary to conduct the assigned mission. MCO 3000.13 provides additional information on readiness reporting.

HMLA AH-1Z	
MISSION ESSENTIAL TASK LIST (METL)	
CORE	
MET	MCT DESCRIPTION
MCT 3.2.3.1.1 <b>CAS</b>	Conduct Close Air Support
MCT 3.2.3.1.2.1 <b>STK</b>	Conduct Strike
MCT 3.2.3.1.2.3 <b>SCAR</b>	Conduct Strike Coordination and Reconnaissance
MCT 3.2.5.4 <b>FAC(A)</b>	Conduct Forward Air Control (Airborne)
MCT 6.2.1.1 <b>TRAP</b>	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)
MCT 6.1.1.11 <b>ESC</b>	Conduct Aerial Escort
CORE PLUS	
MET	MCT DESCRIPTION
MCT 1.3.3.3.1 <b>SEA</b>	Conduct Aviation Operations From Expeditionary Sea-Based Sites
MCT 3.2.3.2 <b>OAAW</b>	<b>Conduct Antiair Warfare [Offensive Antiair Warfare (OAAW)]</b>
MCT 6.1.1.8 <b>AAD</b>	Conduct Active Air Defense

1.4 **MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION.** As Aviation Ground units provide universal impact across all six functions of Marine Aviation, this table is optional for the Aviation Ground community.

HMLA AH-1Z						
MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION						
CORE						
MET	SIX FUNCTIONS OF MARINE AVIATION					
	OAS	ASPT	AAW	EW	CoA&M	AerRec
MCT 3.2.3.1.1 <b>CAS</b>	X					X
MCT 3.2.3.1.2.1 <b>STK</b>	X					
MCT 3.2.3.1.2.3 <b>SCAR</b>	X					X
MCT 3.2.5.4 <b>FAC(A)</b>	X					X
MCT 6.2.1.1 <b>TRAP</b>	X					
MCT 6.1.1.11 <b>ESC</b>	X					
CORE PLUS						
MCT 1.3.3.3.1 <b>SEA</b>	X					X
MCT 3.2.3.2 <b>OAAW</b>			X			
MCT 6.1.1.8 <b>AAD</b>			X			

1.5 MET TO CORE/MISSION/CORE PLUS SKILL MATRIX. Depicts the relationship between a MET and each Core/Mission/Core Plus/Mission Plus skill associated with the MET for readiness reporting and resource allocation purposes. There shall be a one-to-one relationship between the MET and a corresponding Mission Skill.

HMLA AH-1Z																		
MET TO CORE/MISSION/CORE PLUS/MISSION PLUS SKILL MATRIX																		
MET	CORE SKILLS (2000 PHASE)						MISSION SKILLS (3000 PHASE)						CORE PLUS SKILLS (4000 PHASE)					MISSION PLUS SKILLS (4000)
	TERF	TCT	REC	SWD	FAM	EXP	CAS	STK	SCAR	FAC(A)	TRAP	ESC	ESC	CAS	AI	SCAR	CBRN	SEA
MCT 3.2.3.1.1 CAS	X	X	X	X	X	X	X							X			X	
MCT 3.2.3.1.2.1 STK	X	X	X	X	X	X		X							X			
MCT 3.2.3.1.2.3 SCAR	X	X	X	X	X	X			X							X		
MCT 3.2.5.4 FAC(A)	X	X	X	X	X	X				X				X				
MCT 6.2.1.1 TRAP	X	X	X	X	X	X					X		X					
MCT 6.1.1.11 ESC	X	X	X	X	X	X						X	X					
CORE PLUS																		
MCT 1.3.3.3.1 SEA					X													X
MCT 3.2.3.2 OAAW		X	X		X	X									X	X		X
MCT 6.1.1.8 AAD	X	X	X	X	X	X												X

1.6 MISSION ESSENTIAL TASK (MET) OUTPUT STANDARDS. The following MET output standards are the required level of performance a HMLA (AH-1Z) squadron/detachment must be capable of sustaining during contingency operations by MET to be considered MET-ready.

1.6.1 Output standards will be demonstrated through the incorporation of unit training Events.

1.6.2 A core capable HMLA (AH-1Z) squadron/detachment is able to sustain the number of sorties listed below on a daily basis during contingency/combat operations. The sortie rates are based on 1.5 hour average sortie duration. It assumes >70% Mission Capable (MC) aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET and >90% T/O aircrew on hand. If unit MC aircraft is <70% or T/O aircrew <90%, core capability will be degraded by a like percentage.

HMLA AH-1Z								
MISSION ESSENTIAL TASK (MET) OUTPUT STANDARDS								
CORE								
MET	OUTPUT STANDARDS BY TASK ORGANIZATION (NUMBER OF AIRCRAFT)							
	MAXIMUM MCT SORTIES PER MET				MAXIMUM DAILY SORTIES**			
	Squadron	Squadron(-)	Detachment	Detachment	Squadron	Squadron(-)	Detachment	Detachment
	15 A/C	10 A/C	5 A/C	4 A/C	15 A/C	10 A/C	5 A/C	4 A/C
MCT 3.2.3.1.1 CAS	20	14	6	4	20	14	6	4
MCT 3.2.3.1.2.1 STK	20	14	6	4				
MCT 3.2.3.1.2.3 SCAR	20	14	6	4				
MCT 3.2.5.4 FAC(A)*	18	13	5	4				
MCT 6.2.1.1 TRAP	20	14	6	4				
MCT 6.1.1.11 ESC	20	14	6	4				
MISSION PLUS								
MCT 1.3.3.3.1 SEA	20	14	6	4				
MCT 3.2.3.2 OAAW	10	6	4	4				
MCT 6.1.1.8 AAD	10	6	4	4				

\*FAC(A) sorties may be sourced by both UH and AH aircrew. The numbers shown are HMLA Squadron/Squadron(-)/Detachment totals.

\*\*A 15/10/5/4 plane Mission Capable HMLA(AH-1Z) Squadron/Squadron(-)/Detachment is able to execute 20/14/6/4 total overall sorties on a daily (24 hour period) basis during contingency/combat operations.

1.7 **CORE MODEL MINIMUM REQUIREMENTS (CMMR) / ADVANCED AND BASELINE TRAINING STANDARDS FOR READINESS REPORTING (DRRS-MC).** The paragraphs and tables below delineate the minimum pilot qualifications, designations, and/or training for the Advanced and Baseline Training Standards.

1.7.1 **CMMR / Advanced Training Standard:** The minimum pilot qualifications, designations, and/or training required to execute the MET output standards of paragraph 1.6. Units can be expected to perform a critical role in a mission or OPLAN and normally requires external MAGTF support.

1.7.2 **Baseline Training Standard:** The level of readiness expected from a unit sustained through CORE training at home station. Normally equates to approximately 70% of CMMR.

1.7.3 In the matrix below the first number in the “Pilots Trained” columns reflect the CMMR or Advanced Training Standard, the numbers in parentheses indicate the Baseline Training Standard.

Note: Combat Leadership is depicted as only one value (CMMR).

HMLA AH-1Z						
CORE MODEL MINIMUM REQUIREMENT (CMMR) TRAINING STANDARDS FOR READINESS REPORTING (DRRS-MC)						
CORE MISSIONS						
MET	PILOT	COPILOT	Crews Trained			
			Squadron	Squadron(-)	Detachment	Detachment
			15 A/C	10 A/C	5 A/C	4 A/C
MCT 3.2.3.1.1 <b>CAS</b>	MSP, AHC	NSQ(LL)	10(7)	7(4)	3(2)	2(1)
MCT 3.2.3.1.2.1 <b>STK</b>	MSP, AHC	NSQ(LL)	10(7)	7(4)	3(2)	2(1)
MCT 3.2.3.1.2.3 <b>SCAR</b>	MSP, AHC	NSQ(LL)	10(7)	7(4)	3(2)	2(1)
MCT 3.2.5.4 <b>FAC(A)*</b>	MSP, FAC(A), AHC	NSQ(LL)	9(6)	7(4)	3(2)	2(2)
MCT 6.2.1.1 <b>TRAP</b>	MSP, AHC	NSQ(LL)	10(7)	7(4)	3(2)	2(1)
MCT 6.1.1.11 <b>ESC</b>	MSP, AHC	NSQ(LL)	10(7)	7(4)	3(2)	2(1)
*FAC(A) training requirements apply to HMLA squadron, not individual aircraft models (may be filled by UH or AH crew).						
CORE PLUS						
MCT 1.3.3.3.1 <b>SEA</b>	MPSP, CQ(D), CQ(N), CQ NVD, AHC	NSQ(LL), CQ(D), CQ(N), CQ NVD	10(7)	7(4)	3(2)	2(1)
MCT 3.2.3.2 <b>OAAW</b>	MPSP, AHC	NSQ(LL)	5(3)	3(2)	2(1)	2(1)
MCT 6.1.1.8 <b>AAD</b>	MPSP, DACM- FW, DACM-RW, AHC	NSQ(LL), DACM- FW, DACM-RW	5(3)	3(2)	2(1)	2(1)
COMBAT LEADERSHIP						
DESIGNATION	Squadron	Squadron(-)	Detachment	Detachment		
	15 A/C	10 A/C	5 A/C	4 A/C		
Attack Helicopter Commander (AHC)	15	10	5	4		
Section Leader (SL)	8	5	3	2		
Division Leader (DL)**	4	3	1	1		
Flight Leader (FL)**	4	3	1	1		
Air Mission Commander (AMC)**	4	3	1	1		
**Division Leader, Flight Leader, and Air Mission Commander Leadership requirements apply to HMLA squadron, not individual aircraft models (may be filled by UH or AH pilot). Note: Crew definitions for training are identified within each T&R event.						

1.8 **CORE MODEL TRAINING STANDARD (CMTS).** The CMTS is the optimum training standard reflecting the number of crews or aircrews trained to CSP/MSP, per crew position to execute each Stage of instruction or flight as detailed below. The CMTS Matrix depicts the training goal and optimum depth of training desired for each unit or squadron as they develop their unit or squadron training plan. It is not utilized for readiness reporting (DRRS-MC) purposes. At a minimum, the CMTS shall enable a unit or squadron to form CMMR crews for Mission Skills (and Mission Plus Skills when required).



1.8.1 HMLA (AH-1Z) Tactical and Reserve Squadron

HMLA AH-1Z								
CORE MODEL TRAINING STANDARD (CMTS)								
CORE SKILLS (2000 Phase)								
CORE SKILLS	SQUADRON 15 A/C		SQUADRON(-) 10 A/C		DETACHMENT 5 A/C		DETACHMENT 4 A/C	
TERF	30		20		10		9	
TCT	30		20		10		9	
REC	30		20		10		9	
SWD	27		18		9		8	
FAM	30		20		10		9	
EXP	24		20		10		9	
MISSION SKILLS (3000 Phase)								
MISSION SKILLS	SQUADRON 15 A/C		SQUADRON(-) 10 A/C		DETACHMENT 5 A/C		DETACHMENT 4 A/C	
CAS	24		16		10		9	
STK	24		16		10		9	
SCAR	24		16		10		9	
FAC(A)	6		4		2		2	
ESC	24		16		10		9	
TRAP	24		16		10		9	
CORE PLUS SKILLS (4000 Phase)								
CORE PLUS SKILLS	SQUADRON 15 A/C <sup>1</sup>		SQUADRON(-) 10 A/C <sup>1</sup>		DETACHMENT 5 A/C <sup>1</sup>		DETACHMENT 4 A/C <sup>1</sup>	
ESC	3	12	2	8	1	5	1	4
CAS	3	12	2	8	1	5	1	4
STK	3	12	2	8	1	5	1	4
SCAR	3	12	2	8	1	5	1	4
CBRN	2	36	1	24	1	12	1	9
MISSION PLUS SKILL (4000 Phase)								
MISSION PLUS SKILLS	SQUADRON 15 A/C <sup>1</sup>		SQUADRON(-) 10 A/C <sup>1</sup>		DETACHMENT 5 A/C <sup>1</sup>		DETACHMENT 4 A/C <sup>1</sup>	
SEA	4	24	2	16	2	10	2	9
OAAW	4	14	2	8	2	6	2	5
DACM	4	16	2	10	2	8	2	8

Note<sup>1</sup>: For Core Plus Skills and Mission Plus Skills, the first number (in blue font and highlighted in gray) represents the number of individuals the unit or squadron is expected to train at all times in order to retain a cadre of capability within the squadron. The second number represents the number of MET capable individuals the squadron should train if that MET becomes an Assigned/Directed Mission Set. For the 4000 Phase the commanding officer determines the number of aircrew to train. The CMTS is based upon the community's collective recommendation.

1.9 INSTRUCTOR DESIGNATIONS

1.9.1 HMLA (AH-1Z) Tactical and Reserve Squadron

HMLA AH-1Z				
INSTRUCTOR TRAINING CMTS (5000 Phase)				
DESIGNATION	SQUADRON 15 A/C	SQUADRON(-) 10 A/C	DETACHMENT 5 A/C	DETACHMENT 4 A/C
BIP	9	6	3	2
TERFI	9	6	3	2
WTO	9	6	3	2
NSI	6	4	2	2
WTI	3	2	1	1
FAC(A)I	3	2	1	1
DACMI	3	2	1	1
FLSE*	3	2	1	1

\*FLSEs are Designated by the Group CO.

1.9.2 HMLAT-303 (AH-1Z) Fleet Replacement Squadron

<b>HMLAT-303 AH-1Z (18 Aircraft)</b>	
<b>INSTRUCTOR TRAINING (5000 Phase)</b>	
<b>DESIGNATION</b>	<b>PILOTS</b>
BIP	25
TERF I	25
WTO	25
IP/FRSI	25
NS/FRSI	13*
NI/ANI	13
NSFI	12*
NSI	1
WTI	-
FAC(A) I	-
DACM I	-
FLSE	-
* HMLAT-303 NS Instructor requirement may include NSIs as well as NSFIs	

1.10 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)

1.10.1 HMLA (AH-1Z) Tactical and Reserve Squadron

<b>HMLA AH-1Z</b>				
<b>RCQD (6000 Phase)</b>				
<b>DESIGNATION</b>	<b>SQUADRON 15 A/C</b>	<b>SQUADRON(-) 10 A/C</b>	<b>DETACHMENT 5 A/C</b>	<b>DETACHMENT 4 A/C</b>
Functional Check Pilot (FCP)	5	3	2	2

1.10.2 HMLAT-303 Fleet Replacement Squadron

<b>HMLAT-303 AH-1Z (18 Aircraft)</b>	
<b>FLIGHT LEADERSHIP (6000 PHASE)</b>	
<b>DESIGNATIONS</b>	<b>PILOTS</b>
Attack Helicopter Commander(AHC)	25
Section Leader (SL)	25
Division Leader (DL)	6
Flight Leader (FL)	3
Functional Check Pilot (FCP)	25

Appendix A

**HMLA (AH-1Z)**

**MCT 3.2.3.1.1 Conduct Close Air Support (CAS)**

**Conditions:**

**C.1.3.2.3 Aviation Meteorological Conditions**

Current weather/flight conditions affecting flight rules next 24 hours.

Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

**C.1.3.1.3.11 Ceiling**

Height of lowest cloud cover above sea level.

Descriptors: Low (100 to 3,000 feet); Medium (3,000 to 10,000 feet); High (>10,000 feet)

**C 1.3.2 Visibility**

Maximum distance to see an object given the moisture and particulate matter (dust, salt, ash) suspended in the atmosphere.

Descriptors: Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

**C 2.7.2 Air Superiority**

The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 AH-1Z aircrews formed
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 10/7/3/2 AH-1Z aircrews MET-capable IAW T&R requirements

**Advanced Capability:**

- Capable of supporting CAS in a high threat environment.

**Baseline Training Standard (70% of CMMR):**

- 7/4/2/1 AH-1Z aircrews MET-capable IAW T&R requirements

**Baseline Capability:**

- Capable of supporting CAS in a medium threat environment.

**Output Standards:**

20/14/6/4 AH-1Z sorties daily sustained during contingency/combat.

**MCT 3.2.3.1.2.1**      **Conduct Strike (STK)**

**Conditions:**

**C.1.3.2.3 Aviation Meteorological Conditions**

Current weather/flight conditions affecting flight rules next 24 hours.

Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

**C.1.3.1.3.11 Ceiling**

Height of lowest cloud cover above sea level.

Descriptors: Low (100 to 3,000 feet); Medium (3,000 to 10,000 feet); High (>10,000 feet)

**C 1.3.2 Visibility**

Maximum distance to see an object given the moisture and particulate matter (dust, salt, ash) suspended in the atmosphere.

Descriptors: Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

**C 2.7.2 Air Superiority**

The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 AH-1Z aircrews formed
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 10/7/3/2 AH-1Z aircrews MET-capable IAW T&R requirements

**Advanced Capability:**

- Capable of supporting STK in a high threat environment

**Baseline Training Standard (70% of CMMR):**

- 7/4/2/1 AH-1Z aircrews MET-capable IAW T&R requirements

**Baseline Capability:**

- Capable of supporting STK in a medium threat environment

**Output Standards:**

20/14/6/4 AH-1Z sorties daily sustained during contingency/combat

**MCT 3.2.3.1.2.3**

**Conduct Strike Coordination and Reconnaissance (SCAR)**

**Conditions:**

**C.1.3.2.3 Aviation Meteorological Conditions**

Current weather/flight conditions affecting flight rules next 24 hours.

Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

**C.1.3.1.3.11 Ceiling**

Height of lowest cloud cover above sea level.

Descriptors: Low (100 to 3,000 feet); Medium (3,000 to 10,000 feet); High (>10,000 feet)

**C 1.3.2 Visibility**

Maximum distance to see an object given the moisture and particulate matter (dust, salt, ash) suspended in the atmosphere.

Descriptors: Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

**C 2.7.2 Air Superiority**

The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 AH-1Z aircrews formed
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 10/7/3/2 AH-1Z aircrews MET-capable IAW T&R requirements

**Advanced Capability:**

- Capable of supporting SCAR in a high threat environment

**Baseline Training Standard (70% of CMMR):**

- 7/4/2/1 AH-1Z aircrews MET-capable IAW T&R requirements

**Baseline Capability:**

- Capable of supporting SCAR in a medium threat environment

**Output Standards:**

20/14/6/4 AH-1Z sorties daily sustained during contingency/combat

**MCT 3.2.5.4**                      **Conduct Forward Air Control (Airborne) [FAC(A)]**

**Conditions:**

**C.1.3.2.3 Aviation Meteorological Conditions**

Current weather/flight conditions affecting flight rules next 24 hours.

Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

**C.1.3.1.3.11 Ceiling**

Height of lowest cloud cover above sea level.

Descriptors: Low (100 to 3,000 feet); Medium (3,000 to 10,000 feet); High (>10,000 feet)

**C 1.3.2 Visibility**

Maximum distance to see an object given the moisture and particulate matter (dust, salt, ash) suspended in the atmosphere.

Descriptors: Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

**C 2.7.2 Air Superiority**

The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 H-1 aircrews formed
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 9/7/3/2 H-1 aircrews MET-capable IAW T&R requirements

**Advanced Capability:**

- Capable of supporting FAC(A) in a high threat environment

**Baseline Training Standard (70% of CMMR):**

- 6/4/2/2 H-1 aircrews MET-capable IAW T&R requirements

**Baseline Capability:**

- Capable of supporting FAC(A) in a medium threat environment

**Output Standards:**

18/13/5/4 H-1 sorties daily sustained during contingency/combat

**MCT 6.2.1.1**

**Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)**

**Conditions:**

**C.1.3.2.3 Aviation Meteorological Conditions**

Current weather/flight conditions affecting flight rules next 24 hours.

Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

**C.1.3.1.3.11 Ceiling**

Height of lowest cloud cover above sea level.

Descriptors: Low (100 to 3,000 feet); Medium (3,000 to 10,000 feet); High (>10,000 feet)

**C 1.3.2 Visibility**

Maximum distance to see an object given the moisture and particulate matter (dust, salt, ash) suspended in the atmosphere.

Descriptors: Very low (< 1/8 NM); Low (1/8 to 1 NM); Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

**C 2.7.2 Air Superiority**

The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 AH-1Z aircrews formed
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 10/7/3/2 AH-1Z aircrews MET-capable IAW T&R requirements

**Advanced Capability:**

- Capable of supporting TRAP in a high threat environment

**Baseline Training Standard (70% of CMMR):**

- 7/4/2/1 AH-1Z aircrews MET-capable IAW T&R requirements

**Baseline Capability:**

- Capable of supporting TRAP in a medium threat environment

**Output Standards:**

20/14/6/4 AH-1Z sorties daily sustained during contingency/combat

**MCT 6.1.1.11**                      **Conduct Aerial Escort Operations (ESC)**

**Conditions:**

**C.1.3.2.3 Aviation Meteorological Conditions**

Current weather/flight conditions affecting flight rules next 24 hours.

Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

**C.1.3.1.3.11 Ceiling**

Height of lowest cloud cover above sea level.

Descriptors: Low (100 to 3,000 feet); Medium (3,000 to 10,000 feet); High (>10,000 feet)

**C 1.3.2 Visibility**

Maximum distance to see an object given the moisture and particulate matter (dust, salt, ash) suspended in the atmosphere.

Descriptors: Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

**C 2.7.2 Air Superiority**

The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 AH-1Z aircrews formed
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft)
- Operational support equipment fully supports MCT.

**Advanced Training Standard (CMMR):**

- 10/7/3/2 AH-1Z aircrews MET-capable IAW T&R requirements.

**Advanced Capability:**

- Capable of supporting ESC in a high threat environment.

**Baseline Training Standard (70% of CMMR):**

- 7/4/2/1 AH-1Z aircrews MET-capable IAW T&R requirements.

**Baseline Capability:**

- Capable of supporting ESC in a medium threat environment.

**Output Standards:**

20/14/6/4 AH-1Z sorties daily sustained during contingency/combat.



**Core Plus**

**MCT 1.3.3.3.1**

**Conduct Aviation Operations From Expeditionary Sea-Based Sites (SEA)**

**Conditions:**

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

**C 1.3.1.3.1 Air Temperature**

Atmospheric temperature at ground level (degrees Fahrenheit).

Descriptors: Hot (> 85 F); Temperate (40 to 85 F); Cold (10 to 39 F); Very cold (< 10 F).

**C 2.1.4.5 Intratheater Distance**

Mileage between two locations (e.g., airfield to the FEBA).

Descriptors: Very short (< 10 NM); Short (10 to 50 NM); Moderate (50 to 150 NM); Long (150 to 500 NM); Very long (> 500 NM).

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 AH-1Z aircrews formed.
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft).
- Operational support equipment fully supports MCT.

**Advanced Training Standard (CMMR):**

- 10/7/3/2 AH-1Z aircrews MET-capable IAW T&R requirements.

**Advanced Capability:**

- Capable of supporting SEA in a high threat environment.

**Baseline Training Standard (70% of CMMR):**

- 7/4/2/1 AH-1Z aircrews MET-capable IAW T&R requirements.

**Baseline Capability:**

- Capable of supporting SEA in a medium threat environment.

**Output Standards:**

20/14/6/4 AH-1Z sorties daily sustained during contingency/combat.

**MCT 3.2.3.2 Conduct Antiair Warfare [Offensive Antiair Warfare (OAAW)]**

**Conditions:**

**C.1.3.2.3 Aviation Meteorological Conditions**

Current weather/flight conditions affecting flight rules next 24 hours.

Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

**C.1.3.1.3.11 Ceiling**

Height of lowest cloud cover above sea level.

Descriptors: Low (100 to 3,000 feet); Medium (3,000 to 10,000 feet); High (>10,000 feet)

**C 1.3.2 Visibility**

Maximum distance to see an object given the moisture and particulate matter (dust, salt, ash) suspended in the atmosphere.

Descriptors: Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

**C 2.7.2 Air Superiority**

The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 AH-1Z aircrews formed.
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 5/3/2/2 AH-1Z aircrews MET-capable IAW T&R requirements.

**Advanced Capability:**

- Capable of supporting OAAW in a high threat environment.

**Baseline Training Standard (70% of CMMR):**

- 3/2/1/1 AH-1Z aircrews MET-capable IAW T&R requirements.

**Baseline Capability:**

- Capable of supporting OAAW in a medium threat environment.

**Output Standards:**

10/6/4/4 AH-1Z sorties daily sustained during contingency/combat.

**MCT 6.1.1.8**

**Conduct Active Air Defense (AAD)**

**Conditions:**

**C.1.3.2.3 Aviation Meteorological Conditions**

Current weather/flight conditions affecting flight rules next 24 hours.

Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

**C 1.3.2 Visibility**

Maximum distance to see an object given the moisture and particulate matter (dust, salt, ash) suspended in the atmosphere.

Descriptors: Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

**C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources.

Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit)

**C 2.7.2 Air Superiority**

The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

**Standards:**

**AH-1Z Squadron (15)/Squadron(-)(10)/Detachment (5)/Detachment (4) {15/10/5/4} Aircraft**

**Personnel:**

- 16/11/5/4 AH-1Z aircrews formed.
- P-level of 2 or better

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (10/7/3/3 AH-1Z aircraft).
- Operational support equipment fully supports MCT.

**Advanced Training Standard (CMMR):**

- 5/3/2/2 AH-1Z aircrews MET-capable IAW T&R requirements.

**Advanced Capability:**

- Capable of supporting OAAW in a high threat environment.

**Baseline Training Standard (70% of CMMR):**

- 3/2/1/1 AH-1Z aircrews MET-capable IAW T&R requirements.

**Baseline Capability:**

- Capable of supporting OAAW in a medium threat environment.

**Output Standards:**

10/6/4/4 AH-1Z sorties daily sustained during contingency/combat.

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## Appendix B Reference Sources

### ABBREVIATIONS

Skill/Stage Abbreviations	
ESC	Aerial Escort
AAD	Active Air Defense
AHC	Attack Helicopter Commander
AI	Air Interdiction
AMC	Air Mission Commander
NSQ(LLL)	Night Systems Qualification (Low Light Level)
ASPT	Assault Support
BIP	Basic Instructor Pilot
CAS	Close Air Support
CQ	Carrier Qualification
CSI	Contract Simulator Instructor
CSIX	Core Skill Introduction Check
DACM	Defensive Air Combat Maneuvering
DACMI	Defensive Air Combat Maneuvering Instructor
DESG	Designation
DFAM	Division FAM
DL	Division Leader
EXP	Expeditionary Shore-Based Sites
FAC(A)	Forward Air Controller (Airborne)
FAC(A)I	Forward Air Controller (Airborne) Instructor
FAM	Familiarization
FCF	Functional Check Flight
FCLP	Field Carrier Landing Practice
FL	Flight Leader
FLSE	Flight Leadership Standardization Evaluator
FORM	Formation
FRSI	Fleet Replacement Squadron Instructor
FWDACM	Fixed Wing Defensive Air Combat Maneuvering
INST	Instruments
NI/ANI	NATOPS Instructor / Assistant NI
NATOPS	Naval Aviation Training and Operating Procedures Standardization
NAV	Navigation
CBRN	Chemical Biological Radiological Nuclear
NSFI	Night System Familiarization Instructor
NSI	Night Systems Instructor
NSQ(HLL)	Night Systems Qualification (High Light Level)
NSQ(LLL)	Night Systems Qualification (Low Light Level)
NFAM	NVD FAM
NFORM	NVD Form
NNAV	NVD NAV
NTERF	NVD TERF
OAAW	Conduct Anti-air Warfare [Offensive Anti-air Warfare (OAAW)]
OAS	Offensive Air Support
PQM	Pilot Qualified in Model
PFLT	Preflight
QUAL	Qualification
RECCE	Reconnaissance
RQD	Requirements Qualifications Designation
RWDACM	Rotary Wing Defensive Air Combat Maneuvering
SIM	Simulator
SI/ASI	Standardization Instructor/Assistant SI
SCAR	Strike Coordination and Reconnaissance
SL	Section Leader
SOTC	Specific Operations Tracking Codes
SWD	Specific Weapons Delivery
TAC	Tactics
TCT	Threat Counter-Tactics
TEN	Tactical Environment Network
TEN+	Enhanced Tactical Environment Network
TERF	Terrain Flight
TERFI	Terrain Flight Instructor
TRAP	Tactical Recovery of Aircraft and Personnel
WTI	Weapons and Tactics Instructor
WTO	Weapons Training Officer
WTTP	Weapons and Tactics Training Program

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## ORDNANCE REQUIREMENTS

### General

Pilots shall annotate ordnance expended in M-SHARP. This information shall be tracked by Operations to ensure that all pilots meet ordnance proficiency requirements spelled out in the event descriptions to the maximum extent practical. There is a high likelihood that pilots may not expend the entire ordnance amount allotted on a particular sortie due to a variety of reasons (equipment malfunction, switchology, range constraints, training priorities, etc). This ordnance “deficit” adversely impacts pilot proficiency. Ordnance expenditure tracking will allow Operations to identify and correct pilot deficits by increasing ordnance loads on subsequent sorties, selective scheduling, or other methods.

Additional ordnance requirements such as initial HELLFIRE qualification, illumination, flechette, APKWS, expendables, and WP for FAC(A) target marking are specified for certain events.

Ground Ordnance. The table below defines external ordnance requirements for T&R execution.

### BASIC/CONVERSION POI

ORDNANCE	1000	2000	3000	4000	6000	REFRES H <sup>1</sup>	IUT <sup>2</sup>	ANNUAL <sup>3,4</sup>
HE Artillery	0	0	10	10	0	0	6	10
WP Artillery	0	0	6	6	0	0	4	6
FW Bombs	0	0	8	4	0	8	8	8

### NOTES:

- (1) 1000-3000 phases only.
- (2) Numbers include MAWTS-1 Course Catalog IUT syllabi.
- (3) 2000-3000 phases only.
- (4) Annual ordnance requirements to maintain aircrew proficiency derived from MAINTAIN table and refly interval.

Ordinance Tables

AH-1Z ORDNANCE ROLL-UP TABLE BY PROGRAM OF INSTRUCTION (POI) AND DESIGNATION														
BASIC POI														
Ordinance Requirements By Phase (per pilot)							Ordinance Requirements By Syllabus (per pilot)							
PHASE	1000	2000	3000	4000	5000	6000	POI	NSQ(LL <sup>2</sup> )	AHC <sup>3</sup>	FAC(A)	SL	DL	WTO	NSI
ORDNANCE							ORDNANCE							
20mm	600	2,600	5,300	1,300	1,800	2,400	20mm	1,400	3,800	1,500	900	900	600	600
2.75 " HE	14	54	84	35	28	56	2.75 " HE	28	77	7	21	21	14	14
2.75" RP	0	0	28	0	14	0	2.75" RP	0	0	28	0	0	0	0
APKWS	0	0 <sup>1</sup>	4	0	0	0	APKWS	0	4	0	0	0	0	0
Illum	0	0	4	0	0	0	Illum	0	4	0	0	0	0	0
Flechette	0	0	4	0	0	0	Flechette	0	4	0	0	0	0	0
HF	0	1	0	0	0	0	HF	0	0	0	0	0	0	0
Chaff	0	90	360	150	150	240	Chaff	90	330	30	90	90	30	60
Flare	0	90	360	330	390	240	Flare	90	330	30	90	90	30	60
Note 1: SWD-2601 is a S/A event, if flown in aircraft requires 2 APKWS.							Note 2: Includes required NSQ and NSQ(LL) Core Skills events. Note 3: Only includes Mission Skills events through TRAP-3308.							
REFRESHER POI														
Ordinance Requirements By Phase (per pilot)							Ordinance Requirements By Syllabus (per pilot)							
PHASE	1000	2000	3000	4000	5000	6000	POI	NSQ(LL <sup>2</sup> )	AHC	FAC(A)	SL	DL	WTO	NSI
ORDNANCE							ORDNANCE							
20mm	300	2,300	4,500	1,300	900	1,200	20mm	1,100	3,000	1,500	300	300	300	300
2.75 " HE	7	47	70	35	14	28	2.75 " HE	21	63	7	7	7	7	7
2.75" RP	0	0	28	0	7	0	2.75" RP	0	0	28	0	0	0	0
APKWS	0	0	0	0	0	0	APKWS	0	0	0	0	0	0	0
Illum	0	0	0	0	0	0	Illum	0	0	0	0	0	0	0
Flechette	0	0	0	0	0	0	Flechette	0	0	0	0	0	0	0
HF	0	1	0	0	0	0	HF	0	0	0	0	0	0	0
Chaff	0	60	300	150	75	120	Chaff	60	270	30	30	30	15	30
Flare	0	60	300	240	195	120	Flare	60	270	30	30	30	15	30
SERIES CONVERSION POI														
Ordinance Requirement (per pilot)														
POI		AHC		Full T&R										
ORDNANCE														
20mm		2,700		3,300										
2.75 " HE		68		82										
2.75" RP		0		0										
APKWS		0		0										
Illum		0		0										
Flechette		0		0										
HF		0		0										
Chaff		180		225										
Flare		180		285										



AH-1Z YEARLY CURRENCY ORDNANCE REQUIREMENT (PER PILOT)										
DESIGNATION		AHC				FAC(A)		CPSP		
ORDNANCE										
20 mm		7,200				1,500		650		
2.75 " HE		150				7		18		
2.75" RP		0				28		0		
APKWS		0				0		0		
Illum		0				0		0		
Flechette		0				0		0		
HF		0.5				0		0		
Chaff		450				30		75		
Flare		450				30		143		
HMLA (AH-1Z) YEARLY ORDNANCE REQUIREMENT										
POI & DESIGNATION		BASIC POI (ATTAIN) <sup>4</sup>				REFRESHER POI	MAINTAIN		Total	
		2000	AHC	FAC(A)	SL		DL	AHC		Full T&R
ORDNANCE										
20mm		23,400	34,200	3,000	3,600	1,800	25,900	57,600	56,100	205,600
2.75 " HE		486	693	14	84	42	490	1,200	1,050	4,059
2.75" RP		0	0	56	0	0	56	0	168	280
APKWS		0	36	0	0	0	0	0	0	36
Illum		0	36	0	0	0	0	0	0	36
Flechette		0	36	0	0	0	0	0	0	36
HF		9	0	0	0	0	0	4	3	16
Chaff		810	2,970	60	360	180	1,920	3,600	3,330	13,230
Flare		810	2,970	60	360	180	1,920	3,600	3,738	13,638
Note 4: Totals based on the following assumptions, a T/O squadron broken down as follows: 9 pilots in the basic POI for CSP, 9 pilots in basic POI for AHC, 8 pilots maintaining the AHC qual and 6 pilots maintaining all T&R events. Of the pilots maintaining AHC, 2 are in the basic POI for FAC(A), 4 are in the basic POI for SL and 2 are in the basic POI for DL. 3 pilots are in the AHC refresher syllabus and 2 pilots are in the full T&R refresher syllabus.										

HMLAT-303 (AH-1Z) YEARLY ORDNANCE REQUIREMENT				
POI & DESIGNATION	BASIC POI <sup>5</sup>		REFRESHER POI <sup>5</sup>	SQUADRON TOTAL (PER YEAR) <sup>6</sup>
ORDNANCE	RAC	FRSI		
20mm	600	300	300	15,900
2.75 " HE	14	7	7	371
2.75" RP	0	0	0	0
APKWS	0	0	0	0
Illum	0	0	0	0
Flechette	0	0	0	0
HF	0	0	0	0
Chaff	0	0	0	0
Flare	0	0	0	0

Note 5: Ordnance totals per pilot.  
Note 6: Based on producing 20 RACs, 5 refreshers and 8 new FRSIs per year.

## HMLA TRAINING RANGE/RESOURCE REQUIREMENTS

General. The range requirements listed below are based on event requirements listed in the individual event descriptions. Units should make every effort to adhere to the requirements listed in the event descriptions. Commanding officers may waive requirements based on existing range capabilities and limitations.

Threat Counter-Tactics (TCT). Threat emitter and expendable usage.

### Specific Weapons Delivery (SWD), Night Systems Qualification (low Light Level) [NSQ(LLL)]

- (1) All rotary-wing air to ground ordnance permitted.
- (2) Expendable usage.
- (3) Lasers permitted (LDRS,LRF,IR POINTERS).
- (4) Scored or raked range (SWD-2605)

### Offensive Air Support (OAS)

- (1) All rotary-wing air to ground ordnance permitted.
- (2) Expendable usage.
- (3) Lasers permitted (LDRS,LRF,IR POINTERS).
- (4) Supports all three types of Terminal control. Allows JTAC personnel to operate in range.

### Forward Air Controller (Airborne) (FAC(A))

- (1) All rotary-wing air to ground ordnance permitted.
- (2) All fixed-wing air to ground ordnance permitted.
- (3) Expendable usage.
- (4) Lasers permitted (LDRS,LRF,IR POINTERS).
- (5) Supports all three types of Terminal control. Allows JTAC personnel to operate in range.
- (6) Ground indirect fire systems permitted (artillery/mortars).

### Defensive Air Combat Maneuvering (DACM)

- (1) Air Combat Maneuvering (ACM) permitted both fixed-wing and rotary-wing.
- (2) Expendable usage.
- (3) Tactical Air Combat Training System (TACTS) or comparable system compatible.
- (4) Air to Air Missile firing capable, if applicable.

HMLA AH-1Z Readiness Supplement  
15 Aircraft

HMLA (AH-1Z) Squadron 15 Aircraft																		
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD (SORTIES)	CREWS TRAINED				AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT	T/O PILOTS	STAFFING GOAL	AHC	SECTION LEADER	DIVISION LEADER	FLIGHT LEADER	AIR MISSION COMMANDER
				ADVANCED TRAINING STANDARD CREWS TRAINED (CMMR)	BASELINE TRAINING STANDARD CREWS TRAINED (70% CMMR)	PILOT	COPILOT	PAA	MC	# MC								
MCT 3.2.3.1.1	CAS	Conduct Close Air Support	20	10	7	MSP,AHC	NSQ(LLL)	15	70%	10	20	36	32	15	8	4	4	4
MCT 3.2.3.1.2.1	STK	Conduct Strike	20	10	7	MSP,AHC	NSQ(LLL)	15	70%	10								
MCT 3.2.3.1.2.3	SCAR	Conduct Strike Coordination and Reconnaissance	20	10	7	MSP,AHC	NSQ(LLL)	15	70%	10								
MCT 3.2.5.4	FAC(A)	Conduct Forward Air Control (Airborne)	18	9	6	MSP,FAC(A) AHC	NSQ(LLL)	15	70%	10								
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)	20	10	7	MSP,AHC	NSQ(LLL)	15	70%	10								
MCT 6.1.1.11	ESC	Conduct Aerial Escort	20	10	7	MSP,AHC	NSQ(LLL)	15	70%	10								
CORE PLUS																		
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	20	10	7	MPSP,CQ(D), CQ(N),CQ NVD, AHC	NSQ(LLL), CQ(D), CQ(N), CQ NVD	15	70%	10								
MCT 3.2.3.2	OAAW	Conduct Antiair Warfare [Offensive Antiair Warfare (OAAW)]	10	5	3	MPSP,AHC	NSQ(LLL)	15	70%	10								
MCT 6.1.1.8	AAD	Conduct Active Air Defense	10	5	3	MPSP,DACM FW, DACM RW, AHC	NSQ(LLL), DACM FW, DACM RW	15	70%	10								
PARA 1.3			PARA 1.6	PARA 1.7				PARA 1.2	MET Worksheets		PARA 1.6	PARA 1.2		PARA 1.7				
Critical MOSs - 7565,6019,6324,6154,6531,6114,6591,6012,6016,6017,6018,7577,7544,7547. P-Level 2 or better.																		
Personnel - P-Level 2 or better.																		

HMLA AH-1Z Readiness Supplement  
10 Aircraft

HMLA (AH-1Z) Squadron(-) 10 Aircraft																		
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD (SORTIES)	CREWS TRAINED				AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT	T/O PILOTS	STAFFING GOAL	AHC	SECTION LEADER	DIVISION LEADER	FLIGHT LEADER	AIR MISSION COMMANDER
				ADVANCED TRAINING STANDARD CREWS TRAINED (CMMR)	BASELINE TRAINING STANDARD CREWS TRAINED (70% CMMR)	PILOT	COPILOT	PAA	MC	# MC								
MCT 3.2.3.1.1	CAS	Conduct Close Air Support	14	7	4	MSP,AHC	NSQ(LLL)	10	70%	7	14	24	21	10	5	3	3	3
MCT 3.2.3.1.2.1	STK	Conduct Strike	14	7	4	MSP,AHC	NSQ(LLL)	10	70%	7								
MCT 3.2.3.1.2.3	SCAR	Conduct Strike Coordination and Reconnaissance	14	7	4	MSP,AHC	NSQ(LLL)	10	70%	7								
MCT 3.2.5.4	FAC(A)	Conduct Forward Air Control (Airborne)	13	7	4	MSP,FAC(A) _AHC	NSQ(LLL)	10	70%	7								
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)	14	7	4	MSP,AHC	NSQ(LLL)	10	70%	7								
MCT 6.1.1.11	ESC	Conduct Aerial Escort	14	7	4	MSP,AHC	NSQ(LLL)	10	70%	7								
CORE PLUS																		
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	14	7	4	MPSP,CQ(D), CQ(N),CQ NVD, AHC	NSQ(LLL), CQ(D), CQ(N), CQ NVD	10	70%	7								
MCT 3.2.3.2	OAAW	Conduct Antiair Warfare [Offensive Antiair Warfare (OAAW)]	6	3	2	MPSP,AHC	NSQ(LLL)	10	70%	7								
MCT 6.1.1.8	AAD	Conduct Active Air Defense	6	3	2	MPSP,DACM FW, DACM RW, AHC	NSQ(LLL), DACM FW, DACM RW	10	70%	7								
PARA 1.3			PARA 1.6	PARA 1.7				PARA 1.2	MET Worksheets		PARA 1.6	PARA 1.2		PARA 1.7				
Critical MOSs - 7565,6019,6324,6154,6531,6114,6591,6012,6016,6017,6018,7577,7544,7547. P-Level 2 or better.																		
Personnel - P-Level 2 or better.																		

HMLA AH-1Z Readiness Supplement

5 Aircraft

HMLA (AH-1Z) Detachment 5 Aircraft																		
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD (SORTIES)	CREWS TRAINED				AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT	T/O PILOTS	STAFFING GOAL	AHC	SECTION LEADER	DIVISION LEADER	FLIGHT LEADER	AIR MISSION COMMANDER
				ADVANCED TRAINING STANDARD CREWS TRAINED (CMMR)	BASELINE TRAINING STANDARD CREWS TRAINED (70% CMMR)	PILOT	COPILOT	PAA	MC	# MC								
MCT 3.2.3.1.1	CAS	Conduct Close Air Support	6	3	2	MSP,AHC	NSQ(LLL)	5	70%	3	6	12	11	5	3	1	1	1
MCT 3.2.3.1.2.1	STK	Conduct Strike	6	3	2	MSP,AHC	NSQ(LLL)	5	70%	3								
MCT 3.2.3.1.2.3	SCAR	Conduct Strike Coordination and Reconnaissance	6	3	2	MSP,AHC	NSQ(LLL)	5	70%	3								
MCT 3.2.5.4	FAC(A)	Conduct Forward Air Control (Airborne)	5	3	2	MSP,FAC(A) _AHC	NSQ(LLL)	5	70%	3								
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)	6	3	2	MSP,AHC	NSQ(LLL)	5	70%	3								
MCT 6.1.1.11	ESC	Conduct Aerial Escort	6	3	2	MSP,AHC	NSQ(LLL)	5	70%	3								
CORE PLUS																		
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	6	3	2	MPSP,CQ(D), CQ(N),CQ NVD, AHC	NSQ(LLL), CQ(D), CQ(N), CQ NVD	5	70%	3								
MCT 3.2.3.2	OAAW	Conduct Antiair Warfare [Offensive Antiair Warfare (OAAW)]	4	2	1	MPSP,AHC	NSQ(LLL)	5	70%	3								
MCT 6.1.1.8	AAD	Conduct Active Air Defense	4	2	1	MPSP,DACM FW, DACM RW, AHC	NSQ(LLL), DACM FW, DACM RW	5	70%	3								
PARA 1.3			PARA 1.6	PARA 1.7				PARA 1.2	MET Worksheets		PARA 1.6	PARA 1.2		PARA 1.7				
Critical MOSs - 7565,6019,6324,6154,6531,6114,6591,6012,6016,6017,6018,7577,7544,7547. P-Level 2 or better.																		
Personnel - P-Level 2 or better.																		

CHAPTER 2  
AH-1Z PILOT

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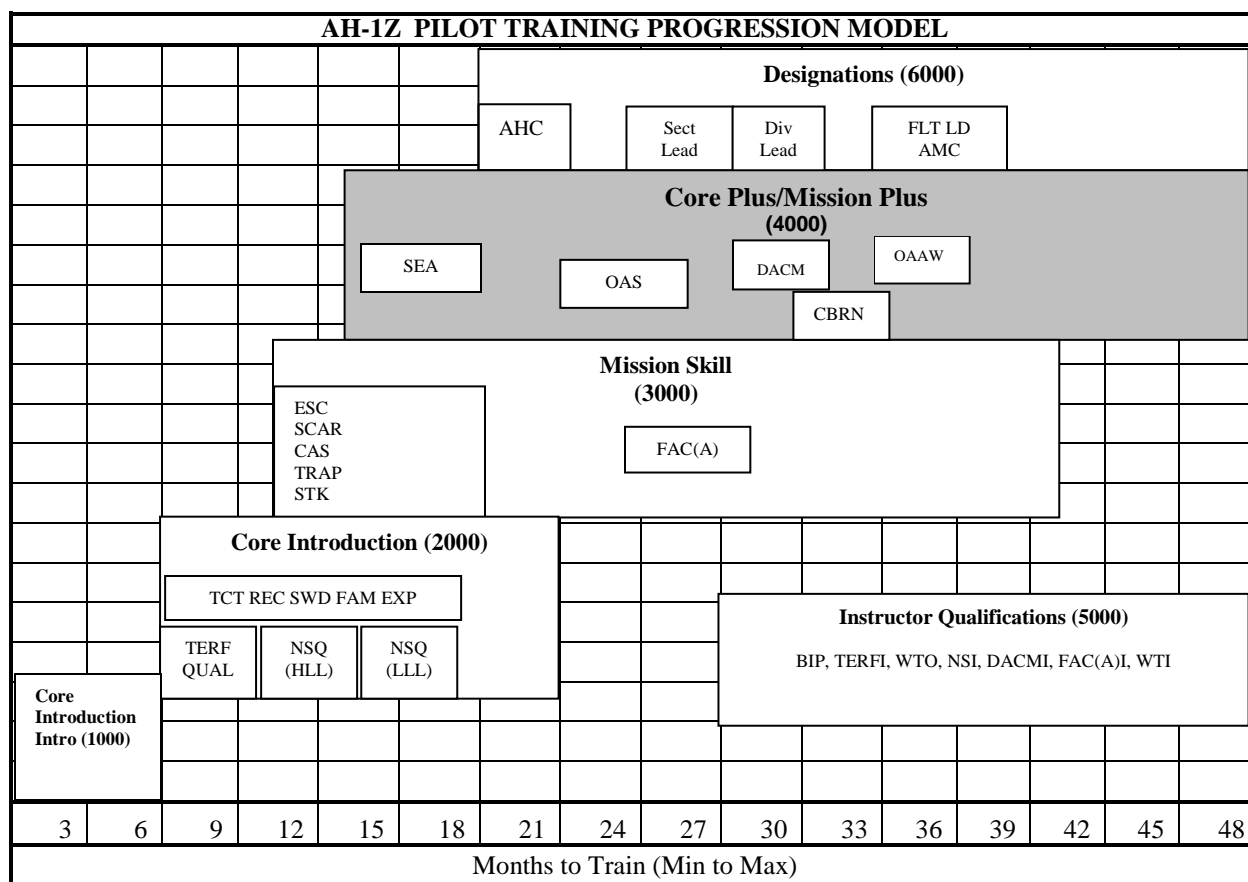
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## CHAPTER 2

### AH-1Z PILOT

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

2.1 **TRAINING PROGRESSION MODEL.** This model represents the recommended training progression for the minimum to maximum time per phase for the AH-1Z pilot. Units should use the model as a guide to generate individual training plans.



2.2 **PROGRAMS OF INSTRUCTION (POI).** In accordance with POI updating rules, in order for all events in a stage to be updated once the R coded events for the stage have been flown, there has to be a previously flown date present, either proficient or delinquent, otherwise the event will be recognized as incomplete and must be flown. **Therefore, all refresher and series conversion pilots shall ensure previously flown events are logged, based on the last date flown.** If the flight was flown under a previous T&R (AH-1Z or AH-1W), reference the AH-1Z Pilot Syllabus Matrix at the end of the Chapter to ensure events are converted correctly (Paragraph 2.22). **Pilot Training Officers shall ensure pilots are placed in the appropriate syllabus (B, R, S, MR) in MSHARP, in order to ensure MSHARP functions properly.** Modified syllabi approved by the appropriate authority shall be filed in the APR.

2.2.1 **Basic (B) POI.** The Basic syllabus includes all events and is required for initial training. Transition pilots are also assigned to the Basic POI. At the discretion of the FRS Commanding Officer, U.S. and international exchange pilots, previously qualified in similar type aircraft, may be assigned a S POI for the Core Introduction (1000) Phase.

WEEKS	COURSE	PERFORMING ACTIVITY
1-2	Interactive Courseware	USMC AH-1Z FRS
3-26	Core Introduction Training	USMC AH-1Z FRS
27-165	Core/Mission Training	Tactical Squadron



**2.2.2 Series Conversion (S) POI.** The Series Conversion syllabus is provided for personnel proficient in the AH-1W converting directly to the AH-1Z. After performing event conversion in accordance with the T&R syllabus matrix, a previously designated AH-1W pilot in the series conversion syllabus shall fly all “S” coded events if the pilot is proficient in the AH-1W. The Series Conversion syllabus is predicated on the experience of the Series Conversion pilot and is primarily designed for the AH-1W pilot who has not been out of the AH-1W cockpit for longer than 485 days and is beginning the Series Conversion within days of the last AH-1W flight. The commanding officer of the FRS may tailor the Series Conversion syllabus to fit the experience and proficiency of the Series Conversion pilot per the T&R Program Manual. A pilot in the Series Conversion syllabus shall fly all “S” coded events in the 1000 level. Two additional events are recommended for pilots requiring additional flights due to time out of the cockpit (e.g. AH-1W pilot out of cockpit >485 and doing series conversion): FAM 1103, 1108.

U.S. and international exchange pilots may be eligible for a S syllabus in the Core Introduction (1000) Phase, at the discretion of the FRS Commanding Officer. The syllabus should be predicated on the experience of the pilot and consider previous qualifications, familiarity with similar type aircraft and language skills. The syllabus can be extended to include any event from the Basic POI, but at no time shall it be less than the full S POI. Exchange pilots may be eligible for the S syllabus in the Core and Mission Skills Phase (2000-3000) with the approval of ASB and the syllabus sponsor.

In order to regain AHC, flight leadership designations and FAC(A) (as applicable), the S events listed in the 1000 through 5000 level shall be completed in any order, and in no fewer than 18 flight hours in the aircraft. FAM-2803 and NSQ(LLL)-2609 shall be flown under LLL conditions. All other flights may be flown under any light level condition. TERF qualification may be granted after the completion of TERF-2101. NSQ(HLL) may be granted after the completion of SWD-2607. NSQ(LLL) may be granted after the completion of NSQ(HLL), FAM-2803 and NSQ(LLL)-2609.

In order to regain instructor designations (BIP, TERFI, WTO and NSI), a total of 30 **aircraft flight hours** must be flown, inclusive of the flight time from the above paragraph, but not including flight time from the 1000 level syllabus. Additionally, all “S” coded events from the appropriate instructor syllabus shall be flown in order to regain instructor designations. Events that can count toward the 30 flight hour total are any 4000 level event and:

REC-2302	ESC-3100	FACA-3401
SWD-2605	ESC-3101	FACA-3402
SWD-2607	ESC-3103	FACA-3403
SWD-2609	CAS-3301	FACA-3404
SWD-2610	CAS-3302	SCAR-3305
FAM-2803	CAS-3303	SCAR-3306
		STK-3307

These events shall be flown under the light level conditions prescribed in the event description. For pilots regaining the NSI designation, at least 15 of the 30 total flight hours shall be flown at night. BIP-5103, WTO-5204 and NSI-5904 may also count toward the 30 flight hour requirement. All flight time gained while accomplishing a T&R event shall count towards the required flight time.

For conversion from the AH-1Z to the AH-1W see the AH-1W T&R.

WEEKS	COURSE	PERFORMING ACTIVITY
1-2	Interactive Courseware	USMC AH-1Z FRS
3-8	Core Introduction Training	USMC AH-1Z FRS
9-17	Core/Mission Training	Tactical Squadron

### 2.2.3 Modified Refresher/Refresher (MR/R) POI

**Refresher Syllabus.** A Refresher syllabus is provided for personnel returning to an operational squadron who have previously completed the AH-1Z Basic or Series Conversion POI. Experienced pilots (completed at least one fleet tour in an operational unit) returning to a squadron, shall be assigned to the Refresher or Modified Refresher POIs as follows:

Regardless of the type of billet returning from, pilots having not flown the AH-1Z for < 485 days will conduct Refresher training at the tactical unit. This syllabus is at the discretion of the squadron commander, and does not require all “R” coded events.

Pilots returning from a DIFOP billet, where a helicopter was flown, having not flown the AH-1Z for > 485 days will conduct Modified Refresher training at the FRS.

Pilots returning from a DIFDEN billet, or a DIFOP billet where a helicopter was not flown, having not flown a AH-1Z for > 485 days but ≤ 730 days shall conduct Modified Refresher training at the FRS.

Regardless of the type of billet returning from, pilots having not flown the AH-1Z for > 730 days will conduct full Refresher training beginning at the FRS.

The Refresher syllabus is predicated on the experience of the Refresher pilot. A previously designated AH-1Z pilot in the Refresher syllabus should fly all “R” coded events; however, a pilot need not fly every event within a stage of training to be re-qualified in that stage. The commanding officer may tailor the Refresher syllabus to fit the experience of the Refresher pilot per the T&R Program Manual. This assumes that the Refresher has had previous proficiency in that stage of training. If the pilot has no previous proficiency in a stage or particular event, then the pilot should fly the entire stage or all events not previously flown. The Refresher syllabus applies only up to the stage achieved during the prior tour. After completion of an appropriate Refresher syllabus, the pilot will complete the entire remaining syllabus. Prerequisites apply only to replacement aircrew and not to Refresher pilots.

Previously designated AH-1W pilots will be assigned to the Refresher POI upon completion of FRS Series Conversion training. After performing event conversion in accordance with AH-1Z Pilot Syllabus Matrix (paragraph 2.22), previously designated AH-1W pilots shall complete all R coded events. Events the previously designated pilot did not complete or were added to this T&R manual since they left DIFOP status will not be logged in M-SHARP and must be flown to attain proficiency. At the discretion of the commanding officer pilots under the Refresher POI who were previously NSQ(LL) qualified may conduct NS or (NS) Refresher syllabus events under HLL or LLL conditions.

WEEKS	COURSE	PERFORMING ACTIVITY
1-2	Interactive Courseware	USMC AH-1Z FRS
3-8	Core Introduction Training	USMC AH-1Z FRS
9-30	Core/Mission Training	Tactical Squadron

Modified Refresher Syllabus. A Modified Refresher syllabus, for pilots not requiring a full Refresher POI, is provided to expedite training at the FRS. It can be individually tailored as specified by the commanding officer of the FRS. However, in no case will this syllabus be less than the minimum Modified Refresher (MR coded) syllabus shown here. Following the FRS, the Refresher should follow the Refresher syllabus described above; however, the commanding officer may tailor the Refresher syllabus to fit the experience of the Refresher pilot per the T&R Program Manual.

WEEKS	COURSE	PERFORMING ACTIVITY
1-2	Interactive Courseware	USMC AH-1Z FRS
3-8	Core Introduction Training	USMC AH-1Z FRS
9-30	Core/Mission Training	Tactical Squadron

#### 2.2.4 Fleet Replacement Squadron and NATOPS/Assistant NATOPS POI

WEEKS	COURSE	PERFORMING ACTIVITY
1-4	Fleet Replacement Squadron Instructor	USMC AH-1Z FRS
1	Night Systems Familiarization Instructor	USMC AH-1Z FRS
1	NATOPS/Assistant NATOPS Instructor	Tactical Squadron

#### 2.2.5 Basic Instructor Pilot and Stage Instructor POI

WEEKS	COURSE	PERFORMING ACTIVITY
2	Basic Instructor Pilot	Tactical Squadron
1	Terrain Flight Instructor	Tactical Squadron
3	Weapons Training Officer Instructor	Tactical Squadron

#### 2.2.6 MAWTS-1 Level Instructor POI

WEEKS	COURSE	PERFORMING ACTIVITY
24	Night Systems Instructor	MAWTS-1
24	Defensive Air Combat Maneuvering Instructor	MAWTS-1
24	Forward Air Controller (Airborne) Instructor	MAWTS-1

#### 2.2.7 Flight Leadership POI

WEEKS	COURSE	PERFORMING ACTIVITY
1-4	Section Leader	Tactical Squadron
1-4	Division Leader	Tactical Squadron
1-2	Flight Leader	Tactical Squadron
1-2	Air Mission Commander	Tactical Squadron
1	Flight Leadership Standardization Evaluator	Group Designated

### 2.3 PROFICIENCY & CURRENCY

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

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

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

**Loss Of Individual Skill Proficiency.** Should an individual lose proficiency in all maintain events in a skill, the individual will be assigned to the Refresher POI for the skill. To regain skill proficiency, the individual must demonstrate proficiency in all R-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 Skills Proficiency (CSP), Mission Skill Proficiency (MSP), Core Plus Skill Proficiency (CPSP), or Mission Plus Skill Proficiency (MPSP), the individual may count towards CMMR or CMTS.

**2.3.3 Currency.** Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill 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.

**2.4 CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS (CQD) TABLES.** The tables below delineate T&R events required to be completed to attain proficiency, and initial qualifications and designations. In addition to event requirements, all 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 Aircrew Performance Records (APR) and NATOPS jackets. Loss of proficiency in all qualification events causes the associated qualification to be lost. Regaining a qualification requires completing all R-coded syllabus events associated with that qualification.

<b>AH-1Z PILOT REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)</b>	
<b>QUALIFICATION</b>	<b>Initial Event Qualification Requirements</b>
INSTRUMENT	6100: IAW CNAF 3710.7 and an annual qualification letter signed by the commanding officer.
NATOPS	6101: IAW CNAF 3710.7 and an annual qualification letter signed by the commanding officer.
TERFQ	2100,2101
NSQ(HLL)	2101,2302
NSQ(LL)	NSQ(HLL),2802,2803,2102,2608,2609
FAC(A)	3400,3401,3402,3403,3404,3405
Day CQ	4603
NVD CQ	4604
Night CQ	4605
RW DACM	TERFQ,4300,4301,4302,4303
FW DACM	TERFQ,4304,4305
<b>DESIGNATION</b>	<b>Initial Event Designated Requirements</b>
FCP	DESG-6300, FCP-6200, 6201, 6202, 6203, 6204, 6205 and IAW AH-1Z NATOPS.
PQM	Successful completion of NATOPS and Instrument checks (6100 and 6101) and CIX 1901.
AHC	DESG-6300, 6398
SECTION LEAD	DESG-6398,6400,6401,6498
DIVISION LEAD	SL-6498,6500,6501,6598
FLIGHT LEAD	FL-6698
AMC	AMC-6798

AH-1Z PILOT REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)	
BIP	5100,5101,5102,5103,5104,5105
TERFI	5110,5111
WTO	5200,5201,5202,5203,5204
CSI	5300
CRMI	6104 and IAW CNAFINST 1542.7
CRMF	6103 and IAW CNAFINST 1542.7
FRSI	5310,5311,5312,5313,5314
FLSE*	5920 and IAW FLSE program guide and MAW T/M/S Program Coordinator requirements.
FAC(A)I*	5400,5401,5402
NSFI	5600,5601,5602 or 5316 if current NSI (5600, 5601, 5602 baselined by FRS for current NSI)
RW DACMI*	5800,5802
FW DACMI*	5801,5803
NSI*	5900,5901,5902,5903,5904,5905
WTI*	Graduation from Weapons and Tactics Instructor Course.
ANI	6105 given by a NATOPS Instructor
NI	6106 given by a NATOPS Evaluator
NE	6107 given by a NATOPS Evaluator or FRS Commanding Officer
INSTRUMENT FLIGHT BOARD	Per Squadron Guidance and Governing Documents, 6100
* IAW the MAWTS-1 Course Catalogs. Certifications for FAC(A)I, DACMI, NSI, and WTI are signed by the MAWTS-1 Commanding Officer and forwarded to squadron commanding officers. Squadron commanding officers should designate pilots who satisfactorily complete the evaluation flight(s) and have a complete ATF from the MAWTS-1 IP who evaluates the pilot.	
Tracking Code Requirements	
TRACKING CODES	Event Requirements
SOTC-6900	2.75 inch Illumination Rocket Delivery
SOTC-6901	2.75 inch Guided Rocket Delivery (APKWS)
SOTC-6902	2.75 inch Flechette Rocket Delivery
SOTC-6903	AGM-179 Joint Air Ground Missile Delivery
SOTC-6904	AGM-114 HELLFIRE Delivery
SOTC-6905	AIM-9 Sidewinder Delivery

## 2.5 SYLLABUS NOTES

### 2.5.1 Academic Training

**General.** The Academic syllabus is designed to ensure pilots receive the proper academic training prior to starting a new phase and stage of training. Within each phase of training (1000-8000) there are corresponding stages, each stage has an academic syllabus. The required academic syllabus for each stage of training is further delineated in the beginning paragraphs of each phase. Each phase and stage contain specific academic requirements which must be completed either prior to phase and/or stage initiation or prior to phase and/or stage completion. Academic/ground training events can either be accomplished by an individual utilizing self-paced courseware or presented by a qualified instructor

#### Requirement

Academic training shall be conducted for each phase/stage of the syllabus.

Where indicated, standardized academic training materials exist and may be obtained from the sponsoring activity.

Academic training requirements are listed separately for each phase of flight training.

Training may be completed earlier in stage but should be completed by the appropriate sortie(s).

Course descriptions are as follows:

**Interactive Courseware (ICW).** This is a Computer Based Training (CBT) syllabus for Core Introduction Introduction training. It consists of both self-paced lessons and instructor-presented phase lectures.

**Academic Support Package (ASP).** These are MAWTS-1 prepared classes available on CD-ROM or the MAWTS-1 websites. All material is contained on CDs or the websites, both classified and unclassified. These can be either self-paced lessons or instructor-presented lectures. The classes listed are only the Generics, Common or Specific AH-1 classes.

**Computer Based Training.** These are software and/or hardware computer training aids designed to augment training for specific systems. Examples include the Naval Air Warfare Center programs for avionics systems, as well as other programs developed by various sources such as the TISP, FTS, Mission Planning Software/JMPS/AWE, EOTDA, and ASE trainers/programs.

Squadron Developed Training. Squadron-developed curriculum is used to enhance the above programs. Recognition training should be continuous.

Websites. The MAWTS-1 websites have classes, publications and other pertinent material and are included below.

NIPR: <https://mceits.usmc.mil/sites/mawts1/default.aspx> Click on ASD, AH-1 for general unclassified information.

SIPR: <https://intelshare.intelink.sgov.gov/sites/mawts1/default.aspx> Click on ASD, AH-1 for general information, then select Courseware, ASP for WTI classified and unclassified courseware.

Graduate Level Courses. There are 4 graduate level courses (FAC(A)I, , DACMI, NSI, WTI) that qualify instructors for specific portions of the T&R syllabus. The requirements for these instructor certifications are contained in the MAWTS-1 Course Catalog.

External academic courses of instruction available to complete the syllabus are listed below:

COURSE	ACTIVITY
Survival, Evasion, Resistance, and Escape (SERE) Course	NAS Brunswick ME, NAS North Island CA
NITE lab	Any Approved Course
Forward Air Controller (Airborne) Course	Local MATSS
Weapons and Tactics Instructor (WTI) Course	MAWTS-1
Aviation Career Progression Model	MAWTS-1, MCALMS
Basic Instructor Course	MAWTS-1, Local MATSS

### 2.5.2 Event Requirements

General. The MAWTS-1 Course Catalog contains a summary matrix of all Ground, Academic, Simulator, and Flight requirements for each stage of the T&R. This matrix shall be placed in the Aircrew Performance Record (APR) of all aircrew to thoroughly track training progression. As each training event is completed, the PTO will input the date of completion.

All events, to include simulators, shall begin with a comprehensive brief with emphasis on administrative procedures, CRM, tactical procedures, mission performance standards and aircrew expectations.

All flights shall terminate with a comprehensive debrief with emphasis on aircrew performance utilizing all evaluation techniques available (e.g. video, participating aircrews, external support personnel).

An ATF is required for any initial event completed by a Basic/Transition, Refresher or Series Conversion pilot, or as recommended by the squadron Standardization Board. If the commanding officer has waived/deferred a syllabus sortie, the squadron training officer shall place a waiver/deferral letter in section 3 of the APR. Standardized ATFs can be obtained by the T&R sponsor, MAWTS-1.

All pilots will have an APR. The squadron training officer shall ensure each ATF is entered in section 3 of the APR.

When operational commanders assign HMLA squadrons to prolonged commitments where specific T&R training is not available (e.g., MEU deployments, sustained combat deployments), it is expected that degradation in some mission areas will occur. Commanding officers are authorized to defer training in specific missions that are not relevant to their current deployment situation. Once the squadron or detachment has returned from the deployment, every effort should be made to achieve the deferred training for the affected pilots.

Compliance with the written flight description is mandatory for syllabus event completion. In the absence of a flight simulator, completion of a syllabus event is not required to complete that stage. Completion of those events should be accomplished as soon as practical upon simulator availability. Should the command desire, simulator events can be flown in the aircraft for T&R credit.

Training should be accomplished by flying events within a stage in sequence and stages in sequence when practical. As an example, prerequisites allow a PUI to fly events in other stages while waiting for the next HLL or LLL period.

Specific rules of conduct requirements for individual type missions (NVG training, CQs, DACM, etc.) can be found in chapter 3 of the Aviation T&R Program Manual.

### 2.5.3 Event Header

Sortie Duration. Times indicated for each event are recommendations. When scheduling sorties, training officers are allowed to schedule additional training codes based on anticipated mission sets if the performance standards are met for the sortie, and sufficient time is available during the flight to accomplish those sorties (e.g. 3 hour flight scheduled to conduct two sorties with flight time requirement of 1.5 hours each). If multiple syllabus events are to be accomplished during a single flight evolution, appropriate planning, briefing, and debriefing time shall be allotted to ensure that requisite training objectives can be met.

**Proficiency Interval.** The proficiency Interval, more commonly called “Refly Factor”, reflects the maximum time between syllabus events. Refly factors are delineated in days. If not applicable, an asteric (\*) will be used to indicate the event has no reflly interval – it is a one-time training requirement (unless R-coded).

**Programs of Instruction.** Delineates event requirements for specific syllabi.

**Event Conditions.** Refer to the following table for required event conditions:

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

**Device Codes.** Refer to the following table for device codes:

Symbol	Device
A	Event performed in aircraft
S	Event performed in simulator or a simulated practical application
A/S	Event performed in aircraft preferred/simulator optional
A/S*	Initial event SHALL be performed in the aircraft. Subsequent flights may be flown in the simulator for proficiency.
S/A	Event performed in simulator preferred/aircraft optional
G	Ground/academic training.
GE	Ground event requiring evaluation.

Tactical Environment Network (TEN) simulator requirements are identified for each simulator event. TEN has been used to identify that the simulator must have the ability to link to the network. TEN+ has been used to identify that at least one networked, man-in-the-loop simulator is required for that event. Linked simulator events require an approved Tactical Environment Network simulation and at least one additional, networked, man-in-the-loop simulator to meet the training objectives. A moving model controlled from the operator station does not satisfy the man-in-the-loop requirement.

#### 2.5.4 Event Body

**Requirement.** The requirement lists specific tasks for the event and indicates what the individual should accomplish.

**Discuss.** The IP shall discuss a procedure or maneuver during the brief, in flight, or debrief. The PUI is responsible for knowledge of the applicable procedures prior to the brief.

**Demonstrate.** The IP performs the maneuver with accompanying description. The PUI observes the maneuver and is responsible for the knowledge of the procedures prior to the sortie.

**Introduce.** The IP may perform the maneuver with an accompanying description, 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 sortie.

**Practice.** The PUI performs the maneuver or procedure that has been previously introduced in order to prepare for Review on a later flight. The IP should coach as required to guide the PUI’s practice.

**Review.** The IP observes and grades the maneuver without coaching the PUI. An airborne critique of PUI performance is at the option of the instructor. The PUI is expected to perform the maneuver without coaching and devoid of procedural error at a level acceptable to warrant progress into the next stage of training.

**Evaluate.** Any flight designed to evaluate aircrew standardization.

**Performance Standards.** Performance standards are listed for each T&R event description. These are training standards for individual aircrew performance and shall be utilized by the evaluator as a guideline to determine the satisfactory completion of each event. If the aircrew did not successfully attain the performance standards, the training code shall not be logged as a completed flight. **Logging multiple training codes on an initial**

*single sortie shall be avoided.*

Prerequisites. Events (academic or flight/simulator) that must be completed prior to the initiation of the event. Events preceeding a “~” indicate prerequisites dependent on optional conditions (e.g. environmental and ordnance). For example, SWD-2609~LLL, indicates that if the event is flown under LLL conditions, NSQ(LLL) is a required prerequisite.

Ordnance/Range/Target/External Syllabus Support. Items required to successfully complete the required training.

Crew Requirements. The crew requirements listed at the end of each event are requirements for initial stage training flights. For operational flights the minimum crew requirements are defined by CNAF, NATOPS, and NAVMC 3500.14. When not clearly defined by higher directives, the squadron commanding officer, DSS, or local SOPs may dictate the minimum crew requirements.

#### 2.5.5 Grading Standards

Complete. The PUI has demonstrated sufficient grasp of the concepts and skills to proceed to the next training evolution or be designated appropriately.

Incomplete. Describes a training event that is not declared 'Complete' due to circumstances beyond the control of the aircrew. Examples may include, but are not limited to: WX, time constraints, aircraft or simulator maintenance, external support inadequate. 'Incomplete' shall not be used to obscure reporting of a substandard performance.

Requires Additional Training (RAT). A RAT is used when the PUI has not yet demonstrated sufficient grasp of the required skills and concepts to progress in the syllabus. A RAT is not derogatory in nature. Instructor remediation recommendations should specifically identify the deficient area(s) for addressing shortcomings in terms of reading assignments, courseware, additional flight, simulator, or other appropriate training. The instructor assigning a RAT synopsis is responsible for ensuring the recommendation has been endorsed by Squadron leadership and adhered to by the student unless a higher authority intervenes with additional guidance. A RAT shall not be used for E coded events.

Unsatisfactory. Identifies a condition where the PUI has proven unable to meet performance standards due to a lack of preparation, lack of effort, consistent inability to demonstrate improvement or resistance to instruction. Significant safety of flight incidents that are of a direct result of the pilot under training actions should be considered unsatisfactory. The instructor assigning this event synopsis is responsible for ensuring recommendations for remediation, if applicable, are proposed through the DSS & Operations Department.

#### Common Standards to be graded on every ATF:

Brief	Debrief	Mission Planning
Checklist Use	External Communications	Airwork
Situational Awareness	CRM	

#### Common Standards to be graded on every 3000-6000 level ATF (performance):

NAV systems usage	Laser marksmanship	Procedural communications
EW systems usage	PGM employment	Flight leadership
TDC systems usage	Rocket employment	Tactical decision making
TSS employment	20mm employment	Admin considerations

#### 2.6 CORE INTRODUCTION FRS ACADEMIC PHASE (1000)

Purpose. To develop a Core Introduction complete copilot. These academics facilitate understanding of basic functions/operations in the AH-1Z and ensure individuals possess the requisite knowledge to be designated Pilot Qualified in Model (PQM), NATOPS qualified and rates the 7513/7565 MOS as specified in CIX-1901.

General. These academics are intended to be an integrated series of academic events contained within each phase of training. Accordingly, academic events serve as prerequisites to selected flight events or stages.

Completion of these academics and flight phase meet the requirements for the PUI to be designated a PQM. Core Introduction academic events are completed by attending the appropriate HMLAT-303 Light Attack University (LAU) stage, IAW the FRS Course Catalog.

CORE INTRODUCTION FRS ACADEMIC PHASE	
TRAINING CODES	COURSEWARE
ACAD-1000	HMLAT-303 Initial LAU
ACAD-1001	HMLAT-303 Mid Stage LAU
ACAD-1002	HMLAT-303 Final LAU

At the completion of each ACAD Event, the appropriate training code shall be logged in M-SHARP by the individual pilot, contract instructor, or squadron operations personnel, as appropriate.

## 2.7 CORE INTRODUCTION PHASE (1000)

**Purpose.** To develop a Core Introduction complete copilot with the airmanship, CRM, systems and procedural knowledge to perform responsibilities as a competent copilot in any mission set and as necessary, act as PIC for non-tactical missions. Additionally, to prepare the PUI for follow on Core Phase training. At the completion of this phase the PUI will be designated Pilot Qualified in Model (PQM), NATOPS qualified, and rate the 7513/7565 MOS as specified in CIX-1901.

**General.** Completion of this Phase meets the requirements for the PUI to be designated a PQM and NATOPS qualified at the discretion of the commanding officer. A tracking code of DESG-6300 shall be logged. The AH-1Z Model Manager shall be responsible for Core Introduction Phase standardization. Instructors shall be responsible for mission briefs. Students may conduct a mission brief only after observing the instructor brief a mission in that specific stage.

**Stages.** The following Stages are included in the Core Introduction Phase of training.

CORE INTRODUCTION (1000 Phase)		
STAGE	PARAGRAPH	PAGE NUMBER
Familiarization (FAM)	2.7.1	2-11
Instrument (INST)	2.7.2	2-24
Formation (FORM)	2.7.3	2-27
Terrain Flight (TERF)	2.7.4	2-29
Navigation (NAV)	2.7.5	2-31
Specific Weapons Delivery (SWD)	2.7.6	2-34
Advanced Systems Familiarization (ASF)	2.7.7	2-39
Core Introduction Check (CIX)	2.7.8	2-38

### 2.7.1 Familiarization (FAM)

**Purpose.** To develop familiarity with aircraft flight characteristics, limitations, and emergency procedures during day and night operations. To develop proficiency in all maneuvers and to instill basic CRM procedures throughout the familiarization stage.

**General.** PUI must demonstrate proficiency with all shore based FAM procedures to include normal/emergency procedures and basic aircraft maneuvers. Additionally, the PUI must display a thorough knowledge of limitations and flight characteristics. During all stages, the PUI shall complete a weight and power form before each sortie and present it to the IP for verification.

Where seat position is optional, PUI should conduct half of the syllabus events from each seat to facilitate proficiency from both cockpit positions. IP should discuss CRM considerations for each cockpit position during each event.

**Ground/Academic Training.** IAW HMLAT-303 FRS Course Catalog.

**References.** Maneuver Description Guide, NATOPS manual and NVD manual.

**Crew Requirements.** As listed at the end of each event.

**FAM-1100      0.0      \*      B      D      GE      1 AH-1Z (STATIC)**

**Goal.** Introduce preflight and postflight familiarization and responsibilities.

#### Requirements

##### Discuss

All demonstrate and introduce items

##### Demonstrate

OMA/M-SHARP functionality



ADB Review

Introduce

Weight and power computations  
All preflight inspections  
Postflight inspections  
Emergency egress procedures

Performance Standards

PUI shall complete an accurate weight and power computation for given conditions.  
PUI shall demonstrate basic knowledge of ADB and maintenance functions.  
PUI shall demonstrate a basic knowledge of preflight and postflight inspection checklist IAW AH-1Z NATOPS.

Prerequisites. ACAD-1000

Crew. FRSI/PUI

**FAM-1101      0.0      485      B,R,S,MR      D      GE      1 AH-1Z (STATIC)**

Goal. Review preflight and postflight familiarization and responsibilities.

Requirements

Discuss

Use of performance charts  
Height/Velocity diagram

Introduce

APU start  
HMSD boresight procedures  
Mission card loading  
Loading mission card into aircraft

Review

Weight and power computations  
All preflight inspections  
Postflight inspections  
Emergency egress procedures  
OMA/M-SHARP functionality

Performance Standards

PUI shall complete an accurate weight and power computation for given conditions.  
PUI shall screen and understand the function of the ADB.  
PUI shall conduct aircraft preflight and postflight inspections and identify key components IAW AH-1Z NATOPS.

Prerequisite. 1100

Crew. FRSI/PUI

**SFAM-1102      1.5      485      B,R,S,MR      D      S      1 AH-1Z**

Goal. RS – Introduce NATOPS checklists and ground procedures.

Requirements

Discuss

All demonstrate and introduce items  
Subsequent start checklist  
Rotor brake start  
Auxiliary Power Unit  
Warning, caution, and advisory system  
NATOPS emergencies during start and shutdown  
PBA functionality  
HOCAS switchology and function

Demonstrate

Basic simulator operation

Introduce

Start checklist  
Cross start checklist  
Rotor brake start

Takeoff checklist  
Landing checklist  
Shutdown checklist  
Emergency shutdown  
APU fire  
Engine hot start  
Engine fire on start (external)  
Direct-to function

Review

HMSD boresight procedures  
Mission card loading  
Loading mission card into aircraft

Performance Standards

PUI shall demonstrate functional knowledge of NATOPS checklists and procedures.  
PUI shall conduct an aircraft start and shutdown.  
PUI shall load a mission card with radio presets, mission list, editable and non-editable points, and one route.

Prerequisites. 1101

Crew. CSI or FRSI/PUI

**SFAM-1103    1.5    485    B,R,S,MR    D    S    1 AH-1Z**

Goal. FS – Introduce familiarization maneuvers.

Requirements

Discuss

All demonstrate and introduce maneuvers  
AFCS  
Environmental control system  
Associated NATOPS emergencies and limitations for briefed systems

Introduce

Low work  
Hover takeoff  
No hover takeoff  
Tactical RVL approach profile  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
Waveoff procedures  
MAP page orientation

Review

Start checklist  
Takeoff checklist  
Landing checklist  
Shutdown checklist  
Emergency shutdown  
HMSD boresight procedures  
Direct-to function  
Mission card loading

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.  
PUI shall load a mission card with radio presets, mission list, editable and non-editable points, vector overlay of appropriate local ranges or other restricted areas, and one route.  
PUI will conduct a normal start and shutdown from the front seat.

Prerequisites. 1102

Crew. CSI or FRSI/PUI

**FAM-1104      2.0      \*      B      D      A      1 AH-1Z**

Goal. FS – Introduce course rules and basic familiarization maneuvers.

Requirements

Discuss

All demonstrate and introduce maneuvers  
HMSD usage, capabilities, and setup  
Engine emergencies and limitations  
Prohibited Maneuvers  
Hand and Arm signals  
Lost plane procedures  
Pressure fueling checklist  
Lost comm procedures

Demonstrate

Mission brief

Introduce

Course rules/area familiarization  
Low work  
Hover takeoff  
No hover takeoff  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
Waveoff procedures

Review

Start checklist  
Shutdown checklist  
MAP page orientation

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.  
PUI shall load a mission card with radio presets, mission list, editable and non-editable points, vector overlay of appropriate local ranges or other restricted areas and one route.  
PUI shall complete a weight and power for conditions of the given day.

Prerequisites. 1103, 1200, 1500

Crew. ANI/PUI

**FAM-1105      2.0      485      B,R,S,MR      D      A      1 AH-1Z**

Goal. FS – Introduce basic familiarization maneuvers.

Requirements

Discuss

All demonstrate and introduce maneuvers  
Hydraulic emergencies and limitations  
Ditching (power on/off)  
Airspeed limitations  
CFIT avoidance considerations

Demonstrate

Mission brief

Introduce

High Speed Approach and Landing  
SWD profiles  
SCAS Failure

Review

Start checklist  
Shutdown checklist  
Low work  
Hover takeoff

No hover takeoff  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
Waveoff procedures  
Storing waypoints and targets

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate, a vector overlay of appropriate local ranges, or other restricted areas and one route.

PUI shall complete an accurate weight and power computation for given conditions.

Prerequisites. 1104

Crew. ANI/PUI

**SFAM-1106    1.5    485    B,R,S,MR    D    S    1 AH-1Z**

Goal. FS – Introduce emergency maneuvers.

Requirements

Discuss

All demonstrate and introduce maneuvers  
DECU Lockout  
Autorotational characteristics  
Emergency Equipment  
Wire Strike Protection  
Energy attenuating seats  
Associated NATOPS emergencies and limitations for briefed systems

Demonstrate

Single engine flight characteristics at altitude  
Autorotational characteristics at altitude

Introduce

DECU lockout  
Hovering autorotations  
Taxiing autorotations  
Full autorotations  
Simulated emergency procedures  
Straight-in autorotation  
90-degree autorotation  
180-degree autorotation  
High-speed low-level autorotation  
Autorotation to a spot  
Collective control interference  
Fixed pitch tail rotor malfunctions  
Single Engine Failure

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate, a vector overlay of appropriate local ranges, or other restricted areas and one route.

PUI shall perform a minimum of five full autorotations.

Prerequisites. 1105

Crew. CSI or FRSI/PUI

**SFAM-1107    1.5    485    B,R,S,MR    D    S    1 AH-1Z**

Goal. RS – Review emergency procedures and CRM.

Requirements

Discuss

All demonstrate and introduce maneuvers  
Engine power malfunctions  
Associated NATOPS emergencies and limitations for briefed systems  
Landing in trees

Introduce

Main drive shaft failure  
Compressor stall  
Dual engine fire  
Single engine fire  
Engine electrical system failure  
Loss of tail rotor thrust/components in a hover  
Loss of tail rotor thrust/components in flight  
Np overspeed  
Np underspeed  
Dual engine failure during takeoff  
Single engine failure during takeoff  
Rotor brake pressurized in flight  
Dual engine failure in a HIGE  
Dual engine failure in flight  
Dual engine failure at high power and airspeed  
Single engine failure in a HOGE  
Single engine failure in flight  
Engine driven suction pump failure  
Complete electrical failure

Review

Straight-in autorotation  
90-degree autorotation  
180-degree autorotation  
High-speed low-level autorotation  
Autorotation to a spot

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

PUI shall perform a minimum of five full autorotations.

Prerequisites. 1106

Crew. CSI or FRSI/PUI (copilot mandatory and shall be 1103 complete)

**FAM-1108      2.0      485      B,R,S,MR      D      A      1 AH-1Z**

Goal. FS – Introduce emergency maneuvers and review familiarization maneuvers.

Requirements

Discuss

All demonstrate and introduce maneuvers  
Drive system and flight control emergencies and limitations  
Single engine characteristics and considerations  
Static/Dynamic rollover  
Low, medium and high frequency vibrations

Demonstrate

DECU lockout

Introduce

Mission brief  
Single engine failures  
Fixed pitch tail rotor malfunctions  
Simulated emergency procedures

Review

Hover takeoff  
No hover takeoff  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
High-speed approach and landing

Waveoff procedures  
SWD profiles  
SCAS Failure

Performance Standards

PUI shall perform a mission brief.  
PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.  
PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate and a vector overlay of appropriate local ranges or other restricted areas.  
PUI shall complete an accurate weight and power computation for given conditions.

Prerequisites. 1107

Crew. ANI/PUI

**FAM-1109      2.0      \*      B      D      A      1 AH-1Z**

Goal. RS - Review familiarization maneuvers, emergencies, and local instrument procedures.

Requirements

Discuss

Fire detection, warning and extinguisher system  
Electrical power and fire emergencies, limitations, servicing, and checklists

Demonstrate

Reduced Visibility Landings (RVLs)

Introduce

TSS cueing modes: pre-point, flight plan, and CAS

Review

Mission brief  
Hover takeoff  
No hover takeoff  
Tactical RVL approach profile  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
High-speed approach and landing  
Waveoff procedures  
SCAS Failure  
Single engine failures  
Fixed pitch tail rotor malfunctions  
Simulated emergency procedures  
SWD profiles  
Local GCA procedures

Performance Standards

PUI shall perform a mission brief.  
PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.  
PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate, and a vector overlay of appropriate local ranges or other restricted areas.  
PUI shall complete an accurate weight and power computation for given conditions.  
PUI shall conduct one precision or non-precision approach at homefield.

Prerequisites. 1108

Crew. FRSI/PUI

**SFAM-1110      1.5      \*      B      D      S      1 AH-1Z**

Goal. RS – Review emergency procedures and CRM.

Requirements

Discuss

15 minutes of discussion time is for an abbreviated NATOPS and detailed crew brief. Use remaining 15 minutes to cover EPs and review PUI's crew brief pertaining to emergencies and CRM.  
CRM during emergency procedures

Review

DECU lockout  
Main drive shaft failure  
Compressor Stall  
Dual engine fire  
Single engine fire  
Engine electrical system failure  
Loss of tail rotor thrust/components in a hover  
Np overspeed  
Np underspeed  
Dual engine failure during takeoff  
Single engine failure during takeoff  
Rotor brake pressurizes in flight  
Dual engine failure in a HIGE  
Dual engine failure in flight  
Dual engine failure at high power and airspeed  
Single engine failure in a HOGE  
Single engine failure in flight  
Engine driven suction pump failure  
MAP page overview  
Direct-to function  
NERP and mission card waypoint usage

Performance Standards

PUI shall conduct NATOPS CRM brief. Sortie shall be used to review EPs and CRM while outside the local pattern during basic VFR flight.  
PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.  
PUI shall load a mission card with radio presets, mission list, editable and non-editable points, vector overlay of appropriate local ranges or other restricted areas, and one route.  
PUI shall perform a minimum of 5 full autorotations.

Prerequisites. 1109

Crew. CSI or FRSI/PUI (copilot mandatory and shall be 1107 complete)

**SFAM-1111    1.5    \*    B    D    S    1 AH-1Z**

Goal. RS – Review emergency procedures and CRM.

Requirements

Discuss

15 minutes of discussion time is for an abbreviated NATOPS and detailed crew brief. Use remaining 15 minutes to cover EPs and review PUI's crew brief pertaining to emergencies and CRM.  
CRM during emergency procedures

Review

DECU lockout  
Main drive shaft failure  
Compressor Stall  
Dual engine fire  
Single engine fire  
Engine electrical system failure  
Loss of tail rotor thrust/components in a hover  
Np overspeed  
Np underspeed  
Dual engine failure during takeoff  
Single engine failure during takeoff  
Rotor brake pressurizes in flight  
Dual engine failure in a HIGE  
Dual engine failure in flight  
Dual engine failure at high power and airspeed  
Single engine failure in a HOGE

Single engine failure in flight  
Engine driven suction pump failure  
MAP page overview  
Direct-to function  
NERP and mission card waypoint usage

Performance Standards

PUI shall conduct NATOPS CRM brief. Sortie shall be used to review EPs and CRM while outside the local pattern during basic VFR flight.  
PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.  
PUI shall load a mission card with radio presets, mission list, editable and non-editable points, vector overlay of appropriate local ranges or other restricted areas, and one route.  
PUI shall perform a minimum of 5 full autorotations.

Prerequisites. 1110

Crew. CSI or FRSI/PUI (copilot mandatory and shall be 1107 complete)

**FAM-1112      2.0      \*      B      D      A      1 AH-1Z**

Goal. RS - Review familiarization maneuvers, emergencies, and local instrument procedures.

Requirements

Discuss

Fuel emergencies, limitations, servicing, and checklists  
Any previously introduced NATOPS/MDG, system, emergency limitation, procedure, or checklist

Review

Mission brief  
Hover takeoff  
No hover takeoff  
RVL landing  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
High-speed approach and landing  
Waveoff procedures  
SCAS Failure  
Single engine failures  
Fixed pitch tail rotor malfunctions  
Simulate emergency procedures  
SWD profiles  
Local GCA procedures  
DMS usage

Performance Standards

PUI shall perform a mission brief.  
PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.  
PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate and a vector overlay of appropriate local ranges or other restricted areas.  
PUI shall complete a weight and power for conditions of the given day.  
PUI shall conduct one precision or non-precision approach at homefield.

Prerequisites. 1111

Crew. FRSI/PUI

**FAM-1113      2.0      730      B,R,S      D      A      1 AH-1Z**

Goal. RS - Review emergency and familiarization maneuvers.

Requirements

Discuss

Any previously introduced NATOPS/MDG system, emergency, limitation, procedure, or checklist  
Engine wash procedures



Introduce

DECU lockout

Review

Mission brief  
Hover takeoff  
No hover takeoff  
RVL landing  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
High-speed approach and landing  
Waveoff procedures  
SCAS Failure  
Single engine failures  
Fixed pitch tail rotor malfunctions  
Simulated emergency procedures  
SWD profiles

Performance Standards

PUI shall perform a mission brief.

PUI shall demonstrate the CRM, systems and procedural knowledge and stage specific flight skills to safely execute all FAM stage maneuvers and handle simulated emergencies IAW the AH-1Z NATOPS and MDG. As the local flying area allows, mission profile should include operations at the departure airfield, at local training facilities and OLFs and incorporating local course rules.

PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate and a vector overlay of appropriate local ranges or other restricted areas.

Prerequisites. 1112, 1501

Crew. FRSI/PUI

**SFAM-1114      1.5      485      B,R,S,MR      D      S      1 AH-1Z**

Goal. RS - Emergency procedures and CRM evaluation.

Requirements

Discuss

15 minutes of discussion time is for an abbreviated NATOPS and detailed crew brief. Use remaining 15 minutes to cover EPs and review PUI's crew brief pertaining to emergencies and CRM.

Any previously introduced NATOPS/MDG system, emergency, limitation, procedure or checklist

Review

Mission brief  
Aircraft emergencies with emphasis on causes indications, and procedures to recover aircraft and CRM

Performance Standards

PUI shall conduct NATOPS CRM brief. Sortie shall be used to review EPs and CRM while outside the local pattern during basic VFR flight.

PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

PUI will demonstrate knowledge, safety, and CRM considerations during the execution of emergency procedures.

PUI shall perform a minimum of five full autorotations.

Prerequisites. 1113

Crew. CSI or FRSI/PUI (copilot mandatory and shall be 1107 complete)

**FAM-1115      2.0      485      B,R,S,MR      D      A      1 AH-1Z**

Goal. RS – Evaluate Familiarization maneuvers.

Requirements

Discuss

Any previously introduced NATOPS/MDG system, emergency, limitation, procedure, or checklist

Evaluate

Mission brief  
FAM maneuvers  
IFR operations and procedures  
VFR operations and procedures  
Course rules  
Simulated emergencies  
Inflight contingencies

Performance Standards

As the local flying area allows, mission profile should include operations at the departure airfield, at local training facilities and OLFs while incorporating local course rules.

PUI shall demonstrate a detailed understanding and functional knowledge of single ship operations IAW the AH-1Z NATOPS and MDG.

PUI shall demonstrate the ability to safely execute any previously introduced procedure, maneuver, or emergency.

If R,S,MR event, PUI should use available time to review instrument navigation procedures and build annual instrument minimums.

Prerequisites. 1114

Crew. ANI/PUI.

**FAM-1116      2.0      485      B,R,S,MR      D      A      1 AH-1Z**

Goal. OS – Introduce aircraft energy management.

Requirements

Discuss

All demonstrate and introduce items  
Performance charts  
Autorotations  
Single engine power and flight characteristics  
High, hot, and heavy operations  
E-M Diagram (Ps)  
High altitude landings

Demonstrate

Autorotational characteristics at altitude  
High angle of bank  
Collective control interference

Introduce

Power limited (sliding) takeoff  
Max power takeoff  
Brownout landings

Review

DECU lockout  
SWD profiles (low and medium altitude)

Performance Standards

IP shall demonstrate aircraft energy management as it relates to performance and emergency situations.

PUI shall complete a simulated weight and power for conditions of high, hot, and heavy operations, as dictated by IP.

PUI shall have a detailed understanding of demonstrate and introduce maneuvers.

If R,S,MR event, PUI shall be introduced to and perform TERF maneuvers.

If R,S,MR event, PUI should use available time to review instrument navigation procedures and build annual instrument minimums.

Prerequisites. 1115

Crew. ANI/PUI

**SFAM-1117      1.5      485      B,R,S,MR      NS      S      1 AH-1Z**

Goal. FS - Introduce NVD Familiarization maneuvers during HLL.

Requirements

Discuss

All demonstrate and introduce maneuvers  
NDM setup/operation  
Aircraft lighting and switchology

Demonstrate

NVD portion of NATOPS brief

Introduce

Low work  
Hover takeoff  
No hover takeoff  
RVL landing  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
High-speed approach and landing  
Waveoff procedures  
SWD profiles  
SCAS Failure  
Single engine failures  
Fixed pitch tail rotor malfunctions

Performance Standards

PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS, MDG and NVD manual.  
PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate and a vector overlay of appropriate local ranges or other restricted areas.

Prerequisites. 1115

Crew. CSI or NSF/PUI

**SFAM-1118      1.5      \*      B      NS      S      1 AH-1Z**

Goal. RS - Introduce NVD emergency maneuvers during HLL.

Requirement

Discuss

All demonstrate and introduce maneuvers  
NVD emergencies  
IIMC in NVD environment  
Electrical failure at night

Introduce

Hovering Autorotations  
Taxiing Autorotations  
Full autorotations  
Simulated emergency procedures  
Straight-in autorotation  
90-degree autorotation  
180-degree autorotation  
High-speed low-level autorotation  
Autorotation to a spot

Review

Low work  
Hover takeoff  
No hover takeoff  
RVL landing  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
High-speed approach and landing  
Waveoff procedures  
SWD profiles  
SCAS Failure  
Single engine failures  
Fixed pitch tail rotor malfunctions

Performance Standards

PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS, MDG and NVD manual.

PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate and a vector overlay of appropriate local ranges or other restricted areas.

PUI shall perform a minimum of five full autorotations.

Prerequisites. 1117

Crew. CSI or NSFI/PUI

**FAM-1119      2.0      \*      B      NS      A      1 AH-1Z**

Goal. FS – Review NVD Familiarization maneuvers during HLL.

Requirements

Discuss

All demonstrate and introduce maneuvers  
Solar Lunar Almanac Prediction (SLAP)  
Sources of illumination at night  
Light levels  
Crew day/crew rest requirements at night  
CRM at night  
Use of searchlight at night  
Required equipment and cockpit setup for night flights  
NVD scan pattern  
NVD components and operation  
NDM preflight/focus procedures  
NDM boresight/brightness/declutter

Demonstrate

NVD portion of NATOPS brief

Introduce

Low work  
Hover takeoff  
No hover takeoff  
RVL landing  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
High-speed approach and landing  
Waveoff procedures  
SWD profiles  
SCAS Failure  
Single engine failures  
Fixed pitch tail rotor malfunctions  
Simulated emergency procedures  
MAP page usage at night

Performance Standards

PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS, MDG and NVD manual.

PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate and a vector overlay of appropriate local ranges or other restricted areas.

PUI shall complete an accurate weight and power computation for given conditions.

PUI shall bring appropriate SLAP data to the brief, to include Lunar Elevation/Azimuth Angles (LEAA) and Lunar Daily Illumination (LDI) charts.

Prerequisites. 1118

Crew. NSFI/PUI

**FAM-1120      2.0      485      B,R,S,MR      NS      A      1 AH-1Z**

Goal. RS – Review NVD Familiarization maneuvers during HLL.

Requirements

Discuss

Automatic Brightness Control  
Bright Source Protection  
NVD Scene  
NVD comfort level  
NVD shadowing  
RADALT at night

Review

NVD portion of NATOPS brief  
Low work  
Hover takeoff  
No hover takeoff  
RVL landing  
Steep Approach  
Hover landing  
No hover landing  
Sliding landing  
High-speed approach and landing  
Waveoff procedures  
SWD profiles  
SCAS Failure  
Single engine failures  
Fixed pitch tail rotor malfunctions  
Simulated emergency procedures  
MAP page usage at night

Performance Standards

PUI shall perform a mission brief.  
PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS, MDG, and NVD manual.  
PUI shall load a mission card with radio presets, a mission list, editable waypoints for local course rules, non-editable waypoints as appropriate and a vector overlay of appropriate local ranges or other restricted areas.  
PUI shall complete an accurate weight and power computation for given conditions.  
PUI shall bring appropriate SLAP data to the brief, to include Lunar Elevation/Azimuth Angles (LEAA) and Lunar Daily Illumination (LDI) charts.

Prerequisites. 1119

Crew. NSF/PUI

2.7.2 Instruments (INST)

Purpose. To develop proficiency in actual/simulated IMC. To develop the PUIs stage specific flight skills, systems and procedural knowledge, and CRM to safely act as PIC during enroute and terminal operations under IFR and in IMC.

General. SINST-1204 should be conducted at the completion of the Core Introduction Phase and serve as the annual instrument evaluation, if annual minimums are met. A 6100 tracking code shall be logged at the completion of SINST-1204 if conducting an annual instrument evaluation.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. Instrument stage lecture and CBT/ICW. Instrument Ground School (as applicable).

References. Maneuver Description Guide, NATOPS manual, Instrument Flight Manual, and Instrument Flight Publications.

**SINST-1200    1.5    \*    B    (N\*)    S    1 AH-1Z**

Goal. OS - Introduce basic instrument flight maneuvers.

Requirements

Discuss

All demonstrate and introduce maneuvers  
Standard rate indications  
Spatial disorientation

Introduce

Instrument flight checklist

Instrument takeoff (ITO)  
Level speed change  
Standard rate turns  
Vertical S-1 pattern  
Turn pattern  
Oscar pattern  
Timed turns using the DFD standby compass  
Recovery from unusual attitudes

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

Prerequisites. 1103

Crew. CSI or FRSI/PUI

**SINST-1201 1.5 485 B,R,S,MR (N\*) S 1 AH-1Z**

Goal. OS – Introduce instrument flight navigation procedures.

Requirements

Discuss

All demonstrate and introduce maneuvers  
NERP  
Navigation System Integration  
AFCS in instrument flight  
Initial Approach Fix (IAF)  
Final Approach Fix (FAF)  
Minimum Descent Altitude (MDA)  
Voice reports  
Lost communications procedures  
DD-175 filing criteria and procedures  
Weather briefing requirements

Introduce

Standard Instrument Departures (SIDs)  
Airway Navigation  
TACAN intercepts  
TACAN point to point navigation  
TACAN holding  
TACAN arcing  
TACAN approach  
Precision approach (PAR)  
Airport Surveillance Radar (ASR)  
Use of AFCS in instrument flight  
Missed approach  
No-Gyro approach  
Instrument autorotation

Review

Instrument flight checklist

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

PUI shall load a mission card with appropriate instrument fixes/ATC reporting points as waypoints, a vector overlay indicating final approach course, and appropriate ATC frequencies.

Prerequisites. 1104

Crew. CSI or FRSI/PUI

**INST-1202 2.0 \* B (N\*) A 1 AH-1Z**

Goal. OS – Review basic instrument flight maneuvers in local controlled airspace.

Requirements

Discuss

All demonstrate and introduce maneuvers

- Integrated avionics system
- Communications system
- Rain removal system
- Anti-ice system
- Pitot Heat System
- Associated NATOPS emergencies, limitations, servicing, and checklists for briefed systems
- VMC to IMC & IMC to VMC transitions
- In flight filing procedures
- GCA airspace & requirements
- NAVAID failures
- Spatial disorientation

#### Review

- Instrument flight checklist
- Instrument takeoff (ITO)
- Level speed change
- Standard rate turns
- Vertical S-1 pattern
- Turn pattern
- Oscar pattern
- Timed turns using the DFD standby compass
- TACAN approach
- Precision approach (PAR)
- Airport Surveillance Radar (ASR)
- Use of AFCS in instrument flight

#### Performance Standards

PUI to conduct procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

PUI shall load a mission card with appropriate instrument fixes/ATC reporting points as waypoints, a vector overlay indicating final approach course, and appropriate ATC frequencies.

PUI shall complete an accurate weight and power computation for given conditions.

#### Prerequisites. 1201

Crew. CSI or FRSI/PUI

**INST-1203      2.0      485      B,R,S,MR      (N\*)      A      1 AH-1Z**

Goal. OS – Review instrument flight navigation procedures.

#### Requirements

##### Discuss

- All demonstrate and introduce maneuvers
- Instrument flight publications
- Airspace classification
- Cloud clearance and visibility requirements
- Lost communications procedures
- DD-1801 filing criteria and procedures
- Weather briefing requirements
- Navigation system integration

##### Review

- Standard Instrument Departures (SIDs)
- Airway navigation
- TACAN approach
- Precision approach (PAR)
- Airport Surveillance Radar (ASR)
- No-gyro approach
- Missed approach
- Use of AFCS in instrument flight

#### Performance Standards

PUI to conduct procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

PUI shall load a mission card with appropriate instrument fixes/ATC reporting points as waypoints, a vector overlay indicating final approach course, and appropriate ATC frequencies.

PUI shall file the DD-1801.

PUI shall complete an accurate weight and power computation for given conditions.

Event shall partially be flown outside of local airspace.

Event should be flown in conjunction with 1503 (out/in or cross-country flight) to the max extent practical.

Prerequisites. 1202, 1502

Crew. FRSI/PUI

**SINST-1204    1.5    485    B,R,S,MR    (N)    S    1 AH-1Z**

Goal. OS – Evaluate instrument flight and emergency procedures under IFR in IMC.

Requirements

Discuss

Any previously introduced INST stage item  
Annual and semi-annual instrument and approach minimums

Review

Standard Instrument Departures (SIDs)  
TACAN procedures  
Precision approach (PAR)  
Airport Surveillance Radar (ASR)  
No-Gyro approach  
Missed approach  
Airway navigation  
Use of AFCS in instrument flight  
Emergencies in IMC

Performance Standards

PUI shall load a mission card with appropriate instrument fixes/ATC reporting points as waypoints, a vector overlay indicating final approach course and appropriate ATC frequencies.  
PUI shall demonstrate a detailed understanding and functional knowledge of all instrument procedures, emergencies, aircraft systems and maneuvers IAW the NATOPS IFM, AH-1Z NATOPS, MDG and CNAF 3710.  
PUI shall conduct an annual instrument evaluation IAW CNAF M-3710.7 (if applicable).

Prerequisites. All 1000-level syllabus events with the exception of 1900 and 1901.

Crew. CSI or FRSI (IFBM as required)/PUI

2.7.3    Formation (FORM)

Purpose. To introduce formation flight and develop proficiency in parade and tactical formation maneuvers. To develop the PUIs stage specific flight skills, systems and procedural knowledge, and CRM to safely act as PIC as the designated wingman during nontactical flights.

General. At the completion of this stage, the PUI will be proficient at formation takeoffs and landings, rendezvous, parade, cruise, and all formation maneuvers listed in the AH-1Z NATOPS and MDG. PUI will have introductory knowledge of ASTACSOP section contingencies and tactical formation maneuvers.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. ACAD-1001.

References. Maneuver Description Guide, NATOPS manual, ASTACSOP, NVD manual, & NTP.

**FORM-1300    2.0    485    B,R,MR    D    S    1 AH-1Z & 1 H-1**

Goal. OS – Introduce formation flight.

Requirements

Discuss

All demonstrate and introduce maneuvers  
CRM during form flight  
Form Maneuver Card  
Cruise turn principles  
ASTACSOP items

Demonstrate

ASTACSOP RIO  
ASTACSOP lost comm  
ASTACSOP IIMC  
ASTACSOP loss of visual contact

Introduce

Parade flight



- Parade turns
- Crossovers
- Breakup and rendezvous
- Cruise turns
- Tactical formation maneuvers
- Formation takeoff
- Formation landing
- Wingman awareness
- Formation communication
- Lead change
- Section landings

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.  
PUI shall load a mission card with a vector overlay of a formation working area.  
PUI shall complete an accurate weight and power computation for given conditions.  
PUI shall perform all MDG formation maneuvers as lead and wingman.  
A minimum of 2 section landings will be accomplished as lead and as wingman.

Prerequisites. 1001, 1116

Crew. FRSI/PUI

**FORM-1301    2.0    485    B,R,MR    NS    A    1 AH-1Z & 1 H-1**

Goal. FS - Introduce NVD formation flight, demonstrate tactical formation flight maneuvering, and NVD section landings.

Requirements

Discuss

- All demonstrate and introduce maneuvers
- ASTACSOP aircraft lighting
- ASTACSOP goggle/degoggle procedures
- NVD formation flight techniques
- ASTACSOP loss of visual contact at night
- CRM during NVD formation flight
- H-1 NVD formation related mishaps

Demonstrate

- Tactical formation maneuvers
- Aircraft lighting configurations

Introduce

- Parade flight
- Parade turns
- Crossovers
- Breakup and rendezvous
- Cruise turns
- Formation takeoff
- Formation landing
- Wingman awareness
- Formation communication
- Lead change
- Section landings
- ASTACSOP RIO
- ASTACSOP lost comm
- ASTACSOP IIMC
- ASTACSOP loss of visual contact

Performance Standards

PUI shall conduct all procedures and maneuvers IAW the AH-1Z NATOPS, MDG, ASTACSOP, NTPP and MAWTS-1 NVD manual.  
PUI shall load a mission card with a vector overlay of a formation working area.  
PUI shall complete an accurate weight and power computation for given conditions.  
PUI shall bring appropriate SLAP data to the brief, to include Lunar Elevation/Azimuth Angles (LEAA) and Lunar Daily Illumination (LDI) charts.  
A minimum of 2 section landings will be accomplished as lead and as wingman.

Prerequisites. 1300, 1120

Crew. NSFI/PUI

**FORM-1302    2.0    \*    B    D    A    1 AH-1Z & 1 H-1**

Goal. OS – Evaluate day formation flight.

Requirements

Discuss

Any previously introduced item in the FORM stage  
Aircraft emergencies during formation flight  
Break (homefield, FARP, ship)  
ASTACSOP items  
Section landings  
Wingman awareness

Review

Parade flight  
Parade turns  
Cruise flight  
Cruise turns  
Crossovers  
Breakup and rendezvous  
Formation landing  
Formation takeoff  
Wingman awareness  
Formation communication  
Lead change  
Section landings  
ASTACSOP RIO  
ASTACSOP lost comm.  
ASTACSOP IIMC  
ASTACSOP loss of visual contact

Performance Standards

PUI shall execute an abbreviated parade and cruise sequence as -2 and be prepared to execute contingency items such as ASTACSOP IIMC, loss of visual contact, lost comm and/or other emergencies. At a minimum, two simulated contingencies will be executed during the event.

IP shall give PUI guidance on building a navigation route that will include one airport for a low approach outside the local area, and an area to conduct section target acquisition, section target tracking, and section sensor holding patterns.

PUI shall conduct section brief.

PUI shall demonstrate a detailed understanding and functional knowledge of all formation procedures IAW the AH-1Z NATOPS and MDG.

PUI shall load a mission card with a route and formation areas overlay (as applicable)

PUI shall perform all MDG formation maneuvers as lead and wingman.

Prerequisites. 1301

Crew. ANI/PUI

#### 2.7.4 Terrain Flight (TERF)

Purpose. To introduce low level, contour and NOE modes of TERF flight and develop proficiency in the application of TERF. To develop the PUI's stage specific flight skills, systems and procedural knowledge, and CRM and prepare the PUI for Core Introduction Phase TERF training.

General. PUI will demonstrate an understanding of the TERF modes (low level, contour, and NOE) and proficiency in low level, contour and NOE flight maneuvers. TERF-1401 should be scheduled as a section in authorized TERF area to increase formation flight proficiency. If weather and/or maintenance does not allow, degradation to MIKE TERF area is authorized to complete the event.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. ACAD-1001.

References. Maneuver Description Guide, NATOPS manual, NVD manual, and NTPP.

**TERF-1400    2.0    485    B,R,S,MR    D    A    1 AH-1Z**



Roll  
Turns  
TERF navigation

Review

Additional FORM sustainment as required  
Additional FAM sustainment as required  
TERF and NVD portions of the NATOPS brief

Performance Standards

PUI shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS, MDG and NVD manual.  
PUI shall load a mission card with a mission list, a vector overlay of the route and set up terrain banding.  
PUI shall complete an accurate weight and balance computation for given conditions.  
PUI shall bring appropriate SLAP data to the brief, to include Lunar Elevation/Azimuth Angles (LEAA) and Lunar Daily Illumination (LDI) charts.  
PUI shall conduct the route brief and navigate an approved TERF route with a minimum of 5 checkpoints.

Prerequisite. 1301, 1400

Range Requirement. Authorized TERF area, high bird as required

Crew. NSF/PUI

2.7.5 Navigation (NAV)

Purpose. To develop the ability to conduct day/night navigation. NAV stage proficiency will be evaluated as part of CIX-1901.

General. PUI must demonstrate the ability to navigate preplanned routes and identify positions using both charts/maps and mission planning software/moving map display.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. ACAD-1001 prior to 1503.

References. Maneuver Description Guide, NATOPS manual, ASTACSOP, NVD manual, NTTP.

**SNAB-1500 1.5 485 B,R,S,MR (N) S/A 1 AH-1Z**

Goal. OS – Introduce digital map system (DMS).

Requirements

Discuss

All demonstrate and introduce maneuvers  
Editable and non-editable points  
HMDS cueing integration  
Map page scales  
Map orientation on MAP page

Demonstrate

STATUS page operation

Introduce

DFD functions  
Vector overlays  
Storing waypoints or targets  
Overlay creation and selection  
Terrain banding  
AUTO and MAN route builds  
PTA, ETA and CGS

Review

Direct-to function  
Mission card loading  
Loading mission card into the aircraft  
MAP page orientation

Performance Standards

PUI will have a detailed understanding and functional knowledge of the DMS IAW the AH-1Z NATOPS and NTTP.  
PUI shall load a mission card with communications including a mission list, a route, editable and non-editable waypoints, targets, and a vector overlay.

PUI will create a route using the MAN and AUTO build functions.

Prerequisites. 1103, 1200

Crew. CSI or FRSI/PUI

**SNAV-1501      1.5      \*      B,S      (N)      S/A      S-TEN      1 AH-1Z**

Goal. OS – Introduce the TSS.

Requirements

Discuss

All demonstrate and introduce maneuvers  
TSS components  
TSS track modes (AA,AG,UR)  
TSS LASER modes (T,S)  
TSS LST/IR AD functionality and setup  
TSS environmental considerations  
Non-uniformity correction (NUC) procedures

Introduce

TSS boresight  
TSS page operation  
TSS Mission grip functionality  
VTR functionality  
Storing a waypoint/target using the TSS  
TSS offset function  
TSS aimpoint adjust  
TSS MAQ, active track, inertial track  
TSS PIP, white hot vs. black hot

Performance Standards.

PUI shall have a detailed understanding and functional knowledge of the TSS IAW AH-1Z NATOPS, NTRP, and NTP.

Prerequisites. 1103, 1200

Crew. CSI or FRSI/PUI

**SNAV-1502      1.5      485      B,R,S,MR      D      S/A      1 AH-1Z**

Goal. OS – Introduce flight navigation.

Requirements

Discuss

Checkpoint identification using the TSS  
Planned time of arrival and command ground speed  
In flight fuel calculations  
Checkpoint selection

Review

Mission card loading  
MAP page orientation  
Storing waypoints or targets  
Direct-to function  
Overlay creation and selection  
Terrain banding  
AUTO and MAN route builds  
EGI needle utilization  
PTA, ETA, and CGS

Performance Standards

PUI will have a detailed understanding and functional knowledge of the DMS and TSS IAW the AH-1Z NATOPS, NTRP, and NTP.  
PUI shall load a mission card consisting of both editable and non-editable waypoints, communication load, mission list and one route.  
PUI will adjust at minimum two route points in MAN build and two route points in AUTO build.  
PUI will use the mission card STORE function and conduct post flight debrief with new and adjusted routes.

Prerequisites. 1115

Crew. CSI or FRSI/PUI

**NAV-1503      2.0      \*      B      D      A      1 AH-1Z**

Goal. OS – Introduce flight navigation.

Requirements

Discuss

Map preparation of both the 1:250,000 Joint Operation Graphic (JOG) and 1:50,000 paper maps  
Map datum  
Flight plans vs. routes  
Checkpoint selection  
CRM, lookout doctrine, and obstacle/hazard avoidance  
Route briefing techniques  
NAV and TSS integration  
ASTACSOP navigation procedures and Magellan standards  
Bingo and joker considerations  
In-flight fuel calculations/planning  
INS-only navigation

Demonstrate

INS updates

Review

Mission card loading  
MAP page orientation  
Storing waypoints or targets  
Direct-to function  
Checkpoint identification using the TSS  
Overlay creation and selection  
Terrain banding  
AUTO and MAN route builds  
EGI needle utilization  
PTA, ETA, and CGS  
NERP use  
Additional FAM sustainment as required

Performance Standards

PUI will have a detailed understanding and functional knowledge of the DMS and TSS IAW the AH-1Z NATOPS, NTRP, and NTPP.  
PUI shall load a mission card consisting of both editable and non-editable waypoints, communication load, mission list and one route.  
PUI will adjust at minimum two route points in MAN build and two route points in AUTO build.  
PUI will use the mission card STORE function and conduct post flight debrief with new and adjusted routes.  
PUI shall navigate a minimum of two legs using a map and not the map page.  
PUI shall complete an accurate weight and power computation for given conditions. PUI shall plan and navigate a route of at least 5 checkpoints outside of local airspace.  
Event should be flown in conjunction with 1203 (out/in or cross-country flight) to the max extent practical.

Prerequisites. 1001,1502

Crew. FRSI/PUI

**NAV-1504      2.0      \*      B      NS      A      1 AH-1Z**

Goal. OS – Introduce NVD navigation.

Requirements

Discuss

Night navigation considerations  
Route briefing techniques

Review

Mission card loading  
MAP page orientation  
Storing waypoints or targets  
Direct-to function  
Checkpoint identification using the TSS  
Overlay creation and selection

Terrain banding  
AUTO and MAN route builds  
EGI needle utilization  
PTA, ETA, and CGS  
Additional FAM sustainment as required

#### Performance Standards

PUI will have a detailed understanding and functional knowledge of the DMS and TSS IAW the AH-1Z NATOPS, NTRP, and NTTP.  
PUI shall load a mission card consisting of both editable and non-editable waypoints, communication load, mission list and one route.  
PUI will adjust at minimum two route points in MAN build and two route points in AUTO build.  
PUI will use the mission card STORE function and conduct post flight debrief with new and adjusted routes.  
Plan and navigate a route of at least 5 checkpoints outside of local airspace.  
PUI shall bring appropriate SLAP data to the brief, to include Lunar Elevation/Azimuth Angles (LEAA) and Lunar Daily Illumination (LDI) charts.  
PUI shall complete an accurate weight and power computation for given conditions.

Prerequisites. 1120, 1503

Crew. NSF/PUI

#### 2.7.6 Specific Weapons Delivery (SWD)

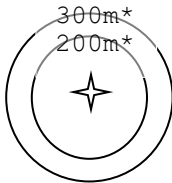
Purpose. To develop the ability to deliver air-to-ground weapons employing all available sensors and weapons systems.

#### General.

At the completion of this stage, PUI will demonstrate familiarity with all ordnance delivery methods.

The SWD Stage shall focus on teaching the PUI proper weapons delivery switchology, CRM, techniques, and flight profiles. At the completion of the Stage, the PUI should be able to perform prescribed weapons delivery demonstrating correct switchology and release profiles. Focus should be on weapons delivery profiles and ordnance accuracy, not tactical scenarios. DVR debrief should be used to the maximum extent possible.

IPs shall evaluate ordnance effectiveness based on the following accuracy metrics.

CORE INTRODUCTION INTRODUCTION	ROCKET STANDARD	GUN STANDARD	PURPOSE
 <p>*Radius</p>	<p>-In correct profile per NTTP</p> <p>-No miss greater than 400 meters</p> <p>-CE90<math>\leq</math>300 meters**</p>	<p>-On target within 5 seconds of trigger pull</p>	<p>-Based upon rocket Min Safe Distances (MSDs)***</p> <p>-Qualifies PUI to deliver rockets during CAS training events</p>

\*\* CE90 example: SWD-1606 requires (14) 2.75" rockets. CE90 $\leq$ 300 meters requires that 90% of the delivered rockets impact within 200 meters of the target. In order to calculate, simply disregard the worst 10% of rockets released and the remaining farthest SINGLE MISS DISTANCE = CE90. Conservative rounding is applied.

#### Examples:

- 3-10 rockets released ~ disregard one rocket, SECOND FARTHEST MISS = CE90
- 11-20 rockets released ~ disregard two rockets, THIRD FARTHEST MISS = CE90
- In no case can a single rocket miss the intended target by more than 400m, including the omitted rounds for CE90 calculation.

\*\*\* Minimum Safe Distances (MSDs) are based upon ALSA assumptions, which consider (among other factors) warhead fragmentation patterns and delivery accuracy. HE rocket delivery profiles outside of the NTTP Weapons Release Envelope will invalidate the MSDs listed in JFIRE, and will increase risk to ground personnel during CAS training events.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. ACAD-1001.

References. Maneuver Description Guide, NATOPS manual, ASTACSOP, NTPP, NTRP.

**SSWD-1600      1.5      \*      B      D      S      S-TEN      1 AH-1Z**

Goal. RS – Introduce ordnance checklists, weapons systems and setup, and 20mm employment.

Requirements

Discuss

All demonstrate and introduce maneuvers  
CRM during ordnance delivery  
20mm PGU rounds  
Visual/Contact/Tally  
Ordnance checklists  
WPN page setup  
Emergency procedures  
HMSD boresight procedures/symbology sets

Introduce

Ordnance checklists  
TSS switchology and employment  
Laser system function  
TSS front and rear seat acquire  
WPN page setup  
Required switchology  
TSS Guns

Review

TSS track modes  
VTR usage  
Target grid entry  
MAP page setup  
TSS and NAV system integration  
TDC page setup  
TSS offset function  
TSS aimpoint adjust  
TSS prepoint  
TSS MAQ, active track, inertial track  
TSS PIP, white hot vs. black hot

Performance Standards

PUI shall have a detailed understanding and functional knowledge of weapons systems and checklists IAW the AH-1Z NATOPS, MDG, NTPP, ASTACSOP, and NTRP.

PUI shall load a mission card with ingress and egress routes, vector overlay of the objective area to include range fan and distances from target, and weapons setup.

PUI shall set the mission card to turn on contour lines.

PUI will utilize TSS LASER and TSS STOR to store a minimum of two different target sets.

PUI will employ the 20mm system in TSS guns against applicable target sets.

Prerequisites. 1001, 1116

Crew. CSI or FRSI/PUI

**SSWD-1601      1.5      \*      B      D      S      S-TEN      1 AH-1Z**

Goal. OS – Introduce rocket employment in all modes of medium altitude employment, and fixed 20mm employment. Review ordnance checklists, weapons systems, and setup.

Requirements

Discuss

All demonstrate and introduce maneuvers  
CRM during ordnance delivery  
Weapons delivery profiles  
2.75" rocket warheads and fuses

Introduce

Fixed 20mm delivery  
Medium altitude CCIP rocket delivery  
Medium altitude CCRP rocket delivery

Review



Ordnance checklists  
TSS switchology and employment  
TSS Guns  
Fixed Guns  
HMSD Guns

Performance Standards

PUI shall have a detailed understanding and functional knowledge of weapons systems and checklists IAW the AH-1Z NATOPS, MDG, NTTP, ASTACSOP and NTRP.  
PUI shall load a mission card with ingress and egress routes, vector overlay of the objective area.  
PUI shall set the mission card to turn on contour lines  
PUI will employ the 20mm system in fixed forward, and rockets using manual range, geo-range, and laser range

Prerequisites. 1600

Crew. CSI or FRSI/PUI

**SSWD-1602    1.5    \*    B    D    S    S-TEN    1 AH-1Z**

Goal. OS – Review medium altitude rocket employment. Introduce low altitude rocket and gun employment and 20mm HMSD employment.

Requirements

Discuss

All demonstrate and introduce maneuvers  
CRM during ordnance delivery  
HMSD boresight, symbology, integration  
Weapons delivery profiles

Introduce

Ordnance comm procedures  
Weapons emergencies  
Low altitude CCRP rocket delivery  
Low altitude CCIP rocket delivery  
HMSD 20mm employment

Review

Ordnance checklists  
TSS switchology and employment  
TSS Guns  
Fixed Guns  
Medium altitude rocket employment

Performance Standards

PUI shall have a detailed understanding and functional knowledge of weapons systems and checklists IAW the AH-1Z NATOPS, MDG, NTTP, ASTACSOP, and NTRP.  
PUI shall load a mission card with ingress and egress routes, vector overlay of the objective area.  
PUI shall set the mission card to turn on contour lines.  
PUI will employ the 20mm system in HMSD guns against applicable target sets.  
PUI will employ rockets in CCRP-M, CCRP-A, and CCIP modes of operation using manual, LASER, and geo ranging.

Prerequisites. 1601

Crew. CSI or FRSI/PUI

**SSWD-1603    1.5    \*    B,S    D    S    S-TEN    1 AH-1Z**

Goal. OS – Introduce PGM employment. Review 20mm TSS employment.

Requirements

Discuss

CRM during ordnance delivery  
Hellfire variants  
LASER acquisition basket  
Hellfire employment considerations

Hellfire switchology

Introduce

ASTACSOP PGM comm procedures  
Weapons emergencies  
Autonomous Hellfire employment  
Remote designator Hellfire employment  
Hellfire employment

Review

20mm TSS employment  
TSS switchology and employment

Performance Standards

PUI shall have a detailed understanding and functional knowledge of weapons systems and checklists IAW the AH-1Z NATOPS, MDG, NTP, ASTACSOP, and NTRP.

PUI shall load a mission card with ingress and egress routes, vector overlay of the objective area.

PUI shall set the mission card to turn on contour lines.

PUI will employ PGMs in autonomous LOBL and LOAL modes of operation to include Laser system operation and HMSD integration.

PUI will employ rockets in CCRP-M, CCRP-A, and CCIP modes of operation using manual, LASER, and geo ranging.

Prerequisites. 1602

Crew. CSI or FRSI/PUI

**SSWD-1604    1.5    730    B,R,S    D    S    S-TEN 1 AH-1Z**

Goal. OS – Review ordnance checklists, weapons systems and setup and 20mm, PGM and rocket employment.

Requirements

Discuss

CRM during ordnance delivery  
R-220 “Whiskey”  
Final attack headings  
Pulloff considerations

Review

Ordnance checklists  
TSS switchology and employment  
20mm delivery  
CCIP rocket delivery (low and medium altitude)  
CCRP rocket delivery (low and medium altitude)  
Hellfire employment

Performance Standards

PUI shall have a detailed understanding and functional knowledge of weapons systems and checklists IAW the AH-1Z NATOPS, MDG, NTP, ASTACSOP, and NTRP.

PUI shall load a mission card with ingress and egress routes, vector overlay of the objective area.

PUI shall set the mission card to turn on contour lines.

PUI will employ the 20mm system in fixed forward, TSS guns, and HMSD guns against applicable target sets.

PUI will employ PGMs in autonomous LOBL and LOAL modes of operation to include Laser system operation and HMSD integration.

PUI will employ rockets in CCRP-M, CCRP-A, and CCIP modes of operation using manual, LASER, and geo ranging.

Prerequisites. 1603

Crew. CSI or FRSI/PUI

**SWD-1605    1.5    \*    B    D    A    1 AH-1Z**

Goal. OS – Introduce ordnance checklists, weapons systems and setup and 20mm, PGM and rocket employment in the aircraft.

## Requirements

### Discuss

All demonstrate and introduce maneuvers  
FENCE In/Out Checklists  
CRM during ordnance delivery  
Aircraft weapon system components (to include LAADS, SSE, SSC, ISMS, and mission computers)  
HMSD boresight, symbology, integration  
Unguided weapons delivery ballistics  
Unguided weapons employment  
Visual/Contact/Tally  
Weapons accuracy standards  
ASTACSOP arming procedures  
CALA and airfield ordnance operations  
Radius of turn (g-loading)  
20mm system  
All 20mm types  
20mm, 2.75" MSD Numbers  
20mm modes and procedures  
Weapons emergencies  
Jettison procedures

### Introduce

Weapons preflight  
Range operations  
Ordnance comm procedures  
Simulated Hellfire employment  
CCRP rocket delivery  
CCIP rocket delivery  
TSS Guns  
Fixed Guns  
HMSD Guns

### Review

ASTACSOP RIO  
Ordnance checklists  
TSS switchology and employment

## Performance Standards

PUI shall have a detailed understanding and functional knowledge of weapons systems and checklists IAW the AH-1Z NATOPS, MDG, NTP, ASTACSOP, and NTRP.

PUI shall load a mission card with ingress and egress routes, vector overlay of the objective area.

PUI will employ the 20mm system in fixed forward, TSS guns, and HMSD guns against applicable target sets.

PUI will employ rockets in CCRP and CCIP modes of operation using manual, LASER, and geo ranging.

PUI shall complete an accurate weight and power computation for given conditions.

Prerequisites. 1300, 1604, 1700

Ordnance. (1) Captive PGM, (14) 2.75" rockets, (300) rounds 20mm

Range Requirement. Live fire LASER safe range

Crew. FRSI/PUI

**SWD-1606      1.5      485      B,R,S,MR      D      A      1 AH-1Z**

Goal. OS – Evaluate ordnance checklists, weapons systems and setup and 20mm, PGM and rocket employment in the aircraft.

## Requirements

### Discuss

Rocket pods  
All 2.75" rocket motors, fuses, warheads  
Rocket delivery modes and procedures  
Hellfire systems  
All Hellfire types  
Hellfire LASER safety considerations  
Hellfire delivery modes and procedures

## Review

ASTACSOP RIO  
Weapons preflight  
TSS switchology and employment  
Range operations  
Ordnance comm procedures  
Simulated Hellfire employment  
CCRP rocket delivery  
CCIP rocket delivery  
20mm delivery  
EW page setup  
ASE operation

## Performance Standards

PUI shall have a detailed understanding and functional knowledge of weapons systems and checklists IAW the AH-1Z NATOPS, MDG, NTP, ASTACSOP, and NTRP  
PUI shall load a mission card with ingress and egress routes, vector overlay of the objective area  
PUI will employ rockets in CCRP and CCIP modes of operation using manual, LASER, and geo ranging.  
PUI shall complete an accurate weight and power computation for given conditions.

## Prerequisites. 1605

Ordnance. (1) Captive PGM, (14) 2.75" rockets, (300) rounds 20mm.

Range Requirement. Live fire LASER safe range

Crew. FRSI/PUI

## 2.7.7 Advanced Systems Familiarization (ASF)

Purpose. To introduce offensive/defensive electronic and infrared countermeasures, the electronic warfare (EW) MFD page functions, Aircraft Survivability Equipment (ASE), and Advanced Precision Kill Weapon System (APKWS).

General. At the completion of this stage, the PUI will be proficient at setup of all aircraft survivability equipment and be exposed to threat indications and APKWS setup.

Crew Requirements. As listed at the end of each event.

**SASF-1700 1.5 \* B,S D S S-TEN 1 AH-1Z**

Goal. OS - Introduce ASE functionality and APKWS setup.

## Requirements

### Discuss

One hour allotted to discussion items and one hour allotted to systems exposure  
ASE suite operation (NATOPS checklists, visual displays, and audio messages for power on/BIT)  
Expendables general purpose  
AAR-47, APR-39, and ALE-47 general purpose  
Displays, controls, detectors and other components  
Visual and audio threat information  
Automatic and manual threat reaction capabilities & operation  
APR-39, AAR-47 and ALE-47 integration  
System modes of operation  
BIT, maintenance BIT and failure messages  
Dispense switch function  
APKWS DFD switchology  
APKWS HMSD symbology  
APKWS weapon page setup  
APKWS modes of employment

### Demonstrate

RADAR search, acquire, track and launch visual/audio indications  
APKWS modes of employment

### Introduce

ASE suite power on, BIT, settings and power off per NATOPS and TPG checklists  
ASE suite cockpit control switchology and related display information (EW page setup)

Inventory reset

Performance Standards

Successfully operate (energize and BIT) and troubleshoot APR-39, AAR-47 and ALE-47 systems.  
Successfully navigate EW page functionality and setup.  
Observe various threat system indications.  
Observe APKWS modes of employment  
PUI shall load a vector overlay with threat rings.

Prerequisites. ACAD-1001, 1116

Crew. FRSI (Pri) or CSI (Alt)/PUI

2.7.8 Core Introduction Check (CIX)

Purpose. To review all areas of instruction and demonstrate proficiency and knowledge of all maneuvers to certify the PUI as PQM, NATOPS qualified and Core Introduction Phase complete. To evaluate PUI's ability to safely act as PIC or designated wingman during non-tactical flights.

General. The PUI will demonstrate proficiency through the Core Introduction phase. Upon completion of the evaluation event, the PUI will be designated as PQM IAW AH-1Z NATOPS Chapter 5. CIX-1900/1901 meets the qualifications for the 7513/7565 MOS and will serve as the initial NATOPS evaluation (NTPS-6101). A 6101 tracking code shall be logged at the completion of the SCIX-1900.

Crew Requirements. As listed at the end of each event.

**SCIX-1900      1.5      485      B,R,S,MR      D      S      S-TEN      1 AH-1Z**

Goal. RS - Conduct a NATOPS evaluation IAW CNAF M-3710.7 and AH-1Z NATOPS.

Requirements

Discuss

NATOPS Brief with emphasis on CRM  
Egress procedures  
Aircraft emergencies with emphasis on causes, indications, and recovery procedures

Evaluate

Any previously introduced item  
Aircraft emergencies with emphasis on causes, indications, and recovery procedures

Performance Standards

PUI shall conduct all procedures and maneuvers IAW CNAF M-3710.7 and the AH-1Z NATOPS

Prerequisites. 6002, 6003, all previous Core Introduction Phase events except 1204

Crew. ANI/PUI/Co-pilot (1113 complete)

**CIX-1901      2.0      485      B,R,S,MR      D      A      1 AH-1Z**

Goal. RS – Core Introduction Check.

Requirements

Discuss

Responsibilities of the Pilot Qualified in Model (PQM) IAW CNAF M-3710.7  
Any aircraft system, limit, EP, or MDG maneuver  
OMA/M-SHARP functionality

Review

FAM maneuvers  
IFR operations and procedures  
VFR operations and procedures  
Navigation  
Simulated emergencies  
Inflight contingencies

Performance Standards

PUI shall act as PIC and IP shall act as peer-level co-pilot.  
PUI shall plan, brief, and lead the flight based on an assigned mission profile and IP guidance.  
Mission profile shall focus on the tasks related to ferry/cross country flights and shall incorporate VFR and IFR components.

Mission profile should include operations at controlled and uncontrolled airports, and where possible, exposure to land as soon as possible and land as soon as practicable emergencies away from homefield with PUI acting as both PAC and PNAC.

PUI shall demonstrate a detailed understanding and functional knowledge of any previously introduced procedure, emergency, system, and maneuver IAW the AH-1Z NATOPS and MDG.

PUI shall demonstrate the ability to safely execute any previously introduced procedure, maneuver, or emergency.

PUI shall complete an accurate weight and power computation for given conditions.

Prerequisites. 1204,1900

Crew. ANI/PUI.

## 2.8 CORE PHASE (2000)

Purpose. To develop a Core Skill complete co-pilot with the airmanship, CRM, and systems and tactical knowledge to safely act as a co-pilot to an Attack Helicopter Commander and perform all duties of the Pilot at the Controls during execution of any HMLA Core MET under any lighting condition.

### General

Pilots entering the Core Phase shall have completed the Core Introduction Phase.

Upon completion of this phase, the PUI will be TERF, TCT, REC, SWD, NSQ, NSQ(LLL), and EXP complete, and may conduct additional skills as specified by the squadron commander.

Consideration should be given to scheduling a co-pilot in addition to the instructor during completion of some simulator events. A junior co-pilot will provide a more realistic crew environment and facilitate better Crew Resource Management (CRM) techniques.

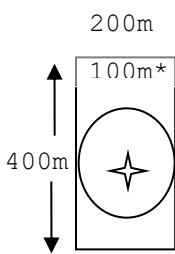
Completion of TERF-2101 meets the requirements for the PUI to be TERF qualified. At the discretion of the squadron commanding officer a letter assigning the PUI as TERFQ shall be placed in the NATOPS jacket and APR.

Completion of TERF-2101 and REC-2302 meets the requirements for the PUI to be Night Systems Qualified, High Light Level [NSQ(HLL)]. At the discretion of the squadron commanding officer a letter assigning the PUI as NSQ(HLL) shall be placed in the NATOPS jacket and APR.

Completion of SFAM-2802, FAM-2803, TERF-2102, SSWD-2608, and SWD-2609 meets the requirements for the PUI to be Night Systems Qualified, Low Light Level [NSQ(LLL)]. At the discretion of the squadron commanding officer a letter assigning the PUI as NSQ(LLL) shall be placed in the NATOPS jacket and APR.

Prior to completion of the Core Skills/Mission Skills Phase, Expeditionary Shore Based (EXP) Operations shall be conducted. Refer to paragraph 2.9.9 for sortie requirements. EXP-2900 through 2903 may be logged in conjunction with any Core or Mission Skills Phase event.

2.8.1 Ordnance Delivery. For Core Phase events involving ordnance delivery, the PUI shall be evaluated on delivery accuracy. At the completion of the NSQ(LLL) syllabus, the PUI will have conducted three simulator and seven conventional ordnance delivery events. IPs shall evaluate ordnance accuracy based on the following accuracy metrics.

CORE SKILL	ROCKET STANDARD	GUN STANDARD	PURPOSE
 <p>*Radius</p>	<p>-In correct profile per NTTP</p> <p>-No miss greater than 200 meters long/short, 100 meters laterally</p> <p>-CE90<math>\leq</math>100 meters**</p>	<p>-On target within 3 seconds of trigger pull</p>	<p>-Based upon rocket Risk Estimate Distances (REDs)***</p> <p>-Qualifies PUI to deliver rockets during combat OAS.</p>

\*\* CE90 example: SWD-2605 requires (19) 2.75" rockets. CE90 $\leq$ 100 meters requires that 90% of the delivered

rockets impact within 100 meters of the target. In order to calculate, simply disregard the worst 10% of rockets released and the remaining farthest SINGLE MISS DISTANCE = CE90. Conservative rounding is applied.

Examples:

- 3-10 rockets released ~ disregard one rocket, SECOND FARTHEST MISS = CE90
- 11-20 rockets released ~ disregard two rockets, THIRD FARTHEST MISS = CE90
- In no case can a single rocket miss the intended target by more than 200m, including the omitted rounds for CE90 calculation. This constitutes failure to meet the performance standard.

\*\*\* Risk Estimate Distances (REDs) are based upon ALSA assumptions, which consider (among other factors) warhead fragmentation patterns and delivery accuracy. HE rocket delivery profiles outside of the ANTPP Weapons Release Envelope will invalidate the REDs listed in JFIRE, and will increase risk to ground personnel during CAS missions.

PGMs - Correct switchology, proper LASER placement, and profile IAW AH-1 NTPP for simulated employment. Live PGM employment must also achieve a direct hit.

TOTs – Initial ordnance impacts delivered within  $\pm 30$  seconds of established TOT.

CORE Stages

CORE (2000 Phase)		
STAGE	PARAGRAPH NUMBER	PAGE NUMBER
Academics (ACAD)	2.9.1	2-42
Terrain Flight (TERF)	2.9.2	2-43
Threat Counter-Tactics (TCT)	2.9.3	2-45
Reconnaissance (REC)	2.9.4	2-47
Specific Weapons Delivery	2.9.5	2-49
Familiarization (FAM)	2.9.6	2-56
Expeditionary Shore Based Operations (EXP)	2.9.7	2-58

2.9 CORE STAGES

2.9.1 Academics (ACAD)

Purpose

To develop a Core Skill complete co-pilot with the airmanship, CRM, and systems and tactical knowledge to safely act as a co-pilot to an Attack Helicopter Commander or Section Lead, and perform all duties of the Pilot at the Controls during execution of any HMLA Core MET under any lighting condition.

These academics facilitate understanding of functions/operations in the AH-1Z and ensure individuals possess the requisite knowledge to be a TERF, TCT, REC, SWD, NSQ, and EXP qualified co-pilot.

The focus of this training is co-pilot combat proficiency.

General

These academics are intended to be an integrated series of academic lectures, readings and practical application contained within each phase of training.

The lectures, readings and chalk-talks are contained in the MAWTS-1 AH-1 Course Catalog.

The academic courseware is a requirement.

At the completion of each ACAD event, the appropriate training code shall be logged in M-SHARP by the individual pilot, contract instructor or squadron operations personnel, as appropriate.

The codes listed below associated with these classes may NOT be the most up to date as the current AH-1 Course Catalog is the master document for stage academic requirements.

Academic events listed below:

CORE ACADEMIC PHASE	
TRAINING CODES	COURSEWARE
GENERAL REQUIREMENTS	
ACAD-2000	HMLA Radios
TERF	
ACAD-2001	MAWTS-1 NITE Lab Courseware
ACAD-2002	H-1 Aerodynamics
TCT	
ACAD-2021	(S) Assault Support ASE
ACAD-2022	(S) Threat Analysis
ACAD-2023	(S) HMLA ASE*
REC	
ACAD-2031	Recognition of Combat Vehicles (ROC-V)**
ACAD-2032	TSS
SWD	
ACAD-2061	Rockets
ACAD-2062	20mm
ACAD-2063	AGM-114 Hellfire
ACAD-2064	AIM-9
ACAD-2065	AGR-19 APKWS
ACAD-2066	AGM-179 JAGM
FAM	
No Lectures	
EXP	
ACAD-2090	HMLA FARP Operations
ACPM // CORE PHASE	
ACPM-8200	8200 ACPM Courseware
*Indicates classes that should be presented to all pilots annually.	
** ROC-V available at <a href="https://www.marinenet.usmc.mil">https://www.marinenet.usmc.mil</a> or <a href="https://rocv.army.mil">https://rocv.army.mil</a> .	

### 2.9.2 Terrain Flight/Navigation (TERF)

Purpose. To enhance proficiency in terrain flight and navigation.

## General

PUI will demonstrate proficiency in terrain flight and navigation.

Once complete in this stage the pilot may be TERF qualified at the discretion of the commanding officer.

**Crew Requirements.** As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>TERF-2100</b>	<b>2.0</b>	<b>180</b>	<b>B,R</b>	<b>D</b>	<b>A</b>	<b>1 AH-1Z</b>
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Goal. FS - Review TERF maneuvers and navigation.

## Requirements

## Discuss

- Terrain appreciation
- Effective CRM/RM during navigation
- Navigation terminology
- Load computations and HIGE/HOGE requirements
- Assault Support Tactical SOP
- TERF tactical application
- Moving map navigational system use and operation
- High gross weight handling characteristics
- Obstacle avoidance

## Review

- TERF maneuvers
- TERF navigation
- Loading and operation of the moving map navigation system
- CRM during TERF



Performance Standards

PUI shall conduct the route brief.

PUI shall complete a navigation route with a minimum of 5 checkpoints utilizing a 1:50,000 scale map and minimum length of 20 NM.

Remain oriented on entire route within 500 meters, 15 degrees of heading and 1 minute of planned route time.

PUI shall conduct all TERF maneuvers IAW the AH-1Z NATOPS, MDG and NTP.

PUI shall conduct 5 landings to an unimproved landing site

Prerequisites. 2000,2001,2002

Range Requirement. Authorized TERF route, high bird if required

Crew. TERF/PUI

**TERF-2101      2.0      180      B,R,S                      HLL      A              1 AH-1Z**

Goal. FS - Review TERF maneuvers and navigation using NVDs (HLL).

Requirements

Discuss

ASTACSOP lighting configurations

NVD focus procedures

NVG and A/C emergencies

TERF maneuvers at night

NVD scan pattern in TERF environment

Cultural lighting

Intercockpit and intraflight crew coordination during low altitude tactical flight utilizing NVGs.

Review

TERF maneuvers

TERF navigation

NVD TERF flight and maneuvers considerations

Effective CRM during navigation and obstacle avoidance.

Performance Standards

PUI shall conduct the route brief.

PUI shall complete a navigation route with a minimum of 5 checkpoints utilizing a 1:50,000 scale map and minimum length of 20 NM.

Remain oriented on entire route within 500 meters, 15 degrees of heading and 1 minute of planned route time.

PUI shall conduct all TERF maneuvers IAW the AH-1Z NATOPS, MDG and NTP.

PUI shall conduct 5 landings to an unimproved landing site.

Prerequisites. 2100

Range Requirements. Authorized TERF route, high bird if required

Crew. NSI/PUI

**TERF-2102      1.5      180      B,R                      LLL      A              1 AH-1Z & 1 H-1**

Goal. FS - Develop proficiency in tactical formation flight and TERF navigation (LLL).

Requirements

Discuss

Tactical formations on NVGs

LLL formation flight considerations

Navigation hazards

Night systems integration

Night rendezvous and join-up procedures per AH-1 NTP

Loss of visual contact procedures

Introduce

Tactical formation flight  
Navigation utilizing NVDs in low level, contour and NOE flight profiles  
Rendezvous and join-up procedures  
Loss of visual contact procedures  
TERF maneuvers in LLL conditions

Review

Proper NVD scan patterns  
External aircraft lighting

Performance Standards

PUI shall plan, brief and navigate a TERF route with a minimum of 5 checkpoints utilizing a 1:50,000 scale map and minimum length of 20 NM.

Remain oriented on entire route within 500 meters, 15 degrees of heading and 1 minute of planned route time.

PUI shall conduct section formation flight in both the tactical lead and tactical wingman positions IAW NTTP, NATOPS and MDG

PUI shall conduct all TERF maneuvers IAW the AH-1Z NATOPS, MDG and NTTP.

IP shall demonstrate loss of visual contact and the subsequent rendezvous and join-up.

Prerequisites. 2803

Range Requirement. Authorized TERF area and route. Pure section preferred

Crew. NSI/PUI

2.9.3 Threat Counter Tactics (TCT)

Purpose. To introduce offensive/defensive electronic and infrared countermeasures, tactics, employment of Aircraft Survivability Equipment (ASE) and employment of precision guided munitions in a RADAR/IR environment.

General

At the completion of this stage, the PUI will be proficient at setup, operation, and employment of all aircraft survivability equipment.

Aircraft should be configured with an operable APR-39, ALE-47, AAR-47, captive PGM, HMSD, TSS and CLDR.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**GTCT-2200    1.0    \*    B    (NS)    GE    1 AH-1Z**

Goal. RS – Introduce ASE setup and operation.

Requirements

Discuss

APR-39 characteristics and system operation  
AAR-47 characteristics and system operation  
AAQ-45 characteristics and system operation  
ALE-47 flare and chaff expendable characteristics  
MFD/DFD/HMSD Symbolology  
AFTTP 3-1 Threat Guide  
APR-39/ALE-47 Quick Reference Guide  
ASTACSOP Threat Analysis Worksheet

Demonstrate/Introduce

IP shall demonstrate using the 3-1 and QRG to select an appropriate ALE MAG ID and program setting for a given threat.  
Introduce utilizing 3-1 and QRG to fill out a Threat Analysis worksheet for an associated RF and

IR Threat.

APR-39, AAR-47, and ALE-47 systems operations to include power up, Built In Test(BIT) procedures, training mode and basic mode/manual operations  
APR-39, AAR-47, and ALE-47 system trouble shooting

## Performance Standards

Correctly identify and describe the operation of all ASE installed on the AH-1Z while on APU or ground power.

Successfully operate (energize and BIT) APR-39, AAR-47, and ALE-47 systems.

Successfully select the ALE-47 training mode.

Given a threat,select an appropriate ALE MAG ID and program setting.

Prerequisites. 2021,2022,2023

Crew. WTO/PUI

<b>STCT-2201</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S</b>	<b>FFS/FTD</b>	<b>TEN</b>
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Goal. RS – Introduce ASE operation in a low to medium IR and RADAR threat environment.

## Requirements

## Discuss

### ASTACSOP evasive maneuvers/threat reactions

## SLAP/EOTDA considerations specific to threat analysis

## ALE-47 operation to include current pre-emptive and reactive programs

Capabilities/limitations/weapons envelopes for IP selected RADAR and IR threat systems.

### Demonstrate/Introduce

## Tactical employment of PGMs versus preplanned and reactive targets in an EW environment

An entire RADAR threat missile engagement sequence with emphasis on system indications and function

Threat RADAR systems and their associated APR-39 indications.

### Pre-emptive and reactive expendables use against an IR threat

A preplanned attack against a RADAR or IR threat

### A reactive attack against a RADAR or IR threat

## Brevity calls

## ASTACSOP threat reaction calls

## Review

APR-39, AAR-47, and ALE-47 systems operation to include power up, BIT procedures, training mode and basic/manual operations

## APR-39, AAR-47, and ALE-47 system trouble shooting

## AFTTP 3-1 Threat Guide

APR-39/ALE-47 Quick Reference Guide

## ASTACSOP Threat Analysis Worksheet

## Performance Standards

Successfully operate (energize and BIT) APR-39, AAR-47, and ALE-47 systems.

Successfully select the ALE-47 training mode.

Given a threat, select an appropriate ALE MAG ID and program setting.

Correctly identify APR-39 threat system displays based on system visual/aural indications.

Prerequisites. 2200

Crew. WTO/PUI

<b>STCT-2202</b>	<b>1.5</b>	<b>365</b>	<b>B,R,S</b>	<b>(NS)</b>	<b>S/A</b>	<b>FFS/FTD TEN+</b>
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Goal. OS – Review ASE operation and introduce tactical employment of ASE versus RADAR and IR threat systems.

## Requirements

### Discuss

Capabilities/limitations/weapon envelopes of potential threat systems; (1) IR threat, (1) RADAR threat utilizing ASTACSOP Threat Analysis Worksheet as a guide.  
Terrain profile analysis and related tactical considerations  
TTPs to avoid detection/acquisition from enemy infrared guided and optically tracked systems  
EMCON levels, procedures, and their tactical employment  
COMSEC/TRANSEC

### Demonstrate/Introduce

How to plan a route in order to avoid a threat using mission planning software, threat overlays, SAFET, and WEZ analysis.  
In-flight plotting of threats using aircraft systems (threat overlays) and other available means (i.e. KILSWITCH, map, etc.).  
Use of aircraft systems to aid in threat avoidance (e.g. Threats, CLOS, intervisibility)

### Review

ASE operation  
Threat identification  
Appropriate threat reaction  
Tactical employment of PGMs versus preplanned and reactive targets in an IR SAM threat environment  
AFTTP 3-1  
ASE Quick Reference Guides  
ASTACSOP Threat Analysis Worksheet

## Performance Standards

Successfully operate (energize and BIT) APR-39, AAR-47, and ALE-47 systems.  
Given a threat, utilize the AFTTP 3-1, APR-39 QRG, and ALE-47 QRG to select an appropriate ALE MAG ID and program setting.  
Correctly identify APR-39 threat system displays based on system visual/aural indications.  
Correctly perform appropriate evasive maneuvers and expendable release in response to surface to air threat.  
Execute a preplanned attack against a RADAR or IR threat.  
Execute a reactive attack against a RADAR or IR threat.

Prerequisites. 2201, 2604~AC, 2302~NS

Ordnance. If flown in aircraft: (1) captive PGM, (60) chaff/flares

Range Requirement. EW range, LASER safe range

External Syllabus Support. Live fire range, remote RADAR emitter and IR stimulator support

Crew. WTO/PUI (NSI/PUI~NS)

### 2.9.4 Reconnaissance (REC)

Purpose. To develop proficiency in reconnaissance operations.

#### General

The PUI will demonstrate proficiency in aircraft system employment and sensor management for target detection, recognition and identification during reconnaissance operations.  
Aircraft shall be configured with an operable TSS, HMSD and VTR.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**GREC-2300    1.0    \*    B,S    (NS)    GE    1 AH-1Z**

Goal. RS - Introduce day visual reconnaissance.

## Requirements

Discuss

TSS switchology, components, and functions  
Mission grip functions  
Nominal Occular Hazard Distances (NOHD)  
Laser beam divergence  
Laser marksmanship and laser designator errors

Demonstrate/Introduce

VTR/DVR displays and functions  
Rate and position slewing  
MAQ, Active Track, Inertial Track  
Picture in Picture  
White hot vs black hot  
TSS cue and track modes  
TSS troubleshooting  
VTR/DVR playback  
FLIR gain and level

Performance Standards

Successfully operate (energize and boresight) TSS system.  
Successfully operate FLIR to include gain/level, man/auto, polarity and focus.  
Successfully record and play back VTR/DVR in FLIR and Color TV modes.  
Correctly describe LASER functions.  
Correctly perform auto track, offset, pre-point, source selection functions.

Prerequisites. 2031,2032

Crew. WTO/PUI

**SREC-2301    1.5    \*    B,S    D    S/A    FFS/FTD    TEN**

Goal. RS - Introduce day visual reconnaissance.

Requirements

Discuss

TSS switchology, components, and functions  
Mission grip functions  
Sensor Management  
Detect / Recognize / Identify  
Laser Beam Divergence  
Nominal Occular Hazard Distances (NOHD)  
Laser Marksmanship  
VTR/DVR functions and tactical use  
Basic Visual Reconnaissance techniques  
Commander's Critical Information Requirements (CCIRs)  
Traveling, traveling overwatch & bounding overwatch

Demonstrate/Introduce

VTR/DVR displays and functions  
MISREP/IFREP procedures  
Intelligence collection/dissemination procedures  
S-2 debrief

Performance Standards

Successfully operate (energize and boresight) TSS system.  
Successfully operate FLIR to include gain/level, man/auto, polarity and focus.  
Successfully record and play back VTR/DVR in FLIR and Color TV modes.  
Correctly describe LASER functions.  
Correctly perform auto track, offset, pre-point, source selection functions.

Prerequisites. 2300,(2100~AC)

Range Requirement. Authorized TERF area, LASER safe range

External Syllabus Support. Thermally augmented threat vehicles if available.

Crew. WTO/PUI

**REC-2302      1.5      180      B,R,S      NS      A      1 AH-1Z & 1 H-1**

Goal. RS - Introduce night visual reconnaissance procedures (HLL).

Requirements

Discuss

Section TERF maneuvering  
Use of sensor performance prediction tools

Demonstrate/Introduce

Traveling, traveling overwatch & bounding overwatch  
Use of sensor performance prediction tools  
Objective area holding techniques

Review

TSS switchology/components/functions  
Mission grip functions  
Sensor management  
Detect / Recognize / Identify  
Laser Beam Divergence  
Laser Marksmanship  
Basic Visual Reconnaissance techniques  
Commander's Critical Information Requirements (CCIRs)  
MISREP/IFREP procedures  
Intelligence collection and dissemination procedures

Performance Standards

Utilize the proper reconnaissance method to acquire detect, identify and recognize targets.  
PUI shall demonstrate proficiency with sensors and modes.  
PUI shall conduct reconnaissance, while demonstrating functional knowledge of recce techniques and proper use of the sensor.  
PUI shall use the VTR/DVR for debrief and mission analysis.

Prerequisites. 2101,2301

Range Requirement. Authorized TERF area, LASER safe range as applicable

External Syllabus Support. Thermally augmented threat vehicles if available

Crew. NSI/PUI

2.9.5      Specific Weapons Delivery (SWD)

Purpose. To introduce and develop proficiency in SWD and weapon systems employment.

General.

At the completion of this stage, the PUI will have demonstrated proficiency in ordnance delivery and proper use of the TSS under all threat conditions with mixed ordnance loads.

SWD should be conducted on rated/scored ranges whenever possible.

Focus should be on weapons delivery profiles and ordnance accuracy, not tactical scenarios.

PUI SHALL shoot rockets in all modes (CCRP-A,CCRP-M,CCIP) and 20mm in all modes (TSS,HMSD,Fixed) using both medium and low altitude delivery.

An **example** template for SWD events is listed below:

Medium altitude

CCRP-A

CCRP-A, quantity 3

2 x CCRP-M, laser source (shoot, adjust, shoot)

CCRP-M, geo source

2 x CCIP (shoot, adjust, shoot)

Low altitude

3 x CCIP (shoot, adjust, shoot)

Video debrief should be used to the maximum extent possible.

Emphasis will be on CRM and Risk Management while utilizing the ordnance systems.

Aircraft should be configured with an operable FLIR, PGM system, FMV, HMSD, VTR/DVR, APR-39, AAR-47, ALE-47 and IR Pointer (night events).

SWD-2609 (LLL Dive Delivery Ordnance) is not chained by any other event. In order to log SWD-2609, the pilot logging the code SHALL have been at the controls while conducting dive delivery of 2.75" rockets OR fixed forward 20mm.

Listed ordnance is required for initial (B,S,R) syllabus events. Refly for SWD dive delivery ordnance is a minimum of (4) 2.75" rockets or fixed forward 20mm. Refer to syllabus matrix for objective and threshold requirements.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>SSWD-2600</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S/A</b>	<b>FFS/FTD</b>	<b>TEN</b>
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Goal. OS – To introduce and develop proficiency using Hellfire missile system.

## Requirements

## Discuss

### Hellfire missile characteristics

### Pre/post-launch constraints symbology

### Timing/designation/delay options

### Cloud ceiling limitations

## J-LASER terminology

### Surface Danger Zones (SDZs)

Joint Munitions Effectiveness Manuals (JMEMs)/JMEMs Weaponneering System (JWS)

## Weaponneering considerations

## HMSD Symbology

## Introduce/Review

Hellfire operations in all modes and profiles (e.g. manual, LOBL, LOAL, hover, running, diving)

## 20mm delivery in TSS and HMSD modes

### Remote/buddy lase operations

## Performance Standards

Conduct the Arm/Dearm and the Penetration/After Firing checklist per AH-1Z NATOPS & TPG.

Demonstrate proper switchology during PGM engagements.

Engage and destroy point targets or armored threats in all modes IAW the AH-1Z NATOPS and AH-1Z NTTP. Engage and destroy three point targets utilizing HMSD and TSS modes of 20mm delivery.

Prerequisites. 2063,2065,2301 (2100~AC)

Ordnance. If flown in aircraft: (2) captive Hellfire

**Range Requirement.** Live fire range and LASER safe range

Crew. WTO/PUI

<b>SSWD-2601</b>	<b>1.5</b>	<b>180</b>	<b>B,R,S</b>	<b>D</b>	<b>S/A</b>	<b>FFS/FTD</b>	<b>TEN</b>
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Goal. OS – Review Hellfire and introduce APKWS.

Requirements

Discuss

- APKWS characteristics
- APKWS employment procedures
- LASER considerations
- APKWS weaponeering considerations
- APKWS aircrew coordination

Introduce/demonstrate. APKWS employment

Review. Hellfire employment

Performance Standards

- Successful employment of APKWS at ranges from 1500 – 5000 meters utilizing all profiles.
- Successful employment of multiple Hellfire against point targets utilizing a combination of delayed lase, shifting targets with missiles in flight and remote lasing.
- During at least one engagement PUI shall adhere to a TOT +/- 30 seconds.

Prerequisites. 2600

Ordnance. If flown in aircraft: (2) captive Hellfire, (2) 2.75 inch APKWS rockets, (300) rounds 20mm

Range Requirement. Live fire range and LASER safe range

Crew. WTO/PUI

**SWD-2602      0.1      730      B,R,S      (NS)      A/S\*      1 AH-1Z**

Goal. OS - To conduct a PGM shoot and develop 20mm proficiency.

Requirements

Discuss

- Target acquisition in the night environment
- Backscatter avoidance techniques
- Designation employment considerations/techniques
- Ordnance preflight procedures
- Hellfire related emergency procedures
- Missile firing reports/data required

Demonstrate/Introduce. Simulated missions to destroy point targets and armored threats.

Review

- Hellfire missile characteristics
- Hellfire missile switchology
- Laser interlocks and considerations
- Pre/post-launch constraints symbology
- Timing/designation/delay options
- J-LASER terminology
- Surface Danger Zones (SDZs)
- Joint Munitions Effectiveness Manuals (JMEMs)/JWS Weaponeering considerations
- 20mm delivery in TSS and HMSD modes

Performance Standards

- Successful live Hellfire missile engagement
- Proper missile selection, system bore sight, mode of delivery selection, LASER code
- Successful gun delivery with proper corrections

Prerequisites. 2100,2601,2101~NS,2302~NS

Ordnance. (1) live Hellfire, or (2) APKWS, or (1) JAGM, and (300) rounds 20mm, if refresh/series conversion, substitute (2) CATM-114.

Range Requirement. Live fire and LASER safe range



Crew. WTO(NSI)/PUI

**SSWD-2603      1.5      485      B,R,S      D      S      FFS/FTD TEN**

Goal. FS - To develop proficiency at specific weapons delivery (SWD).

Requirements

Discuss

Rocket and 20mm switchology  
Rocket and fixed 20mm range settings  
Rocket and 20mm trouble shooting considerations  
Section and Division attack patterns  
SOP ordnance procedures  
Target fixation  
CRM during ordnance evolutions  
Flechette rockets  
Illumination rockets  
AIM-9

Demonstrate/Introduce

Flechette rocket delivery profiles  
Illumination delivery profiles  
AIM-9 switchology and delivery

Review

Rocket and 20mm ordnance emergencies  
HMSD symbology  
20mm fixed forward and HMSD using running, pop-up, and diving fire  
Rocket delivery using pop-up, and diving fire per the NTTP utilizing both low altitude and medium altitude tactics.

Performance Standards.

Successful employment of the 20mm weapon system at ranges from 500-2000 meters.

Successful employment of 2.75 inch HE/Inert rockets at ranges from 500-2000 meters.

Prerequisites. 2061,2100,2301

Crew. WTO/PUI

**SWD-2604      1.5      485      B,R,S      D      A      1 AH-1Z**

Goal. FS - To develop proficiency at specific weapons delivery (SWD).

Requirements

Discuss

Engagement envelopes of 2.75 inch rockets  
Rocket and 20mm common switchology errors  
Rocket and fixed 20mm range settings  
Rocket and 20mm trouble shooting considerations  
SWD Error analysis  
CRM and intracockpit communication during ordnance evolutions

Review

Fixed forward turret fire performing a minimum of 4 attacks utilizing diving fire.  
Rocket delivery per NTTP profile.

Performance Standards.

Successful employment of the 20mm weapon system.

Successful employment of 2.75 inch rockets.

Prerequisites. 2603

Ordnance. (19) 2.75 inch rockets, (300) rounds 20mm

Range Requirement. Live fire and LASER safe range

Crew. WTO/PUI

**SWD-2605      1.5      180      B,R,S                      D      A      1 AH-1Z**

Goal. FS - To evaluate proficiency at specific weapons delivery (SWD).

Requirements

Discuss

Engagement envelopes of 2.75 inch rockets  
Rocket and 20mm common switchology errors  
Rocket and fixed 20mm range settings  
Rocket and 20mm trouble shooting considerations  
SWD Error analysis  
CRM and intracockpit communication during ordnance evolutions

Review

Fixed forward turret fire performing a minimum of 4 attacks utilizing diving fire.  
Rocket delivery per NTTP profile.

Performance Standards

Successful employment of the 20mm weapon system.  
  
Successful employment of 2.75 inch rockets.  
After completion of the 2000 phase the accuracy metric for this event is dependent upon the pilot's current designation.(e.g. AHC requires refl of SWD-2605 meeting the Mission Skills accuracy metric).

Prerequisites. 2604

Ordnance. (19) 2.75 inch rockets, (300) rounds 20mm

Range Requirement. Raked or scored range and LASER safe range

Crew. WTO/PUI

**SWD-2606      1.5      485      B,R,S                      HLL      A      1 AH-1Z**

Goal. FS - To develop proficiency at ordnance delivery (HLL).

Requirements

Discuss

Night ordnance delivery effects  
Rocket and 20mm common switchology errors  
IR LASER pointer usage and switchology  
CRM regarding target acquisition and hand-off (e.g. front-rear seat)  
Target/reticle fixation

Demonstrate/Introduce

Fixed forward and HMSD turret fire with IR Pointer  
Rocket delivery per NTTP using pop-up and diving profiles

Review

All ordnance emergencies  
SWD and error analysis

Performance Standards.

Successful employment of CCIP 2.75 inch rockets.  
  
Successful employment of HMSD 20mm gun.  
  
Successful employment of Fixed Forward 20mm gun.

Prerequisites. 2101,2302,2604

Ordnance. (19) 2.75 inch rockets, (300) rounds 20mm, (60) chaff/flares and IR Pointer

Range Requirement. Live fire range and LASER safe range with thermally significant targets if available

Crew. NSI/PUI

**SWD-2607      1.5      180      B,R,S      NS      A      1 AH-1Z**

Goal. OS - Refine night time ordnance dive delivery.

Requirements

Discuss

Night ordnance delivery effects  
Rocket and 20mm common switchology errors  
IR LASER pointer usage and switchology  
CRM regarding target acquisition and hand-off (i.e. front-rear seat)

Demonstrate. A RW CAS mission to include coordination with the terminal controller and section tactics.

Review

Fixed forward and HMSD turret fire with IR Pointer  
20mm delivery in TSS and HMSD modes  
Rocket delivery per NTP using pop-up and diving profiles  
All ordnance emergencies  
SWD and error analysis

Performance Standards.

Successful employment of CCRP 2.75 inch rockets.

Successful employment of TSS 20mm gun.

Prerequisites. 2606, (2608~LLL)

Ordnance. (19) 2.75 inch rockets, (300) rounds 20mm, (60) chaff/flares and IR Pointer.

Range requirement. Live fire range and LASER safe range with thermally significant targets if available

Crew. NSI/PUI

**SSWD-2608      1.5      485      B,R,S      NS      S      FFS/FTD TEN**

Goal. OS – Introduce dive delivery (LLL).

Requirements

Discuss

Penetration checklist procedures  
LLL target acquisition  
LLL ordnance delivery effects  
LLL ordnance delivery scan techniques  
Target/reticle fixation  
HMSD symbology and declutter modes  
Target handoff techniques  
Arming/Dearming procedures

Introduce. LLL ordnance delivery

Review

APKWS employment profiles and CRM  
Rocket and 20mm common switchology errors

IR LASER pointer usage and switchology  
CRM regarding target acquisition and hand-off (e.g. front/rear seat)  
Fixed forward and HMSD turret fire with IR Pointer  
Rocket delivery per ANTTP using pop-up and diving profiles  
Ordnance emergencies  
SWD and error analysis

Performance Standards

Conduct Arm/Dearm procedures and penetration checklists IAW ASTACSOP and local directives.  
Successful employment of the 20mm weapon system at ranges from 500-2000 meters and 2.75 inch rockets at ranges from 500-2000 meters, exhibiting proper impact detection and adjustment working towards core skill accuracy metric while adhering to all range regulations.  
Conduct proper actions in response to inflight ordnance emergencies.

Prerequisites. 2606,2802 (2102~AC)

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

Crew. NSI/PUI

**SWD-2609      1.5      180      B,R,S      LLL      A      2 H-1**

Goal. FS - Review ordnance dive delivery (LLL).

Requirements

Discuss

20mm ordnance nomenclature  
Rocket warhead/fuse combinations

Review

Rocket delivery per ANTTP using pop-up and diving profiles  
LLL target acquisition difficulties  
LLL ordnance delivery effects  
LLL scan techniques

Performance Standards

Conduct Arm/Dearm procedures and penetration checklists IAW ASTACSOP and local directives.  
Successful employment of the 20mm weapon system at ranges from 500-2000 meters and 2.75 inch rockets at ranges from 500-2000 meters, exhibiting proper impact detection and adjustment, working towards core skill accuracy metric while adhering to all range regulations.

Prerequisites. 2102,2607,2608,2802,2803.

Ordnance. (19) 2.75 inch rockets, (300) rounds 20mm, (60) chaff/flares and IR Pointer. If for refly/proficiency, (4) 2.75 inch rockets, (300) rounds 20mm.

Range Requirement. Raked or scored (if available), live fire, and LASER safe range

Crew. NSI/PUI

**SWD-2610      0.1      180      B,R,S      (NS)      A      1 AH-1Z**

Goal. OS – Refine 20mm TSS employment.

Requirement

Discuss

FOV selection IAW NTTP  
Sensor track considerations  
CRM while employing TSS 20mm  
20mm only attack profiles  
Unguided ordnance ballistics  
Attack profiles and geometry while engaging moving targets

Review

20mm common switchology errors  
20mm range settings  
20mm trouble shooting considerations

Performance Standards

Validate, using VTR, an effective engagement.  
Successful employment of TSS 20mm weapon system at ranges from 500-2000 meters.

Prerequisites. 2062,2100,2301, (2604~NS),(2606~LLL)

Ordnance. (500) rounds 20mm

Range Requirement. Live fire range and LASER safe range with thermally significant targets, if available

Crew. WTO(NSI)/PUI

2.9.6 Familiarization (FAM)

Purpose

To develop and maintain familiarity with aircraft flight characteristics, instrument flight procedures, limitations, and emergency procedures.  
To develop proficiency in all maneuvers and to instill basic CRM procedures.

General

PUI must demonstrate proficiency with all shore based FAM procedures to include normal/emergency procedures and basic aircraft maneuvers.  
PUI must display a thorough knowledge of limitations and flight characteristics.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**FAM-2800      1.5      90      B,R,S      (NS)      A      1 AH-1Z**

Goal. OS – Familiarization/instrument proficiency.

Requirements

Discuss

Aircraft limitations  
Emergency procedures  
Aircraft systems

Review. FAM stage maneuvers, instrument procedures

Performance Standards

PUI shall perform all maneuvers IAW AH-1Z NATOPs and MDG.

Prerequisites. 1901,2000

Crew. BIP(NSI)/PUI.

**SFAM-2801      1.5      90      B,R,S      (NS)      S/A      FFS/FTD TEN**

Goal. OS - Review aircraft emergency procedures and systems failures.

Requirements

Review. Emergency procedures

Performance Standards

Demonstrate the ability to operate the aircraft under all emergency conditions per AH-1Z NATOPS.

PUI shall complete a minimum of (5) autorotations IAW the AH-1Z NATOPS and MDG if executed in the AH-1Z FFS/FTD.

Prerequisites. 1901

Crew. CSI (BIP(NSI)/PUI~AC)

**SFAM-2802      1.5      \*      B      LLL      S      FFS/FTD      TEN**

Goal. OS - Perform NVD and aircraft emergency procedures during LLL conditions.

Requirements

Discuss

Crew comfort during LLL NVG operations  
Aircraft preparation for night operations  
NVD effects encountered during LLL conditions  
Use of the searchlight (covert/overt)  
LLL Emergency procedures considerations  
Inadvertent IMC (IIMC) procedures  
LLL scheduling restrictions  
Cockpit management during LLL operations

Introduce

Pattern work at lighted and unlighted landing sites  
NVD and aircraft emergency procedures at lighted and unlighted landing sites  
Inadvertent IMC (IIMC)

Performance Standards

PUI shall execute 5 landings at an unlighted site  
PUI shall execute 5 landings at a lighted site  
PUI shall execute 5 autorotations  
Safely conduct NVD and aircraft emergencies IAW NATOPS  
Demonstrate proper knowledge of IIMC procedures IAW ASTACSOP

Prerequisites. 2101

Crew. NSI/PUI

**FAM-2803      2.0      180      B,R,S      LLL      A      1 AH-1Z**

Goal. FS - Perform NVD low work, pattern work and navigation (LLL).

Requirements

Discuss

Map preparation  
Checkpoint selection  
Sensor integration during navigation  
Cultural lighting  
Aircraft external lighting configurations  
Mission card preparation

Introduce

Basic low work and pattern work at an unlighted field or remote landing site  
NVD navigation techniques

Performance Standards

PUI shall conduct 5 landings at an unlighted field or remote landing site free from artificial illumination  
PUI shall perform all FAM maneuvers IAW MDG and MAWTS-1 NVD manual.  
PUI shall plan, brief and navigate a route utilizing a 1:250,000 scale map consisting of a minimum of 5 checkpoints and 50 nautical miles remaining oriented within 1 NM of flight planned route, and 15 degrees of heading and arrive at final checkpoint within 1 minute of assigned time.  
Utilize TSS to aid in identifying checkpoints enroute

PUI shall not use the GPS for a minimum of 2 legs of the route

Prerequisites. 2302,2802

Crew. NSI/PUI

#### 2.9.7 Expeditionary Shore-based Site Operations (EXP)

Purpose. To introduce day and night flight and ground operations from an expeditionary shore-based site.

##### General

- An actual FARP or ADGR site is preferred but not required.
- IAW applicable directives, PUI will emphasize proper communication procedures, patterns, and aviation operations in a FARP environment.
- Squadrons may elect to simulate one of these environments at an outlying field, austere landing zone(s) or other appropriate landing sites.
  - o If simulating a FARP or ADGR site environment, emphasis should be placed in entry/exit and landing procedures/communications, and landing spot layout and markings.
- Refer to appropriate NATOPS, NTTP, ASTACSOP and Aircraft Refueling NATOPS Manual for FARP operations.
- Expeditionary Operations shall be flown in conjunction with any Core/Mission Phase event once prerequisites are complete.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>EXP-2900</b>	<b>0.1</b>	<b>180</b>	<b>B,R</b>	<b>D</b>	<b>A</b>	<b>1 AH-1Z</b>
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Goal. OS - Conduct Reduced Visibility Landings (RVL)

##### Requirements

###### Discuss

Reduced visibility landing profile and CRM  
Use of HMSD & hover aid graphic symbology during approach, landing and takeoff  
Recommended waveoff parameters and use of HMSD  
Landing zone selection criteria

###### Demonstrate/Introduce

Reduced visibility landings  
Waveoffs

Review. Landings to an unimproved landing site.

##### Performance Standards

PUI shall brief RVL profiles and CRM responsibilities for landing, takeoff, and waveoffs.  
PUI shall conduct a minimum of one (1) RVL approach.  
PUI shall conduct a minimum of one (1) reduced visibility takeoff.  
PUI shall conduct a minimum of one (1) waveoff.

Prerequisites. 2100

Crew. BIP/PUI

<b>EXP-2901</b>	<b>0.1</b>	<b>180</b>	<b>B,R,S</b>	<b>NS</b>	<b>A</b>	<b>1 AH-1Z</b>
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Goal. OS - Conduct NVD Reduced Visibility Landings (RVL)

##### Requirements

###### Discuss

Reduced visibility landing profile and CRM  
Use of HMSD & hover aid graphic symbology during approach, landing and takeoff

Recommended waveoff parameters and use of HMSD  
Landing zone selection criteria  
Aircraft lighting use  
Use of searchlight

Demonstrate/Introduce

NVD Reduced visibility landings  
Waveoffs

Review. Landings to an unimproved landing site.

Performance Standards

PUI shall brief RVL profiles and CRM responsibilities for landing, takeoff, and waveoffs.  
PUI shall conduct a minimum of one (1) RVL approach.  
PUI shall conduct a minimum of one (1) reduced visibility takeoff.  
PUI shall conduct a minimum of (1) waveoff.

Prerequisites. 2101,2900,2803~LLL

Crew. NSI/PUI

**EXP-2902      0.1      \*      B      D      A      1 AH-1Z**

Goal. OS - Conduct day Expeditionary Shore-based Site Operations (FARP).

Requirements

Discuss

FARP types  
FARP equipment  
FARP procedures and personnel  
Landing point markings  
Movement within the FARP  
Ordnance procedures  
FARP emergency procedures  
MMT communications/nets  
FARP OIC communications/nets  
ADGR platforms, equipment and capabilities

Introduce

Day FARP operations  
Inbound & outbound formations and approaches

Review. Landing procedures to an unprepared surface

Performance Standards

PUI shall conduct a FARP brief.  
PUI shall brief landing profiles and CRM responsibilities for landing, takeoff, and waveoffs.  
PUI shall conduct a minimum of one (1) landing and one (1) takeoff.  
PUI should conduct refueling if utilizing and actual FARP or ADGR site.

Prerequisites. 2090,2100

External Syllabus Support. Actual or simulated FARP (See EXP stage description for simulated FARP requirements).

Crew. BIP/PUI

**EXP-2903      0.1      180      B,R,S      NS      A/S\*      1 AH-1Z**

Goal. OS - Conduct NVD Expeditionary Shore-based Site Operations(FARP).

Requirements

Discuss

Night landing point markings



- Aircraft lighting
- FARP types
- FARP equipment
- FARP procedures and personnel
- Landing point markings
- Movement within the FARP
- Ordnance procedures
- FARP emergency procedures
- MMT communications/nets
- FARP OIC communications/nets
- ADGR platforms, equipment and capabilities
- Night FARP Midair Mishap (<https://portal.marinenet.usmc.mil/libdl.html?f=1483769DAF63>)

Demonstrate/Introduce . Night FARP operations

Review. Landing procedures to an unprepared surface

#### Performance Standards

PUI shall conduct a FARP brief, including night environment and NVD considerations.

PUI shall brief landing profiles and CRM responsibilities for landing, takeoff, and waveoffs.

PUI shall conduct a minimum of one (1) night landing and one (1) night takeoff.

PUI should conduct refueling if utilizing and actual FARP or ADGR site.

Prerequisites. 2090,2101

External Syllabus Support. Actual or simulated FARP (See EXP stage description for simulated FARP requirements).

Crew. NSI/PUI

## 2.10 MISSION PHASE (3000)

Purpose. To produce a mission skills proficient pilot with the airmanship, CRM, and systems and tactical knowledge to act as Pilot at the Controls or Pilot Not at the Controls in lead or wing aircraft position during execution of any HMLA Core MET under any lighting condition. Upon completion of the Mission phase, pilots should be proficient in Mission Essential Tasks.

General. Upon completion of the Mission phase, pilots may be designated Attack Helicopter Commander (AHC) and Forward Air Controller (Airborne) [FAC(A)].

Completion of the Core Phase and the ESC, CAS, STK, SCAR, and TRAP stages of the Mission Phase meet the requirements for the PUI to be eligible for the AHC designation.

Upon completion of the DESG-6398 event and refl of SWD-2605 meeting Mission Skills ordnance accuracy standards, and at the discretion of the squadron commanding officer a letter designating the PUI as an AHC shall be placed in the NATOPS jacket and APR.

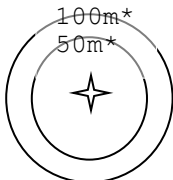
Completion of the FAC(A) stage and compliance with the JFAC(A) MOA meets the requirements for the PUI to be FAC(A) qualified. At the discretion of the squadron commanding officer a letter assigning the PUI as FAC(A) qualified shall be placed in the NATOPS jacket and APR.

Prior to completion of the Core Skills/Mission Skills Phase, Expeditionary Shore Based (EXP) Operations shall be conducted. Refer to paragraph 2.9.7 for sortie requirements. EXP-2900 through 2903 may be logged in conjunction with any Core or Mission Skills Phase event.

2.10.1 Ordnance Delivery. At the completion of this stage, the PUI will have demonstrated increased accuracy during ordnance delivery and proper use of the TSS under all threat conditions with mixed ordnance loads. At the completion of the OAS syllabus, prior to AHC (DESG-6398), the PUI shall refl SWD-2605 and will be required to meet the Mission Skills ordnance accuracy metric. SWD should be conducted on rated/scored ranges whenever possible. Focus should be on weapons delivery profiles and ordnance accuracy, not tactical scenarios. VTR debrief

should be used to the maximum extent possible. Emphasis will be on CRM and Risk Management while utilizing the ordnance systems.

IPs shall evaluate ordnance effectiveness based on the following accuracy metrics.

MISSION SKILLS	UNGUIDED ROCKET STANDARD	GUN STANDARD	PURPOSE
 <p>*RADIUS</p>	<p>-In correct profile per NTTP</p> <p>-No miss greater than 100 meters</p> <p>-CE90 ≤ 50 meters**</p> <p>-(1) rocket must impact within 10 meters</p>	<p>-On target within 3 seconds of trigger pull</p>	<p>-Based upon M151 Effective Casualty Radius (ECR)***</p> <p>-Demonstrates the ability to damage targets</p>

\*\* CE90 example: SWD-2605 requires (19) 2.75” rockets. CE90 ≤ 50 meters requires that 90% of the delivered rockets impact within 50 meters of the target. In order to calculate, simply disregard the worst 10% of rockets released and the remaining farthest SINGLE MISS DISTANCE = CE90. Conservative rounding is applied.

Examples:

- 3-10 rockets released ~ disregard one rocket, SECOND FARTHEST MISS = CE90
- 11-20 rockets released ~ disregard two rockets, THIRD FARTHEST MISS = CE90
- In no case can a single rocket miss the intended target by more than 100m, including the omitted rounds for CE90 calculation. This constitutes a failure to meet the performance standards

\*\*\* Effective Casualty Radii (ECRs) are generic distances intended to be applied versus the anticipated target set for a particular weapon, based primarily upon explosive yield and warhead/fuse characteristics. Variables to weapon effectiveness include target vulnerability and composition of underlying terrain. Weapons that impact the target vicinity at distances beyond the warhead’s ECR are predicted to be ineffective for target damage.

PGMs - Correct switchology, proper LASER placement, and profile IAW AH-1 NTTP for simulated employment. Live PGM employment must also achieve a direct hit.

TOTs – Initial ordnance impacts delivered within ± 30 seconds of established TOT.

During this phase, one of the night aircraft ordnance events shall employ (7) 2.75 inch Illumination rockets (i.e. M257/M278). Illumination employment shall be evaluated on effectiveness and account for wind, elevation, delivery and flight release parameters. SOTC-6900 shall be logged in conjunction with the appropriately flown sortie.

During this phase, one of the aircraft ordnance events shall employ (4) 2.75 inch Advanced Precision Kill Weapons System (APKWS) rockets. APKWS employment shall be evaluated on effectiveness, delivery and flight release parameters. SOTC-6901 shall be logged in conjunction with the appropriately flown sortie.

During this phase, one of the aircraft ordnance events shall employ (7) 2.75 inch flechette rockets. Flechette employment shall be evaluated on effectiveness, delivery and flight release parameters. SOTC-6902 shall be logged in conjunction with the appropriately flown sortie.

#### Mission Stages

MISSION (3000 Phase)		
STAGE	PARAGRAPH NUMBER	PAGE NUMBER
Academics (ACAD)	2.11.1	2-62
Escort (ESC)	2.11.2	2-62
Close Air Support (CAS)	2.11.3	2-66
Strike Coordination and Reconnaissance (SCAR)	2.11.4	2-70
Strike (STK)	2.11.5	2-72
Forward Air Controller (Airborne) [FAC(A)]	2.11.6	2-73
Tactical Recovery of Aircraft Equipment and Personnel (TRAP)	2.11.7	2-78

## 2.11 MISSION STAGES

### 2.11.1 Academics (ACAD)

**Purpose.** These academics facilitate understanding of operations in the AH-1Z and MAGTF level functions to ensure individuals possess the requisite knowledge to be designated Attack Helicopter Commander (AHC) and Forward Air Controller (Airborne) [FAC(A)].

**General.** These academics are intended to be an integrated series of academic lectures, readings and practical application contained within each phase of training. The lectures, readings and chalk-talks are contained in the MAWTS-1 AH-1 Course Catalog. The academic courseware is a requirement. At the completion of each ACAD event, the appropriate training code shall be logged in M-SHARP by the individual pilot, contract instructor or squadron operations personnel, as appropriate. The codes listed below associated with these classes may NOT be the most up to date as the current AH-1 Course Catalog is the master document for stage academic requirements.

MISSION ACADEMIC PHASE	
TRAINING CODES	COURSEWARE
GENERAL REQUIREMENTS	
ACAD-3000	Intelligence Support to Aviation
ACAD-3001	Problem Framing
ACAD-3002	ROE Planning
ACAD-3003	Execution Checklist
ACAD-3004	Objective Area Planning*
ACAD-3005	Rapid Response Planning
ACAD-3006	(S) Radar Guided Surface to Air Missiles
ACAD-3007	(S) Radar Theory
ACAD-3008	(S) IR SAM Threat to RW Aircraft*
ACAD-3009	(S) ADA Threat to RW Aircraft*
ACAD-3010	(S) Electronic Warfare
ACAD-3013	(S) Navigational Warfare
ESC	
ACAD-3011	(S) Assault Support Escort Tactics*
ACAD-3012	H-1 Escort TTPs
CAS/STK/SCAR	
ACAD-3031	Urban CAS*
ACAD-3032	Close Air Support
ACAD-3033	CAS Standardization*
ACAD-3034	(S) Weaponneering
ACAD-3035	HMLA AR and SCAR TTPs
TRAP	
ACAD-3038	(S) TRAP
FAC(A)	
ACAD-3041	FAC(A) Groundschool
ACAD-3042	JFAC(A) Courseware
ACAD-3043	FAC(A) TTPS*
MISSION SKILL	
ACPM-8300	ACPM 8300 Series

\*Indicates classes that are required annually.

### 2.11.2 Escort (ESC)

**Purpose.** To develop proficiency in prescribed airborne and surface escort formations and maneuvers.

**General.** The pilot will develop a detailed understanding and functional knowledge of escort formations, maneuvers and techniques associated with airborne and surface operations.

- **Live ordnance employment is required for at least one event in the escort stage.**
  - o If ordnance is utilized, the PUI shall have completed the Core Skills SWD flight corresponding to the appropriate ordnance load and event condition.
- Aircraft should be configured with an operable FLIR, VTR, FMV
  - o If ordnance is utilized, also APR-39, AAR-47, ALE-47, HMSD and IR Pointer
- **One of the four required flights in the ESC stage shall be flown as a pure element with 2 AH-1Zs.**

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**SESC-3100      1.5      \*      B,S      D      S      FFS/FTD TEN**

Goal. FS - Demonstrate and introduce day assault support escort mechanics and techniques.

Requirements

Discuss

Purpose of escort  
EFL responsibilities  
Categories of assault support  
Six missions of assault support escort  
Assault support escort techniques  
Advantages/disadvantages of escort techniques  
Escort patterns  
LZ clearance/coverage scan techniques  
Threat reaction and immediate action procedures  
Escort/assault support terminology  
Assault sectors of fire and escort/assault integration and deconfliction  
Tilt-rotor considerations

Demonstrate/Introduce

Escort/assault support mission planning  
Escort responsibilities  
Attached/detached/combined escort section mechanics  
En route escort section mechanics  
Objective area flow and communications with assault support aircraft  
LZ coverage patterns and ordnance delivery procedures  
Tactical employment of ordnance in close proximity to assault support aircraft enroute and in the LZ (objective area)

Performance Standards

PUI shall exhibit a thorough understanding of assault support escort responsibilities and assault support operations IAW the H-1 NTP and ASTACSOP.  
PUI shall be introduced to RW escort techniques and patterns.  
PUI shall conduct one line number sequence (created by IP) from the lead position and one from the dash two position.  
PUI shall demonstrate understanding of proper time space analysis for joining on an assault package of RW or TR assault support aircraft (both should be demonstrated if utilizing the simulator).  
PUI shall execute en-route attached escort and (1) pre-planned join-up with assault support aircraft  
PUI shall execute detached escort techniques  
PUI shall execute shuttle escort techniques  
Assault support aircraft shall execute (1) waveoff from the LZ  
PUI shall use correct terminology and techniques for LZ clearance and coverage IAW the ASTACSOP.

Prerequisites. 3011,3012,3300,2609,8200

Ordnance (Optional). (2) captive PGM, CATM-9 (if avail), (7) 2.75 inch rockets, (300) rounds 20mm, (60) Chaff/Flares

Range Requirements. Live fire and LASER safe range (if required)

External Syllabus Support. One or more assault support aircraft

Crew. WTO/PUI

**ESC-3101      1.5      \*      B      D      A      1 AH-1Z & 1 H-1**

Goal. OS - Demonstrate and introduce day assault support escort procedures in a low threat environment.

Requirements

Discuss

- EFL responsibilities
- Escort patterns
- LZ clearance/coverage scan techniques
- Fire support planning ISO LZ clearance and GCE ground tactical plan (GTP)
- LZ clearance procedures and communications
- Capabilities/employment of HELLFIRE during escort
- AIM-9 switchology and employment techniques
- Supporting arms coordination
- Fragmentation patterns
- Assault sectors of fire and escort/assault integration and deconfliction
- TRAP considerations and procedures

Demonstrate/Introduce

- Escort/assault support mission planning
- Objective area fires integration/deconfliction
- Objective area flow and communications
- LZ coverage patterns and ordnance delivery procedures
- Tactical employment of ordnance in close proximity to assault support aircraft enroute and in the LZ (objective area)

Performance Standards

- PUI should plan in conjunction with assault aircrew and GCE representatives.
- PUI shall exhibit a thorough understanding of escort responsibilities and assault support operations.
- PUI shall properly plan and employ escort assets in an objective area.
- PUI shall properly employ escort techniques and patterns for the assigned mission.
- PUI shall integrate fire support in an objective area (if required).
- PUI shall use correct terminology and techniques for LZ clearance and coverage.

Prerequisites. 3100

Ordnance (Optional). (2) captive PGM, CATM-9 (if avail), (7) 2.75 inch rockets, (300) rounds 20mm, (60) Chaff/Flares

Range Requirements. Live fire and LASER safe range (if required)

External Syllabus Support. One or more assault support aircraft

Crew. WTO/PUI

**ESC-3102      1.5      365      B,R      NS      A      1 AH-1Z & 1 H-1**

Goal. OS - Demonstrate and introduce night assault support escort in a low to medium threat environment.

Requirements

Discuss

- Night LZ clearance/coverage techniques and procedures
- Night escort techniques/procedures
- ASTACSOP assault support A/C lighting
- Night formation, lighting and threat detection
- AMC/AFL/EFL relationship
- Supporting arms coordination
- FLIR and IR pointer usage
- Assault support aircraft sectors of fire
- Escort/assault integration and deconfliction
- Fixed wing escort procedures
- Waveoff criteria and actions

Demonstrate/Introduce

- Night attached/detached escort procedures
- Tactical employment of ordnance in close proximity to assault support aircraft enroute and in the

LZ (objective area)  
LZ coverage and scan patterns  
ITG with IR pointer

Review

Ordnance delivery procedures with NVDs  
Escort responsibilities  
Attached/detached/combined escort  
Objective area fires integration  
Objective area flow and communications

Performance Standards

PUI shall conduct the EFL brief IAW the ASTACSOP AMC/AFL/EFL mission brief.  
PUI shall exhibit a thorough understanding of assault support escort responsibilities and assault support operations IAW the H-1 NTP and ASTACSOP.  
PUI shall properly plan for and employ escort assets in objective area.  
PUI shall conduct enroute attached escort of assault support aircraft.  
PUI shall properly employ escort techniques and patterns for the assigned mission.  
PUI shall integrate fire support in objective area (if required).  
PUI should utilize IR pointer for initial terminal guidance to LZ or to alert crews to a simulated enemy position.  
PUI shall use correct terminology and techniques for LZ clearance and coverage.

Prerequisites. 3101

Ordnance (Optional). (2) captive PGM, CATM-9 (if avail), (7) 2.75 inch rockets, (300) rounds 20mm, (60)chaff/flares

Range Requirements. Live fire and LASER safe range (if required)

External Syllabus Support. One or more assault support aircraft

Crew. NSI/PUI

**ESC-3103      1.5      485      B,R      (NS)      A/S      AH-1Z & 1 H-1**

Goal. OS - Introduce surface force escort operations in a low threat environment.

Requirements

Discuss

Surface force units needs  
Surface force escort procedures and techniques  
Escort profiles  
Terminal controller procedures and communications (enroute/objective)  
Non-JTAC qualified convoys  
PID and ROE considerations  
Tactical employment of ordnance in close proximity to surface vehicles  
HELLFIRE in support of GCE scheme of maneuver  
Ordnance fragmentation patterns  
Fire support planning/integration with the supported unit  
Fixed wing integration  
Escort fire support coordination  
Methods of escort, route and objective clearance/coverage techniques and procedures

Introduce

Route coverage patterns  
Targets of opportunity  
Actions in the objective area  
Ordnance delivery techniques and procedures

Performance Standards

PUI shall exhibit a thorough understanding of surface force escort responsibilities in support of the GCE

scheme of maneuver.

PUI shall properly plan and employ escort assets enroute and in objective area.

PUI shall properly employ escort techniques and patterns for the assigned mission.

PUI shall integrate fire support enroute and in the objective area(if required).

Prerequisites. 3300,2609

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (300) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range (if required)

External Syllabus Support. Device operator. Simulator should be linked with another H-1. If flown in aircraft, one ground/amphibious unit.

Crew. WTO(NSI)/PUI

### 2.11.3 Close Air Support (CAS)

Purpose. To develop procedures and skills to tactically employ the aircraft while conducting CAS missions under varying threat conditions.

#### General

Upon completion of this stage the pilot will be proficient in the planning, briefing and execution aspects of CAS missions.

In addition, the pilot will be proficient in the operation and employment of all organic weapon systems.

Aircraft should be configured with an operable FLIR, PGM system, HMSD, VTR/DVR, APR-39, AAR-47, ALE-47 and IR Pointer (night events).

Actual fixed wing aircraft, TACP, and indirect fire support assets should be incorporated to the maximum extent practicable, but in the event that support is not available, the IP can simulate these assets during the conduct of a sortie.

Initial (B,R,S) CAS-3303 events SHALL be conducted LLL with ordnance.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**SCAS-3300    1.5    \*    B,S    D    S    FFS/FTD    TEN**

Goal. RS - Introduce RW CAS missions in the daytime rural and urban environments in a low threat environment.

#### Requirements

##### Discuss

Execution Template IAW TACP TACSOP  
CAS check-in brief  
Nine line and five line attack briefs  
Battle position selection  
Plotting BPs/HAs  
Holding area selection  
Movement from HAs to BPs  
Objective area timing  
CRM and lookout doctrine in the tactical environment  
Day and night CAS considerations

##### Demonstrate/Introduce

CAS check-in brief  
9-line attack brief  
5-line attack brief  
IR CAS terminology and use  
Tactical RW CAS missions during both day and night  
TDC entry for attack briefs  
Move from a low to medium threat environment during the sortie utilizing CAS mission briefs with and without target marks

Plotting of threats using aircraft systems

Review. All ordnance delivery procedures and considerations

Performance Standards

PUI shall exhibit a thorough understanding of the CAS mission brief and standard fire support coordination measures used when providing RW CAS.

PUI shall conduct a minimum of six (6) RW CAS missions-utilizing guns, rockets and PGMs.

PUI shall demonstrate a detailed understanding and functional knowledge of all weapons systems, common trouble shooting techniques and delivery techniques.

Prerequisites. 2609,3000-3010,3013,3031,3032,3033,8200

Crew. WTO/PUI

**CAS-3301      1.5      180      B,R,S      D      A      1 AH-1Z & 1 H-1**

Goal. OS - Provide RW CAS to ground forces in a low threat environment.

Requirements

Discuss

Objective area timing  
Attack and cover elements  
AH-1Z weapons integration/synchronization with GCE assets and scheme of maneuver  
Friendly marking techniques/procedures  
Identification of friendly/enemy positions  
MACCS integration.

Demonstrate/Introduce

Tactical RW CAS missions utilizing CAS mission briefs  
Integration of attack helicopters into the ground scheme of maneuver  
Conduct CAS with and without a visual mark  
Conduct CAS in a low to medium threat environment  
Integration of FW CAS and indirect fire assets into objective area mechanics

Review

TDC entry for attack briefs  
Plotting of threats using aircraft systems  
Fire Support Coordination Measures  
Types of terminal attack control  
BP location  
HA to BP movement  
Ordnance delivery per NTTP  
CRM principles during RW CAS

Performance Standards

PUI shall utilize mission planning software to conduct elevation analysis and line of sight communications considerations.

PUI shall brief the objective area portion of the OAS brief.

PUI shall conduct all missions utilizing CAS procedures and communications.

PUI shall conduct a minimum of four (4) RW CAS missions utilizing CAS mission briefs.

PUI shall achieve the desired effects as stipulated by the terminal controller.

PUI shall ensure all missions are within 30 seconds of TOT during engagements or fall within the assigned engagement window.

Prerequisites. 3300

Ordnance. (2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets

External Syllabus Support. TACP (if available)



Crew. WTO/PUI

**CAS-3302      1.5      \*      B      NS      A      1 AH-1Z & 1 H-1**

Goal. RS - To provide RW CAS to ground forces at night in a low threat environment.

Requirements

Discuss

Night/IR marking methods  
IR CAS terminology and use  
Employment capabilities of the TSS  
Sensor management  
Terminal attack control procedures at night  
CRM during night RW CAS missions

Demonstrate/Introduce

Friendly position marking techniques and procedures  
Tactical RW CAS mission at night with NVDs utilizing CAS Mission briefs  
Conduct CAS in a medium threat environment.

Review

J-LASER terminology  
IR pointer usage  
Integration of attack helicopters into the ground scheme of maneuver  
Friendly marking techniques/procedures  
Identification of friendly/enemy positions  
Objective area timing

Performance Standards

PUI shall brief the objective area portion of the OAS brief.  
PUI shall conduct a minimum of four (4) NVD RW CAS missions utilizing CAS mission briefs.  
PUI shall conduct all missions utilizing CAS procedures and communications.  
IP shall ensure all attacks adhere to assigned attack brief parameters and restrictions.  
PUI shall achieve the desired effects as stipulated by the terminal attack controller.  
PUI shall ensure all missions are within 30 seconds of TOT during engagements or fall within assigned engagement window.  
PUI shall conduct 20mm TSS delivery in FLIR mode.  
IP shall validate, using VTR, an effective PGM engagement of a point target.

Prerequisites. 3301

Ordnance. (2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets.

External Syllabus Support. TACP (if available)

Crew. NSI/PUI

**CAS-3303      1.5      180      B,R,S      NS      A      1 AH-1Z & 1 H-1**

Goal. RS - Provide CAS to ground forces at night in a medium threat environment.

Requirements

Discuss

MACCS agencies and integration  
J-LASER terminology  
Elevation analysis and line of sight communications consideration as part of mission planning

Demonstrate/Introduce

Night CAS in a medium threat environment  
Integration of FW CAS and indirect fires assets into objective area mechanics

#### Performance Standards

- PUI shall brief objective area portion of OAS brief.
- PUI shall conduct a minimum of four (4) RW CAS missions utilizing CAS mission briefs.
- PUI shall conduct all missions utilizing CAS procedures and communications.
- PUI shall achieve the desired effects as stipulated by the terminal attack controller.
- PUI shall ensure all missions are within 30 seconds of TOT during engagements or fall within the assigned engagement window
- PUI shall utilize mission planning software to conduct elevation analysis and line of sight communications considerations.

#### Prerequisites. 3302

Ordnance. (2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets and TACP, if available.

Crew. NSI/PUI

**CAS-3304      1.5      365      B,R      (NS)      A/S      1 AH-1Z & 1 H-1**

Goal. RS – Review urban CAS in a low to medium threat environment.

#### Requirements

##### Discuss

- Urban terrain considerations
- Line of sight considerations for weapons and communications
- Weapon selection
- ROE/PID
- Collateral Damage Estimation (CDE)
- Gridded Reference Graphic (GRG)
- Laser spot/LGW considerations
- Urban threat considerations

Introduce/demonstrate . GRG usage

#### Performance Standards

- PUI shall brief objective area portion of the OAS brief.
- PUI shall receive, coordinate and execute a minimum of 4 RW CAS missions utilizing 5-line or 9-line attack briefs.
- PUI shall conduct urban targeting using a gridded reference graphic (GRG).
- PUI shall integrate with GCE maneuver and fire support plan.

Prerequisites. 3301,3302~NS,3303~LLL

Ordnance (Optional). (2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flare

Range Requirement. Live fire and LASER safe range if required, suitable urban environment or MOUT facility

External Syllabus Support. TACP with appropriate marking devices (if available)

Crew. WTO(NSI)/PUI.

#### 2.11.4 Strike Coordination and Reconnaissance (SCAR)

Purpose. To develop procedures and skills to tactically employ the aircraft while conducting Armed Reconnaissance (AR) and SCAR missions under varying threat conditions.

##### General

Upon completion of this stage the pilot will be proficient in the planning, briefing and execution aspects of AR and SCAR missions.

In addition, the pilot will be proficient in the operation and employment of all organic weapon systems.

Aircraft should be configured with an operable FLIR, PGM systems, HMSD, VTR/DVR, APR-39, AAR-

47, ALE-47 and IR Pointer (night events).

Actual fixed wing aircraft, MACCS agencies and indirect fire support assets should be incorporated to the maximum extent practicable, but in the event that support is not available, the IP can simulate these assets during the conduct of a sortie.

AR-3305 is annotated as an A/S sortie. If this event is an initial sortie for the PUI, and in the simulator, it SHALL be flown with a linked H-1 simulator for -2.

One of the three events amongst SCAR-3305, SCAR-3306, and STK-3307 SHALL be flown in the aircraft for initial/basic POI.

SCAR-3305 and SCAR-3306 may be done as a land based event or maritime based event, dependant upon squadron training objectives and resources available.

While ordnance is listed as optional for SCAR events, captive PGMs SHALL be carried on all flight events.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**SCAR-3305      1.5      365      B,R      (NS)      A/S      2 AH-1Z**

Goal. OS - Conduct armed reconnaissance in a low to medium threat environment.

Requirements

Discuss

- Primary purpose of AR
- AR Planning considerations
- Named Area of Interest (NAI)
- Target Area of Interest (TAI)
- Essential Fire Support Tasks (EFSTs)
- Attack Guidance Matrix
- Recce Points
- Intelligence Preperation of the Battlefield
- Adversary and Situation Templates
- Modified combined obstacle overlay (MCOO)
- High, medium, and low threat levels
- Threat radar planning considerations with the emphasis on mission planning systems
- Radar terrain masking
- Radar resolution cell (RRC)
- Global Area Reference System (GARS)
- MCRP 3-31.4 MTTP for Kill Box planning and employment
- Immediate and Delay Attacks
- Target Analysis Worksheets
- Air Operations in Maritime Surface Warfare (AOMSW)

Review

- IFREP/MISREP procedures
- Traveling, traveling overwatch, bounding overwatch procedures
- Intelligence collection and dissemination procedures

Performance Standards

PUI should give the entire OAS brief, but at a minimum shall brief the weaponeering portion of the OAS brief.

PUI shall demonstrate a basic knowledge of AR planning, execution and mechanics.

PUI should conduct 20mm weapons delivery utilizing HMSD.

PUI shall achieve successful destruction of targets of opportunity (TOO) utilizing correct weapons-to-target match and standard weapons delivery profiles.

IP shall validate, using the VTR/DVR, an effective PGM engagement of a point target.

PUI shall consolidate BDA and pass through appropriate MACCS channels.

Prerequisites. 3034,3035,3036,NSQ(LL)

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

Crew. WTO(NSI)/PUI

**SCAR-3306 1.5 365 B,R,S (NS) S/A 2 AH-1Z**

Goal. RS - Conduct a SCAR mission in a medium threat environment.

Requirements

Discuss

SCAR planning considerations  
Fixed Wing Stack Management  
Suppression of Enemy Air Defense (SEAD)  
Destruction of Enemy Air Defense (DEAD)  
Fixed Wing sensor capabilities  
Target Priority List (TPL)/Prioritized Target List (PTL)  
Joint Surveillance Target Attack RADAR System (JSTARS)  
Targeting process (F2T2EA)  
MACCS integration for deep battlespace operations  
Organic MAGTF EW capabilities/limitations  
IPB process  
Global Area Reference System (GARS)  
Kill boxes  
Air Operations in Maritime Surface Warfare (AOMSW)

Review

FSCMs  
MACCS  
ROE/PID considerations  
JMEMs/JWS  
Weapon to target match  
IFREP/MISREP procedures  
Traveling, traveling overwatch, bounding overwatch procedures  
Intelligence collection and dissemination procedures

Performance Standards

PUI shall conduct the OAS brief, with an emphasis on AR and SCAR gameplan.  
PUI shall demonstrate a basic knowledge of SCAR planning, execution and mechanics.  
PUI shall properly employ all ASE IAW AH-1Z NTRP.  
PUI shall achieve the desired effects (as stipulated by the mission objectives) on at least two (2) known targets with timely, accurate engagements with minimal exposure time as the SCAR while using proper weapons to target match.  
IP shall validate, using the VTR/DVR, an effective PGM engagement of a point target.  
PUI shall consolidate BDA and pass through appropriate MACCS channels.

Prerequisites. 3034,3035,3036,3305,NSQ(LLL)

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. RW or FW aircraft

Crew. WTO(NSI)/PUI

2.11.5 Strike (STK)

**Purpose.** To develop procedures and skills to tactically employ the aircraft while conducting Strike (STK) missions under varying threat conditions.

## General

Upon completion of this stage the pilot will be proficient in the planning, briefing and execution aspects of STK missions.

In addition, the pilot will be proficient in the operation and employment of all organic weapon systems.

Aircraft should be configured with an operable FLIR, PGM system, HMSD, VTR/DVR, APR-39, AAR-47, ALE-47 and IR Pointer (night events).

Actual fixed wing aircraft, MACCS agencies and indirect fire support assets should be incorporated to the maximum extent practicable, but in the event that support is not available, the IP can simulate these assets during the conduct of a sortie.

STK-3307 is annotated as an (NS) sortie. If this event is an initial sortie for the PUI, it SHALL be flown at night. Subsequent flights of this event can be flown day or night.

One of the three events amongst SCAR-3305, SCAR-3306, and STK-3307 SHALL be flown in the aircraft for initial/basic POI.

While ordnance is listed as optional for STK-3307, captive PGMs SHALL be carried in flight.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>STK-3307</b>	<b>1.5</b>	<b>365</b>	<b>B,R,S</b>	<b>(NS)</b>	<b>A/S</b>	<b>2 AH-1Z</b>
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**Goal. RS - Conduct a strike mission in a medium threat environment.**

## Requirements

## Discuss

- Primary purpose of STK
- STK planning considerations
- RADAR terrain task analysis
- ROE/PID considerations
- JMEMs/JWS
- Weapon to target match
- High, medium, and low threat levels
- FARP procedures

## Review

IFREP/MISREP procedures  
Traveling, traveling overwatch, bounding overwatch procedures  
Intelligence collection and dissemination procedures

## Performance Standards

PUI shall conduct the OAS brief.

PUI shall demonstrate a basic knowledge of STK planning, execution and mechanics.

PUI shall properly employ all ASE IAW H-1 NTTP/NTRP.

All attacks shall utilize planned routes, BPs, and FPs as applicable.

PUI shall achieve the successful destruction of selected known targets utilizing proper weapon to target engagements and weaponeering.

PUI shall achieve the desired effects (as stipulated by the mission objectives) with timely, accurate engagements with minimal exposure time

IP shall validate, using the VTR/DVR, an effective PGM engagement of a point target.

PUI shall consolidate BDA and pass through appropriate MACCS channels.

PUI shall ensure all missions are within 10 seconds of TOT.

Prerequisites. 3034,NSQ(LL)

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (300) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

Crew. WTO(NSI)/PUI

## 2.11.6 Forward Air Controller (Airborne) [FAC(A)]

Purpose. To qualify PUI as a FAC(A) in accordance with applicable directives.

### General

PUI shall be designated PQM (DESG-6300) to conduct FACA-3400, and AHC (DESG-6398) for all subsequent events. Nonqualified aircrew shall fly FACA-3401 through FACA-3405 with a FAC(A)I.

At the completion of this stage, the PUI should have demonstrated a thorough knowledge of CAS and FAC(A) procedures used to control RW and FW aircraft and supporting arms under varied environmental and threat conditions.

FAC(A) training requirements are listed in the most recent JFAC(A) MOA and the T&R Program Manual, Chapter 3. The JFAC(A) MOA can be found on the MAWTS-1 Webpage at:  
[https://mceits.usmc.mil/sites/mawts1/SitePages/JFAC\(A\).aspx](https://mceits.usmc.mil/sites/mawts1/SitePages/JFAC(A).aspx).

Upon successful completion of this stage and compliance with JFAC(A) MOA certification requirements, the commanding officer may issue the PUI a T&R FAC(A) qualification as well as a JFAC(A) MOA FAC(A) certification.

The JFAC(A) MOA dictates that specific control tasks (i.e. day/night, use of LTD/IR PTR, type of control, etc) be completed for certification. This T&R manual does not dictate on which events every control task requirement must be completed. Squadron operations staff and FAC(A)Is are therefore responsible for ensuring that PUI complete the required number of each control task IAW the current Joint FAC(A) MOA.

For T&R events not integrated with a live TACP, the FAC(A)I may simulate the TACP.

FAC(A)-3404 is annotated as an (NS) sortie. If this event is an initial sortie for the PUI, it SHALL be flown at night. Subsequent flights of this event can be flown day or night.

Two of the controls during the initial POI shall be under contested/highly contested conditions. A “contested/highly contested” control is defined as a control where the target area threat level dictates that the FAC(A) and/or attacking aircraft must use threat counter-tactics, countermeasures, or maintain stand-off prior to the target attack run. The FAC(A) must use a tactical scenario which requires a full 9-line CAS attack brief (IP to target area).

In order to ensure compliance with the JFAC(A) MOA qualification standards, FAC(A)s shall complete a FAC(A) evaluation/assessment (FAC(A)-3405) every 24 months and a standardized ATF shall be written by the supervising FAC(A)I. ***The initial FAC(A) Evaluation (FAC(A)-3405) should be completed and logged in conjunction with the FAC(A)-3404.*** FAC(A)s shall lose their qualification if they fail the recurring evaluation or if their evaluation period lapses. In order to regain qualification, FAC(A)s shall meet the T&R and the JFAC(A) MOA requirements as well as complete a subsequent re-evaluation under the supervision of a FAC(A)I.

Aircrew who have lost the FAC(A) qualification due to failure to meet JFAC(A) MOA currency requirements shall regain the FAC(A) qualification by successfully completing events as delineated in the appropriate T&R syllabus under the supervision of a current and qualified FAC(A) or FAC(A)I. At a minimum, such aircrew must complete the number and category (appropriate night, control type, ordnance, etc.) of control tasks the individual failed to accomplish during the appropriate six-month currency period (reference the current JFAC(A) MOA). Aircrew that are less than 6 months non-current must accomplish these control tasks under the supervision of a qualified FAC(A) while aircrew that are greater than 6 months non-current must accomplish these control tasks under the supervision of a FAC(A)I.

Aircrew who have lost the FAC(A) qualification due to exceeding the reflly interval in all associated qualification events, or who have been FAC(A) unqualified for 24 consecutive months per the JFAC(A) MOA, shall regain qualification by completing the refresher FAC(A) syllabus under the supervision of a FAC(A)I IAW the current JFAC(A) MOA.

The FFS/FTD SHALL be operated by a WTO or FAC(A) from the command post (not from a crew seat). Where a S-TEN+ is specified the IP may simulate the man in the loop. A co-pilot SHALL be required for CRM purposes and cockpit management.

The JFAC(A) MOA states that “During initial certification and requalification, when instructing FAC(A) trainees or unqualified FAC(A)s in live terminal attack control, the instructor will be physically located within the

flight and be able to take control of the mission, if necessary.” As such, conducting T&R FAC(A) events cross-cockpit is authorized with the following exceptions. Conducting all T&R FAC(A) events cross-cockpit is not authorized; at least one event (FACA-3401 through FACA-3404) shall be conducted with a FAC(A)-I in the same cockpit. The initial FACA-3405 evaluation sortie shall be flown with the FAC(A)-I in the same cockpit. FAC(A)-3405 reflly should be flown with the FAC(A)-I in the same cockpit.

If a FAC(A) sortie is flown with a FAC(A)I and PUI, and terminal attack control is conducted by PUI, credit for each control will go to both pilots. Also, if the crew consists of two FAC(A) proficient, qualified pilots, both shall receive control credit.

Aircraft should be configured with an operable FLIR, CLDR, HMSD, VTR and IR Pointer (night events).

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**FACA-3400 1.5 365 B,R (NS) A/S\* 1 AH-1Z**

Goal. RS - Introduce indirect fire supporting arms control.

Requirements

Discuss

CFF parts and elements  
Suppression of Enemy Air Defenses (SEAD)  
LASER call for fire procedures  
Ground Delivered Illumination  
Marine Indirect Fire asset organization  
Capabilities and limitations of indirect fire assets  
Naval Surface Fire Support (NSFS) capabilities, limitations and employment  
Integration of Indirect Fires with CAS Assets in support of the GCE SOM  
Appendix 19 to Annex C – Fire Support  
Fire Support Coordination Measures  
Airspace Control Measures

Introduce. Call for fire procedures

Performance Standards

PUI shall demonstrate a basic knowledge of indirect fire support planning, preparation and execution.

PUI shall conduct a minimum of three (3) fire missions, one (1) of which shall be an adjust fire mission, one (1) shall be a SEAD mission, and one (1) shall be an immediate suppression mission.

PUI shall achieve desired effects (destroy, neutralize or suppress) on selected targets.

Prerequisites. 3041,3042,6300

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (300) rounds 20mm (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. One (1) indirect fire asset with eight (8) rounds

Crew. WTO(NSI)+FAC(A)/PUI

**SFACA-3401 1.5 485 B,R D S/A FFS/FTD TEN**

Goal. RS – Introduce control of RW aircraft.

Requirements

Discuss

RW CAS and FAC(A) aircraft capabilities, limitations and employment  
FAC(A) Capabilities / FAC(A) Duties and Responsibilities per JFAC(A) MOA  
Use and submission of the Joint Tactical Airstrike Request (JTAR)  
CAS specific Rules of Engagement, Proportional Response and Collateral Damage Considerations  
Marine and Joint Command and Control Structure and impact on CAS/FAC(A) planning  
Types of Terminal Attack Control, methods of attack and their application to RW CAS assets

Target marking considerations for RW CAS assets  
RW FAC(A) Crew coordination  
Task shedding/sharing in the FAC(A) environment  
FAC(A) game-plan  
Section mechanics in support of FAC(A)  
JFAC(A) MOA certification and qualification requirements and applicable definitions  
JFAC(A) MOA CAS Mission Profile

Introduce

Integration of RW CAS assets into objective area mechanics  
RW communication and control procedures.  
LASER designation for laser guided weapons

Performance Standards

IP shall demonstrate a FAC(A) Gameplan that supports the event scenario  
PUI shall demonstrate basic knowledge of planning, briefing and execution IAW USMC TACPSOP.  
PUI shall deliver a minimum of two (2) RW 9-Line CAS attack briefs.

Prerequisites. 3041,3042,3043,6398

Ordnance. (2) Captive PGM, (7) 2.75 inch RP rockets, (300) rounds 20mm

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. (2) RW CAS aircraft with ordnance and Ground Maneuver Unit with TACP (If conducted in aircraft).

Crew. FAC(A)/PUI (FAC(A)/PUI/Copilot~SIM)

**FACA-3402      1.5      485      B,R      D      A/S\*      1 AH-1Z**

Goal. RS – Introduce control of FW aircraft.

Requirements

Discuss

FW CAS aircraft ordnance capabilities, limitations and employment  
Marine and Joint UAS capabilities, limitations and employment  
Effects of weather, terrain and threat on FW CAS assets and RW FAC(A)  
Types of Terminal Attack Control, methods of attack and their application to FW CAS assets  
Airspace Control Order (ACO), Air Tasking Order (ATO) and impact on CAS/FAC(A) planning  
Laser guided, sensor guided, coordinate dependant and non-precision weapons deliveries  
Target location procedures in support of CAS  
Target marking considerations for FW CAS assets  
SEAD in support of FW CAS attacks  
FAC(A) CRM

Introduce

Integration of FW CAS assets  
FW LASER designation for Hellfire setup and execution  
RW LASER designation for LST/LGB setup and execution  
Objective area mechanics  
Communication and control procedures

Review

Task shedding/sharing in the FAC(A) environment  
FAC(A) gameplan  
Section mechanics in support of FAC(A)

Performance Standards

PUI shall brief a FAC(A) game plan.  
PUI shall demonstrate a basic knowledge of FW CAS aircraft planning, preparation and execution.  
PUI shall utilize a minimum of two (2) 9-Line CAS attack briefs.

Prerequisites. 3041,3042,3043,6398



Ordnance. (2) Captive PGM, (7) 2.75 inch RP rockets, (300) rounds 20mm

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. 2 FW CAS aircraft with ordnance and Ground Maneuver Unit with TACP (If conducted in aircraft).

Crew. FAC(A)/PUI

**SFACA-3403 1.5 485 B,R NS S/A FFS/FTD TEN+ 1 AH-1**

Goal. RS – Introduce control of FW/RW aircraft at night in an Urban Environment.

Requirements

Discuss

- Effects of weather, terrain and threat at night to FW CAS assets and RW FAC(A)
- Ground and aviation delivered illumination in support of CAS
- Urban terrain considerations
- Line of sight considerations for weapons, aircrew, and communications
- Laser spot/LGW considerations
- Weapon selection in an Urban Environment
- ROE/PID
- Collateral Damage Estimation (CDE)
- Gridded Reference Graphic (GRG)
- Urban threat considerations
- AC-130 integration and Call For Fire
- Night FAC(A) coordination within the flight and intracockpit

Introduce.

- FAC(A) GRG usage.
- FAC(A) control at night
- FAC(A) control in the Urban Environment

Review

- FW CAS aircraft sensor capabilities, limitations and employment
- FW aircraft ordnance capabilities, limitations and employment
- Marine and Joint UAS capabilities, limitations and employment
- Types of Terminal Attack Control, methods of attack and their application to CAS assets
- Laser guided, sensor guided, coordinate dependant and non-precision weapons deliveries
- Target marking considerations
- FAC(A) crew coordination
- Task shedding/sharing in the FAC(A) environment
- Integration of FW and RW CAS assets
- Objective area mechanics
- Communication and control procedures
- SEAD in support of CAS attacks

Performance Standards

- PUI shall brief a FAC(A) gameplan.
- PUI shall demonstrate a basic knowledge of FW/RW CAS aircraft planning, preparation, execution and night considerations.
- PUI shall conduct a minimum of four (4) FW controls and (4) RW controls.
- PUI shall conduct one coordinated attack that integrates FW and RW fires.
- PUI shall utilize a minimum of (2) 9-Line CAS attack briefs.

Prerequisites. 3401, 3402

Ordnance. (2) Captive PGM, (7) 2.75 inch RP rockets, (300) rounds 20mm

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. (2) FW CAS and (2) RW CAS aircraft with ordnance and Ground Maneuver Unit with TACP (If conducted in aircraft).

Crew. FAC(A)/PUI/Copilot (FAC(A)/PUI~Aircraft)

**FACA-3404 1.5 365 B,R (NS) A/S\* 1 AH-1Z & 1 H-1**

Goal. RS – Review FAC(A) and the use of supporting arms and their integration in support of GCE SOM.

Requirements

Discuss

Fire Support planning documents (Appendix 19, target list worksheet, scheduling worksheet)  
Target acquisition via aided or unaided vision or remote observer  
Integration of air and surface fires in support of the Ground Scheme of Maneuver  
Weaponing process for RW, FW and UAS ordnance and weapon to target match  
Integration of digital systems (VMF, Link-16, etc...)  
MISREP and BDA assessment

Review

Discussion items from previous FAC(A) flights  
Integration of multiple fire support assets (FW, RW, UAS, IDF)  
Objective area mechanics  
Communication and control procedures

Performance Standards

PUI shall brief a FAC(A) game plan that supports the GCE SOM.  
PUI shall demonstrate sound knowledge of FW and RW CAS aircraft planning, preparation, and execution.  
PUI shall integrate and conduct FAC(A) with multiple assets in support of the GCE SOM during a dynamic scenario.  
PUI shall utilize a minimum of two (2) 9-Line CAS attack briefs.

Prerequisites. 3400, 3403

Ordnance. (2) Captive PGM, (7) 2.75 inch RP rockets, (300) rounds 20mm

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available.

External Syllabus Support. (2) FW CAS aircraft with ordnance, (2) RW aircraft with ordnance (separate from flight), and Ground Maneuver unit with TACP.

Crew. FAC(A)/PUI

**SFACA-3405 1.5 730 B,R,S (NS) S/A FFS/FTD TEN+**

Goal. OS – FAC(A) Evaluation – Emphasis shall be placed on the use of all available supporting arms and their integration in support of the GCE SOM.

Requirements

Discuss

JFAC(A) MOA currency requirements  
Any JMT listed in the FAC(A) MOA JMTL

Review

Discussion items from previous FAC(A) flights  
Integration of multiple fire support assets (FW, RW, UAS, IDF)  
Objective area mechanics  
Communication and control procedures

Performance Standards

PUI shall brief a FAC(A) game plan that supports the GCE SOM.  
PUI shall demonstrate sound knowledge of FW and RW CAS aircraft planning, preparation, and execution.  
PUI shall integrate and conduct FAC(A) with multiple assets in support of the GCE SOM during a dynamic scenario.

Prerequisites. 3400, 3403

Ordnance. (2) Captive PGM, (7) 2.75 inch RP rockets, (300) rounds 20mm

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available.

External Syllabus Support. (2) FW CAS aircraft with ordnance, (2) RW aircraft with ordnance (separate from flight), and Ground Maneuver unit with TACP.

Crew. FAC(A)I/PUI/Copilot (FAC(A)I/PUI~Aircraft)

#### 2.11.7 Tactical Recovery of Aircraft and Personnel (TRAP)

Purpose. To develop procedures and skills to tactically employ the aircraft while conducting TRAP missions under varying threat conditions.

General.

Upon completion of this stage the pilot will be proficient in the planning, briefing and execution aspects of TRAP missions.

In addition, the pilot will be proficient in the operation and employment of all organic weapon systems.

Aircraft should be configured with an operable FLIR, PGM system, CLDR, HMSD, VTR, APR-39, AAR-47, ALE-47 and IR Pointer (night events).

Actual fixed wing aircraft, ground recovery forces, and indirect fire support asset should be incorporated to the maximum extent practicable, but in the event that support is not available, the IP can simulate these assets during the conduct of a sortie.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>TRAP-3500</b>	<b>1.5</b>	<b>365</b>	<b>B,R,S</b>	<b>(NS)</b>	<b>A/S</b>	<b>1 AH-1Z &amp; 1 H-1</b>
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Goal. OS - Conduct a TRAP in a low to medium threat environment.

Requirements

Discuss

- JPRC and PRCC functions
- TRAP launch criteria
- Joint PR execution brief (PR 15-line)
- Survivor location and authentication
- ISOPREP data and procedures for authentication
- CSAR SPINS
- SARDOT
- Plotting BULLSEYE/SARDOT cuts using aircraft systems
- SARNEG
- TRAP zones
- GCE TRAP force composition
- Fire support coordination
- ASTACSOP TRAP matrix
- ASTACSOP TRAP template

Introduce

- Isolated person authentication
- CSAR SPINS application

Review

- Escort/assault support mission planning
- Escort responsibilities
- Attached/detached/combined escort
- Objective area fires integration
- Objective area flow and communications

Performance Standards

PUI shall give the EFL portion of the AMC brief.

- PUI shall properly plan for and employ escort assets in objective area.
- PUI shall utilize CSAR SPINS and ISOPREP data to properly authenticate downed aircrew.
- PUI shall properly employ escort techniques and patterns for the assigned mission.
- PUI shall integrate fire support assets in objective area.
- PUI shall use correct terminology and techniques for LZ clearance and coverage.

Prerequisites. 3038,3100,3102~NS

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (300) rounds 20mm (60) chaff/flares

Range Requirements. Live fire and LASER safe range (if required)

External Syllabus Support. One or more external assault support aircraft or one ground/amphibious unit (minimum three vehicles)

Crew. WTO(NSI)/PUI

## 2.12 CORE PLUS PHASE (4000)

Purpose. To certify the PUI in large scale integrated mission events, events having unique mission tasking, events having a low probability of execution in combat, are theater specific, and/or are relatively high-threat events.

General. Upon completion of each individual stage, the pilot will be considered Core Plus/Mission Plus proficient in that stage.

Completion of TERFQ, DACM-4300, DACM-4301, DACM-4302, and DACM-4303 meets the requirements for the PUI to be RWDACM qualified.

At the discretion of the squadron commanding officer a letter assigning the PUI as RWDACM qualified shall be placed in the NATOPS jacket and APR.

Completion of DACM-4304 and DACM-4305 meets the requirements for the PUI to be FWDACM qualified. At the discretion of the squadron commanding officer a letter assigning the PUI as FWDACM qualified shall be placed in the NATOPS jacket and APR.

Completion of SCBRN-4400 meets the requirements for the PUI to be CBRN qualified. At the discretion of the squadron commanding officer a letter assigning the PUI as CBRN qualified shall be placed in the NATOPS jacket and APR.

The SEA stage consists of FCLP, Day CQ, Night CQ, and NVD CQ. Completion of these individual events meets the requirements for the PUI to be Carrier Qualified in the respective environmentals. At the discretion of the squadron commanding officer a letter assigning the PUI as Day, Night, and NVD Carrier Qualified shall be placed in the NATOPS jacket and APR.

Ordnance Delivery. At the completion of this phase, the PUI will have demonstrated increased accuracy during ordnance delivery and proper use of the FLIR under medium to high threat conditions with mixed ordnance loads. For the Core Plus Phase, the PUI shall meet the ordnance metrics outlined for the Mission Phase. VTR debrief should be used to the maximum extent possible. Emphasis will be on CRM and Risk Management while utilizing the ordnance systems.

### Phase Overview

CORE PLUS (4000 Phase)		
STAGE	PARAGRAPH NUMBER	PAGE NUMBER
Academics (ACAD)	2.13.1	2-80
Escort (ESC)	2.13.2	2-80
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## 2.13 CORE PLUS STAGES

### 2.13.1 Academics

**Purpose.** To develop a Core Plus Skill complete pilot. These academics facilitate understanding of higher threat operations in the AH-1Z and MAGTF/Joint level functions to ensure individuals possess the requisite knowledge to execute large scale integrated mission events, unique mission tasking, events having a low probability of execution in combat, are theater specific and/or are relatively high-threat events.

**General.** These academics are intended to be an integrated series of academic lectures, readings and practical application contained within each phase of training. The lectures, readings and chalk-talks are contained in the MAWTS-1 AH-1 Course Catalog. The academic courseware is a requirement. At the completion of each ACAD event, the appropriate training code shall be logged in M-SHARP by the individual pilot, contract instructor or squadron operations personnel, as appropriate. The codes listed below associated with these classes may NOT be the most up to date as the current AH-1 Course Catalog is the master document for stage academic requirements.

CORE PLUS ACADEMIC PHASE	
TRAINING CODES	COURSEWARE
DACM	
ACAD-4030	DACM Planning Considerations
ACAD-4031	DACM Parts 1-4
ACAD-4032	DACM Example RW Flight Brief
ACAD-4033	(S) RW Threat to the MAGTF
ACAD-4034	(S) Attack Helo Threat to RW A/C
ACAD-4035	(S) FW Threat to the MAGTF
ACAD-4036	(S) FW Threat to RW A/C
CQ	
ACAD-4060	Intro to Shipboard Operations
ACAD-4061*	(S) HMLA Sea-Based Operations
*Indicates classes that should be presented to all pilots annually.	

### 2.13.2 Escort (ESC)

**Purpose.** To refine proficiency in escort missions.

#### General

At the completion of this stage, the PUI will have demonstrated the ability to plan, brief, and integrate multiple assets and fires in the execution of escort missions under varied environmental and higher threat conditions.

Aircraft should be configured with an operable FLIR, PGM system, CLDR, FMV, HMSD, VTR, APR-39, AAR-47, ALE-47 and IR pointer (night events).

**Crew Requirements.** As listed at the end of each event.

**Ground/Academic Training.** IAW the MAWTS-1 AH-1 Course Catalog.

**ESC-4200      1.5      730      B,R      (NS)      A/S      2 AH-1Z**

**Goal.** OS - Refine armed escort responsibilities during assault support operations in a medium threat environment.

#### Requirements

##### Discuss

LZ clearance procedures and communication  
Threat reaction and immediate action procedures  
Capabilities/employment of HELLFIRE during escort  
AIM-9 switchology and employment techniques

##### Review

Escort/assault support mission planning  
Escort responsibilities  
Attached/detached/combined escort  
Objective area fires integration  
Objective area flow and communications

#### Performance Standards

PUI shall plan, brief and lead an armed Escort mission in a contested and degraded environment, against medium to high threats, including comm and GPS denial/degradation.

PUI shall correctly react to one (1) or more simulated enroute threats to the assault flight IAW ASTACSOP.

PUI shall develop and execute a fire support plan during the initial assault wave.

PUI shall integrate fire support assets in the objective area.

PUI shall use correct terminology and techniques for LZ clearance and coverage.

Prerequisites. 6498

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (300) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. 2 or more assault support aircraft

Crew. WTI/PUI

### 2.13.3 Close Air Support (CAS)

Purpose. To refine proficiency in Close Air Support missions.

#### General

At the completion of this stage, the PUI will have demonstrated the ability to plan, brief and execute a CAS mission and deliver accurate and timely fires under varied environmental and higher threat conditions.

Aircraft should be configured with an operable FLIR, PGM system, CLDR, HMSD, VTR, FMV, APR-39, AAR-47, ALE-47 and IR Pointer (night events).

Actual fixed wing aircraft, TACP, and indirect fire assets should be incorporated to the maximum extent practicable, but in the event that support is not available, the IP can simulate these assets during the conduct of a sortie.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>CAS-4201</b>	<b>1.5</b>	<b>730</b>	<b>B,R</b>	<b>(NS)</b>	<b>A/S</b>	<b>2 AH-1Z</b>
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Goal. OS – Conduct CAS in a medium to high threat environment.

#### Requirements

##### Discuss

- Aircraft flight profiles
- Weapon selection
- Organic MAGTF EW capabilities and limitations
- RADAR Terrain Mask Analysis
- Assault support escort considerations
- Preemptive expendables use
- SEAD/DEAD employment
- GCE SOM integration
- Fires Synchronization Meeting/Combined Arms Rehearsal
- FAC(A) gameplan in high threat environment
- Contested degraded operations

##### Review

- J-LASER terminology
- IR pointer usage
- Friendly marking techniques/procedures
- Identification of friendly/enemy positions
- Objective area timing

#### Performance Standards

PUI shall plan, brief and lead a CAS mission in a contested and degraded environment, against medium to high threats, including comm and GPS denial/degradation.

PUI shall receive, coordinate and execute a minimum of four (4) RW CAS missions utilizing 5-line or 9-line attack briefs.

PUI shall execute a detailed fire support plan with ground force maneuver.

PUI shall conduct a minimum of two (2) non-permissive RW CAS missions utilizing CAS mission briefs.

PUI shall conduct all missions utilizing CAS procedures and communication.

PUI shall achieve the desired effects as stipulated by the terminal controller.

PUI shall ensure all missions are within 30 seconds of TOT during engagements or fall within the assigned engagement window

IP shall validate IDF accuracy and procedures using VTR.

Prerequisites. 6498

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares.

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. JTAC with appropriate marking devices (if available)

Crew. WTI/PUI

#### 2.13.4 Strike Coordination and Reconnaissance (SCAR)

Purpose. To refine proficiency in Strike Coordination and Reconnaissance missions.

## General

At the completion of this stage, the PUI will have demonstrated the ability to plan, brief, and integrate multiple assets and fires in the execution of SCAR missions under varied environmental and higher threat conditions.

Aircraft should be configured with an operable FLIR, PGM system, HMSD, VTR/DVR, APR-39, AAR-47, ALE-47 and IR Pointer (night events).

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>SCAR-4205</b>	<b>1.5</b>	<b>730</b>	<b>B,R</b>	<b>(NS)</b>	<b>A</b>	<b>2 AH-1Z</b>
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Goal. OS - Conduct an Armed Reconnaissance mission in a medium to high threat environment.

## Requirements

## Discuss

## Threat RADAR planning considerations

RADAR terrain masking and RADAR resolution cell (RRC)

## Global Area Reference System (GARS) & Kill boxes

### Named Areas of Interest (NAI)

### Target Areas of Interest (TAI)

### Modified Combined Obstacle Overlay (MCOO)

High Value Target List (HVTL), High Payoff Target List (HPTL), Target Priority List (TPL),

Reactive Attack Guidance Matrix (RAGM).

## Joint Surveillance Attack Target RADAR System (JSTARS)

## National imagery assets

## UAS/ISR integration

## Review

## IFREP/MISREP procedures

## Intelligence collection and dissemination procedures

## Battle Damage Assessment(BDA)

### Performance Standards

PUI shall plan, brief and lead an Armed Reconnaissance mission in a contested and degraded environment, against medium to high threats, including comm and GPS denial/degradation.

PUI shall achieve successful destruction of targets of opportunity (TOO) utilizing correct weapon to target match and standard weapons delivery profiles.

IP shall validate, using the VTR, an effective PGM engagement of a point target.

PUI shall consolidate BDA and pass through appropriate MACCS channels.

Prerequisites. 6498

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

Crew. WTI/PUI

**SCAR-4206    1.5    730    B,R    (NS)    A/S    2 AH-1Z**

Goal. OS - Conduct a Strike Coordination and Reconnaissance (SCAR) mission in a medium to high threat environment.

#### Requirements

##### Discuss

Organic MAGTF EW capabilities and limitations  
Suppression of Enemy Air Defense (SEAD)  
Destruction of Enemy Air Defense (DEAD)  
Collateral Damage Estimation (CDE)  
Positive Identification (PID)  
Theater Air Control System (TACS)  
Target Location Error (TLE)

##### Review

Targeting process  
Joint Surveillance Target Attack RADAR System (JSTARS)  
ROE/PID considerations  
JMEMs/JWS  
Weapon to target match  
IFREP/MISREP procedures

#### Performance Standards

PUI shall plan, brief and lead a Strike Coordination and Reconnaissance (SCAR) mission in a contested and degraded environment, against medium to high threats, including comm and GPS denial/degradation.

PUI shall properly employ all ASE IAW AH-1Z NTRP.

PUI shall achieve the desired effects (as stipulated by the mission objectives) on at least two (2) known targets with timely, accurate engagements with minimal exposure time as the SCAR while using proper weapon to target match.

IP shall validate, using the VTR, an effective PGM engagement of a point target.

Consolidate BDA and pass through appropriate MACCS channels.

Prerequisites. 6498

Ordnance (Optional). (2) captive PGM, (7) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. 2 OAS aircraft

Crew. WTI/PUI

#### 2.13.5 Strike (STK)

Purpose. To refine proficiency in STK missions.

##### General

At the completion of this stage, the PUI will have demonstrated the ability to plan, brief, and destroy known targets in the execution of STK missions under varied environmental and higher threat conditions.

Aircraft should be configured with an operable FLIR, PGM system, HMSD, VTR/DVR, APR-39, AAR-47,



ALE-47 and IR Pointer (night events).

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**STK-4207      1.5      730      B,R      (NS)      A/S      2 AH-1Z**

Goal. OS - Conduct a Strike mission in a medium to high threat environment.

Requirements

Discuss

Organic MAGTF EW Capabilities and Limitations  
Suppression of Enemy Air Defense (SEAD)  
Destruction of Enemy Air Defense (DEAD)  
Collateral Damage Estimate (CDE)  
Positive Identification (PID)  
Target Location Error (TLE)

Review

Primary purpose of STK  
STK Planning considerations  
RADAR Terrain Mask analysis  
ROE/PID considerations in flight  
JMEMs/JWS  
Weapon to target match  
High, medium, and low threat levels

Performance Standards

PUI shall plan, brief and lead a Strike mission in a contested and degraded environment, against medium to high threats, including comm and GPS denial/degradation.

All attacks shall utilize planned routes, BPs, and FPs as applicable.

PUI shall properly employ all ASE IAW AH-1Z NTTP/NTRP.

PUI shall achieve successful destruction of selected known targets utilizing proper weapon to target engagements and weaponeering.

PUI shall achieve the desired effects (as stipulated by the mission objectives) with timely, accurate engagements with minimal exposure time.

IP shall validate, using the VTR, an effective PGM engagement of a point target.

PUI shall consolidate BDA and pass through appropriate MACCS channels.

Prerequisites. 6498

Ordnance. (2) captive PGM, (7) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirements. Live fire and LASER safe range with thermally significant targets, if available

Crew. WTI/PUI

2.13.6 Offensive Anti-Air Warfare (OAAW)

Purpose. To refine proficiency in OAAW missions.

General

At the completion of this stage, the PUI will have demonstrated the ability to plan, brief and integrate multiple assets and fires in the execution of OAAW missions under varied environmental and higher threat conditions.

Aircraft should be configured with an operable TSS, PGM system, HMSD, VTR/DVR, APR-39, ALE-47 and IR Pointer (night events).

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. ACAD-4020, IAW the MAWTS-1 Course Catalog.

**OAAW-4209 2.0 730 B,R (NS) A/S 2 AH-1Z**

Goal. OS – Conduct an Offensive Anti-Air Warfare (OAAW) mission in medium to high threat environment.

Requirements

Discuss

Definition of OAAW  
OAAW characteristics  
OAAW tasks & principles  
Types of OAAW missions  
Intelligence Preparation of the Battlefield (IPB)

Review

Organic MAGTF EW Capabilities and Limitations  
Suppression of Enemy Air Defense  
Destruction of Enemy Air Defense  
JMEMs/JWS  
Weapon to target match  
High Value Target (HVT) list, High Payoff Target List (HPTL), Target Priority List (TPL) & Reactive Attack Guidance Matrix (RAGM).  
Time critical targets (TCT)

Demonstrate/Introduce

Preemptive and reactive OAAW targeting  
Time critical target attacks  
Reactive and preplanned SEAD

Performance Standards

PUI shall plan, brief and lead an Offensive Anti-Air Warfare (OAAW) mission in a contested and degraded environment, against medium to high threats, including comm and GPS denial/degradation.

Properly employ all ASE IAW AH-1Z NTTP/NTRP.

Successful destruction of selected known targets utilizing proper weapon-to-target engagements and weaponeering.

Achieve the desired effects (as stipulated by the mission objectives) with timely, accurate engagements with minimal exposure time.

Validate, using TSS, VTR, an effective PGM engagement of a point target.

Consolidate BDA and pass through appropriate MACCS channels.

Prerequisites. 8300,4206,4207

Ordinance. (2) captive PGM, (1) CATM-9, (60) chaff/flares

Range Requirements. Designated TERF area, live fire and LASER safe range.

Crew. WTI/PUI.

2.13.7 Rotary Wing DACM (RWDACM)

Purpose. To demonstrate, introduce, and refine RWDACM tactics.

General

At the completion of this stage, the pilot will be proficient in the conduct of the principles of RWDACM and have a thorough knowledge of weapons employment, aircraft control and threat tactics of RW adversaries.

Aircraft should be configured with an operable operable TSS, HMSD, captive AIM-9, VTR/DVR, APR-39, and ALE-47.

Crew Requirements. As listed at the end of each event. All participants must be TERF qualified.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**DACM-4300    1.5    485    B,R,S    D    A/S    2 AH-1Z**

Goal. OS – Introduce outside weapons parameters air-to-air tactics.

Requirements

Discuss

Crew coordination considerations  
Aircraft control characteristics  
DACM flight leadership considerations  
Section tactics and gameplan  
V-Pole  
Inside weapons parameters vs. outside weapons parameters  
AIM-9

Demonstrate/Introduce. Outside weapons parameters air combat maneuvering.

Performance Standards

PUI shall demonstrate appropriate tactics to engage adversary aircraft outside weapons parameters, utilizing non-merge tactics and maneuvering.  
PUI shall demonstrate proficiency in employing PGMs against a non-maneuvering RW adversary.  
PUI shall demonstrate proficiency in employing AIM-9 against a non-maneuvering RW adversary.  
PUI shall demonstrate proficiency in employing PGMs against a maneuvering RW adversary.  
PUI shall demonstrate proficiency in employing AIM-9 against a maneuvering RW adversary.

Prerequisites. 2064,2603

Ordinance. (1) CATM-9, (30) flares

External Syllabus Support. Designated TERF area. High bird required for engagements greater than 1 v 1.

Crew. WTO+RWDACM/PUI

**DACM-4301    1.0    \*    B,S    D    A    1 AH-1Z & 1 H-1**

Goal. FS - Introduce 1 v 1 RWDACM.

Requirements

Discuss

Energy Maneuverability (EM)  
Specific excess power ( $P_s$ )  
EM &  $P_s$  tactical considerations  
High and low yo-yo  
Yo-Yo counter-tactics  
Weapons employment rules of thumb  
Range estimation techniques  
Line number setups  
V-Pole  
DACM training rules  
Control zone maneuvering  
Crew coordination considerations  
Aircraft control characteristics  
DACM flight leadership considerations

Introduce

A/C capabilities/limitations  
Adversary capabilities/limitations  
Weapons envelopes of adversary RW aircraft

Performance Standards

PUI shall conduct one complete line number sequence (from both friendly and adversary roles).  
PUI shall maintain aircraft control within NATOPS limitations.  
PUI shall execute proper threat reactions to RW attacks.

PUI shall demonstrate proficiency in employing 20mm and rockets against a maneuvering RW adversary.

Prerequisites. TERF,2202,2301,2603,4030-4034

Ordnance. (1) CATM-9, (30) flares and TCTS pod (as required)

External Syllabus Support. One adversary helicopter and appropriate air-to-air training area

Crew. RW DACMI/PUI

**DACM-4302    1.0    \*    B    D    A    1 AH-1Z 1 H-1**

Goal. RS - Introduce 2 v 1 RWDACM

Requirements

Discuss

Weapons employment rules of thumb  
Range estimation techniques  
Line number setups and communication  
DACM training rules  
Crew coordination considerations  
Aircraft control characteristics  
DACM flight leadership considerations  
Section tactics and gameplan  
Roles and responsibilities of free and engaged A/C  
Control zone maneuvering and the weave

Review

Adversary capabilities/limitations  
Weapons envelopes of adversary RW aircraft  
Energy maneuverability (EM)  
Specific excess power (Ps)  
EM & Ps tactical considerations

Performance Standards.

PUI shall conduct one complete line number sequence from both tactical lead and tactical wingman positions.  
PUI shall maintain aircraft control within NATOPS limitations.  
PUI shall execute proper threat reactions to RW attacks.

Prerequisites. 4301

Ordnance. (1) CATM-9, (30) flares and TCTS pod (as required)

External Syllabus Support. One adversary helicopter and appropriate air-to-air training area

Crew. RW DACMI/PUI

**DACM-4303    2.0    485    B,R    D    A    1 AH-1Z & 1 H-1**

Goal. OS - Review 1 v 1 and 2 v 1 RWDACM

Requirements

Crew coordination considerations  
Aircraft control characteristics  
DACM flight leadership considerations  
Section tactics and gameplan  
Roles and responsibilities of free and engaged A/C  
Control zone maneuvering and the weave

Review

Energy Maneuverability (EM)  
Specific excess power (Ps)  
Em & Ps tactical considerations  
High and low yo-yo

Yo-yo counter-tactics  
Weapons employment rules of thumb  
Range estimation techniques  
Line number setups  
V-Pole  
DACM training rules

Performance Standards

PUI shall complete a minimum of one (1) line number sequence as lead and one (1) line number sequence as wingman.

PUI shall demonstrate appropriate section tactics to engage adversary aircraft outside weapons parameters as lead and wingman, utilizing non-merge tactics and maneuvering.

PUI shall maintain aircraft control within NATOPS limitations.

PUI shall execute proper reactions to RW threat attacks.

Prerequisites. 3013,4030-4034,4302,4300

Ordnance. (1) CATM-9, (30) flares and TCTS pod (as required)

External Syllabus Support. One adversary helicopter and appropriate air-to-air training area

Crew. RW DACMI/PUI

2.13.8 Fixed-Wing Defensive Air Combat Maneuvering (FWDACM)

Purpose. To demonstrate, introduce, and refine FWDACM tactics.

General

At the completion of this stage, the PUI will be proficient in the conduct of FWDACM and have a thorough knowledge of weapons employment, aircraft control and threat tactics of FW adversaries.

Aircraft should be configured with an operable TSS, HMSD, captive AIM-9, VTR/DVR, APR-39, and ALE-47.

Crew Requirements. As listed at the end of each event. All participants must be TERF qualified.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**DACM-4304    1.0    485    B,R,S    D    A    1 AH-1Z**

Goal. FS - Perform 1 v 1 DACM against a FW adversary.

Requirements

Discuss

FW capabilities/limitations  
Weapon envelopes and tactics of adversary FW aircraft  
Tactical advantages derived from Ps/EM charts  
FW threat counter-tactics  
FW air-to-air weapons considerations  
Range estimation  
Lead requirements  
RADAR/fire control capabilities  
Intercept terminology  
Visual combat air patrol (VISCAP) considerations  
DACM training rules  
FW DACM line number set-up and execution

Introduce

FW capabilities/limitations  
Weapons envelopes of adversary FW aircraft  
1 v 1 maneuvers against FW aircraft

Review. AIM-9 switchology and delivery

Performance Standards

PUI shall conduct a minimum of one (1) line number sequence.

PUI shall demonstrate proficiency in employing AIM-9 against a FW adversary.

PUI shall execute proper reactions to FW threat attacks.

Prerequisites. TERF,2202,2301,2603

Ordnance. (1) CATM-9, (30) flares and TCTS pod (as required)

External Syllabus Support. One FW adversary and appropriate air-to-air training area

Crew. FW DACMI/PUI

**DACM-4305 1.0 \* B, D A 2 AH-1Z**

Goal. RS - Introduce 2 v 2 DACM against FW adversaries.

Requirements

Discuss

FW capabilities/limitations

FW threat counter-tactics

P<sub>s</sub>/EM of threat/friendly aircraft

FW DACM training rules

2 v 2 FW DACM line number set-up

Demonstrate/Introduce

RW section game plan

RW v FW weapons employment

Aircraft/section control

Section awareness and communication

DACM flight leadership

Performance Standards

PUI shall complete a minimum of one (1) line number sequence as lead and one (1) line number sequence as wingman.

PUI shall demonstrate proficiency in employing AIM-9 against a FW adversary.

PUI shall execute proper reactions to FW threat attacks.

Prerequisites. 4030-4032,4035,4036,4304

Ordnance. (1) CATM-9, (30) flares and TCTS pod (as required)

External Syllabus Support. 2 FW adversary and appropriate air-to-air training area

Crew. FW DACMI/PUI

### 2.13.9 Chemical, Biological, Radiological and Nuclear warfare (CBRN)

Purpose. To introduce the pilot to operations while wearing the aviator's CBR protective mask.

General. This event is designed to expand the capabilities of the aircrew in CBR operations.

Crew requirements. As listed at the end of the event.

Ground/academic training

Review appropriate section of AH-1Z NTRP on the CBRN protective mask prior to flight. The pilot will complete the protective mask familiarization lecture and aircraft egress with mask.

Discuss capabilities and disadvantages of the mask to include emergency procedures. Review all MOPP conditions.

**SCBRN-4400 1.0 1095 B,R D/NS S/A FFS/FTD**

Goal. OS - CBR Protective mask introduction.

Requirements

Discuss

Advantages & disadvantages CBR protective mask  
CBR Protective Mask components and operation  
Psychological effects  
Operating in a CBRN environment  
Emergency procedures while using the CBR protective mask  
Emergency egress  
MOPP considerations  
NVD considerations  
Battery failure

Demonstrate/Introduce. Wear of the CBR protective mask while conducting FAM maneuvers.

Performance standards

PUI shall perform all maneuvers IAW AH-1Z MDG and NATOPs.

PUI shall complete 5 autorotations IAW the AH-1Z MDG and NATOPS.

Prerequisites. (2101~AC)

Crew. NSI/PUI

2.13.10 Sea-Based Expeditionary Operations (SEA)

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

Purpose. To introduce day and night flight operations from a carrier deck or air capable ship.

General

IAW applicable directives, PUI will emphasize proper communication procedures, patterns, and aviation operations in the shipboard environment.

Refer to appropriate NATOPS and appropriate shipboard NATOPS manuals for carrier operations.

Consideration should be given to conducting FCLPs to both LSD/LPD and LHA/LHD deck configurations.

Initial Night Systems Carrier Qualification training shall be accomplished under High Light Level conditions.

Requalification and proficiency training may be accomplished under any light level condition.

PUI shall conduct at least one (1) precision and one (1) non-precision approach to an air capable ship before stage completion.

Once complete with each stage the pilot may be qualified Day CQ, Night CQ, or NVD CQ (as appropriate), in writing, at the discretion of the commanding officer.

Crew Requirements. As listed at the end of each event, carrier qualified instructors are preferred for all FCLP events.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**SFCLP-4600 1.5 \* B D/NS/N\* S FFS/FTD**

Goal. OS – Introduce day, night, and NVD shipboard operations.

Requirements

Discuss

Flight deck operations (e.g. lighting, air plan, starting procedures)

Wind envelopes and engage/disengage envelopes

Shipboard EPs

Alpha, Charlie, and Delta patterns

Shipboard instrument procedures (e.g. TACAN, Carrier Controlled Approaches (CCA), marshals)

Lost communication procedures

Shipboard lighting and NVG procedures

Shipboard communication procedures

Shipboard helicopter director visual signals

Demonstrate

Day, Night and NVD shipboard patterns and approaches

Helicopter director visual signals





Shipboard lighting considerations  
NVD failures and emergency procedures  
Spatial disorientation and vertigo  
Shipboard instrument procedures

Demonstrate/Introduce

Night unaided/NVD pattern  
Sight picture and HMSD usage  
Landings to an FCLP deck.

Review

Shipboard communication procedures  
Shipboard helicopter director visual signals

Performance Standards. PUI shall conduct a minimum of 5 unaided and 5 NVD landings per the AH-1Z NATOPS and shipboard NATOPS manuals.

Prerequisites. 4601

External Syllabus Support. FCLP pad with overt and NVD deck lighting

Crew. NSI(CQ Preferred)/PUI

**CQ-4603      1.0      365      B,R,S      D      A      1 AH-1Z**

Goal. FS - Conduct day shipboard landing qualification.

Requirements

Discuss

Day shipboard patterns  
Sight picture and landings to a ship's deck

Demonstrate/Introduce

Day shipboard operations  
Lost communication procedure in a shipboard environment

Review

Types of air capable ships  
Shipboard specific crew coordination  
Deck crewman vest colors  
Helicopter director visual signals  
Emergency and ditching procedures  
Wind limitation and engage/disengage charts  
Shipboard terminology  
Different case departures and arrivals  
Rotor brake start procedures  
HERO conditions and ordnance operations  
Shipboard airspace

Performance Standards

PUI should execute a rotor brake start, if able  
PUI shall conduct a minimum of five (5) day shipboard landings per the AH-1Z NATOPS and shipboard NATOPS manuals.  
PUI should conduct one (1) precision and one (1) non-precision approach, if available.  
PUI should conduct shipboard refueling, if available.  
PUI should conduct an Alpha pattern, if available.

Prerequisites 4601

External Syllabus Support Landing platform afloat

Crew. BIP (Day CQ)/PUI

**CQ-4604      1.0      365      B,R,S      NS      A      1 AH-1Z**

Goal. OS – Conduct NVD shipboard landing qualification.

Requirements

Discuss

Night NVD pattern  
Sight picture and night landings to a ship's deck.

Demonstrate/Introduce NVD shipboard operations

Review

Instrument scan considerations  
Night shipboard specific crew coordination  
Shipboard lighting considerations  
NVD failures and emergency procedures  
Spatial disorientation and vertigo  
Shipboard instrument procedures  
Shipboard communication procedures  
Shipboard helicopter director visual signals

Performance Standards

PUI shall conduct a minimum of five (5) NVD shipboard landings per the AH-1Z NATOPS and shipboard NATOPS manuals.  
PUI should conduct one (1) lost comm marshalling procedure, if available.  
PUI should conduct one (1) precision and one (1) non-precision approach, if available.  
PUI should conduct shipboard refueling, if available.  
PUI should conduct an Alpha pattern, if available.

Prerequisites NSQ(HLL), 4602, 4603

External Syllabus Support Landing platform afloat

Crew. NSI (NVD CQ)/PUI

**CQ-4605      1.0      365      B,R,S      N\*      A      1 AH-1Z**

Goal. OS - Conduct night unaided shipboard landing qualification.

Requirements

Discuss

Shipboard lighting  
Wind limitations

Demonstrate/Introduce Night unaided shipboard operations

Review

Shipboard lighting considerations  
Shipboard instrument procedures  
Delta, Alpha and Charlie patterns  
Shipboard helicopter director visual signals

Performance Standards

PUI shall conduct a minimum of five (5) unaided shipboard landings per the AH-1Z NATOPS and shipboard NATOPS manuals.  
PUI should conduct one (1) precision and one (1) non-precision approach, if available.

Prerequisites 4602,4603

External Syllabus Support Landing platform afloat

Crew. NSI (Night CQ)/PUI

2.14 **INSTRUCTOR TRAINING PHASE (5000)**

Purpose. To develop standardized Instructor Pilots (IPs) with the ability to teach flight skills requisite to qualification as a Core Plus/Mission Skills qualified pilot.

### General

Upon completion of this phase of training the IUT may be designated a BIP, TERFI, WTO, CSI, FRSI, FRS-SI, FAC(A)I, DACMI, NSFI, NSI and FLSE.

Completion of the BIP stage and DESG-6498 meets the requirements for the PUI to be designated a BIP.

At the discretion of the squadron commanding officer a letter designating the IUT as a BIP shall be placed in the NATOPS jacket and APR.

Completion of the BIP and TERFI stage meets the requirements for the PUI to be designated a TERFI.

At the discretion of the squadron commanding officer a letter designating the IUT as a TERFI shall be placed in the NATOPS jacket and APR.

Completion of the WTO stage and refly of the SWD-2605 meeting the instructor under training accuracy metric completes the requirements for the IUT to be designated a WTO.

At the discretion of the squadron commanding officer a letter designating the IUT as a WTO shall be placed in the NATOPS jacket and APR.

Completion of the CSI stage meets the requirements for the IUT to be designated a CSI.

At the discretion of the group commanding officer a letter designating the IUT as a CSI shall be distributed to squadrons DoSS and operations departments.

A copy shall be maintained by the MATSS representative to track CSI currency and refly requirements.

Completion of the FRSI stage meets the requirements for the IUT to be designated a FRSI.

At the discretion of the squadron commanding officer a letter designating the IUT as a FRSI shall be placed in the NATOPS jacket and APR.

Refer to the MAWTS-1 AH-1 Course Catalog for FAC(A)I, DACMI, NSI and FLSE requirements.

Prior to the completion of each stage of training, the IUT will be required to present a class from an applicable MAWTS-1 ASP lecture or HMLAT-303 courseware.

Emphasis will be placed on error analysis, error correction, instructional technique and briefing and debriefing procedures.

Ordnance Delivery. For ordnance accuracy metrics, refer to paragraph 2.15.4

### Phase Overview

INSTRUCTOR TRAINING (5000 Phase)		
STAGE	PARAGRAPH NUMBER	PAGE NUMBER
Academics (ACAD)	2.15.1	2-95
Basic Instructor Pilot (BIP)	2.15.2	2-95
Terrain Flight Instructor (TERFI)	2.15.3	2-98
Weapons Training Officer (WTO)	2.15.4	2-99
Contract Simulator Instructor (CSI)	2.15.5	2-103
Fleet Replacement Squadron Instructor (FRSI)	2.15.6	2-104
Forward Air Controller (Airborne) Instructor [FAC(A)I]	2.15.7	2-108
Night Systems Familiarization Instructor (NSFI)	2.15.8	2-109
Defensive Air Combat Maneuvering Instructor (DACMI)	2.15.9	2-109
Night Systems Instructor (NSI)	2.15.10	2-110
Flight Lead Standardization Evaluator (FLSE)	2.15.11	2-110

## 2.15 INSTRUCTOR STAGES

### 2.15.1 Academics (ACAD)

#### Purpose

To develop standardized Instructor Pilots (IPs).

These academics review and emphasize procedural based knowledge, standardized instruction, systems knowledge/nomenclature, and training management to ensure individuals possess the requisite knowledge and ability to teach flight skills.

#### General

These academics are intended to be an integrated series of academic lectures, readings and practical application contained within each phase of training.

The lectures, readings and chalk-talks are contained in the MAWTS-1 AH-1 Course Catalog. The academic courseware is a requirement.

At the completion of each ACAD event, the appropriate training code shall be logged in M-SHARP by the individual pilot, contract instructor or squadron operations personnel, as appropriate.

The codes listed below associated with these classes may NOT be the most up to date as the current AH-1 Course Catalog is the master document for stage academic requirements.

Instructor Under Training academic events are listed below.

INSTRUCTOR UNDER TRAINING ACADEMIC PHASE	
TRAINING CODES	COURSEWARE
<b>BIP</b>	
ACAD-5001	Basic Instructor Course
<b>WTO</b>	
ACAD-5020	WTO Class Presentation
ACAD-5021	WTO Chalk Talk
<b>FAC(A)-I</b>	
ACAD-5040	FAC(A)-I Class Presentation
ACAD-5041	FAC(A)-I Chalk Talk
<b>CSI</b>	
Refer to MATSS provided courseware	
<b>FRSI</b>	
ACAD-5060	Fleet Replacement Squadron Instructor Course (FRSIC)
<b>DACM-I</b>	
ACAD-5080	RW DACM-I Lecture or Chalk Talk
ACAD-5081	FW DACM-I Lecture or Chalk Talk
<b>NSI</b>	
ACAD-5090	NSI Class Presentation

## 2.15.2 Basic Instructor Pilot (BIP)

Purpose. To qualify the IUT to instruct basic FAM, INST, FORM, FCLP, and CQ.

General. To instruct CQ, IUT must meet currency requirements outlined in CNAF M-3710.7. Aircraft should be equipped with an operable HMSD.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW MAWTS-1 AH-1 Course Catalog.

**SBIP-5100 1.5 \* B,R D S FFS/FTD**

Goal. Control Station - Simulator control – Introduce simulator iOS control functions and capabilities.

### Requirements

#### Discuss

- Learning objectives
- Performance standards
- M-SHARP simulator logging
- Basic simulator functions (motion, communication, etc.)
- HMSD integration & boresighting procedures
- Simulator MAF submission

#### Demonstrate/Introduce

- Environment/weather conditions
- Weapons/ASE configuration
- Systems/Weapons malfunctions
- Threat indication incorporation and capabilities
- Friendly system incorporation and capabilities
- Instrument/approach functions
- Shipboard configuration and functions

Performance Standards

- IUT shall demonstrate the ability to operate the simulator iOS.
- IUT shall demonstrate the ability to manipulate environmental conditions.
- IUT shall demonstrate the ability to manipulate and operate simulator weapons and ASE.
- IUT shall demonstrate the ability to manipulate and operate simulator emergencies and malfunctions.
- IUT shall demonstrate the ability to manipulate and operate simulator ship moving models.

Prerequisites. 5001,6398

Crew. MATSS IP(Preferred) or WTO/IUT

<b>SBIP-5101</b>	<b>1.5</b>	<b>*</b>	<b>B,R,S</b>	<b>D</b>	<b>S</b>	<b>FFS/FTD</b>
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Goal. OS – Emergency procedures standardization.

Requirements

Discuss

- Cockpit indications of all emergencies
- Instructor techniques
- CRM skills and behaviors
- ORM management as an instructor
- Human factor errors

Demonstrate/Introduce . Procedures for running simulator

Review

- Systems failures
- Emergency procedures
- Full/power recovery autorotations
- Aircrew responsibilities

Performance Standards

- IUT shall demonstrate the ability to operate the aircraft under all emergency conditions per AH-1Z NATOPS.
- IUT shall demonstrate a thorough knowledge of aircraft systems, emergency procedures and MDG procedures.
- Utilizing a co-pilot, IUT shall demonstrate the ability to analyze and instruct proper responses & CRM during aircraft emergency procedures.

Prerequisites. 5100,6398

External Syllabus Support. Device operator

Crew. WTO/IUT/co-pilot

<b>SBIP-5102</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S/A</b>	<b>FFS/FTD</b>
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Goal. RS – Instruct all FAM stage maneuvers and CQ procedures with emphasis on standardization IAW the AH-1Z NATOPS, MDG and LHA/LHD NATOPS.

Requirements

Discuss

- Instructional techniques
- Common PUI mistakes
- FAM stage maneuvers IAW with the AH-1Z NATOPS & MDG
- FCLP and CQ procedures

Review

- Knowledge of AWE, TAMMAC
- Local course rules
- All FAM stage maneuvers
- Shipboard operations

Performance Standards

- IUT shall complete five (5) autorotations IAW the AH-1Z NATOPS and MDG.

IUT shall conduct a minimum of two (2) day CQ landings per the AH-1Z NATOPS and shipboard NATOPS manuals.

Utilizing a co-pilot, IUT shall demonstrate the ability to analyze and instruct proper CRM and FAM maneuvers emphasizing error analysis.

Prerequisites. 5101

External Syllabus Support. Device operator. If flown in the aircraft: FCLP pad

Crew. WTO/IUT

**BIP-5103      1.5      \*      B,R,S      D      A      1 AH-1Z**

Goal. RS - IUT will demonstrate the ability to accurately identify and correct PUI BAW errors, tendencies and procedural errors during FAM maneuvers.

Requirements

Discuss

Error detection and correction techniques  
CNAF M-3710.7 chapters 3-8, and 13  
Aircrew Performance Record (APR) requirements and organization  
NATOPs Jacket requirements and organization

Demonstrate/Introduce . Error detection, correction of airwork and procedural deficiencies

Performance Standards

IP will act as the PUI.

IUT shall satisfactorily demonstrate the ability to recognize, analyze and correct all errors through demonstration or verbal commands.

Prerequisites. 5102

Crew. WTO/IUT

**SBIP-5104      1.5      \*      B      (N\*)      S      FFS/FTD**

Goal. OS – IUT will demonstrate the ability to instruct in the instrument flight regime.

Requirement

Discuss

Applicable instrument publications  
Instrument flight checklist  
Instrument flight procedures  
Instructional techniques  
Common PUI mistakes and CRM during instrument flight  
Vertigo

Review. IFR flight planning and enroute procedures

Performance Standards

IP will act as PUI. IP will provide the IUT with an actual or notional instrument flight plan with intentional errors. IUT will correctly identify all errors in a flight plan provided by the IP.

IUT will satisfactorily demonstrate the ability to execute, analyze and correct all standard instrument maneuvers under actual or simulated IFR conditions.

IUT shall ensure that the PUI maintains established BAW parameters.

IUT shall conduct a minimum of three (3) instrument approaches (1 precision, 2 non-precision).

Prerequisites. 5100

External Syllabus Support. Device operator

Crew. WTO(NSI~NS)+IFBM/IUT~AC

**BIP-5105      1.5      \*      B      D      A      1 AH-1Z & 1 H-1**

Goal. RS – IUT will demonstrate the ability to instruct formation flight.

Requirements

Discuss

Instructor briefing and debriefing techniques  
Parade and Tactical formations  
Formation take-off and landings  
TacForm maneuvers

Review

Visual signals  
Lead change  
Inadvertent IMC  
Section takeoff  
Parade and cruise formations  
Breakup, rendezvous & join-up  
Crossovers  
Climbs and descents  
Section landings  
Parade & cruise turns

Performance Standards

The IUT shall brief and lead the flight.

The IP will act as the PUI for a portion of the parade and tactical sequences.

The IUT shall demonstrate all formation stage maneuvers with emphasis on instructional technique, accurate maneuver description, formation signals and parade/tactical formation maneuvering.

IUT shall properly perform all briefed maneuvers from both lead and wingman position IAW the AH-1Z NATOPS, NTTP and MDG.

IUT shall be able to identify and correct abnormal parameters performed by the IP/PUI.

IUT shall demonstrate loss of visual contact and the subsequent rendezvous and join-up.

Prerequisites. 5103,6498

Crew. WTO/IUT

2.15.3 Terrain Flight Instructor (TERFI)

Purpose. To qualify the IUT as a TERF instructor.

General

IUT shall be BIP stage complete prior to beginning TERFI training.

IUT will demonstrate the ability to utilize mission planning software and appropriate tactical navigation systems.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW MAWTS-1 AH-1 Course Catalog.

<b>STERF-5110</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>S</b>	<b>FFS/FTD</b>
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Goal. RS – Review all TERF maneuvers and profiles.

Requirements

Discuss

Crew coordination  
Comfort level  
Common PUI mistakes  
Map preparation  
Low altitude emergencies  
Single engine operation

Review

All TERF maneuvers  
Tactical decisions to fly TERF  
Threat considerations that influence TERF profiles

Performance Standards. Utilizing a co-pilot, IUT shall satisfactorily demonstrate the ability to recognize, analyze and correct all errors through demonstration or verbal commands.

Prerequisites. 5001,5100

External Syllabus Support. Authorized TERF maneuvering area

Crew. WTO/IUT/co-pilot

**TERF-5111      1.5      \*      B,R      D      A      1 AH-1Z & 1 H-1**

Goal. RS – Instruct TERF navigation, maneuvers, profiles and procedures.

Requirements

Discuss

TERF navigation techniques and procedures  
CRM in the TERF environment  
Comfort level  
Terrain flight illusions and hazards

Review

Boundary features  
Intermediate checkpoints  
EGI navigation functions

Performance Standards

IUT shall plan, brief and lead the flight.

IUT shall navigate in low level, contour and NOE profile, a route consisting of five (5) checkpoints utilizing a 1:50,000 scale map remaining oriented within 200 meters, 15 degrees of heading and arriving at the final checkpoint within +/- 30 seconds of the planned time.

IUT shall not use onboard navigation systems for a minimum of 2 legs of the route.

IUT shall fly from the seat opposite of that flown during STERF-5110.

Emphasis will be on tactical use of terrain to navigate to a specific objective area, masking and unmasking profiles.

IUT shall conduct all TERF maneuvers IAW the AH-1Z NATOPS, MDG and NTP.

Prerequisites. 5103,6498

External Syllabus Support. Authorized TERF route

Crew. WTO/IUT

**2.15.4    Weapons Training Officer (WTO)**

Purpose. To qualify the IUT as a WTO.

General

IUT shall be TERFI stage complete prior to beginning WTO training.

The WTO is qualified to instruct all phases of flight except those requiring FAC(A)I, NSFI, NSI, DACMI, or WTI qualifications.

As such, the WTO shall demonstrate sound knowledge of all aircraft weapons systems, threat systems, and current tactics, techniques and procedures.

At the completion of this stage, the PUI will have demonstrated increased accuracy and the ability to instruct during ordnance delivery and proper use of the TSS under all threat conditions with mixed ordnance loads.

At the completion of the WTO syllabus, prior to WTO designation, the PUI shall refly SWD-2605 and will be required to meet the instructor under training accuracy metric.

SWD should be conducted on rated/scored ranges whenever possible.

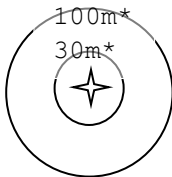


Focus should be on weapons delivery profiles and ordnance accuracy, not tactical scenarios.

Weapons system video debrief should be used to the maximum extent possible.

Emphasis will be on CRM and Risk Management while utilizing the ordnance systems.

IPs shall evaluate ordnance effectiveness based on the following accuracy metrics:

CORE PLUS SKILLS	UNGUIDED ROCKET STANDARD	GUN STANDARD	PURPOSE
 <p>*Radius</p>	<p>-In correct profile per NTTP</p> <p>-No miss greater than 100 meters</p> <p>-CE90≤30 meters**</p> <p>-(1) rocket per pass must impact within 10 meters</p>	<p>-On target within 3 seconds of trigger pull</p>	<p>-Based upon M151 Effective Casualty Radius(ECR)***</p> <p>-Demonstrates the capacity to instruct Specific Weapons Delivery</p>

\*\* CE90 example: SWD-2605 requires (7) 2.75” rockets. CE90≤30 meters requires that 90% of the delivered rockets impact within 30 meters of the target. In order to calculate, simply disregard the worst 10% of rockets released and the remaining farthest SINGLE MISS DISTANCE = CE90. Conservative rounding is applied.

Examples:

- 3-10 rockets released ~ disregard one rocket, SECOND FARTHEST MISS = CE90
- 11-20 rockets released ~ disregard two rockets, THIRD FARTHEST MISS = CE90
- In no case can a single rocket miss the intended target by more than 100m, including the omitted rounds for CE90 calculation. This constitutes failure to meet performance standards.

\*\*\* Effective Casualty Radii (ECRs) are generic distances intended to be applied versus the anticipated target set for a particular weapon, based primarily upon explosive yield and warhead/fuse characteristics. Variables to weapon effectiveness include target vulnerability and composition of underlying terrain. Weapons that impact the target vicinity at distances beyond the warhead’s ECR are predicted to be ineffective for target damage.

PGMs - Correct switchology, proper LASER placement, and profile IAW AH-1 NTTP for simulated employment. Live PGM employment must also achieve a direct hit.

TOTs – Initial ordnance impacts delivered within ± 30 seconds of established TOT.

Aircraft should be configured with an operable FLIR, PGM system, CLDR, FMV, HMSD, VTR, APR-39, AAR-47 and ALE-47.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW MAWTS-1 AH-1 Course Catalog.

**SWTO-5200    1.5    \*    B    D    S    FFS/FTD**

Goal. Tactical simulator control – Review iOS control functions and capabilities. Introduce scenario development linked evolution operations, and TEn/CPOS/NECC functions.

Requirements

Discuss

Advanced simulation scenario development (METT-TSL)  
Simulator set-up and linked evolution operations  
Linked simulator operations and troubleshooting  
Instructor briefing and debriefing techniques

Demonstrate/Introduce.

TEn+ employment (CPOS/NECC employment if facilities available)

Review

Environment/weather conditions  
Weapons/ASE configuration  
Systems/Weapons malfunctions  
Threat systems incorporation and capabilities  
Friendly system incorporation and capabilities

Instrument/approach functions  
Shipboard configuration and functions

Performance Standards

IUT shall build, save, load, and execute a low to medium threat tactical scenario from the control position.  
IUT shall manipulate TEn map view and De-Clutter options.  
IUT shall manipulate and operate ground fixed, ground mover, airborne players, and IADS.  
IUT shall manipulate and operate aerial and convoy formations.  
IUT shall build, save, load, and employ a Pre-Planned Flight (PPF) for ground and air players.  
IUT shall manipulate and operate off-board laser designators.  
IUT shall manipulate and operate battlefield effects, including smoke, ordnance impacts, and player damage.  
IUT shall manipulate and operate the Group tool for constructive players.  
IUT shall manipulate and operate the Air-to-Ground scoring tool.

Prerequisites. 6498

Crew. MATSS IP (Preferred) or WTO/IUT

**SWTO-5201    1.5    \*    B,R,S    D    S    FFS/FTD**

Goal. RS – Review all AH-1Z systems (weapons, ASE, navigation, sensors).

Requirements

Discuss

AH-1Z Targeting Sight System components, operation, and malfunctions  
AH-1Z navigation system, with emphasis placed on setup and operation for target engagement  
TRM/CRM and instructor techniques during ordnance delivery  
Weapons systems malfunctions  
Common Switchology Errors  
Weapons delivery and error analysis  
How to build a scenario  
How to give a quality X  
Instructing vs. evaluating

Review

All weapons systems components, operation and employment (e.g. APKWS, flechette, PGMs)  
Ordnance delivery from low and medium altitude profiles

Performance Standards

Utilizing a co-pilot, demonstrate instructional techniques to correct weapons delivery errors working towards instructor under training accuracy metric.  
IUT will identify and correct ordnance systems malfunctions and switchology problems.  
Emphasize CRM during weapons delivery and weapons troubleshooting.

Prerequisites. 5105,5111,5200

External Syllabus Support. Device operator

Crew. NSI/IUT/co-pilot

**WTO-5202    1.5    \*    B    D    A    1 AH-1Z & 1 H-1**

Goal. RS - Review WTO-5201 in the aircraft with emphasis on instructional techniques.

Requirements

Discuss

Standardized attack terminology and communication  
CRM and instructor techniques during ordnance delivery

Range procedures for local ranges

Demonstrate

Instructional techniques in the employment of all weapon systems during a SWD flight  
Common attack patterns errors and misconceptions  
Common PUI cockpit mistakes and switchology errors

Review

All weapons systems components, operation and employment(e.g. APKWS, flechette, PGMs)  
Ordnance delivery from low and medium altitude profiles

Performance Standards

IP will act as the PUI.

IUT will have a thorough understanding of all weapon systems, switchology, system malfunctions and failures.

IUT will ensure that all ordnance is delivered IAW published range regulations and squadron SOPs.

IUT shall employ instructional techniques to correct weapons delivery errors working towards instructor under training accuracy metric.

IUT shall identify and correct ordnance systems malfunctions and switchology problems.

Prerequisites. 5201

Ordnance. (2) captive PGM, (19) 2.75 inch rockets, (300) rounds 20mm, (30) chaff/flares

Crew. NSI/IUT

**SWTO-5203    1.5    \*    B,R,S    D    S    FFS/FTD**

Goal. FS - Instruct a tactical event with emphasis on instructional techniques and tactics standardization.

Requirements

Introduce

Tactical scenario development  
Instructor RFI process  
Tactical instruction as the flying pilot  
Scenario management  
Instructor task sharing and task shedding

Discuss

All weapons systems components, operation and employment  
All ASE components, operation, and malfunctions  
RM and instructor techniques during ordnance delivery  
Weapons systems malfunctions  
Common Switchology Errors  
Weapons delivery and error analysis

Review. All weapons systems components, operation and employment, with emphasis placed on systems malfunctions, switchology errors, common PUI errors, and weapons delivery error analysis

Performance Standards

A squadron co-pilot (IP, if no co-pilot available) will plan, brief and lead the flight under a tactical scenario.

With guidance from IP, IUT will develop a scenario, conduct the RFI process, and manage the tactical scenario in flight.

IUT will ensure that all ordnance is delivered IAW published range regulations and squadron SOPs.

IUT will properly identify and correct weapons switchology errors initiated by the IP and meet the instructor under training accuracy metrics listed above.

Demonstrate knowledge and instructional techniques in all weapons training areas including the MACCS, FSCMs, escort, electronic warfare, intercept procedures, PGM delivery, weaponeering and crew coordination.

Utilizing a co-pilot, demonstrate instructional techniques to correct weapons delivery errors working towards instructor under training accuracy metric.

IUT will identify and correct ordnance systems malfunctions and switchology problems.

Emphasize CRM during weapons delivery and weapons troubleshooting.

Prerequisites. 5202

External Syllabus Support. Device operator

Crew. NSI/IUT/co-pilot

**WTO-5204      1.5      \*      B,R,S      D      A      2 H-1**

Goal. FS - Demonstrate the ability to instruct a tactical event with emphasis on instructional techniques and tactics standardization.

#### Requirements

##### Discuss

Terrain flight ordnance delivery techniques  
CRM and instructor techniques during tactical missions

##### Review

All weapons systems components, operation and employment  
Instructional techniques in the employment of all weapon systems during a tactical flight  
Common attack patterns errors and misconceptions  
Common PUI cockpit mistakes and switchology errors

#### Performance Standards

IP will act as the PUI and plan, brief and lead the flight under a tactical scenario.  
IUT will develop a scenario, conduct the RFI process, and manage the tactical scenario in flight.  
IUT will ensure that all ordnance is delivered IAW published range regulations and squadron SOPs.  
IUT will properly identify and correct weapons switchology errors initiated by the IP and meet the instructor under training accuracy metrics listed above.  
Demonstrate knowledge and instructional techniques in all weapons training areas including the MACCS, FSCMs, escort, electronic warfare, intercept procedures, PGM delivery, weaponeering and crew coordination.

Prerequisites. 5203,5021,5020

Ordnance. (2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (30) chaff/flares

Range Requirement. Live fire and LASER safe range

Crew. NSI/IUT

#### 2.15.5 Contract Simulator Instructor (CSI)

Purpose. To develop qualified Contract Simulator Instructors (CSIs) using a standardized instructor program. This syllabus is designed to prepare CSIs to instruct Core Introduction Phase events in the simulator.

General. CSIs will complete all events in the simulator. Events may be conducted from the simulator command position (CP) or the designated AH-1Z crew position at the discretion of the IP.

In order to receive initial designation, CSIs shall complete requirements of applicable civilian contracts and a syllabus agreed upon by the Model Manager and Site Manager. The syllabus should be commensurate with experience in model, previous designations and currency of the proposed CSI and should include a comprehensive review of the Core Introduction Phase simulator events that will be instructed. In accordance with applicable contracts and CNAF M-3710.7, CSIs shall complete an annual standardization certification with the T/M/S NATOPS Evaluator to ensure compliance and adequate standardization.

Crew Requirements. As listed at the end of each event and IAW assigned syllabus.

Ground/Academic Training. IAW MAWTS-1 AH-1 Course Catalog and assigned syllabus.

**SCSI-5300 1.5 365 B,M D S S-TEN 1 AH-1Z**

Goal. OS – Core Introduction Phase standardization.

Requirements

Discuss

RAC trends and syllabus standardization

Review

Any Core Introduction Phase item

Performance Standards

IUT shall demonstrate the ability to instruct Core Introduction Phase events IAW applicable contracts and publications.

Prerequisite. Candidate CSI

Crew. NE/IUT

**2.15.6 Fleet Replacement Squadron Instructor (FRSI)**

Purpose. To certify the IUT as a Fleet Replacement Squadron Instructor capable of instructing Core Introduction Phase events. To familiarize IUT with local area operations, techniques and procedures. Emphasis will be placed on instructor proficiency, training standardization, and aircraft recovery from various regimes.

General. IUT must have been designated WTO prior to beginning FRSI training. In the event an IUT needs a refresher syllabus, IUT must be designated PQM prior to beginning FRSI training. Refresher IUT must be designated WTO prior to FRSI designation.

A 2801 tracking code shall be logged at the completion of the SFRSI-5310.

FRSI-5315 is an event for ANI standardization and is not required to be designated an FRSI. A 6101 tracking code shall be logged at the completion of the event if conditions are met for annual NATOPS check.

FRSI-5316 is the only event required for NSFI designation if IUT is a designated and current NSI. Designation as NSFI after the completion of FRSI-5316 is IAW the MAWTS-1 Course Catalog and is at the discretion of the Commanding Officer. NSFI designation for any other IUT requires completion of the 5600 stage events IAW the MAWTS-1 Course Catalog.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. As required in FRS Course Catalog.

**SFRSI-5310 1.5 \* B D S S-TEN 1 AH-1Z**

Goal. RS – Emergency procedures review.

Requirements

Discuss

RAC tendencies on CRM/EP sims  
Any NATOPS EP, system, limit or MDG procedure

Review

Engine driven suction pump failure  
Single engine failure  
Dual engine failure at high power and airspeed  
Dual engine failure in flight  
Rotor brake pressurized in flight  
Dual engine failure during takeoff  
Engine hot start  
Emergency shutdown  
Np underspeed  
Np overspeed  
Engine electrical system failures  
Loss of tail rotor thrust/components in a hover

Loss of tail rotor thrust/components in flight  
Single engine fire  
Dual engine fire  
Compressor Stall  
Complete electrical failure  
Main drive shaft failure  
Full autorotations

Performance Standards. IUT shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

Prerequisites. 5203

Crew. CSI or ANI/IUT

**FRSI-5311      2.0      \*      B      D      A      1 AH-1Z**

Goal. RS – Review familiarization maneuvers, instruments, and confined area landings.

Requirements

Discuss

Mission brief  
FAM/INST event techniques, standardization and operating areas  
FAM/INST stage RAC tendencies and risk mitigation  
Any FAM/INST discussion item, maneuver or procedure  
Local course rules and GCA procedures

Review

Course rules/area fam  
Hover takeoff  
No hover takeoff  
RVL landing  
Precision (steep) approach profile  
Hover landing  
No hover landing  
Sliding landing  
High speed approach and landing  
Waveoff procedures  
SCAS Failure  
Single engine failures  
Fixed pitch tail rotor malfunctions  
High altitude emergencies  
Confined area landings  
Local TACAN and GCA procedures

Performance Standards

IUT shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

IUT shall gain proficiency and knowledge of local area operations and procedures.

Prerequisites. 5310

Crew. ANI/IUT

**FRSI-5312      2.0      \*      B      D      A      1 AH-1Z**

Goal. FS – Review familiarization maneuvers, terrain flight, and navigation

Requirements

Discuss.

Mission brief  
FAM/NAV/TERF event techniques, standardization and operating areas  
FAM/NAV/TERF stage RAC tendencies and risk mitigation  
Any FAM/NAV/TERF discussion item, maneuver or procedure

## Review

- Course rules/area fam
- Hover takeoff
- No hover takeoff
- RVL landing
- Precision (steep) approach profile
- Hover landing
- No hover landing
- Sliding landing
- High speed approach and landing
- Waveoff procedures
- SCAS Failure
- Single engine failures
- Fixed pitch tail rotor malfunctions
- High altitude emergencies
- Local area operations, techniques and procedures
- TERF maneuvers

### Performance Standards

IUT shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

IUT shall gain proficiency and knowledge of local area operations and procedures.

Prerequisites. 5311

Crew. ANI/IUT

<b>FRSI-5313</b>	<b>2.0</b>	<b>730</b>	<b>B,R</b>	<b>D</b>	<b>A</b>	<b>1 AH-1Z &amp; 1 H-1</b>
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Goal. OS – Review formation flight and tactical formation flight maneuvering.

## Requirements

## Discuss

FORM event techniques, standardization and operating areas  
FORM stage RAC tendencies and risk mitigation  
Any FORM stage discussion item, maneuver or procedure

## Review

- ASTACSOP loss of visual contact
- ASTACSOP IIMC
- ASTACSOP RIO
- Parade flight
- Cruise flight
- Breakup and rendezvous
- Tactical formation maneuvers
- Wingman awareness
- Formation communication
- Lead change
- Section tactical landings
- FAM sustainment as required

### Performance Standards.

IUT shall have a detailed understanding and functional knowledge of all procedures and maneuvers IAW the AH-1Z NATOPS and MDG.

IUT should perform all maneuvers as lead and wingman.

Prerequisites. 5311

Crew. ANI/IUT

<b>FRSI-5314</b>	<b>2.0</b>	<b>730</b>	<b>B,R</b>	<b>D</b>	<b>A</b>	<b>1 AH-1Z</b>
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Goal. OS – Review weapons systems operation.

## Requirements

## Discuss

SWD event techniques, standardization and operating areas  
SWD stage RAC tendencies and risk mitigation  
Any SWD stage discussion item, maneuver or procedure

Review

20mm delivery  
Rocket delivery  
Weapons emergencies  
Ordnance communication procedures  
Ordnance checklists  
Range operations and regulations

Performance Standards

IUT shall have a detailed understanding and functional knowledge of all SWD stage procedures, and checklists IAW the AH-1Z NATOPS, MDG, ASTACSOP and NTTP.  
IUT shall brief and lead the flight and conduct crew brief. Crew brief shall give special attention to switchology and weapons release authority.  
Conduct of the flight should be based on IUT's currency and proficiency in weapons systems.

Prerequisites. 5313

Ordnance. (7) 2.75 inch rockets, (300) 20mm

Range Requirements. Live fire LASER safe range

Crew. ANI/IUT

**SFRSI-5315    1.5    730    B,R    D    S    1 AH-1Z**

Goal. OS - Conduct an Assistant NATOPS Instructor (ANI) standardization check.

Requirements

Discuss

ANI required events  
Standardization during initial FAM stage events  
Standardization during end of stage events, including 1116  
NATOPS Brief with emphasis on CRM  
Egress procedures

Review

All FAM stage maneuvers and procedures  
Aircraft emergencies with emphasis on causes, indications and recovery procedures

Performance Standards

IUT shall have a detailed understanding and functional knowledge of all Core Introduction Phase procedures and checklists IAW the AH-1Z NATOPS, MDG, ASTACSOP and NTTP.

Prerequisite. Designated FRSI (6002, 6003 if applicable)

Crew. NE/IUT

**FRSI-5316    2.0    730    B,R    NS    A    1 AH-1Z**

Goal. RS – Review NVD familiarization and TERF maneuvers.

Requirements

Discuss

NVD event techniques, standardization and operating areas  
RAC NVD tendencies and risk mitigation  
Any NVD event discussion item, maneuver or procedure

Review

NVD portion of NATOPS brief  
NVD FAM stage maneuvers  
NVD TERF stage maneuvers  
Local area operations, techniques and procedures

Performance Standards



Crew. NSI/IUT

### Purpose

Emphasis will be placed on the ability to coordinate simultaneous FW and RW CAS, surface fires (direct and indirect), while working with a TACP and operating within the MACCS.

IUT shall be FAC(A) qualified IAW NAVMC P3500.48 and current/proficient per the JFAC(A) MOA.

IUT will be designated an NSI prior to beginning the syllabus.

*IUT SHALL have logged a year's worth of FAC(A) controls after being designated a FAC(A) prior to beginning the FAC(A)I syllabus*

Aircraft should be configured with an operable FLIR, VTR, HMSD, and IR Pointer (night events).

Crew Requirements. IAW MAWTS-1 AH-1 Course Catalog.

Ground/Academic Training. IAW MAWTS-1 AH-1 Course Catalog.

<b>SFACAI-5400</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>(NS)</b>	<b>S/A</b>	<b>1 AH-1Z</b>
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Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the FAC(A)I POI.

<b>FACAI-5401</b>	<b>2.0</b>	<b>*</b>	<b>B,R</b>	<b>(NS)</b>	<b>A</b>	<b>1 AH-1Z &amp; 1 H-1</b>
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**Requirement.** Reference the MAWTS-1 AH-1 Course Catalog for the FAC(A)I POI.

Ordinance. Reference the MAWTS-1 AH-1 Course Catalog.

Prerequisite. 5400

**FACAI-5402      2.0      \*      B,R      (NS)      A      1 AH-1Z & 1 H-1**

Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the FAC(A)I POI.

Ordinance. Reference the MAWTS-1 AH-1 Course Catalog.

Prerequisite. 5401,5040,5041

**Purpose.** To certify the IUT as an NSFI capable of safely conducting ground and airborne instruction of night vision device (NVD) flight during the Core Skill Introduction Phase.

General. IUT will be Night Systems Qualified Low Light Level (NSQ LLL) and TERFI prior to beginning training.

Crew Requirements. IAW MAWTS-1 Course Catalog

Ground/Academic Training. IAW MAWTS-1 Course Catalog

<b>NSFI-5600</b>	<b>2.0</b>	<b>*</b>	<b>B,R,S</b>	<b>NS</b>	<b>A</b>	<b>1 AH-1Z</b>
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Requirement. Reference the MAWTS-1 Course Catalog for the NSFPI POI.

<b>NSFI-5601</b>	<b>2.0</b>	<b>*</b>	<b>B,S</b>	<b>NS</b>	<b>A</b>	<b>2 AH-1Z</b>
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**Requirement.** Reference the MAWTS-1 Course Catalog for the NSF I POI.

<b>NSFI-5602</b>	<b>2.0</b>	<b>*</b>	<b>B,S</b>	<b>NS</b>	<b>A</b>	<b>1 AH-1Z</b>
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**Requirement.** Reference the MAWTS-1 Course Catalog for the NSFI POL.

### 2.15.9 Defensive Air Combat Maneuvering Instructor (DACMI)

**Purpose.** To certify the IUT as a Rotary Wing Defensive Air Combat Maneuvering Instructor (RW DACMI) and Fixed Wing Defensive Air Combat Maneuvering Instructor (FW DACMI) capable of safely conducting ground and airborne instruction of the AH-1Z air-to-air flight syllabus.

## General

IUT will be RWDACM qualified and designated WTO prior to beginning RWDACMI training.

IUT will be FWDACM qualified and designated WTO prior to beginning FWDACMI training.

Upon completion of DACMI-5800 and DACMI-5802, the IUT may be designated a RW DACMI, capable of instructing RW DACM T&R events and the RW DACMI IUT syllabus (DACMI-5800).

Upon completion of DACMI-5801 and DACMI-5803, the IUT may be designated a FW DACMI, capable of instructing FW DACM T&R events and the FW DACMI IUT syllabus (DACMI-5801).

Aircraft should be configured with an operable TSS, captive AIM-9, DVR/VTR, APR-39, and ALE-47.

Crew Requirements. IAW MAWTS-1 AH-1 Course Catalog.

Ground/Academic Training. IAW MAWTS-1 AH-1 Course Catalog.

<b>DACMI-5800</b>	<b>2.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>2 AH-1Z</b>
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Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the DACMI POI.

Ordnance (Optional). (1) captive AIM-9, (60) flares and TCTS pod

<b>DACMI-5801</b>	<b>2.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>2 AH-1Z</b>
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Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the DACMI POI.

Ordnance (Optional). (1) captive AIM-9, (60) flares and TCTS pod

**DACMI-5802    2.0    \*    B,R    D    A    2 AH-1Z**

Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the DACMI POL.

Ordnance (Optional). (1) captive AIM-9, (60) flares and TCTS pod

**DACMI-5803    2.0    \*    B,R    D    A    2 AH-1Z**

**Requirement.** Reference the MAWTS-1 AH-1 Course Catalog for the DACMI POI.

Ordnance (Optional). (1) captive AIM-9, (60) flares and TCTS pod

#### 2.15.10 Night Systems Instructor (NSI)

**Purpose.** To certify the IUT as an NSI capable of safely conducting ground and airborne instruction of the AH-1Z night vision device (NVD) flight syllabus.

General. IUT will be NSQ(LL) proficient and designated WTO prior to beginning training.

Aircraft should be configured with an operable TSS, PGM system, DVR/VTR, APR-39, ALE-47 and IR Pointer.

Crew Requirements. IAW MAWTS-1 AH-1 Course Catalog.

Ground/Academic Training. IAW MAWTS-1 AH-1 Course Catalog.

<b>NSI-5900</b>	<b>2.0</b>	<b>*</b>	<b>B,S</b>	<b>NS</b>	<b>A</b>	<b>1 AH-1Z</b>
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**Requirement.** Reference the MAWTS-1 AH-1 Course Catalog for the NSI POL.

**NSI-5901      2.0      \*      B,S      NS      A      1 AH-1Z & 1 H-1**

Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the NSI POI.

Ordinance. (2) captive PGM, (14) 2.75 inch rockets, (2) 2.75 inch rockets (optional), (300) rounds 20mm, (60) chaff/flares

**SNSI-5902      1.5      \*      B      NS      S/A      FFS/FTD**

Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the NSI POI.

Ordinance. (2) captive PGM, (7) 2.75 inch rockets, (300) rounds 20mm, (60) chaff/flares

**SNSI-5903      1.5      \*      B      NS      S/A      FFS/FTD**

Requirement. Reference the MAWTS-1 Course AH-1 Catalog for the NSI POI.

Ordinance. (2) captive PGM, 2.75 inch rockets (optional), (300) rounds 20mm, (60) chaff/flares

**NSI-5904      2.0      \*      B,S      NS      A      1 AH-1Z & 1 H-1**

Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the NSI POI.

Ordinance. (2) captive PGM, 2.75 inch rockets (optional), (300) rounds 20mm, (60) chaff/flares

**NSI-5905      2.0      \*      B,R      LLL      A      1 AH-1Z & 1 H-1**

Requirement. Reference the MAWTS-1 AH-1 Course Catalog for the NSI POI.

Ordinance. (2) captive PGM, (7) 2.75 inch rockets (Optional), (300) rounds 20mm, (60) chaff/flares

#### 2.15.11 Flight Lead Standardization Evaluator (FLSE)

Purpose. To certify and designate the pilot as a FLSE.

##### General

FLSEs ensure flight leadership standardization across all squadrons.

The FLSE shall conduct a standardized evaluation of a prospective flight leader's ability to safely and effectively perform the duties as a flight lead.

Prospective FLSEs shall complete the POI listed below.

Upon completion of the POI, the squadron commanding officer will nominate the prospective FLSE to the MAG commanding officer for approval and designation.

FLSE-5920 is not required for Weapons and Tactics Instructor Course (WTI) graduates that do not require refresher training.

Designated FLSEs are required to complete quarterly standardization training with the Program Coordinator.

Refer to NAVMC 3500.14 and the MAWTS-1 AH-1 Course Catalog.

##### Re-designation

FLSE re-designation criteria for aircrew that do not require Core Introduction Refresher training is at the discretion of the MAG CO.

For aircrew who require Core Introduction Refresher training, the minimum re-designation requirement for FLSE positions is successful completion of the R-coded T&R FLSE POI.

Crew requirements. Shall be determined by the Wing FLSE Program Coordinator or the FLSE Model Manager.

Academic/Ground Training. IAW MAWTS-1 AH-1 Course Catalog.

**FLSE-5920      0.0      730      B,R      (N)      G      FLSE Certification**

Goal. To certify the IUT to be designated a FLSE.

Requirement. IAW MAWTS-1 AH-1 Course Catalog

Performance Standard. IAW MAWTS-1 AH-1 Course Catalog

Prerequisite. 6598 (DL & NSI)

External Syllabus Support. Program Coordinator

**FLSE-5921      0.0      365      B,R,S      (N)      G      Annual FLSE Training**

Goal. Complete quarterly FLSE training with program coordinator.

Requirement. Quarterly training with the FLSE Program Coordinator

Performance Standard. Successful completion of the quarterly FLSE training

Prerequisite. 5920

External Syllabus Support. Program Coordinator

## 2.16 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD) PHASE (6000)

Purpose. To outline the requirements for qualifications, designations, and flight leadership.

General.

Once the flight to attain the qualification/designation is complete, a letter from the squadron commanding officer awarding the qualification/designation shall be placed in the NATOPS and APR before that qualification/designation can be utilized.

Completion of the INST-6100 sortie meets the requirements for the PUI to be instrument qualified. At the discretion of the squadron commanding officer a letter designating the PUI as Instrument qualified shall be placed in the NATOPS jacket and APR.

Completion of the NTPS-6101 sortie meets the requirements for the PUI to be NATOPS qualified. At the discretion of the squadron commanding officer a letter assigning the PUI as NATOPS qualified shall be placed in the NATOPS jacket and APR.

Completion of FCF stage meets the requirements for the PUI to be eligible for the FCP designation. At the discretion of the squadron commanding officer a letter designating the PUI as an FCP shall be placed in the NATOPS jacket and APR.

Completion of the Core Phase and the Mission Phase meet the requirements for the PUI to be eligible for the AHC designation. Upon completion of the DESG-6398 event and reflly of SWD-2605 meeting Mission Skills ordnance accuracy standards, and at the discretion of the squadron commanding officer a letter designating the PUI as an AHC shall be placed in the NATOPS jacket and APR.

Completion of the Section Lead stage SL-6498 meets the requirements for the PUI to be eligible for the Section Lead designation. At the discretion of the squadron commanding officer a letter designating the PUI as Section Lead shall be placed in the NATOPS jacket and APR.

Completion of the Division Lead stage DL-6598 stage meets the requirements for the PUI to be eligible for the Division Lead designation. At the discretion of the squadron commanding officer a letter designating the PUI as Division Lead shall be placed in the NATOPS jacket and APR.

Completion of the FL-6698 sortie meets the requirements for the PUI to be eligible for the Flight Lead designation. At the discretion of the squadron commanding officer a letter designating the PUI as Flight Lead shall be placed in the NATOPS jacket and APR.

Completion of the DESG-6598 sortie meets the requirements for the PUI to be eligible for the AMC designation. At the discretion of the squadron commanding officer a letter designating the PUI as AMC shall be placed in the NATOPS jacket and APR.

Ordnance Delivery. At At the completion of applicable stages, the PUI will have demonstrated increased accuracy during ordnance delivery and proper use of the TSS under varied threat conditions with mixed ordnance loads. For the AHC, SL, DL and FL stages, the PUI shall meet the ordnance metrics outlined for the Mission Phase (See Paragraph 2.15.4). VTR debrief should be used to the maximum extent possible. Emphasis will be on CRM and Risk Management while utilizing the ordnance systems.

## RCQD Stages

RCQD (6000 Phase)		
STAGE	PARAGRAPH NUMBER	PAGE NUMBER
Academics (ACAD)	2.17.1	2-112
Instrument Rating(INST)	2.17.2	2-113
NATOPS Qualification (NATOPS)	2.17.3	2-113
Crew Resource Management Training (CRM)	2.17.4	2-115
Functional Check Pilot (FCP)	2.17.5	2-115
Pilot Qualified in Model (PQM)	2.17.6	2-118
Attack Helicopter Commander (AHC)	2.17.7	2-119
Section Leader (SL)	2.17.8	2-119
Division Leader (DL)	2.17.9	2-122
Flight Leader (FL)	2.17.10	2-125
Air Misison Commander (AMC)	2.17.11	2-127
Specific Operations Tracking Codes (SOTC)	2.17.12	2-128

## 2.17 RCQD STAGES

### 2.17.1 Academics (ACAD)

**Purpose.** To develop standardized flight leadership skills and knowledge. These academics review and emphasize procedural based knowledge, systems knowledge/nomenclature, and advanced Joint/MAGTF topics to ensure individuals possess the requisite knowledge and ability to command their aircraft and lead flights.

#### General

These academics are intended to be an integrated series of academic lectures, readings and practical application contained within each phase of training. The lectures, readings and chalk-talks are contained in the MAWTS-1 AH-1 Course Catalog. The academic courseware is a requirement.

At the completion of each ACAD event, the appropriate training code shall be logged in M-SHARP by the individual pilot, contract instructor or squadron operations personnel, as appropriate.

The codes listed below associated with these classes may not be the most up to date as the current AH-1 Course Catalog is the master document for stage academic requirements.

Flight leadership academic events are listed below.

REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS ACADEMIC PHASE	
TRAINING CODES	COURSEWARE
SECTION LEADER	
ACAD-8600	ACPM 8600 Series
AIR MISSION COMMANDER	
ACAD-6041	(S) MAGTF Targeting
ACAD-6042	JTAC-Aircrew Integration
ACAD-6071	Air Mission Commander
*Indicates classes that should be presented to all pilots annually.	

### 2.17.2 Instrument Rating (INST)

Purpose. To certify the PUI as instrument rated.

General. The instrument rating is an annual requirement. The PUI shall log annual instrument minimum requirements prior to event IAW CNAF M-3710. A designated instrument Instructor, who is a member of the Instrument Flight Board (IFB), shall evaluate INST-6100.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW CNAF M-3710.7.

**INST-6000      8.0      365      B,R,M                      (N)      G      Instrument Ground School**

Goal. Attend an TYCOM approved instrument ground school per CNAF M-3710.7.

Performance Standards. Achieve a grade of qualified IAW CNAF M-3710.7.

**INST-6001      1.0      365      B,R,M                      (N)      G      Instrument Ground School Exam**

Goal. To evaluate the airman's knowledge of instrument flight and procedures.

Performance Standards. Achieve a grade of qualified IAW CNAF M-3710.7.

**INST-6100      1.5      365      B,R,M                      (N)      S/A      FFS/FTD**

Goal. OS - Conduct an annual instrument check.

Requirement. Successfully conduct the check IAW the NATOPS, MDG, CNAF M-3710.7 and Instrument Flight Manual (IFM).

Performance Standards. IAW the NATOPS, MDG, CNAF M-3710.7 and Instrument Flight Manual (IFM).

Prerequisites. 6000,6001, and IAW CNAF M-3710.7

Crew. BIP+IFBM (NSI required if flown using NVDs)/PUI

### 2.17.3 NATOPS (NTPS) Qualification

Purpose. To certify the PUI as NATOPS qualified in the AH-1Z.

General. The NATOPS qualification is an annual requirement. A designated NATOPS Evaluator/Instructor/Assistant NATOPS Instructor shall evaluate NTPS-6101.

To the greatest extent possible, an EP review (FAM-2801) will be conducted in the same month as the annual NATOPS check (NTPS-6101). The annual CRM evaluation (CRM-6102) should be completed in conjunction with the annual NATOPS check, when possible.

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW NATOPS.

**NTPS-6002      2.0      365      B,R,S,M                      (N)      G      Open Book NATOPS Evaluation**

Goal. To evaluate airman's knowledge of normal/emergency procedures, systems and aircraft limitations.

Performance Standards. Achieve a grade of qualified IAW NATOPS.

**NTPS-6003      1.0      365      B,R,S,M      (N)      G      Closed Book NATOPS Evaluation**

Goal. To evaluate airman's knowledge of normal/emergency procedures, systems and aircraft limitations.

Performance Standards. Achieve a grade of qualified IAW NATOPS.

**NTPS-6004      1.0      365      B,R,S,M      (N)      G      Oral NATOPS Evaluation**

Goal

To evaluate airman's knowledge of normal/emergency procedures, systems and aircraft limitations.

Performance Standards. Achieve a grade of qualified IAW NATOPS.

**NTPS-6101      1.5      365      B,R,S,M      (N)      A/S      1 AH-1Z**

Goal. OS - Conduct an annual NATOPS check.

Requirement. Successfully conduct the evaluation IAW CNAF M-3710.7 and NATOPS.

Performance Standards. IAW CNAF M-3710.7 and NATOPS.

Prerequisites. 6002, 6003, 6004

Crew. NI or ANI /PUI

Performance Standards. IAW CNAF M-3710.7 and NATOPS

**NTPS-6105      0.1      365      B,R,S,M      (N)      A/S 1 AH-1Z Assistant NATOPS Instructor Standardization**

Goal. To obtain designation as an Assistant NATOPS Instructor (ANI).

Performance Standards. IAW CNAF M-3710.7. Completion of this event meets the requirements to be eligible for the ANI designation. At the discretion of the commanding officer a letter designating the IUT as ANI shall be placed in the NATOPS jacket.

Prerequisites. BIP

Crew. NI/IUT

**NTPS-6106      0.1      365      B,R,S,M      (N) A/S      1 AH-1Z NATOPS Instructor Standardization**

Goal. To obtain designation as a NATOPS Instructor (NI).

Performance Standards. IAW CNAF M-3710.7. Completion of this event meets the requirements to be eligible for the NI designation. At the discretion of the commanding officer a letter designating the IUT as NI shall be placed in the NATOPS jacket.

Prerequisites. BIP

Crew. NE/IUT

**NTPS-6107      0.1      365      B,R,S,M      (N) A/S      1 AH-1Z NATOPS Evaluator Standardization**

Goal. To obtain designation as a NATOPS Evaluator (NE).

Performance Standards. IAW CNAF M-3710.7. Completion of this event meets the requirements to be eligible for the NE designation. At the discretion of the commanding officer a letter designating the IUT as NE shall be placed in the NATOPS jacket.

Prerequisites. FRSI+CRMI

Crew. FRS Commanding Officer or NE/IUT

#### 2.17.4 Annual Crew Resource Management (CRM) Evaluation

Purpose. Conduct annual CRM ground training and flight evaluation.

General Completion of this stage meets the requirements for the annual CRM flight evaluation and ground training.

The CRM-6102 event may be logged in conjunction with any operational or training flight. However, it should be completed in conjunction with the annual NATOPS check, when possible.

CRM training and flight evaluations shall be logged in the individual NATOPS Flight Personnel Training/Qualification Jacket in section II, part C on enclosure (4). In addition to Section II part C entries, CRM flight evaluation shall be commented on in the remarks section of the NATOPS evaluation form when the flight is flown in conjunction with NTPS-6101. Additionally annual CRM flight evaluations shall be documented in the individual aircrew logbooks.

Crew Requirements. CRMF (CRMF Designated NSI)

Ground/Academic Training. IAW CNAFINST 1542.7 series.

<b>CRM-6005</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>(N)</b>	<b>G</b>	<b>Annual CRM Ground Training</b>
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Goal. Receive annual CRM training.

Requirement. IAW CNAFINST 1542.7 series receive instruction in CRM history, Seven Critical Skills, CNAFINST 1542.7 series and a T/M specific case study or scenario.

<b>CRM-6102</b>	<b>0.1</b>	<b>365</b>	<b>B,R,S,M</b>	<b>(N)</b>	<b>S/A</b>	<b>1 AH-1Z CRM EVAL</b>
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Goal. OS - Conduct an annual Crew Resource Management evaluation.

Requirement

Successfully conduct the evaluation IAW CNAF M-3710.7 and NATOPS.

The evaluation should be conducted in conjunction with the annual NATOPS evaluation flight when possible.

Performance Standards. IAW CNAF M-3710.7 and NATOPS.

<b>CRM-6103</b>	<b>0.0</b>	<b>365</b>	<b>B,R,S</b>	<b>G</b>	<b>CRMF Training</b>
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Goal. To obtain designation as a Crew Resource Management Facilitator (CRMF).

Requirement. Complete the requirements specified per CNAFINST 1542.7. Completion of this event meets the requirements to be eligible for the CRMF designation. At the discretion of the commanding officer a letter designating the PUI as CRMF shall be placed in the NATOPS jacket and APR.

Performance Standards. IAW CNAFINST 1542.7 series.

<b>CRM-6104</b>	<b>0.0</b>	<b>*</b>	<b>B</b>	<b>G</b>	<b>CRMI Training</b>
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Goal. To obtain designation as a Crew Resource Management Instructor (CRMI).

Requirement. Complete the requirements specified per CNAFINST 1542.7. Completion of this event meets the requirements to be eligible for the CRMI designation. At the discretion of the commanding officer a letter designating the PUI as CRMI shall be placed in the NATOPS jacket and APR.

Performance Standards. IAW CNAFINST 1542.7 series.

<b>FCP-6006</b>	<b>1.0</b>	<b>485</b>	<b>B,R,S</b>	<b>(N)</b>	<b>G</b>	<b>FCP Open Book Exam</b>
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Goal. Successful completion of the FCP open-book exam.

<b>FCP-6007</b>	<b>1.0</b>	<b>*</b>	<b>B</b>	<b>(N)</b>	<b>G</b>	<b>FCP Closed Book Exam</b>
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Goal. Successful completion of the FCP closed-book exam.

<b>SFCP-6200</b>	<b>1.5</b>	<b>*</b>	<b>B,R,S</b>	<b>D</b>	<b>S</b>	<b>FTD/FFS</b>
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Goal. OS – Demonstrate FCF procedures.

Requirements

Discuss

- ODO brief procedures
- FCF paperwork process
- ADB contents
- Crew requirements/authorized crewmembers
- Weather requirements
- Testing areas
- QA brief
- FCF profiles
- The proper completion of M-SHARP/NALCOMIS/OOMA paperwork following FCFs
- Emergency procedures during FCFs
- Structural vs. access panels
- Functional ground turn requirements
- The importance of proper pre-flights and post-flights

Demonstrate

- All items in the FCF Checklist
- If conducted in an aircraft, demonstrate IMD-HUMS procedures for main/tail rotor track & balance and vibration diagnostics

Performance Standards

IAW NATOPS, OPNAVINST 4790, and local SOPs.

PUI shall demonstrate familiarity with systems, FCF checklists, procedures, and maneuvers while conducting an “A” profile.

Prerequisites. 6300

External Syllabus Support. Device Operator

Crew. BIP+FCP/PUI

<b>SFCP-6201</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S</b>	<b>FTD/FFS</b>
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Goal. RS – Introduce FCF procedures.

Requirements

Discuss

- Hydraulic samples
- Safe for flight items
- Engine rigging and trim adjustments
- DECU, HMU, and ODV operation
- Overspeed protection
- Ground/hover, in-flight, and maximum power assurance/checks
- Torque repeatability
- WOG initialization
- N<sub>R</sub> droop check
- Control motion transducer check

Introduce

- All items in the FCF checklist
- If conducted in an aircraft, introduce IMD-HUMS procedures for main/tail rotor track & balance and vibration diagnostics

## IAW NATOPS, OPNAVINST 4790, and local SOPs.

Prerequisite. 6200

### External Syllabus Support. Device Operator

Crew. BIP+FCP/PUI

**FCP-6202      1.5      \*      B      D      A      1 AH-1Z**

Goal. OS - Introduce main rotor track & balance and vibration diagnostics.

## Discuss

- IMD-HUMS procedures for main rotor track & balance
- Ground/in-flight vibration diagnostics
- Crew swap function
- Ground and flight regimes for rotor track and balance and vibration diagnostics
- Methods for obtaining & making corrections
- Use of optical tracker
- Aut rotation RPM

Demonstrate/Introduce . Main rotor track & balance and vibration diagnostics

## IAW NATOPS, OPNAVINST 4790, and local SOPs.

PUI shall demonstrate familiarity with systems, FCF checklists, procedures, and maneuvers while conducting an “A” profile.

This event may be combined with FCP-6203.

IAW NATOPS, PUI shall demonstrate knowledge and comprehension of main rotor track and balance/vibanal procedures. PUI must also observe track and balance/vibanal equipment installation and preflight, post-flight results, and subsequent adjustments.

Prerequisites. 6201

Crew. BIP+FCP/PUI

**FCP-6203**      **1.5**      **\***      **B**      **D**      **A**      **1 AH-1Z**

Goal. OS - Introduce tail rotor track & balance.

## Discuss

## IMD-HUMS procedures for tail rotor track & balance

### Methods for obtaining & making corrections

Demonstrate/Introduce . Tail rotor track & balance

## IAW NATOPS, OPNAVINST 4790, and local SOPs.

PUI shall demonstrate familiarity with systems, FCF checklists, procedures, and maneuvers while conducting an “A” profile.

This event may be combined with FCP-6202.

Prerequisite. 6202

Crew. BIP+FCP/PUI

<b>SFCP-6204</b>	<b>1.5</b>	<b>365</b>	<b>B,R,S</b>	<b>D</b>	<b>S/A</b>	<b>FTD/FFS</b>
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Goal. RS – Review FCF procedures.

Requirements

Discuss

AMU Ground Station software  
Use of IMD-HUMS for viewing systems indications  
Shipboard FCF procedures  
MESM  
Hydraulic samples, functional check flight (FCF) vs. functional ground turn (FGT) procedures and requirements, daily and turnaround inspections

Review

All FCF procedures  
Completion of track & balance and vibration diagnostics may be simulated

Performance Standards

IAW NATOPS, OPNAVINST 4790, and local SOPs.  
PUI shall demonstrate knowledge of systems, FCF checklists, procedures, and maneuvers while conducting an “A” profile.

Prerequisites. 6200,6201,6202,6203

External Syllabus Support. Device Operator

Crew. BIP+FCP/PUI

<b>FCP-6205</b>	<b>1.5</b>	<b>*</b>	<b>B,R,S</b>	<b>D</b>	<b>A</b>	<b>1 AH-1Z</b>
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Goal. RS – Conduct FCP Evaluation.

Requirement

Discuss. Any FCF procedure, regulation, SOP, or aircraft system

Evaluate . PUI on brief, FCF, and debrief procedures

Performance Standards

PUI shall conduct an “A” profile FCF.  
Completion of track & balance and vibration diagnostics may be simulated.  
IAW NATOPS, OPNAVINST 4790, and local SOPs.

PUI shall demonstrate familiarity with systems, FCF checklists, procedures, and maneuvers while conducting an “A” profile.

Prerequisites. 6006,6007,6204

Crew. BIP+FCP/PUI

2.17.6 Pilot Qualified in Model (PQM)

Purpose. Tracking code for PQM.

General. Completion of the Core Introduction Phase meets the requirements for the PUI to be PQM. Upon completion of the CIX-1901, and the designation by the squadron commanding officer, a letter assigning the PUI as PQM shall be placed in the NATOPS jacket, APR and a proficiency code of DESG-6300 shall be logged.

Crew Requirements. As listed at the end of the event.

Ground/Academic Training. As outlined in Core Skill Introduction Phase.

<b>DESG-6300</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>A/S</b>	<b>1 AH-1Z</b>
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Goal. RS - Qualify PUI as PQM.

Requirement. Completion of the Core Introduction Phase

Prerequisites. 1901

## 2.17.7 Attack Helicopter Commander (AHC)

Purpose. To qualify the PUI as an Attack Helicopter Commander (AHC).

### General

Completion of the Core Skills Phase and the ESC, CAS, SCAR, STK, and TRAP stages of the Mission Skill Phase meet the requirements for the PUI to be eligible for the AHC designation.

Upon completion of the DESG-6398 event and reflly of SWD-2605 meeting Mission Skills ordnance accuracy standards, and at the discretion of the squadron commanding officer a letter designating the PUI as an AHC shall be placed in the NATOPS jacket and APR.

The AHC evaluation shall be conducted as a separate flight as a wingman.

The DESG-6398 shall be logged in conjunction with a previously flown Mission Skill Phase sortie for the evaluation flight.

Aircraft shall be configured with an operable FLIR, PGM system, CLDR, HMSD, VTR/DVR, APR-39, AAR-47, ALE-47 and IR pointer (night event).

Crew Requirements. As listed at the end of the event.

Ground/Academic Training. IAW with the MAWTS-1 AH-1 Course Catalog.

**DESG-6398      1.5      \*      B,R,S      (NS)      A      1 AH-1Z & 1 H-1**

Goal. RS – To qualify the PUI as an Attack Helicopter Commander (AHC).

### Requirements

Discuss. All aircraft ordnance and ASE systems

### Review

Ordnance pre-flight checks  
Ordnance emergencies  
SWD and ordnance delivery profiles  
Knowlwdge of local range regulations  
SOPs for ordnance delivery

### Performance Standards.

PUI shall conduct cockpit brief with focus on weapons considerations.

PUI shall demonstrate knowledge of local range regulations and SOPs for ordnance delivery.

PUI shall demonstrate successful employment of the 20mm weapon system at ranges from 500-2000 meters and 2.75 inch rockets at ranges from 500-2000 meters, exhibiting proper impact detection and adjustment, while attaining Mission Skills accuracy standards.

PUI shall exhibit a thorough understanding of all weapons systems and safely employ ordnance systems IAW AH-1Z NTTP/NTRP/NATOPS.

PUI shall conduct cockpit debrief, assessing weapons switchology and accuracy using videotape review.

For Series Conversion this event may be flown in conjunction with the last 3000 S event as the completion of the 2000 and 3000 series conversion. Upon completion of this event during the series conversion syllabus, all flight leadership and FAC(A) qualifications will convert.

Prerequisites. 8200,8300,6300, (Core Skill and Mission Skill Phase complete), reflly of SWD-2605 IAW Mission Skills Phase ordnance accuracy standards (may be flown in conjunction with the DESG-6398).

Ordnance. (2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares

Range Requirement. Live fire and LASER safe range.

Crew. WTO(NSI)/PUI

## 2.17.8 Section Leader

Purpose. To prepare and evaluate a prospective section lead's ability to plan, brief, lead and debrief a section.

### General

PUI shall conduct the following day and night workup sorties in order to develop the prospective section lead's flight leadership.

At the discretion of the Commanding Officer cross-cockpit instruction is authorized. SL-6498 shall be evaluated by a MAG Flight Lead Stan Evaluator (FLSE) from a different command within the MAG.

The IP will use the sortie requirement criteria to determine whether the PUI completed the sortie.

The PUI will use the performance standards to debrief the flight.

Completion of the Section Leader syllabus meets the requirements for designation as a Section Leader. At the discretion of the squadron commanding officer, a letter designating the pilot as a Section Leader shall be placed in the NATOPS jacket and APR.

In order to complete the Section Leader stage two of the three flights shall be conducted with ordnance. Rockets are optional if flown with (2) CATM-114s and (500) 20mm.

One of the ordnance flights shall be conducted during the day and one shall be conducted at night.

Consideration should be given to making the Section lead check (SL-6498) an ordnance event.

At least one of the events shall be conducted with 2 AH-1Zs and at least one of the events should be a mixed section.

PUI shall have a minimum of 50 hours as designated AHC and three flights in wingman position as a designated AHC prior to flying SL-6498.

Additionally, during the 50 hour prerequisite period the PUI shall brief and lead a minimum of 2 sections prior to beginning the section lead syllabus.

PUI shall be evaluated on ordnance delivery accuracy utilizing Core Plus/Mission Plus Skills ordnance accuracy standards.

Aircraft should be configured with an operable FLIR, PGM system, HMSD, VTR/DVR, APR-39, AAR-47 and ALE-47 and IR Pointer (night events).

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>SL-6400</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>1 AH-1Z &amp; 1 H-1</b>
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Goal. OS – Tactically employ a section in a low to medium threat environment during the conduct of a day OAS or escort mission. Emphasis shall be placed on safety, route planning, CRM/TRM critical skills, flight member responsibilities, threat counter-tactics, ASTACSOP, fuel management and communications.

#### Requirements

- Plan, brief, lead and debrief a day OAS or escort mission
- Develop a plan that supports the ground SOM and commander's intent of the supported unit
- Plan and brief section mechanics, attacks and objective area maneuver
- Plan and brief section threat reactions
- Plan and brief rendezvous & join-up per ASTACSOP and NTTP
- Brief penetration/de-penetration/offensive checklist procedures
- Use all available planning tools to plan & brief route considerations, sensor acquisition, and target engagement
- Conduct a minimum of one section take-off and one section landing
- Maneuver section using appropriate formations and signals
- Conduct a rendezvous & join-up
- Demonstrate applicable threat counter-tactics
- Locate, plot and effectively engage target(s) within the section
- Direct attacks against target(s)
- Control section during enroute and objective area operations
- Delegate tasks within flight and cockpit
- Conduct the debrief, covering pertinent section specifics and learning points

#### Performance Standards

PUI shall brief IAW ASTACSOP/NTTP.

PUI shall maintain situational awareness of wingman and mutual support during enroute portion of flight and in the objective area.  
PUI shall effectively control the section throughout the flight.  
PUI shall locate targets in a timely manner.  
PUI shall engage target(s) using TTPs appropriate for the scenario.  
PUI shall minimize threat exposure and use appropriate threat counter-tactics.  
PUI shall use TRANSEC/COMSEC for all communications.  
PUI shall adhere to local course rules and comply with applicable range regulations.  
PUI shall debrief lessons learned and accurately analyze effectiveness of TTPs.  
PUI shall engage targets using TTPs appropriate for the scenario.

Prerequisite. 6398, at least three flights in wingman position as a designated AHC, and brief and lead a minimum of 2 sections.

Ordnance (Optional). (2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirement. Live fire and LASER safe range

External Syllabus Support. One or more assault support aircraft(if escort mission)

Crew. NSI/PUI

**SL-6401      1.5      \*      B      NS      A      1 AH-1Z & 1 H-1**

Goal. OS – Tactically employ a section in a medium to high threat environment during the conduct of a night OAS or escort mission. Emphasis shall be placed on safety, range regulations, night formation considerations, sensor acquisition and hand-off, night rendezvous & join-up procedures, aircraft lighting, section IIMC procedures and wingman awareness.

#### Requirements

Plan, brief, lead and debrief a night OAS or escort mission  
Develop a plan that supports the ground SOM and commander's intent of the supported unit  
Plan and brief section mechanics, attacks and objective area maneuver  
Plan and brief fire support plan  
Plan and brief section threat reactions  
Use all available planning tools to plan & brief night considerations including illumination, shadowing, sensor effectiveness, and target acquisition/engagement  
Brief appropriate FAA and tactical lighting configurations  
Conduct a minimum of one night section take-off and one night section landing  
Maneuver section using formations and tactics appropriate for ambient illumination  
Demonstrate applicable threat counter-tactics  
Locate, plot, and effectively engage target(s) within the section  
Control section during enroute and objective area operations  
Delegate tasks within flight and cockpit  
Conduct the debrief, covering pertinent section specifics and learning points

#### Performance Standards

PUI shall brief IAW ASTACSOP/NTTP.  
PUI shall maintain situational awareness of wingman and mutual support during enroute portion of flight and in the objective area.  
PUI shall effectively control the section throughout the flight.  
PUI shall locate targets in a timely manner.  
PUI shall engage target(s) using TTPs appropriate for the scenario.  
PUI shall minimize threat exposure and use appropriate threat counter-tactics.  
PUI shall use TRANSEC/COMSEC for all communications.  
PUI shall adhere to local course rules and comply with applicable range regulations.  
PUI shall debrief lessons learned and accurately analyze effectiveness of TTPs.

Prerequisite. 6398, at least three flights in wingman position as a designated AHC, and brief and lead a minimum of 2 sections.

Ordnance (Optional). (2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirement. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. One or more assault support aircraft(if escort mission)

Crew. NSI/PUI

**SL-6498      2.0      \*      B,R      (NS)      A      1 AH-1Z & 1 H-1**

Goal. OS – Section Leader Evaluation - Tactically employ a section in a low to medium threat environment during the conduct of a day or night OAS or escort mission. Emphasis shall be placed on safety, range regulations, mission planning, weapons effects/SDZs, PGM employment, identification of targets & friendly personnel, FARP operations, ASTACSOP and wingman awareness.

Requirements

- Plan, brief, lead and debrief a day OAS or escort mission
- Develop a plan that supports the ground SOM and commander's intent of the supported unit
- Plan and brief section mechanics, attacks and objective area maneuver
- Plan and brief section threat reactions
- Plan and brief rendezvous & join-up per ASTACSOP and NTP
- Brief penetration/de-penetration/offensive checklist procedures
- Use all available planning tools to plan & brief route considerations, sensor acquisition, and target engagement
- Conduct a minimum of one section take-off and one section landing
- Maneuver section using appropriate formations and signals
- Conduct a rendezvous & join-up
- Demonstrate applicable threat counter-tactics
- Locate, plot and effectively engage target(s) within the section
- Direct attacks against target(s)
- Control section during enroute and objective area operations
- Delegate tasks within flight and cockpit
- Conduct the debrief, covering pertinent section specifics and learning points

Performance Standards

- PUI shall brief IAW ASTACSOP/NTP.
- PUI shall maintain situational awareness of wingman and mutual support during enroute portion of flight and in the objective area.
- PUI shall effectively control the section throughout the flight.
- PUI shall locate targets in a timely manner.
- PUI shall engage target(s) using TTPs appropriate for the scenario.
- PUI shall minimize threat exposure and use appropriate threat counter-tactics.
- PUI shall use TRANSEC/COMSEC for all communications.
- PUI shall adhere to local course rules and comply with applicable range regulations.
- PUI shall debrief lessons learned and accurately analyze effectiveness of TTPs.

Prerequisite. 8600,6400,6401, 50 hrs flight time since being designated AHC (this 50 hrs can include the Section Leader Under Training flights).

Ordnance (Optional). (2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirement. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. One or more assault support aircraft(if escort mission)

Crew. FLSE/PUI

Purpose. To prepare and evaluate a prospective division lead's ability to plan, brief, lead and debrief a division.

General

PUI shall conduct the following day and night workup sorties in order to develop the prospective division lead's flight leadership.

At the discretion of the commanding officer cross-cockpit instruction is authorized. DL-6598 shall be evaluated by a MAG Flight Lead Stan Evaluator (FLSE) from a different command within the MAG.

The IP will use the sortie requirement criteria to determine whether the PUI completed the sortie.

The PUI will use the performance standards to debrief the flight.

Completion of the Division Leader syllabus meets the requirements for designation as a Division Leader. At the discretion of the squadron commanding officer, a letter designating the pilot as a Division Leader shall be placed in the NATOPS jacket and APR.

In order to complete the Division Leader stage two of the three flights shall be conducted with ordnance. Rockets are optional if flown with (2) CATM-114s and (500) 20mm.

One of the ordnance flights shall be conducted during the day and one shall be conducted at night.

Consideration should be given to making the Division Lead check (DL-6598) an ordnance event.

One of the three Division Leader stage flights should be conducted with 3+ AH-1Zs. During the conduct of all OAS/ESC missions at least one attack shall be conducted as a division.

PUI shall have lead three flights as a designated Section Leader (SL). PUI shall also have a minimum of: 600 total hours, 200 Rotary wing hours, and 50 hours in model.

PUI shall be evaluated on ordnance delivery accuracy utilizing Core Plus/Mission Plus ordnance accuracy standards.

Aircraft should be configured with an operable FLIR, PGM system, CLDR, FMV, HMSD, VTR, APR-39, AAR-47 and ALE-47 and IR Pointer (night events).

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

<b>DL-6500</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>1 AH-1Z &amp; 2+ H-1s</b>
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Goal. OS - Tactically employ a division in a low to medium threat environment during the conduct of a day OAS or escort mission. Emphasis should be placed on route planning, flight member responsibilities, division formations and maneuvering, threat counter-tactics, ASTACSOP, division attacks and communication.

Requirements

- Plan, brief, lead and debrief a day OAS or escort mission
- Develop a plan that supports the ground SOM and commander's intent of the supported unit
- Plan and brief division mechanics, attacks and objective area maneuver
- Plan and brief division threat reactions
- Plan and brief rendezvous & join-up per ASTACSOP and NTTP
- Brief penetration/de-penetration/offensive checklist procedures
- Use all available planning tools to plan & brief route considerations, sensor acquisition, and target engagement
- Conduct division take-off/landing, scatter plan/rendezvous, and lost communication procedures.
- Maneuver division using appropriate formations and signals
- Conduct a rendezvous & join-up
- Demonstrate applicable threat counter-tactics
- Locate, plot and effectively engage target(s) within the division
- Direct attacks against target(s)
- Control division during enroute and objective area operations
- Delegate tasks within flight and cockpit
- Conduct the debrief, covering pertinent division specifics and learning points



### Performance Standards

- PUI shall brief IAW ASTACSOP/NTTP.
- PUI shall maintain situational awareness of wingmen and mutual support during enroute portion of flight and in the objective area.
- PUI shall effectively control the division throughout the flight.
- PUI shall locate targets in a timely manner.
- PUI shall engage target(s) using TTPs appropriate for the scenario.
- PUI shall minimize threat exposure and use appropriate threat counter-tactics.
- PUI shall use TRANSEC/COMSEC for all communications.
- PUI shall adhere to local course rules and comply with applicable range regulations.
- PUI shall debrief lessons learned and accurately analyze effectiveness of TTPs.

Prerequisites. 6498, Lead a minimum of three flights as a designated Section Lead. Minimum of: 600 total hours, 200 Rotary wing hours, and 50 hours in model.

Ordnance (Optional). (2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60)chaff/flares

Range Requirement. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. One or more assault support aircraft(if escort mission)

Crew. NSI+DL/PUI

**DL-6501      1.5      \*      B      NS      A      1 AH-1Z & 2+ H-1s**

Goal. OS - Tactically employ a division in a medium to high threat environment during the conduct of a night OAS or escort mission. Emphasis should be placed on night formation considerations, sensor acquisition, flight member responsibilities, division lighting, ASTACSOP, division attacks, PGM employment and communication.

### Requirements

- Plan, brief, lead and debrief a night OAS or escort mission
- Develop a plan that supports the ground SOM and commander's intent of the supported unit
- Plan and brief division mechanics, attacks and objective area maneuver
- Plan and brief fire support plan
- Plan and brief section threat reactions
- Use all available planning tools to plan & brief night considerations including illumination, shadowing, sensor effectiveness, and target acquisition/engagement
- Brief appropriate FAA and tactical lighting configurations
- Conduct a minimum of one night division take-off and one night division landing
- Maneuver division using formations and tactics appropriate for ambient illumination
- Demonstrate applicable threat counter-tactics
- Locate, plot, and effectively engage target(s) within the division
- Control section during enroute and objective area operations
- Delegate tasks within flight and cockpit
- Conduct the debrief, covering pertinent division specifics and learning points

### Performance Standards

- PUI shall brief IAW ASTACSOP/NTTP.
- PUI shall maintain situational awareness of wingmen and mutual support during enroute portion of flight and in the objective area.
- PUI shall effectively control the division throughout the flight.
- PUI shall locate targets in a timely manner.
- PUI shall engage target(s) using TTPs appropriate for the scenario.
- PUI shall minimize threat exposure and use appropriate threat counter-tactics.
- PUI shall use TRANSEC/COMSEC for all communications.
- PUI shall adhere to local course rules and comply with applicable range regulations.
- PUI shall debrief lessons learned and accurately analyze effectiveness of TTPs.

Prerequisites. 6498, Lead a minimum of three flights as a designated Section Lead. Minimum of: 600 total hours, 200 Rotary wing hours, and 50 hours in model.

Ordnance (Optional). (2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirement. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. One or more assault support aircraft(if escort mission)

Crew. NSI+DL/PUI

**DL-6598      1.5      \*      B,R      (NS)      A      1 AH-1Z & 2+ H-1s**

Goal. OS - Division Leader Evaluation - Tactically employ a division in a low to medium threat environment during the conduct of a day or night OAS or escort mission. Emphasis should be placed on range regulations/procedures, control of fires, power available/maneuvering considerations, objective area mechanics, flight member responsibilities, arm/penetration/de-arm procedures, division attacks and communication.

#### Requirements

- Plan, brief, lead and debrief an OAS or escort mission
- Develop a plan that supports the ground SOM and commander's intent of the supported unit
- Plan and brief division mechanics, attacks and objective area maneuver
- Plan and brief division threat reactions
- Plan and brief rendezvous & join-up per ASTACSOP and NTP
- Brief penetration/de-penetration/offensive checklist procedures
- Use all available planning tools to plan & brief route considerations, sensor acquisition, and target engagement
- Conduct division take-off/landing, scatter plan/rendezvous, and lost communication procedures
- Maneuver division using appropriate formations and signals
- Conduct a rendezvous & join-up
- Demonstrate applicable threat counter-tactics
- Locate, plot and effectively engage target(s) within the division
- Direct attacks against target(s)
- Control division during enroute and objective area operations
- Delegate tasks within flight and cockpit
- Conduct the debrief, covering pertinent division specifics and learning points

#### Performance Standards

- PUI shall brief IAW ASTACSOP/NTP.
- PUI shall maintain situational awareness of wingmen and mutual support during enroute portion of flight and in the objective area.
- PUI shall effectively control the division throughout the flight.
- PUI shall locate targets in a timely manner.
- PUI shall engage target(s) using TTPs appropriate for the scenario.
- PUI shall minimize threat exposure and use appropriate threat counter-tactics.
- PUI shall use TRANSEC/COMSEC for all communications.
- PUI shall adhere to local course rules and comply with applicable range regulations.
- PUI shall debrief lessons learned and accurately analyze effectiveness of TTPs.

Prerequisites. 6500,6501

Ordnance (Optional). (2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60)chaff/flares

Range Requirement. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. One or more assault support aircraft(if escort mission)

Crew. FLSE/PUI

2.17.10 Flight Leader

Purpose. To prepare and evaluate a prospective flight lead's ability to plan, brief, lead and debrief a flight.

General

PUI shall conduct the following sortie in order to develop and evaluate the prospective flight lead's flight leadership. At the discretion of the commanding officer cross-cockpit instruction is authorized.

The IP will use the sortie requirement criteria to determine whether the PUI completed the sortie. The PUI will use the performance standards to debrief the flight. Completion of the Flight Leader syllabus meets the requirements for designation as a Flight Leader. At the discretion of the squadron commanding officer, a letter designating the pilot as a Flight Leader shall be placed in the NATOPS jacket and APR.

PUI shall have lead three flights as a designated Division Leader. PUI shall also have a minimum of 750 total flight hours.

PUI shall be evaluated on ordnance delivery accuracy utilizing Core Plus/Mission Plus ordnance accuracy standards.

Aircraft should be configured with an operable FLIR, PGM system, CLDR, FMV, HMSD, VTR, APR-39, AAR-47 and ALE-47 and IR Pointer (night events).

Crew Requirements. As listed at the end of each event.

Ground/Academic Training. IAW the MAWTS-1 AH-1 Course Catalog.

**FL-6698      1.5      \*      B,R      (NS)      A      1 AH-1Z & 4+ H-1s**

Goal. OS - Flight Lead Evaluation - Tactically employ a flight in a low to medium threat environment during the conduct of a day or night OAS or escort mission. Emphasis should be placed on ASTACSOP, flight/element integration, routing, objective area mechanics, flight member responsibilities, attack patterns and communication.

Requirements

- Plan, brief, lead and debrief an OAS or escort mission
- Develop a plan that supports the ground SOM and commander's intent of the supported unit
- Plan and brief flight mechanics, attacks and objective area maneuver
- Plan and brief flight threat reactions
- Plan and brief rendezvous & join-up per ASTACSOP and NTPP
- Brief penetration/de-penetration/offensive checklist procedures
- Use all available planning tools to plan & brief route considerations, sensor acquisition, and target engagement
- Conduct flight take-off/landing, scatter plan/rendezvous, and lost communication procedures
- Maneuver flight using appropriate formations and signals
- Conduct a rendezvous & join-up
- Demonstrate applicable threat counter-tactics
- Locate, plot and effectively engage target(s) within the flight
- Direct attacks against target(s)
- Control flight during enroute and objective area operations
- Delegate tasks within flight and cockpit
- Conduct the debrief, covering pertinent flight specifics and learning points

Performance Standards

- PUI shall brief IAW ASTACSOP/NTPP.
- PUI shall maintain situational awareness of wingmen and mutual support during enroute portion of flight and in the objective area.
- PUI shall effectively control the flight throughout the mission.
- PUI shall locate targets in a timely manner.
- PUI shall engage target(s) using TTPs appropriate for the scenario.
- PUI shall minimize threat exposure and use appropriate threat counter-tactics.
- PUI shall use TRANSEC/COMSEC for all communications.
- PUI shall adhere to local course rules and comply with applicable range regulations.
- PUI shall debrief lessons learned and accurately analyze effectiveness of TTPs.

Prerequisites. 6598, PUI shall have lead three flights as a designated Division Leader. PUI shall also have a minimum of 750 total flight hours.

Ordnance. (2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60)chaff/flares

Range Requirement. Live fire and LASER safe range with thermally significant targets, if available

External Syllabus Support. One or more assault support aircraft(if escort mission)

Crew. FLSE/PUI

#### 2.17.11 Air Mission Commander (AMC)

Purpose. To prepare and evaluate a prospective air mission commander's ability to plan, brief and command an air component of an assault support or OAS mission.

##### General

AMC is designated in recognition of experience, demonstrated flight leadership ability and judgment.

Work-up for this phase shall consist of completion of the division leader syllabus.

Completion of the AMC-6798 meets the requirements for the PUI to be designated an AMC.

At the discretion of the squadron commanding officer, a letter designating the PUI as an AMC shall be placed in the NATOPS jacket, APR and AMC-6798 shall be logged.

Crew Requirements. The AMC-6798 evaluation must be evaluated by an AMC. There is no requirement for the PUI to conduct aircrew duties during the evaluation.

Ground/Academic Training. The PUI shall demonstrate familiarity with OAS, assault support operations, MACCS and MAGTF integration.

##### Air Mission Commander (AMC) Overview

<b>AMC-6798</b>	<b>1.5</b>	<b>*</b>	<b>B,R</b>	<b>(NS)</b>	<b>GE</b>	<b>ANY AMC PLATFORM OR COC</b>
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Goal. OS - Conduct a day or night Air Mission Commander (AMC) check utilizing a MCTL-based mission and a tactical scenario.

##### Requirements

Plan, brief, lead, and debrief a multi-element, multi-T/M/S tactical mission in any threat environment utilizing at a minimum, one assault element and one RW or FW escort element.

The AMCUI shall be evaluated on his/her ability to integrate the 6 functions of Marine Aviation and shall lead the mission from a airborne platform or COC (as appropriate).

##### Discuss

- Prolem Framing and METT-TSL
- Marine Corps Planning Process (MCPPE)/Rapid Response Planning Process (R2P2)
- COA development and task delegation
- Six functions of Marine Aviation
- Aviation Ground Support (AGS) capabilities
- MACCS agencies, functions, and employment
- Threat planning considerations for multiple T/M/S aircraft
- GCE support considerations
- Objective area planning considerations
- Fire Support Coordination Measures (FSCMs)
- Fire support/supporting arms considerations and integration (e.g. indirect fires, CAS)
- RW and FW escort considerations and escort tactics
- Assault support considerations and tactics
- Contingency planning
- Immediate tasking
- Go vs. No-Go criteria
- Event vs. time driven mission execution
- Chain of responsibility and delegation of authority

C&C platform considerations and Mission Control Area (MCA) selection  
Secure vs. active communications  
EMCON and radio procedures  
Information flow requirements  
Execution checklist utilization  
Mission Coordination Area (MCA) selection

Review

Tactical mission planning and briefing  
Command and control during a tactical mission

Performance Standards

The AMCUI shall conduct problem framing IAW MCWP 5-1.  
The AMCUI shall delegate mission tasks to the most advantageous asset/flight, ensure coordination and supervision of key personnel during planning.  
The AMCUI shall develop a plan that integrates the six functions of Marine Aviation and AGS.  
The AMCUI shall develop a plan that fully supports the GCE ground scheme of maneuver and Essential Fire Support Tasks (EFSTs).  
The AMCUI shall conduct an AMC brief IAW NTTP series publications  
The AMCUI shall maintain SA on mission progress/execution  
The AMCUI shall maximize C&C platform capabilities  
The AMCUI shall demonstrate proper decision making and task delegation in response to immediate missions and/or contingencies  
The AMCUI shall demonstrate proper understanding and utilization of C4I to facilitate information flow and execution, RW and/or FW escort, secure and active communications, FSCM utilization and supporting arms, and contingency planning and execution.  
The AMCUI shall possess the tactical and operational knowledge required of an AMC.

Prerequisites. 6041,6042,6071,6598

Ordnance (Optional). (2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares

Range Requirement. Live fire and LASER safe range(as required)

External Syllabus Support. GCE, MACCS agencies, AGS assets, multiple T/M/S RW and/or FW assets as required, and any other support required based on the tactical scenario (HST, threat emitter/simulator)

Crew. AMC+FLSE/PUI

2.17.12 Specific Operations Tracking Codes (SOTC)

Purpose. To provide a vehicle for Tracking Codes associated with specific operations. All codes will be logged in conjunction with the appropriately flown sortie.

General. Each pilot assigned to a squadron should complete at least one (1) of each applicable SOTC code during their first fleet tour.

Crew Requirements. As listed at the end of each event.

**SOTC-6900      0.1      \*      B,R      NS      A      1 AH-1Z**

Goal. OS – Track proficiency in shooting the 2.75 inch Illumination rocket (M-257/M-278).

Requirement. Shoot one (1) 2.75 inch illumination rocket

Ordnance. (1) 2.75 inch illumination rocket

Crew. NSI/PUI

**SOTC-6901      0.1      \*      B,R      (NS)      A      1 AH-1Z**

Goal. OS – Track proficiency in shooting the 2.75 inch guided rocket (APKWS).

Requirement. Shoot one (1) 2.75 inch guided rocket

Ordnance. (1) AGR-19A or AGR-19B - APKWS

Crew. WTO(NSI)/PUI

**SOTC-6902      0.1      \*      B,R      (NS)      A      1 AH-1Z**

Goal. OS – Track proficiency in shooting the 2.75 inch flechette rocket.

Requirement. Shoot one (1) 2.75 inch flechette rocket

Ordnance. (1) 2.75 inch guided rocket

Crew. WTO(NSI)/PUI

**SOTC-6903      0.1      \*      B,R      (NS)      A      1 AH-1Z**

Goal. OS – Track proficiency in shooting JAGM.

Requirement. Shoot one (1) JAGM

Ordnance. (1) JAGM

Crew. WTO(NSI)/PUI

**SOTC-6904      0.1      \*      B,R      (NS)      A      1 AH-1Z**

Goal. OS – Track proficiency in shooting a Hellfire missile.

Requirement. Shoot one (1) Hellfire Missile

Ordnance. (1) live Hellfire Missile

Crew. WTO(NSI)/PUI

**SOTC-6905      0.1      \*      B,R      (NS)      A      1 AH-1Z**

Goal. OS – Track proficiency in shooting an AIM-9 missile.

Requirement. Shoot one (1) AIM-9 missile

Ordnance. (1) live AIM-9 missile

Crew. WTO(NSI)/PUI

## 2.18 MISSION ESSENTIAL TASK (MET) PHASE (7000)

### 2.18.1 Purpose

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

To fulfill the requirements of a Marine Corps Combat Readiness Evaluation (MCCRE) as specified in MCO 3502.1, Marine Corps Combat Readiness Evaluation.

Prerequisite. Aircrew assessed during this phase shall meet the requirements of a Force Generation Order. The crews should be comprised of deploying personnel to the maximum extent practical.

Admin Notes. The proficiency period for conducting elements of the 7000 phase are:

- No less than once every 2 years for active components
- No less than once every 5 years for reserve components

Units not scheduled to be assessed at a service level training venue (i.e. ITX, MTNEX, TALONEX) shall conduct elements of the 7000 level phase as a minimum requirement for a unit to deploy.

The MAW Flight Leadership Standardization and Evaluation (FLSE) cadre is the resource used to assess Type/ Model/ Series units for MET capability in accordance with the MCCRE Order. The units assessor will be designated at the Wing level of the unit to be assessed.

Events in this Phase normally require a Force Generation Order prior to commencing the 7000 Stage. Once a unit deploys, is removed from the Force Generation Order, or completes the required 7000-Stage, 7000 Phase currency no longer needs to be maintained. Multiple Events may be accomplished during the same sortie. Results of the MCCRE assessment shall be formatted per Appendix D, 3500.14D and submitted to CG, MCCDC (via AMHS message attachment to CG TECOM MTESD) no later than 45 days after MCCRE completion.

Due to an HMLA's unique composition and multiple T/M/S within a squadron, common METs may be marked as T&R complete regardless of the composition of the element that is evaluated. For example, if a section of AH-1s are evaluated conducting CAS, the MET-7002 code may be logged for both the AH-1 and UH-1 in MSHARP and reported as complete for the squadron.

**2.18.2 Stages.** The following stages are included in the Mission Essential Task (MET) Phase of training. **Only METs required per the Force Generation Order shall be evaluated.**

CORE STAGE	PAGE NUMBER
Escort (ESC)	2-62
Close Air Support (CAS)	2-66
Strike (STK)	2-72
Strike Coordination and Reconnaissance (SCAR)	2-70
Tactical Recovery of Aircraft Equipment and Personnel (TRAP)	2-78
Forward Air Controller (Airborne) [FAC(A)]	2-73
CORE PLUS STAGE	PAGE NUMBER
EXPEDITIONARY SEA-BASED OPERATIONS (CQ)	2-90
OFFENSIVE ANTI-AIR WARFARE (OAAW)	2-85
ACTIVE AIR DEFENSE (DACM)	2-86

### 2.18.3 MISSION ESSENTIAL TASK (MET) STAGE

**Purpose.** To assess squadrons or detachments executing community specific MET(s) or MET preparatory Events.

#### General

**Prerequisite.** If an event requires prerequisites in addition to those listed for the MET Phase, they will be covered in the individual event.

**Crew Requirements.** The participants required for the 7000 Phase are the evaluated unit and the assessor. The crew requirement is based on the specific event. The assessment shall be conducted from a crew position of the assessor's T/M/S. At the discretion of the assessor, observation of mission planning, briefing/debriefing, and execution from an OP may satisfy a portion of the assessment.

Respectively, the primary, alternate, and tertiary assessors shall be a MATSS representative, WTI (FLSE) from within the parent command designated by the owning Wing, or MAWTS-1 representative. The number of crews evaluated will be based on a percentage required to deploy per the Force Generation Order.

2-131



**MET-7009      1.5      730      B,R      (NS)      A/S      2+      H-1**

Goal. Demonstrate the ability to conduct Tactical Recovery of Aircraft and Personnel (TRAP) in a low to medium threat environment.

Performance Standard. Plan, brief and execute a TRAP mission per MCT 6.2.1.1 and the T/M/S specific T&R. Properly employ TRAP template. Effectively communicate with Isolated Personnel, Rescort, RMC and other supporting aircraft.

Instructor: MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. IAW Phase

Ordnance. IAW Phase

Range Requirement. Live fire and expendable range as required

External Syllabus Support. Assault and/or Command and Control aircraft are preferred if available. Isolated personnel in the objective area is preferred. Use of survival radios is preferred. Ground combat element is preferred if available.

**MET-7010      1.5      730      B,R      (NS)      A/S      2+      H-1**

Goal. Demonstrate the capability to conduct aerial escort in a low to medium threat environment.

Performance Standard. Plan, brief and execute an aerial escort evolution per MCT 6.1.1.11 and the T/M/S specific T&R.

Instructor: MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. IAW Phase

Ordnance. IAW Phase

Range Requirement. Live fire range as required.

External Syllabus Support. Actual assault transport element consisting of at least one aircraft.

**MET-7012      1.5      730      B,R      (NS)      A/S      2+      H-1**

Goal. Demonstrate the capability to conduct operations from expeditionary sea-based sites in a low to medium threat environment.

Performance Standard. Plan, brief and execute any evolution from an expeditionary sea-based site per MCT 1.3.3.3.1 and the T/M/S specific T&R.

Instructor: MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. IAW Phase

Ordnance. IAW Phase

Range Requirement. Live fire range as required.

External Syllabus Support. Naval shipping platform capable of conducting helicopter operations.

**MET-7013      1.5      730      B,R      (NS)      A/S      2+      AH/H-1**

Goal. Demonstrate the capability to offensive anti-air warfare in a low to medium threat environment.

Performance Standard. Plan, brief and execute an OAAW mission per MCT 3.2.3.2 and the T/M/S specific T&R.

Instructor: MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. IAW Phase

Ordnance. IAW Phase

Range Requirement. Live fire range as required.

External Syllabus Support. IAW Phase.

**MET-7016      1.5      730      B,R      (NS)      A/S      2+      H-1**

Goal. Demonstrate the capability to conduct active air defense (DACM) in a low to medium threat environment.

Performance Standard. Plan, brief and execute a DACM evolution per MCT 6.1.1.8 and the T/M/S specific T&R.

Instructor: MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. IAW Phase

Ordnance. IAW Phase

Range Requirement. Live fire range as required.

External Syllabus Support. Adversary aircraft as required per DACM guidelines.

## 2.19 AVIATION CAREER PROGRESSION MODEL (8000)

### Purpose

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

ACPM academic training requirements will be tracked and managed in M-SHARP.

Commanding officers shall ensure the requisite ACPM training requirements have been met prior to designating flight leaders.

### General

ACPM courseware is integrated into each Phase of instruction from 2000-6000.

All ACPM courseware shall be completed prior to getting the culminating qualification for each phase.

8200 academics must be complete prior to PQM.

8300 academics must be complete prior to AHC.

8600 academics must be complete prior to SL.

The ACPM courseware can be found on MCALMS.

SIPR: <http://www.mawts1.usmc.smil.mil/> Click on Departments, AH-1 for general information.

Click on Departments, Academics, Generics, Common or Specific for WTI classified and unclassified courseware.

Click on ASP for Academic Support Package courseware and ACPM classes.

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

AVIATION CAREER PROGRESSION MODEL	
TRAINING CODES	COURSEWARE
CORE SKILL	
ACPM-8200	ACPM 8200 Series
MISSION SKILL	
ACPM-8300	ACPM 8300 Series
SECTION LEADER	
ACPM-8600	ACPM 8600 Series

At the completion of each ACPM event, the appropriate training code shall be logged in M-SHARP by the individual pilot, or squadron operations personnel, as appropriate.

ACPM events do not have re-fly intervals.

#### 2.19.1 ACPM Core Training Phase

Purpose. To provide and introduce basic integration of the ACE within the MAGTF and ACE Battle Staff planning.

General. The PUI must be complete the ACPM-8200 series prior to PQM designation.

#### **ACPM-8200 6.0 \* MACCS Agencies, Functions, and Control of Aircraft and Missiles**

##### MACCS Agencies, Functions, and Control of Aircraft and Missiles

- Understand the organization of the MACG and the agencies provided by the MACG that form the MACCS.
- Understand the mission and tasks of the Tactical Air Command Center (TACC).
- Understand the mission and tasks of the Tactical Air Operations Center (TAOC).
- Understand the mission and tasks of marine Air Traffic Control (MATC) and the marine Air Traffic Control Mobile Team (MMT).
- Understand the mission and tasks of the Direct Air Support Center (DASC).
- Understand the mission and tasks of the Low Altitude Air Defense (LAAD) Battalion.
- Understand the mission and tasks of the Marine Unmanned Aerial Vehicle (VMU) squadron.
- Understand the mission and tasks of the Marine Wing Communication Squadron (MWCS).

##### MWCS Brief

- From a list be able to identify the core competencies of the MWCS.
- Without the aid of reference, describe the organization of the MWCS.
- Without the aid of reference, identify key equipment used by the MWCS to support the MACCS.

##### ACA and Airspace

- List the three fundamental principles of airspace command and control.
- List and explain the three tenets of the integrated combat airspace command and control system.
- Describe the responsibilities of the ACA.
- Describe the responsibilities of the AMCT.
- Understand the definitions of Air Direction and Air Control as well as the subsets of those two major categories.
- List a variety of items encompassed within the ACP.

##### Aviation Ground Support

- Identify the organization responsible for providing Aviation Ground Support (AGS) to the MAW.
- Identify the four concepts for MAGTF Forward Operating Bases (FOBs).

Identify the five activities the Marine Wing Support Squadron (MWSS) performs for the ACE when deployed.  
Identify the four classifications of FOBs and state the distinguishing characteristics of each.  
Identify the fourteen functions of AGS.

#### ACE Battle Staff

To introduce and explain the intel capabilities/products available to the ACE/MAGTF.  
To introduce ALSA comm brevity terms.  
Introduce functions and responsibilities of ACE Battle Staff.

#### 2.19.2 ACPM MISSION TRAINING EVENTS

Purpose. To provide and introduce basic integration of the ACE within the MAGTF and Joint environment.  
General. The PUI must be complete the ACPM-8300 series prior to AHC designation.

#### **ACPM-8300    6.0       \*       8300 Series**

##### Learning Objectives

##### Air Defense

Outline the principles of Air Defense.  
Understand the composition of an Integrated Air Defense System (IADS).  
Define Active and Passive Air Defense.  
Identify the (4) primary pillars of Passive Air Defense operations.

##### Forward Arming Refueling Point (FARP) Operations

State the mission and objective of a FARP.  
Explain the planning considerations of a FARP.  
Explain the techniques of employment.  
Describe the procedures necessary for movement of aircraft through a FARP and various layouts.

##### Marine Corps Tactical Fuel Systems

State the basic history of the Bulk Fuel community.  
Identify the four major fuel systems and their capabilities.  
State the job description of the Bulk Fuel Specialist.

##### Joint Structure & Joint Air Operations

Understand the criteria used by the Joint Force Commander (JFC) when selecting the Joint Forces Air Component Commander (JFACC).  
Understand the duties and responsibilities of the five divisions of Joint Air and Space Operations Center (JAOC).  
Know the types of sorties the MAGTF Commander must make available to the JFACC for tasking.  
Understand the primary responsibilities of the Area Air Defense Commander (AADC).  
Understand the purpose of the Airspace Control Order (ACO).  
Become familiar with the six phases of the Joint Air Tasking Cycle.

##### Joint Air Tasking Cycle Phase 1: Strategy Development

Understand how the JFC normally provides air apportionment guidance to the Joint Forces Air Component Commander (JFACC).  
Understand the air apportionment process.

Understand who drafts the AOD and what the AOD provides the JAOC.  
Understand how objectives and tasks are prioritized.

#### Joint Air Tasking Cycle Phase 2: Target Development

Understand the purpose of the Joint Integrated Prioritized Target List (JIPTL).  
Understand the purpose for the joint targeting coordination board and its participants.  
Understand the target development process.  
Know the product of phase 2 of the joint air tasking cycle.  
Understand what provides the foundation for phase 2 of the joint air tasking cycle.

#### Joint Air Tasking Cycle Phase 3: Weaponneering and Allocation

Understand weaponneering and how it is conducted within the joint air tasking cycle.  
Understand the Allocation Request Message (ALLOREQ) and how it is used in producing the MAAP.  
Understand the air allocation process.  
Understand the purpose of the MAAP team and what is contained in the MAAP.  
Understand the purpose of the Sortie Allocation (SORTIEALLOT) message.

#### Joint Air Tasking Cycle Phase 4: Joint ATO Production

Understand the role of joint ATO production within the joint air tasking cycle.  
Understand the responsibilities of the joint ATO production team.  
Understand the processes used in the production of the joint air tasking order.  
Understand how TBMCS 1.1.3 is used to produce the joint air tasking order.

#### Joint Air Tasking Cycle Phase 5: Force Execution

Understand the primary functions and responsibilities of the AOC.  
Understand how the JAOC organizes for the execution phase.  
Understand how TBMCS 1.1.3 is used during the execution phase

#### Joint Air Tasking Cycle Phase 6: Combat Assessment

Understand the three inter-related components of combat assessment.  
Understand the key factors concerning the three components of combat assessment.  
Understand the purpose of BDA based upon current doctrine.  
Understand physical damage, functional damage, and the target system assessment process.  
Understand the purpose of the re-attack recommendation.

#### Integrating Fires & Airspace within the MAGTF

List the (14) Fire Support Principles.  
Identify and discuss the (2) types of FSCMs.  
Identify where most of the fire support coordination occurs within the MAGTF.  
Discuss the purpose of ACMs.  
Discuss the need for integrating FSCMs and ACMs.  
Identify the required components of the JFA as an FSCM.  
Identify the differences between the JFA and GARS.

#### Phasing Control Ashore

Identify the Navy agency most akin to the LF FSCC.

Identify what must be established ashore for control to be phased from the Navy TACC to the landing force.

#### TACRON Organizations and Functions

##### Battle Command Display

Introduce the Battle Command Display.

##### Six Functions of Marine Aviation

To better understand the 6 functions of Marine Corps Aviation.

##### JTAR/ASR Introduction and Practical Application

Understand the ATO cycle and the request process.

Write a technically correct JTAR.

Write a technically correct EW JTAR.

Write a technically correct EARF.

Write a technically correct ASR.

Track submitted air requests using various web-based programs.

Introduce the Automated Tracking System.

##### Site Commander Primer

Introduce fundamentals and functions of Site Command.

##### Theater Air Ground System (TAGS)

Identify the primary characteristics of TAGS.

Identify the primary surveillance agency within the Theater Air Control System.

Identify the element within the Army Air and Ground System responsible for integrating operational fires and synchronizing deep operations.

Identify the element within the Navy's Tactical Air Control System responsible for coordinating power projection.

Identify the commander within an amphibious task force who is subordinate to the Air Defense Commander (ADC) and responsible for the detection and engagement of hostile tracks in the AOA.

Identify the Marine Corps' contribution to overall Theater Air Ground System.

#### 2.19.3 ACPM Flight Leadership Training Events

Purpose. To provide the prospective flight leader the concepts of basic integration of the MAGTF within the Joint environment.

General. Completion of Flight Leadership Training Events is required prior to the Section Leader designation, However, the PUI does not need to be in a specific flight leader syllabus in order to receive 8600 level training events.

#### **ACPM-8600 6.0 \* 8600 Series**

##### Tactical Air Command Center (TACC)

Without aid of references, identify the mission of the TACC.

Without aid of references, identify the major tasks/duties of the TACC.

Without aid of references, identify the three sections being supported by intelligence.

Without aid of references, identify the key TACC personnel and their responsibilities.

Without aid of references, identify the equipment associated with a full TACC capability.

### Joint Ops Introduction

- Understand Joint Operation Command relationships.
- Understand the main responsibilities for each Functional Component Commander.

### ESG/CSG Integration

#### Joint Data Network

- Understand the four components of the JDN.
- Understand the differences between the Single Integrated Air Picture (SIAP), Common Tactical Picture (CTP), and Common Operational Picture (COP).
- Understand the differences between Sensor Network(s), Joint Data Network (JDN), and Joint Planning Network (JPN).
- Understand how the ACE builds its CTP and how information is shared throughout the ACE and the Marine Air Command and Control System (MACCS).
- Know the primary system that will “tie in” the intelligence flow throughout the Marine Aviation Command and Control System (MACCS).

### MAGTF Theater and National ISR Employment

- Define priority intelligence requirement.
- Identify basic tenets of the National Imagery Interpretability Rating Scale.
- Recognize strengths and weaknesses of the EO, SAR, and IR sensors found on national satellites.
- Know the three categories of SIGINT.
- Identify the information requirements used in the UAS planning process.
- Identify what effective planning of UAS employment involves.
- Identify key planning considerations outlined for UAS employment.
- Define “Non-Traditional ISR”.
- Identify the most common shortfalls on JTARs submitted for NTISR support.
- Identify the most common shortfalls on JTARs submitted for ATARS support.
- Identify different imagery products ATARS can provide

## 2.20 SYLLABUS EVALUATION FORMS

### General

- Syllabus event forms will reside at MAWTS-1.
- Forms will reside on the unclassified site.

## 2.21 SYLLABUS MATRICES GENERAL INFORMATION

### 2.21.1 T&R Chaining

- Event chaining allows for the completion of more complex and/or advanced events using the same skills to update proficiency status of events.

Only events in a sequence entailing demonstration of equivalent skills shall be chained.

When a T&R event is logged, the proficiency dates of other T&R events (usually lower in number) may be updated.

The T&R code that is logged is known as the “chaining code,” and the updated codes are “chained codes.”

Chained codes are not always updated when a chaining code is logged.

Conditional Chaining. The following environmental conditions further specify which T&R codes are chain-updated:

- Night Systems Optional. Chained codes annotated with a tilde after them, e.g. 2101~NS, are only chain-updated if the chaining code is flown using night systems.

Light Level Optional. Chained codes annotated with a tilde and a 'NS' after them, e.g. 2101~NS, are only chain-updated if the chaining code is flown using night systems during HLL. Chained codes annotated with a tilde and a 'LLL' after them, e.g. 2701~LLL, are only chain-updated if the chaining code is flown using night systems during LLL.

2.21.2 Syllabus Event Conversion. The syllabus event conversion information is used to convert T&R syllabus event proficiency status of the previous T&R syllabus into event proficiency status of the current T&R for individuals.



2.22 AH-1Z T&R MATRIX (2000-8000 PHASE)

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN				ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W->Z)	EVENT CONV (Z->Z)	
				B	R	S	MAINTAIN	#	TIME	#	TIME	#	TIME													
CORE SKILLS (2000 PHASE)																										
ACADEMICS (ACAD)																										
ACAD	ACAD	HMLA RADIOS	2000	X					1.0					(N)		G			*					2000	2000	
	ACAD	MAWTS-1 NITE LAB	2001	X					12.0					(N)		G			*					2001	2001	
	ACAD	H-1 Aerodynamics	2002	X					1.0					(N)		G			*					2012	2012	
	ACAD	(S) Asslt Support ASE	2021	X					1.0					(N)		G			*					2021	2021	
	ACAD	(S) Threat Analysis	2022	X					1.0					(N)	X	G			*					2023	2023	
	ACAD	HMLA ASE	2023	X	X		X		1.0					(N)		G			365					2023	2023	
	ACAD	ROC-V	2031	X					1.0					(N)		G			*					2011	2011	
	ACAD	AH-1Z TSS	2032	X					1.0					(N)		G			*					2011	2011	
	ACAD	Rockets	2061	X					1.0					(N)		G			*					2061	2061	
	ACAD	20mm	2062	X					1.0					(N)		G			*					2062	2062	
	ACAD	AGM-114 Hellfire	2063	X					1.0					(N)		G			*					2063	2063	
	ACAD	AIM-9	2064	X					1.0					(N)		G			*					2064	2064	
	ACAD	AGR-19 APKWS	2065	X					1.0					(N)		G			*							
	ACAD	AGM-179 JAGM	2066	X					1.0					(N)	X	G			*							
ACAD	HMLA FARP Ops	2090	X					1.0					(N)		G			*					2090	3045		
ACAD SKILL TOTAL								15	26.0	0	0.0	0	0.0													
TERRAIN FLIGHT (TERF)																										
TERF	TERF	Rev TERF	2100	X	X		X					2.0	D	FS	A	1		180	2000,2001,2002	2800				2100	2100	
	TERF	Rev NVD TERF	2101	X	X	X	X					2.0	HLL	FS	A	1		180	2100	2100					2101	
	TERF	NVD LLL TACFORM/TERF	2102	X	X		X					1.5	LLL	FS	A	2		180	2803	2101,2803				2702	2702	
TERF SKILL TOTAL								0	0.0	0	0.0	3	5.5													
THREAT COUNTER TACTICS (TCT)																										
TCT	GTCT	Ground Intro to ASE	2200	X					1.0				(NS)	RS	GE	1		*	2021,2022,2023					2200	2200	
	STCT	Intro ASE RADAR/IR	2201	X						1.5			D	RS	S	1	X	*	2200					2200	2200	
	STCT	Tactical ASE Employ	2202	X	X	X	X			1.5			(NS)	OS	S/A	2	X	365	2201, 2604~AC, 2302~NS						2201	
TCT SKILL TOTAL								1	1.0	2	3.0	0	0.0													
RECONNAISSANCE (REC)																										
REC	GREC	Ground Intro to REC	2300	X		X			1.0				(NS)	RS	GE	1		*	2031,2032					2300	2300	
	SREC	Intro Day RECCE	2301	X		X				1.5			D	RS	S/A	1	X	*	2300,2100~AC					2300	2300	
	REC	Intro NVD RECCE	2302	X	X	X	X					1.5	NS	RS	A	2		180	2101,2301	2100,2101					2301	
REC SKILL TOTAL								1	1.0	1	1.5	1	1.5													

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W-->Z)	EVENT CONV (Z-->Z)	
				#	TIME	#		TIME	#	TIME																
SPECIFIC WEAPONS DELIVERY (SWD)																										
SWD	SSWD	Intro to PGMs	2600	X							1.5			D	OS	S/A	1	X	*	2063,2065,2301,2100~AC				2600	2600	
	SSWD	Intro to APKWS REV HF	2601	X	X	X	X				1.5			D	OS	S/A	1	X	180	2600				2601	2601	
	SWD	Live PGM	2602	X	X	X	X						0.1	(NS)	OS	A/S*	1		730	2100,2601,2101~NS,2302~NS	2601,2203~NS				2602	
	SSWD	RKT/Gun Intro	2603	X	X	X					1.5			D	FS	S	1	X	485	2061,2100,2301					2603	
	SWD	Rev Rockets	2604	X	X	X							1.5	D	FS	A	1		485	2603					2604	
	SWD	Eval SWD	2605	X	X	X	X						1.5	D	FS	A	1		180	2604	2604,2603,2100				2605	
	SWD	Intro NS SWD	2606	X	X	X							1.5	HLL	FS	A	1		485	2101,2302,2604				2606	2606	
	SWD	Refine NS SWD	2607	X	X	X	X						1.5	NS	OS	A	1		180	2606, 2608~LLL	2606				2607	
	SSWD	LLL Dive Delivery	2608	X	X	X					1.5			NS	OS	S	1	X	485	2606,2802,2102~AC				2608	2704	
	SWD	LLL Dive Delivery	2609	X	X	X	X						1.5	LLL	FS	A	1		180	2102,2607,2608,2802,2803	2101,2102,2605,2607,2608				2705	
SWD	TSS 20MM	2610	X	X	X	X						0.1	(NS)	OS	A	1		180	2062,2100,2301,2604~NS,2606~LLL					2610		
SWD SKILL TOTAL								0	0.0	4	6.0	7	7.7													
FAMILIARIZATION (FAM)																										
FAM	FAM	FAM/INST Proficiency	2800	X	X	X	X						1.5	(NS)	OS	A	1		90	1901,2000					2800	
	SFAM	EP Simulator	2801	X	X	X	X				1.5			(NS)	OS	S/A	1	X	90	1901					2801	
	SFAM	NVD LLL EPs	2802	X							1.5			LLL	OS	S	1	X	*	2101				2700	2700	
	FAM	NVD LLL FAM/Nav	2803	X	X	X	X						2.0	LLL	FS	A	1		180	2302,2802	2800				2701	
FAM SKILL TOTAL								0	0.0	2	3.0	2	3.5													
EXPEDITIONARY (EXP)																										
EXP	EXP	DAY RVL	2900	X	X								0.1	D	OS	A	1		180	2100				3602	2900	
	EXP	NS RVL	2901	X	X	X	X						0.1	NS	OS	A	1		180	2101,2900,2803~LLL					2901	
	EXP	DAY FARP	2902	X									0.1	D	OS	A	1		*	2090,2100				3600	2902	
	EXP	NS FARP	2903	X	X	X	X						0.1	NS	OS	A/S*	1		180	2090,2101,2803~LLL					2903	
EXP SKILL TOTAL								0	0.0	0	0.0	4	0.4													
CORE SKILL (2000 PHASE) TOTAL								17	28.0	9	13.5	17	18.6													

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																									
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W->Z)	EVENT CONV (Z->Z)
				B	R	S		#	TIME	#	TIME	#	TIME												
MISSION SKILLS (3000 PHASE)																									
ACADEMICS (ACAD)																									
ACAD	ACAD	Intel Support to Av	3000	X					1.0					(N)		G			*					3000	3000
	ACAD	Problem Framing	3001	X					1.0					(N)		G			*					3001	3001
	ACAD	Rules of Engagement	3002	X					1.0					(N)		G			*					3002	3002
	ACAD	Execution Checklist	3003	X					1.0					(N)		G			*					3004	3004
	ACAD	Objective Area Plan	3004	X					1.0					(N)		G			*					3005	3005
	ACAD	Rapid Response Plan	3005	X					1.0					(N)		G			*					3007	3007
	ACAD	(S) RADAR Guided Surface to Air	3006	X	X		X		1.0					(N)		G			365					3008	3008
	ACAD	(S) Radar Theory	3007	X					1.0					(N)		G			*					3009	3009
	ACAD	(S) IR Threat to RW Aircraft	3008	X	X		X		1.0					(N)		G			365					3010	3010
	ACAD	(S) ADA Threat to RW Aircraft	3009	X	X		X		1.0					(N)		G			365					3011	3011
	ACAD	(S) Electronic Warfare	3010	X	X		X		1.0					(N)		G			365					3013	3013
	ACAD	(S) Assault Support Escort Tactics	3011	X					1.0					(N)		G			*					3019	3019
	ACAD	H-1 Escort TTPs	3012	X	X		X		1.0					(N)		G			365					3019	3019
	ACAD	(S) Navigational Warfare	3013	X	X		X		1.0					(N)		G			365					3013	3013
	ACAD	Urban CAS	3031	X	X		X		1.0					(N)		G			365					3031	3031
	ACAD	Close Air Support	3032	X					1.0					(N)		G			*					3032	3032
	ACAD	CAS Standardization	3033	X	X		X		1.0					(N)		G			365					3033	3033
	ACAD	(S) Weaponeering	3034	X					1.0					(N)		G			*					3034	3034
	ACAD	HMLA SCAR TTPs	3035	X					1.0					(N)		G			*					3035	3035
	ACAD	(S) Armored Threats	3036	X					1.0					(N)		G			*						
	ACAD	(S) TRAP	3038	X					1.0					(N)		G			*					3039	3039
	ACAD	FAC(A) G School	3041	X					1.0					(N)		G			365					3041	3041
	ACAD	JFAC(A) Courseware	3042	X	X		X		1.0					(N)		G			365					3041	3041
	ACAD	FAC(A) TTPs	3043	X					1.0					(N)		G			*					3042	3042
ACAD SKILL TOTAL								24	24.0	0	0.0	0	0.0												
ESCORT (ESC)																									
ESC	SESC	SIM ASPT ESC	3100	X		X					1.5			D	FS	S	1		*	3011,3012,3300,2609,8200				3102	3102
	ESC	DAY ASPT ESC	3101	X								1.5		D	OS	A	2		*	3100				3100	3100
	ESC	NVD ASPT ESC	3102	X	X		X					1.5		NS	OS	A	2		365	3101	2607~ORD NS, 2609~ORD LLL			3101	3101
	ESC	Surface ESC	3103	X	X							1.5		(NS)	OS	A/S	2		485	3300,2609				3103	3103
		EXP CSP, 2900,2901,2902,2903																							
		NSQ(HLL), 2101,2302																							
	NSQ(LL), 2609																								

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	#	ACAD	#	SIM	#	FLIGHT	COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "T"	EOM	MIRROR (W->Z)	EVENT CONV (Z->Z)	
				B	R	S			TIME		TIME		TIME													
ESC SKILL TOTAL								0	0.0	1	1.5	3	4.5													
CLOSE AIR SUPPORT (CAS)																										
CAS	SCAS	Intro CAS	3300	X		X					1.5			D	RS	S	1	X	*	2609,3000-3010,3013, 3031,3032,3033,8200					3300	
	CAS	Intro Day CAS	3301	X	X	X	X						1.5	D	OS	A	2		180	3300	2800				3301	
	CAS	Intro NVD CAS HLL	3302	X									1.5	NS	RS	A	2		*	3301,NSQ(HLL)~HLL,NSQ(LL)~LLL	2301,3301,2101			3302	3302	
	CAS	Intro NVD CAS LLL	3303	X	X	X	X						1.5	NS	RS	A	2		180	3302	3301,2803,2102,2302				3303	
	CAS	Intro Urban CAS	3304	X	X		X						1.5	(NS)	RS	A/S	2		365	3301,3302~NS,3303~LLL	2800,3301,2101~NS, 2102~LLL, 2302~NS, 2803~LLL, 3303~LLL			3304	3304	
		EXP CSP, 2900,2901,2902,2903																								
		NSQ(HLL), 2101,2302																								
	NSQ(LL),, 2609																									
CAS SKILL TOTAL								0	0.0	1	1.5	4	6.0													
STRIKE (STK)																										
STK	STK	Aerial Interdiction/Strike	3307	X	X	X	X						1.5	(NS)	RS	A/S	2		365	3034,NSQ(LL)	2601,2302~NS					3306
	SSWD	Review Hellfire/Intro APKWS	2601	X	X		X																			
		EXP CSP, 2900,2901,2902,2903																								
		NSQ(HLL), 2101,2302																								
		NSQ(LL),, 2609																								
STK SKILL TOTAL								0	0.0	0	0.0	1	1.5													
STRIKE COORDINATON ARMED RECONNAISSANCE (SCAR)																										
SCAR	SCAR	Armed Recon	3305	X	X		X						1.5	(NS)	OS	A/S	2		365	NSQ(LL),3034,3035,3036	2601,2607~ORD NS,2609~ORD LLL,2302~NS			3305	3305	
	SCAR	SCAR	3306	X	X	X	X				1.5			(NS)	RS	S/A	2		365	NSQ(LL),3034,3035,3036,3305	2601,2607~ORD NS,2609~ORD LLL,2302~NS				3307	
	SSWD	Review Hellfire/Intro APKWS	2601																							
		EXP CSP, 2900,2901,2902,2903																								
		NSQ(HLL), 2101,2302																								
		NSQ(LL),, 2609																								
SCAR SKILL TOTAL								0	0.0	1	1.5	1	1.5													
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)																										
TRAP	TRAP	TRAP	3500	X	X	X	X						1.5	(NS)	OS	A/S	2		365	3038,3100,NS~3102	2607~ORD NS,2609~ORD LLL,2302~NS				3308	
	SESC	ASPT ESC	3100	X	X	X	X				1.5															
		EXP CSP, 2900,2901,2902,2903																								
		NSQ(HLL), 2101,2302																								
		NSQ(LL), 2609																								
TRAP SKILL TOTAL								0	0.0	1	1.5	1	1.5													

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W->Z)	EVENT CONV (Z->Z)	
				B	R	S		#	TIME	#	TIME	#	TIME													
FORWARD AIR CONTROLLER (AIRBORNE) [FAC(A)]																										
FAC(A)	FAC(A)	IDF Control	3400	X	X		X					1.5	(NS)	RS	A/S*	1		365	3041,3042,6300	2302~NS				3400	3400	
	SFAC(A)	RW Control	3401	X	X					1.5			D	RS	S/A	1	X	485	3041,3042,3043,6398	3301,2302~NS				3401	3401	
	FAC(A)	FW Control	3402	X	X							1.5	D	RS	A/S*	1		485	3041,3042,3043,6398	3301				3402	3402	
	SFAC(A)	NVD Urban FW/RW Control	3403	X	X					1.5			NS	RS	S/A	1	X	485	3401,3402	3301,3401,2302~NS,3303~NS				3403	3403	
	FAC(A)	Sup Arms Consolidate	3404	X	X		X					1.5	(NS)	RS	A/S*	2		365	3400,3403	3301,3402,3401,2302~NS,3303~NS,3403~NS				3404	3404	
	SFAC(A)	FAC(A) Standardization	3405	X	X	X	X			1.5			(NS)	OS	S/A	1		730	3400,3403	3404,3403,3402,3401					6906	
		EXP CSP, 2900,2901,2902,2903																								
		NSQ(HLL), 2101.2302																								
	NSQ(LLI), 2609																									
FAC(A) SKILL TOTAL								0	0.0	3	4.5	3	4.5													
MISSION SKILL TOTAL								24	24.0	7	10.5	13	19.5													
CORE PLUS SKILLS (4000 PHASE)																										
ACADEMICS (ACAD)																										
ACAD	ACAD	DACM Planning C	4030	X					1.0				(N)		G			*						4030	4030	
	ACAD	DACM Parts 1-4	4031	X					1.0				(N)		G			*						4031	4031	
	ACAD	DACM Example RW Flight Brief	4032	X					1.0				(N)		G			*						4032	4032	
	ACAD	(S) RW Threat to MAGTF	4033	X					1.0				(N)		G			*						4033	4033	
	ACAD	(S) Attack Helo Threat	4034	X					1.0				(N)		G			*						4034	4034	
	ACAD	(S) FW Threat to MAGTF	4035	X					1.0				(N)		G			*						4035	4035	
	ACAD	(S) FW Threat to RW A/C	4036	X					1.0				(N)		G			*						4036	4036	
	ACAD	Intro to Shipboard Operations	4060	X					1.0				(N)		G			*								
	ACAD	(S) HMLA Sea-Based Operations	4061	X	X		X		1.0				(N)		G			365								
SKILL TOTAL								9	9.0	0	0.0	0	0.0													
ESCORT (ESC)																										
ESC	ESC	ASP ESC Med/High Threat	4200	X	X		X					1.5	(NS)	OS	A/S	2		730	6498	3101, 3102~NS					4200	
		NSQ(HLL), 2101,2302																								
		NSQ(LLI), 2609																								
ESC SKILL TOTAL								0	0.0	0	0.0	1	1.5													
CLOSE AIR SUPPORT (CAS)																										
CAS	CAS	CAS Med/High Threat	4201	X	X		X					1.5	(NS)	OS	A/S	2		730	6498	3301,3303~LLI					4201	
		NSQ(HLL), 2101,2302																								
		NSQ(LLI), 2609																								
CAS SKILL TOTAL								0	0.0	0	0.0	1	1.5													

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																											
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W-->Z)	EVENT CONV (Z-->Z)		
				#	TIME	#		TIME	#	TIME																	
STRIKE COORDINATON ARMED RECONNAISSANCE (SCAR)																											
SCAR	SCAR	AR Med/High Threat	4205	X	X		X					1.5	(NS)	OS	A	2		730	6498		3305				4205		
	SCAR	SCAR Med/High Threat	4206	X	X		X					1.5	(NS)	OS	A/S	2		730	6498		3306				4207		
	SSWD	Review Hellfire/Intro APKWS	2601	X	X		X																				
		NSQ(HLL), 2101,2302																									
		NSQ(LLL),, 2609																									
SCAR SKILL TOTAL								0	0.0	0	0.0	1	1.5														
STRIKE (STK)																											
STK	STK	AI Med/High Threat	4207	X	X		X					1.5	(NS)	OS	A/S	2		730	6498		3307				4206		
	SSWD	Review Hellfire/Intro APKWS	2601	X	X		X																				
		NSQ(HLL), 2101,2302																									
		NSQ(LLL), 2609																									
STK SKILL TOTAL								0	0.0	0	0.0	1	1.5														
OFFENSIVE ANTI AIR WARFARE (OAAW)																											
OAAW	OAAW	OAAW	4209	X	X		X					2.0	(NS)	OS	A/S	2		730	8300,4206,4207					4209			
		NSQ(HLL), 2101,2302																									
		NSQ(LLL), 2609																									
OAAW SKILL TOTAL								0	0.0	0	0.0	1	2.0														
ACTIVE AIR DEFENSE (AAD)																											
AAD	RWDACM	OWP DACM	4300	X	X	X	X					1.5	D	OS	A/S	2		485	2064,2603				4300	4300			
	RWDACM	1v1 RW	4301	X		X						1.0	D	FS	A	2		*	TERF,2202,2301,2603,4030-4034				4301	4301			
	RWDACM	2v1 RW	4302	X								1.0	D	RS	A	2		*	4301				4302	4302			
	RWDACM	Rev 1v1/2v1 RW	4303	X	X		X					2.0	D	OS	A	2		485	3013,4030,4031,4032,4033,4034,4300,4302				4303	4303			
	FWDACM	1v1 FW	4304	X	X	X	X					1.0	D	FS	A	1		485	TERF,2202,2301,2603					4304			
	FWDACM	2v2 FW	4305	X								1.0	D	RS	A	2		*	4030,4031,4032,4035,4036,4304				4305	4305			
		NSQ(HLL), 2101,2302																									
		NSQ(LLL), 2609																									
AAD SKILL TOTAL								0	0.0	0	0.0	6	7.5														
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR WARFARE (CBRN)																											
CBRN	SCBRN	CBRN	4400	X	X		X				1.0			D/NS	OS	S/A	1		1095	2101~AC				4400	4400		
CBRN SKILL TOTAL								0	0.0	1	1.0	0	0.0														

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																									
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W->Z)	EVENT CONV (Z->Z)
				#	TIME	#		TIME	#	TIME															
EXPEDITIONARY SEA BASED OPERATIONS (SEA)																									
SEA	SFCLP	Intro CQ	4600	X						1.5			D/NS/N*	OS	S	1		*	2800,4060,4061				2500	2500	
	FCLP	Day FCLP	4601	X	X		X					1.0	D	FS	A	1		365	4600				2501	2501	
	FCLP	Night FCLP	4602	X	X		X					1.0	N*/NS	FS	A	1		365	4601				2502	2502	
	CQ	Day CQ	4603	X	X	X	X					1.0	D	FS	A	1		365	4601					4600	
	CQ	NVD CQ	4604	X	X	X	X					1.0	NS	OS	A	1		365	NSQ(HLL),4602,4603					4601	
	CQ	Unaided CQ	4605	X	X	X	X					1.0	N*	OS	A	1		365	4602,4603					4601	
		NSQ(HLL),2101,2302																							
		NSQ(LL),2800,2609																							
SEA SKILL TOTAL								0	0.0	1	1.5	5	5.0												
INSTRUCTOR TRAINING (5000 PHASE)																									
ACADEMICS (ACAD)																									
ACAD	ACAD	Basic Instructor Course	5001	X					12.0				(N)		G			*					5001	5001	
	ACAD	WTO Class Presentation	5020	X					1.0				(N)		GE			*					5203	5203	
	ACAD	WTO Chalk Talk	5021	X					1.0				(N)		G			*					5203	5203	
	ACAD	FAC(A)-I Class Presentation	5040	X					1.0				(N)		GE			*					5401	5402	
	ACAD	FAC(A)-I Chalk Talk	5041	X					1.0				(N)		G			*					5401	5402	
	ACAD	FRSI Course	5060	X					6.0				(N)		G			*					5060	5060	
	ACAD	RW DACM-I Lecture or Chalk Talk	5080	X					1.0				(N)		GE			*					5802	5802	
	ACAD	FW DACM-I Lecture or Chalk Talk	5081	X					1.0				(N)		GE			*					5803	5803	
	ACAD	NSI Class Presentation	5090	X					1.0				(N)		GE			*					5905	5905	
ACAD TOTAL								9	25.0	0	0.0	0	0.0												
BASIC INSTRUCTOR PILOT (BIP)																									
BIP	SBIP	Intro Sim Functions	5100	X	X					1.5			D	CP	S			*	5001,6398,Note: (5001 may be done in conjunction with 5100)				5210	5210	
	SBIP	EP Stan	5101	X	X	X				1.5			D	OS	S	1		*	5100,6398					5100	
	SBIP	FAM/FCLP Maneuvers	5102	X						1.5			D	RS	S/A	1		*	5101				5101	5101	
	BIP	FAM Maneuvers Rev	5103	X	X	X						1.5	D	RS	A	1		*	5102					5104	
	SBIP	INST Rev	5104	X						1.5			(N*)	OS	S	1		*	5100				5102	5102	
	BIP	IUT FORM Flt Rev	5105	X									1.5	D	RS	A	2		*	5103,6498				5103	5103
BIP TOTAL								0	0.0	4	6.0	2	3.0												
TERRAIN FLIGHT INSTRUCTOR (TERFI)																									
TERFI	STERFI	TERF Maneuvers	5110	X		X				1.5			D	RS	S	1		*	5001,5100				5110	5110	
	TERFI	TERF Nav	5111	X	X							1.5	D	RS	A	2		*	5103,6498				5111	5111	
TERFI TOTAL								0	0.0	1	1.5	1	1.5												

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W-->Z)	EVENT CONV (Z-->Z)	
				#	TIME	#		TIME	#	TIME																
WEAPONS TACTICS OFFICER (WTO)																										
WTO	SWTO	Rev Sim Functions	5200	X							1.5			D	CP	S			*	6498				5211	5211	
	SWTO	SWD Instruction	5201	X	X	X					1.5			D	RS	S	1		*	5105,5111,5200	2601				5200	
	WTO	SWD Instruction	5202	X									1.5	D	RS	A	2		*	5201	2100,2604			5202	5202	
	SWTO	OAS Instruction	5203	X	X	X					1.5			D	FS	S	1		*	5202	5201,5111,5103,5101,5100			5201	5201	
	WTO	OAS Instruction	5204	X	X	X							1.5	D	FS	A	2		*	5203,5020,5021; Note (MUST LOG 2605 IN CONJUNCTION)	2100,2604,3301,5203,5201,5111,5103,5101,5100				5203	
WTO TOTAL								0	0.0	3	4.5	2	3.0													
CONTRACT SIMULATOR INSTRUCTOR (CSI)																										
CSI	SCSI	EP & FAM Stan	5300	X			X				1.5			D	OS	S		X	365	Candidate CSI					5300	
	SCSI	INST Stan	5301	X			X				1.5			(N*)	OS	S			365	Candidate CSI					5301	
	SCSI	Sys/ASE Rev	5302	X			X				1.5			D	OS	S			365	Candidate CSI					5302	
	SCSI	Rev Ord Delivery	5303	X			X				1.5			D	OS	S			365	Candidate CSI					5303	
CSI TOTAL								0	0.0	4	6.0	0	0.0													
FORWARD AIR CONTROLLER (AIRBORNE) INSTRUCTOR [FAC(A)I]																										
FAC(A)I	SFAC(A)I	FAC(A)I Sim	5400	X							1.5			(NS)	FS	S/A	2	X	*	IAW MAWTS-1 Course Catalog. 3405,5905. One year's worth of FAC(A) controls (4 x CMPs)				5400	5400	
	FAC(A)I	FAC(A)I UT	5401	X	X								2.0	(NS)	RS	A	2		*	IAW MAWTS-1 Course Catalog				5401	5401	
	FAC(A)I	FAC(A)I Check	5402	X	X								2.0	(NS)	RS	A	2		*	IAW MAWTS-1 Course Catalog. 5040,5041,5400,5401	3405,5401			5402	5402	
FAC(A)I TOTAL								0	0.0	1	1.5	2	4.0													
DEFENSIVE AIR COMBAT MANEUVERS INSTRUCTOR (DACMI)																										
DACMI	DACMI	1v1 & 2v1 RW	5800	X									2.0	D	OS	A	2		*	IAW MAWTS-1 Course Catalog. 4300,4301,4302,4303	4300,4301,4302,4303			5800	5800	
	DACMI	1v1 & 2v1 FW	5801	X									2.0	D	OS	A	2		*	IAW MAWTS-1 Course Catalog. 4304,4305	4304,4305			5801	5801	
	DACMI	1v1 & 2v1 RW Eval	5802	X	X								2.0	D	OS	A	2		*	IAW MAWTS-1 Course Catalog. 5800,5080	4303			5802	5802	
	DACMI	1v1 & 2v1 FW Eval	5803	X	X								2.0	D	OS	A	2		*	IAW MAWTS-1 Course Catalog. 5801,5081	4304,4305			5803	5803	
DACMI TOTAL								0	0.0	0	0.0	4	8.0													
NIGHT SYSTEMS INSTRUCTOR (NSI)																										
NSI	NSI	EP,NAV,FAM Stan	5900	X		X							2.0	NS	RS	A	1		*	IAW MAWTS-1 Course Cat	2101,2802,2803,2800			5900	5900	
	NSI	TACFORM/SWD	5901	X		X							2.0	NS	RS	A/S	2		*	IAW MAWTS-1 Course Cat	2101,2802,2803,2800			5901	5901	
	SNSI	TACFORM/SWD	5902	X							1.5			NS	RS	S/A		X	*	IAW MAWTS-1 Course Cat				5902	5902	
	SNSI	OAS Instruction	5903	X							1.5			NS	FS	S/A		X	*	IAW MAWTS-1 Course Cat				5903	5903	
	NSI	OAS	5904	X		X							2.0	NS	RS	A	2		*	IAW MAWTS-1 Course Cat	2101,2202,2302			5904	5904	
	NSI	NSI Check	5905	X	X								2.0	LLL	RS	A	2		*	IAW MAWTS-1 Course Cat	2101,2202,2302,3303,5204,5203,5201			5905	5905	
NSI TOTAL								0	0.0	2	3.0	4	8.0													
FLIGHT LEADERSHIP STANDARDIZATION INSTRUCTOR (FLSE)																										
FLSE	FLSE	FLSE certification	5920	X	X				0.0					(N)		G			730	6598,5905				5920	5920	
	FLSE	FLSE Annual Training	5921	X	X	X	X		0.0					(N)		G			365	5920		X	X		5921	
FLSE TOTAL								2	0.0	2	4.5	0	0.0													



AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																											
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W-->Z)	EVENT CONV (Z-->Z)		
				#	TIME	#		TIME	#	TIME																	
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD) (6000 PHASE)																											
INSTRUMENT (INST)																											
INST	INST	INST Grd Sch	6000	X	X		X		8.0					(N)		G			365						X		6000
	INST	INST Grd Sch Exam	6001	X	X		X		1.0					(N)		G			365					X	X		6001
	INST	Annual INST Check	6100	X	X		X				1.5			(N)		S/A	1		365	6000,6001				X	X		6100
INST TOTAL								2	9.0	1	1.5	0	0.0														
NATOPS (NTPS)																											
NTPS	NTPS	Open Book NATOPS	6002	X	X	X	X		2.0					(N)		G			365					X	X		6002
	NTPS	Closed Book NATOPS	6003	X	X	X	X		1.0					(N)		G			365					X	X		6003
	NTPS	Oral NATOPS	6004	X	X	X	X		1.0					(N)		G			365					X	X		6004
	NTPS	NATOPS Check	6101	X	X	X	X					1.5		(N)		A/S	1		365	6002,6003,6004				X	X		6101
	NTPS	ANI Stan	6105	X	X	X	X				0.1			(N)		A/S	1		365	5105				X	X		
	NTPS	NI Stan	6106	X	X	X	X				0.1			(N)		A/S	1		365	5105				X	X		
	NTPS	NE Stan	6107	X	X	X	X				0.1			(N)		A/S	1		365	5105				X	X		
NTPS TOTAL								3	4.0	3	0.3	1	1.5														
CREW RESOURCE MANAGEMENT (CRM)																											
CRM	CRM	Crew Resource Mngt	6005	X	X	X	X		1.0					(N)		G			365						X		6005
	CRM	CRM Eval	6102	X	X	X	X					0.1		(N)		S/A	1		365					X	X		6102
	CRM	CRM-F Training	6103	X	X	X			0.0							G			365								
	CRM	CRM-I Training	6104	X					0.0							G			*								
CRM TOTAL								1	1.0	0	0.0	1	0.1														
FUNCTIONAL CHECKPILOT (FCP)																											
FCP	FCP	FCP Open Book Exam	6006	X	X	X			1.0					(N)		G			485								6006
	FCP	FCP Closed Book Exam	6007	X					1.0					(N)		G			*								6007
	SFCP	Demo FCF Procedures	6200	X	X	X					1.5			D	OS	S		X	485	6300							6200
	SFCP	Intro FCF Procedures	6201	X							1.5			D	RS	S		X	*	6200						6201	6201
	FCP	MR Track and Balance	6202	X									1.5	D	OS	A	1		*	6201						6202	6202
	FCP	TR Track and Balance	6203	X									1.5	D	OS	A	1		*	6202						6203	6203
	FCP	FCF Rev	6204	X	X	X							1.5	D	RS	S/A		X	365	6200,6201,6202,6203						6204	
	FCP	FCP Eval	6205	X	X	X							1.5	D	RS	A	1		*	6006,6007,6204							6205
FCP TOTAL								2	2.0	2	3.0	4	6.0														
ACADEMICS (ACAD)																											
ACAD	ACAD	(S) MAGTF Targeting	6041	X	X				1.0					(N)		G			365							6041	6041
	ACAD	JTAC-Aircrew Integration	6042	X					1.0					(N)		G			*							6042	6042
	ACAD	Air Mission Commander	6071	X					1.0					(N)		G			*							6042	6042
ACAD TOTAL								3	3.0	0	0.0	0	0.0														

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W-->Z)	EVENT CONV (Z-->Z)	
				B	R	S		#	TIME	#	TIME	#	TIME													
PILOT QUALIFIED IN MODEL (PQM)																										
PQM	DESG	PQM Eval	6300	X		X						1.5	D	RS	A/S	1		*	1901		X				6300	
PQM TOTAL								0	4.0	0	0.0	1	1.5													
ATTACK HELICOPTER AIRCRAFT COMMANDER (AHC)																										
AHC	DESG	AHC Eval	6398	X	X	X						1.5	(NS)	RS	A	2		*	8200,8300,6300,Core and Mission Skills Complete 2100,2101,2102,2103,2200,2201,2202,2300,2301,2302,2600,2601,2602,2603,2604,2605,2606,2607,2608,2609,2610,2800,2801,2802,2803,2900,2901,2902,2903,3100,3101,3102,3103,3300,3301,3302,3303,3304,3305,3306,3307,3308,3500)						6398	
AHC TOTAL								0	0.0	0	0.0	1	1.5													
SECTION LEADER (SL)																										
SL	SL	Sec Ldr Day	6400	X								1.5	D	OS	A	2		*	6398: Note (Must have at least three flights in wingman position as a designated AHC, and brief and lead a minimum of 2 sections.)	6398,2603~ORD				6400	6400	
	SL	Night Sec Ldr	6401	X								1.5	NS	OS	A	2		*	6398: Note (Must have at least three flights in wingman position as a designated AHC, and brief and lead a minimum of 2 sections.)	2102,6398,2607~ORD NS,2609~ORD LLL				6401	6401	
	SL	Sec Ldr Eval	6498	X	X							2.0	(NS)	OS	A	2		*	8600,6400,6401: Note; {Must also have 50 hours since 6398 initially logged (In B POI only)}	6398,2102~NS, 2607~ORD NS, 2609~ORD LLL	X			6498	6498	
SL TOTAL								0	0.0	0	0.0	3	5.0													
DIVISION LEADER (DL)																										
DL	DL	Div Ldr Day	6500	X								1.5	D	OS	A	3		*	6498: Note; (Lead a minimum of three flights as a designated Section Lead. Minimum of: 600 total hours, 200 Rotary wing hours, and 50 hours in model)	2601,6498,6398,2603~ORD				6500	6500	
	DL	Div Ldr Night	6501	X								1.5	NS	OS	A	3		*	6498: Note; (Lead a minimum of three flights as a designated Section Lead. Minimum of: 600 total hours, 200 Rotary wing hours, and 50 hours in model)	2102,2601,6498,6398,2603~ORD, 2607~ORD NS, 2609~ORD LLL				6501	6501	
	DL	Div Ldr Eval	6598	X	X							1.5	(NS)	OS	A	3		*	6500,6501	2601,6498,6398,2603~ORD, 2607~ORD NS, 2609~ORD LLL				6598	6598	
DL TOTAL								0	0.0	0	0.0	3	4.5													
FLIGHT LEADER (FL)																										
FL	FL	Flt Ldr Eval	6698	X	X							1.5	(NS)	OS	A	5		*	6598: Note; (PUI shall have lead three flights as a designated Division Leader. PUI shall also have a minimum of 750 total flight hours)	6598,6498,6398,2102~NS, 2601,2603~ORD,2607~ORD NS,2609~ORD LLL				6698	6698	
FL TOTAL								0	0.0	0	0.0	1	1.5													
AIR MISSION COMMANDER (AMC)																										
AMC	AMC	AMC Eval	6798	X	X							1.5	(NS)	OS	A/S/G	1		*	6041,6042,6071,6598					6798	6798	
AMC TOTAL								0	0.0	0	0.0	1	1.5													
SPECIFIC OPERATIONS TRACKING CODE (SOTC)																										
SOTC	SOTC	Illum Rkt	6900	X	X							0.1	NS	OS	A	1		*						6900	6900	
	SOTC	APKWS	6901	X	X							0.1	(NS)	OS	A	1		*						6901	6901	
	SOTC	Flechette Rkt	6902	X	X							0.1	(NS)	OS	A	1		*						6902	6902	
	SOTC	JAGM	6903	X	X							0.1	(NS)	OS	A	1		*							6903	
	SOTC	Hellfire Prof	6904	X	X							0.1	(NS)	OS	A	1		*						6904	6904	
	SOTC	AIM-9 Prof	6905	X	X							0.1	(NS)	OS	A	1		*							6905	6905

AH-1Z PILOT T&R SYLLABUS MATRIX (2000-8000 PHASE)																											
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ATTAIN			MAINTAIN	ACAD		SIM		FLIGHT		COND	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	CHAINING	EATF "I"	EOM	MIRROR (W->Z)	EVENT CONV (Z->Z)		
				B	R	S		#	TIME	#	TIME	#	TIME														
SOTC TOTAL								0	0.0	0	0.0	6	0.6														
MISSION ESSENTIAL TASK (MET) (7000 PHASE)																											
MISSION ESSENTIAL TASK (MET)																											
MET	MET	CLOSE AIR SUPPORT (CAS)	7002	X	X								1.5	(NS)		A/S	2+		730			X			7002		
	MET	AERIAL INTERDICTION (AI)	7003	X	X								1.5	(NS)		A/S	2+		730			X			7003		
	MET	STRIKE COORD AND RECON (SCAR)	7005	X	X								1.5	(NS)		A/S	2+		730			X			7005		
	MET	FAC(A)	7006	X	X								1.5	(NS)		A/S	2+		730			X			7006		
	MET	TRAP	7009	X	X								1.5	(NS)		A/S	2+		730			X			7009		
	MET	AERIAL ESCORT (AE)	7010	X	X								1.5	(NS)		A/S	2+		730			X			7010		
	MET	EXP SEA BASED TAC (SEA)	7012	X	X								1.5	(NS)		A/S	2+		730			X			7012		
	MET	OFFENSIVE ANTI-AIR WARFARE (OAAW)	7013	X	X								1.5	(NS)		A/S	2+		730			X			7013		
	MET	ACTIVE AIR DEFENSE (AAD)	7016	X	X								1.5	(NS)		A/S	2+		730			X			7016		
MET TOTAL												9	13.5														
AVIATION CAREER PROGRESSION MODEL (8000 PHASE)																											
AVIATION CAREER PROGRESSION MODEL (ACPM)																											
ACPM	ACPM	ACPM 8200 Series	8200	X					6.0					(N)		G			*					8200	8200		
	ACPM	ACPM 8300 Series	8300	X					6.0					(N)		G			*					8300	8300		
	ACPM	ACPM 8600 Series	8600	X					6.0					(N)		G			*					8620	8620		
ACPM TOTAL								3	18.0	0	0.0	0	0.0														

## 2.23 AH-1Z RANGE AND ORDNANCE MATRIX

AH-1Z RANGE AND ORDNANCE MATRIX							
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE NOTES	RANGE	EXTERNAL SYLLABUS SUPPORT
TERRAIN FLIGHT (TERF)							
TERF	TERF	Rev TERF	2100			Authorized TERF route	
	TERF	Rev NVD TERF	2101			Authorized TERF route	
	TERF	NVD LLL TACFORM/TERF	2102			Authorized TERF route	
THREAT COUNTER TACTICS (TCT)							
TCT	STCT	Tactical ASE Employ	2202	(1) Captive HF, (60) Chaff/Flares ~AC		EW range, LASER safe range	Live fire range, Remote RADAR and IR stimulator
RECONNAISSANCE (REC)							
REC	SREC	Intro Day RECCE	2301			Authorized TERF area, LASER safe range	Thermally augmented threat vehicles, if available
	REC	Intro NVD RECCE	2302			Authorized TERF area, LASER safe range	Thermally augmented threat vehicles, if available
SPECIFIC WEAPONS DELIVERY (SWD)							
SWD	SSWD	Intro to PGMs	2600	(2) Captive HF ~AC		Live fire range and LASER safe range	
	SSWD	Intro to APKWS REV HF	2601	(2) Captive HF,(2)2.75" APKWS,(300)20mm~AC		Live fire range and LASER safe range	
	SWD	Live PGM	2602	(1) live Hellfire, or (2) APKWS, or (1) JAGM, and (300) rounds 20mm, if refresh/series conversion, substitute (2) CATM-114		Live fire range and LASER safe range	
	SWD	Rev Rockets	2604	(19) 2.75" rockets, (300) 20mm	Threshold (10) 2.75" rockets	Live fire range and LASER safe range	
	SWD	Eval SWD	2605	(19) 2.75" rockets, (300) 20mm	Threshold (10) 2.75" rockets	Raked or scored range and LASER safe range	Scored Range
	SWD	Intro NS SWD	2606	(19) 2.75" rockets, (300) 20mm, (60) chaff/flare and IR Pointer	Threshold (10) 2.75" rockets	Live fire range and LASER safe range	
	SWD	Refine NS SWD	2607	(19) 2.75" rockets, (300) 20mm, (60) chaff/flare and IR Pointer	Threshold (10) 2.75" rockets	Live fire range and LASER safe range	
	SSWD	LLL Dive Delivery	2608			Live fire range and LASER safe range	
	SWD	LLL Dive Delivery	2609	(19) 2.75" rockets, (300) 20mm, (60) chaff/flare and IR Pointer	Threshold (10) 2.75" rockets	Raked or scored (if available), live fire, and LASER safe range	Scored Range
	SWD	TSS 20MM	2610	(500) 20mm		Live fire range and LASER safe range	
EXPEDITIONARY (EXP)							
EXP	EXP	DAY RVL	2900				
	EXP	NS RVL	2901				
	EXP	DAY FARP	2902				Actual or simulated FARP
	EXP	NS FARP	2903				Actual or simulated FARP

AH-1Z RANGE AND ORDNANCE MATRIX							
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE NOTES	RANGE	EXTERNAL SYLLABUS SUPPORT
ESCORT (ESC)							
ESC	SESC	SIM ASPT ESC	3100	(2) Captive PGM, (1) CATM-9, (7) 2.75 inch rockets, (300) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft
	ESC	DAY ASPT ESC	3101	(2) Captive PGM, (1) CATM-9, (7) 2.75 inch rockets, (300) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft
	ESC	NVD ASPT ESC	3102	(2) Captive PGM, (1) CATM-9, (7) 2.75 inch rockets, (300) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft
	ESC	Surface ESC	3103	(2) Captive PGM, (7) 2.75" rockets, (300) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets	One ground/amphibious unit (minimum three vehicles) ~AC
CLOSE AIR SUPPORT (CAS)							
CAS	CAS	Intro Day CAS	3301	(2) Captive PGM, (8) 2.75" rockets (Optional), (500) 20mm, (60) chaff/flare	Threshold (300) 20mm, ordnance optional for maintain.	Live fire and LASER safe range with thermally significant targets	TACP
	CAS	Intro NVD CAS HLL	3302	(2) Captive PGM, (8) 2.75" rockets (Optional), (500) 20mm, (60) chaff/flare	Threshold (300) 20mm, ordnance optional for maintain.	Live fire and LASER safe range with thermally significant targets	TACP
	CAS	Intro NVD CAS LLL	3303	(2) Captive PGM, (8) 2.75" rockets (Optional), (500) 20mm, (60) chaff/flare	Threshold (300) 20mm, ordnance optional for maintain.	Live fire and LASER safe range with thermally significant targets	Thermally significant targets
	CAS	Intro Urban CAS	3304	(2) Captive PGM, (8) 2.75" rockets, (500) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets	TACP with appropriate marking devices (if available), suitable urban environment or MOUT facility
STRIKE (STK)							
STK	STK	Aerial Interdiction/Strike	3307	(2) Captive PGM, (7) 2.75" rockets, (300) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets	
STRIKE COORDINATOR ARMED RECONNAISSANCE (SCAR)							
SCAR	SCAR	Armed Recon	3305	(2) Captive PGM, (7) 2.75" rockets, (500) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets	
	SCAR	SCAR	3306	(2) Captive PGM, (7) 2.75" rockets, (500) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets	RW or FW aircraft
	SSWD	Review Hellfire/Intro APKWS	2601				
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)							
TRAP	TRAP	TRAP	3500	(2) Captive PGM, (7) 2.75" rockets, (300) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range (if required)	One or more external Assault Support aircraft or one ground/amphibious unit (minimum three vehicles)

AH-1Z RANGE AND ORDNANCE MATRIX							
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE NOTES	RANGE	EXTERNAL SYLLABUS SUPPORT
FORWARD AIR CONTROLLER (AIRBORNE) [FAC(A)]							
FAC(A)	FAC(A)	IDF Control	3400	(2) Captive PGM, (7) 2.75" rockets, (300) 20mm, (60) chaff/flare	Optional	Live fire and LASER safe range with thermally significant targets, if available.	One (1) indirect fire asset with eight (8) rounds
	SFAC(A)	RW Control	3401	(2) Captive PGM, (7) 2.75" RP rockets, (300) 20mm		Live fire and LASER safe range with thermally significant targets, if available.	2 RW CAS aircraft with ordnance, Ground Maneuver Unit with TACP
	FAC(A)	FW Control	3402	(2) Captive PGM, (7) 2.75" RP rockets, (300) 20mm		Live fire and LASER safe range with thermally significant targets, if available.	2 FW CAS aircraft with ordnance and Ground Maneuver Unit with TACP (If conducted in aircraft).
	SFAC(A)	NVD Urban FW/RW Control	3403	(2) Captive PGM, (7) 2.75" RP rockets, (300) 20mm		Live fire and LASER safe range with thermally significant targets, if available.	(2) FW CAS and (2) RW CAS aircraft with ordnance and Ground Maneuver Unit with TACP (If conducted in aircraft).
	FAC(A)	Sup Arms Consolidate	3404	(2) Captive PGM, (7) 2.75" RP rockets, (300) 20mm		Live fire and LASER safe range with thermally significant targets, if available.	(2) FW CAS aircraft with ordnance, (2) RW aircraft with ordnance (separate from flight), and Ground Maneuver unit with TACP.
	SFAC(A)	FAC(A) Standardization	3405	(2) Captive PGM, (7) 2.75" RP rockets, (300) 20mm		Live fire and LASER safe range with thermally significant targets, if available.	(2) FW CAS aircraft with ordnance, (2) RW aircraft with ordnance (separate from flight), and Ground Maneuver unit with TACP.
ESCORT (ESC)							
ESC	ESC	ASP ESC Med/High Threat	4200	(2) captive PGM, (7) 2.75" rockets, (300) 20mm, (60) chaff/flares	Optional	Live fire and LASER safe range with thermally significant targets	2 or more assault support aircraft
CLOSE AIR SUPPORT (CAS)							
CAS	CAS	CAS Med/High Threat	4201	(2) captive PGM, (7) 2.75" rockets, (500) 20mm, (60) chaff/flares	Optional	Live fire and LASER safe range with thermally significant targets	JTAC with appropriate marking devices (if available), suitable urban environment or MOUT facility
STRIKE COORDINATON ARMED RECONNAISSANCE (SCAR)							
SCAR	SCAR	AR Med/High Threat	4205	(2) captive PGM, (7) 2.75" rockets, (500) 20mm, (60) chaff/flares	Optional	Live fire and LASER safe range with thermally significant targets	
	SCAR	SCAR Med/High Threat	4206	(2) captive PGM, (7) 2.75" rockets, (500) 20mm, (60) chaff/flares	Optional	Live fire and LASER safe range with thermally significant targets	2 OAS aircraft
STRIKE (STK)							
STK	STK	STK Med/High Threat	4207	(2) captive PGM, (7) 2.75" rockets, (500) 20mm, (60) chaff/flares	Optional	Live fire and LASER safe range with thermally significant targets	
	SSWD	Review Hellfire/Intro APKWS	2601				
OFFENSIVE ANTI AIR WARFARE (OAAW)							
OAAW	OAAW	OAAW	4209	(2) captive PGM, (1) CATM-9, (60) chaff/flares	Optional	Live fire and LASER safe range	Designated TERF area

AH-1Z RANGE AND ORDNANCE MATRIX							
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE NOTES	RANGE	EXTERNAL SYLLABUS SUPPORT
ACTIVE AIR DEFENSE (AAD)							
AAD	RWDACM	OWP DACM	4300	(1) CATM-9,(30) flares		Authorized TERF area	Designated TERF area
	RWDACM	1v1 RW	4301	(1) CATM-9, (30) flares and TCTS pod (as required)		Appropriate air-to-air training area	One adversary helicopter and appropriate air-to-air training area
	RWDACM	2V1 RW	4302	(1) CATM-9, (30) flares and TCTS pod (as required)		Appropriate air-to-air training area	One adversary helicopter and appropriate air-to-air training area
	RWDACM	Rev 1v1/2v1 RW	4303	(1) CATM-9, (30) flares and TCTS pod (as required)		Appropriate air-to-air training area	One adversary helicopter and appropriate air-to-air training area
	FWDACM	1v1 FW	4304	(1) CATM-9, (30) flares and TCTS pod (as required)		Appropriate air-to-air training area	One FW adversary and appropriate air-to-air training area
	FWDACM	2v2 FW	4305	(1) CATM-9, (30) flares and TCTS pod (as required)		Appropriate air-to-air training area	Two FW adversary and appropriate air-to-air training area
EXPEDITIONARY SEA BASED OPERATIONS (SEA)							
SEA	SFCLP	Intro CQ	4600				
	FCLP	Day FCLP	4601				FCLP pad
	FCLP	Night FCLP	4602				FCLP pad
	CQ	Day CQ	4603				Landing platform afloat
	CQ	NVD CQ	4604				Landing platform afloat
	CQ	Unaided CQ	4605				Landing platform afloat
BASIC INSTRUCTOR PILOT (BIP)							
BIP	SBIP	EP Stan	5101				Device operator
	SBIP	FAM/FCLP Maneuvers	5102				Device operator, FCLP pad~AC
	SBIP	INST Rev	5104				Device operator
TERRAIN FLIGHT INSTRUCTOR (TERFI)							
TERFI	STERFI	TERF Maneuvers	5110			Authorized TERF maneuvering area	
	TERFI	TERF Nav	5111			Authorized TERF maneuvering area	
WEAPONS TACTICS OFFICER (WTO)							
WTO	SWTO	SWD Instruction	5201	(2) captive PGM, (19) 2.75 inch rockets, (300) rounds 20mm, (30) chaff/flares			Device operator
	WTO	SWD Instruction	5202	(2) captive PGM, (19) 2.75 inch rockets, (300) rounds 20mm, (30) chaff/flares	Threshold: (10) 2.75" Rockets	Live fire and LASER safe range with thermally significant targets	
	SWTO	OAS Instruction	5203	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (30) chaff/flares			Device operator
	WTO	OAS Instruction	5204	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (30) chaff/flares	Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	

AH-1Z RANGE AND ORDNANCE MATRIX							
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE NOTES	RANGE	EXTERNAL SYLLABUS SUPPORT
FORWARD AIR CONTROLLER (AIRBORNE) INSTRUCTOR [FAC(A)I]							
FAC(A)I	FAC(A)I	FAC(A)I UT	5401	(2) captive PGM, (4) 2.75 inch RP rockets, (300) rounds 20mm, (60) chaff/flares		Live fire and LASER safe range with thermally significant targets	FW and RW OAS support, IDF support, TACP if available
	FAC(A)I	FAC(A)I Check	5402	(2) captive PGM, (4) 2.75 inch RP rockets, (300) rounds 20mm, (60) chaff/flares		Live fire and LASER safe range with thermally significant targets	FW and RW OAS support, IDF support, TACP if available
DEFENSIVE AIR COMBAT MANEUVERS INSTRUCTOR (DACMI)							
DACMI	DACMI	1v1 & 2v1 RW	5800	(1) captive AIM-9, (60) flares and TCTS pod (optional)			
	DACMI	1v1 & 2v1 FW	5801	(1) captive AIM-9, (60) flares and TCTS pod (optional)			
	DACMI	1v1 & 2v1 RW Eval	5802	(1) captive AIM-9, (60) flares and TCTS pod (optional)			
	DACMI	1v1 & 2v1 FW Eval	5803	(1) captive AIM-9, (60) flares and TCTS pod (optional)			
NIGHT SYSTEMS INSTRUCTOR (NSI)							
NSI	NSI	TACFORM/SWD	5901	(2) captive PGM, (14) 2.75 inch rockets, (2) 2.75 inch illumination rockets (optional), (300) rounds 20mm, (60) chaff/flares		Live fire and LASER safe range with thermally significant targets	
	SNSI	TACFORM/SWD	5902	(2) captive PGM, (7) 2.75 inch rockets, (300) rounds 20mm, (60) chaff/flares			
	SNSI	OAS Instruction	5903	(2) captive PGM, 2.75 inch rockets (optional), (300) rounds 20mm, (60) chaff/flares			
	NSI	OAS	5904	(2) captive PGM, (7) 2.75 inch rockets (optional), (300) rounds 20mm, (60) chaff/flares		Live fire and LASER safe range with thermally significant targets	
	NSI	NSI Check	5905	(2) captive PGM, (7) 2.75 inch rockets (optional), (300) rounds 20mm, (60) chaff/flares		Live fire and LASER safe range with thermally significant targets	
FLIGHT LEADERSHIP STANDARDIZATION INSTRUCTOR (FLSE)							
FLSE	FLSE	FLSE Annual Training	5921				Program Coordinator
ATTACK HELICOPTER AIRCRAFT COMMANDER (AHC)							
AHC	DESG	AHC Eval	6398	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares	Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft(if escort mission)



AH-1Z RANGE AND ORDNANCE MATRIX							
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE NOTES	RANGE	EXTERNAL SYLLABUS SUPPORT
SECTION LEADER (SL)							
SL	SL	Sec Ldr Day	6400	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares	Ordnance Optional. Must shoot once day, and once night. Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft(if escort mission)
	SL	Night Sec Ldr	6401	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares	Ordnance Optional. Must shoot once day, and once night. Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft(if escort mission)
	SL	Sec Ldr Eval	6498	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares	Ordnance Optional. Must shoot once day, and once night. Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft(if escort mission)
DIVISION LEADER (DL)							
DL	DL	Div Ldr Day	6500	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares	Ordnance Optional. Must shoot once day, and once night. Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft(if escort mission)
	DL	Div Ldr Night	6501	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares	Ordnance Optional. Must shoot once day, and once night. Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft(if escort mission)
	DL	Div Ldr Eval	6598	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares	Ordnance Optional. Must shoot once day, and once night. Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft(if escort mission)
FLIGHT LEADER (FL)							
FL	FL	Flt Ldr Eval	6698	(2) captive PGM, (8) 2.75 inch rockets (optional), (500) rounds 20mm, (60) chaff/flares	Threshold: (300) 20mm	Live fire and LASER safe range with thermally significant targets	One or more assault support aircraft(if escort mission)
AIR MISSION COMMANDER (AMC)							
AMC	AMC	AMC Eval	6798	(2) captive PGM, (8) 2.75 inch rockets, (500) rounds 20mm, (60) chaff/flares	Optional	Live fire and LASER safe range(as required)	GCE, MACCS agencies, AGS assets, multiple T/M/S RW and/or FW assets as required, and any other support required based on the tactical scenario (HST, threat emitter/simulator)
SPECIFIC OPERATIONS TRACKING CODE (SOTC)							
SOTC	SOTC	Illum Rkt	6900	(1) 2.75" Illumination rocket			
	SOTC	APKWS	6901	(1) AGR-19A OR B - APKWS			
	SOTC	Flechette Rkt	6902	(1) 2.75" Flechette			
	SOTC	JAGM	6903	(1) AGM-179 JAGM			
	SOTC	Hellfire Prof	6904	(1) AGM-114 HELLFIRE			
	SOTC	AIM-9 Prof	6905	(1) AIM-9M			

AH-1Z RANGE AND ORDNANCE MATRIX							
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	ORDNANCE	ORDNANCE NOTES	RANGE	EXTERNAL SYLLABUS SUPPORT
MISSION ESSENTIAL TASK (MET)							
MET	MET	CLOSE AIR SUPPORT (CAS)	7002			Live fire range as applicable.	JTAC/TACP is preferred, but may be simulated if necessary.
	MET	AERIAL INTERDICTION (AI)	7003			Live fire range as applicable.	IAW Phase
	MET	STRIKE COORD AND RECON (SCAR)	7005			Live fire range as applicable.	External AR platforms preferred but may be simulated if required.
	MET	FAC(A)	7006			Live fire range as applicable.	Requirements per FAC(A)-3404
	MET	TRAP	7009			Live fire range as applicable.	Assault and/or Command and Control aircraft are preferred if available. Isolated personnel in the objective area is preferred. Use of survival radios is preferred. Ground combat element is preferred if available.
	MET	AERIAL ESCORT (AE)	7010			Live fire range as applicable.	Actual assault transport element consisting of at least one aircraft
	MET	EXP SEA BASED TAC (SEA)	7012			Live fire range as applicable.	Naval shipping platform capable of conducting helicopter operations
	MET	OFFENSIVE ANTI-AIR WARFARE (OAAW)	7013			Live fire range as applicable.	IAW Phase
	MET	ACTIVE AIR DEFENSE (AAD)	7016			Live fire range as applicable.	Adversary aircraft as required per DACM guidelines

## 2.24 AH-1Z T7R MATRIX (1000 &amp; 5000 FRS PHASE)

AH-1Z PILOT T&R SYLLABUS MATRIX (1000 & 5000 FRS PHASE)																									
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	BASIC	REFRESHER	SER CONV	MOD REF	ACAD		SIM		FLIGHT		CONDITION	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	ORDNANCE	ORDNANCE QUANTITY	RANGE	EVAL	EVENT CONV
								#	TIME	#	TIME	#	TIME												
ACADEMICS (ACAD)																									
ACAD	ACAD	HMLAT-303 Initial LAU	1000	X	X	X	X							(N)		G			485						1000
	ACAD	HMLAT-303 Mid-Stage LAU	1001	X										(N)		G			*	1110					1001
	ACAD	HMLAT-303 Final LAU	1002	X										(N)		G			*	1901					1002
ACAD SKILL TOTAL								0	0.0	0	0.0	0	0.0												
FAMILIARIZATION (FAM)																									
FAM	FAM	Intro Pre/Post Flt	1100	X					0.0					D		GE	1		*	1000					1100
	FAM	Review Pre/Post Flt	1101	X	X	X	X		0.0					D		GE	1		485	1100					1101
	SFAM	NATOPS Checklists	1102	X	X	X	X				1.5			D	RS	S	1		485	1101					1102
	SFAM	Intro FAM Maneuvers	1103	X	X	X	X				1.5			D	FS	S	1		485	1102					1103
	FAM	Intro Course Rules & FAM	1104	X								2.0		D	FS	A	1		*	1103,1200,1500					1104
	FAM	Intro FAM Maneuvers	1105	X	X	X	X					2.0		D	FS	A	1		485	1104					1105
	SFAM	Intro Emergency Proc	1106	X	X	X	X				1.5			D	FS	S	1		485	1105					1106
	SFAM	Review Emergency Proc, Intro CRM	1107	X	X	X	X				1.5			D	RS	S	1		485	1106					1107
	FAM	Intro Eps/Review FAM Maneuvers	1108	X	X	X	X					2.0		D	FS	A	1		485	1107					1108
	FAM	Review FAM Maneuvers & Inst	1109	X								2.0		D	RS	A	1		*	1108					1109
	SFAM	Review EPs/CRM	1110	X							1.5			D	RS	S	1		*	1109					1110
	SFAM	Review EPs/CRM	1111	X							1.5			D	RS	S	1		*	1110					1111
	FAM	Rev Eps/FAM Maneuvers & Inst	1112	X								2.0		D	RS	A	1		*	1111					1112
	FAM	Review Eps/FAM Maneuvers	1113	X	X	X						2.0		D	RS	A	1		730	1112,1501					1113
	SFAM	Emerg Proc/CRM Eval	1114	X	X	X	X				1.5			D	RS	S	1		485	1113					1114
	FAM	FAM Eval	1115	X	X	X	X					2.0		D	RS	A	1		485	1114				X	1115
	FAM	Intro to Energy Management	1116	X	X	X	X					2.0		D	FS	A	1		485	1115					1116
	SFAM	Intro NVD FAM HLL	1117	X	X	X	X				1.5			NS	FS	S	1		485	1115					1117
	SFAM	Intro NVD Maneuvers HLL	1118	X							1.5			NS	RS	S	1		*	1117					1118
	FAM	Review NVD FAM Maneuvers HLL	1119	X								2.0		NS	FS	A	1		*	1118					1119
FAM	Review NVD FAM Maneuvers HLL	1120	X	X	X	X					2.0		NS	RS	A	1		485	1119					1120	
FAM SKILL TOTAL								2	0.0	9	13.5	10	20.0												

AH-1Z PILOT T&R SYLLABUS MATRIX (1000 & 5000 FRS PHASE)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	BASIC	REFRESHER	SER CONV	MOD REF	ACAD		SIM		FLIGHT		CONDITION	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	ORDNANCE	ORDNANCE QUANTITY	RANGE	EVAL	EVENT CONV	
								#	TIME	#	TIME	#	TIME													
INSTRUMENT (INST)																										
INST	SINST	Intro Basic INST	1200	X							1.5			(N*)	OS	S	1		*	1103					1200	
	SINST	Instrument Navigation	1201	X	X	X	X				1.5			(N*)	OS	S	1		485	1104,1200					1201	
	INST	Local Instrument Procedures	1202	X									2.0	(N)	OS	A	1		*	1201					1202	
	INST	Instrument Navigation	1203	X	X	X	X						2.0	(N*)	OS	A	1		485	1202,1502					1203	
	SINST	INST Flt Proc Eval	1204	X	X	X	X				1.5			(N)	OS	S	1		485	All 1000 level codes except 1900,1901				X	1204	
INST SKILL TOTAL								0	0.0	3	4.5	2	4.0													
FORMATION (FORM)																										
FORM	FORM	Intro FORM/TAC FORM	1300	X	X		X						2.0	D	OS	A	2		485	1001,1116					1300	
	FORM	Intro NVD FORM	1301	X	X		X						2.0	NS	FS	A	2		485	1300,1120					1301	
	FORM	FORM Eval	1302	X									2.0	D	OS	A	2		*	1301				X	1302	
FORM SKILL TOTAL								0	0.0	0	0.0	3	6.0													
TERRAIN FLIGHT (TERF)																										
TERF	TERF	Intro TERF	1400	X	X	X	X						2.0	D	FS	A	1		485	1001, 1116			TERF		1400	
	TERF	Intro NVD TERF	1401	X									2.0	NS	FS	A	2		*	1301, 1400			TERF		1401	
TERF SKILL TOTAL								0	0.0	0	0.0	2	4.0													
NAVIGATION (NAV)																										
NAV	SNAV	Intro DMS NAV	1500	X	X	X	X				1.5			(N)	OS	S/A	1		485	1103, 1200					1500	
	SNAV	Intro TSS	1501	X		X					1.5			(N)	OS	S/A	1	S-TEN	*	1103, 1200					1501	
	SNAV	Intro Flt NAV	1502	X	X	X	X				1.5			D	OS	S/A	1		485	1115					1502	
	NAV	Intro Flt NAV	1503	X									2.0	D	OS	A	1		*	1001, 1502					1503	
	NAV	Intro NVD NAV	1504	X									2.0	NS	OS	A	1		*	1120, 1503					1504	
NAV SKILL TOTAL								0	0.0	3	4.5	2	4.0													
SPECIFIC WEAPONS DELIVERY (SWD)																										
SWD	SSWD	Ord Checklists, TSS, TSS Guns	1600	X							1.5			D	RS	S	1	S-TEN	*	1001, 1116					1600	
	SSWD	Introduce weapons Delivery	1601	X							1.5			D	OS	S	1	S-TEN	*	1600					1601	
	SSWD	Review rockets, fixed gun, and all Med Alt 20mm and rockets	1602	X							1.5			D	OS	S	1	S-TEN	*	1601					1602	
	SSWD	Intro PGM. Rev TSS 20mm	1603	X		X					1.5			D	OS	S	1	S-TEN	*	1602					1603	
	SSWD	Rev 20mm, rockets, PGM, TSS	1604	X	X	X					1.5			D	OS	S	1	S-TEN	730	1603					1604	
	SWD	20mm, PGM, Rocket Employment	1605	X									1.5	D	OS	A	1		*	1300,1604,1700	PGM, 2.75" ,20mm	1 captive, 14,300	Live fire LASER safe range		1605	
	SWD	Eval Weapons Employment	1606	X	X	X	X						1.5	D	OS	A	1		485	1605	PGM, 2.75", 20mm	1 captive, 14,300	Live fire LASER safe range		1606	
SWD SKILL TOTAL								0	0.0	5	7.5	2	3.0													

AH-1Z PILOT T&R SYLLABUS MATRIX (1000 & 5000 FRS PHASE)																										
SKILL	PREFIX	T&R DESCRIPTION	EVENT NUMBER	BASIC	REFRESHER	SER CONV	MOD REF	ACAD		SIM		FLIGHT		CONDITION	SEAT	TYPE	# A/C or Sim	NETWORK	REFLY	PREREQUISITE	ORDNANCE	ORDNANCE QUANTITY	RANGE	EVAL	EVENT CONV	
								#	TIME	#	TIME	#	TIME													
ADVANCED SYSTEMS FAMILIARIZATION (ASF)																										
ASF	ASF	Intro ASE & APKWS	1700	X		X					1.5			D	OS	S	1	S-TEN	*	1001, 1116					1700	
ASF SKILL TOTAL								0	0.0	1	1.5	0	0.0													
CORE SKILL INTRODUCTION EVALUATION (CIX)																										
CIX	CIX	NATOPS Eval	1900	X	X	X	X				1.5			D	RS	S	1	S-TEN	485	6002, 6003, all previous Core Introduction Phase events except 1204				X	1900	
	CIX	Core Skill Intro Ck	1901	X	X	X	X					2.0	D	RS	A	1		485	1204, 1900				X	1901		
CIX SKILL TOTAL								0	0.0	1	1.5	1	2.0													
CORE SKILL INTRODUCTION TOTAL								2	0.0	22	33.0	22	43.0													
FLEET REPLACEMENT STANDARIZATION INSTRUCTOR (FRSI)																										
FRSI	SFRSI	EP Review	5310	X							1.5			D	RS	S	1		*	5203					5310	
	FRSI	Rev FAM, INST, CALs	5311	X								2.0	D	RS	A	1		*	5310					5311		
	FRSI	Rev FAM, TERF, NAV	5312	X								2.0	D	FS	A	1		*	5311					5312		
	FRSI	Rev FORM	5313	X	X							2.0	D	OS	A	2		730	5311					5313		
	FRSI	Rev SWD	5314	X	X							2.0	D	OS	A	1		730	5313	2.75", 20mm	7,300	Live fire LASER safe range		5314		
	SFRSI	ANI Standardization	5315	X	X						1.5			D	OS	S	1		730	Designated FRSI (6002, 6003 if applicable)					5315	
	FRSI	Rev NVD FAM/TERF	5316	X	X							2.0	NS	RS	A	1		730	Current NSI, 5312, 5313					5316		
FRSI TOTAL								0	0.0	2	3.0	5	10.0													
NIGHT SYSTEMS FAMILIARIZATION INSTRUCTOR (FRSI)																										
NSFI	NSFI	NAV & TERF IUT	5600	X	X	X	X					2.0	NS		A	1		485							5600	
	NSFI	FORM IUT	5601	X		X						2.0	NS		A	2		*							5601	
	NSFI	NSFI Check	5602	X	X	X	X					2.0	NS		A	1		485							5602	
NSFI TOTAL								0	0.0	0	0.0	3	6.0													